Alex Murshteyn, Site Acquisition
c/o New Cingular Wireless, PCS LLC (AT&T)
Centerline Communications, LLC
95 Ryan Drive, Suite 1
Raynham, MA 02767
Mobile: (508) 821-0159
AMurshteyn@centerlinecommunications.com

August 31, 2016

Melanie A. Bachman
Acting Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: Notice of Exempt Modification // Site Number: CT5440 (Name: Waterbury West)
1389 West Main Street, Waterbury, CT 06708
N 41.5491919 // W 73.0652989

Dear Ms. Bachman:

New Cingular Wireless, PCS, LLC ("AT&T") currently maintains 6 total antennas at two levels, namely 48-feet and 42-feet, of the existing 57.5-foot rooftop flagpole tower at 1389 West Main Street, Waterbury, CT. The pole and property are both owned by Waterbury Center Medical Condominium Association, Inc. AT&T now intends to replace 3 of its existing antennas with 3 new LTE (700/1900 band) antennas for its LTE upgrade. These antennas would be installed at a new 50-foot level of a replacement flagpole tower; as well as at the 42-foot level in a new faux 50.1-foot faux chimney tower ballast-mounted at the opposite end of the rooftop. AT&T also intends to install 3 new remote radios with A2 modules and relocate one of its antenna sectors (i.e. 3 antennas), along with ancillary equipment thereto, to the new faux chimney.

The current proposal involves an antenna swap only (three for three); no antennas will be added.

Note that this facility was originally approved by the City of Waterbury's Zoning Board of Appeals in 2002; no CSC docket is on file. As you may recall, you have already apprised the City's Land Use Inspector Margaret Brown of the CSC's jurisdiction on August 11th.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Neil O'Leary, Mayor for the City of Waterbury, as well as the tower owner and the ground owner, Waterbury Center Medical Condominium Association, Inc.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

Attached to accommodate this filing are construction drawings dated August 31, 2016 by ComEx Consultants, a structural analysis dated June 20, 2016 by Destek Engineering, LLC and an Emissions Analysis Report dated August 24, 2016 by EBI Consulting.

1. The proposed modifications will result in 2' increase in the height of the existing structure.

2. The proposed modifications will require the extension of the site boundary on the rooftop in order to accommodate 3-for-3 antenna replacement inside a wider and taller flagpole along with the relocation of 1 antenna sector from the existing stealth flagpole and RRU-frame location into a faux chimney location on a new ballast platform mount at the opposite end of the rooftop.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.

5. The proposed modifications will not cause an ineligible change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading, as shown in the attached structural analysis by Destek Engineering, LLC, dated June 20, 2016.

For the foregoing reasons, AT&T respectfully submits that the proposed modifications to the above referenced telecommunications facility constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Alex Murshteyn, Site Acquisition
c/o New Cingular Wireless, PCS LLC (AT&T)
Centerline Communications, LLC
95 Ryan Drive, Suite 1
Raynham, MA 02767
Mobile: (508) 821-0159
AMurshteyn@centerlinecommunications.com

cc: Neil O'Leary, Mayor, City of Waterbury - as elected official
Waterbury Center Medical Condominium Association, Inc. - as property & tower owner

STRUCTURAL ANALYSIS REPORT
ROOFTOP

Prepared For:

Com-Ex Consultants, LLC
115 Route 46 – Suite E39
Mountain Lakes, NJ 07046

Structure Rating:	
Support Platform:	**Pass**
Custom Sled:	**Pass**
Building Roof:	**Pass**

Sincerely,
Destek Engineering, LLC

06-20-2016

STATE OF CONNECTICUT
AHMET COLAKOGLU
PEN. 27057
LICENSED
PROFESSIONAL ENGINEER

Ahmet Colakoglu, PE
Connecticut Professional Engineer
License No: 27057

Site ID: CT5440
FA Location Code: 10071305
Site Name: WATERBURY WEST
1389 West Main Street
Waterbury, CT 06708

Destek Job No: 1629072 June 20, 2016

CONTENTS

DESTEK ENGINEERING, LLC
1281 Kennestone Circle, Ste 100, Marietta, GA 30066 -Tel: (770) 693-0835

1.0 SUBJECT AND REFERENCES

The purpose of this analysis is to evaluate the structural capacity of the existing telecommunication installation on the building located at 1389 West Main Street, Waterbury, CT 06708, for the additions and alterations proposed by AT&T Mobility (AT&T).

The structural analysis is based on a site visit performed by Destek Engineering, LLC (Destek), personnel on May 19, 2016, and on the following information provided to Destek:

- Construction Drawings prepared by Com-Ex Consultants and Empire Telecom, Job Number 15167-EMP dated 02/12/2016.
- Communication Pole Design Calculations and Permit Drawings prepared by Valmont Microflect, Valmont order number 323406, dated 04/26/2016.
- Communication Pole Design Calculations and Permit Drawings prepared by Valmont Microflect, Valmont order number 323409, dated 04/26/2016.
- As-Built Construction Drawings prepared by Dewberry Engineers, Inc., and Nexlink Global Services, Dewberry number 50048347/50048409, dated 09/20/2012.
- Structural Analysis Report prepared by Hudson Design Group, LLC, dated 07/16/2010.
- RFDS provided by AT&T, dated 12/10/2015.

1.1 STRUCTURE AND EXISTING EQUIPMENT

The structure is a three-story medical center building where the structural system is comprised of standard steel framing. The elevation of the main roof is approximately 38 feet above ground level (AGL). AT&T currently has equipment cabinets located at the rooftop level and supported on a steel platform anchored to the roof structure. AT&T also currently has (6) panel antennas on the roof of the building at RAD centers of 48’ and 42’ AGL (per CDs), (2) per sector. The panel antennas for all sectors are mounted to a pipe mast and covered with a 2’ diameter RF transparent canister. The pipe mast and canister are supported on structural steel platform anchored to the building roof structure. Please refer to the calculations in Appendix A for details.

2.0 APPURTENANCES

This analysis is based on the following existing and proposed appurtenances:

Existing Configuration of AT&T Appurtenances:

Rad. Center (ft)	Antenna & TMA	Mount
48’ & 42’	(6) KMW AM-X-CD-14-65-00T-RET (3) TT19-08BP111-001 TMA’s* (3) DTMABP7819VG12A TMA’s* (3) RRUS-11**	(1) RF transparent canister

*** Equipment installed at steel platform level**

**** Equipment installed in a non-penetrating sled**

Proposed and Final Configuration of AT&T Appurtenances:

Rad. Center (ft)	Antenna & TMA	Mount
50’ and 42’ Alpha and Beta	(2) KMW AM-X-CD-14-65-00T-RET (2) CCI HPA-65R-BUU-H8 (2) TT19-08BP111-001 TMA’s* (4) TMA2093F00V1-1 TMA’s* (2) RRUS-11** (2) RRUS-12+RRUS-A2**	(1) RF transparent canister
42’ Gamma	(1) KMW AM-X-CD-14-65-00T-RET (1) CCI HPA-65R-BUU-H6 (1) TT19-08BP111-001 TMA’s* (2) TMA2093F00V1-1 TMA’s* (1) RRUS-11* (1) RRUS-12+RRUS-A2*	(1) RF transparent chimney

*** Equipment installed at steel platform level**
**** Equipment installed in a non-penetrating sled**

3.0 CODES AND LOADING

The analysis is in accordance with the following codes and loading as adopted in Connecticut:

- 2005 State Building Code with all of the adopted Supplements and Amendments.
- Minimum Design Loads for Buildings and Other Structures SEI/ASCE 7-02, American Society of Civil Engineers
- Specifications for Structural Steel Buildings – Allowable Stress ANSI/AISC 335-89s1, American National Standards Institute/American Institute for Steel Construction
- Basic Wind Speed: 95 mph
- Exposure: B

4.0 STANDARD CONDITIONS FOR ENGINEERING SERVICES ON EXISTING STRUCTURES

The analysis is based on the information provided to Destek and is assumed to be current and correct. Unless otherwise noted, the structure and the foundation system are assumed to be in good condition, free of defects, and can achieve theoretical strength.

It is assumed that the structure has been maintained and shall be maintained during its service. The superstructure and the foundation system are assumed to be designed with proper engineering practice and fabricated, constructed and erected in accordance with the design documents. Destek will accept no liability which may arise due to any existing deficiency in design, material, fabrication, erection, construction, etc., or lack of maintenance.

DESTEK ENGINEERING, LLC
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The analysis does not include a qualification of the mounts attached on the structure or their connections. The analysis is performed to verify the capacity of the main structural members, which is the current practice in the tower industry.

The analysis results presented in this report are only applicable for the previously mentioned existing and proposed additions and alterations. Any deviation of the proposed equipment and placement, etc., will require Destek to generate an additional structural analysis. Additionally, the proposed linear appurtenances should be placed per any recommendations specified in this report.

5.0 ANALYSIS and ASSUMPTIONS

The structure is considered to have adequate strength for the proposed loading if the existing structural members that will be used to support the proposed equipment are structurally adequate per the applicable code criteria, or that the additions or alterations to the existing structure do not increase the force in any structural element by more than 5%.

The analysis was performed by utilizing Risa 3-D, a commercially available structural engineering software package developed by Risa Technologies, as applicable.

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6.0 RESULTS AND CONCLUSION

Mount Steel Platform: The existing steel platform supporting the existing RF transparent canister is found to have **adequate** structural capacity for the proposed installation by AT&T. For the code specified load combinations and the proposed loading configuration, the existing platform W8x24 beams are stressed to **31%** of their structural capacity as a maximum. See attached drawings for additional connection details.

New Sled Mount for RF Transparent Chimney: The proposed custom non-penetrating roof sled is found to have **adequate** structural capacity for the proposed installation by AT&T, once it is built per the Sled Mount Details prepared by Destek Engineering, LLC, dated 06/20/2016. For the code specified load combinations and the proposed loading configuration, the new sled members will be stressed to **78%** of their structural capacity as a maximum. To prevent overturning of the sled, a ballast weight of **1675 lbs** should be placed per tray, for a total of **6700 lbs per sled**. This amount of ballast is only valid if the top of the RF transparent chimney is not higher than 12'-0" above the roofline, which appears to be consistent with the proposed configuration.

RRH Sled: The existing RRH non-penetrating roof sled is found to have **adequate** structural capacity for the proposed installation by AT&T. To prevent overturning of the sled, a ballast weight of **235 lbs** should be placed per tray, for a total of **470 lbs for the sled**.

Building Roof: The existing building roof structure is found to have **adequate** strength for the proposed configuration and roof sled addition. For the code specified load combinations and the proposed loading configuration, the existing roof beams will be stressed to **90%** of their structural capacity as a maximum.

Therefore, the proposed additions and alterations by AT&T **can** be implemented as intended with the conditions outlined in this report.

Should you need any clarifications or have any questions about this report, please contact Destek at (770) 693-0835 or acolakoglu@destekengineering.com.

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APPENDIX A
PICTURES AND CALCULATIONS

EXISTING RF TRANSPARENT CANISTER AND SUPPORTING STEEL PLATFORM ON ROOF

PROPOSED LOCATION OF RF TRANSPARENT CHIMNEY ON CUSTOM NON-PENETRATING SLED

CALCULATION SHEET

PURPOSE

The purpose of this analysis is to evaluate the structural capacity of the existing installation located in the roof of the building at 1389 West Main Street, Waterbury, CT 06708, to support the existing monopole with the proposed additions and alterations proposed by AT&T Mobility.

All calculations in accordance with 2005 Connecticut Building Code with all adopted addendums and supplements.

Wind Load

(reference ASCE 7-02 section 6.5.15 & Appendix K in 2009 Amendment) — ASCE 7 Reference

Input:

Location:	Waterbury, CT - New Haven County	
Classification:	II	Table 1-1 pg 4
Antenna RAD Center (AGL):	$z := 50$ ft	
Exposure category:	Exp := "B"	Section 6.5.6.2 pg 28

$$z_g := \begin{cases} 1200 & \text{if } Exp = \text{"B"} \\ 900 & \text{if } Exp = \text{"C"} \\ 700 & \text{if } Exp = \text{"D"} \end{cases} = 1200 \qquad \alpha := \begin{cases} 7.0 & \text{if } Exp = \text{"B"} \\ 9.5 & \text{if } Exp = \text{"C"} \\ 11.5 & \text{if } Exp = \text{"D"} \end{cases} = 7$$

Velocity pressure exposure coefficient: $K_z := 2.01 \cdot \left(\frac{z}{z_g}\right)^{\frac{2}{\alpha}} = 0.811$ — Table 6-3 pg 75

Topographic factor: $K_{zt} := 1.0$ — Section 6.5.7.2 pg 30

Wind directional factor: $K_d := 0.85$ — Table 6-4 pg 76

Basic wind speed: $V := 95$ mph — Appendix K of 2009 Amendment

Importance factor: $I := 1.00$ — Table 6-1 pg 73

Gust response factor: $G := 0.85$ — Section 6.5.8 pg 30

Velocity Pressure: $q_z := 0.00256 \cdot K_z \cdot K_{zt} \cdot K_d \cdot V^2 \cdot I \cdot psf$ — Equation (6-15) pg 31

$$q_z = 15.92 \cdot psf$$

Force Coefficients: — Figure (6-21), pg 69

$$C_{F\_flat} := \begin{pmatrix} 1 & 1.3 \\ 7 & 1.4 \\ 25 & 2 \end{pmatrix} \qquad C_{F\_round} := \begin{pmatrix} 1 & 0.7 \\ 7 & 0.8 \\ 25 & 1.2 \end{pmatrix}$$

Loads on Antenna RF Transparent Canister

Dimensions : $H := 15ft$ $Diam := 36in$

Per Drawings:

$F_{Canister} := 2047lbf$

$P_{Canister} := 1785lbf$

$M_{Canister} := 234kip \cdot in = 19.5 \cdot kip \cdot ft$

Loads on Antenna RF Transparent Chimney

Dimensions : $H := 8.5ft$ $W := 48in$ $D := 48in$

Per Drawings:

$F_{Chimney} := 2889lbf$

$P_{Chimney} := 1429lbf$

$M_{Chimney} := 174kip \cdot in = 14.5 \cdot kip \cdot ft$

Loads on RRUS-11

Dimensions : $H := 19.69in$ $W := 16.97in$ $D := 7.17in$ $W_{rru1} := 50.7lbf$ $r_{rru1\_sled} := 24in$ $r_{rru1\_plat2} := 18in$

Front:

$Area := H \cdot W = 2.32\,ft^2$

$C_f := linterp\left(C_{F\_flat}^{\langle 0 \rangle}, C_{F\_flat}^{\langle 1 \rangle}, \frac{H}{W}\right) = 1.303$ Figure (6-19), Pg 69

$F_{rru1\_front} := q_z \cdot G \cdot C_f \cdot Area = 40.905\,lbf$ Equation (6-15) Pg 31

Side:

$Area := H \cdot D = 0.98\,ft^2$

$C_f := linterp\left(C_{F\_flat}^{\langle 0 \rangle}, C_{F\_flat}^{\langle 1 \rangle}, \frac{H}{D}\right) = 1.329$ Figure (6-19), Pg 69

$F_{rru1\_side} := q_z \cdot G \cdot C_f \cdot Area = 17.633\,lbf$ Equation (6-15) Pg 31

Loads on RRUS-12 + RRUS-A2

Dimensions : $H := 20.4in$ $W := 18.5in$ $D := 10.9in$ $W_{rru2} := 80lbf$ $r_{rru2\_sled} := 24in$ $r_{rru2\_plat2} := 18in$

Front:

$Area := H \cdot W = 2.621\,ft^2$

$C_f := linterp\left(C_{F\_flat}^{\langle 0 \rangle}, C_{F\_flat}^{\langle 1 \rangle}, \frac{H}{W}\right) = 1.302$ Figure (6-19), Pg 69

$F_{rru2\_front} := q_z \cdot G \cdot C_f \cdot Area = 46.167\,lbf$ Equation (6-15) Pg 31

Side:

$Area := H \cdot D = 1.544\,ft^2$

$C_f := linterp\left(C_{F\_flat}^{\langle 0 \rangle}, C_{F\_flat}^{\langle 1 \rangle}, \frac{H}{D}\right) = 1.315$ Figure (6-19), Pg 69

$F_{rru2\_side} := q_z \cdot G \cdot C_f \cdot Area = 27.469\,lbf$ Equation (6-15) Pg 31

Loads on TT19-08BP111-001 TMA

Dimensions : $H := 9.9in$ $W := 6.7in$ $D := 5.4in$ $W_{tma1} := 16lbf$ $r_{tma1\_plat2} := 18in$

Front: $Area := H \cdot W = 0.461\ ft^2$

$C_f := linterp\left(C_{F\_flat}^{\langle 0 \rangle}, C_{F\_flat}^{\langle 1 \rangle}, \frac{H}{W}\right) = 1.308$ Figure (6-19), Pg 69

$F_{tma1\_front} := q_z \cdot G \cdot C_f \cdot Area = 8.153\ lbf$ Equation (6-15) Pg 31

Side: $Area := H \cdot D = 0.371\ ft^2$

$C_f := linterp\left(C_{F\_flat}^{\langle 0 \rangle}, C_{F\_flat}^{\langle 1 \rangle}, \frac{H}{D}\right) = 1.314$ Figure (6-19), Pg 69

$F_{tma1\_side} := q_z \cdot G \cdot C_f \cdot Area = 6.601\ lbf$ Equation (6-15) Pg 31

Loads on TMA2093F00V1-1 TMA

Dimensions : $H := 11.8in$ $W := 9.8in$ $D := 3.7in$ $W_{tma2} := 23.1lbf$ $r_{tma2\_plat2} := 18in$

Front: $Area := H \cdot W = 0.803\ ft^2$

$C_f := linterp\left(C_{F\_flat}^{\langle 0 \rangle}, C_{F\_flat}^{\langle 1 \rangle}, \frac{H}{W}\right) = 1.303$ Figure (6-19), Pg 69

$F_{tma2\_front} := q_z \cdot G \cdot C_f \cdot Area = 14.164\ lbf$ Equation (6-15) Pg 31

Side: $Area := H \cdot D = 0.303\ ft^2$

$C_f := linterp\left(C_{F\_flat}^{\langle 0 \rangle}, C_{F\_flat}^{\langle 1 \rangle}, \frac{H}{D}\right) = 1.336$ Figure (6-19), Pg 69

$F_{tma2\_side} := q_z \cdot G \cdot C_f \cdot Area = 5.484\ lbf$ Equation (6-15) Pg 31

Loads on DC6

Dimensions : $H := 24in$ $W := 11in$ $D := 11in$ $W_{DC6} := 18.9lbf$ $r_{DC6\_sled} := 36in$

Front: $Area := H \cdot W = 1.833\ ft^2$

$C_f := linterp\left(C_{F\_flat}^{\langle 0 \rangle}, C_{F\_flat}^{\langle 1 \rangle}, \frac{H}{W}\right) = 1.32$ Figure (6-19), Pg 69

$F_{DC6\_front} := q_z \cdot G \cdot C_f \cdot Area = 32.741\ lbf$ Equation (6-15) Pg 31

Side: $Area := H \cdot D = 1.833\ ft^2$

$C_f := linterp\left(C_{F\_flat}^{\langle 0 \rangle}, C_{F\_flat}^{\langle 1 \rangle}, \frac{H}{D}\right) = 1.32$ Figure (6-19), Pg 69

$F_{DC6\_side} := q_z \cdot G \cdot C_f \cdot Area = 32.741\ lbf$ Equation (6-15) Pg 31

Loads on HSS4x4x1/4:

$W := 4in$ $Length := 24in$

$C_f := \min\left[\left(\text{linterp}\left(C_{F\_flat}^{\langle 0\rangle}, C_{F\_flat}^{\langle 1\rangle}, \frac{Length}{W}\right)\right), 2.0\right] = 1.383$ Figure (6-19), Pg 69

$F_{HSS4} := q_z \cdot G \cdot C_f \cdot W = 6.24 \cdot plf$ Equation (6-15)

Loads on W8x15:

$H := 8in$ $Length := 69in$

$C_f := \min\left[\left(\text{linterp}\left(C_{F\_flat}^{\langle 0\rangle}, C_{F\_flat}^{\langle 1\rangle}, \frac{Length}{H}\right)\right), 2.0\right] = 1.454$ Figure (6-19), Pg 69

$F_{W8} := q_z \cdot G \cdot C_f \cdot H = 13.119 \cdot plf$ Equation (6-15)

Loads on W8x24:

$H := 8in$ $Length := 69in$

$C_f := \min\left[\left(\text{linterp}\left(C_{F\_flat}^{\langle 0\rangle}, C_{F\_flat}^{\langle 1\rangle}, \frac{Length}{H}\right)\right), 2.0\right] = 1.454$ Figure (6-19), Pg 69

$F_{W8} := q_z \cdot G \cdot C_f \cdot H = 13.119 \cdot plf$ Equation (6-15)

Loads on RF Transparent Chimney Support Sled Kickers:

$W := 3in$ $Length := 54in$ $r_{kicks\_plat2} := 12in$

$C_f := \min\left[\left(\text{linterp}\left(C_{F\_flat}^{\langle 0\rangle}, C_{F\_flat}^{\langle 1\rangle}, \frac{Length}{W}\right)\right), 2.0\right] = 1.767$ Figure (6-19), Pg 69

$F_{kicks} := q_z \cdot G \cdot C_f \cdot H = 15.938 \cdot plf$ Equation (6-15)

$F_{kicks\_plat2} := F_{kicks} \cdot Length = 71.722 \cdot lbf$

Loads on RF Transparent Chimney Support Sled Post:

$Diam := 6.625in$ $Length := 2ft$ $r_{post\_plat2} := 12in$

$C_f := \min\left[\left(\text{linterp}\left(C_{F\_round}^{\langle 0\rangle}, C_{F\_round}^{\langle 1\rangle}, \frac{Length}{Diam}\right)\right), 1.2\right] = 0.744$ Figure (6-19), Pg 69

$F_{post} := q_z \cdot G \cdot C_f \cdot H = 6.709 \cdot plf$ Equation (6-15)

$F_{post\_plat2} := F_{post} \cdot Length = 13.419 \cdot lbf$

Loads on RRH Sled Post:

$Diam := 2.375in$ $Length := 3ft$ $r_{posts\_sled} := 18in$

$C_f := \min\left[\left(\text{linterp}\left(C_{F\_round}^{\langle 0\rangle}, C_{F\_round}^{\langle 1\rangle}, \frac{Length}{Diam}\right)\right), 1.2\right] = 0.981$ Figure (6-19), Pg 69

$F_{posts} := q_z \cdot G \cdot C_f \cdot H = 8.853 \cdot plf$ Equation (6-15)

$F_{posts\_sled} := F_{posts} \cdot Length = 26.558 \cdot lbf$

Loads on RRH Sled Horizontal:

$Diam := 2.375in$ $Length := 7.5ft$ $r_{hor\_sled} := 21in$

$C_f := \min\left[\left(\text{linterp}\left(C_{F\_round}^{\langle 0\rangle}, C_{F\_round}^{\langle 1\rangle}, \frac{Length}{Diam}\right)\right), 1.2\right] = 1.2$ Figure (6-19), Pg 69

$F_{hor} := q_z \cdot G \cdot C_f \cdot H = 10.826 \cdot plf$ Equation (6-15)

$F_{hor\_sled} := F_{hor} \cdot Length = 81.194 \cdot lbf$

Loads on RRH Sled Kickers:

$W := 2.5in$ $Length := 34in$ $r_{kicks\_sled} := 15in$

$C_f := \min\left[\left(\text{linterp}\left(C_{F\_round}^{\langle 0\rangle}, C_{F\_round}^{\langle 1\rangle}, \frac{Length}{Diam}\right)\right), 1.2\right] = 0.963$ Figure (6-19), Pg 69

$F_{kicks} := q_z \cdot G \cdot C_f \cdot H = 8.684 \cdot plf$ Equation (6-15)

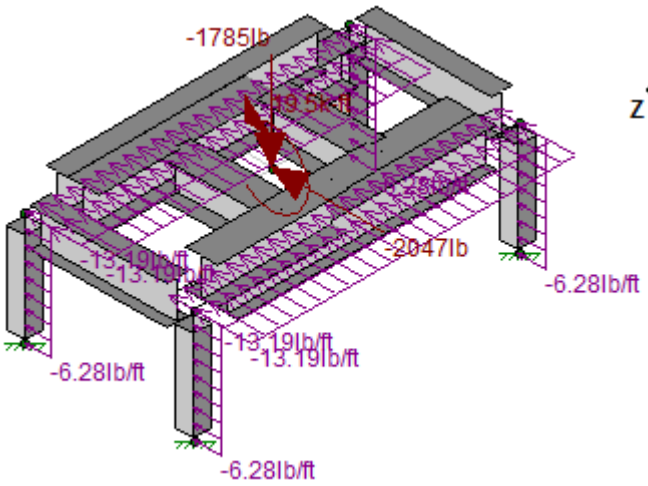
$F_{kicks\_sled} := F_{kicks} \cdot Length = 24.605 \cdot lbf$

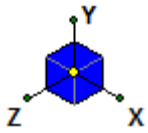
CALCULATION SHEET

Check RF Transparent Canister Support Platform:

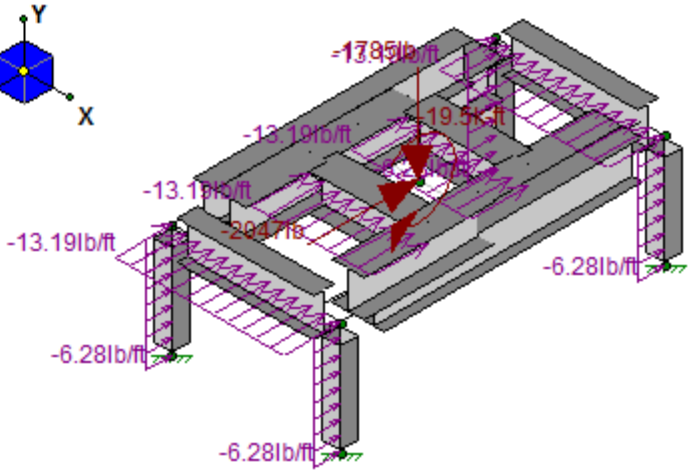
Load Configuration:

DL+WL_front



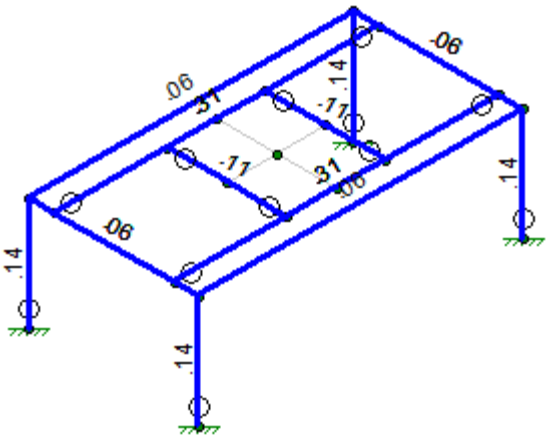


DL+WL_side

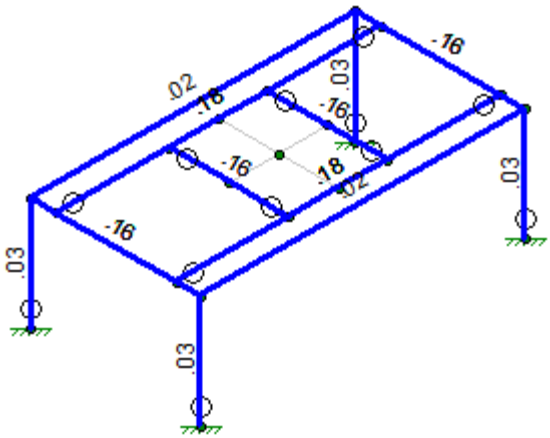


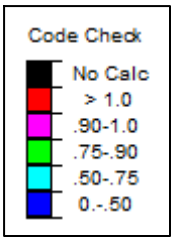
Capacity Checks:

Axial & Bending:



Shear:





CALCULATION SHEET

CHECK ROOF STRUCTURE UNDER MOUNTS

Load Combinations (reference ASCE 7-02)

1) DL
2) DL + LLr
3) DL+ SL

Roof Dead Load

For Roof:

3.5" Slab on 1 1/2" 22 Gauge Deck - 51 psf
Roofing - 2 psf
Insulation - 3 psf
Mech & Miscl - 5psf

Roof Dead Load: $DL_R := 61psf$

Ceiling Dead Load

For Dropped Ceiling:

Ceiling Tile - 1.0 psf
Framing - 1.5 psf

Ceiling Dead Load: $DL_C := 2.5psf$

Roof Live Load

Per ASCE7-05: $LL_r := 20psf$ — ASCE 7-02 Table 4-1

Snow Load

Ground Snow Loads: $p_g := 35psf$ — ASCE 7-02: Figure 7-1

Thermal factor: $C_t := 1.0$ — ASCE 7-02: Table 7-3

Exposure Factor: $C_e := 0.9$ — ASCE 7-02: Table 7-2
Upper Level, Fully exposed

Importance factor: $I := 1.0$ — ASCE 7-02: Table 1-1
Occupancy Category II
Table 7-4

Flat Roof Snow Loads: $P_f := 0.7 \cdot C_e \cdot C_t \cdot I \cdot p_g$ — ASCE 7-02: Eq 7-1

$P_f = 22.05 \cdot psf$

Rain on Snow Surcharge: $P_{fr} := P_f + 0psf$ — ASCE 7-02: 7.10

$P_f = 22.05 \cdot psf$

Minimum Roof Snow Load: $P_{f\_min} := 20 \cdot I\,psf$ — ASCE 7-02: Section 7.3

$P_f := \max(P_f, P_{f\_min})$

$P_f = 22.05 \cdot psf$

Check Roof Beams W16x26 & W16x31

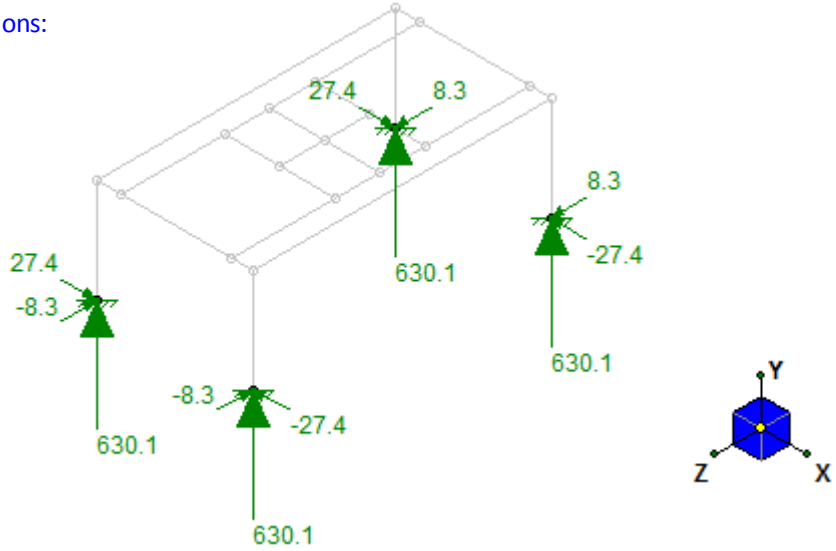
Beam Tributary Width: $W_{Trib} := 6ft + 9.5in$

Beam Dead Load: $w_{DLr} := (DL_R + DL_C) \cdot W_{Trib} = 431.271 \cdot plf$

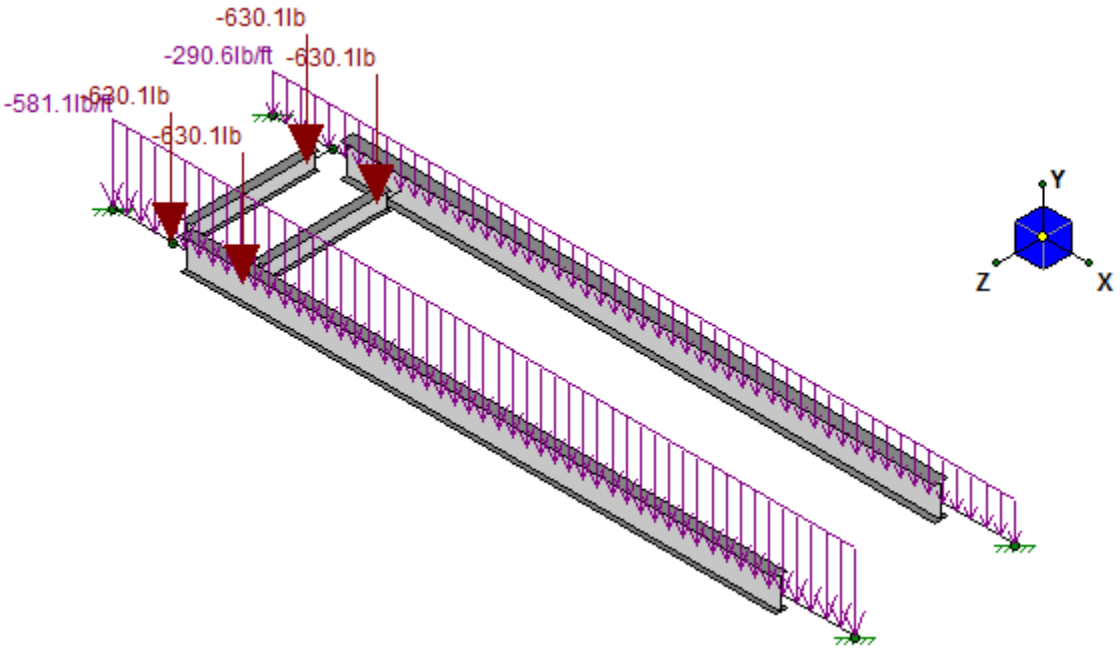
Beam Live Load: $w_{LL} := LL_r \cdot W_{Trib} = 135.833 \cdot plf$

Beam Snow Load: $w_{SL} := P_f \cdot W_{Trib} = 149.756 \cdot plf$

Beam Mount Support Reactions:

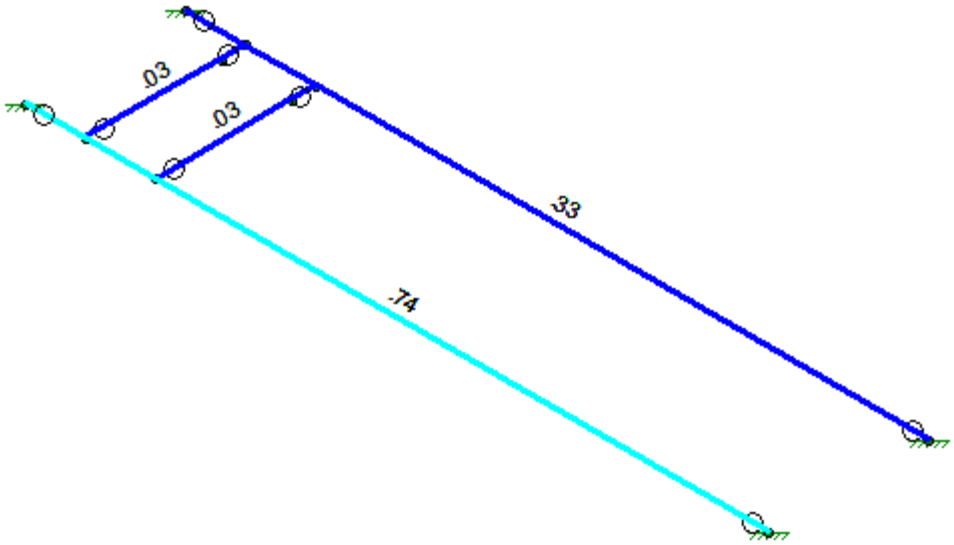


Load Configuration: (shown for DL+Mount+SL)

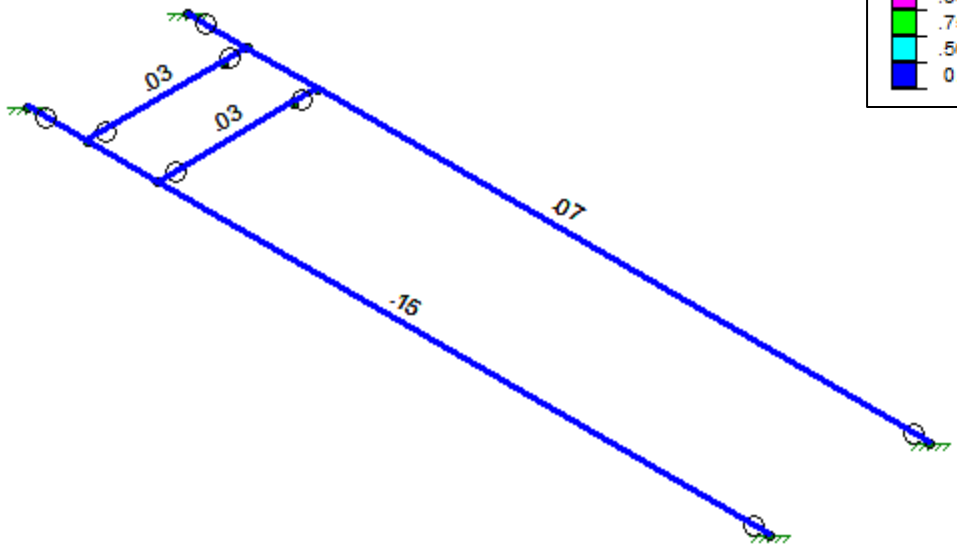


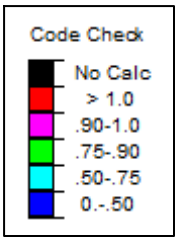
CALCULATION SHEET

Bending Check:



Shear Check:



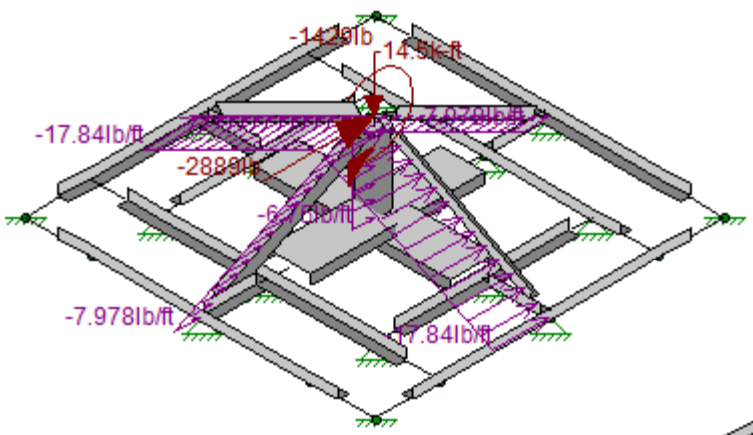


CALCULATION SHEET

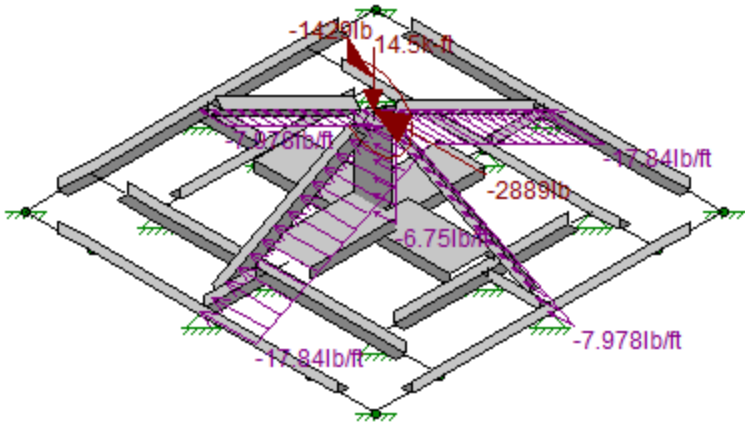
Check RF Transparent Chimney Support Sled:

Load Configuration:

DL+WL_front

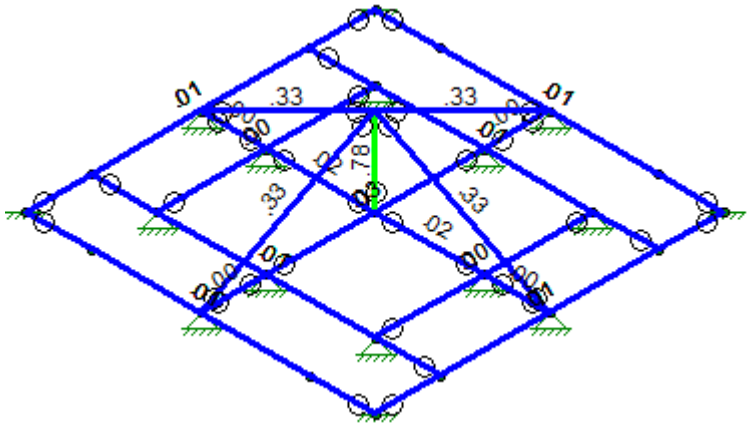


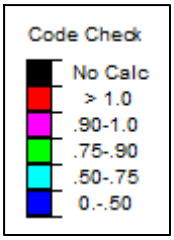
DL+WL_side



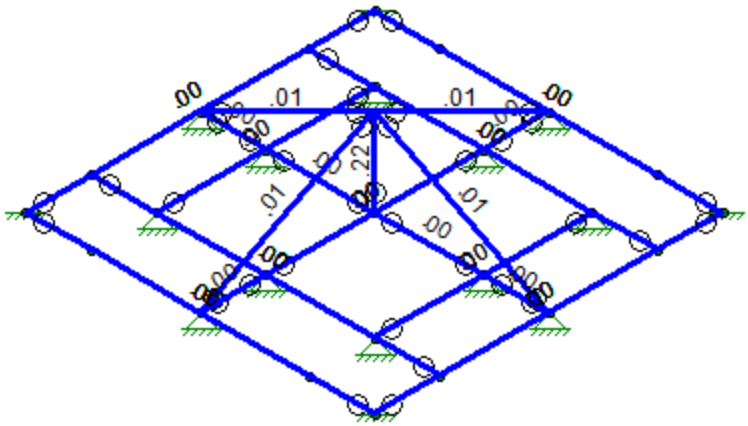
Capacity Checks:

Axial & Bending:





Shear:



DETERMINE REQUIRED COUNTER WEIGHT FOR RF TRANSPARENT CHIMNEY SUPPORT SLED

$M_{equip\_plat2} := \left(M_{Chimney} + F_{Chimney} \cdot 24in\right) + F_{rru1\_front} \cdot r_{rru1\_plat2} + F_{rru2\_front} \cdot r_{rru2\_plat2} \ldots = 20.463 \cdot kip \cdot ft$
$+ F_{tma1\_front} \cdot r_{tma1\_plat2} + 2 \cdot F_{tma2\_front} \cdot r_{tma2\_plat2}$

$M_{kicks\_plat2} := 4F_{kicks\_plat2} \cdot r_{kicks\_plat2} = 286.887 \cdot ft \cdot lbf$

$M_{post\_plat2} := F_{post\_plat2} \cdot r_{post\_plat2} = 13.419 \cdot ft \cdot lbf$

$M_{over\_plat2} := M_{equip\_plat2} + M_{kicks\_plat2} + M_{post\_plat2}$

$M_{over\_plat2} = 20764 \cdot ft \cdot lbf$

$FS := 1.666$ Factor of safety for Overturning

(Weight of the frame is approx. 645 lbs and the center of gravity is 4'-0" away from the rotation point. The moment arm for the ballast weights are (2) @ 4'-0" and (1) @ 7'-3")

$W_{plat2} := 645lbf$

$W := P_{Chimney} + W_{rru1} + W_{rru2} + W_{tma1} + 2W_{tma2} + W_{plat2} = 2266.9\,lbf$

$$W_{ballast\_per\_tray} := \frac{\left(M_{over\_plat2} \cdot FS - W \cdot 4ft\right)}{(2 \cdot 48in) + 87in}$$

$W_{ballast\_per\_tray} = 1674\,lbf$

To resist overturning, each tray should contain a ballast weight of 1675 lbs

$W_{ballast\_tray} := 1675lbf$

$W_{total\_plat2} := W + 4 \cdot W_{ballast\_tray} = 8966.9\,lbf$

Check Roof Structure under Gamma RF Transparent Chimney

Check Loads on Slab & Deck

Slab Span: $L_{slab} := 6ft + 9.5in$

Allowable Maximum Load on Slab: $w_{allow\_slab} := 311psf + 51psf$ Per Vulcraft Catalog

Slab Dead Load: $w_{DLr} := (DL_R + DL_C) = 63.5 \cdot psf$

Slab Live Load: $w_{LL} := LL_r = 20 \cdot psf$

Slab Snow Load: $w_{SL} := P_f = 22.05 \cdot psf$

Slab Mount Support Load: $w_{Plat2DL} := \frac{W_{total\_plat2}}{[(8ft \cdot 8ft) - (5ft \cdot 5ft)]} = 229.92 \cdot psf$

Maximum Total Load on Slab: $w_{slab} := w_{DLr} + w_{Plat2DL} + w_{SL} = 315.47 \cdot psf$

Comparison: $\frac{w_{slab}}{w_{allow\_slab}} = 87.15 \cdot \%$ **==> OK, Slab & deck are adequate**

Check Roof Beams W16x31

Beam Tributary Width: $W_{Trib} := 6ft + 9.5in$

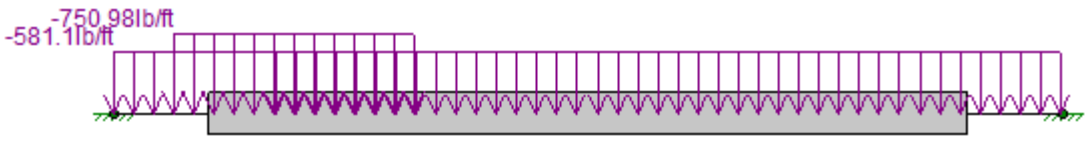
Beam Dead Load: $w_{DLr} := (DL_R + DL_C) \cdot W_{Trib} = 431.271 \cdot plf$

Beam Live Load: $w_{LL} := LL_r \cdot W_{Trib} = 135.833 \cdot plf$

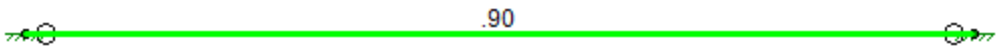
Beam Snow Load: $w_{SL} := P_f \cdot W_{Trib} = 149.756 \cdot plf$

Beam Mount Support Load: $w_{Plat2dl} := \left(\frac{0.67 W_{total\_plat2}}{8ft}\right) = 750.98 \cdot plf$

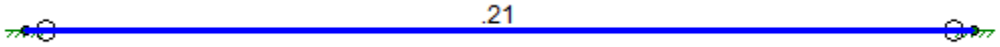
Load Configuration: (shown for DL+Mount+SL)

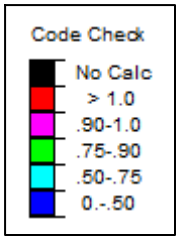


Bending Check:



Shear Check:





DETERMINE REQUIRED COUNTER WEIGHT FOR RRU SUPPORT SLED

$M_{rru\_sled} := 2 \cdot F_{rru1\_front} \cdot r_{rru1\_sled} + 2 \cdot F_{rru2\_front} \cdot r_{rru2\_sled} + F_{DC6\_front} \cdot r_{DC6\_sled} = 0.447 \cdot kip \cdot ft$

$M_{kicks\_rru\_sled} := 2F_{kicks\_sled} \cdot r_{kicks\_sled} = 61.511 \cdot ft \cdot lbf$

$M_{posts\_rru\_sled} := 2F_{posts\_sled} \cdot r_{posts\_sled} = 79.675 \cdot ft \cdot lbf$

$M_{hor\_rru\_sled} := F_{hor\_sled} \cdot r_{hor\_sled} = 142.09 \cdot ft \cdot lbf$

$M_{over\_rru\_sled} := M_{rru\_sled} + M_{kicks\_rru\_sled} + M_{posts\_rru\_sled} + M_{hor\_rru\_sled}$

$M_{over\_rru\_sled} = 730 \cdot ft \cdot lbf$

$FS := 1.666$ Factor of safety for Overturning

(Weight of the frame is approx. 140 lbs and the center of gravity is 1'-4.5" away from the rotation point. The moment arm for the ballast weights are 24" and 9")

$W_{rru\_sled} := 140lbf$

$W := 2W_{rru1} + 2W_{rru2} + W_{DC6} + W_{rru\_sled} = 420.3\,lbf$

$$W_{ballast\_per\_tray} := \frac{\left(M_{over\_rru\_sled} \cdot FS - W \cdot 16.5in\right)}{24in + 9in}$$

$W \cdot 16.5in = 577.9 \cdot lbf \cdot ft$

$W_{ballast\_per\_tray} = 232\,lbf$

To resist overturning, each tray should contain a ballast weight of 235 lbs

1.0 DESIGN INFORMATION AND GENERAL REQUIREMENTS

1.0 GENERAL
ALL DIMENSIONS ARE APPROXIMATE, CONTRACTOR SHOULD VERIFY ALL DIMENSIONS BEFORE FABRICATION OF STEEL AND COMMENCEMENT OF WORK.

1.1 CODES
a. 2005 CONNECTICUT BUILDING CODE WITH ALL ADOPTED AMENDMENTS AND SUPPLEMENTS
b. MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES, ASCE/SEI 7-02, AMERICAN SOCIETY OF CIVIL ENGINEERS
c. STEEL CONSTRUCTION MANUAL, 9TH EDITION, AMERICAN INSTITUTE OF STEEL CONSTRUCTION

1.2 LOADS AND DESIGN CRITERIA
a. WIND LOADING: V: 95 MPH, EXPOSURE B, OCCUPANCY CATEGORY II
b. EQUIPMENT AS LISTED IN CONSTRUCTION DRAWINGS PREPARED BY COM-EX CONSULTANTS AND EMPIRE TELECOM, DATED 02/12/2016, AND STRUCTURAL ANALYSIS REPORT PREPARED BY DESTEK ENGINEERING, LLC, DATED 06/20/2016.

1.3 NOTES
a. PRIOR TO PURCHASE OR FABRICATION OF MATERIAL, THE CONTRACTOR SHALL PERFORM AN INSPECTION VERIFYING MEMBER AND BOLT SIZES. SHOULD THE CONTRACTOR DISCOVER ANY DAMAGED OR MISSING MEMBERS OR THE MEMBER OR BOLT SIZES DO NOT MATCH THOSE LISTED, DESTEK SHALL BE NOTIFIED IMMEDIATELY.
b. CONTRACTOR TO REPLACE ALL BOLTS REMOVED WITH NEW BOLTS OF SAME TYPE, UNLESS NOTED OTHERWISE.

2.0 STRUCTURAL STEEL

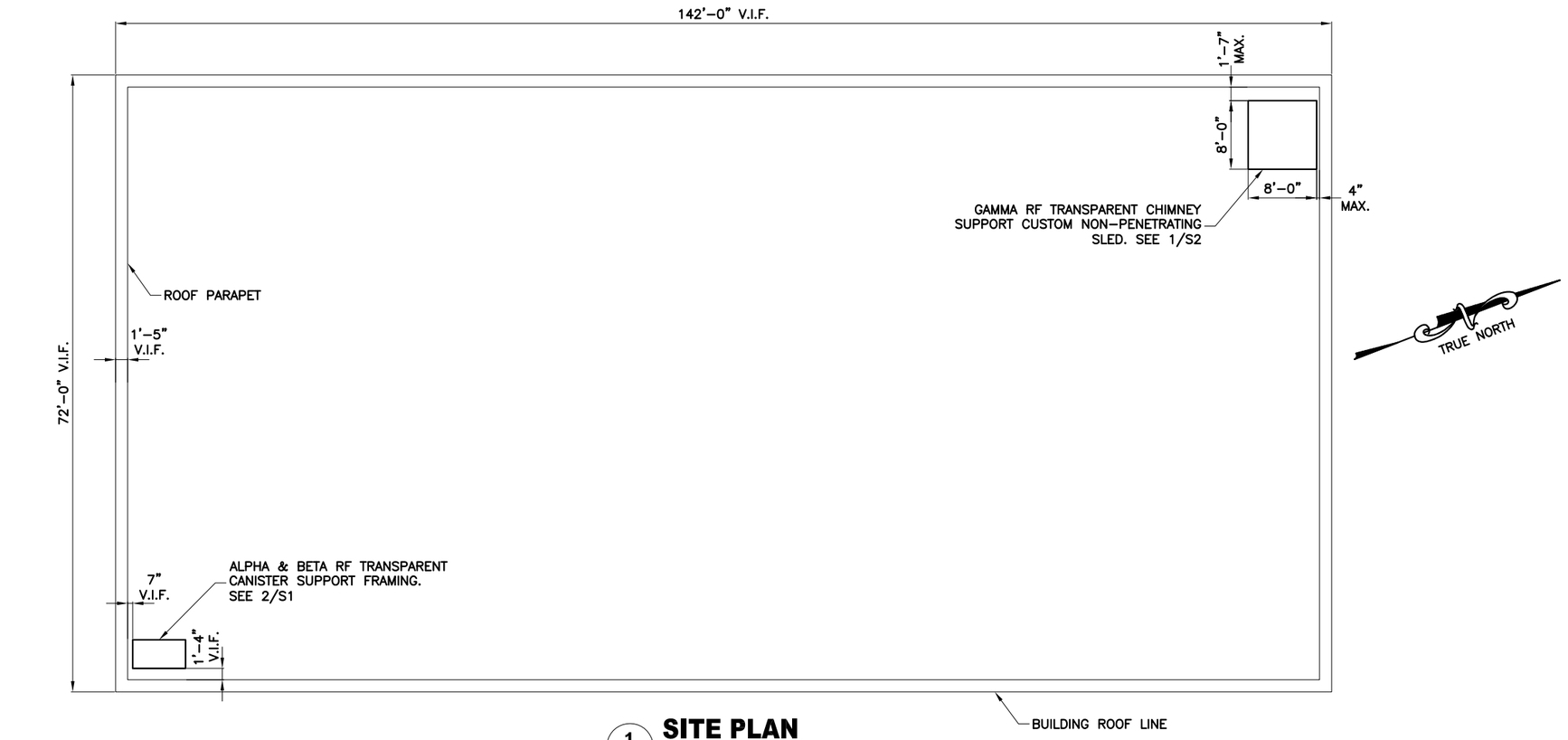
2.1 MATERIALS
a. STRUCTURAL STEEL . . . . . ASTM A992
MISC ANGLE & PLATE . . . . ASTM A36
PIPE . . . . . ASTM A53 GR. B
RODS . . . . . ASTM A572-50 (MINIMUM)
HSS. . . . . ASTM A500, GR. B, Fy=46 KSI
b. BOLTS . . . . . ASTM A325 U.N.O.
c. WELDING ELECTRODES . . . . . AWS A5.1 (E70XX)
d. STEEL CONSTRUCTION SHALL CONFORM TO "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, ANSI/AISC 335-89S1"
e. WELDING SHALL CONFORM TO AWS D1.1/D1.3/D1.7 AS APPLICABLE.
f. THE FABRICATOR SHALL FURNISH CHECKED SHOP AND ERECTION DRAWINGS TO THE ENGINEER, AND OBTAIN APPROVAL PRIOR TO FABRICATING ANY STRUCTURAL STEEL. SHOP DRAWINGS SHALL CONFORM TO "DETAILING FOR STEEL CONSTRUCTION, 2ND EDITION"
g. POOR MATCHING OF HOLES SHALL BE CORRECTED BY DRILLING TO THE NEXT LARGER SIZE. WELDING FOR REDRILLING WILL NOT BE PERMITTED.

2.2 CONNECTIONS
a. SHOP CONNECTIONS MAY BE BOLTED OR WELDED
b. CONNECTIONS WHERE THE BEAM SHEAR (V) IS NOT NOTED ON THE DRAWINGS, SIMPLE SHEAR CONNECTIONS SHALL BE DESIGNED TO DEVELOP 1/2 OF THE MAXIMUM TOTAL UNIFORM LOAD CAPACITY OF THE BEAM.
c. FIELD CONNECTIONS SHALL BE MADE WITH A325 BOLTS AND HARDENED WASHERS EXCEPT AS INDICATED ON THE DESIGN DRAWINGS
d. CONNECTIONS NOT SHOWN ON DRAWINGS SHALL BE DESIGNED BY THE STEEL FABRICATOR. CONNECTIONS SHALL BE DESIGNED IN ACCORDANCE WITH AISC "SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS" AND "AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES".
e. DO NOT FIELD CUT OR ALTER STRUCTURAL MEMBERS WITHOUT PRIOR WRITTEN APPROVAL OF ENGINEER.
f. BOLT HOLES SHALL BE CUT, DRILLED OR PUNCHED AT RIGHT ANGLES TO THE SURFACE OF THE METAL AND SHALL NOT BE MADE OR ENLARGED BY BURNING. HOLES SHALL BE CLEAN CUT WITHOUT TORN OR RAGGED EDGES. OUTSIDE BURRS RESULTING FROM DRILLING OR REAMING OPERATION SHALL BE REMOVED WITH A TOOL MAKING A 1/16 INCH BEVEL. BOLT HOLES SHALL BE 1/16 INCH OVERSIZE.

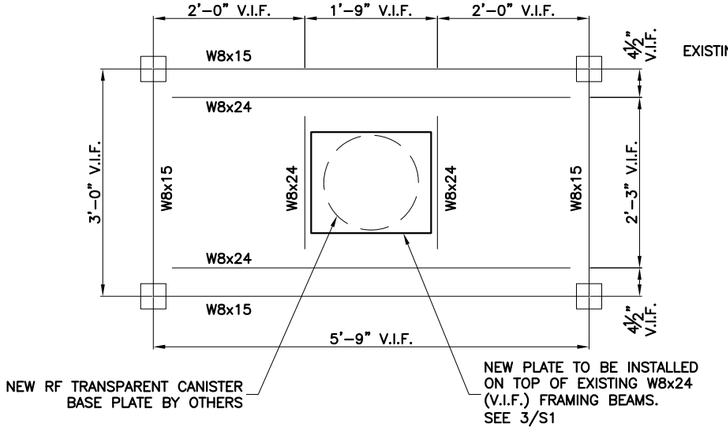
2.3 FINISHES
a. STRUCTURAL STEEL SHALL BE HOT DIP GALVANIZED AFTER FABRICATION PER ASTM A123
b. BOLTS AND NUTS SHALL BE HOT DIP GALVANIZED PER ASTM A153.
c. ALL SURFACES DAMAGED BY FIELD WELDING OR CUTTING SHALL BE PAINTED WITH COLD GALVANIZING COMPOUND TWICE. THE PAINT SHOULD BE AT LEAST 93% PURE ZINC. RUST-OLEUM PROFESSIONAL, (MODEL# 7585838) OR SIMILAR.

2.4 WELDING
a. CONTRACTOR TO TAKE ALL NECESSARY PRECAUTIONS FOR FIRE PREVENTION DURING WELDING, SUCH AS; INSTALLING 3000 (NFPA 701) FIRE BLANKET AROUND COAX. MORE SPLATTER AND SPARKS SHOULD BE ANTICIPATED WHILE WELDING ON GALVANIZED SURFACE. COAX IS FLAMMABLE AND SHALL CATCH FIRE IF NOT PROTECTED. WATER SHALL BE ON SITE OF ADEQUATE AMOUNT AND AVAILABLE AT SHORT NOTICE AT ALL TIMES DURING WELDING ACTIVITY. CONTRACTOR SHOULD BE ABLE TO TRANSPORT THE WATER TO THE HEIGHT WELDING BEING PERFORMED.
b. WELDING ON GALVANIZED SURFACE SHOULD BE DONE WITH EXTREME CAUTION. IF THE WELD MATERIAL IS CONTAMINATED WITH ZINC, IT DOES NOT PROVIDE A STRUCTURAL WELD. GROUND GALVANIZING BEFORE WELDING.
c. WELDING CERTIFICATE MUST BE PROVIDED PRIOR TO WELDING. ALL WELDING SHALL BE PERFORMED BY AWS QUALIFIED WELDER WHO HAS EXPERIENCE WITH GALVANIZED SURFACES.

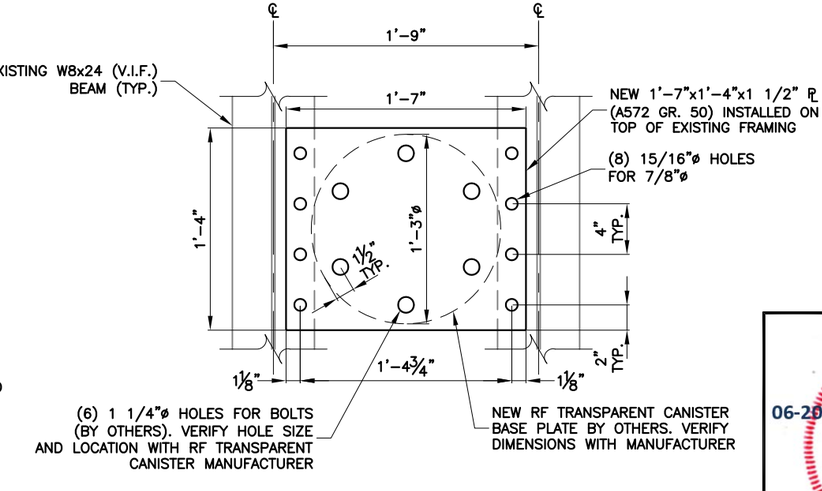
DRAWINGS PLOTTED TO SCALE ON 11x17 SHEETS



1/S1 **SITE PLAN**
1/16" = 1'-0"



2/S1 **ALPHA & BETA SUPPORT FRAMING PLAN**
1/2" = 1'-0"



3/S1 **PLATE ADDITION DETAIL**
1" = 1'-0"

DESTEK ENGINEERING
DESTEK ENGINEERING, LLC
1281 KENNESTONE CIRCLE
SUITE 100
MARIETTA, GA 30066
TEL NO: 770-693-0835
ADMIN@DESTEKENGINEERING.COM

PREPARED FOR:
COM-EX Consultants
115 Route 46 - Suite E39
Mountain Lakes, NJ 07046

NUM	DESCRIPTION:	DATE
A	ISSUED FOR CONSTRUCTION	06/20/16

CT5440 - WATERBURY WEST

ADDRESS:
1389 WEST MAIN STREET,
WATERBURY, CT 06708
FA CODE: 10071305

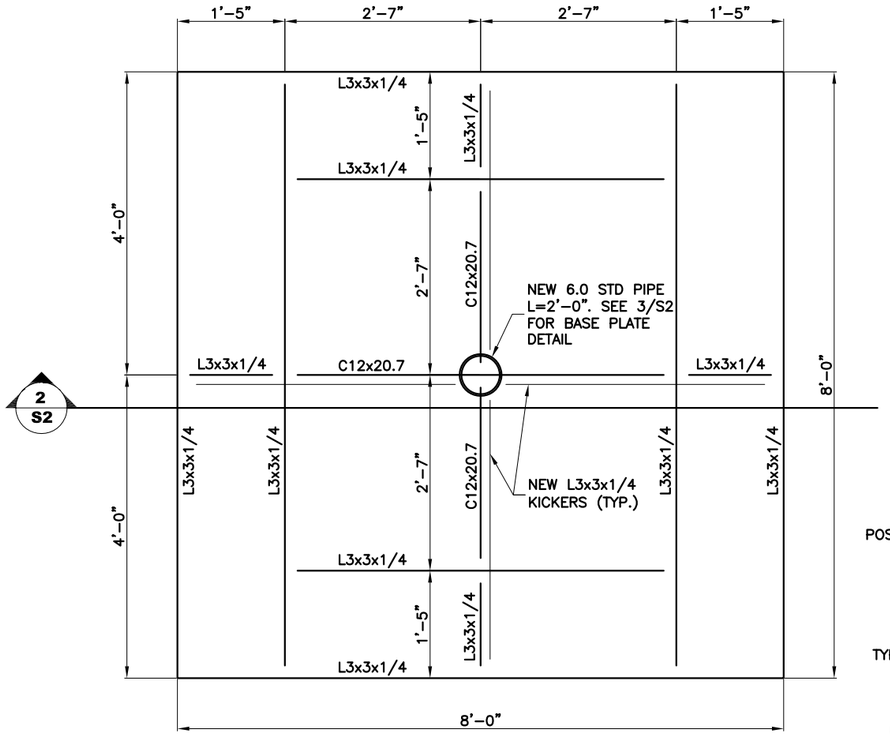
STATE OF CONNECTICUT
AHMET COLAKOGLU
PEN. 27057
LICENSED
PROFESSIONAL ENGINEER
06-20-2016

Ahmet Colakoglu, PE
CT License No: 27057

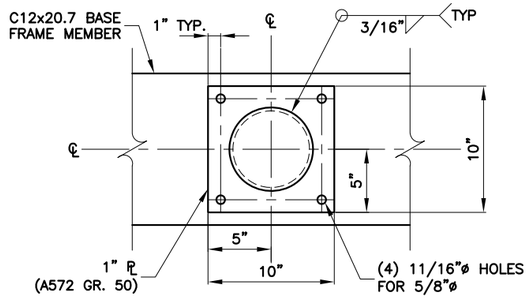
DESIGNED: SA
DRAWN: SA
CHECKED: AC

JOB #: 1629072

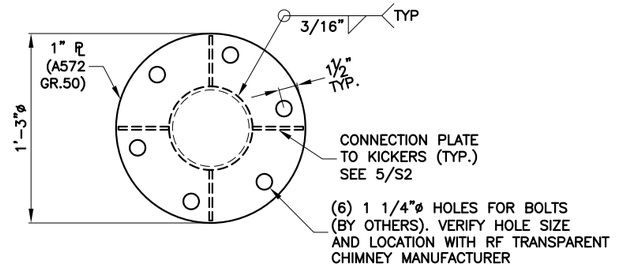
S1
SITE PLAN, DETAILS & NOTES



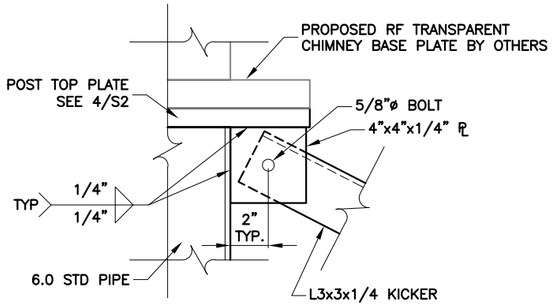
1 / S2 SLED BASE FRAMING PLAN
1/2" = 1'-0"



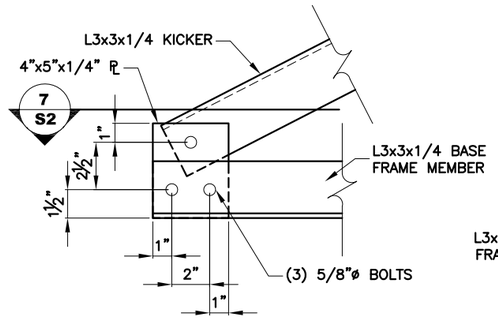
3 / S2 POST BASE PLATE DETAIL
1" = 1'-0"



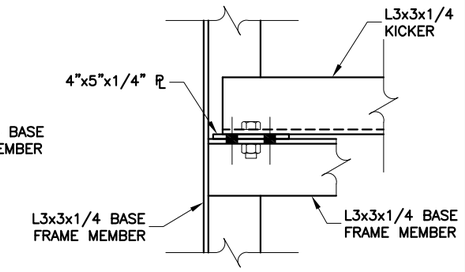
4 / S2 POST TOP PLATE DETAIL
1" = 1'-0"



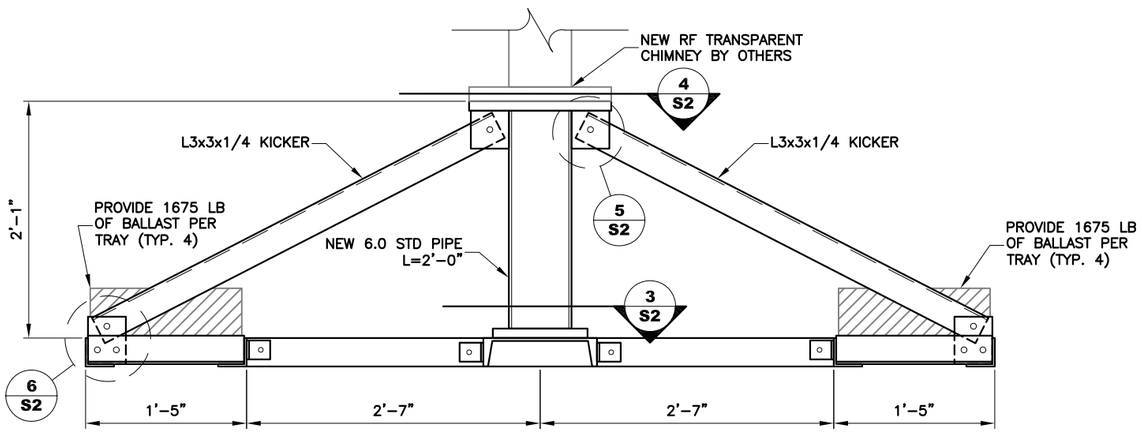
5 / S2 POST-KICKER CONNECTION
1 1/2" = 1'-0"



6 / S2 POST-KICKER CONNECTION
1 1/2" = 1'-0"



7 / S2 SECTION
1 1/2" = 1'-0"



2 / S2 SLED ELEVATION
3/4" = 1'-0"

DRAWINGS PLOTTED TO SCALE ON 11x17 SHEETS

DESTEK ENGINEERING

DESTEK ENGINEERING, LLC
1281 KENNESTONE CIRCLE
SUITE 100
MARIETTA, GA 30066
TEL NO: 770-693-0835
ADMIN@DESTEKENGINEERING.COM

PREPARED FOR:
COM-EX Consultants
115 Route 46 - Suite E39
Mountain Lakes, NJ 07046

NUM	DATE	DESCRIPTION:
A	06/20/16	ISSUED FOR CONSTRUCTION

CT5440 – WATERBURY WEST

ADDRESS: 1389 WEST MAIN STREET, WATERBURY, CT 06708
FA CODE: 10071305

06-20-2016
STATE OF CONNECTICUT
AHMET COLAKOGLU
PEN. 27057
LICENSED PROFESSIONAL ENGINEER

Ahmet Colakoglu, PE
CT License No: 27057

DESIGNED: SA
DRAWN: SA
CHECKED: AC

JOB #: 1629072

S2
GAMMA MOUNT DETAILS

EBI Consulting
environmental | engineering | due diligence

RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

AT&T Existing Facility

Site ID: CT5440

Waterbury West
1389 West Main Street
Waterbury, CT 06708

August 24, 2016

EBI Project Number: 6216003659

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	30.84 %

21 B Street · Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

EBI Consulting
environmental | engineering | due diligence

August 24, 2016

AT&T Mobility – New England
Attn: Cameron Syme, RF Manager
550 Cochituate Road
Suite 550 – 13&14
Framingham, MA 06040

Emissions Analysis for Site: **CT5440 – Waterbury West**

EBI Consulting was directed to analyze the proposed AT&T facility located at **1389 West Main Street, Waterbury, CT**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits at surrounding ground levels.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications facility that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 700 and 850 MHz Bands are approximately 467 $\mu W/cm^2$ and 567 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) bands is 1000 $\mu W/cm^2$. Because each carrier

will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed AT&T Wireless antenna facility located at **1389 West Main Street, Waterbury, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the building. For this report the sample point is the top of a 6-foot person standing at ground level at the base of the building.

For all calculations, all equipment was calculated using the following assumptions:

1) 2 UMTS channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 2 UMTS channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

3) 2 LTE channels (700 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

4) 2 LTE channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

5) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

6) For the following calculations the sample point was the top of a 6-foot person standing at ground level at the base of the building. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

7) The antennas used in this modeling are the **KMW AM-X-CD-14-65-00T-RET, CCI HPA-65R-BUU-H8 and CCI HPA-65R-BUU-H6** for transmission in the 700 MHz, 850 MHz, and 1900 MHz (PCS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

8) The antenna mounting height centerlines of the proposed antennas are **42 feet & 50 feet** above ground level (AGL) for **Sector A**, **42 feet & 50 feet** above ground level (AGL) for **Sector B** and **42 feet** above ground level (AGL) for Sector C. The Sector A & B antennas are located in a faux flagpole on the southern end of the building with the antennas with azimuths of 100 & 220 degrees from true north. The Sector C antennas are located in a faux chimney at the northern end of the building with an azimuth of 340 degrees from true north.

9) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves. Per the Connecticut Siting Council active database there are no additional carriers on this building.

All calculations were done with respect to uncontrolled / general public threshold limits.

AT&T Site Inventory and Power Data by Antenna

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	KMW AM-X-CD-14-65-00T-RET	Make / Model:	KMW AM-X-CD-14-65-00T-RET	Make / Model:	KMW AM-X-CD-14-65-00T-RET
Gain:	12.65 / 14.15 dBd	Gain:	12.65 / 14.15 dBd	Gain:	12.65 / 14.15 dBd
Height (AGL):	**42 feet**	Height (AGL):	**42 feet**	Height (AGL):	**42 feet**
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	120 Watts	Total TX Power(W):	120 Watts	Total TX Power(W):	120 Watts
ERP (W):	2,664.56	ERP (W):	2,664.56	ERP (W):	2,664.56
Antenna A1 MPE%	**9.73 %**	Antenna B1 MPE%	**9.73 %**	Antenna C1 MPE%	**9.73 %**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	CCI HPA-65R-BUU-H8	Make / Model:	CCI HPA-65R-BUU-H8	Make / Model:	CCI HPA-65R-BUU-H6
Gain:	13.15 / 14.95 dBd	Gain:	13.15 / 14.95 dBd	Gain:	11.95 / 14.75 dBd
Height (AGL):	**50 feet**	Height (AGL):	**50 feet**	Height (AGL):	**42 feet**
Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	240 Watts	Total TX Power(W):	240 Watts	Total TX Power(W):	240 Watts
ERP (W):	6,229.75	ERP (W):	6,229.75	ERP (W):	5,462.56
Antenna A2 MPE%	**16.82 %**	Antenna B2 MPE%	**16.82 %**	Antenna C2 MPE%	**21.11 %**

Site Composite MPE%	
Carrier	**MPE%**
AT&T – Max per sector	**30.84 %**
No Additional Carriers On Site	NA
Site Total MPE %:	**30.84 %**

AT&T Sector A Total:	26.55 %
AT&T Sector B Total:	26.55 %
AT&T Sector C Total:	30.84 %
Site Total:	30.84 %

AT&T _ Max Values Per Sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
AT&T 850 MHz UMTS	2	552.23	42	30.64	850 MHz	567	5.40%
AT&T 1900 MHz (PCS) UMTS	2	780.05	42	43.28	1900 MHz (PCS)	1000	4.33%
AT&T 700 MHz LTE	2	940.05	42	52.15	700 MHz	467	11.17%
AT&T 1900 MHz (PCS) LTE	2	1,791.23	42	99.38	1900 MHz (PCS)	1000	9.94%
						Total:	30.84%

Summary

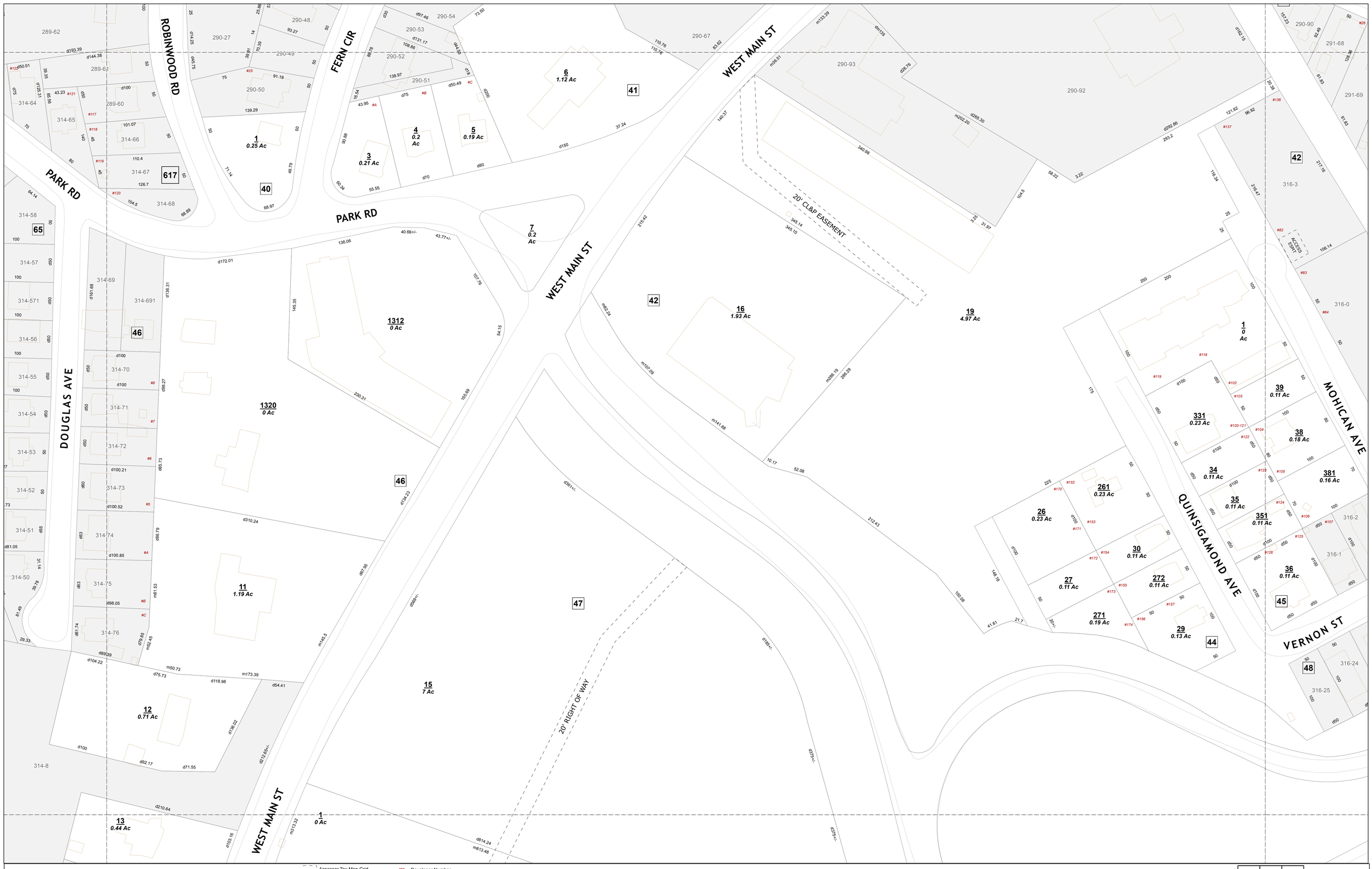
All calculations performed for this analysis yielded results that were **within** the allowable limits for general public exposure to RF Emissions.

The anticipated maximum composite contributions from the AT&T facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general public exposure to RF Emissions are shown here:

AT&T Sector	Power Density Value (%)
Sector A:	26.55 %
Sector B:	26.55 %
Sector C:	30.84 %
AT&T Maximum Total (per sector):	30.84 %
Site Total:	30.84 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **30.84 %** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.



Map # **315**

City of Waterbury
Assessor's Department

- Assessor Tax Map Grid
- Property Boundary
- Property Boundary (Off Map)
- Buildings
- Edge of Road
- #23 Developer Number
- 79 Lot Number
- 134 Block Number
- 0.27 Ac Property Acreage
- 327-17 Map-Lot Number (Off Map)

City of Waterbury, Connecticut

Property Assessment Map

This map is for informational purposes only and has not been prepared for, or suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to verify the usability of the information. The City of Waterbury makes no warranties, express or implied, as to the use of the information obtained herein.

0 50 100 200 Feet

1 inch = 50 feet

289	290	291
314	315	316
339	340	341

Map # **315**

Map #
340

City of Waterbury
Assessor's Department

Assessor Tax Map Grid
Property Boundary
Property Boundary (Off Map)
Buildings
Edge of Road
#23 Developer Number
79 Lot Number
134 Block Number
0.27 Ac Property Acreage
327-17 Map-Lot Number (Off Map)

City of Waterbury, Connecticut
Property Assessment Map

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0 50 100 200 Feet
1 inch = 50 feet

314	315	316
339	340	341
363	364	365

Map #
340

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2012.

CITY OF WATERBURY

Information on the Property Records for the Municipality of Waterbury was last updated on 8/31/2016.

Property Search | Sales Search | Property Search Results

Property Search Results

100 ▼ records per page

Street Name	Number	Unit	Name	Uniqueid	MBL	Property Use	Acres	Zone	Buildi
WEST MAIN ST (PropertyResults.aspx?towncode=151&uniqueid=031500470000000100106)	1389	106	AXL ENTERPRISES, LLC	031500470000000100106	0315-0047-0001	Medical Office	0.00	CO	1

WEST MAIN ST (PropertyResults.aspx?towncode=151&uniqueid=031500470000000010011 2)	1389	112	AXL ENTERPRISES LLC	031500470000000010011 2	0315-0047-0001	Medical Office	0.00	CO	1
WEST MAIN ST (PropertyResults.aspx?towncode=151&uniqueid=031500470000 0000100205)	1389	205	C & D REALTY LLC	031500470000 0000100205	0315-0047-0001	Medical Office	0.00	CO	1
WEST MAIN ST (PropertyResults.aspx?towncode=151&uniqueid=031500470000000010020 8)	1389	208	KATEMY LLC	031500470000000010020 8	0315-0047-0001	Medical Office	0.00	CO	1
WEST MAIN ST (PropertyResults.aspx?towncode=151&uniqueid=031500470000 0000100309)	1389	309	C & D REALTY LLC	031500470000 0000100309	0315-0047-0001	Medical Office	0.00	CO	1
WEST MAIN ST (PropertyResults.aspx?towncode=151&uniqueid=031500470000 0000100100)	1389	100	JME SERVICES LLC	031500470000 0000100100	0315-0047-0001	Medical Office	0.00	CO	1
WEST MAIN ST (PropertyResults.aspx?towncode=151&uniqueid=031500470000 0000100120)	1389	120	PECK BRIAN M D	031500470000 0000100120	0315-0047-0001	Medical Office	0.00	CO	1
WEST MAIN ST (PropertyResults.aspx?towncode=151&uniqueid=031500470000 0000100121)	1389	121	M & P REALTY CO	031500470000 0000100121	0315-0047-0001	Medical Office	0.00	CO	1
WEST MAIN ST (PropertyResults.aspx?towncode=151&uniqueid=031500470000 0000100122)	1389	122	M & P REALTY CO	031500470000 0000100122	0315-0047-0001	Medical Office	0.00	CO	1
WEST MAIN ST (PropertyResults.aspx?towncode=151&uniqueid=031500470000 0000100123)	1389	123	MATZA BRENT W & MARK A AS TRUSTEES OF	031500470000 0000100123	0315-0047-0001	Medical Office	0.00	CO	1

WEST MAIN ST (PropertyResults.aspx?towncode=151&uniqueid=031500470000000100124)	1389	124	PIECHOTA STEPHEN	031500470000000100124	0315-0047-0001	Medical Office	0.00	CO	1
WEST MAIN ST (PropertyResults.aspx?towncode=151&uniqueid=031500470000000100125)	1389	125	MEMD HOLDINGS LLC	031500470000000100125	0315-0047-0001	Medical Office	0.00	CO	1
WEST MAIN ST (PropertyResults.aspx?towncode=151&uniqueid=031500470000000100212)	1389	212	JME SERVICES LLC	031500470000000100212	0315-0047-0001	Medical Office	0.00	CO	1
WEST MAIN ST (PropertyResults.aspx?towncode=151&uniqueid=031500470000000100220)	1389	220	G G R ASSOCIATES	031500470000000100220	0315-0047-0001	Medical Office	0.00	CO	1
WEST MAIN ST (PropertyResults.aspx?towncode=151&uniqueid=031500470000000100221)	1389	221	ARENA CHARLES	031500470000000100221	0315-0047-0001	Medical Office	0.00	CO	1
WEST MAIN ST (PropertyResults.aspx?towncode=151&uniqueid=031500470000000100222)	1389	222	ARENA CHARLES	031500470000000100222	0315-0047-0001	Medical Office	0.00	CO	1
WEST MAIN ST (PropertyResults.aspx?towncode=151&uniqueid=031500470000000100223)	1389	223	MARI EDUARDO G	031500470000000100223	0315-0047-0001	Medical Office	0.00	CO	1
WEST MAIN ST (PropertyResults.aspx?towncode=151&uniqueid=031500470000000100224)	1389	224	G G R ASSOCIATES	031500470000000100224	0315-0047-0001	Medical Office	0.00	CO	1
WEST MAIN ST (PropertyResults.aspx?towncode=151&uniqueid=031500470000000100225)	1389	225	LOUISE REAL ESTATES LLC	031500470000000100225	0315-0047-0001	Medical Office	0.00	CO	1
WEST MAIN ST (PropertyResults.aspx?towncode=151&uniqueid=031500470000000100320)	1389	320	GWOMS REALTY LLC	031500470000000100320	0315-0047-0001	Medical Office	0.00	CO	1

WEST MAIN ST (PropertyResults.aspx?towncode=151&uniqueid=031500470000000100321)	1389	321	STAYWELL HEALTH CARE INC	031500470000000100321	0315-0047-0001	Medical Office	0.00	CO	1
WEST MAIN ST (PropertyResults.aspx?towncode=151&uniqueid=031500470000000100322)	1389	322	RICHI ABDEL AZIZ	031500470000000100322	0315-0047-0001	Medical Office	0.00	CO	1
WEST MAIN ST (PropertyResults.aspx?towncode=151&uniqueid=031500470000000100323)	1389	323	LOUISE REAL ESTATE LLC	031500470000000100323	0315-0047-0001	Medical Office	0.00	CO	1
WEST MAIN ST (PropertyResults.aspx?towncode=151&uniqueid=031500470000000100325)	1389	325	LOUISE REAL ESTATE LLC	031500470000000100325	0315-0047-0001	Medical Office	0.00	CO	1

Showing 1 to 24 of 24 entries

<< First | < Previous | 1 | Next > | Last >>

Information Published With Permission From The Assessor

City of Waterbury
Assessor's Office
235 Grand Street
Waterbury, CT. 06702
Office: (203) 574-6821
Fax: (203) 574-6993

City of Waterbury

Fax

To: Alex **From:** Marci

Fax: **Pages:**

Phone: 203 574-6822 **Date:**

Re: 1389 West Main St **cc:**

Urgent ☐ **For Review** ☐ **Please Comment** ☐ **Please Reply** ☐ **Please Recycle**

• **Comments:**

Name of condo's – Waterbury Medical Center Condo

WATERBURY MEDICAL CENTER CONDO V2354 P1

CITY OF WATERBURY
PROPERTY RECORD CARD

CODE #160 RATIO

ADDRESS: 1389 West Main St.

MAP 0315 | BLK 0047 | LOT 0000

L SIDE | DISTRICT | ZONE | Bldg. 00001 | Unit 00100 | CD A1

PAVED | WALK | CURB | WATER | SEWER | ELECT | GAS | SEPTIC TANK | CARD | OF

YEAR	VOLUME	PAGE	OWNER OF RECORD	R.S.	PURCHASE PRICE	MORTGAGE	INSURANCE	RENTAL
6-23-87	2106	256	Waterbury Medical Building Assoc., Inc.			1389 West Main St. 06708		

BLDG. PERMIT #	DATE	EST. COST	NAME OF ARCHITECT	NAME OF CONTRACTOR	DATE COMPLETED
8480C	9-11-98	2000	Cafet addn to Med Bldg	N.C.	

ASSESSMENT HISTORY

YEAR	LAND	YEAR	LAND	YEAR	LAND	YEAR	LAND	YEAR	LAND
1992	BLDG. 1 650400		BLDG. 1		BLDG. 1		BLDG. 1		BLDG. 1
	BLDG. 2		BLDG. 2		BLDG. 2		BLDG. 2		BLDG. 2
	BLDG. 3		BLDG. 3		BLDG. 3		BLDG. 3		BLDG. 3
	TOTAL 650400		TOTAL		TOTAL		TOTAL		TOTAL
YEAR	LAND	YEAR	LAND	YEAR	LAND	YEAR	LAND	YEAR	LAND
	BLDG. 1		BLDG. 1		BLDG. 1		BLDG. 1		BLDG. 1
	BLDG. 2		BLDG. 2		BLDG. 2		BLDG. 2		BLDG. 2
	BLDG. 3		BLDG. 3		BLDG. 3		BLDG. 3		BLDG. 3
	TOTAL		TOTAL		TOTAL		TOTAL		TOTAL
YEAR	LAND	YEAR	LAND	YEAR	LAND	YEAR	LAND	YEAR	LAND
	BLDG. 1		BLDG. 1		BLDG. 1		BLDG. 1		BLDG. 1
	BLDG. 2		BLDG. 2		BLDG. 2		BLDG. 2		BLDG. 3
	BLDG. 3		BLDG. 3		BLDG. 3		BLDG. 3		BLDG. 2
	TOTAL		TOTAL		TOTAL		TOTAL		TOTAL

COMMENTS

COPY

SUMMARY

	ASSESSED VALUATI
LAND	
BUILDING #1	
BUILDING #2	
BUILDING #3	
BUILDING #4	
TOTAL	$

COMMERCIAL PROPERTY RECORD CARD

09-01-'16 15:40 FROM- Waterbury Assessor 2035746992 T-388 P0002/0002 F-522

PROJECT INFORMATION

SCOPE OF WORK:
- AT&T ANTENNAS: (1) NEW ANTENNA PER SECTOR FOR 3 SECTORS, FOR A TOTAL OF (3) NEW ANTENNAS, (1) EXISTING ANTENNAS PER SECTOR FOR 3 SECTORS, FOR A TOTAL OF (3) EXISTING ANTENNAS TO REMAIN. (1) EXISTING ANTENNA PER SECTOR TO BE REMOVED, FOR A TOTAL OF (3).
- AT&T RRUs: (1) NEW RRUs PER SECTOR FOR (3) SECTORS, FOR A TOTAL OF (3) NEW RRUs; (1) NEW A2 MODULE PER SECTOR, FOR A TOTAL OF (3); (1) EXISTING RRU PER SECTOR TO BE REUSED, FOR A TOTAL OF (3) EXISTING RRUs.

SITE ADDRESS:	1389 WEST MAIN STREET WATERBURY, CT 06708	
LATITUDE:	41.5491919	41° 32' 57.09084"N
LONGITUDE:	-73.0652989	-73° 03' 55.07604"W
USID:	26013	
TOWER OWNER:	TBD	
TYPE OF SITE:	STEALTH POLE ON ROOF/OUTDOOR EQUIPMENT	
POLL HEIGHT:	125'-0"±	
RAD CENTER:	48'-0"± & 42'-0"±	
CURRENT USE:	UNMANNED WIRELESS TELECOMMUNICATIONS FACILITY	
PROPOSED USE:	UNMANNED WIRELESS TELECOMMUNICATIONS FACILITY	

DRAWING INDEX

	DRAWING INDEX	REV.
T-1	TITLE SHEET	0
GN-1	GROUNDING & GENERAL NOTES	0
A-1	ROOFTOP LAYOUT	0
A-2	EQUIPMENT LAYOUTS	0
A-3	ANTENNA LAYOUTS	0
A-4	ELEVATIONS	0
A-5	DETAILS	0
G-1	GROUNDING, ONE-LINE DIAGRAM & DETAILS	0
S-1	STRUCTURAL DETAILS	0
S-2	STRUCTURAL DETAILS	0
S-3	POLE DRAWINGS BY MANUFACTURER	0

APPROVALS

THE FOLLOWING PARTIES HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE SUBCONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN, ALL DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AMD MAY IMPOSE CHANGES OR SITE MODIFICATIONS.

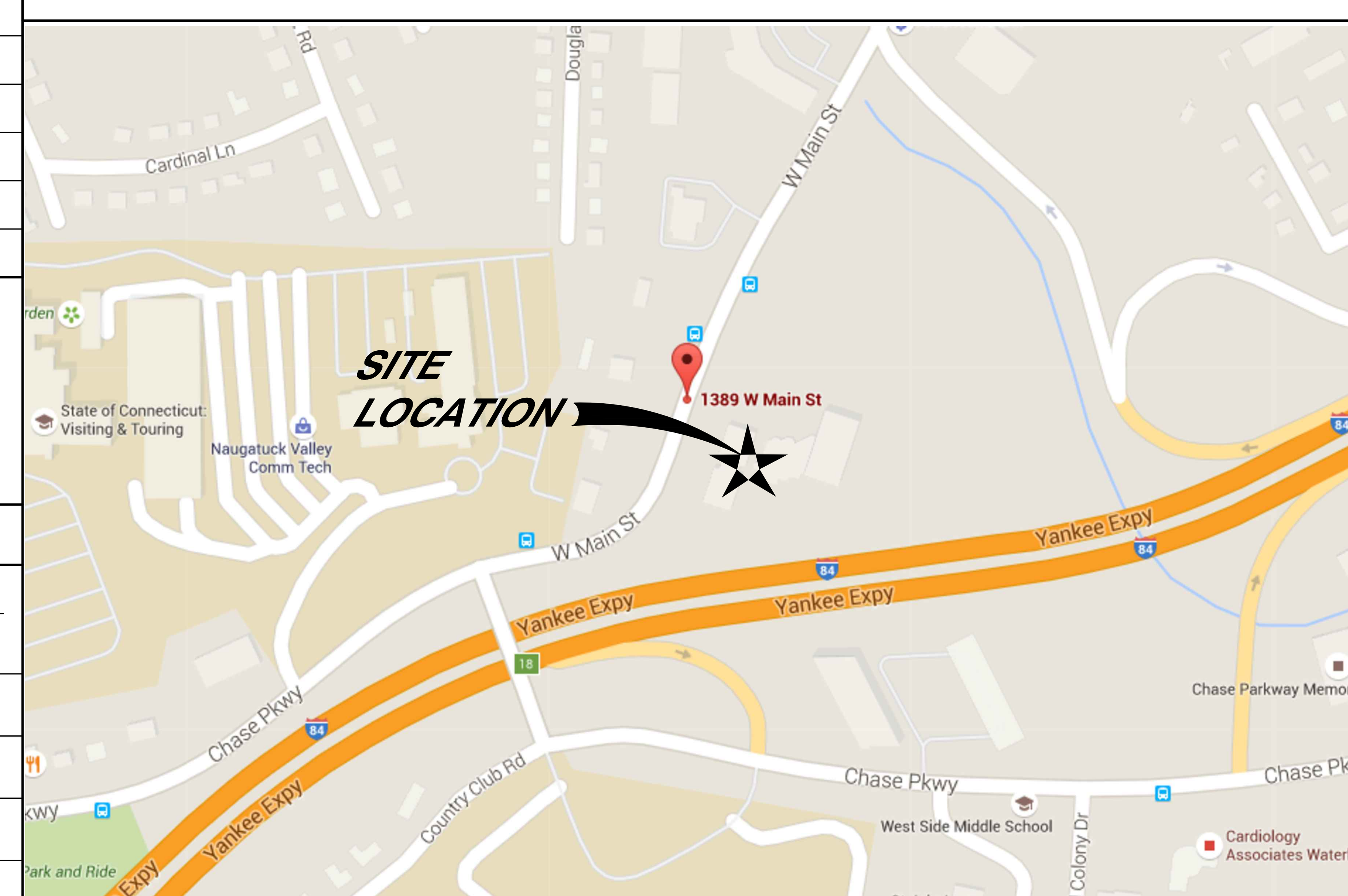
DISCIPLINE:	NAME:	
SITE ACQUISITION:		
CONSTRUCTION MANAGER:		
AT&T PROJECT MANAGER:		

at&t MOBILITY

FA CODE: 10071305
SITE NUMBER: CT5440
SITE NAME: WATERBURY WEST

VICINITY MAP

START GOING NE ON ENTERPRISE DR TOWARD CAPITAL BLVD, TURN LEFT ONTO CAPITAL BLVD, TURN LEFT ONTO WEST ST, MERGE ONTO I-91 S VIA THE RAMP ON THE LEFT TOWARD NEW HAVEN, TAKE EXIT 18 TO MERGE ONTO I-691 W TOWARD MERIDEN/WATERBURY. TAKE EXIT 1 ON THE LEFT TO MERGE ONTO I-84 W TOWARD WATERBURY/DANBURY. TAKE EXIT 18 TOWARD WEST MAIN STREET/HIGHLAND AVE. CONTINUE STRAIGHT AND TURN LEFT ONTO W. MAIN ST. DESTINATION WILL BE AT THE 1ST DRIVEWAY ON THE LEFT.



PROJECT TEAM

CLIENT REPRESENTATIVE

COMPANY: EMPIRE TELECOM
ADDRESS: 16 ESQUIRE ROAD, BILLERICA, MA 01821
CONTACT: DAVID COOPER
PHONE: 617-639-4908
EMAIL: dcooper@empiretelecomm.com

SITE ACQUISITION:

COMPANY: EMPIRE TELECOM
ADDRESS: 16 ESQUIRE ROAD, BILLERICA, MA 01821
CONTACT: DAVID COOPER
PHONE: 617-639-4908
EMAIL: dcooper@empiretelecomm.com

COMPANY: EMPIRE TELECOM
ADDRESS: 16 ESQUIRE ROAD, BILLERICA, MA 01821
CONTACT: DAVID COOPER
PHONE: 617-639-4908
EMAIL: dcooper@empiretelecomm.com

ENGINEERING:

COMPANY: COM-EX CONSULTANTS, LLC
ADDRESS: 115 ROUTE 46, SUITE E39, MOUNTAIN LAKES, NJ 07046
CONTACT: NICHOLAS D. BARILE, P.E.
PHONE: 862-209-4300
EMAIL: nbarile@comexconsultants.com

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COMPANY: AT&T MOBILITY – NEW ENGLAND
ADDRESS: 550 COCHITUATE ROAD, SUITE 550 13 & 14, FRAMINGHAM, MA 01701
CONTACT: CAMERON SYME
PHONE: 508-596-7146
EMAIL: cs6970@att.com

CONSTRUCTION MANAGEMENT:

COMPANY: EMPIRE TELECOM
ADDRESS: 16 ESQUIRE ROAD, BILLERICA, MA 01821
CONTACT: GRZEGORZ "GREG" DORMAN
PHONE: 484-683-1750
EMAIL: gdorman@empiretelecomm.com

GENERAL NOTES

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY, AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

CONNECTICUT ONE CALL SYSTEM, INC. 1-800-922-4455 STOP-CALL BEFORE YOU DIG!

CONNECTICUT LAW REQUIRES TWO WORKING DAYS NOTICE PRIOR TO ANY EARTH MOVING ACTIVITIES BY CALLING 800-922-4455 OR DIAL 811

COM-EX Consultants
115 ROUTE 46
SUITE E39
MOUNTAIN LAKES, NJ 07046
PHONE: 862.209.4300
FAX: 862.209.4301

EMPIRE telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

SITE NUMBER: CT5440
SITE NAME: WATERBURY WEST
1389 WEST MAIN ST.
WATERBURY, CT 06708
NEW HAVEN COUNTY

at&t MOBILITY
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	08/31/16	ISSUED AS FINAL	JW	NDB	NDB

SCALE: AS SHOWN | DESIGNED BY: NJM | DRAWN BY: JW

SEAL: STATE OF CONNECTICUT NICHOLAS D. BARILE No. 28643 LICENSED PROFESSIONAL ENGINEER
NICHOLAS D. BARILE
PROFESSIONAL ENGINEER
CT LIC. NO. 28643

AT&T

DRAWING TITLE: TITLE SHEET

JOB NUMBER	DRAWING NUMBER	REV
15167-EMP	T-1	0

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. TESTS SHALL BE PERFORMED IN ACCORDANCE WITH 25471-000-3PS-EG00-0001, DESIGN & TESTING OF FACILITY GROUNDING FOR CELL SITES.

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 WITH STAINLESS STEEL HARDWARE 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 AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

12. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.

13. ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF ANSI/TIA 222. FOR TOWERS BEING BUILT TO REV-G OF THE STANDARD, THE WIRE SIZE OF THE BURIED GROUND RING AND CONNECTIONS BETWEEN THE TOWER AND THE BURIED GROUND RING SHALL BE CHANGED FROM 2 AWG TO 2/0 AWG. IN ADDITION, THE MINIMUM LENGTH OF THE GROUND RODS SHALL BE INCREASED FROM EIGHT FEET (8') TO TEN FEET (10').

14. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE ½" 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 – EMPIRE TELECOM
   - SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   - OWNER – AT&T MOBILITY
   - OEM – ORIGINAL EQUIPMENT MANUFACTURER

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 (EMPIRE TELECOM).

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

7. 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.

8. 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. ROUTING OF TRENCHING SHALL BE APPROVED BY CONTRACTOR

9. 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.

10. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OFF 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.

11. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

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

13. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS UNLESS OTHERWISE SPECIFIED. ALL CONCRETING WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

14. 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). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCH UP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.

15. CONSTRUCTION SHALL COMPLY WITH SPECIFICATION 25741-000-3APS-A00Z-00002, "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T MOBILITY SITES."

16. 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.

17. 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 MAY NEED TO BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.

18. SINCE THE CELL SITE MAY BE 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 REQUIRED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

19. 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.
   - INTERNATIONAL BUILDING CODE: IBC 2009 WITH LOCAL & COUNTY AMENDMENTS
   - NATIONAL ELECTRICAL CODE: NEC 2011 WITH LOCAL & COUNTY AMENDMENTS
   - FIRE/LIFE SAFETY CODE: NFPA-101 2009 WITH LOCAL & COUNTY AMENDMENTS

20. 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, THIRTEENTH EDITION
   - AMERICAN SOCIETY OF TESTING OF MATERIALS, ASTM
   - TELECOMMUNICATIONS INDUSTRY ASSOCIATION (ANSI/TIA-222-G-1), STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES:
   - TIA 607, COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS
   - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, OSHA
   - INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVELY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONIC EQUIPMENT
   - TELCORDIA GR-1503, COAXIAL CABLE CONNECTIONS

21. 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.

22. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES AND EXISTING CONDITIONS AT THE SITE PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA AND SUBMIT TO THE ENGINEER ANY DISCREPANCIES FROM THE DRAWINGS.

23. INFORMATION SHOWN ON THIS SET OF PLANS TAKEN FROM DRAWINGS PREPARED BY DEWBERRY ENGINEERS, INC. FOR A RECENT UPGRADE DATED 06/13/2012. CONTRACTOR TO NOTIFY DESIGN ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCEMENT OF CONSTRUCTION.

COM-EX Consultants
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PHONE: 862.209.4300
FAX: 862.209.4301

EMPIRE telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

SITE NUMBER: CT5440

SITE NAME: WATERBURY WEST

1389 WEST MAIN ST.
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at&t MOBILITY
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NO.	DATE	REVISIONS	BY	CHK	APP'D
0	08/31/16	ISSUED AS FINAL	JW	NDB	NDB

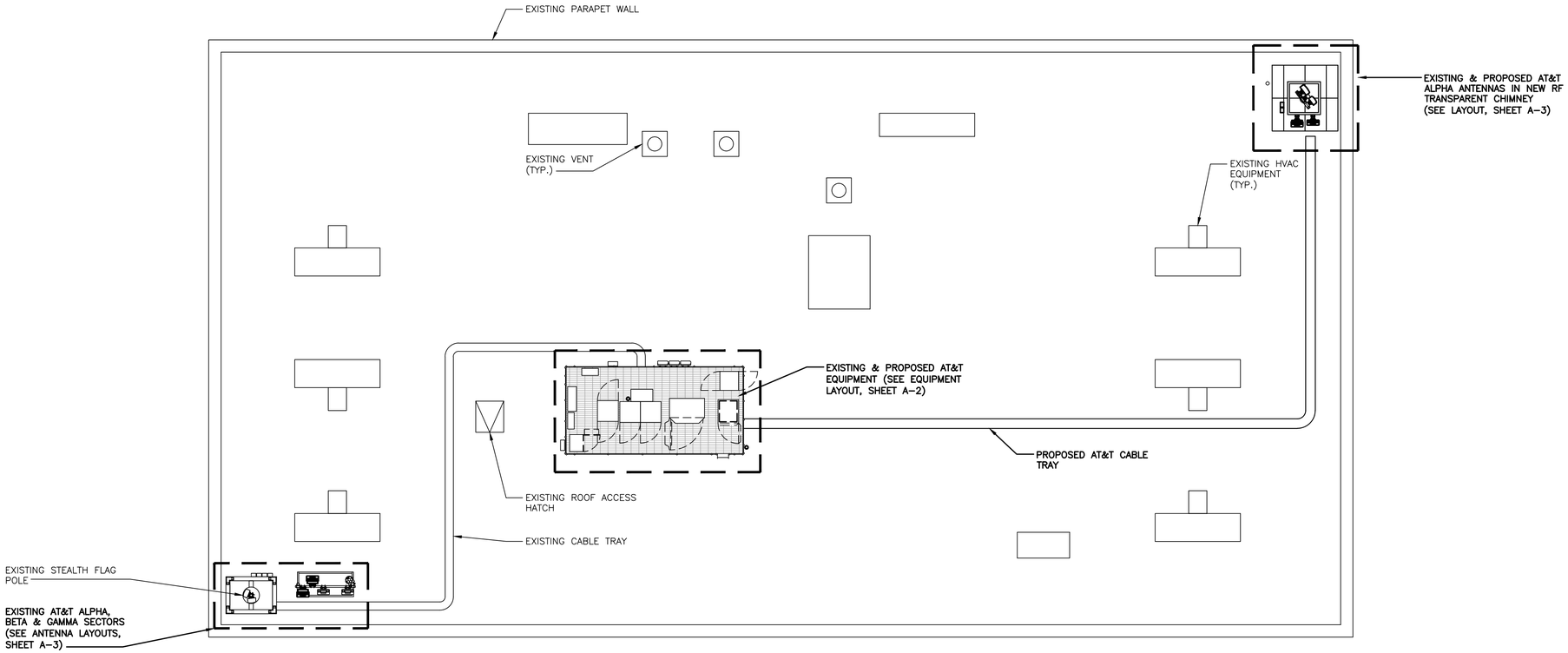
SCALE: AS SHOWN | DESIGNED BY: NJM | DRAWN BY: JW

SEAL:

AT&T

DRAWING TITLE:
GROUNDING & GENERAL NOTES

JOB NUMBER	DRAWING NUMBER	REV
15167-EMP	GN-1	0

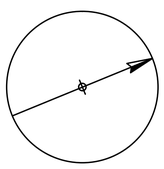


ROOFTOP LAYOUT

SCALE: 1/8" = 1'-0"

0 4 8 16

GRAPHIC SCALE: 1/8"=1'-0"



NORTH

NOTE:
CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES, AND EXISTING CONDITIONS AT THE SITE PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA AND SUBMIT TO THE ENGINEER ANY DISCREPANCIES FROM THE DRAWINGS.

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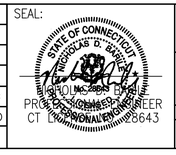
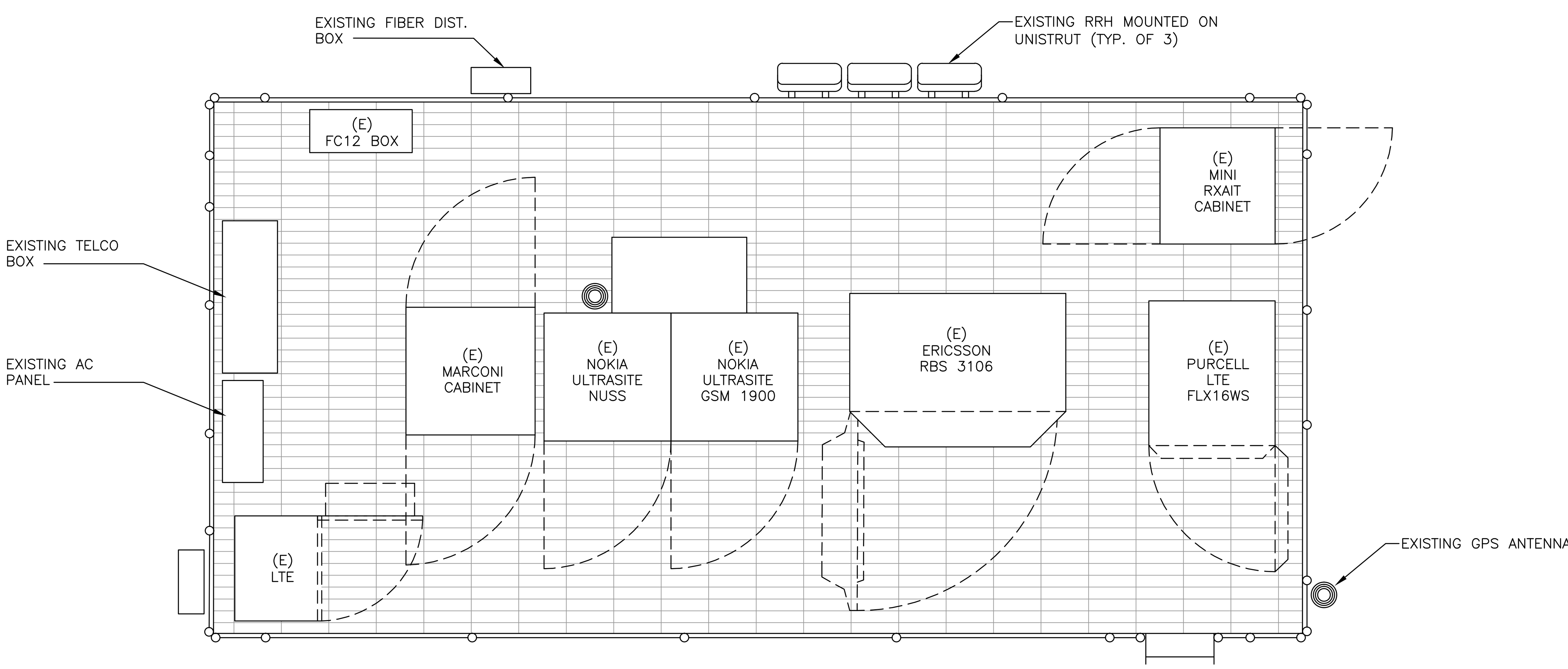
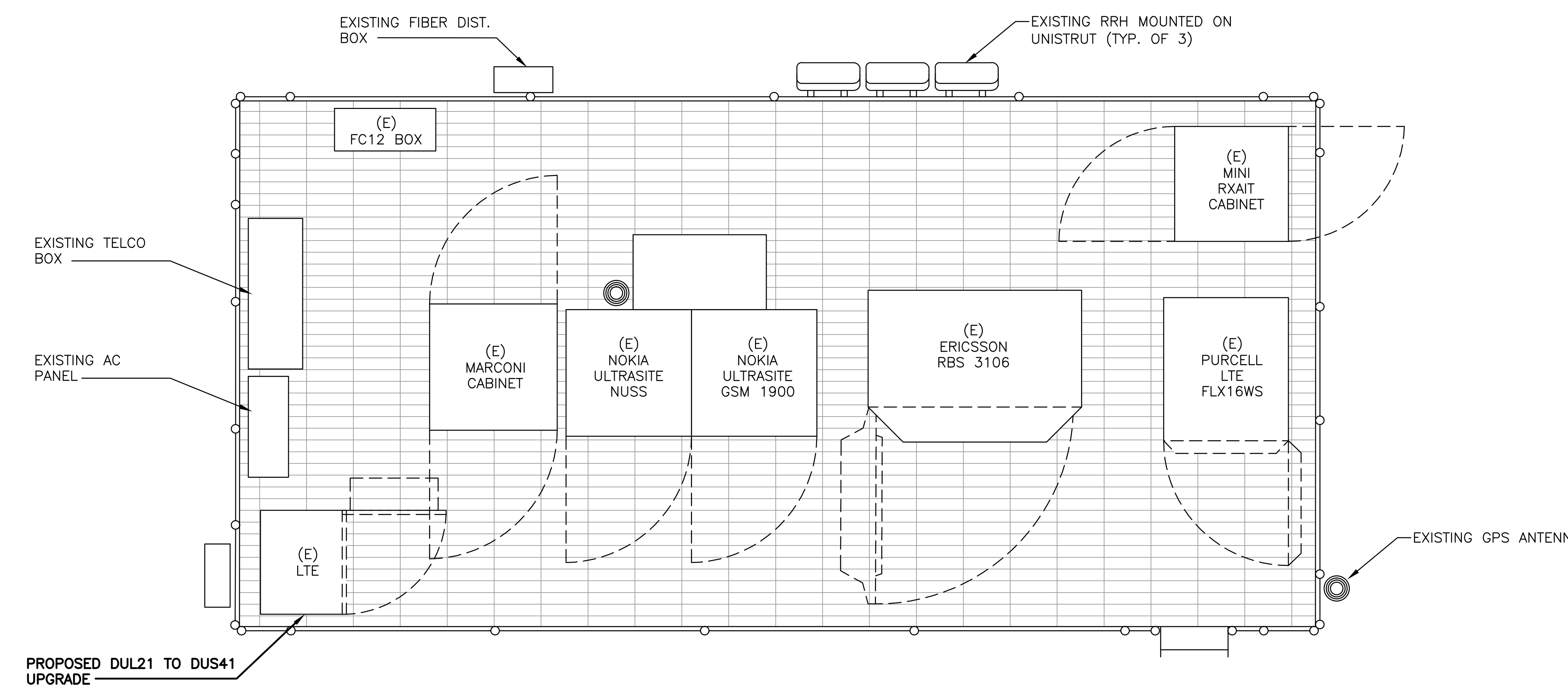


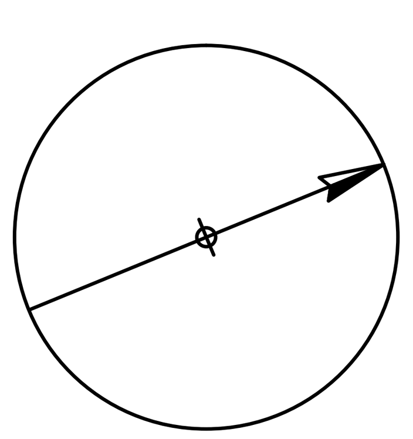
AT&T

DRAWING TITLE:
ROOFTOP LAYOUT

JOB NUMBER	DRAWING NUMBER	REV
15167-EMP	A-1	0







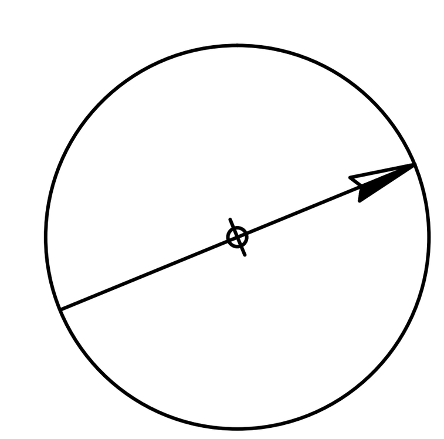
NORTH

EXISTING EQUIPMENT LAYOUT

SCALE: 1" = 2'-0"

2 0 1 2 4 8

(IN FEET)
1/2 Inch = 1 Foot



NORTH

PROPOSED EQUIPMENT LAYOUT

SCALE: 1" = 2'-0"

2 0 1 2 4 8

(IN FEET)
1/2 Inch = 1 Foot

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SCALE: AS SHOWN | DESIGNED BY: NJM | DRAWN BY: JW

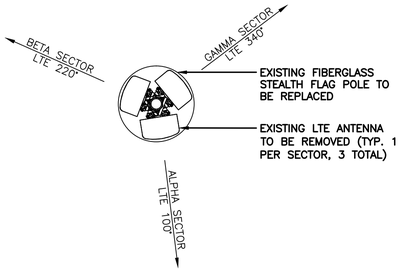
SEAL:
STATE OF CONNECTICUT
PROFESSIONAL ENGINEER
CT 28643

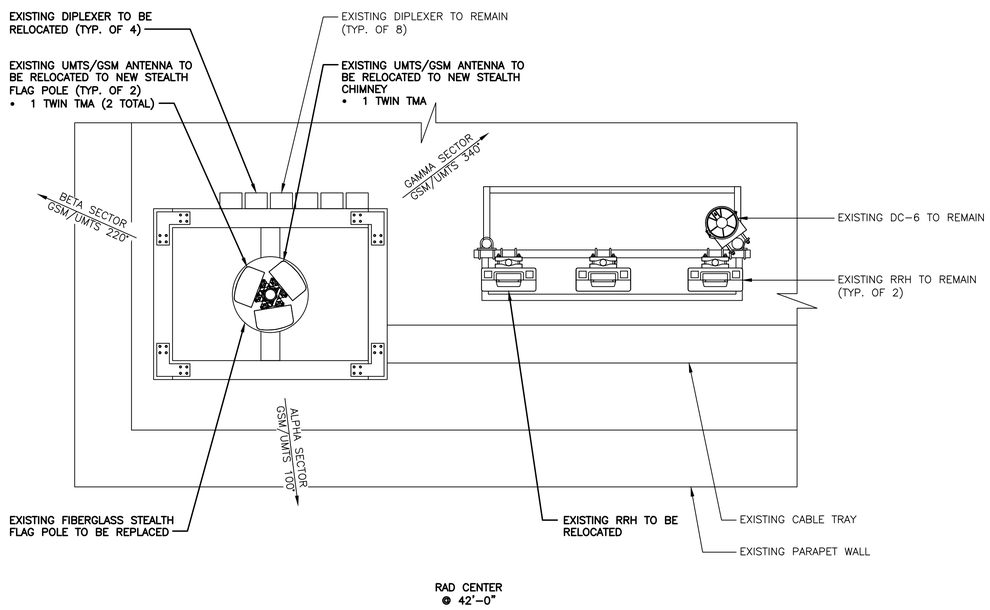
AT&T

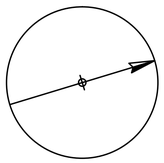
DRAWING TITLE:
EQUIPMENT LAYOUT

JOB NUMBER	DRAWING NUMBER	REV
15167-EMP	A-2	0

PROJECT OWNER IS RESPONSIBLE FOR PROVIDING A STRUCTURAL STABILITY ANALYSIS TO DETERMINE THE CAPACITY AND SUITABILITY OF THE EXISTING ANTENNA SUPPORT STRUCTURE TO SAFELY CARRY ALL ADDITIONAL LOADS IMPOSED BY THE PROPOSED EQUIPMENT AS SHOWN HEREIN. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR INCORPORATING ANY REQUIRED STRUCTURAL MODIFICATIONS INTO THEIR SCOPE OF WORK.

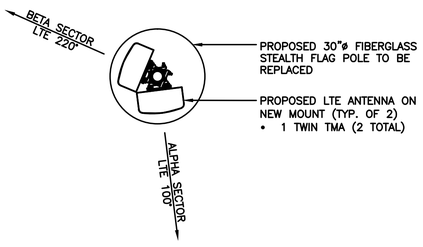


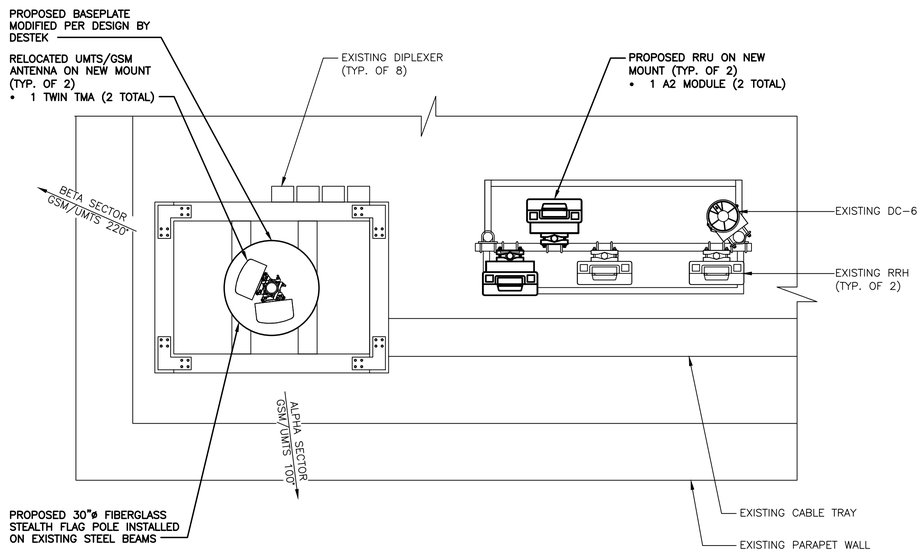


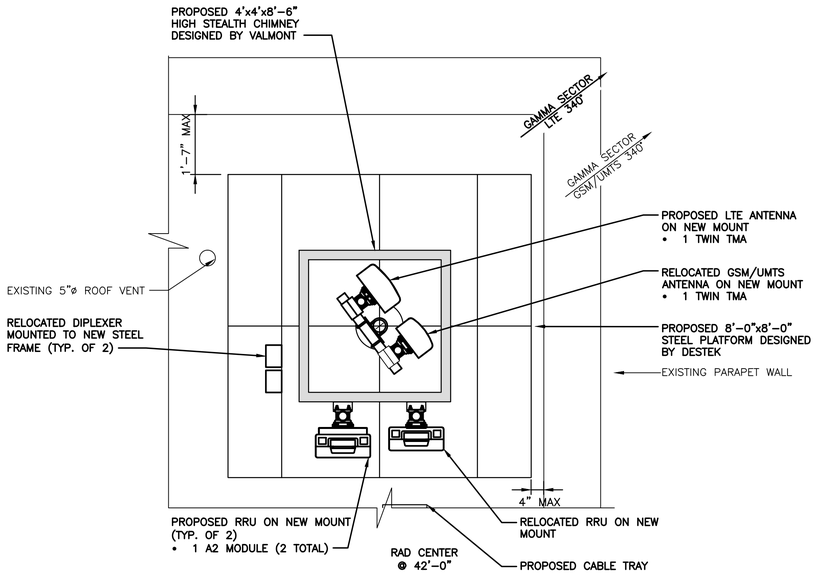


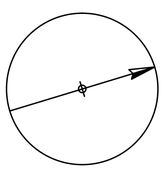
EXISTING ANTENNA LAYOUT

SCALE: N.T.S.









PROPOSED ANTENNA LAYOUT

SCALE: N.T.S.

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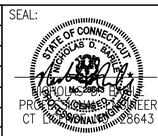

AT&T

DRAWING TITLE: ANTENNA LAYOUTS

JOB NUMBER	DRAWING NUMBER	REV
15167-EMP	A-3	0

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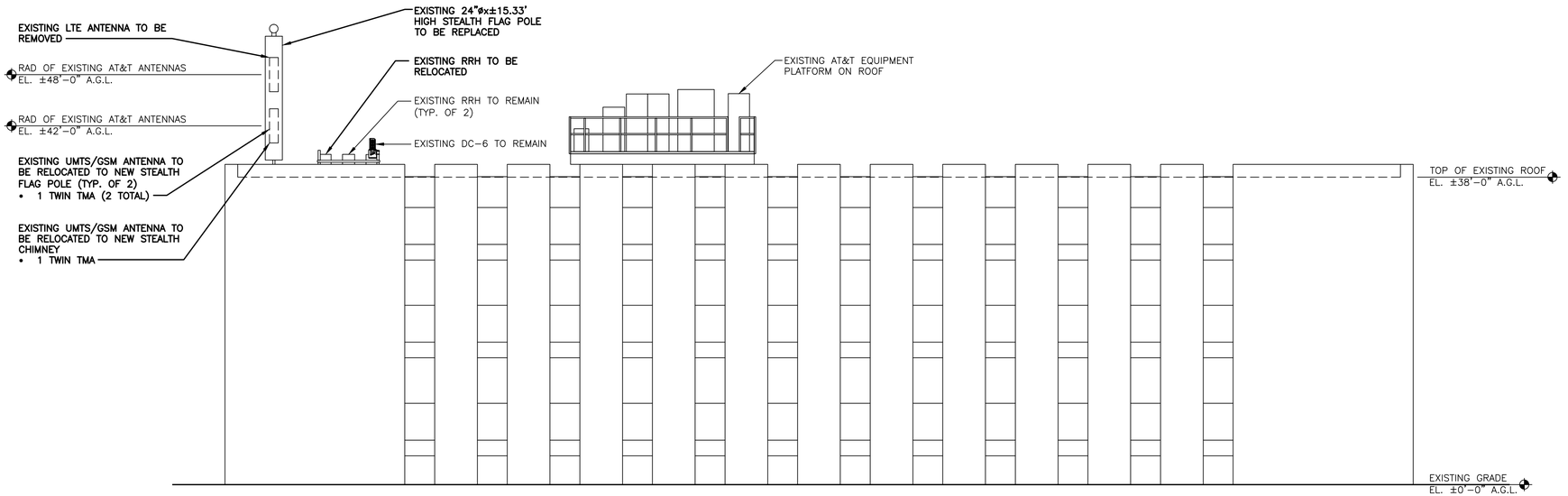
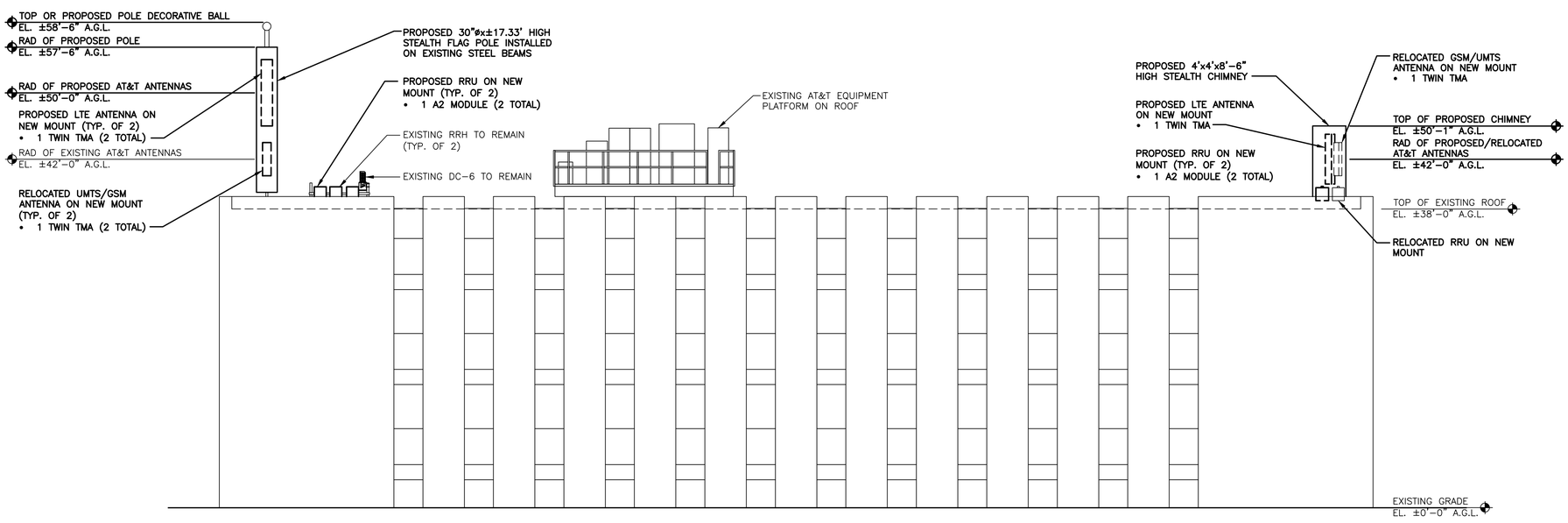


EXISTING TOWER ELEVATION

SCALE: NTS



PROPOSED TOWER ELEVATION

SCALE: NTS

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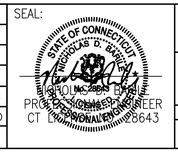
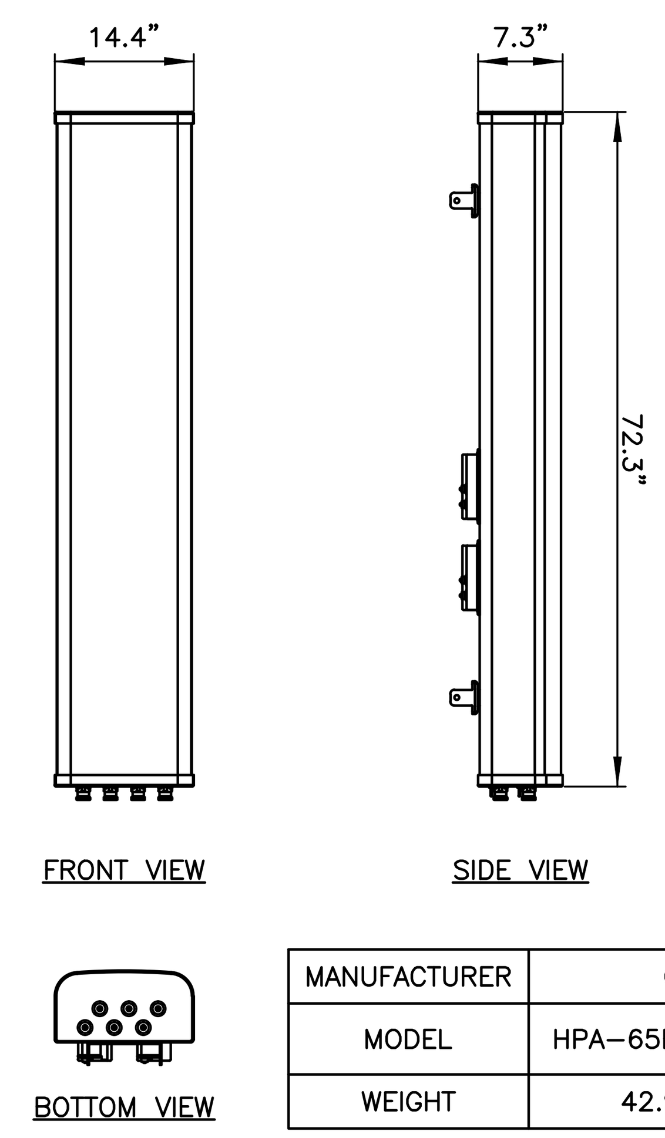


AT&T

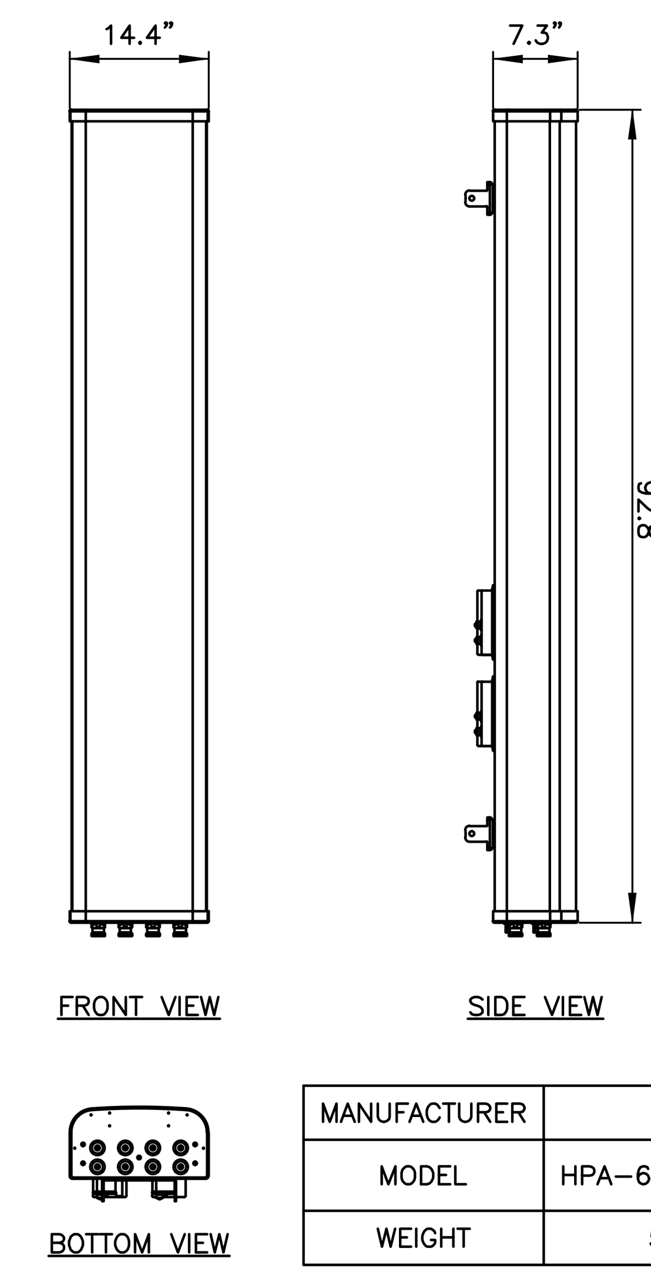
DRAWING TITLE: ELEVATIONS

JOB NUMBER	DRAWING NUMBER	REV
15167-EMP	A-4	0



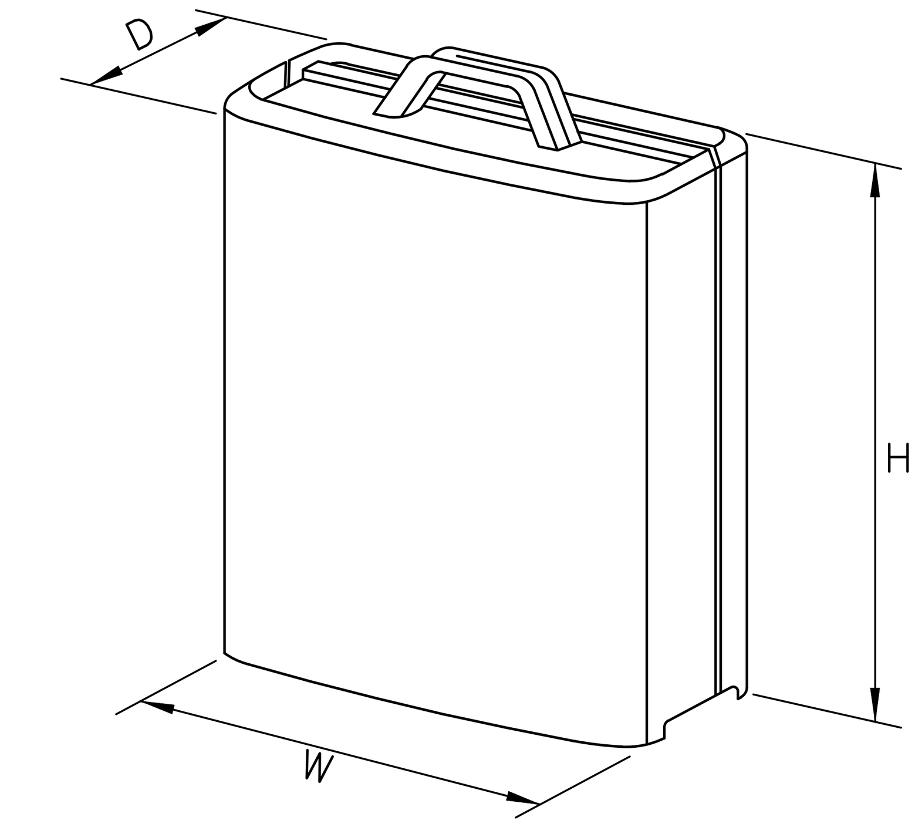
MANUFACTURER	CCI
MODEL	HPA-65R-BUU-H6
WEIGHT	42.9 LBS

LTE ANTENNA DETAIL
SCALE: N.T.S.



MANUFACTURER	CCI
MODEL	HPA-65R-LCUU-H8
WEIGHT	53 LBS

LTE ANTENNA DETAIL
SCALE: N.T.S.



MODEL	H x W x D	WEIGHT
*RRUS-11	19.69" x 16.97" x 7.17"	50.7 LBS
RRUS-12	20.4" x 18.5" x 7.5"	58 LBS

* DENOTES EXISTING

RRUS DETAIL
SCALE: N.T.S.

EXISTING ANTENNA SCHEDULE

SECTOR	POSITION	MAKE	MODEL	SIZE (INCHES)
ALPHA	A1	KMW	AM-X-CD-14-65-00T-RET	48"x11.8"x5.9"
	A2	KMW	AM-X-CD-14-65-00T-RET	48"x11.8"x5.9"
BETA	B1	KMW	AM-X-CD-14-65-00T-RET	48"x11.8"x5.9"
	B2	KMW	AM-X-CD-14-65-00T-RET	48"x11.8"x5.9"
GAMMA	G1	KMW	AM-X-CD-14-65-00T-RET	48"x11.8"x5.9"
	G2	KMW	AM-X-CD-14-65-00T-RET	48"x11.8"x5.9"

FINAL ANTENNA SCHEDULE

SECTOR	POSITION	MAKE	MODEL	SIZE (INCHES)
ALPHA	A1	KMW	AM-X-CD-14-65-00T-RET	48"x11.8"x5.9"
	A2	**CCI**	**HPA-65R-BUU-H8**	**92.4"x14.8"x7.4"**
BETA	B1	KMW	AM-X-CD-14-65-00T-RET	48"x11.8"x5.9"
	B2	**CCI**	**HPA-65R-BUU-H8**	**72"x14.8"x9"**
GAMMA	G1	KMW	AM-X-CD-14-65-00T-RET	48"x11.8"x5.9"
	G2	**CCI**	**HPA-65R-BUU-H6**	**72"x14.8"x9"**

PROPOSED RRU SCHEDULE

SECTOR	MAKE	MODEL	SIZE (INCHES)	ADDITIONAL COMPONENT	SIZE (INCHES)
ALPHA	**ERICSSON**	**RRUS-12**	**20.4"x18.5"x7.5"**	**ERICSSON A2 MODULE**	**16.4"x15.2"x3.4"**
	ERICSSON	RRUS-11 (EXISTING)	19.7"x16.9"x7.2"	–	–
BETA	**ERICSSON**	**RRUS-11**	**19.7"x16.9"x7.2"**	**ERICSSON A2 MODULE**	**16.4"x15.2"x3.4"**
	ERICSSON	RRUS-12 (EXISTING)	20.4"x18.5"x9.5"	–	–
GAMMA	**ERICSSON**	**RRUS-11**	**19.7"x16.9"x7.2"**	**ERICSSON A2 MODULE**	**16.4"x15.2"x3.4"**
	ERICSSON	RRUS-12 (EXISTING)	20.4"x18.5"x9.5"	–	–

PROJECT OWNER IS RESPONSIBLE FOR PROVIDING A STRUCTURAL STABILITY ANALYSIS TO DETERMINE THE CAPACITY AND SUITABILITY OF THE EXISTING ANTENNA SUPPORT STRUCTURE TO SAFELY CARRY ALL ADDITIONAL LOADS IMPOSED BY THE PROPOSED EQUIPMENT AS SHOWN HEREIN. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR INCORPORATING ANY REQUIRED STRUCTURAL MODIFICATIONS INTO THEIR SCOPE OF WORK.

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16 ESQUIRE ROAD
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SITE NUMBER: CT5440
SITE NAME: WATERBURY WEST
1389 WEST MAIN ST.
WATERBURY, CT 06708
NEW HAVEN COUNTY

at&t MOBILITY
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

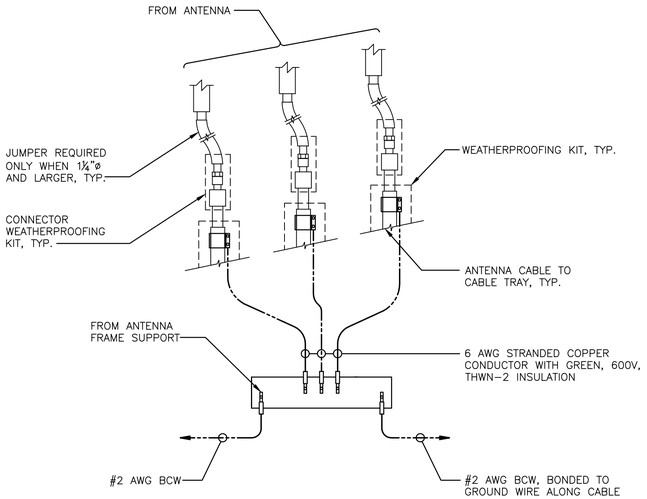
NO.	DATE	REVISIONS	BY	CHK	APP'D
0	08/31/16	ISSUED AS FINAL	JW	NDB	NDB

SCALE: AS SHOWN | DESIGNED BY: NJM | DRAWN BY: JW

SEAL:
PROFESSIONAL ENGINEER
CT [illegible] 8643

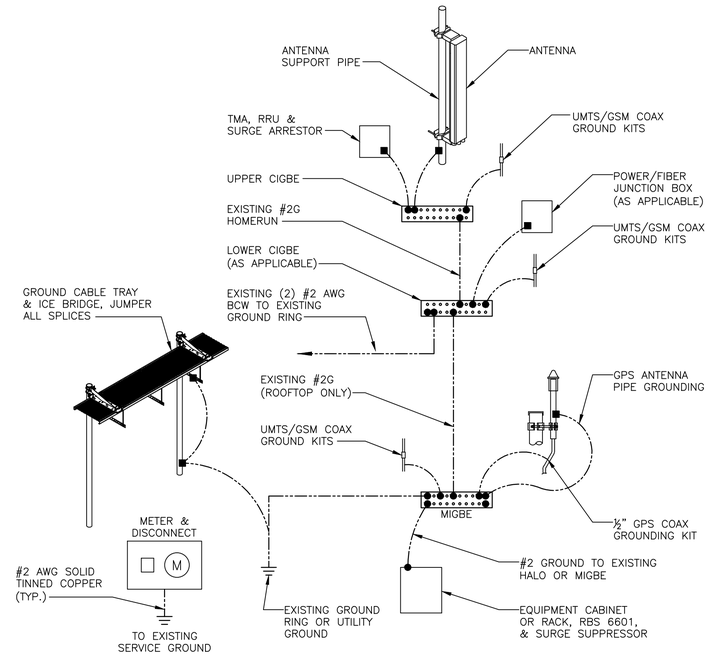
AT&T
DRAWING TITLE:
DETAILS

JOB NUMBER	DRAWING NUMBER	REV
15167-EMP	A-5	0



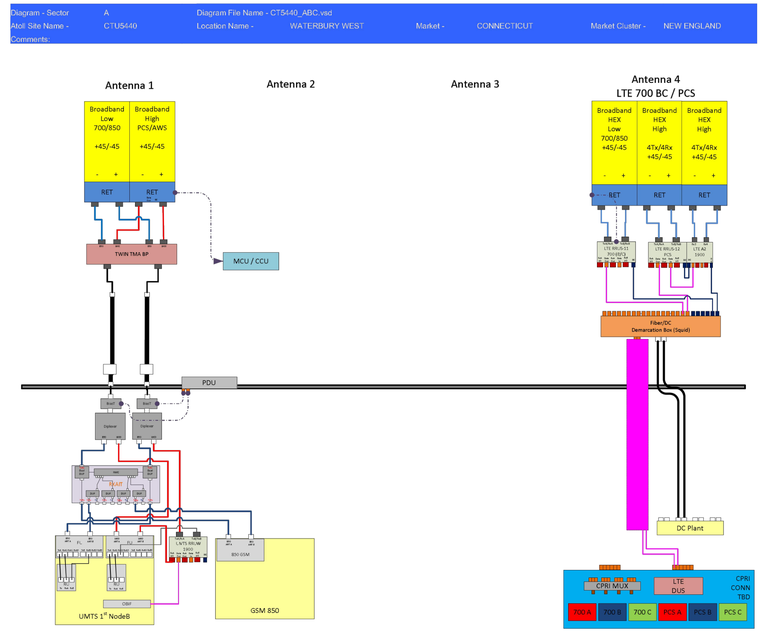
GROUND WIRE TO GROUND BAR CONNECTION DETAIL

SCALE: N.T.S.



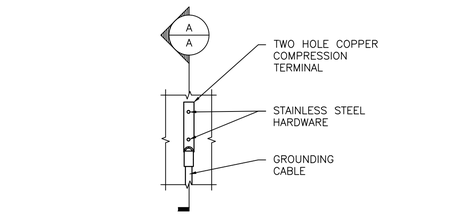
GROUNDING RISER DIAGRAM

SCALE: N.T.S.

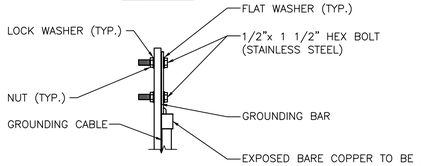


TYPICAL PLUMBING DIAGRAM (PER SECTOR)

SCALE: N.T.S.



ELEVATION



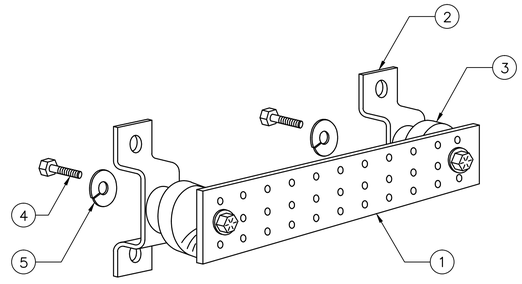
SECTION "A–A"

NOTE:

1. "DOUBLING UP" OR "STACKING" OF CONNECTIONS 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

SCALE: N.T.S.



ITEM NO.	QTY.	DESCRIPTION
1	1	SOLID GROUND BAR (20"x 4"x ¼")
2	2	WALL MOUNTING BRACKET
3	2	INSULATORS
4	4	⅝"–11x1" H.H.C.S.
5	4	⅝" LOCK WASHER

NOTES:

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)

GROUND BAR DETAIL

SCALE: N.T.S.

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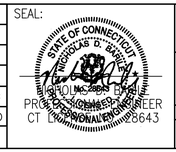
NO.	DATE	REVISIONS	BY	CHK	APP'D
0	08/31/16	ISSUED AS FINAL	JW	NDB	NDB

SCALE: AS SHOWN | DESIGNED BY: NJM | DRAWN BY: JW

SEAL:



AT&T

DRAWING TITLE:
GROUNDING, ONE–LINE DIAGRAM & DETAILS

JOB NUMBER	DRAWING NUMBER	REV
15167–EMP	G–1	0

1.0 DESIGN INFORMATION AND GENERAL REQUIREMENTS

1.0 GENERAL
ALL DIMENSIONS ARE APPROXIMATE, CONTRACTOR SHOULD VERIFY ALL DIMENSIONS BEFORE FABRICATION OF STEEL AND COMMENCEMENT OF WORK.

1.1 CODES
a. 2005 CONNECTICUT BUILDING CODE WITH ALL ADOPTED AMENDMENTS AND SUPPLEMENTS
b. MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES, ASCE/SEI 7-02, AMERICAN SOCIETY OF CIVIL ENGINEERS
c. STEEL CONSTRUCTION MANUAL, 9TH EDITION, AMERICAN INSTITUTE OF STEEL CONSTRUCTION

1.2 LOADS AND DESIGN CRITERIA
a. WIND LOADING: V: 95 MPH, EXPOSURE B, OCCUPANCY CATEGORY II
b. EQUIPMENT AS LISTED IN CONSTRUCTION DRAWINGS PREPARED BY COM-EX CONSULTANTS AND EMPIRE TELECOM, DATED 02/12/2016, AND STRUCTURAL ANALYSIS REPORT PREPARED BY DESTEK ENGINEERING, LLC, DATED 06/20/2016.

1.3 NOTES
a. PRIOR TO PURCHASE OR FABRICATION OF MATERIAL, THE CONTRACTOR SHALL PERFORM AN INSPECTION VERIFYING MEMBER AND BOLT SIZES. SHOULD THE CONTRACTOR DISCOVER ANY DAMAGED OR MISSING MEMBERS OR THE MEMBER OR BOLT SIZES DO NOT MATCH THOSE LISTED, DESTEK SHALL BE NOTIFIED IMMEDIATELY.
b. CONTRACTOR TO REPLACE ALL BOLTS REMOVED WITH NEW BOLTS OF SAME TYPE, UNLESS NOTED OTHERWISE.

2.0 STRUCTURAL STEEL

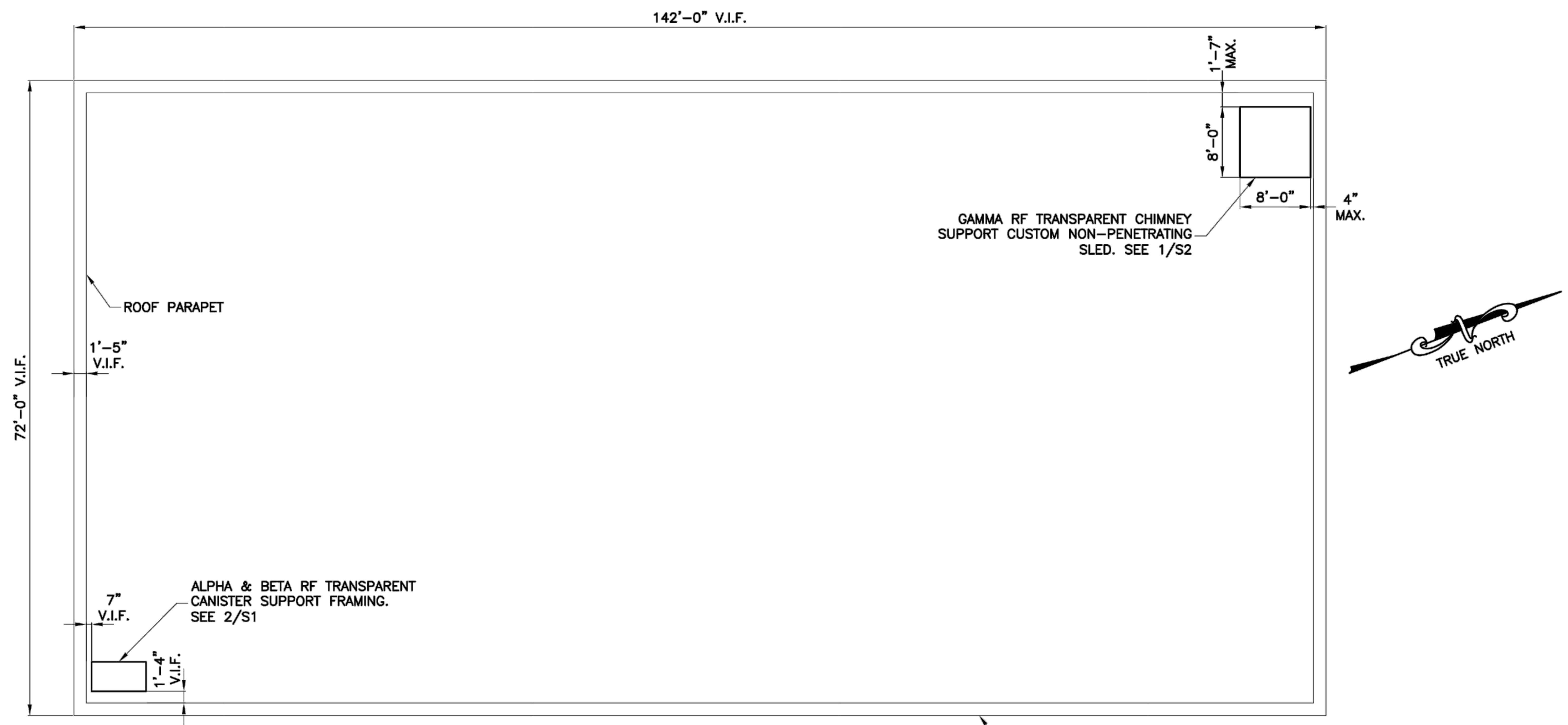
2.1 MATERIALS
a. STRUCTURAL STEEL . . . . ASTM A992
MISC ANGLE & PLATE . . . . ASTM A36
PIPE . . . . ASTM A53 GR. B
RODS . . . . ASTM A572-50 (MINIMUM)
HSS. . . . . ASTM A500, GR. B, Fy=46 KSI
b. BOLTS . . . . ASTM A325 U.N.O.
c. WELDING ELECTRODES . . . . AWS A5.1 (E70XX)
d. STEEL CONSTRUCTION SHALL CONFORM TO "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, ANSI/AISC 335-89S1"
e. WELDING SHALL CONFORM TO AWS D1.1/D1.3/D1.7 AS APPLICABLE.
f. THE FABRICATOR SHALL FURNISH CHECKED SHOP AND ERECTION DRAWINGS TO THE ENGINEER, AND OBTAIN APPROVAL PRIOR TO FABRICATING ANY STRUCTURAL STEEL. SHOP DRAWINGS SHALL CONFORM TO "DETAILING FOR STEEL CONSTRUCTION, 2ND EDITION"
g. POOR MATCHING OF HOLES SHALL BE CORRECTED BY DRILLING TO THE NEXT LARGER SIZE. WELDING FOR REDRILLING WILL NOT BE PERMITTED.

2.2 CONNECTIONS
a. SHOP CONNECTIONS MAY BE BOLTED OR WELDED
b. CONNECTIONS WHERE THE BEAM SHEAR (V) IS NOT NOTED ON THE DRAWINGS, SIMPLE SHEAR CONNECTIONS SHALL BE DESIGNED TO DEVELOP 1/2 OF THE MAXIMUM TOTAL UNIFORM LOAD CAPACITY OF THE BEAM.
c. FIELD CONNECTIONS SHALL BE MADE WITH A325 BOLTS AND HARDENED WASHERS EXCEPT AS INDICATED ON THE DESIGN DRAWINGS
d. CONNECTIONS NOT SHOWN ON DRAWINGS SHALL BE DESIGNED BY THE STEEL FABRICATOR. CONNECTIONS SHALL BE DESIGNED IN ACCORDANCE WITH AISC "SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS" AND "AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES".
e. DO NOT FIELD CUT OR ALTER STRUCTURAL MEMBERS WITHOUT PRIOR WRITTEN APPROVAL OF ENGINEER.
f. BOLT HOLES SHALL BE CUT, DRILLED OR PUNCHED AT RIGHT ANGLES TO THE SURFACE OF THE METAL AND SHALL NOT BE MADE OR ENLARGED BY BURNING. HOLES SHALL BE CLEAN CUT WITHOUT TORN OR RAGGED EDGES. OUTSIDE BURRS RESULTING FROM DRILLING OR REAMING OPERATION SHALL BE REMOVED WITH A TOOL MAKING A 1/16 INCH BEVEL. BOLT HOLES SHALL BE 1/16 INCH OVERSIZE.

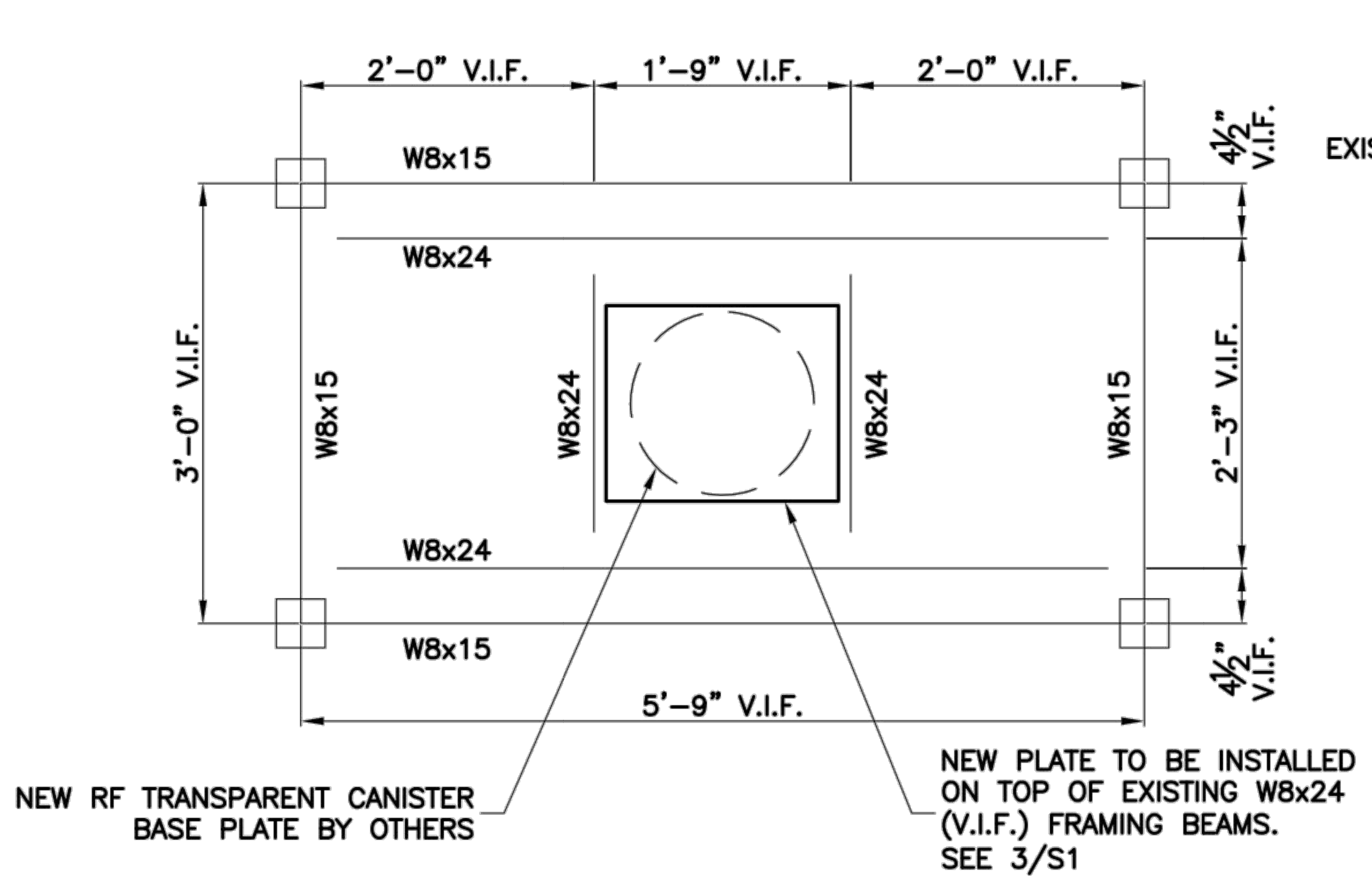
2.3 FINISHES
a. STRUCTURAL STEEL SHALL BE HOT DIP GALVANIZED AFTER FABRICATION PER ASTM A123
b. BOLTS AND NUTS SHALL BE HOT DIP GALVANIZED PER ASTM A153.
c. ALL SURFACES DAMAGED BY FIELD WELDING OR CUTTING SHALL BE PAINTED WITH COLD GALVANIZING COMPOUND TWICE. THE PAINT SHOULD BE AT LEAST 93% PURE ZINC. RUST-OLEUM PROFESSIONAL, (MODEL# 7585838) OR SIMILAR.

2.4 WELDING
a. CONTRACTOR TO TAKE ALL NECESSARY PRECAUTIONS FOR FIRE PREVENTION DURING WELDING, SUCH AS; INSTALLING 3000 (NFPA 701) FIRE BLANKET AROUND COAX. MORE SPLATTER AND SPARKS SHOULD BE ANTICIPATED WHILE WELDING ON GALVANIZED SURFACE. COAX IS FLAMMABLE AND SHALL CATCH FIRE IF NOT PROTECTED. WATER SHALL BE ON SITE OF ADEQUATE AMOUNT AND AVAILABLE AT SHORT NOTICE AT ALL TIMES DURING WELDING ACTIVITY. CONTRACTOR SHOULD BE ABLE TO TRANSPORT THE WATER TO THE HEIGHT WELDING BEING PERFORMED.
b. WELDING ON GALVANIZED SURFACE SHOULD BE DONE WITH EXTREME CAUTION. IF THE WELD MATERIAL IS CONTAMINATED WITH ZINC, IT DOES NOT PROVIDE A STRUCTURAL WELD. GROUND GALVANIZING BEFORE WELDING.
c. WELDING CERTIFICATE MUST BE PROVIDED PRIOR TO WELDING. ALL WELDING SHALL BE PERFORMED BY AWS QUALIFIED WELDER WHO HAS EXPERIENCE WITH GALVANIZED SURFACES.

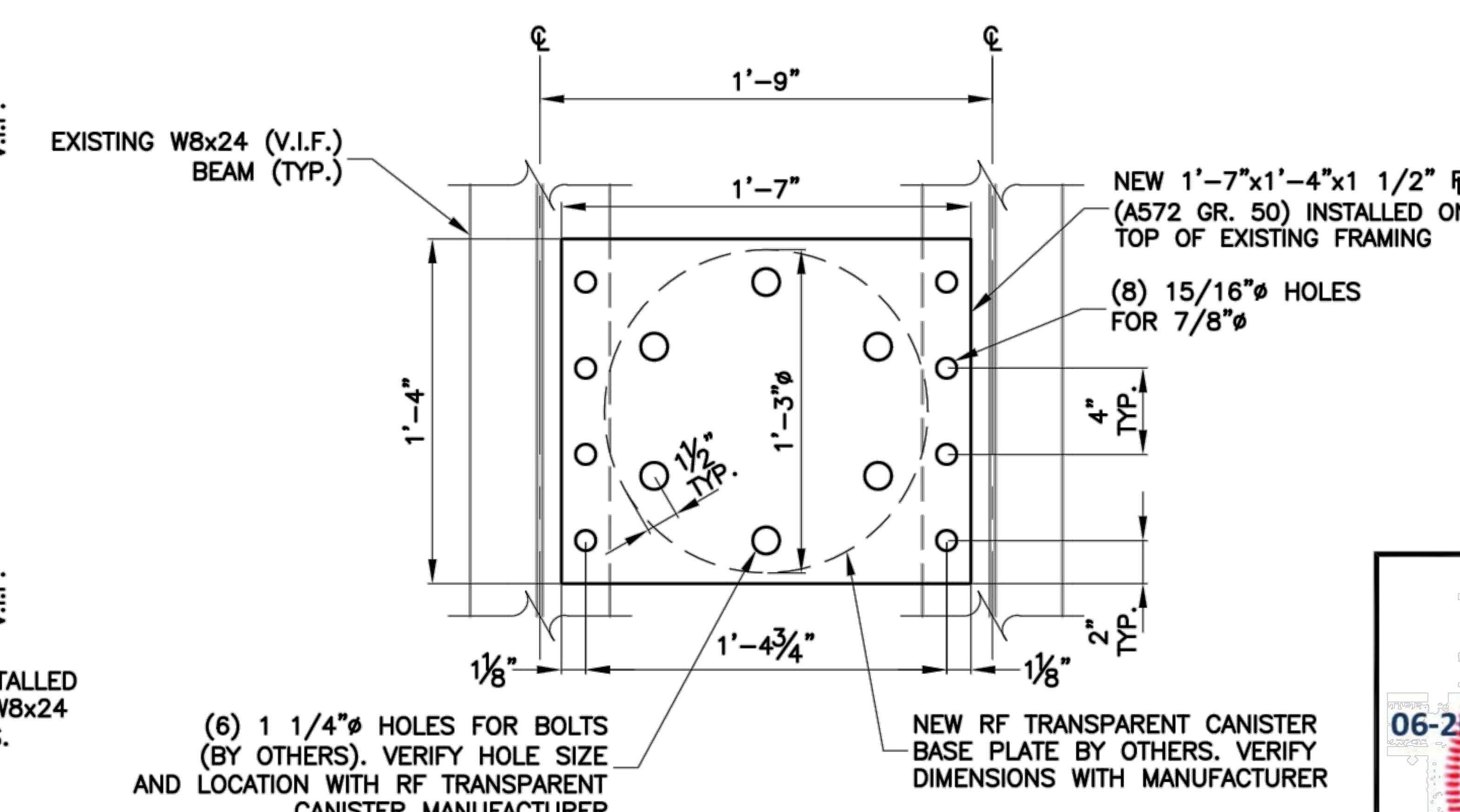
DRAWINGS PLOTTED TO SCALE ON 11x17 SHEETS



1 S1 **SITE PLAN**
1/16" = 1'-0"



2 S1 **ALPHA & BETA SUPPORT FRAMING PLAN**
1/2" = 1'-0"



3 S1 **PLATE ADDITION DETAIL**
1" = 1'-0"

06-20-2016
Ahmet Colakoglu, PE
CT License No: 27057

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DESTEK ENGINEERING, LLC
1281 KENNESTONE CIRCLE
SUITE 100
MARIETTA, GA 30066
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ADMIN@DESTEKENGINEERING.COM

PREPARED FOR:
COM-EX Consultants
115 Route 46 - Suite E39
Mountain Lakes, NJ 07046

NUM	DATE	DESCRIPTION:
A	06/20/16	ISSUED FOR CONSTRUCTION

CT5440 – WATERBURY WEST
ADDRESS:
1389 WEST MAIN STREET,
WATERBURY, CT 06708
FA CODE: 10071305

DESIGNED: SA
DRAWN: SA
CHECKED: AC
JOB #: 1629072

S1
SITE PLAN, DETAILS & NOTES

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EMPIRE telecom
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at&t MOBILITY
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

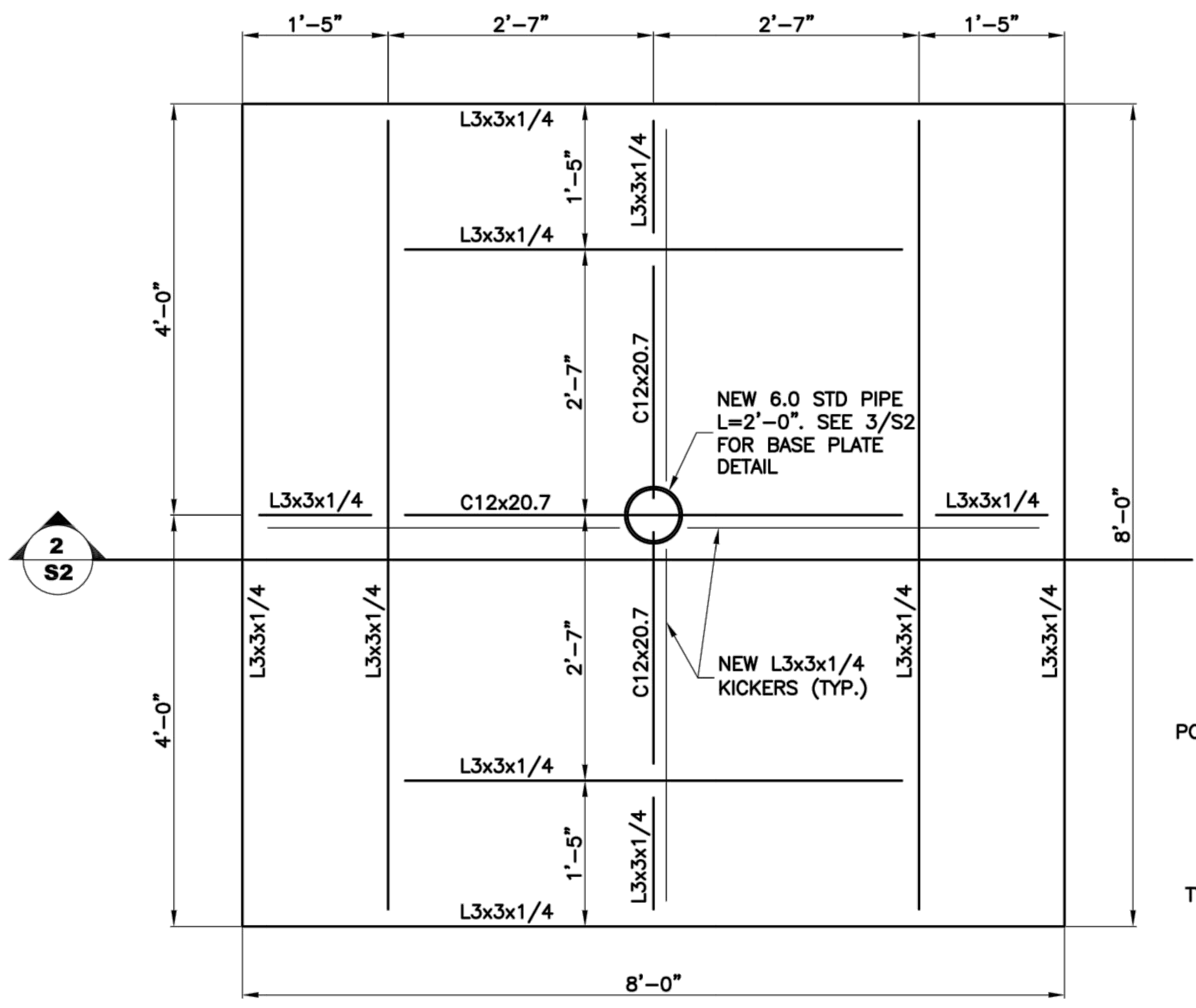
NO.	DATE	REVISIONS	BY	CHK	APP'D
0	08/31/16	ISSUED AS FINAL	JW	NDB	NDB

SCALE: AS SHOWN | DESIGNED BY: NJM | DRAWN BY: JW

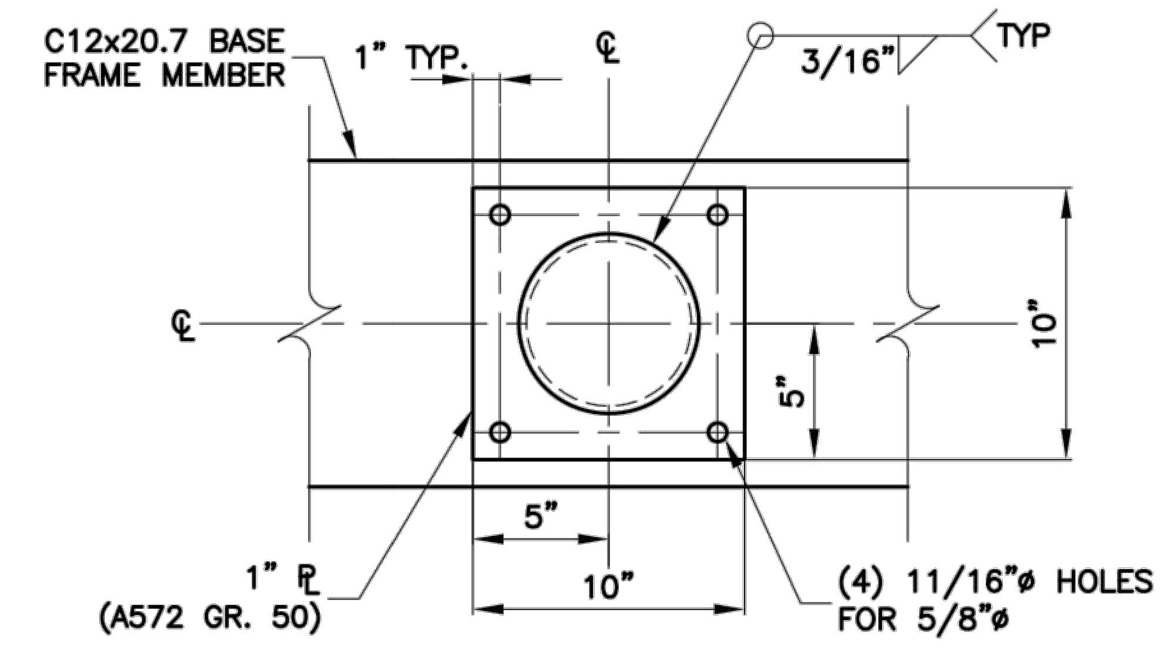
SEAL:
PROFESSIONAL ENGINEER
CT LICENSE NO. 28643

AT&T
DRAWING TITLE:
STRUCTURAL DETAILS

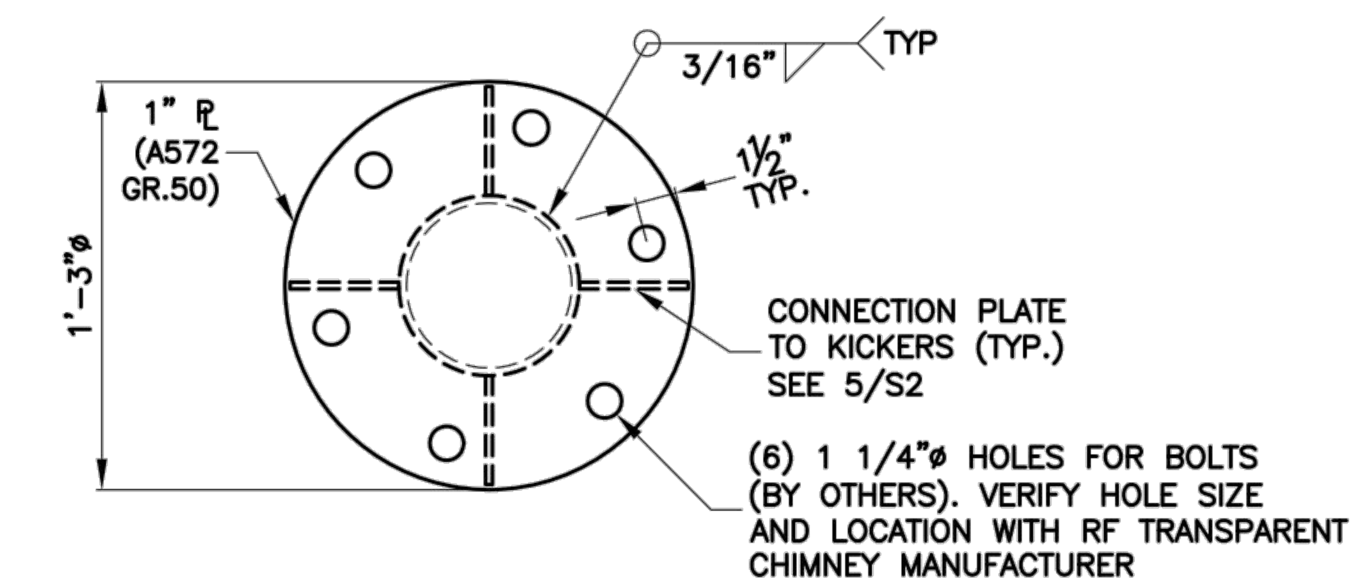
JOB NUMBER	DRAWING NUMBER	REV
15167-EMP	S-1	0



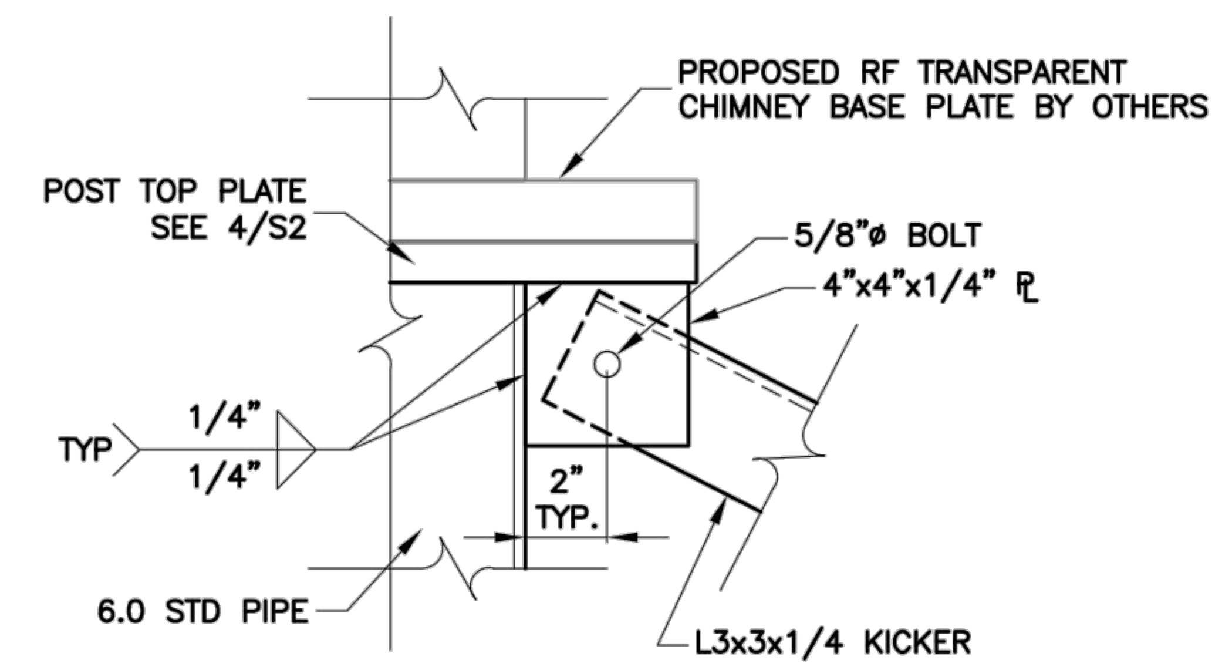
1 S2 **SLED BASE FRAMING PLAN**
1/2" = 1'-0"



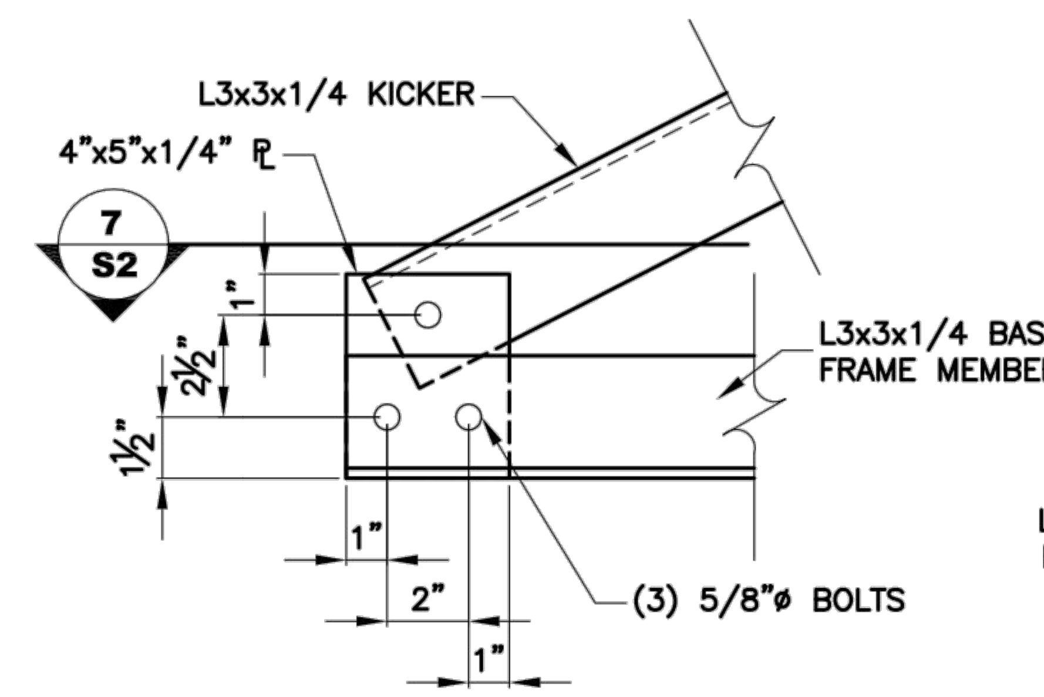
3 S2 **POST BASE PLATE DETAIL**
1" = 1'-0"



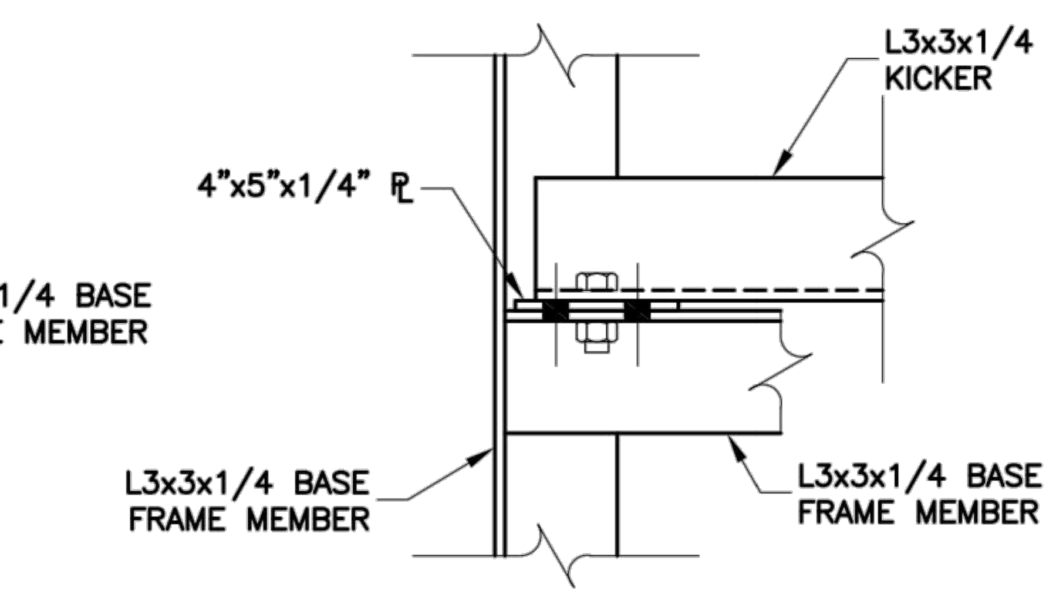
4 S2 **POST TOP PLATE DETAIL**
1" = 1'-0"



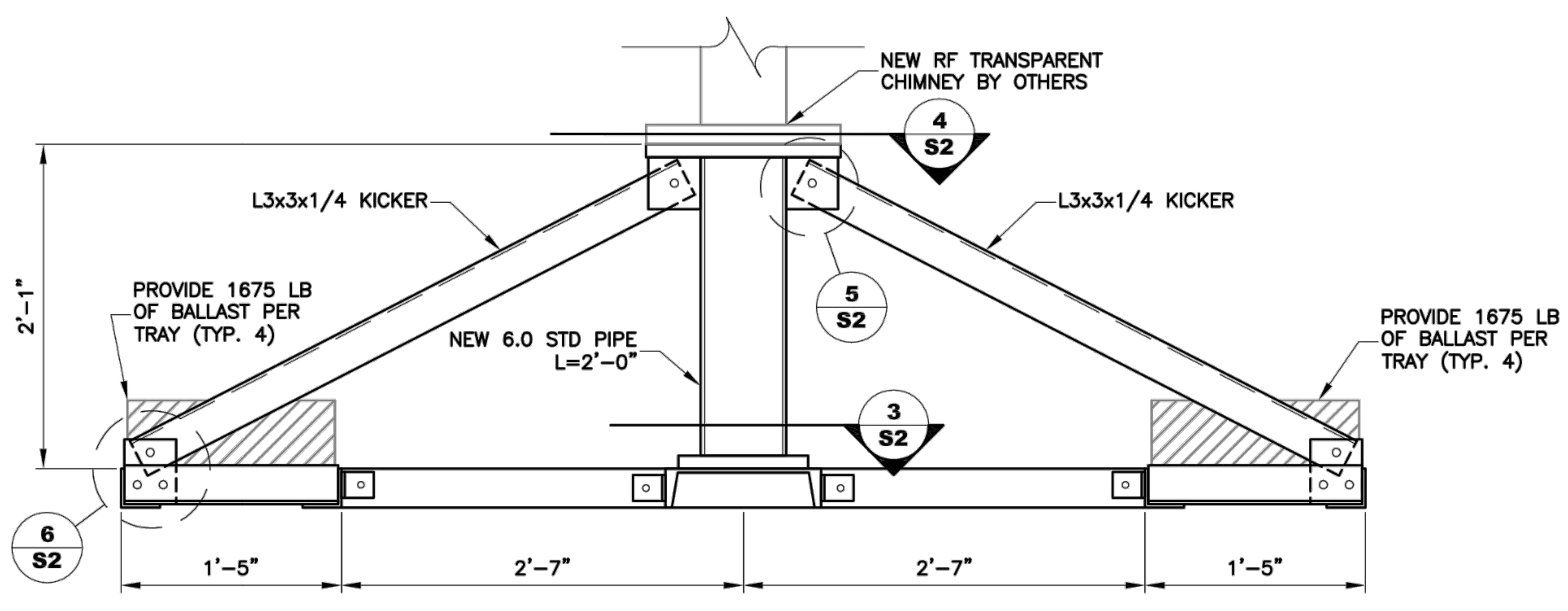
5 S2 **POST-KICKER CONNECTION**
1 1/2" = 1'-0"



6 S2 **POST-KICKER CONNECTION**
1 1/2" = 1'-0"



7 S2 **SECTION**
1 1/2" = 1'-0"



2 S2 **SLED ELEVATION**
3/4" = 1'-0"

DRAWINGS PLOTTED TO SCALE ON 11x17 SHEETS

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FA CODE: 10071305

06-20-2016
Ahmet Colakoglu, PE
CT License No: 27057

DESIGNED: SA
DRAWN: SA
CHECKED: AC
JOB #: 1629072

S2
GAMMA MOUNT DETAILS

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PHONE: 862.209.4300
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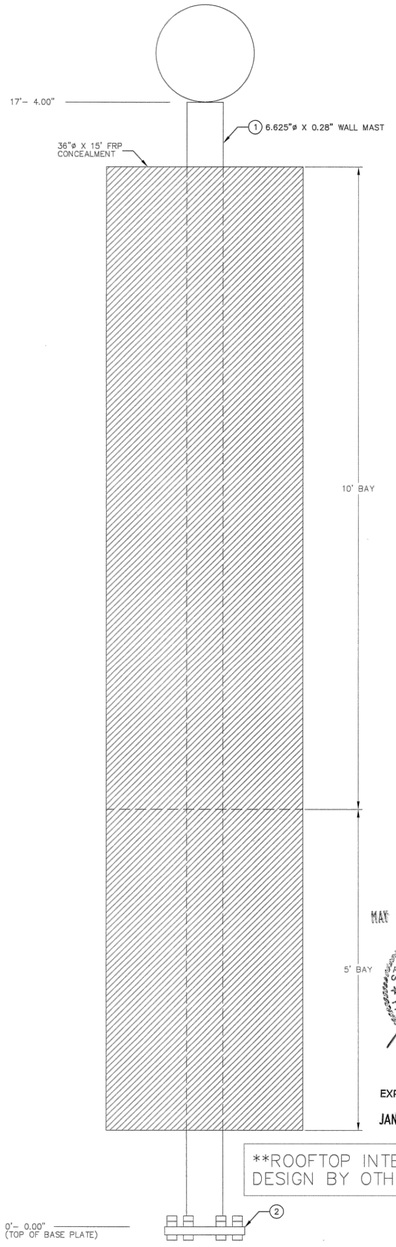
0	08/31/16	ISSUED AS FINAL	JW	NDB	NDB

SCALE: AS SHOWN | DESIGNED BY: NJM | DRAWN BY: JW

SEAL:

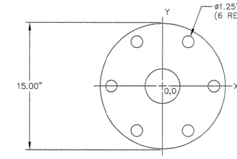
AT&T
DRAWING TITLE: STRUCTURAL DETAILS

JOB NUMBER	DRAWING NUMBER	REV
15167-EMP	S-2	0



ITEM ID	NO. REQD	FEATURES	UNIT WEIGHT(LBS)	WEIGHT (LBS)
1	1	SECTION A 6.625" ø X 0.280" WALL (A53 GR.B)	329	329
	6	1.00" ANCHOR BOLT, F1554 GR55	23	23
2	1	BASE PLATE 1.500" THK (A572 GR50)		
	3	GROUNDING LUG	32	32
		GALVANIZING	9	9
			1	8

HOLE COORDS (INCHES)	
X–COORD	Y–COORD
6.00	0.00
3.00	5.20



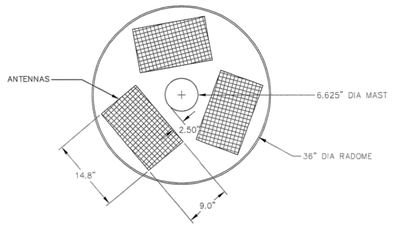
NOTES:
1. BASE PLATE THICKNESS = 1.500"
2. BASE PLATE ALLOWABLE STRESS (KSI) = 50
3. BOLT CIRCLE = 12.00"

BASE PLATE / ANCHORAGE CHARACTERISTICS

NOTES:
1. FACTORED REACTIONS FOR FOUNDATION DESIGN.
   MOMENT = 234 IN–KIPS
   SHEAR = 2,047 #
   VERTICAL = 1,785 #
2. GALVANIZED PER ASTM A–123.
3. DESIGN CRITERIA: ANSI/TIA 222–G ADDENDUM 2
4. THIS STRUCTURE HAS BEEN DESIGNED FOR THE FOLLOWING LOADING:
   EXPOSURE CATEGORY = C
   STRUCTURE CLASSIFICATION = 3
   TOPOGRAPHY CATEGORY = 1
   WIND LOAD CASES ARE BASED ON 3 SECOND GUST AND 100 YEAR WIND RETURN PERIOD
   A. CASE 1: WIND = 120 MPH ULT (93 MPH NOM) WIND SPEED
   B. CASE 2: WIND = 50 MPH ICE AND WIND SPEED
      DESIGN ICE THICKNESS = 0.75 INCH
   C. CASE 3: WIND = 60 MPH WIND SPEED
   D. EQUIPMENT

DESCRIPTION	MTG HT. (FT)	CENT. HT. (FT)	WITHOUT ICE EPA (FT**2)	WITHOUT ICE WT (LBS)	WITH ICE EPA (FT**2)	WITH ICE WT (LBS)
1–GOLD BALL	17.33	17.33	2.00	100	4.00	200
1–15' X 36" DIA CELLSILO	9.00	9.00	27.00	1000	54.00	3000

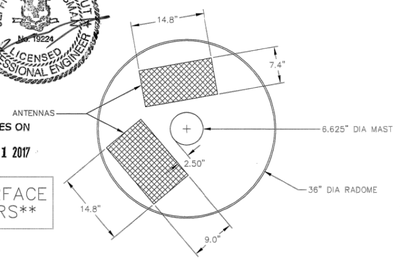
5. FEEDLINES ARE PLACED INTERIOR TO POLE SHAFT (UNLESS NOTED OTHERWISE).
6. ROOF MOUNTED POLE TOP OF BLDG APPROX 38 FT AGL.



PLAN VIEW OF CELLSILO @ 48 FT C.L. AGL

MAY 1 2 2016

EXPIRES ON
JAN 3 1 2017



PLAN VIEW OF CELLSILO @ 42 FT C.L. AGL

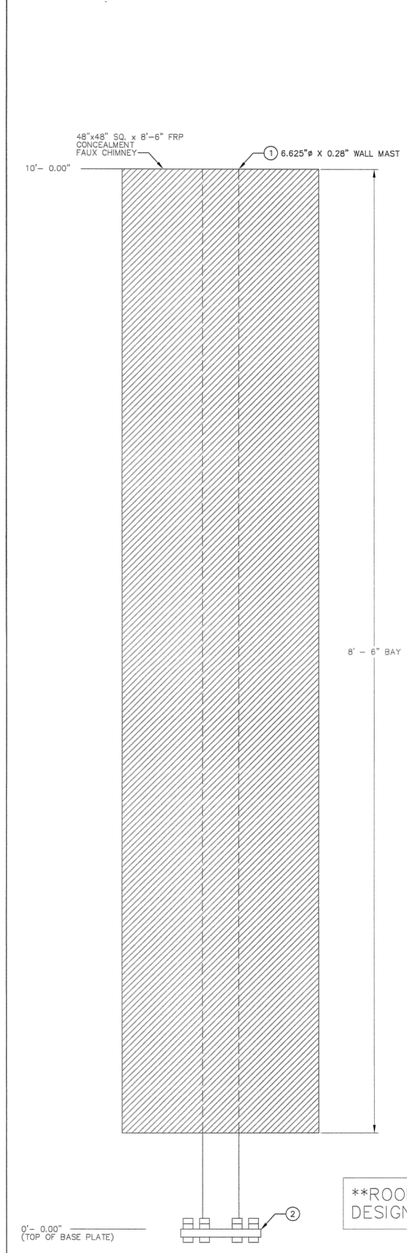
ROOFTOP INTERFACE DESIGN BY OTHERS

SECTION INFORMATION					
ITEM ID	LENGTH	BASE OD	TOP OD	THK	MATL
1	17'– 4.00"	6.63"	6.63"	0.280"	A53 GR.B

ORDER	PROJECT	FILE ID	SCALE	DATE	ENGR
	323406	323406	NONE	04/26/16	DDC/CWB

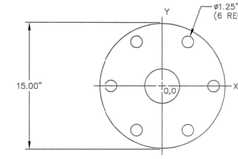
DESCRIPTION: COMEX 17.3' POLE, SITE: WATERBURY WEST, CT–5540 323406

valmont



ITEM ID	NO. REQD	FEATURES	UNIT WEIGHT(LBS)	WEIGHT (LBS)
1	1	SECTION A 6.625" ø X 0.280" WALL (A53 GR.B)	200	200
	6	1.00" ANCHOR BOLT, F1554 GR55	23	23
2	1	BASE PLATE 1.500" THK (A572 GR50)		
	3	GROUNDING LUG	32	32
		GALVANIZING	9	9
			1	8

HOLE COORDS (INCHES)	
X–COORD	Y–COORD
6.00	0.00
3.00	5.20



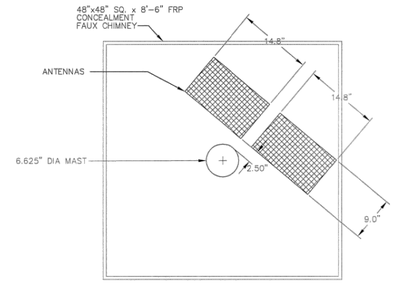
NOTES:
1. BASE PLATE THICKNESS = 1.500"
2. BASE PLATE ALLOWABLE STRESS (KSI) = 50
3. BOLT CIRCLE = 12.00"

BASE PLATE / ANCHORAGE CHARACTERISTICS

NOTES:
1. FACTORED REACTIONS FOR FOUNDATION DESIGN.
   MOMENT = 174 IN–KIPS
   SHEAR = 2,889 #
   VERTICAL = 1,429 #
2. GALVANIZED PER ASTM A–123.
3. DESIGN CRITERIA: ANSI/TIA 222–G ADDENDUM 2
4. THIS STRUCTURE HAS BEEN DESIGNED FOR THE FOLLOWING LOADING:
   EXPOSURE CATEGORY = C
   STRUCTURE CLASSIFICATION = 3
   TOPOGRAPHY CATEGORY = 1
   WIND LOAD CASES ARE BASED ON 3 SECOND GUST AND 100 YEAR WIND RETURN PERIOD
   A. CASE 1: WIND = 120 MPH ULT (93 MPH NOM) WIND SPEED
   B. CASE 2: WIND = 50 MPH ICE AND WIND SPEED
      DESIGN ICE THICKNESS = 0.75 INCH
   C. CASE 3: WIND = 60 MPH WIND SPEED
   D. EQUIPMENT

DESCRIPTION	MTG HT. (FT)	CENT. HT. (FT)	WITHOUT ICE EPA (FT**2) (LBS)	WITHOUT ICE WT (LBS)	WITH ICE EPA (FT**2) (LBS)	WT
1– 8.5' X 48" SQ FAUX CHIMNEY	5.00	5.00	48.00	1000	54.00	3000

5. FEEDLINES ARE PLACED INTERIOR TO POLE SHAFT (UNLESS NOTED OTHERWISE).
6. ROOF MOUNTED POLE TOP OF BLDG APPROX 38 FT AGL.



PLAN VIEW OF FAUX CHIMNEY @ 42 FT C.L. AGL

MAY 1 2 2016

EXPIRES ON
JAN 3 1 2017

ROOFTOP INTERFACE DESIGN BY OTHERS

SECTION INFORMATION					
ITEM ID	LENGTH	BASE OD	TOP OD	THK	MATL
1	10'– 0.00"	6.63"	6.63"	0.280"	A53 GR.B

ORDER	PROJECT	FILE ID	SCALE	DATE	ENGR
	323409	323409	NONE	04/26/16	DDC/CWB

DESCRIPTION: COMEX 10' POLE, SITE: WATERBURY WEST, CT–5540 323409

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COM EX Consultants
115 ROUTE 46
SUITE E39
MOUNTAIN LAKES, NJ 07046
PHONE: 862.209.4300
FAX: 862.209.4301

EMPIRE telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

SITE NUMBER: CT5440

SITE NAME: WATERBURY WEST

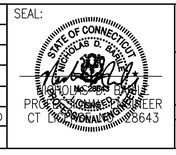
1389 WEST MAIN ST.
WATERBURY, CT 06708
NEW HAVEN COUNTY

at&t MOBILITY
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	08/31/16	ISSUED AS FINAL	JW	NDB	NDB

SCALE: AS SHOWN | DESIGNED BY: NJM | DRAWN BY: JW

SEAL:



AT&T

DRAWING TITLE:
POLE DRAWINGS BY MANUFACTURER

JOB NUMBER	DRAWING NUMBER	REV
15167–EMP	S–3	0