



April 11, 2018

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

Regarding: Notice of Exempt Modification – Addition of (3) new antennas and (6) remote radio units

Property Address: 219 Nells Rock Road, Shelton, CT (the “Property”, AT&T Site # CT2113)

Applicant: AT&T Mobility (“AT&T”)

Dear Ms. Bachman:

AT&T currently maintains a wireless telecommunications facility on an existing 162.5 foot, Lattice Tower (“tower”) at the above-referenced address, latitude 41.30416667, longitude -73.11833333. AT&T’s facility consists of nine (9) wireless telecommunications antennas at 162 feet. The tower is controlled and owned by AT&T. Assessor’s information is attached hereto.

AT&T desires to modify its existing telecommunications facility by adding three (3) new antennas and six (6) remote radios heads. The centerline height of said antennas is and will remain at 162 feet.

Please accept this application as notification pursuant to R.C.S.A. § 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 the Mayor of the City of Shelton, the Building Official of the City of Shelton, and the Planning & Zoning Administrator of the City of Shelton.

The planned modifications to AT&T’s facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

1. The planned modifications will not result in an increase in the height of the existing structure. AT&T’s antennas and associated lines will be installed at 162 foot level of the 162.5 foot tower.
2. The proposed modifications will not involve any changes to ground-mounted equipment and, therefore will not require an extension of the site boundary.
3. The proposed modification will not increase the noise level at the facility by six decibel or more, or to levels that exceed state and local criteria.



4. The operation of the modified facility will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. An RF emissions calculation is attached.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The tower and its foundation can support AT&T's proposed modifications. (Please see attached Structural Analysis completed by GPD Engineering dated March 2, 2018).

For the foregoing reasons AT&T respectfully requests that the proposed addition of antennas and remote radio heads be allowed within the exempt modifications under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Nicole Caplan
Site Acquisition Specialist
Empire Telecom

CC: The Honorable Mark A. Lauretti, Mayor, City of Shelton
Joseph Ballaro, Building Official, City of Shelton
Rick Schultz, AICP, Planning & Zoning Administrator, City of Shelton

16 Esquire Road, Billerica, MA 01862 Phone 978-284-3906 Email: ncaplan@empiretelecomm.com

City of Shelton

Geographic Information System (GIS)

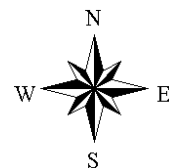


Date Printed: 4/11/2018



MAP DISCLAIMER - NOTICE OF LIABILITY

This map is for assessment purposes only. It is not for legal description or conveyances. All information is subject to verification by any user. The City of Shelton and its mapping contractors assume no legal responsibility for the information contained herein.





WIRELESS COMMUNICATIONS FACILITY CT2113 - LTE 4C/5C/6C FIRSTNET SHELTON EAST CENTRAL 219 NELLS ROCK ROAD SHELTON, CT 06484

GENERAL NOTES

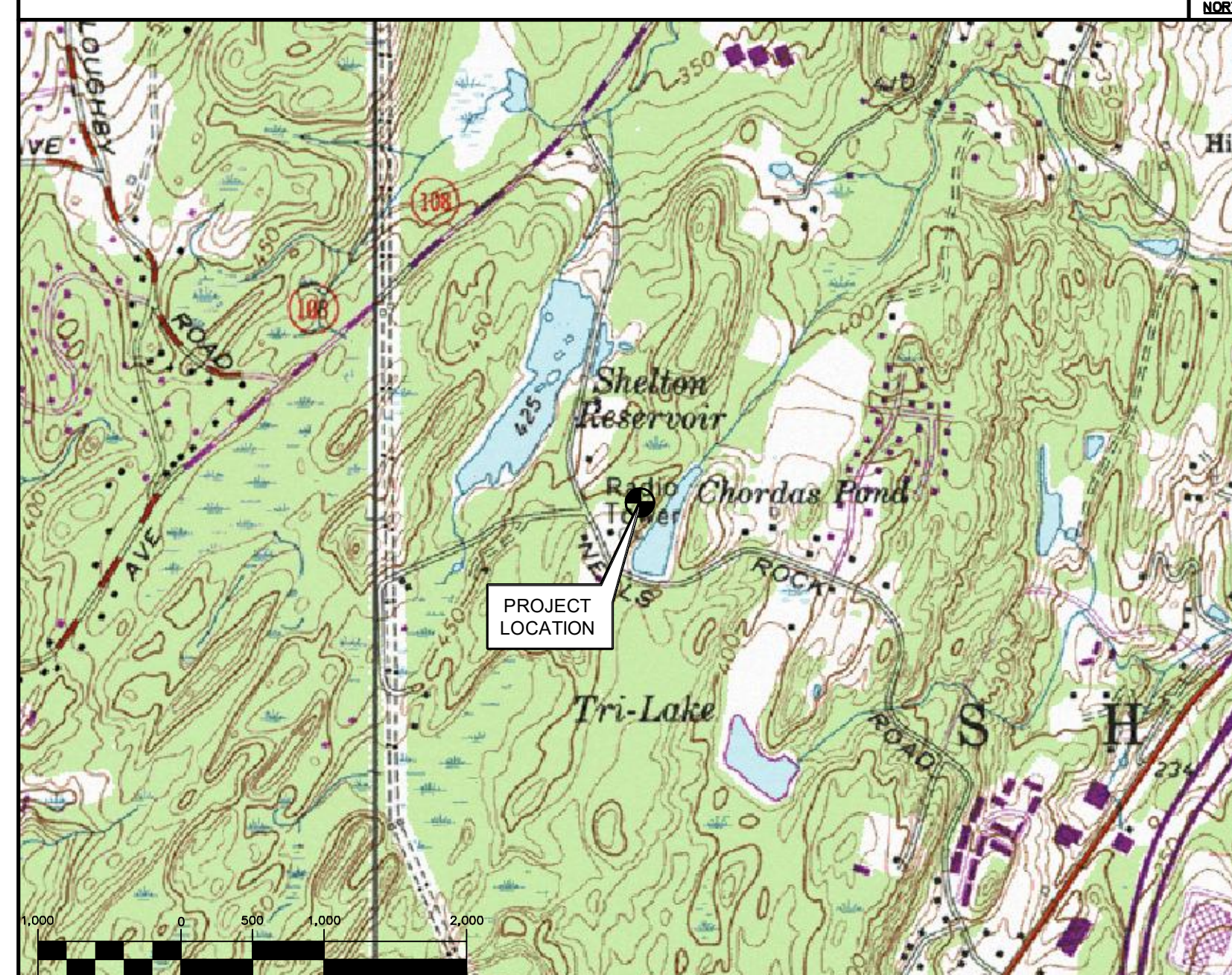
1. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2012 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2016 CONNECTICUT STATE BUILDING CODE, INCLUDING THE TIA-222 REVISION "G" STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES, 2016 CONNECTICUT FIRE SAFETY CODE AND, NATIONAL ELECTRICAL CODE AND LOCAL CODES.
2. THE COMPOUND, TOWER, PRIMARY GROUND RING, ELECTRICAL SERVICE TO THE METER BANK AND TELEPHONE SERVICE TO THE DEMARCATION POINT ARE PROVIDED BY SITE OWNER. AS BUILT FIELD CONDITIONS REGARDING THESE ITEMS SHALL BE CONFIRMED BY THE CONTRACTOR. SHOULD ANY FIELD CONDITIONS PRECLUDE COMPLIANCE WITH THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL NOT PROCEED WITH ANY AFFECTED WORK.
3. CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT DOCUMENT SET. CONTRACTOR SHALL COORDINATE ALL WORK SHOWN IN THE SET OF DRAWINGS. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF DRAWINGS TO ALL SUBCONTRACTORS AND ALL RELATED PARTIES. THE SUBCONTRACTORS SHALL EXAMINE ALL THE DRAWINGS AND SPECIFICATIONS FOR THE INFORMATION THAT AFFECTS THEIR WORK.
4. CONTRACTOR SHALL PROVIDE A COMPLETE BUILD-OUT WITH ALL FINISHES, STRUCTURAL, MECHANICAL, AND ELECTRICAL COMPONENTS AND PROVIDE ALL ITEMS AS SHOWN OR INDICATED ON THE DRAWINGS OR IN THE WRITTEN SPECIFICATIONS.
5. CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR AND EQUIPMENT TO COMPLETE THE WORK AND FURNISH A COMPLETED JOB ALL IN ACCORDANCE WITH LOCAL AND STATE GOVERNING AUTHORITIES AND OTHER AUTHORITIES HAVING LAWFUL JURISDICTION OVER THE WORK.
6. CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS AND ALL INSPECTIONS REQUIRED AND SHALL ALSO PAY FEES REQUIRED FOR THE GENERAL CONSTRUCTION, PLUMBING, ELECTRICAL AND HVAC. PERMITS SHALL BE PAID FOR BY THE RESPECTIVE SUBCONTRACTORS.
7. CONTRACTOR SHALL MAINTAIN A CURRENT SET OF DRAWINGS AND SPECIFICATIONS ON SITE AT ALL TIMES AND INSURE DISTRIBUTION OF NEW DRAWINGS TO SUBCONTRACTORS AND OTHER RELEVANT PARTIES AS SOON AS THEY ARE MADE AVAILABLE. ALL OLD DRAWINGS SHALL BE MARKED VOID AND REMOVED FROM THE CONTRACT AREA. THE CONTRACTOR SHALL FURNISH AN "AS-BUILT" SET OF DRAWINGS TO OWNER UPON COMPLETION OF PROJECT.
8. LOCATION OF EQUIPMENT, AND WORK SUPPLIED BY OTHERS THAT IS DIAGRAMMATICALLY INDICATED ON THE DRAWINGS SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR SHALL DETERMINE LOCATIONS AND DIMENSIONS SUBJECT TO STRUCTURAL CONDITIONS AND WORK OF THE SUBCONTRACTORS.
9. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY. MAINTAIN EXISTING BUILDING'S/PROPERTY'S OPERATIONS, COORDINATE WORK WITH BUILDING/PROPERTY OWNER.
10. DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
11. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
12. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUBCONTRACTORS FOR ANY CONDITION PER MFR.'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
13. ANY AND ALL ERRORS, DISCREPANCIES, AND "MISSED" ITEMS ARE TO BE BROUGHT TO THE ATTENTION OF THE AT&T CONSTRUCTION MANAGER DURING THE BIDDING PROCESS BY THE CONTRACTOR. ALL THESE ITEMS ARE TO BE INCLUDED IN THE BID. NO "EXTRA" WILL BE ALLOWED FOR MISSED ITEMS.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON-SITE SAFETY FROM THE TIME THE JOB IS AWARDED UNTIL ALL WORK IS COMPLETE AND ACCEPTED BY THE OWNER.
15. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE CONSTRUCTION MANAGER FOR REVIEW.
16. THE 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.
17. COORDINATION, LAYOUT, FURNISHING AND INSTALLATION OF CONDUIT AND ALL APPURTENANCES REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
18. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUB-CONTRACTORS FOR ANY CONDITION PER THE MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
19. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.
20. THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" AT LEAST 48 HOURS PRIOR TO ANY EXCAVATIONS AT 1-800-922-4455. ALL UTILITIES SHALL BE IDENTIFIED AND CLEARLY MARKED PRIOR TO ANY EXCAVATION WORK. CONTRACTOR SHALL MAINTAIN AND PROTECT MARKED UTILITIES THROUGHOUT PROJECT COMPLETION.
21. CONTRACTOR SHALL COMPLY WITH OWNERS ENVIRONMENTAL ENGINEER ON ALL METHODS AND PROVISIONS FOR ALL EXCAVATION ACTIVITIES INCLUDING SOIL DISPOSAL. ALL BACKFILL MATERIALS TO BE PROVIDED BY THE CONTRACTOR.

SITE DIRECTIONS

FROM:	TO:
500 ENTERPRISE DRIVE ROCKY HILL, CONNECTICUT	219 NELLS ROCK ROAD SHELTON, CONNECTICUT
1. TURN LEFT ONTO CAPITAL BLVD.	0.36 MI
2. TURN LEFT ONTO WEST ST.	0.27 MI
3. TURN LEFT TO MERGE ONTO I-91 S TOWARD NEW HAVEN.	0.30 MI
4. MERGE ONTO CT-15 S/WILBUR CROSS PKWY S VIA EXIT 17 TOWARD E MAIN ST.	9.59 MI
5. MERGE ONTO CT-34 W VIA EXIT 58 TOWARD DERBY.	21.86 MI
6. TURN LEFT ONTO MAIN ST/CT-34.	3.17 MI
7. MERGE ONTO CT-9 S VIA THE RAMP ON THE LEFT TOWARD BRIDGEPORT.	0.20 MI
8. TAKE THE BRIDGEPORT AVENUE EXIT, EXIT 13.	1.37 MI
9. KEEP LEFT TO TAKE THE BRIDGEPORT AVE RAMP.	0.22 MI
10. TURN LEFT ONTO BRIDGEPORT AVE.	0.03 MI
11. TURN RIGHT ONTO NELLS ROCK RD.	0.59 MI
12. 219 NELLS ROCK RD, SHELTON, CT 06484-3831, 219 NELLS ROCK RD IS ON THE RIGHT.	1.04 MI

VICINITY MAP

SCALE: 1" = 1000'



PROJECT SUMMARY

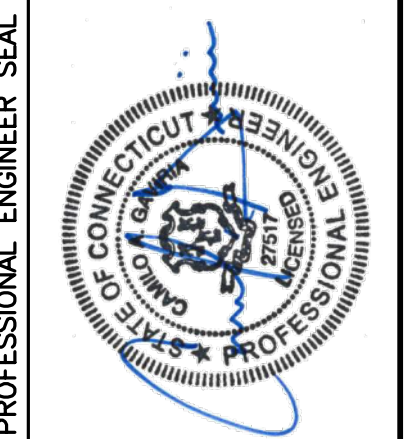
1. THE PROPOSED SCOPE OF WORK CONSISTS OF A MODIFICATION TO THE EXISTING UNMANNED TELECOMMUNICATIONS FACILITY INCLUDING THE FOLLOWING:
 - A. AT ANTENNA SECTORS:
 - INSTALL KATHREIN ANTENNA AT POS. 2. (TOTAL OF 3)
 - INSTALL (1) DC SQUID.
 - INSTALL RRUS-32 B66 AT POS. 2. (TOTAL OF 3)
 - INSTALL B14-4478 AT POS. 2. (TOTAL OF 3)
 - B. AT THE EQUIPMENT SHELTER
 - IN LTE RACK, REPLACE DUS WITH 5216.
 - IN LTE RACK, ADD 2ND XMU AND 2ND 5216+IDLe.
 - INSTALL RRUS-12 ONTO EXISTING RACK. (TOTAL OF 3)
 - INSTALL (6) SURGE ARRESTORS (APTDC-BDFDM-DB)

PROJECT INFORMATION

AT&T SITE NUMBER:	CT2113
AT&T SITE NAME:	SHELTON EAST CENTRAL
SITE ADDRESS:	219 NELLS ROCK ROAD SHELTON, CT 06484
LESSEE/APPLICANT:	AT&T MOBILITY 500 ENTERPRISE DRIVE, SUITE 3A ROCKY HILL, CT 06067
AT&T PACE ID NUMBER:	PACE JOB 1 - MRCTB025341 PACE JOB 2 - MRCTB025287
AT&T FA LOCATION CODE:	10034975
ENGINEER:	CENITEK ENGINEERING, INC. 63-2 NORTH BRANFORD RD. BRANFORD, CT 06405
PROJECT COORDINATES:	LATITUDE: 41°-18'-15.11" N LONGITUDE: 73°-07'-06.04" W GROUND ELEVATION: ±456' AMSL SITE COORDINATES AND GROUND ELEVATION REFERENCED FROM GOOGLE EARTH.

SHEET INDEX

SHT. NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	0
N-1	NOTES, SPECIFICATIONS AND ANTENNA SCHEDULE	0
C-1	PLANS AND ELEVATION	0
C-2	ANTENNA CONFIGURATION DETAILS	0
C-3	DETAILS	0
C-4	DETAILS	0
E-1	SCHEMATIC DIAGRAM AND NOTES	0
E-2	WIRING DIAGRAM	0
E-3	TYPICAL ELECTRICAL DETAILS	0

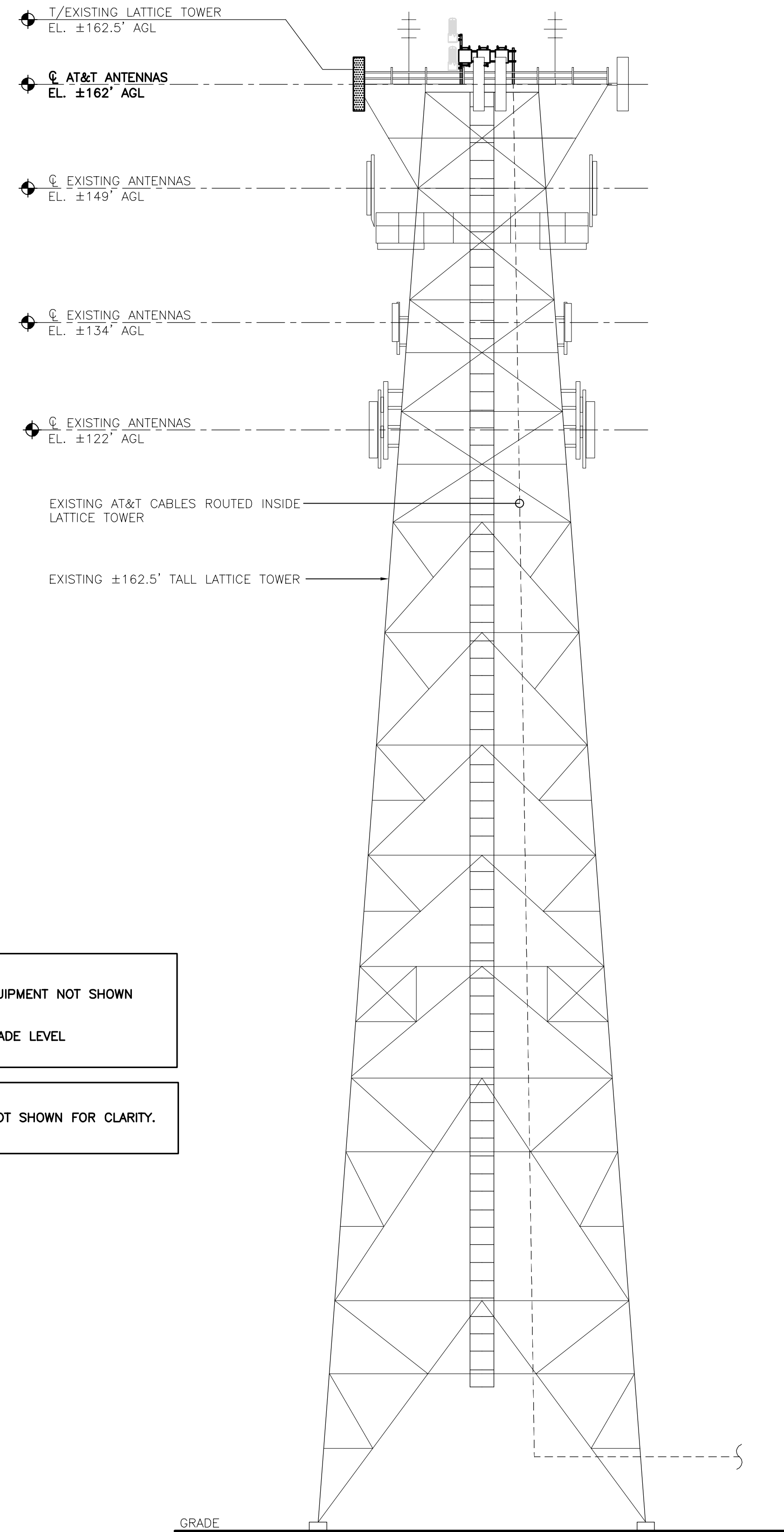


AT&T MOBILITY
 WIRELESS COMMUNICATIONS FACILITY
SHELTON EAST CENTRAL
 CT2113 - LTE 4C/5C/6C FIRSTNET
 219 NELLS ROCK ROAD
 SHELTON, CT 06484

DATE: 03/26/18
SCALE: AS NOTED
JOB NO. 18000.12

TITLE SHEET

T-1

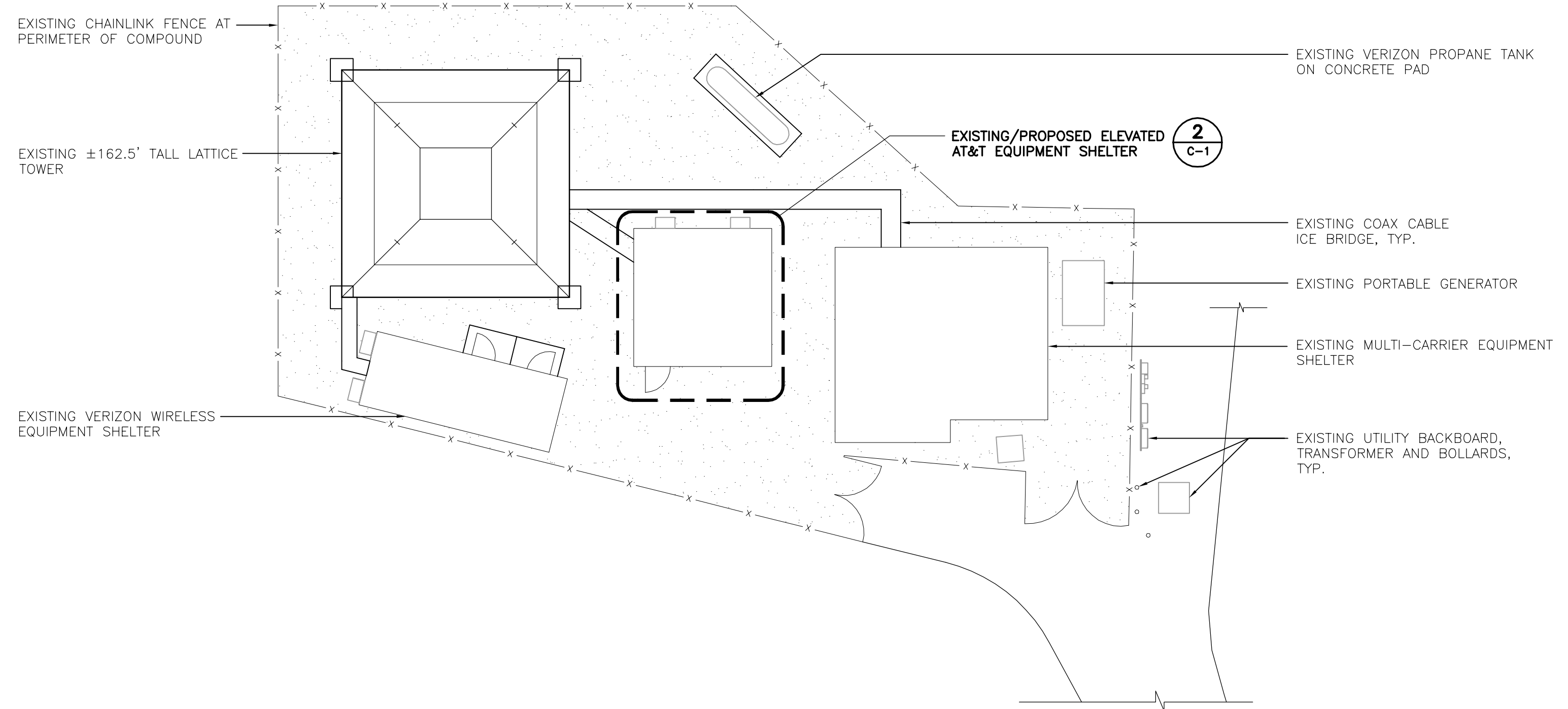


NOTES:

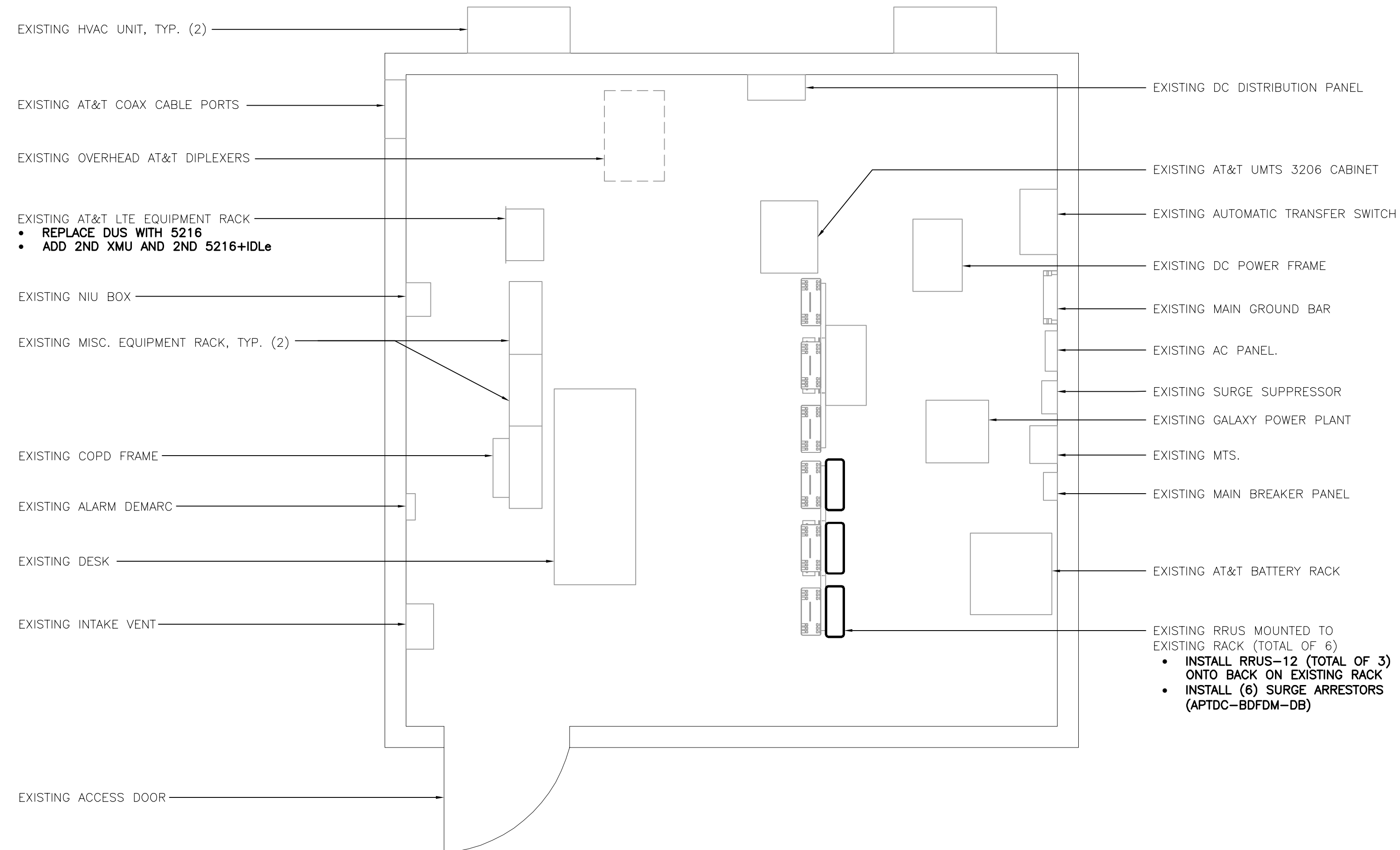
- OTHER CARRIER EQUIPMENT NOT SHOWN FOR CLARITY
- A.G.L. = ABOVE GRADE LEVEL

NOTE:
GROUND EQUIPMENT NOT SHOWN FOR CLARITY.

3 TOWER ELEVATION - PROPOSED
SCALE: 1" = 10'
GRAPHIC SCALE
(IN FEET)
1 inch = 10 ft.

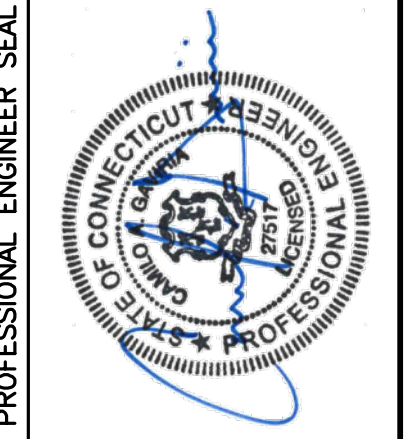


1 PARTIAL SITE PLAN
SCALE: 1" = 15'
TRUE NORTH
GRAPHIC SCALE
(IN FEET)
1 inch = 15 ft.



2 PROPOSED EQUIPMENT LAYOUT PLAN
SCALE: 3/8" = 1'-0"
TRUE NORTH

REV.	DATE	TJR	DND	CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION
0	04/11/18			DRAWN BY/CHKD BY/DESCRIPTION



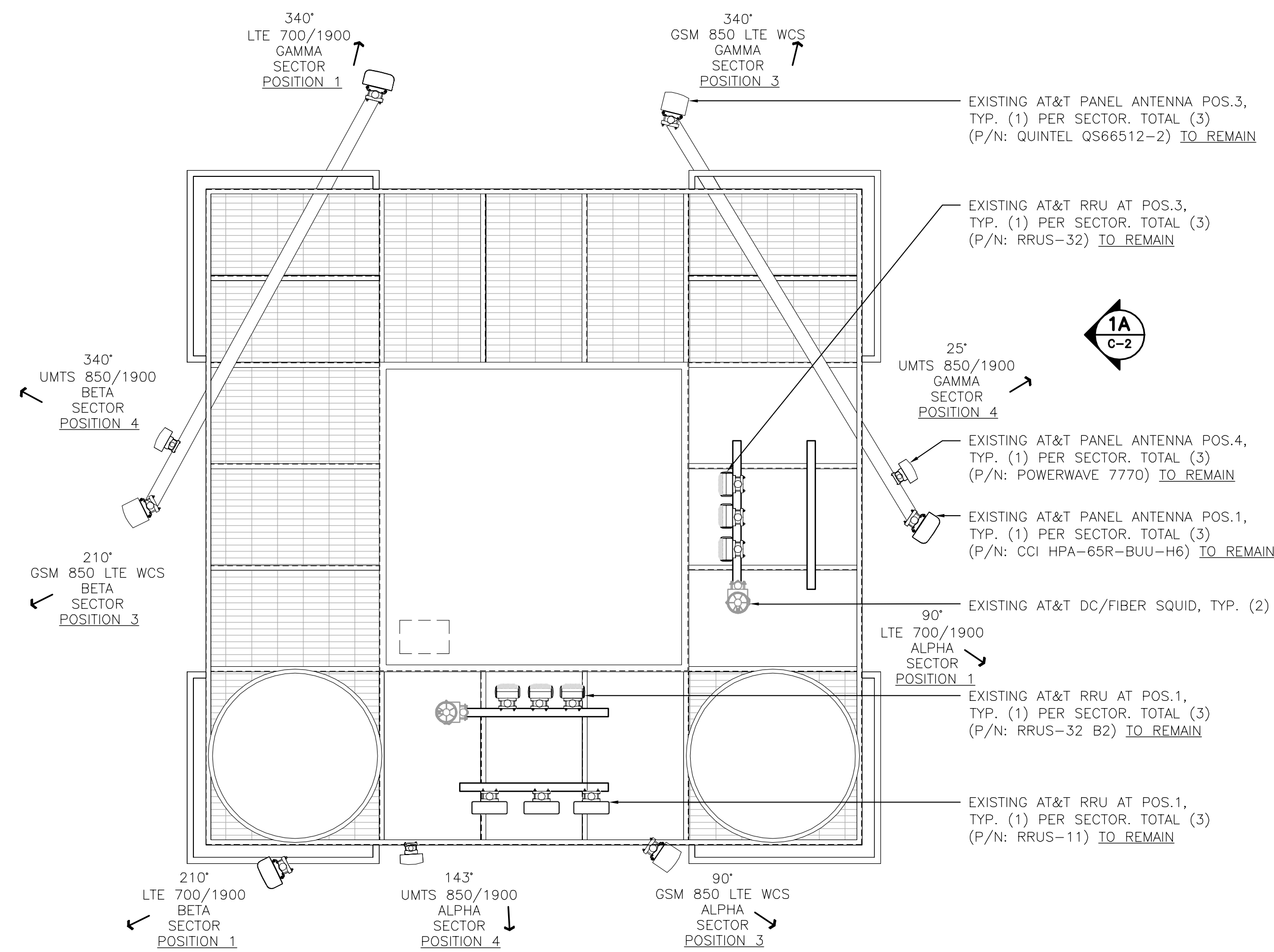
CEN TEK engineering
Centered on Solutions
(203) 488-0580
(203) 488-0587 Fax
682 North Branch Road
Branford, CT 06403
www.CentekEng.com

AT&T MOBILITY
WIRELESS COMMUNICATIONS FACILITY
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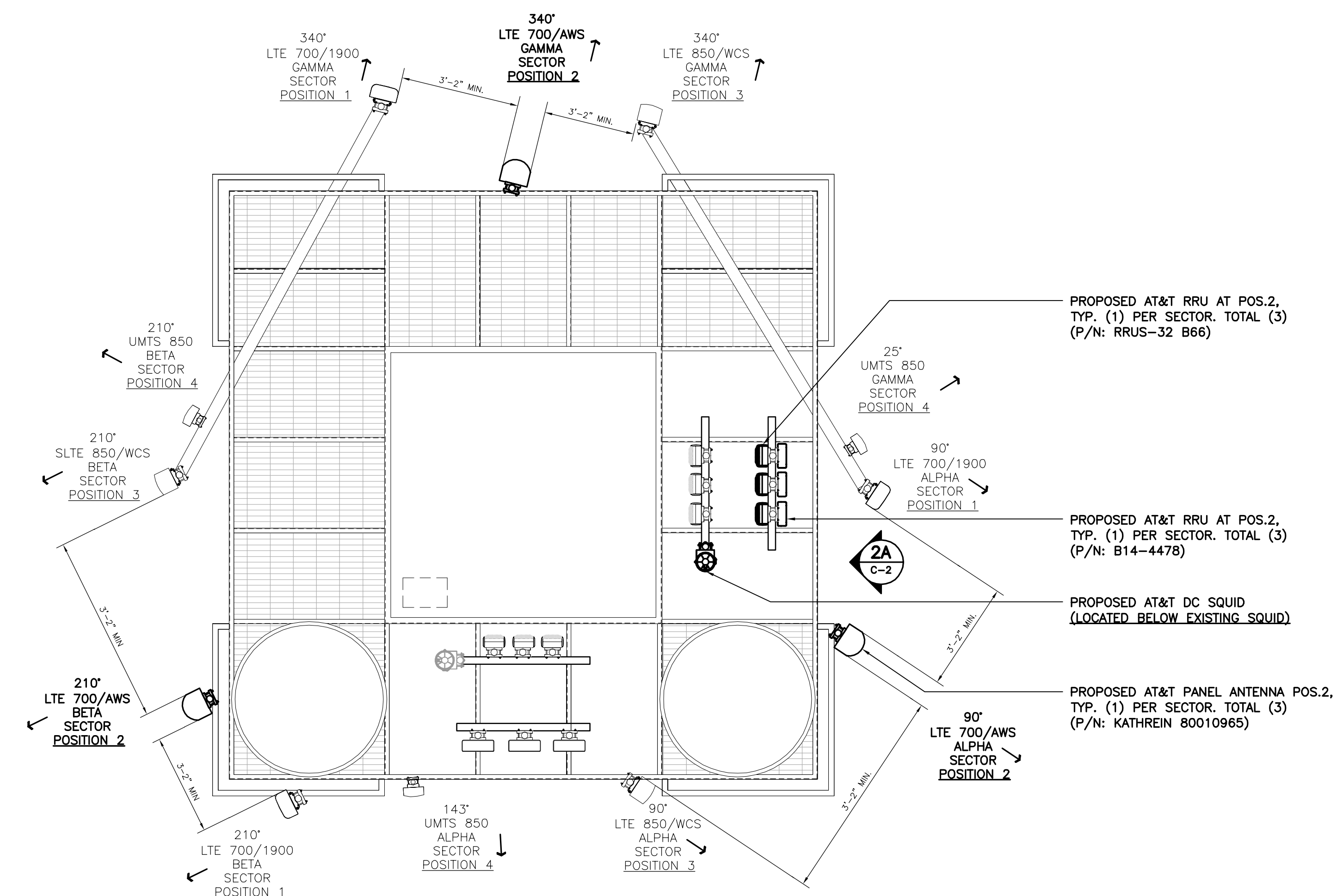
DATE: 03/26/18
SCALE: AS NOTED
JOB NO. 18000.12

PLANS AND ELEVATION

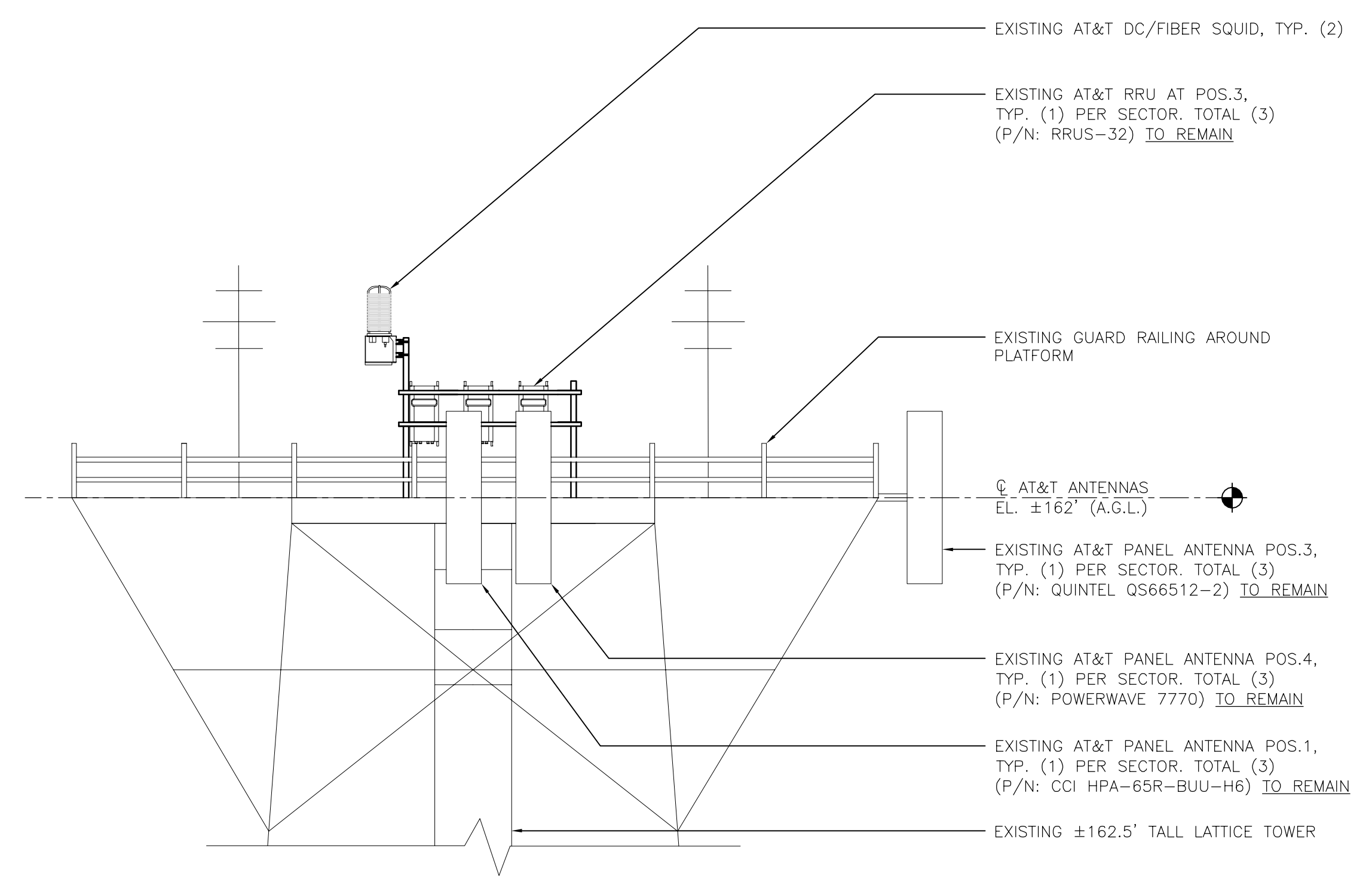
C-1
Sheet No. 3 of 9



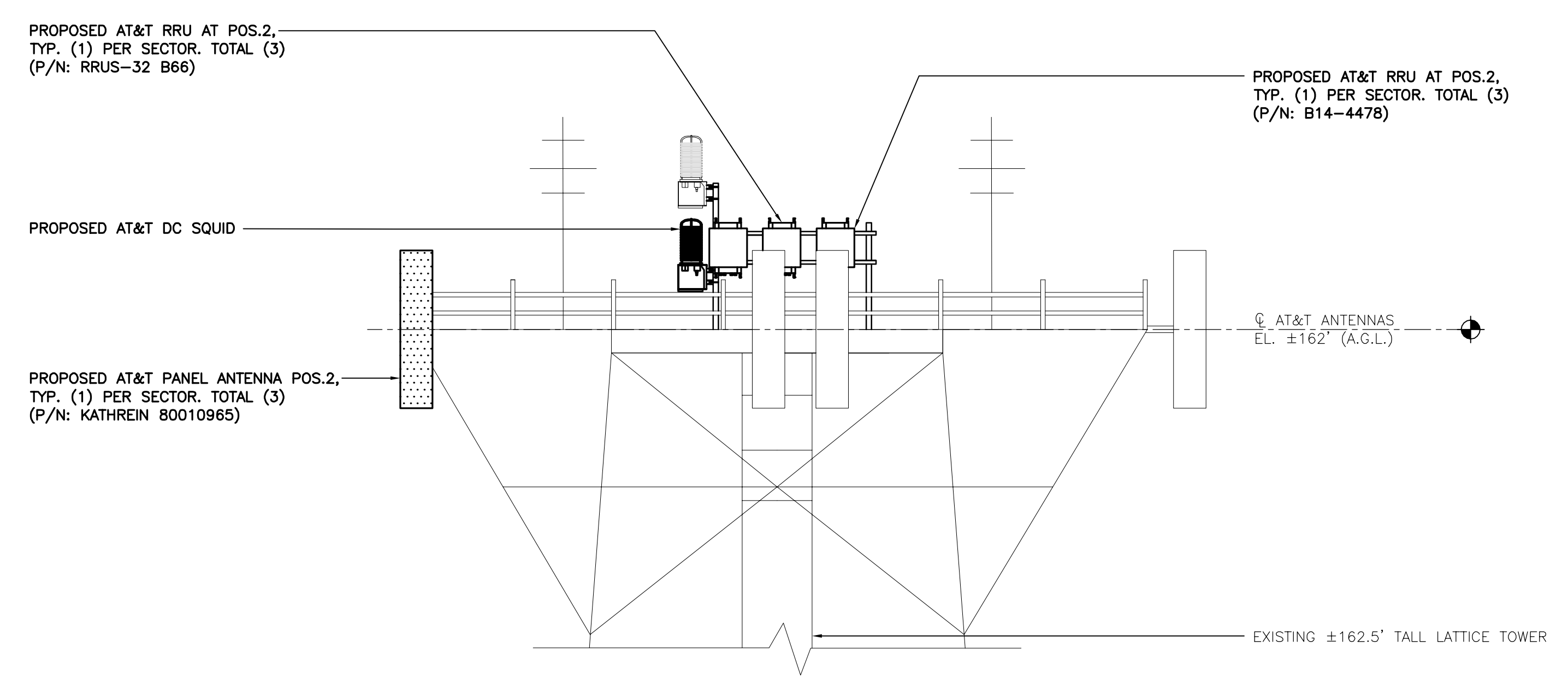
1 EXISTING ANTENNA PLAN
 C-2 SCALE: 1/4" = 1'-0" APPROX. NORTH



2 PROPOSED ANTENNA PLAN
 C-2 SCALE: 1/4" = 1'-0" APPROX. NORTH

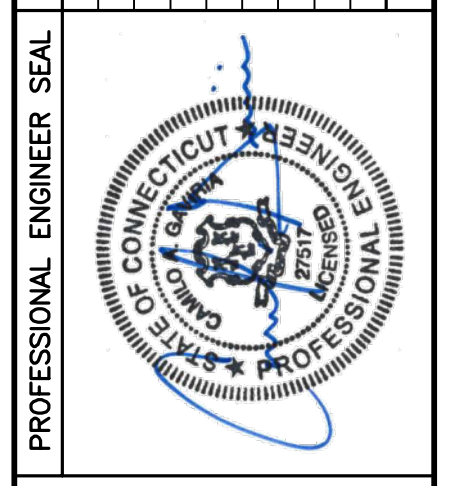


1A EXISTING ANTENNA ELEVATION
 C-2 SCALE: 1/4" = 1'-0"



2A PROPOSED ANTENNA ELEVATION
 C-2 SCALE: 1/4" = 1'-0"

REV	0	DATE	04/11/18	TJR	DND	CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION
REV		DATE		TJR		DRAWN BY/CHKD BY/DESCRIPTION

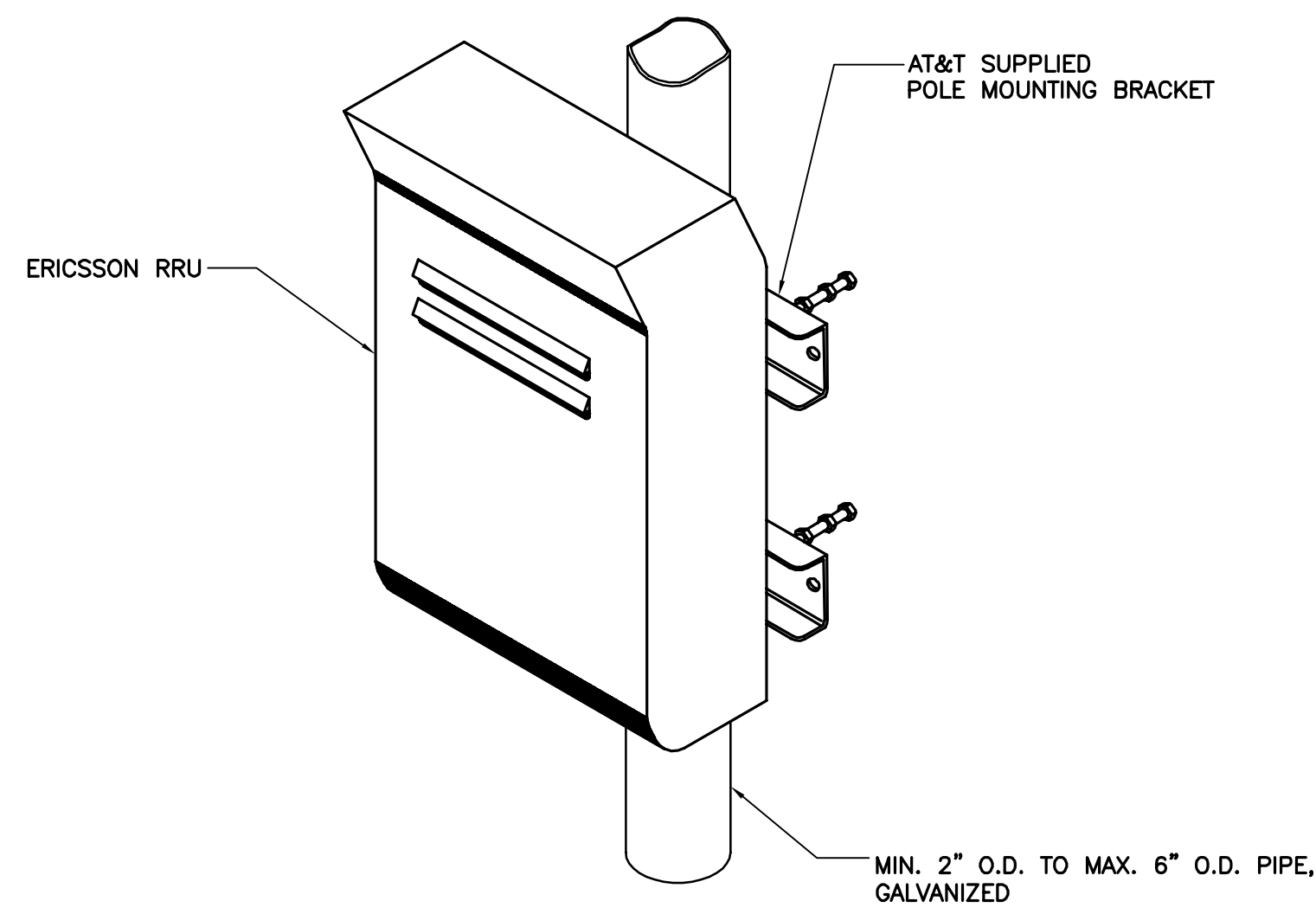


CEN TEK engineering
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 Branford, CT 06405
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 WIRELESS COMMUNICATIONS FACILITY
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 219 NELLIS ROCK ROAD
 SHELTON, CT 06484

DATE: 03/26/18
 SCALE: AS NOTED
 JOB NO. 18000.12

ANTENNA CONFIGURATION DETAILS

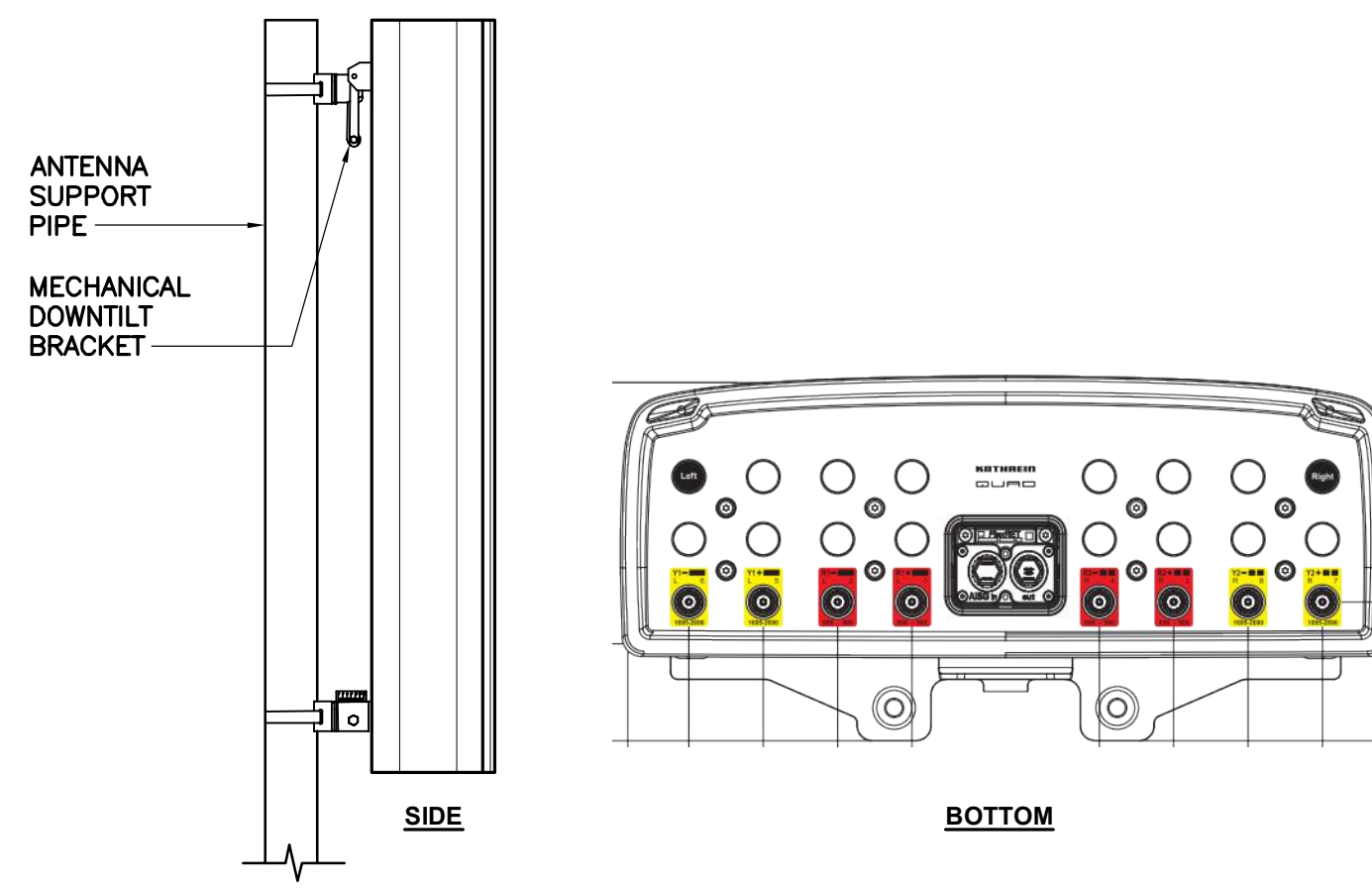


ISOMETRIC VIEW

NOTES:

- AT&T SHALL SUPPLY RRU, AND RRU POLE-MOUNTING BRACKET. CONTRACTOR SHALL SUPPLY POLE/PIPE AND INSTALL ALL MOUNTING HARDWARE INCLUDING ERICSSON RRU POLE-MOUNTING BRACKET. CONTRACTOR SHALL INSTALLS RRU AND MAKES CABLE TERMINATIONS.
- NO PAINTING OF THE RRU OR SOLAR SHIELD IS ALLOWED.

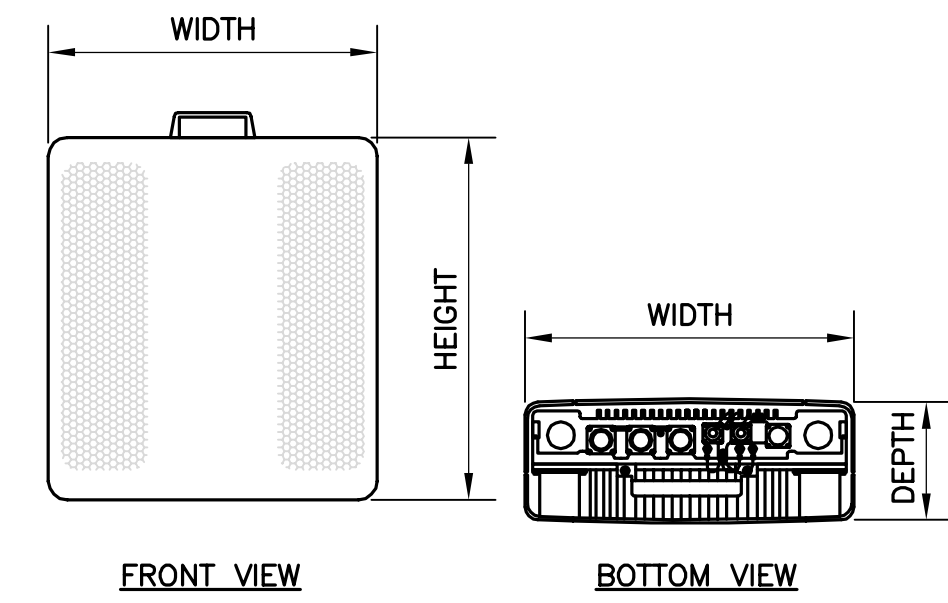
1 TYPICAL RRUS MOUNTING DETAILS
C-3 NOT TO SCALE



BOTTOM

ALPHA/BETA/GAMMA ANTENNA		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: KATHREIN MODEL: 80010965	78.7"L x 20"W x 6.9"D	108.6 LBS.

2 PROPOSED ANTENNA DETAIL
C-3 NOT TO SCALE



RRU (REMOTE RADIO UNIT)			
EQUIPMENT	DIMENSIONS	WEIGHT	CLEARANCES
MAKE: ERICSSON MODEL: RRUS 12	20.4"L x 18.5"W x 7.5"D	50 LBS.	ABOVE: 16" MIN. BELOW: 12" MIN. FRONT: 36" MIN.

NOTES:
1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.

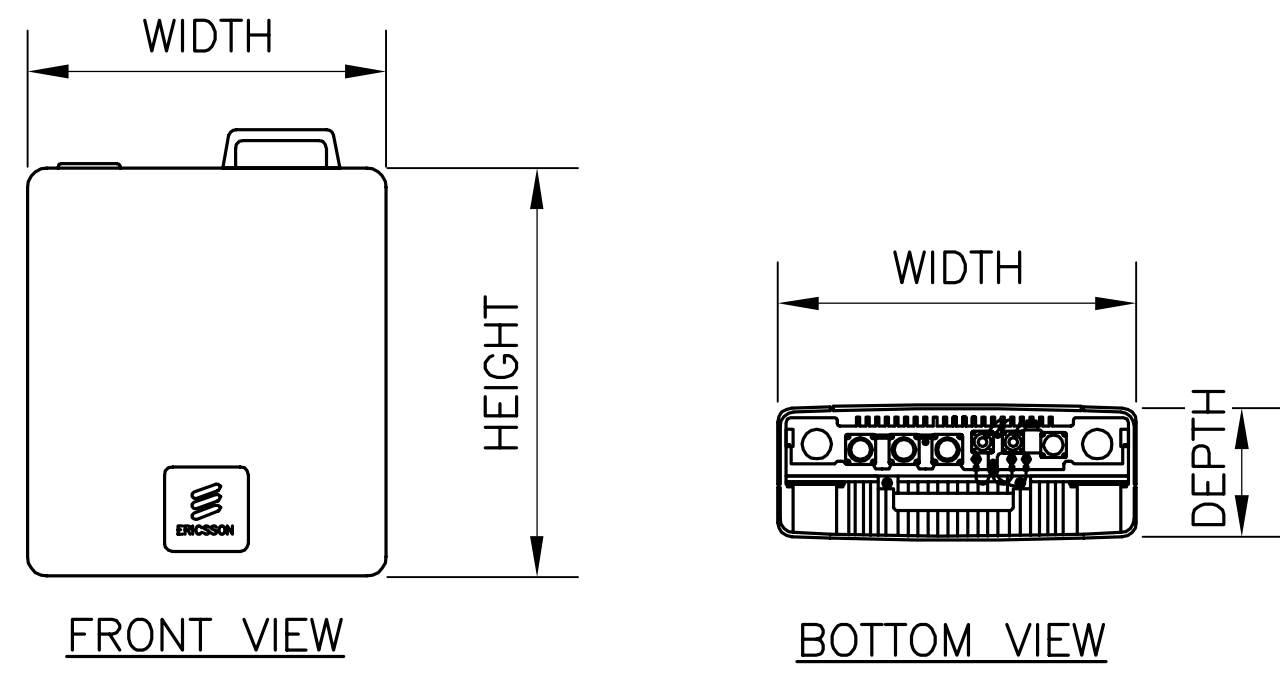
3 ERICSSON RRUS 12 DETAIL
C-3 NOT TO SCALE



SURGE ARESSTOR		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: ANDREW MODEL: APTDC-BDFDM-DB	3.46"H x 3.46"W x 1.65"D	1.32 LBS.

NOTES:
1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.

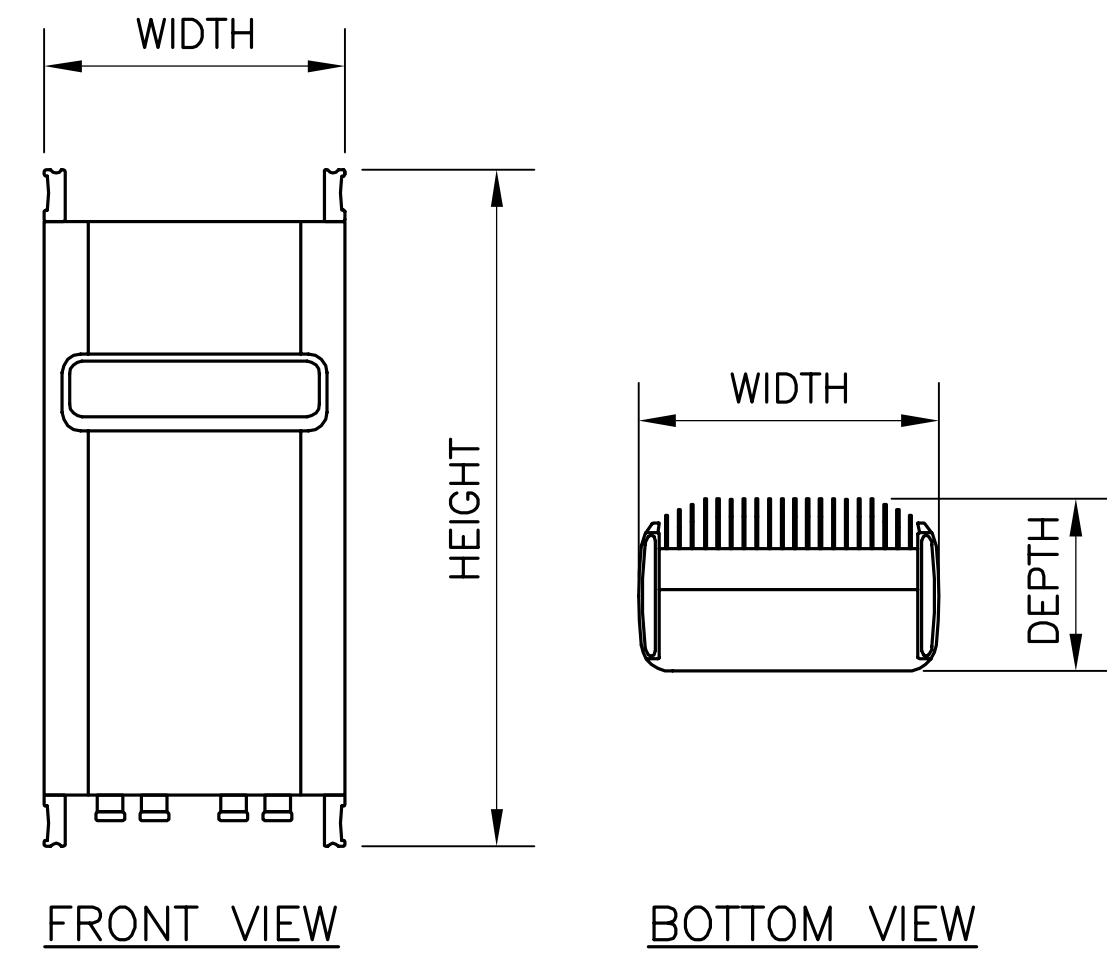
4 ANDREW APTDC-BDFDM-DB DETAIL
C-3 NOT TO SCALE



RRU (REMOTE RADIO UNIT)			
EQUIPMENT	DIMENSIONS	WEIGHT	CLEARANCES
MAKE: ERICSSON MODEL: B14 4478	14.9"L x 13.1"W x 7.3"D	60 LBS.	ABOVE: 16" MIN. BELOW: 12" MIN. FRONT: 36" MIN.

NOTES:
1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.

5 ERICSSON B14 4478 DETAIL
C-3 NOT TO SCALE

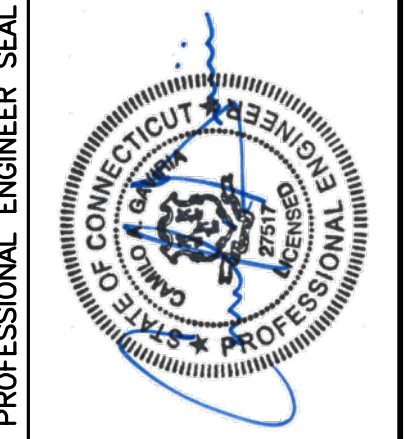


RRU (REMOTE RADIO UNIT)			
EQUIPMENT	DIMENSIONS	WEIGHT	CLEARANCES
MAKE: ERICSSON MODEL: RRUS-32 B66	27.17"L x 12.05"W x 7.01"D	52.91 LBS.	ABOVE: 16" MIN. BELOW: 12" MIN. FRONT: 36" MIN.

NOTES:
1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.

6 ERICSSON RRUS-32 B66 DETAIL
C-3 NOT TO SCALE

REV.	DATE	TJR	DND	CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION
0	04/11/18			DRAWN BY CHK'D BY DESCRIPTION

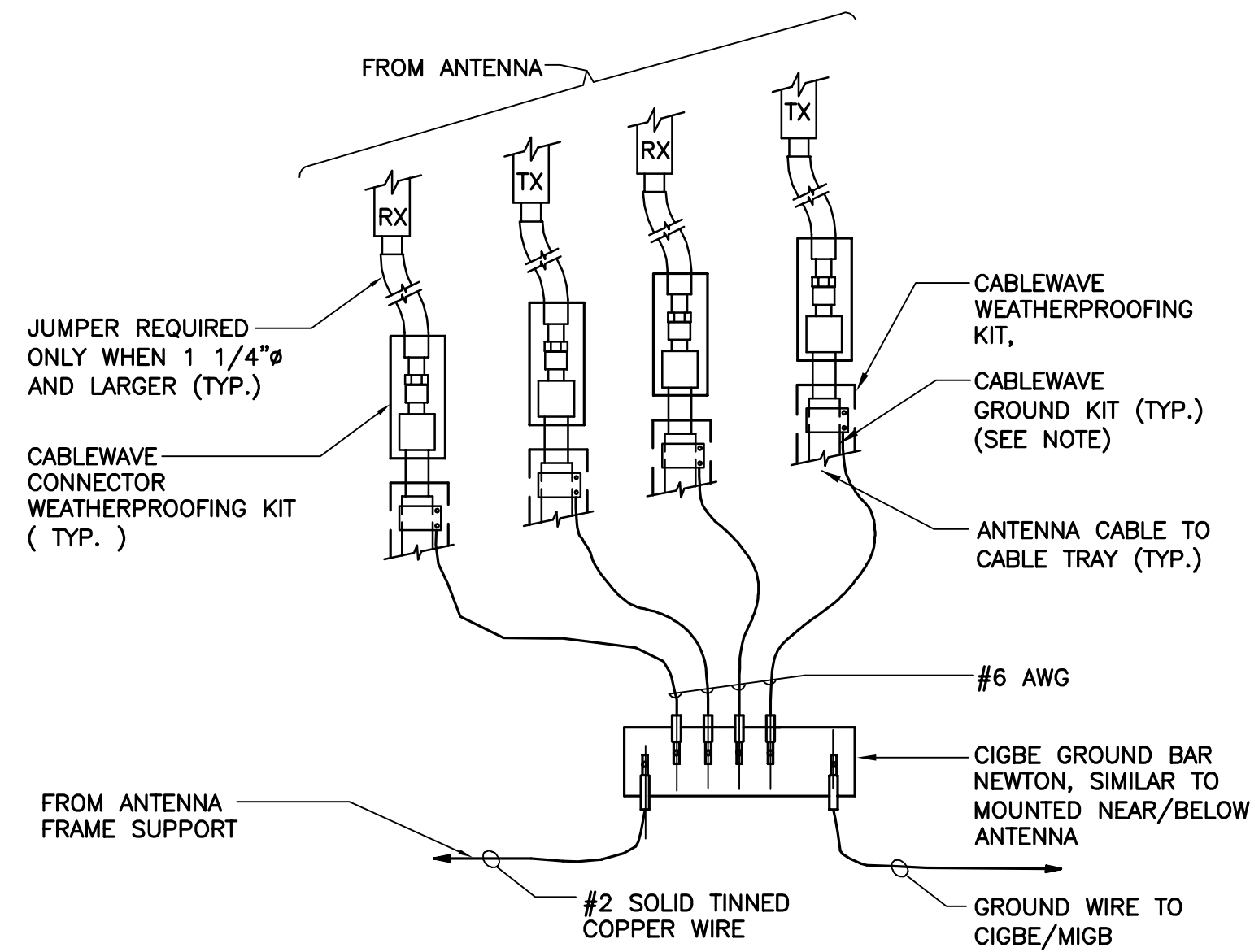


CEN TEK engineering
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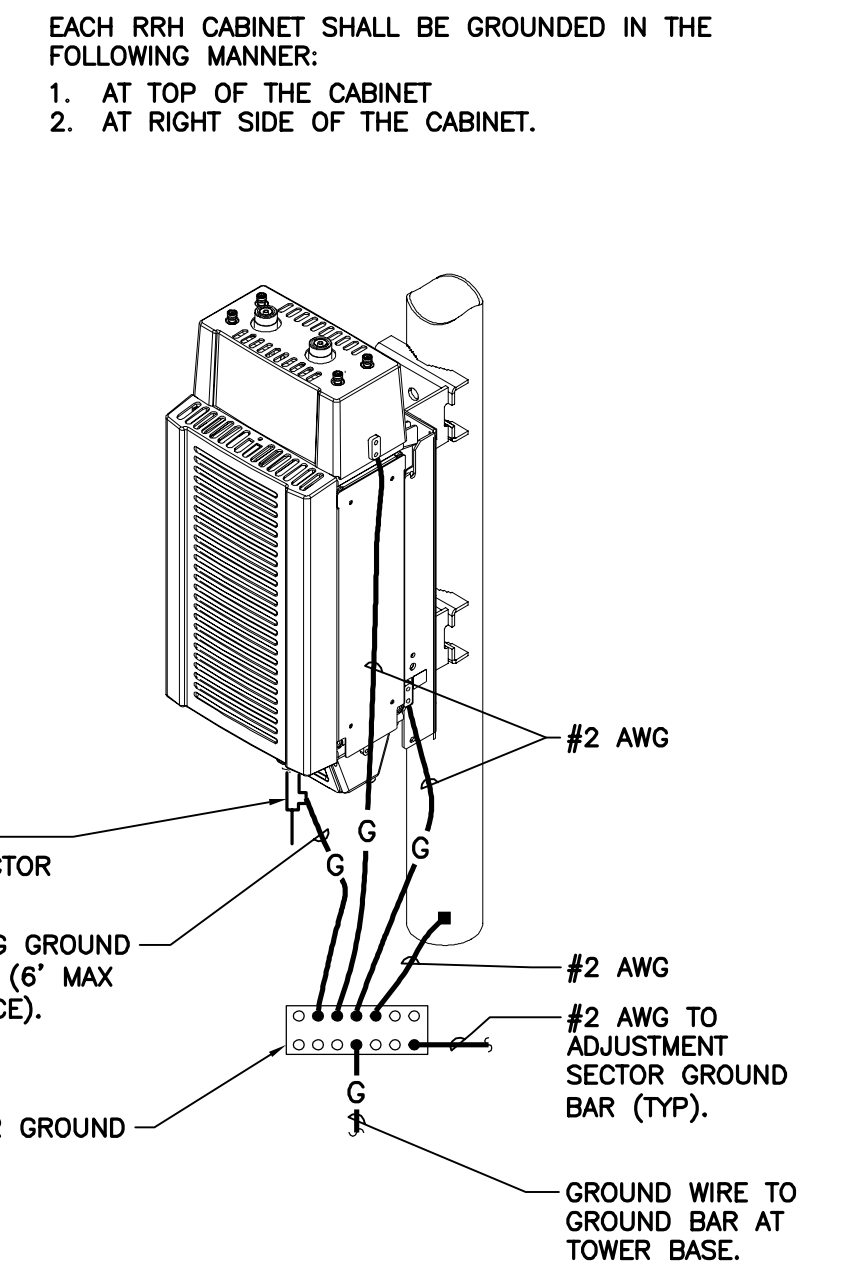
DATE: 03/26/18
SCALE: AS NOTED
JOB NO. 18000.12

DETAILS

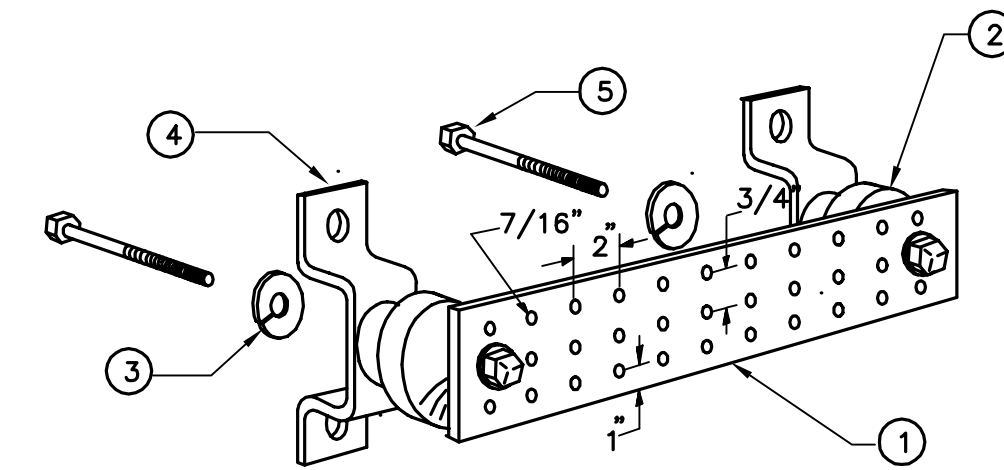


NOTE:
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE

1 CONNECTION OF GROUND WIRES TO GROUND BAR
E-3 NOT TO SCALE



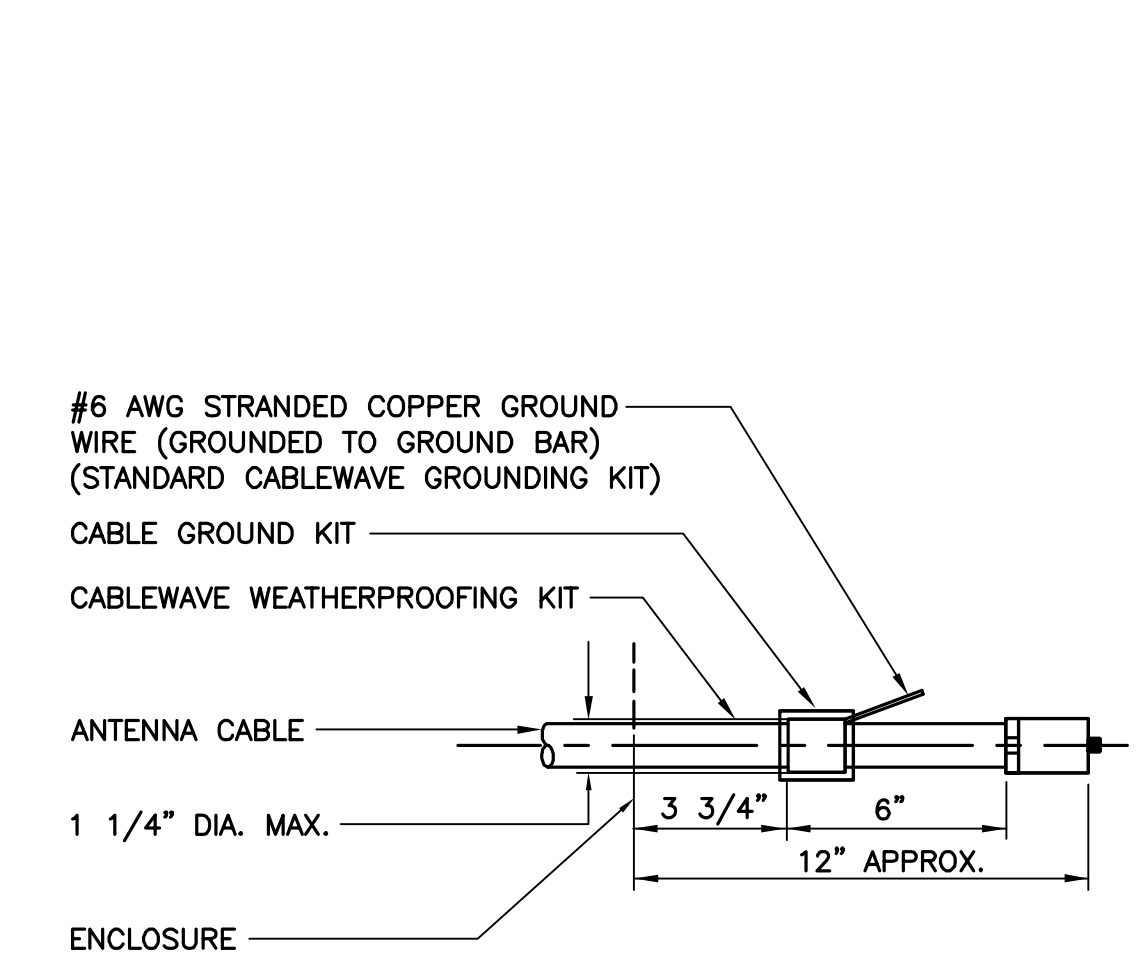
2 RRU POLE MOUNT GROUNDING
E-3 NOT TO SCALE



LEGEND

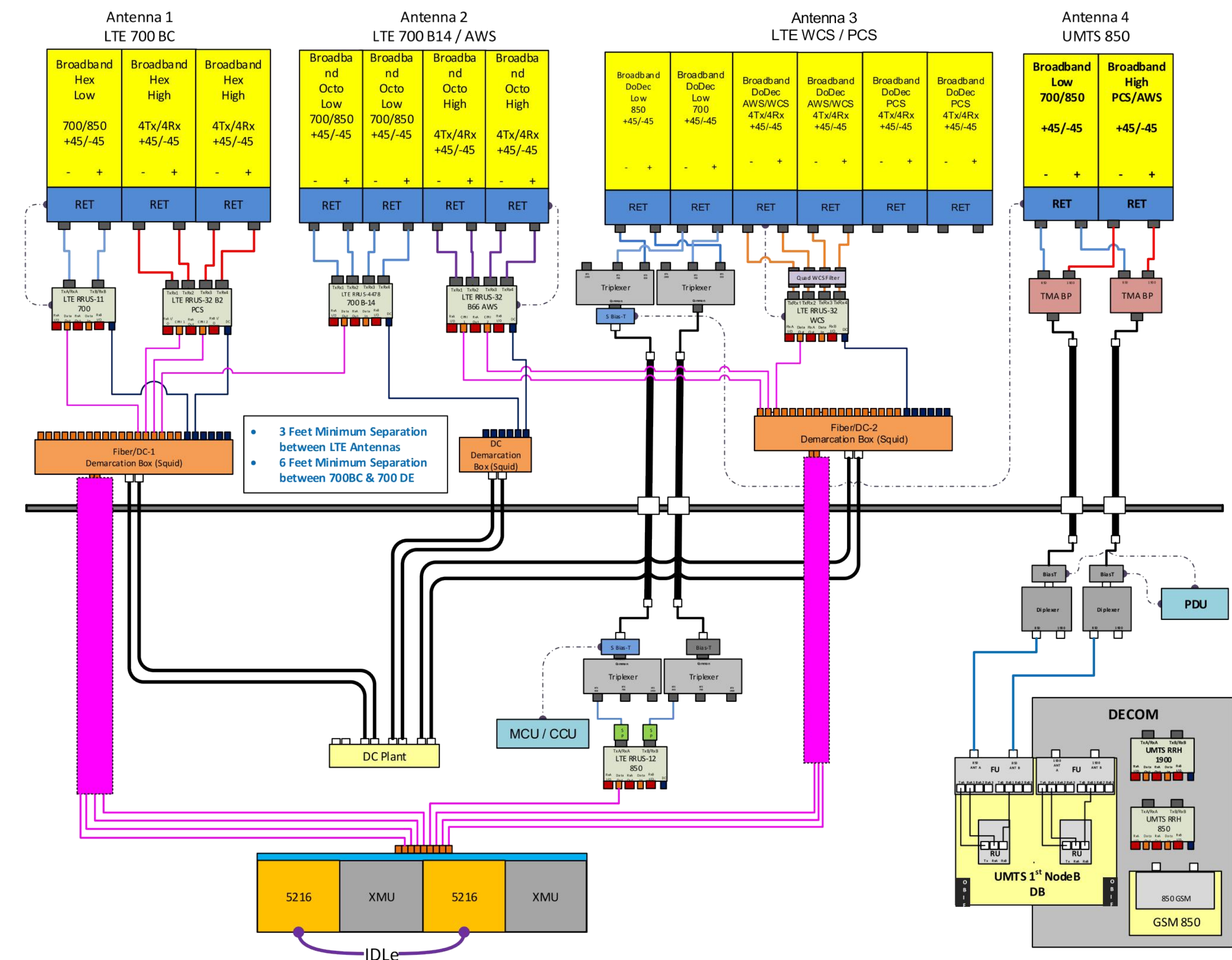
1. TINNED COPPER GROUND BAR, 1/4"x 4"x 20", NEWTON INSTRUMENT CO. HOLE CENTERS TO MATCH NEMA DOUBLE LUG .
2. INSULATORS, NEWTON INSTRUMENT CAT. NO. 2. 3061-4.
3. 5/8" LOCK WASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8.
4. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT. NO. A-6056.
5. STAINLESS STEEL SECURITY SCREWS.

3 GROUND BAR DETAIL
E-3 NOT TO SCALE

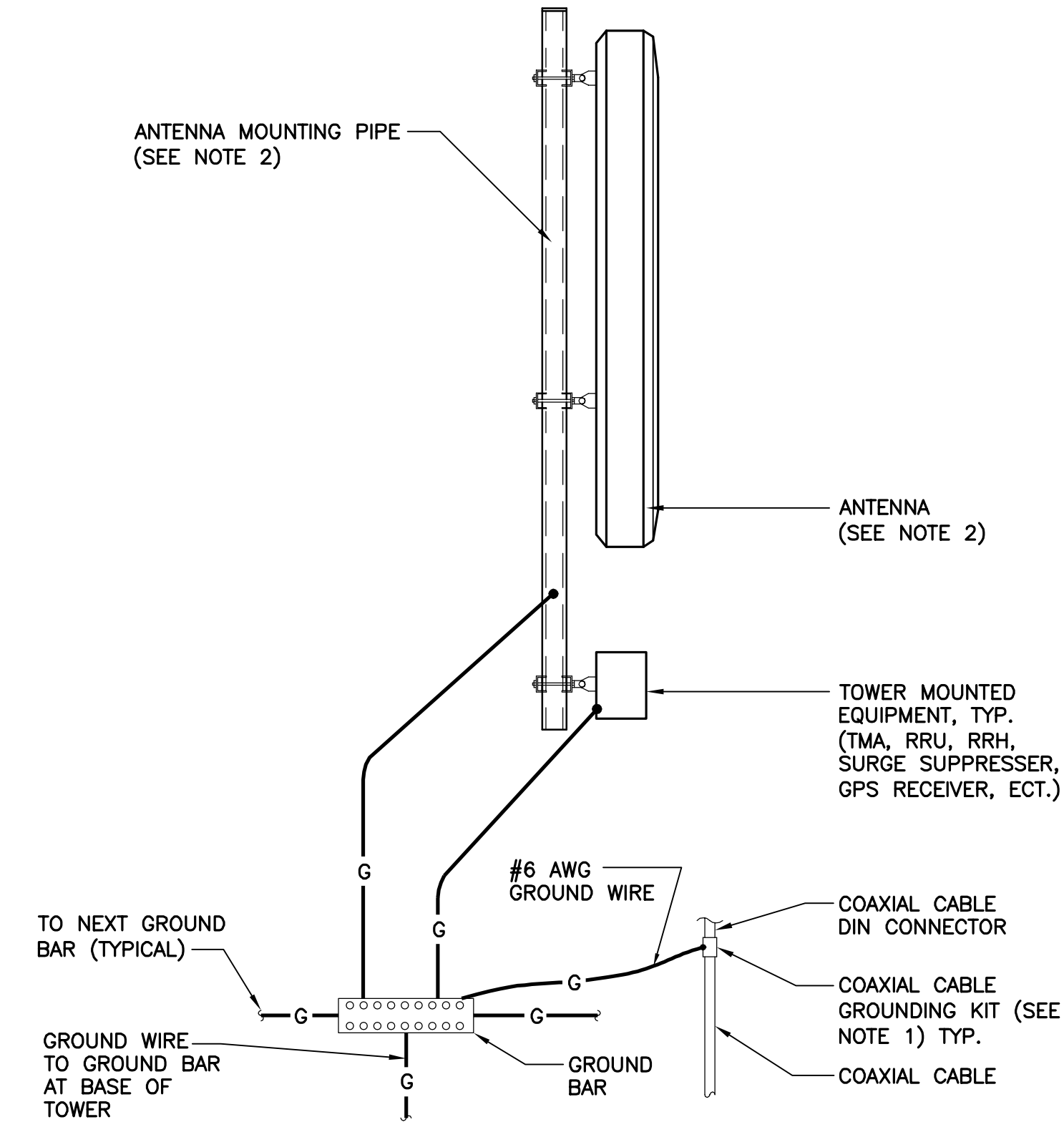


NOTE:
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.

4 ANTENNA CABLE GROUNDING DETAIL
E-3 NOT TO SCALE



5 RF PLUMBING DIAGRAM
E-3 NOT TO SCALE

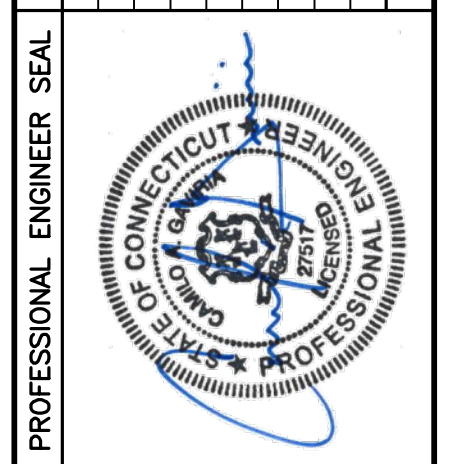


NOTES:

1. BOND COAXIAL CABLE GROUND KITS TO EACH OWNER'S GROUND BAR ALONG ENTIRE COAX RUN FROM ANTENNA TO SHELTER.
2. BOND ALL EQUIPMENT TO GROUND PER NEC AND MANUFACTURERS SPECIFICATIONS.
3. DETAIL IS TYPICAL FOR ALL ANTENNA SECTORS, INCLUDING GPS ANTENNA.

6 TYPICAL ANTENNA GROUNDING DETAIL
E-3 NOT TO SCALE

0	04/11/18	TJR	DND	CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION
REV.	DATE	DRAWN BY	CHKD BY	DESCRIPTION



at&t
EMPIRE telecom

CENTEK engineering
Centek Solutions
(203) 486-0580
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652 North Branch Road
Branford, CT 06405
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AT&T MOBILITY
WIRELESS COMMUNICATIONS FACILITY
SHELTON EAST CENTRAL
CT2113 - LTE 4C/5C/6C FIRSTNET
219 NELLIS ROCK ROAD
SHELTON, CT 06484

DATE: 03/26/18
SCALE: AS NOTED
JOB NO. 18000.12

TYPICAL ELECTRICAL DETAILS

SUMMARY & RESULTS

The purpose of this analysis was to verify whether the existing modified structure is capable of carrying the proposed loading configuration as specified by AT&T Mobility to Empire Telecom. This report was commissioned by Ms. Nicole Caplan of Empire Telecom.

All proposed coax shall be installed with the existing coax on Face C for the analysis results to be valid. See Appendix C for the coax layout.

This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 125 mph converted to a nominal 3-second gust wind speed of 97 mph per Section 1609.3 and Appendix N as required for use in the TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category B and Risk Category II were used in this analysis.

All modifications designed by GPD (Project #: 2013723.SNET025.01, dated 3/1/2013 & Project #: 2014701.02, dated 2/10/2014) were considered in the analysis.

TOWER SUMMARY AND RESULTS

Member	Capacity	Results
Legs	42.3%	Pass
Leg Bolts	52.2%	Pass
Diagonals	92.0%	Pass
Horizontals	70.7%	Pass
Redundant Members	85.6%	Pass
Inner Bracing	42.6%	Pass
Member Bolts	72.6%	Pass
Anchor Rods	45.1%	Pass
Foundations	58.8%	Pass

ANALYSIS METHOD

RISA-3D (Version 16.0.1) and tnxTower (Version 7.0.7.0), commercially available software programs, were used to create a three-dimensional model of the tower and calculate primary member stresses for various dead, wind, and ice load cases. Selected output from the analysis is included in Appendix B. The following table details the information provided to complete this structural analysis. This analysis is solely based on this information and is being completed without the benefit of a recent detailed site visit.

DOCUMENTS PROVIDED

Document	Remarks	Source
RF Design Form	AT&T RF Design Form, dated 10/9/2017	Empire Telecom
Construction Drawings	Not Provided	N/A
Tower Design	Not Provided	N/A
Foundation Design	Not Provided	N/A
Foundation Mapping	GPD Project #: 2016713.69, dated 9/28/2016	GPD
Geotechnical Report	GPD Project #: 2016713.69, dated 9/28/2016	GPD
Previous Structural Analysis	GPD Project #: 2017723.01.SNET025.09 Rev. 1, dated 1/12/2017	GPD
Tower Mapping	GPD Project #: 2016713.69, dated 10/14/2016	GPD
Modification Drawings	GPD Project #: 2013723.01.SNET025.01, dated 3/1/2013	GPD
Modification Drawings	GPD Project #: 2014701.02, dated 2/10/2014	GPD
Post Modification Inspection	GPD Project #: 2013723.01.SNET025.03, dated 9/26/2013	GPD
Post Modification Inspection	GPD Project #: 2014723.01.SNET025.07, dated 6/4/2014	GPD
Tower Sketch	AT&T Tower Sketch Issue 6, dated 6/6/2010	AT&T

ASSUMPTIONS

This rigorous structural analysis is based on the theoretical capacity of the members and is not a condition assessment of the tower. This analysis is from information supplied, and therefore, its results are based on and are as accurate as that supplied data. GPD has made no independent determination, nor is it required to, of its accuracy. The following assumptions were made for this structural analysis.

1. The tower member sizes and shapes are considered accurate as supplied. The material grade is as per data supplied and/or as assumed and as stated in the materials section.
2. The antenna configuration is as supplied and/or as modeled in the analysis. It is assumed to be complete and accurate. All antennas, mounts, coax and waveguides are assumed to be properly installed and supported as per manufacturer requirements.
3. Some assumptions are made regarding antennas and mount sizes and their projected areas based on best interpretation of data supplied and of best knowledge of antenna type and industry practice.
4. All mounts, if applicable, are considered adequate to support the loading. No actual analysis of the mount(s) is performed. This analysis is limited to analyzing the tower only.
5. The soil parameters are as per data supplied or as assumed and stated in the calculations.
6. Foundations are properly designed and constructed to resist the original design loads indicated in the documents provided.
7. The tower and structures have been properly maintained in accordance with TIA Standards and/or with manufacturer's specifications.
8. All welds and connections are assumed to develop at least the member capacity unless determined otherwise and explicitly stated in this report.
9. All prior structural modifications are assumed to be as per data supplied/available and to have been properly installed.
10. Foundation steel was not able to be determined through testing. Therefore, it was assumed that the foundation steel in place is equal to or in excess of the code required minimums.
11. Loading interpreted from photos is accurate to $\pm 5'$ AGL, antenna size accurate to ± 3.3 sf, and coax equal to the number of existing antennas without reserve.
12. All existing loading was obtained from the previous analysis by GPD (Project #: 2017723.01.SNET025.09 Rev. 1, dated 1/12/2017), site photos, and the provided RF Design Form and is assumed to be accurate.
13. The existing loading elevations found in the previous analysis by GPD (Project #: 2017723.01.SNET025.09 Rev. 1, dated 1/12/2017) were found to vary from that listed within the provided RF Design Form. The existing and proposed elevations have been modeled based on the elevations reflected within the previous analysis.
14. Detailed information for the proposed AT&T Mobility DC/Fiber Squid and DC/Fiber cables was incomplete within the provided RF Design Form. The squid model number was assumed to match the existing squids with the proposed cable diameters equal to the existing diameters.
15. All proposed coax shall be installed with the existing coax on Face C for the analysis results to be valid. See Appendix C for the coax layout.
16. Face A azimuth of 57° assumed based on the AT&T Tower Sketch Issue 6, dated 6/6/2010.

If any of these assumptions are not valid or have been made in error, this analysis may be affected, and GPD should be allowed to review any new information to determine its effect on the structural integrity of the tower.

DISCLAIMER OF WARRANTIES

GPD has not performed a recent site visit to the tower to verify the member sizes or antenna/coax loading. If the existing conditions are not as represented on the tower elevation contained in this report, we should be contacted immediately to evaluate the significance of the discrepancy. This is not a condition assessment of the tower or foundation. This report does not replace a full tower inspection. The tower and foundations are assumed to have been properly fabricated, erected, maintained, in good condition, twist free, and plumb.

The engineering services rendered by GPD in connection with this Rigorous Structural Analysis are limited to a computer analysis of the tower structure and theoretical capacity of its main structural members. No allowance was made for any damaged, bent, missing, loose, or rusted members (above and below ground). No allowance was made for loose bolts or cracked welds.

This analysis is limited to the designated maximum wind and seismic conditions per the governing tower standards and code. Wind forces resulting in tower vibrations near the structure's resonant frequencies were not considered in this analysis and are outside the scope of this analysis. Lateral loading from any dynamic response was not evaluated under a time-domain based fatigue analysis.

GPD does not analyze the fabrication of the structure (including welding). It is not possible to have all the very detailed information needed to perform a thorough analysis of every structural sub-component and connection of an existing tower. GPD provides a limited scope of service in that we cannot verify the adequacy of every weld, plate connection detail, etc. The purpose of this report is to assess the capability of adding appurtenances usually accompanied by transmission lines to the structure.

It is the owner's responsibility to determine the amount of ice accumulation in excess of the code specified amount, if any, that should be considered in the structural analysis.

The attached sketches are a schematic representation of the analyzed tower. If any material is fabricated from these sketches, the contractor shall be responsible for field verifying the existing conditions, proper fit, and clearance in the field. Any mentions of structural modifications are reasonable estimates and should not be used as a precise construction document. Precise modification drawings are obtainable from GPD, but are beyond the scope of this report.

Miscellaneous items such as antenna mounts, etc., have not been designed or detailed as a part of our work. We recommend that material of adequate size and strength be purchased from a reputable tower manufacturer.

Towers are designed to carry gravity, wind, and ice loads. All members, legs, diagonals, struts, and redundant members provide structural stability to the tower with little redundancy. Absence or removal of a member can trigger catastrophic failure unless a substitute is provided before any removal. Legs carry axial loads and derive their strength from shorter unbraced lengths by the presence of redundant members and their connection to the diagonals with bolts or welds. If the bolts or welds are removed without providing any substitute to the frame, the leg is subjected to a higher unbraced length that immediately reduces its load carrying capacity. If a diagonal is also removed in addition to the connection, the unbraced length of the leg is greatly increased, jeopardizing its load carrying capacity. Failure of one leg can result in a tower collapse because there is no redundancy. Redundant members and diagonals are critical to the stability of the tower.

GPD makes no warranties, expressed and/or implied, in connection with this report and disclaims any liability arising from material, fabrication, and erection of this tower. GPD will not be responsible whatsoever for, or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of GPD pursuant to this report will be limited to the total fee received for preparation of this report.

APPENDIX A

Tower Analysis Summary Form

APPENDIX B

Software Output Files and Calculations

tnxTower GPD 520 South Main Street Suite 2531 Akron, Ohio 44311 Phone: (330) 572-2100 FAX: (330) 572-2101	Job	27016 SHELTON EAST CENTRAL	Page	1 of 8
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	Client	Empire Telecom	Designed by	lrife

Tower Input Data

The main tower is a 4x free standing tower with an overall height of 162.50 ft above the ground line.

The base of the tower is set at an elevation of 0.00 ft above the ground line.

The face width of the tower is 12.25 ft at the top and 36.25 ft at the base.

This tower is designed using the TIA-222-G standard.

The following design criteria apply:

Tower is located in Fairfield County, Connecticut.

Basic wind speed of 97 mph.

Structure Class II.

Exposure Category B.

Topographic Category 1.

Crest Height 0.00 ft.

Nominal ice thickness of 0.7500 in.

Ice thickness is considered to increase with height.

Ice density of 56 pcf.

A wind speed of 50 mph is used in combination with ice.

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 60 mph.

Pressures are calculated at each section.

Stress ratio used in tower member design is 1.

Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
Climbing Ladder (Af)	B	No	Af (CaAa)	162.50 - 10.00	-36.0000	0.4	1	1	3.8400	3.8400		4.81
Safety Line (3/8")	B	No	Ar (CaAa)	162.50 - 10.00	-36.0000	0.4	1	1	0.3750	0.3750		0.22
LDF4P-50A (1/2 FOAM)	C	No	Ar (CaAa)	162.50 - 65.00	0.0000	-0.45	1	1	0.6300	0.6300		0.15
LDF4P-50A (1/2 FOAM)	C	No	Ar (CaAa)	65.00 - 10.00	0.0000	-0.45	2	2	0.6300	0.6300		0.15
1-1/2" Rigid Conduit	C	No	Ar (CaAa)	162.50 - 10.00	0.0000	-0.44	1	1	1.5000	1.5000		1.00
LDF5-50A (7/8 FOAM)	C	No	Ar (CaAa)	162.50 - 10.00	0.0000	0.03	2	2	1.0000	1.0900		0.33
3/4" Lighting Cable	C	No	Ar (CaAa)	162.50 - 10.00	0.0000	0.03	1	1	0.7500	0.7500		0.35
LDF5-50A (7/8 FOAM)	D	No	Ar (CaAa)	162.50 - 10.00	0.0000	0.48	1	1	1.0000	1.0900		0.33
Feedline Ladder (Af)	C	No	Af (CaAa)	162.50 - 10.00	-1.0000	0.2	1	1	3.0000	3.0000		8.40
LDF7-50A (1-5/8 FOAM)	C	No	Ar (CaAa)	162.50 - 10.00	-6.0000	0.2	12	4	1.0000	1.9800		0.82
7/8" DC Power Cable	C	No	Ar (CaAa)	162.50 - 10.00	-5.0000	0.18	6	3	0.8750	0.8750		0.60
1/2" Fiber Cable	C	No	Ar (CaAa)	162.50 - 10.00	-5.0000	0.18	3	2	0.6300	0.6300		0.15
Feedline Ladder (Af)	A	No	Af (CaAa)	149.00 - 10.00	0.0000	0	1	1	3.0000	3.0000		8.40
1-1/4" Hybrid Cable	A	No	Ar (CaAa)	149.00 - 10.00	0.0000	0.04	3	3	1.0000	1.2500		1.00

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Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
Feedline Ladder (Af)	C	No	Af (CaAa)	135.00 - 10.00	0.0000	0	1	1	3.0000	3.0000		8.40
LDF7-50A (1-5/8 FOAM)	C	No	Ar (CaAa)	135.00 - 10.00	0.0000	0.03	6	6	1.9800	1.9800		0.82
Feedline Ladder (Af)	D	No	Af (CaAa)	124.00 - 10.00	0.0000	0.45	1	1	3.0000	3.0000		8.40
LDF7-50A (1-5/8 FOAM)	D	No	Ar (CaAa)	124.00 - 10.00	0.0000	0.45	17	9	1.0000	1.9800		0.82
1-5/8" Hybrid Cable	D	No	Ar (CaAa)	124.00 - 10.00	0.0000	0.49	2	1	1.0000	1.9800		0.82

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	CAAA Front ft ²	CAAA Side ft ²	Weight lb
28' Square Platform w/ Rails	C	None		0.0000	162.50	No Ice	100.20	11871.000
						1/2" Ice	111.30	15623.000
						1" Ice	122.40	19375.000
Flash Beacon Lighting	C	From Leg	0.00	0.0000	162.50	No Ice	2.70	50.000
			0.00			1/2" Ice	3.10	70.000
			12.50			1" Ice	3.50	90.000
W5 x 13' Mount	C	From Leg	0.00	0.0000	162.50	No Ice	5.42	210.000
			0.00			1/2" Ice	7.00	280.000
			6.25			1" Ice	8.58	350.000
15' Dipole	B	From Face	7.00	0.0000	162.50	No Ice	3.00	40.000
			-3.00			1/2" Ice	4.53	63.137
			-6.50			1" Ice	6.07	95.792
10' Dipole	D	From Face	7.00	0.0000	162.50	No Ice	2.00	20.000
			5.00			1/2" Ice	3.02	35.501
			7.50			1" Ice	4.07	57.466
Pipe Mount 14'x2.875"	B	From Face	7.00	0.0000	162.50	No Ice	4.03	90.000
			-5.00			1/2" Ice	5.46	119.246
			5.50			1" Ice	6.91	157.489
2' Standoff	B	From Face	6.50	0.0000	162.50	No Ice	1.14	37.400
			-5.00			1/2" Ice	1.79	55.340
			9.50			1" Ice	2.44	73.280
2' Standoff	B	From Face	7.50	0.0000	162.50	No Ice	1.14	37.400
			-5.00			1/2" Ice	1.79	55.340
			9.50			1" Ice	2.44	73.280
15' Dipole	B	From Face	7.00	0.0000	162.50	No Ice	3.00	40.000
			5.00			1/2" Ice	4.53	63.137
			21.50			1" Ice	6.07	95.792
Pipe Mount 14'x2.875"	D	From Face	7.00	0.0000	162.50	No Ice	4.03	90.000
			-5.00			1/2" Ice	5.46	119.246
			5.50			1" Ice	6.91	157.489
2' Standoff	D	From Face	6.50	0.0000	162.50	No Ice	1.14	37.400
			-5.00			1/2" Ice	1.79	55.340
			9.50			1" Ice	2.44	73.280
2' Standoff	D	From Face	7.50	0.0000	162.50	No Ice	1.14	37.400
			-5.00			1/2" Ice	1.79	55.340
			9.50			1" Ice	2.44	73.280
10' Omni	D	From Face	8.00	0.0000	162.50	No Ice	2.00	25.000
			-5.00			1/2" Ice	3.02	40.501

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Lateral						Vert
***				20.50			1" Ice	4.07	4.07	62.466
W8 x 19' Beams	A	From Leg	5.00	13.0000	162.50	No Ice	17.00	1.00	290.000	
			0.00			1/2" Ice	19.00	1.50	340.000	
			1.00			1" Ice	21.00	2.00	330.000	
W8 x 19' Beams	D	From Leg	5.00	-17.0000	162.50	No Ice	17.00	1.00	290.000	
			0.00			1/2" Ice	19.00	1.50	340.000	
			1.00			1" Ice	21.00	2.00	330.000	
RA21.7770.00 w/Mount Pipe	A	From Leg	5.00	13.0000	162.50	No Ice	6.88	5.13	65.550	
			0.00			1/2" Ice	7.47	6.25	121.085	
			0.50			1" Ice	7.98	7.08	183.814	
RA21.7770.00 w/Mount Pipe	D	From Leg	5.00	-17.0000	162.50	No Ice	6.88	5.13	65.550	
			0.00			1/2" Ice	7.47	6.25	121.085	
			0.50			1" Ice	7.98	7.08	183.814	
RA21.7770.00 w/Mount Pipe	C	From Face	7.00	-4.0000	162.50	No Ice	6.88	5.13	65.550	
			0.00			1/2" Ice	7.47	6.25	121.085	
			0.50			1" Ice	7.98	7.08	183.814	
HPA-65R-BUU-H6 w/ Mount Pipe	A	From Leg	5.00	13.0000	162.50	No Ice	9.90	8.11	76.550	
			0.00			1/2" Ice	10.47	9.30	158.030	
			0.50			1" Ice	11.01	10.21	247.793	
HPA-65R-BUU-H6 w/ Mount Pipe	D	From Leg	5.00	-17.0000	162.50	No Ice	9.90	8.11	76.550	
			0.00			1/2" Ice	10.47	9.30	158.030	
			0.50			1" Ice	11.01	10.21	247.793	
HPA-65R-BUU-H6 w/ Mount Pipe	C	From Face	7.00	-4.0000	162.50	No Ice	9.90	8.11	76.550	
			0.00			1/2" Ice	10.47	9.30	158.030	
			0.50			1" Ice	11.01	10.21	247.793	
QS66512-2 w/ Mount Pipe	A	From Leg	5.00	13.0000	162.50	No Ice	8.37	8.46	136.550	
			0.00			1/2" Ice	8.93	9.66	212.242	
			0.50			1" Ice	9.46	10.55	296.075	
QS66512-2 w/ Mount Pipe	D	From Leg	5.00	-17.0000	162.50	No Ice	8.37	8.46	136.550	
			0.00			1/2" Ice	8.93	9.66	212.242	
			0.50			1" Ice	9.46	10.55	296.075	
QS66512-2 w/ Mount Pipe	C	From Face	7.00	-4.0000	162.50	No Ice	8.37	8.46	136.550	
			0.00			1/2" Ice	8.93	9.66	212.242	
			0.50			1" Ice	9.46	10.55	296.075	
80010965 w/ Mount Pipe	A	From Leg	5.00	13.0000	162.50	No Ice	14.05	7.63	125.188	
			0.00			1/2" Ice	14.69	8.90	221.670	
			0.50			1" Ice	15.30	9.96	327.183	
80010965 w/ Mount Pipe	D	From Leg	5.00	-17.0000	162.50	No Ice	14.05	7.63	125.188	
			0.00			1/2" Ice	14.69	8.90	221.670	
			0.50			1" Ice	15.30	9.96	327.183	
80010965 w/ Mount Pipe	C	From Face	7.00	-4.0000	162.50	No Ice	14.05	7.63	125.188	
			0.00			1/2" Ice	14.69	8.90	221.670	
			0.50			1" Ice	15.30	9.96	327.183	
(2) 7020.00 RET	A	From Leg	5.00	13.0000	162.50	No Ice	0.10	0.17	2.200	
			0.00			1/2" Ice	0.15	0.24	5.156	
			0.50			1" Ice	0.20	0.31	9.330	
(2) 7020.00 RET	D	From Leg	5.00	-17.0000	162.50	No Ice	0.10	0.17	2.200	
			0.00			1/2" Ice	0.15	0.24	5.156	
			0.50			1" Ice	0.20	0.31	9.330	
(2) 7020.00 RET	C	From Face	7.00	-4.0000	162.50	No Ice	0.10	0.17	2.200	
			0.00			1/2" Ice	0.15	0.24	5.156	
			0.50			1" Ice	0.20	0.31	9.330	
(2) LGP21401	A	From Leg	5.00	13.0000	162.50	No Ice	1.10	0.21	14.100	
			0.00			1/2" Ice	1.24	0.27	21.263	
			0.50			1" Ice	1.38	0.35	30.319	
(2) LGP21401	D	From Leg	5.00	-17.0000	162.50	No Ice	1.10	0.21	14.100	

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft ²	ft ²	lb
			0.00			1/2" Ice	1.24	0.27	21.263
			0.50			1" Ice	1.38	0.35	30.319
(2) LGP21401	C	From Face	7.00		-4.0000	No Ice	1.10	0.21	14.100
			0.00			1/2" Ice	1.24	0.27	21.263
			0.50			1" Ice	1.38	0.35	30.319
(2) TPX-070821	A	From Leg	5.00		13.0000	No Ice	0.47	0.10	7.500
			0.00			1/2" Ice	0.56	0.15	10.952
			0.50			1" Ice	0.66	0.20	15.735
(2) TPX-070821	D	From Leg	5.00		-17.0000	No Ice	0.47	0.10	7.500
			0.00			1/2" Ice	0.56	0.15	10.952
			0.50			1" Ice	0.66	0.20	15.735
(2) TPX-070821	C	From Face	7.00		-4.0000	No Ice	0.47	0.10	7.500
			0.00			1/2" Ice	0.56	0.15	10.952
			0.50			1" Ice	0.66	0.20	15.735
Smart Bias-T	A	From Leg	5.00		-17.0000	No Ice	0.14	0.08	3.300
			0.00			1/2" Ice	0.19	0.12	4.693
			0.50			1" Ice	0.25	0.17	6.947
Smart Bias-T	D	From Leg	5.00		-4.0000	No Ice	0.14	0.08	3.300
			0.00			1/2" Ice	0.19	0.12	4.693
			0.50			1" Ice	0.25	0.17	6.947
Smart Bias-T	C	From Face	7.00		13.0000	No Ice	0.14	0.08	3.300
			0.00			1/2" Ice	0.19	0.12	4.693
			0.50			1" Ice	0.25	0.17	6.947
WCS-IMFT-AMT	A	From Leg	5.00		-17.0000	No Ice	0.64	0.47	18.700
			0.00			1/2" Ice	0.75	0.56	24.918
			0.50			1" Ice	0.86	0.66	32.828
WCS-IMFT-AMT	C	From Face	7.00		13.0000	No Ice	0.64	0.47	18.700
			0.00			1/2" Ice	0.75	0.56	24.918
			0.50			1" Ice	0.86	0.66	32.828
(3) RRUS 11	C	None			0.0000	No Ice	2.78	1.19	50.700
						1/2" Ice	2.99	1.33	71.500
						1" Ice	3.21	1.49	95.335
(3) RRUS 32	C	None			0.0000	No Ice	3.31	2.42	77.000
						1/2" Ice	3.56	2.64	104.928
						1" Ice	3.81	2.86	136.466
(3) RRUS 32 B2	C	None			0.0000	No Ice	2.73	1.67	52.900
						1/2" Ice	2.95	1.86	73.957
						1" Ice	3.18	2.05	98.206
(3) RRUS 12	C	None			0.0000	No Ice	3.15	1.29	58.000
						1/2" Ice	3.36	1.44	81.222
						1" Ice	3.59	1.60	107.645
(3) RRUS B14 4478	C	None			0.0000	No Ice	1.65	0.81	60.000
						1/2" Ice	1.81	0.93	74.366
						1" Ice	1.98	1.06	91.233
(3) RRUS 32 B66	C	None			0.0000	No Ice	2.74	1.67	53.000
						1/2" Ice	2.96	1.86	74.114
						1" Ice	3.19	2.05	98.424
(3) DC6-48-60-18-8F Surge Suppression Unit	C	None			0.0000	No Ice	0.92	0.92	18.900
						1/2" Ice	1.46	1.46	36.615
						1" Ice	1.64	1.64	56.825

14' Sector Frame	A	From Leg	2.00		-2.0000	No Ice	25.00	25.00	380.000
			0.00			1/2" Ice	33.12	33.12	556.690
			0.00			1" Ice	41.24	41.24	733.380
14' Sector Frame	B	From Leg	1.90		18.0000	No Ice	25.00	25.00	380.000
			0.62			1/2" Ice	33.12	33.12	556.690
			0.00			1" Ice	41.24	41.24	733.380

tnxTower GPD 520 South Main Street Suite 2531 Akron, Ohio 44311 Phone: (330) 572-2100 FAX: (330) 572-2101	Job	27016 SHELTON EAST CENTRAL	Page	5 of 8
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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Lateral						Vert
14' Sector Frame	C	From Leg	1.41		45.0000	148.00	No Ice	25.00	25.00	380.000
			1.41				1/2" Ice	33.12	33.12	556.690
			0.00				1" Ice	41.24	41.24	733.380
(2) Pipe Mount 6'x2.375"	A	From Leg	4.00		-2.0000	148.00	No Ice	1.43	1.43	26.100
			0.00				1/2" Ice	1.92	1.92	36.927
			1.00				1" Ice	2.29	2.29	51.814
(2) Pipe Mount 6'x2.375"	B	From Leg	3.80		18.0000	148.00	No Ice	1.43	1.43	26.100
			1.24				1/2" Ice	1.92	1.92	36.927
			1.00				1" Ice	2.29	2.29	51.814
(2) Pipe Mount 6'x2.375"	C	From Leg	2.82		45.0000	148.00	No Ice	1.43	1.43	26.100
			2.82				1/2" Ice	1.92	1.92	36.927
			1.00				1" Ice	2.29	2.29	51.814
APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	4.00		-2.0000	148.00	No Ice	8.02	6.71	78.900
			0.00				1/2" Ice	8.48	7.66	144.306
			1.00				1" Ice	8.94	8.49	217.469
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	3.80		18.0000	148.00	No Ice	8.02	6.71	78.900
			1.24				1/2" Ice	8.48	7.66	144.306
			1.00				1" Ice	8.94	8.49	217.469
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	2.82		58.0000	148.00	No Ice	8.02	6.71	78.900
			2.82				1/2" Ice	8.48	7.66	144.306
			1.00				1" Ice	8.94	8.49	217.469
800MHZ 2X50W RRH	A	From Leg	1.00		0.0000	153.00	No Ice	2.13	1.77	53.000
			0.00				1/2" Ice	2.32	1.95	74.187
			0.00				1" Ice	2.51	2.13	98.387
800MHZ 2X50W RRH	B	From Leg	1.00		0.0000	153.00	No Ice	2.13	1.77	53.000
			0.00				1/2" Ice	2.32	1.95	74.187
			0.00				1" Ice	2.51	2.13	98.387
800MHZ 2X50W RRH	C	From Leg	1.00		0.0000	153.00	No Ice	2.13	1.77	53.000
			0.00				1/2" Ice	2.32	1.95	74.187
			0.00				1" Ice	2.51	2.13	98.387
800 External Notch Filter	A	From Leg	1.00		0.0000	153.00	No Ice	0.66	0.32	11.000
			0.00				1/2" Ice	0.76	0.40	16.814
			0.00				1" Ice	0.87	0.48	24.257
800 External Notch Filter	B	From Leg	1.00		0.0000	153.00	No Ice	0.66	0.32	11.000
			0.00				1/2" Ice	0.76	0.40	16.814
			0.00				1" Ice	0.87	0.48	24.257
800 External Notch Filter	C	From Leg	1.00		0.0000	153.00	No Ice	0.66	0.32	11.000
			0.00				1/2" Ice	0.76	0.40	16.814
			0.00				1" Ice	0.87	0.48	24.257
1900MHz 4X40W RRH	A	From Leg	1.00		0.0000	153.00	No Ice	2.32	2.24	59.500
			0.00				1/2" Ice	2.53	2.44	82.622
			0.00				1" Ice	2.74	2.65	108.978
1900MHz 4X40W RRH	B	From Leg	1.00		0.0000	153.00	No Ice	2.32	2.24	59.500
			0.00				1/2" Ice	2.53	2.44	82.622
			0.00				1" Ice	2.74	2.65	108.978
1900MHz 4X40W RRH	C	From Leg	1.00		0.0000	153.00	No Ice	2.32	2.24	59.500
			0.00				1/2" Ice	2.53	2.44	82.622
			0.00				1" Ice	2.74	2.65	108.978
(2) 2.5" x 3.5' Mount Pipe	A	From Leg	0.50		0.0000	153.00	No Ice	0.74	0.74	20.000
			0.00				1/2" Ice	0.96	0.96	26.726
			0.00				1" Ice	1.18	1.18	35.997
(2) 2.5" x 3.5' Mount Pipe	B	From Leg	0.50		0.0000	153.00	No Ice	0.74	0.74	20.000
			0.00				1/2" Ice	0.96	0.96	26.726
			0.00				1" Ice	1.18	1.18	35.997
(2) 2.5" x 3.5' Mount Pipe	C	From Leg	0.50		0.0000	153.00	No Ice	0.74	0.74	20.000
			0.00				1/2" Ice	0.96	0.96	26.726
			0.00				1" Ice	1.18	1.18	35.997

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Lateral					

30' x 30' Cross Catwalk w/ Handrails	C	None			0.0000	144.00	No Ice 78.00 1/2" Ice 84.00 1" Ice 90.00	78.00 84.00 90.00	5664.000 7807.000 9950.000

2' Standoff	A	From Leg	1.00 0.00 0.00		0.0000	135.00	No Ice 1.14 1/2" Ice 1.79 1" Ice 2.44	1.62 2.41 3.20	37.400 55.340 73.280
2' Standoff	B	From Leg	1.00 0.00 0.00		0.0000	135.00	No Ice 1.14 1/2" Ice 1.79 1" Ice 2.44	1.62 2.41 3.20	37.400 55.340 73.280
2' Standoff	D	From Leg	1.00 0.00 0.00		0.0000	135.00	No Ice 1.14 1/2" Ice 1.79 1" Ice 2.44	1.62 2.41 3.20	37.400 55.340 73.280
AIR21 B4A/B2P w/ mount pipe	A	From Leg	2.00 1.00 0.00		48.0000	135.00	No Ice 6.13 1/2" Ice 6.52 1" Ice 6.92	5.54 6.20 6.87	101.250 156.434 218.215
AIR21 B4A/B2P w/ mount pipe	B	From Leg	2.00 1.00 0.00		78.0000	135.00	No Ice 6.13 1/2" Ice 6.52 1" Ice 6.92	5.54 6.20 6.87	101.250 156.434 218.215
AIR21 B4A/B2P w/ mount pipe	D	From Leg	2.00 1.00 0.00		18.0000	135.00	No Ice 6.13 1/2" Ice 6.52 1" Ice 6.92	5.54 6.20 6.87	101.250 156.434 218.215
DBXNH-6565A-A2M w/ mount pipe	A	From Leg	2.00 -1.00 0.00		-72.0000	135.00	No Ice 5.45 1/2" Ice 5.80 1" Ice 6.17	4.67 5.27 5.88	60.255 110.757 167.983
DBXNH-6565A-A2M w/ mount pipe	B	From Leg	2.00 -1.00 0.00		-42.0000	135.00	No Ice 5.45 1/2" Ice 5.80 1" Ice 6.17	4.67 5.27 5.88	60.255 110.757 167.983
DBXNH-6565A-A2M w/ mount pipe	D	From Leg	2.00 -1.00 0.00		18.0000	135.00	No Ice 5.45 1/2" Ice 5.80 1" Ice 6.17	4.67 5.27 5.88	60.255 110.757 167.983
RRUS 11 B2	A	From Leg	2.00 0.00 0.00		0.0000	135.00	No Ice 2.83 1/2" Ice 3.04 1" Ice 3.26	1.18 1.33 1.48	50.700 71.570 95.487
RRUS 11 B2	B	From Leg	2.00 0.00 0.00		0.0000	135.00	No Ice 2.83 1/2" Ice 3.04 1" Ice 3.26	1.18 1.33 1.48	50.700 71.570 95.487
RRUS 11 B2	D	From Leg	2.00 0.00 0.00		0.0000	135.00	No Ice 2.83 1/2" Ice 3.04 1" Ice 3.26	1.18 1.33 1.48	50.700 71.570 95.487
RRUS 11 B12	A	From Leg	2.00 0.00 0.00		0.0000	135.00	No Ice 2.83 1/2" Ice 3.04 1" Ice 3.26	1.18 1.33 1.48	50.700 71.570 95.487
RRUS 11 B12	B	From Leg	2.00 0.00 0.00		0.0000	135.00	No Ice 2.83 1/2" Ice 3.04 1" Ice 3.26	1.18 1.33 1.48	50.700 71.570 95.487
RRUS 11 B12	D	From Leg	2.00 0.00 0.00		0.0000	135.00	No Ice 2.83 1/2" Ice 3.04 1" Ice 3.26	1.18 1.33 1.48	50.700 71.570 95.487
KRY 112 144/1	A	From Leg	2.00 0.00 0.00		0.0000	135.00	No Ice 0.35 1/2" Ice 0.43 1" Ice 0.51	0.17 0.23 0.30	11.000 14.176 18.583
KRY 112 144/1	B	From Leg	2.00 0.00 0.00		0.0000	135.00	No Ice 0.35 1/2" Ice 0.43 1" Ice 0.51	0.17 0.23 0.30	11.000 14.176 18.583
KRY 112 144/1	D	From Leg	2.00 0.00 0.00		0.0000	135.00	No Ice 0.35 1/2" Ice 0.43 1" Ice 0.51	0.17 0.23 0.30	11.000 14.176 18.583

tnxTower GPD 520 South Main Street Suite 2531 Akron, Ohio 44311 Phone: (330) 572-2100 FAX: (330) 572-2101	Job	27016 SHELTON EAST CENTRAL	Page	7 of 8
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	Client	Empire Telecom	Designed by	lrife

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight lb	
			Horz Lateral ft	Vert ft						
			0.00			1/2" Ice	0.43	0.23	14.176	
			0.00			1" Ice	0.51	0.30	18.583	

12' Sector Frame	A	From Leg	0.50		8.0000	124.00	No Ice	18.81	10.62	513.500
			0.00				1/2" Ice	24.75	15.16	719.590
			0.00				1" Ice	30.69	19.70	925.680
12' Sector Frame	C	From Leg	0.50		-2.0000	124.00	No Ice	18.81	10.62	513.500
			0.00				1/2" Ice	24.75	15.16	719.590
			0.00				1" Ice	30.69	19.70	925.680
12' Sector Frame	D	From Leg	0.50		-12.0000	124.00	No Ice	18.81	10.62	513.500
			0.00				1/2" Ice	24.75	15.16	719.590
			0.00				1" Ice	30.69	19.70	925.680
(2) DB846F65ZAXY w/Mount Pipe	A	From Leg	1.00		8.0000	124.00	No Ice	7.27	7.82	46.550
			0.00				1/2" Ice	7.88	9.01	113.929
			1.00				1" Ice	8.48	9.91	189.249
(2) DB846F65ZAXY w/Mount Pipe	C	From Leg	1.00		-2.0000	124.00	No Ice	7.27	7.82	46.550
			0.00				1/2" Ice	7.88	9.01	113.929
			1.00				1" Ice	8.48	9.91	189.249
(2) DB846F65ZAXY w/Mount Pipe	D	From Leg	1.00		-12.0000	124.00	No Ice	7.27	7.82	46.550
			0.00				1/2" Ice	7.88	9.01	113.929
			1.00				1" Ice	8.48	9.91	189.249
BXA-185085/12CF w/ Mount Pipe	A	From Leg	1.00		8.0000	124.00	No Ice	4.77	5.36	47.740
			0.00				1/2" Ice	5.22	6.17	93.913
			1.00				1" Ice	5.68	6.98	148.113
BXA-185063/12CF w/ mount pipe	C	From Leg	1.00		-2.0000	124.00	No Ice	5.00	5.30	40.550
			0.00				1/2" Ice	5.55	6.47	86.486
			1.00				1" Ice	6.07	7.35	139.852
BXA-185063/12CF w/ mount pipe	D	From Leg	1.00		-12.0000	124.00	No Ice	5.00	5.30	40.550
			0.00				1/2" Ice	5.55	6.47	86.486
			1.00				1" Ice	6.07	7.35	139.852
(2) SBNHH-1D65B w/ Mount Pipe	A	From Leg	1.00		8.0000	124.00	No Ice	8.16	6.16	59.300
			0.00				1/2" Ice	8.62	6.82	120.285
			1.00				1" Ice	9.09	7.51	189.029
(2) SBNHH-1D45B w/ Mount Pipe	C	From Leg	1.00		-2.0000	124.00	No Ice	11.40	6.71	83.600
			0.00				1/2" Ice	11.89	7.66	165.080
			1.00				1" Ice	12.38	8.49	254.719
(2) SBNHH-1D65B w/ Mount Pipe	D	From Leg	1.00		-12.0000	124.00	No Ice	8.16	6.16	59.300
			0.00				1/2" Ice	8.62	6.82	120.285
			1.00				1" Ice	9.09	7.51	189.029
B13 RRH 4X30	A	From Leg	1.00		8.0000	124.00	No Ice	2.06	1.32	55.600
			0.00				1/2" Ice	2.24	1.48	72.875
			1.00				1" Ice	2.43	1.64	92.951
B13 RRH 4X30	C	From Leg	1.00		-2.0000	124.00	No Ice	2.06	1.32	55.600
			0.00				1/2" Ice	2.24	1.48	72.875
			1.00				1" Ice	2.43	1.64	92.951
B13 RRH 4X30	D	From Leg	1.00		-12.0000	124.00	No Ice	2.06	1.32	55.600
			0.00				1/2" Ice	2.24	1.48	72.875
			1.00				1" Ice	2.43	1.64	92.951
B25 RRH4X30	A	From Leg	1.00		8.0000	124.00	No Ice	2.20	1.74	55.000
			0.00				1/2" Ice	2.39	1.92	75.465
			1.00				1" Ice	2.59	2.11	98.944
B25 RRH4X30	C	From Leg	1.00		-2.0000	124.00	No Ice	2.20	1.74	55.000
			0.00				1/2" Ice	2.39	1.92	75.465
			1.00				1" Ice	2.59	2.11	98.944
B25 RRH4X30	D	From Leg	1.00		-12.0000	124.00	No Ice	2.20	1.74	55.000
			0.00				1/2" Ice	2.39	1.92	75.465
			1.00				1" Ice	2.59	2.11	98.944

Job	27016 SHELTON EAST CENTRAL	Page	8 of 8
Project	2018702.01	Date	3/2/2018
Client	Empire Telecom	Designed by	lrife

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Vert						
			ft	ft	°	ft	ft ²	ft ²	lb	
B66A RRH4X45	A	From Leg	1.00	0.00	8.0000	124.00	No Ice	2.54	1.61	56.800
			0.00	0.00			1/2" Ice	2.75	1.79	76.924
			1.00	0.00			1" Ice	2.97	1.98	100.146
B66A RRH4X45	C	From Leg	1.00	0.00	-2.0000	124.00	No Ice	2.54	1.61	56.800
			0.00	0.00			1/2" Ice	2.75	1.79	76.924
			1.00	0.00			1" Ice	2.97	1.98	100.146
B66A RRH4X45	D	From Leg	1.00	0.00	-12.0000	124.00	No Ice	2.54	1.61	56.800
			0.00	0.00			1/2" Ice	2.75	1.79	76.924
			1.00	0.00			1" Ice	2.97	1.98	100.146
DB-T1-6Z-8AB-0Z	A	From Leg	1.00	0.00	8.0000	124.00	No Ice	4.80	2.00	44.000
			0.00	0.00			1/2" Ice	5.07	2.19	80.134
			1.00	0.00			1" Ice	5.35	2.39	120.222
DB-T1-6Z-8AB-0Z	C	From Leg	1.00	0.00	-2.0000	124.00	No Ice	4.80	2.00	44.000
			0.00	0.00			1/2" Ice	5.07	2.19	80.134
			1.00	0.00			1" Ice	5.35	2.39	120.222

4.25' x 7' Catwalk	B	From Face	0.00	0.00	0.0000	112.50	No Ice	11.50	8.90	750.000
			0.00	0.00			1/2" Ice	13.40	10.50	1000.000
			0.00	0.00			1" Ice	15.30	12.10	1250.000
23' x 3' Catwalk	A	From Face	0.00	0.00	0.0000	87.50	No Ice	31.40	12.80	1784.000
			0.00	0.00			1/2" Ice	36.80	15.70	2514.000
			0.00	0.00			1" Ice	42.20	18.60	3244.000
23' x 3' Catwalk	B	From Face	0.00	0.00	0.0000	87.50	No Ice	31.40	12.80	1784.000
			0.00	0.00			1/2" Ice	36.80	15.70	2514.000
			0.00	0.00			1" Ice	42.20	18.60	3244.000
GPS-TMG-HR-26N	B	From Leg	0.50	0.00	0.0000	65.00	No Ice	0.13	0.13	0.600
			0.00	0.00			1/2" Ice	0.18	0.18	2.371
			0.00	0.00			1" Ice	0.24	0.24	5.075
13' x 4.25' Catwalk	B	From Face	0.00	0.00	0.0000	62.50	No Ice	18.85	7.00	1250.000
			0.00	0.00			1/2" Ice	26.00	8.00	1750.000
			0.00	0.00			1" Ice	33.15	9.00	2250.000
13' x 4.25' Catwalk	B	From Face	0.00	0.00	0.0000	25.00	No Ice	18.85	7.00	1250.000
			0.00	0.00			1/2" Ice	26.00	8.00	1750.000
			0.00	0.00			1" Ice	33.15	9.00	2250.000
Side Light	A	From Leg	1.00	0.00	0.0000	92.00	No Ice	0.33	0.33	7.000
			0.00	0.00			1/2" Ice	0.47	0.47	7.050
			0.00	0.00			1" Ice	0.60	0.60	7.100
Side Light	D	From Leg	1.00	0.00	0.0000	92.00	No Ice	0.33	0.33	7.000
			0.00	0.00			1/2" Ice	0.47	0.47	7.050
			0.00	0.00			1" Ice	0.60	0.60	7.100



Company : GPD
 Designer : Irife
 Job Number : 2018702.01
 Model Name : 27016 SHELTON EAST CENTRAL

Checked By: _____

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (1E5 F)	Density[k/ft^3]	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36	29000	11200	.295	.65	.49	36	1.5	58	1.2

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	TWR_LEG_T1	L6x6x1/2	Column	Single Angle	A36	Typical	5.75	19.9	19.9	.501
2	TWR_TOP_GIRT_T1	MC18x58_HRA	Beam	Channel	A36	Typical	17.1	17.8	676	2.81
3	TWR_DIAG_T1	L 3-1/2x3-1/2x1/4	Column	Single Angle	A36	Typical	1.688	2.01	2.01	.035
4	TWR_STEP_T1	L3x2-1/2x1/4	Beam	Single Angle	A36	Typical	1.313	.743	1.173	.027
5	TWR_RED_VERT_T1	L2.5x2.5x3	Beam	Single Angle	A36	Typical	.901	.535	.535	.011
6	TWR_LEG_T2	L6x6x1/2	Column	Single Angle	A36	Typical	5.75	19.9	19.9	.501
7	TWR_TOP_GIRT_T2	2L3-1/2x3x5/16x3/8	Beam	None	A36	Typical	3.87	6.995	4.66	.126
8	TWR_DIAG_T2	L3-1/2x3x1/4	Column	Single Angle	A36	Typical	1.563	1.304	1.913	.033
9	TWR_STEP_T2	C6x8.2	Beam	Channel	A36	Typical	2.39	.687	13.1	.074
10	TWR_RED_VERT_T2	L2.5x2.5x3	Beam	Channel	A36	Typical	.901	.535	.535	.011
11	TWR_LEG_T3	L6x6x5/8	Column	Single Angle	A36	Typical	7.109	24.158	24.158	.926
12	TWR_TOP_GIRT_T3	2L3x2-1/2x1/4x3/8	Beam	None	A36	Typical	2.63	3.373	2.35	.055
13	TWR_INNER_SUPP_T3	2L2-1/2x2x3/16x3/8	Beam	None	A36	Typical	1.64	1.374	1.017	.019
14	TWR_DIAG_T3	L4x3x1/4	Column	Single Angle	A36	Typical	1.688	1.355	2.769	.035
15	TWR_STEP_T3	L3x2-1/2x1/4	Beam	Single Angle	A36	Typical	1.313	.743	1.173	.027
16	TWR_RED_VERT_T3	L2.5x2.5x3	Beam	Single Angle	A36	Typical	.901	.535	.535	.011
17	TWR_INNER_SQ_T3	L3x2.5x4	Beam	Single Angle	A36	Typical	1.32	.734	1.16	.03
18	TWR_INNER_CORNER_T3	L2.5x2.5x3	Beam	Single Angle	A36	Typical	.901	.535	.535	.011
19	TWR_INNER_TRI_T3	L2X2.5X3	Beam	Single Angle	A36	Typical	.809	.509	.291	.009
20	TWR_INNER_LADDER_T3	L2X2.5X3	Beam	Single Angle	A36	Typical	.809	.509	.291	.009
21	TWR_LEG_T4	L6x6x5/8	Column	Single Angle	A36	Typical	7.109	24.158	24.158	.926
22	TWR_DIAG_T4mods	L4x3x1/4	Column	Single Angle	A36	Typical	1.688	1.355	2.769	.035
23	TWR_TOP_GIRT_T4	2L3x2-1/2x1/4x3/8	Beam	None	A36	Typical	2.63	3.373	2.35	.055
24	TWR_RED_VERT_T4	L2.5x2.5x3	Beam	None	A36	Typical	.901	.535	.535	.011
25	TWR_STEP_T4	L3x2-1/2x1/4	Beam	Single Angle	A36	Typical	1.313	.743	1.173	.027
26	TWR_LEG_T5	L6x6x3/4	Column	Single Angle	A36	Typical	8.438	28.155	28.155	1.582
27	TWR_HORZ_T5	2L3x2-1/2x1/4x3/8	Beam	None	A36	Typical	2.63	3.373	2.35	.055
28	TWR_DIAG_T5	2L2-1/2x2-1/2x1/4x3/8	Column	None	A36	Typical	2.38	3.347	1.41	.049
29	TWR_RED_HORZ_T5	L2-1/2x2x3/16	Beam	Single Angle	A36	Typical	.809	.291	.509	.009
30	TWR_RED_DIAG_T5	L2-1/2x2-1/2x3/16	Column	Single Angle	A36	Typical	.902	.547	.547	.011
31	TWR_INNER_SUPP_T5	2L2-1/2x2-1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
32	TWR_INNER_SQ_T5	LL2.5x2x3x3	Beam	None	A36	Typical	1.64	1.38	1.02	.021
33	TWR_INNER_CORNER_T5	L2X2.5X3	Beam	None	A36	Typical	.809	.509	.291	.009



Company : GPD
 Designer : Irife
 Job Number : 2018702.01
 Model Name : 27016 SHELTON EAST CENTRAL

Checked By: _____

Hot Rolled Steel Section Sets (Continued)

Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]	
34	TWR INNER TRI T5	L2X2.5X3	Beam	None	A36	Typical	.809	.509	.291	.009
35	TWR INNER LADDER T5	L2X2.5X3	Beam	None	A36	Typical	.809	.509	.291	.009
36	TWR LEG T6	L6x6x3/4	Column	Single Angle	A36	Typical	8.438	28.155	28.155	1.582
37	TWR HORZ T6	2L2-1/2x2-1/2x1/4x3/8	Beam	None	A36	Typical	2.38	3.347	1.41	.049
38	TWR DIAG T6	2L2-1/2x2-1/2x1/4x3/8	Column	None	A36	Typical	2.38	3.347	1.41	.049
39	TWR RED HORZ T6	L2-1/2x2x3/16	Beam	Single Angle	A36	Typical	.809	.291	.509	.009
40	TWR RED DIAG T6	L2-1/2x2-1/2x3/16	Column	Single Angle	A36	Typical	.902	.547	.547	.011
41	TWR INNER SUPP T6	2L2-1/2x2-1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
42	TWR INNER SQ T6	LL2.5x2x3x3	Beam	None	A36	Typical	1.64	1.38	1.02	.021
43	TWR INNER CORNER T6	L2X2.5X3	Beam	None	A36	Typical	.809	.509	.291	.009
44	TWR INNER TRI T6	L2X2.5X3	Beam	None	A36	Typical	.809	.509	.291	.009
45	TWR INNER LADDER T6	L2X2.5X3	Beam	None	A36	Typical	.809	.509	.291	.009
46	TWR LEG T7	L6x6x7/8	Column	Single Angle	A36	Typical	9.734	31.917	31.917	2.484
47	TWR HORZ T7	2L2-1/2x2-1/2x1/4x3/8	Beam	None	A36	Typical	2.38	3.347	1.41	.049
48	TWR DIAG T7	2L2-1/2x2-1/2x1/4x3/8	Column	None	A36	Typical	2.38	3.347	1.41	.049
49	TWR RED HORZ T7	L2-1/2x2x3/16	Beam	Single Angle	A36	Typical	.809	.291	.509	.009
50	TWR RED DIAG T7	L2-1/2x2-1/2x3/16	Column	Single Angle	A36	Typical	.902	.547	.547	.011
51	TWR INNER SUPP T7	2L2-1/2x2-1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
52	TWR INNER SQ T7	LL2.5x2x3x3	Beam	None	A36	Typical	1.64	1.38	1.02	.021
53	TWR INNER CORNER T7	L2X2.5X3	Beam	None	A36	Typical	.809	.509	.291	.009
54	TWR INNER BRACE T7	L2.5x2.5x4	Beam	None	A36	Typical	1.19	.692	.692	.026
55	TWR INNER GIRT T7	L2X2.5X3	Beam	None	A36	Typical	.809	.509	.291	.009
56	TWR INNER TRI T7	L2X2.5X3	Beam	None	A36	Typical	.809	.509	.291	.009
57	TWR INNER LADDER T7	L2X2.5X3	Beam	None	A36	Typical	.809	.509	.291	.009
58	TWR LEG T8	L6x6x7/8	Column	Single Angle	A36	Typical	9.734	31.917	31.917	2.484
59	TWR HORZ T8	2L2-1/2x2-1/2x1/4x3/8	Beam	None	A36	Typical	2.38	3.347	1.41	.049
60	TWR DIAG T8	2L2-1/2x2-1/2x1/4x3/8	Column	None	A36	Typical	2.38	3.347	1.41	.049
61	TWR RED HORZ T8	L2-1/2x2x3/16	Beam	Single Angle	A36	Typical	.809	.291	.509	.009
62	TWR RED DIAG T8	L2-1/2x2-1/2x3/16	Column	Single Angle	A36	Typical	.902	.547	.547	.011
63	TWR INNER SUPP T8	2L2-1/2x2-1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
64	TWR INNER SQ T8	LL2.5x2x3x3	Beam	None	A36	Typical	1.64	1.38	1.02	.021
65	TWR INNER CORNER T8	L2X2.5X3	Beam	None	A36	Typical	.809	.509	.291	.009
66	TWR INNER TRI T8	L2X2.5X3	Beam	None	A36	Typical	.809	.509	.291	.009
67	TWR INNER LADDER T8	L2X2.5X3	Beam	None	A36	Typical	.809	.509	.291	.009
68	TWR LEG T9	L8x8x3/4	Column	Single Angle	A36	Typical	11.438	69.738	69.738	2.145
69	TWR HORZ T9	2L3x2-1/2x1/4x3/8	Beam	None	A36	Typical	2.63	3.373	2.35	.055
70	TWR DIAG T9	2L2-1/2x2-1/2x1/4x3/8	Column	None	A36	Typical	2.38	3.347	1.41	.049
71	TWR RED HORZ T9	L2-1/2x2-1/2x1/4	Beam	Single Angle	A36	Typical	1.188	.703	.703	.025
72	TWR RED DIAG T9	L2-1/2x2-1/2x3/16	Column	Single Angle	A36	Typical	.902	.547	.547	.011
73	TWR INNER SUPP T9	2L2-1/2x2-1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021



Hot Rolled Steel Section Sets (Continued)

Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]	
74	TWR INNER SQ T9	LL2.5x2x3x3	Beam	None	A36	Typical	1.64	1.38	1.02	.021
75	TWR INNER CORNER T9	L3x3x4	Beam	None	A36	Typical	1.44	1.23	1.23	.031
76	TWR INNER BRACE T9	L2.5x2.5x4	Beam	None	A36	Typical	1.19	.692	.692	.026
77	TWR INNER TRI T9	L2.5x2.5x4	Beam	None	A36	Typical	1.19	.692	.692	.026
78	TWR INNER LADDER T9	2L2-1/2x2-1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
79	TWR LEG T10	L8x8x7/8	Column	Single Angle	A36	Typical	13.234	79.581	79.581	3.378
80	TWR HORZ T10	2L3x2-1/2x1/4x3/8	Beam	None	A36	Typical	2.63	3.373	2.35	.055
81	TWR DIAG T10	2L3x3x3/8x3/8	Column	None	A36	Typical	4.22	8.394	3.52	.198
82	TWR RED HORZ T10	L2-1/2x2x3/16	Beam	None	A36	Typical	.809	.291	.509	.009
83	TWR RED HORZ 2 T10	2L2-1/2x2-1/2x1/4x3/8	Beam	None	A36	Typical	2.38	3.347	1.41	.049
84	TWR RED DIAG T10	L2-1/2x2-1/2x3/16	Column	Single Angle	A36	Typical	.902	.547	.547	.011
85	TWR RED DIAG 2 T10	L3x3-1/2x1/4	Column	Single Angle	A36	Typical	1.563	1.913	1.304	.033
86	TWR RED HIP 2 T10	L4x4x3/8	Beam	Single Angle	A36	Typical	2.86	4.36	4.36	.141
87	TWR RED HIPDIA 2 T10	2L2-1/2x2-1/2x1/4x3/8	Column	None	A36	Typical	2.38	3.347	1.41	.049
88	TWR INNER SUPP T10	L3x3x1/4	Beam	Single Angle	A36	Typical	1.44	1.24	1.24	.032
89	TWR INNER SQ T10	2L3x2-1/2x1/4x3/8	Beam	Single Angle	A36	Typical	2.63	3.373	2.35	.055
90	TWR INNER CORNER T10	L3x3x1/4	Beam	Single Angle	A36	Typical	1.44	1.24	1.24	.032
91	TWR INNER BRACE T10	L2.5x2.5x3	Beam	Single Angle	A36	Typical	.901	.535	.535	.011
92	TWR INNER TRI T10	L2.5x2.5x3	Beam	Single Angle	A36	Typical	.901	.535	.535	.011
93	TWR INNER LADDER T10	L4x4x6	Beam	Single Angle	A36	Typical	2.86	4.32	4.32	.141
94	TWR LEG T11	L8X8X1 HRA	Column	Single Angle	A36	Typical	15	88.983	88.983	5
95	TWR HORZ T11	2L3x3x3/8x3/8	Beam	None	A36	Typical	4.22	8.394	3.52	.198
96	TWR DIAG T11	2L3x3-1/2x3/8x3/8	Column	None	A36	Typical	4.59	12.838	3.69	.215
97	TWR RED HORZ T11	L2-1/2x2-1/2x3/16	Beam	None	A36	Typical	.902	.547	.547	.011
98	TWR RED HORZ 2 T11	2L2-1/2x2-1/2x1/4x3/8	Beam	None	A36	Typical	2.38	3.347	1.41	.049
99	TWR RED DIAG T11	L2-1/2x2-1/2x3/16	Column	None	A36	Typical	.902	.547	.547	.011
100	TWR RED DIAG 2 T11	2L2-1/2x2x1/4x3/8	Column	None	A36	Typical	2.13	1.858	1.31	.044
101	TWR RED SUBHOR T11	2L2-1/2x3-1/2x1/4x3/8	Beam	None	A36	Typical	2.88	8.466	1.55	.06
102	TWR RED BRACE T11	L2.5x2.5x4	Beam	None	A36	Typical	1.19	.692	.692	.026
103	TWR RED VERT T11	L3x3x1/4	Beam	None	A36	Typical	1.44	1.24	1.24	.032
104	TWR RED HIP 2 T11	L4x4x3/8	Beam	Single Angle	A36	Typical	2.86	4.36	4.36	.141
105	TWR RED HIPDIA 2 T11	2L2-1/2x2-1/2x1/4x3/8	Column	None	A36	Typical	2.38	3.347	1.41	.049
106	TWR RED HIPBRACE T11	L2x2x3	Column	None	A36	Typical	.722	.271	.271	.009
107	TWR INNER SUPP T11	2L3x2-1/2x1/4x3/8	Beam	None	A36	Typical	2.63	3.373	2.35	.055
108	TWR INNER SQ T11	LL2.5x2.5x4x3	Beam	None	A36	Typical	2.38	3.31	1.38	.052
109	TWR INNER CORNER T11	L3.5x3.5x5	Beam	None	A36	Typical	2.1	2.44	2.44	.073
110	TWR INNER BRACE T11	L2.5x2.5x3	Beam	None	A36	Typical	.901	.535	.535	.011
111	TWR INNER TRI T11	L2.5x2.5x4	Beam	None	A36	Typical	1.19	.692	.692	.026
112	TWR INNER LADDER T11	L2.5x2.5x4	Beam	None	A36	Typical	1.19	.692	.692	.026



Company : GPD
 Designer : Irife
 Job Number : 2018702.01
 Model Name : 27016 SHELTON EAST CENTRAL

Checked By: _____

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Mem...	Surface(Plate/Wall)
1	Dead	None		-1		60	474	44		
2	No Ice Wind 0 deg	None				60	1152	132		
3	No Ice Wind 45 deg	None				120	1112	176		
4	No Ice Wind 90 deg	None				60	1144	132		
5	No Ice Wind 135 deg	None				120	1120	176		
6	No Ice Wind 180 deg	None				60	1152	132		
7	No Ice Wind 225 deg	None				120	1112	176		
8	No Ice Wind 270 deg	None				60	1144	132		
9	No Ice Wind 315 deg	None				120	1120	176		
10	Ice	None				60	470	440		
11	Temperature Drop	None						396		
12	Ice Wind 0 deg	None				60	1128	132		
13	Ice Wind 45 deg	None				120	1064	176		
14	Ice Wind 90 deg	None				60	1128	108		
15	Ice Wind 135 deg	None				120	1070	168		
16	Ice Wind 180 deg	None				60	1128	132		
17	Ice Wind 225 deg	None				120	1064	176		
18	Ice Wind 270 deg	None				60	1128	108		
19	Ice Wind 315 deg	None				120	1070	168		
20	Service Wind 0 deg	None				60	1104	132		
21	Service Wind 45 deg	None				120	1060	176		
22	Service Wind 90 deg	None				60	1112	116		
23	Service Wind 135 deg	None				120	1070	176		
24	Service Wind 180 deg	None				60	1104	132		
25	Service Wind 225 deg	None				120	1060	176		
26	Service Wind 270 deg	None				60	1112	116		
27	Service Wind 315 deg	None				120	1070	176		

Load Combinations

	Description	Sol...	PD...	SR...	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor
1	Dead Only	Yes			1	1	28	1	29	1	0		0		0		0		0
2	1.2 Dead+1.6 Wind 0 deg - No Ice	Yes			1	1.2	2	1.6	28	1.2	29	1	0		0		0		0
3	0.9 Dead+1.6 Wind 0 deg - No Ice	Yes			1	.9	2	1.6	28	.9	29	1	0		0		0		0
4	1.2 Dead+1.6 Wind 45 deg - No Ice	Yes			1	1.2	3	1.6	28	1.2	29	1	0		0		0		0
5	0.9 Dead+1.6 Wind 45 deg - No Ice	Yes			1	.9	3	1.6	28	.9	29	1	0		0		0		0
6	1.2 Dead+1.6 Wind 90 deg - No Ice	Yes			1	1.2	4	1.6	28	1.2	29	1	0		0		0		0
7	0.9 Dead+1.6 Wind 90 deg - No Ice	Yes			1	.9	4	1.6	28	.9	29	1	0		0		0		0



Load Combinations (Continued)

	Description	Sol...	PD...	SR...	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor
8	1.2 Dead+1.6 Wind 135 deg - No Ice	Yes			1	1.2	5	1.6	28	1.2	29	1	0	0	0	0	0	0	0	0
9	0.9 Dead+1.6 Wind 135 deg - No Ice	Yes			1	.9	5	1.6	28	.9	29	1	0	0	0	0	0	0	0	0
10	1.2 Dead+1.6 Wind 180 deg - No Ice	Yes			1	1.2	6	1.6	28	1.2	29	1	0	0	0	0	0	0	0	0
11	0.9 Dead+1.6 Wind 180 deg - No Ice	Yes			1	.9	6	1.6	28	.9	29	1	0	0	0	0	0	0	0	0
12	1.2 Dead+1.6 Wind 225 deg - No Ice	Yes			1	1.2	7	1.6	28	1.2	29	1	0	0	0	0	0	0	0	0
13	0.9 Dead+1.6 Wind 225 deg - No Ice	Yes			1	.9	7	1.6	28	.9	29	1	0	0	0	0	0	0	0	0
14	1.2 Dead+1.6 Wind 270 deg - No Ice	Yes			1	1.2	8	1.6	28	1.2	29	1	0	0	0	0	0	0	0	0
15	0.9 Dead+1.6 Wind 270 deg - No Ice	Yes			1	.9	8	1.6	28	.9	29	1	0	0	0	0	0	0	0	0
16	1.2 Dead+1.6 Wind 315 deg - No Ice	Yes			1	1.2	9	1.6	28	1.2	29	1	0	0	0	0	0	0	0	0
17	0.9 Dead+1.6 Wind 315 deg - No Ice	Yes			1	.9	9	1.6	28	.9	29	1	0	0	0	0	0	0	0	0
18	1.2 Dead+1.0 Ice+1.0 Temp	Yes			1	1.2	10	1	11	1	28	1.2	29	1	0	0	0	0	0	0
19	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+	Yes			1	1.2	12	1	10	1	11	1	28	1.2	29	1	0	0	0	0
20	1.2 Dead+1.0 Wind 45 deg+1.0 Ice...	Yes			1	1.2	13	1	10	1	11	1	28	1.2	29	1	0	0	0	0
21	1.2 Dead+1.0 Wind 90 deg+1.0 Ice...	Yes			1	1.2	14	1	10	1	11	1	28	1.2	29	1	0	0	0	0
22	1.2 Dead+1.0 Wind 135 deg+1.0 Ic...	Yes			1	1.2	15	1	10	1	11	1	28	1.2	29	1	0	0	0	0
23	1.2 Dead+1.0 Wind 180 deg+1.0 Ic...	Yes			1	1.2	16	1	10	1	11	1	28	1.2	29	1	0	0	0	0
24	1.2 Dead+1.0 Wind 225 deg+1.0 Ic...	Yes			1	1.2	17	1	10	1	11	1	28	1.2	29	1	0	0	0	0
25	1.2 Dead+1.0 Wind 270 deg+1.0 Ic...	Yes			1	1.2	18	1	10	1	11	1	28	1.2	29	1	0	0	0	0
26	1.2 Dead+1.0 Wind 315 deg+1.0 Ic...	Yes			1	1.2	19	1	10	1	11	1	28	1.2	29	1	0	0	0	0
27	Dead+Wind 0 deg - Service	Yes			1	1	20	1	28	1	29	1	0	0	0	0	0	0	0	0
28	Dead+Wind 45 deg - Service	Yes			1	1	21	1	28	1	29	1	0	0	0	0	0	0	0	0
29	Dead+Wind 90 deg - Service	Yes			1	1	22	1	28	1	29	1	0	0	0	0	0	0	0	0
30	Dead+Wind 135 deg - Service	Yes			1	1	23	1	28	1	29	1	0	0	0	0	0	0	0	0
31	Dead+Wind 180 deg - Service	Yes			1	1	24	1	28	1	29	1	0	0	0	0	0	0	0	0
32	Dead+Wind 225 deg - Service	Yes			1	1	25	1	28	1	29	1	0	0	0	0	0	0	0	0
33	Dead+Wind 270 deg - Service	Yes			1	1	26	1	28	1	29	1	0	0	0	0	0	0	0	0
34	Dead+Wind 315 deg - Service	Yes			1	1	27	1	28	1	29	1	0	0	0	0	0	0	0	0

Envelope Joint Reactions

Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N189	max	23.806	12	193.003	12	18.002	5	0	.071	16	0	1
2		min	-18.232	5	-132.862	5	-23.663	12	0	-.161	22	0	1
3	N190	max	18.342	17	193.687	8	18.155	17	0	.066	13	0	1
4		min	-23.921	8	-134.248	17	-23.768	8	0	-.178	20	0	1
5	N191	max	17.851	13	193.184	4	23.934	4	0	.064	8	0	1
6		min	-23.547	4	-132.477	13	-18.329	13	0	-.161	26	0	1
7	N192	max	23.698	16	194.873	16	24.094	16	0	.063	5	0	1
8		min	-17.994	9	-133.357	9	-18.426	9	0	-.184	24	0	1



Company : GPD
 Designer : Irife
 Job Number : 2018702.01
 Model Name : 27016 SHELTON EAST CENTRAL

Checked By: _____

Envelope Joint Reactions (Continued)

Joint	X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
9	Totals: max	77.025	15	348.454	19	78.202	3					
10	min	-77.025	6	103.526	3	-78.202	10					

Envelope AISC 14th(360-10): LRFD Steel Code Checks

Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y	phi*Mn z-z	...Cb	Eqn
1	M9	L 3-1/2x3-1/2x...	.263	7.008	14	.005	9.66	z 24	17.938	54.675	.918	3.864	1	H2-1
2	M10	L 3-1/2x3-1/2x...	.266	7.576	6	.006	9.66	z 23	17.938	54.675	.918	3.864	1	H2-1
3	M11	L 3-1/2x3-1/2x...	.258	7.008	10	.005	9.66	z 22	17.938	54.675	.918	3.864	1	H2-1
4	M12	L 3-1/2x3-1/2x...	.259	7.576	2	.006	9.66	z 21	17.938	54.675	.918	3.864	1	H2-1
5	M13	L 3-1/2x3-1/2x...	.262	7.008	6	.005	9.66	z 19	17.938	54.675	.918	3.864	1	H2-1
6	M14	L 3-1/2x3-1/2x...	.260	7.576	14	.006	9.66	z 19	17.938	54.675	.918	3.864	1	H2-1
7	M15	L 3-1/2x3-1/2x...	.284	6.819	2	.005	9.66	z 25	17.938	54.675	.918	3.864	1	H2-1
8	M16	L 3-1/2x3-1/2x...	.283	7.576	10	.006	9.66	z 25	17.938	54.675	.918	3.864	1	H2-1
9	M29	L3-1/2x3x1/4	.578	7.336	14	.005	10.189	z 24	12.408	50.625	.764	3.012	1	H2-1
10	M30	L3-1/2x3x1/4	.568	0	6	.006	10.189	z 23	12.408	50.625	.764	3.069	1	H2-1
11	M31	L3-1/2x3x1/4	.602	7.336	10	.005	10.189	z 22	12.408	50.625	.764	3.012	1	H2-1
12	M32	L3-1/2x3x1/4	.593	0	2	.006	10.189	z 21	12.408	50.625	.764	3.069	1	H2-1
13	M33	L3-1/2x3x1/4	.597	7.336	6	.005	10.189	z 20	12.408	50.625	.764	3.012	1	H2-1
14	M34	L3-1/2x3x1/4	.593	0	14	.006	10.189	z 19	12.408	50.625	.764	3.069	1	H2-1
15	M35	L3-1/2x3x1/4	.590	7.336	2	.005	10.189	z 26	12.408	50.625	.764	3.012	1	H2-1
16	M36	L3-1/2x3x1/4	.585	0	10	.006	10.189	z 25	12.408	50.625	.764	3.069	1	H2-1
17	M54	L4x3x1/4	.664	10.944	14	.006	10.944	z 23	12.882	54.675	.824	3.521	1	H2-1
18	M55	L4x3x1/4	.678	10.944	6	.006	10.944	z 23	12.882	54.675	.824	3.521	1	H2-1
19	M56	L4x3x1/4	.691	10.944	10	.006	10.944	z 22	12.882	54.675	.824	3.521	1	H2-1
20	M57	L4x3x1/4	.703	10.944	2	.006	10.944	z 20	12.882	54.675	.824	3.521	1	H2-1
21	M58	L4x3x1/4	.692	10.944	6	.006	10.944	z 20	12.882	54.675	.824	3.521	1	H2-1
22	M59	L4x3x1/4	.709	10.944	14	.006	10.944	z 26	12.882	54.675	.824	3.521	1	H2-1
23	M60	L4x3x1/4	.678	10.944	2	.006	10.944	z 26	12.882	54.675	.824	3.521	1	H2-1
24	M61	L4x3x1/4	.697	10.944	10	.006	10.944	z 21	12.882	54.675	.824	3.521	1	H2-1
25	M91	2L2-1/2x2-1/2x...	.675	8.253	14	.003	8.253	y 26	20.24	77.112	5.381	2.133	1	H1-1a
26	M94	2L2-1/2x2-1/2x...	.677	8.253	6	.003	8.253	y 20	20.24	77.112	5.381	2.133	1	H1-1a
27	M98	2L2-1/2x2-1/2x...	.674	8.253	10	.004	8.253	y 24	20.24	77.112	5.381	2.133	1	H1-1a
28	M101	2L2-1/2x2-1/2x...	.673	8.253	2	.004	8.253	y 26	20.24	77.112	5.381	2.133	1	H1-1a
29	M105	2L2-1/2x2-1/2x...	.667	8.253	6	.004	8.253	y 22	20.24	77.112	5.381	2.133	1	H1-1a
30	M108	2L2-1/2x2-1/2x...	.667	8.253	14	.004	8.253	y 24	20.24	77.112	5.381	2.133	1	H1-1a
31	M112	2L2-1/2x2-1/2x...	.688	8.253	2	.003	8.253	y 20	20.24	77.112	5.381	2.133	1	H1-1a
32	M115	2L2-1/2x2-1/2x...	.687	8.253	10	.003	8.253	y 22	20.24	77.112	5.381	2.133	1	H1-1a
33	M128	2L2-1/2x2-1/2x...	.695	8.561	14	.004	8.561	y 26	18.729	77.112	5.381	2.133	1	H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y	phi*Mn z-z	Cb	Eqn
34	M131	2L2-1/2x2-1/2x...	.697	8.561	6	.004	8.561	y 20	18.729	77.112	5.381	2.133	1	H1-1a
35	M135	2L2-1/2x2-1/2x...	.692	8.561	10	.004	8.561	y 25	18.729	77.112	5.381	2.133	1	H1-1a
36	M138	2L2-1/2x2-1/2x...	.693	8.561	2	.004	8.561	y 26	18.729	77.112	5.381	2.133	1	H1-1a
37	M142	2L2-1/2x2-1/2x...	.683	8.561	6	.004	8.561	y 22	18.729	77.112	5.381	2.133	1	H1-1a
38	M145	2L2-1/2x2-1/2x...	.682	8.561	14	.004	8.561	y 23	18.729	77.112	5.381	2.133	1	H1-1a
39	M149	2L2-1/2x2-1/2x...	.704	8.561	2	.004	8.561	y 21	18.729	77.112	5.381	2.133	1	H1-1a
40	M152	2L2-1/2x2-1/2x...	.702	8.561	10	.004	8.561	y 22	18.729	77.112	5.381	2.133	1	H1-1a
41	M165	2L2-1/2x2-1/2x...	.784	8.881	14	.004	8.881	y 26	17.34	77.112	5.381	2.133	1	H1-1a
42	M168	2L2-1/2x2-1/2x...	.793	8.881	6	.004	8.881	y 20	17.34	77.112	5.381	2.133	1	H1-1a
43	M172	2L2-1/2x2-1/2x...	.784	8.881	10	.004	8.881	y 25	17.34	77.112	5.381	2.133	1	H1-1a
44	M175	2L2-1/2x2-1/2x...	.780	8.881	2	.004	8.881	y 26	17.34	77.112	5.381	2.133	1	H1-1a
45	M179	2L2-1/2x2-1/2x...	.780	8.881	6	.004	8.881	y 23	17.34	77.112	5.381	2.133	1	H1-1a
46	M182	2L2-1/2x2-1/2x...	.773	8.881	14	.004	8.881	y 24	17.34	77.112	5.381	2.133	1	H1-1a
47	M186	2L2-1/2x2-1/2x...	.798	8.881	2	.004	8.881	y 20	17.34	77.112	5.381	2.133	1	H1-1a
48	M189	2L2-1/2x2-1/2x...	.801	8.881	10	.004	8.881	y 22	17.34	77.112	5.381	2.133	1	H1-1a
49	M202	2L2-1/2x2-1/2x...	.862	9.214	14	.004	9.214	y 26	16.045	77.112	5.381	2.133	1	H1-1a
50	M205	2L2-1/2x2-1/2x...	.870	9.214	6	.004	9.214	y 20	16.045	77.112	5.381	2.133	1	H1-1a
51	M209	2L2-1/2x2-1/2x...	.859	9.214	10	.004	9.214	y 25	16.045	77.112	5.381	2.133	1	H1-1a
52	M212	2L2-1/2x2-1/2x...	.855	9.214	2	.004	9.214	y 26	16.045	77.112	5.381	2.133	1	H1-1a
53	M216	2L2-1/2x2-1/2x...	.849	9.214	6	.004	9.214	y 22	16.045	77.112	5.381	2.133	1	H1-1a
54	M219	2L2-1/2x2-1/2x...	.843	9.214	14	.004	9.214	y 23	16.045	77.112	5.381	2.133	1	H1-1a
55	M223	2L2-1/2x2-1/2x...	.870	9.214	2	.004	9.214	y 20	16.045	77.112	5.381	2.133	1	H1-1a
56	M226	2L2-1/2x2-1/2x...	.872	9.214	10	.004	9.214	y 22	16.045	77.112	5.381	2.133	1	H1-1a
57	M239	2L2-1/2x2-1/2x...	.906	9.558	14	.004	9.558	y 26	15.651	77.112	5.381	2.133	1	H1-1a
58	M242	2L2-1/2x2-1/2x...	.913	9.558	6	.004	9.558	y 20	15.651	77.112	5.381	2.133	1	H1-1a
59	M246	2L2-1/2x2-1/2x...	.910	9.558	10	.004	9.558	y 25	15.651	77.112	5.381	2.133	1	H1-1a
60	M249	2L2-1/2x2-1/2x...	.903	9.558	2	.004	9.558	y 26	15.651	77.112	5.381	2.133	1	H1-1a
61	M253	2L2-1/2x2-1/2x...	.890	9.558	6	.004	9.558	y 22	15.651	77.112	5.381	2.133	1	H1-1a
62	M256	2L2-1/2x2-1/2x...	.885	9.558	14	.004	9.558	y 23	15.651	77.112	5.381	2.133	1	H1-1a
63	M260	2L2-1/2x2-1/2x...	.915	9.558	2	.004	9.558	y 20	15.651	77.112	5.381	2.133	1	H1-1a
64	M263	2L2-1/2x2-1/2x...	.920	9.558	10	.004	9.558	y 22	15.651	77.112	5.381	2.133	1	H1-1a
65	M276	2L3x3x3/8x3/8	.592	19.927	14	.002	19.927	y 25	35.431	136.728	11.376	4.498	1	H1-1a
66	M281	2L3x3x3/8x3/8	.595	19.927	6	.003	19.927	y 21	35.431	136.728	11.376	4.498	1	H1-1a
67	M287	2L3x3x3/8x3/8	.591	19.927	10	.003	19.927	y 24	35.431	136.728	11.376	4.498	1	H1-1a
68	M292	2L3x3x3/8x3/8	.589	19.927	2	.003	19.927	y 26	35.431	136.728	11.376	4.498	1	H1-1a
69	M300	2L3x3x3/8x3/8	.575	19.927	6	.003	19.927	y 21	35.431	136.728	11.376	4.498	1	H1-1a
70	M305	2L3x3x3/8x3/8	.573	19.927	14	.003	19.927	y 25	35.431	136.728	11.376	4.498	1	H1-1a
71	M313	2L3x3x3/8x3/8	.593	19.927	2	.002	19.927	y 26	35.431	136.728	11.376	4.498	1	H1-1a
72	M318	2L3x3x3/8x3/8	.595	19.927	10	.003	19.927	y 23	35.431	136.728	11.376	4.498	1	H1-1a
73	M337	2L3x3-1/2x3/8x...	.480	0	14	.005	15.467	y 10	48.209	148.716	15.04	4.593	1	H1-1a



Company : GPD
 Designer : Irife
 Job Number : 2018702.01
 Model Name : 27016 SHELTON EAST CENTRAL

Checked By: _____

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y	phi*Mn z-z	Cb	Eqn
74	M342	2L3x3-1/2x3/8x...	.481	0	6	.005	15.467	y 10	48.209	148.716	15.04	4.593	1	H1-1a
75	M349	2L3x3-1/2x3/8x...	.483	0	10	.005	15.467	y 6	48.209	148.716	15.04	4.593	1	H1-1a
76	M354	2L3x3-1/2x3/8x...	.480	0	2	.005	15.467	y 6	48.209	148.716	15.04	4.593	1	H1-1a
77	M363	2L3x3-1/2x3/8x...	.466	0	6	.005	15.467	y 2	48.209	148.716	15.04	4.593	1	H1-1a
78	M368	2L3x3-1/2x3/8x...	.465	0	14	.005	15.467	y 2	48.209	148.716	15.04	4.593	1	H1-1a
79	M377	2L3x3-1/2x3/8x...	.482	0	2	.005	15.467	y 14	48.209	148.716	15.04	4.593	1	H1-1a
80	M382	2L3x3-1/2x3/8x...	.484	0	10	.005	15.467	y 14	48.209	148.716	15.04	4.593	1	H1-1a
81	M90	2L3x2-1/2x1/4x...	.189	0	7	.006	9.817	y 24	40.651	85.212	5.423	4.855	1	H1-1b*
82	M97	2L3x2-1/2x1/4x...	.189	0	3	.007	9.817	y 23	40.651	85.212	5.423	4.855	1	H1-1b*
83	M104	2L3x2-1/2x1/4x...	.187	9.817	7	.006	9.817	y 25	40.651	85.212	5.423	3.034	1	H1-1b*
84	M111	2L3x2-1/2x1/4x...	.192	9.817	3	.006	9.817	y 24	40.651	85.212	5.423	3.034	1	H1-1b*
85	M127	2L2-1/2x2-1/2x...	.422	10.517	6	.007	10.74	y 23	21.014	77.112	5.381	2.133	1	H1-1a
86	M134	2L2-1/2x2-1/2x...	.430	10.517	2	.007	10.74	y 23	21.014	77.112	5.381	2.133	1	H1-1a
87	M141	2L2-1/2x2-1/2x...	.423	10.964	6	.007	10.74	y 22	21.014	77.112	5.381	2.133	1	H1-1a
88	M148	2L2-1/2x2-1/2x...	.426	10.964	2	.007	10.74	y 25	21.014	77.112	5.381	2.133	1	H1-1a
89	M164	2L2-1/2x2-1/2x...	.582	11.663	6	.007	11.663	y 19	17.698	77.112	5.381	2.133	1	H1-1a
90	M171	2L2-1/2x2-1/2x...	.584	11.663	2	.008	11.663	y 26	17.698	77.112	5.381	2.133	1	H1-1a
91	M178	2L2-1/2x2-1/2x...	.591	11.663	6	.008	11.663	y 24	17.698	77.112	5.381	2.133	1	H1-1a
92	M185	2L2-1/2x2-1/2x...	.601	11.663	10	.008	11.663	y 21	17.698	77.112	5.381	2.133	1	H1-1a
93	M201	2L2-1/2x2-1/2x...	.707	12.587	6	.008	12.587	y 23	15.084	77.112	5.381	2.133	1	H1-1a
94	M208	2L2-1/2x2-1/2x...	.707	12.587	2	.008	12.587	y 26	15.084	77.112	5.381	2.133	1	H1-1a
95	M215	2L2-1/2x2-1/2x...	.700	12.587	6	.008	12.587	y 22	15.084	77.112	5.381	2.133	1	H1-1a
96	M222	2L2-1/2x2-1/2x...	.707	12.587	10	.008	12.587	y 25	15.084	77.112	5.381	2.133	1	H1-1a
97	M238	2L3x2-1/2x1/4x...	.527	13.51	6	.008	13.51	y 23	21.715	85.212	5.423	3.034	1	H1-1a
98	M245	2L3x2-1/2x1/4x...	.538	13.51	2	.008	13.51	y 21	21.715	85.212	5.423	3.034	1	H1-1a
99	M252	2L3x2-1/2x1/4x...	.532	13.51	6	.008	13.51	y 26	21.715	85.212	5.423	3.034	1	H1-1a
100	M259	2L3x2-1/2x1/4x...	.532	13.51	10	.008	13.51	y 25	21.715	85.212	5.423	3.034	1	H1-1a
101	M275	2L3x2-1/2x1/4x...	.640	14.433	6	.008	14.433	y 23	19.415	85.212	5.423	3.034	1	H1-1a
102	M286	2L3x2-1/2x1/4x...	.653	14.433	2	.009	14.433	y 22	19.415	85.212	5.423	3.034	1	H1-1a
103	M299	2L3x2-1/2x1/4x...	.640	14.433	6	.009	14.433	y 26	19.415	85.212	5.423	3.034	1	H1-1a
104	M312	2L3x2-1/2x1/4x...	.639	14.433	10	.008	14.433	y 25	19.415	85.212	5.423	3.034	1	H1-1a
105	M336	2L3x3x3/8x3/8	.264	16.279	6	.004	24.418	y 22	51.173	136.728	11.376	4.498	2....	H1-1a
106	M348	2L3x3x3/8x3/8	.260	16.279	2	.005	24.418	y 20	51.173	136.728	11.376	4.498	2....	H1-1a
107	M362	2L3x3x3/8x3/8	.255	16.279	6	.005	8.139	y 20	51.173	136.728	11.376	4.498	2....	H1-1a
108	M376	2L3x3x3/8x3/8	.265	16.279	10	.004	24.418	y 24	51.173	136.728	11.376	4.498	1....	H1-1a
109	M490	L2.5x2.5x4	.022	2.916	20	.002	0	y 6	12.752	38.556	1.114	2.159	1	H2-1
110	M491	L2.5x2.5x4	.022	2.916	25	.002	0	y 10	12.752	38.556	1.114	2.159	1	H2-1
111	M466	L2.5x2.5x4	.029	3.377	26	.002	0	y 14	9.505	38.556	1.114	2.076	1	H2-1
112	M467	L2.5x2.5x4	.029	3.377	22	.002	0	y 10	9.505	38.556	1.114	2.076	1	H2-1
113	M468	L2.5x2.5x4	.029	3.377	23	.002	0	y 2	9.505	38.556	1.114	2.076	1	H2-1



Company : GPD
 Designer : Irife
 Job Number : 2018702.01
 Model Name : 27016 SHELTON EAST CENTRAL

Checked By: _____

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y	phi*Mn z-z	Cb	Eqn
114	M469	L2.5x2.5x4	.029	3.377	25	.002	0	y 6	9.505	38.556	1.114	2.076	1	H2-1
115	M452	L2.5x2.5x3	.037	3.608	19	.002	7.216	y 6	6.307	29.192	.873	1.417	1	H2-1
116	M453	L2.5x2.5x3	.037	3.608	19	.003	7.216	y 2	6.307	29.192	.873	1.417	1	H2-1
117	M454	L2.5x2.5x3	.037	3.608	19	.003	7.216	y 6	6.307	29.192	.873	1.417	1	H2-1
118	M455	L2.5x2.5x3	.037	3.608	19	.002	7.216	y 2	6.307	29.192	.873	1.417	1	H2-1
119	M420	L2.5x2.5x3	.044	4.07	19	.002	8.139	y 22	4.957	29.192	.873	1.349	1	H2-1
120	M421	L2.5x2.5x3	.044	4.07	22	.002	8.139	y 23	4.957	29.192	.873	1.349	1	H2-1
121	M422	L2.5x2.5x3	.044	4.07	19	.002	8.139	y 25	4.957	29.192	.873	1.349	1	H2-1
122	M423	L2.5x2.5x3	.044	4.07	19	.002	8.139	y 26	4.957	29.192	.873	1.349	1	H2-1
123	M530	L2.5x2.5x3	.012	0	8	.001	0	y 12	10.337	29.192	.873	1.606	1....	H2-1*
124	M531	L2.5x2.5x3	.016	0	12	.001	0	y 8	10.337	29.192	.873	1.606	1....	H2-1*
125	M532	L2.5x2.5x3	.012	0	16	.001	0	y 12	10.337	29.192	.873	1.606	1....	H2-1*
126	M512	L2X2.5X3	.042	0	8	.002	0	y 4	4.806	26.198	1.609	.704	1....	H2-1*
127	M513	L2X2.5X3	.048	0	12	.002	0	y 16	4.806	26.198	1.609	.704	1....	H2-1*
128	M514	L2X2.5X3	.041	0	16	.002	0	y 4	4.806	26.198	1.609	.704	1....	H2-1*
129	M502	L2X2.5X3	.063	0	8	.002	0	y 12	4.016	26.198	1.609	.704	1....	H2-1*
130	M503	L2X2.5X3	.071	0	12	.002	0	y 8	4.016	26.198	1.609	.704	1....	H2-1*
131	M504	L2X2.5X3	.063	0	16	.002	0	y 12	4.016	26.198	1.609	.704	1....	H2-1*
132	M487	L2X2.5X3	.055	0	8	.002	0	y 12	3.405	26.198	1.609	.704	1....	H2-1*
133	M488	L2X2.5X3	.060	0	13	.002	0	y 8	3.405	26.198	1.609	.704	1....	H2-1*
134	M489	L2X2.5X3	.054	0	17	.002	8.247	y 12	3.405	26.198	1.609	.704	1....	H2-1*
135	M477	L2X2.5X3	.059	0	8	.003	0	y 12	2.924	26.198	1.609	.704	1....	H2-1*
136	M478	L2X2.5X3	.066	0	12	.003	0	y 8	2.924	26.198	1.609	.704	1....	H2-1*
137	M479	L2X2.5X3	.059	0	16	.003	0	y 12	2.924	26.198	1.609	.704	1....	H2-1*
138	M463	L3x3x4	.044	0	12	.003	0	y 8	8.472	46.656	1.688	2.845	1....	H2-1*
139	M464	L3x3x4	.042	0	8	.003	0	y 12	8.472	46.656	1.688	2.845	1....	H2-1*
140	M465	L3x3x4	.042	0	16	.002	0	y 12	8.472	46.656	1.688	2.845	1....	H2-1*
141	M449	L3x3x1/4	.049	0	8	.003	0	y 4	7.602	46.656	.673	2.786	1....	H2-1*
142	M450	L3x3x1/4	.051	0	12	.003	0	y 8	7.602	46.656	.673	2.786	1....	H2-1*
143	M451	L3x3x1/4	.048	0	16	.003	0	y 4	7.602	46.656	.673	2.786	1....	H2-1*
144	M417	L3.5x3.5x5	.030	0	8	.003	11.511	y 12	11.667	68.04	2.882	4.892	1....	H2-1*
145	M418	L3.5x3.5x5	.032	0	13	.003	11.511	y 8	11.667	68.04	2.882	4.892	1....	H2-1*
146	M419	L3.5x3.5x5	.029	0	17	.003	11.511	y 4	11.667	68.04	2.882	4.892	1....	H2-1*
147	M492	L2X2.5X3	.035	2.916	21	.002	5.832	y 24	6.81	26.198	1.609	.644	1	H2-1
148	M493	L2X2.5X3	.045	2.916	22	.002	0	y 19	6.81	26.198	1.609	.644	1	H2-1
149	M494	L2X2.5X3	.045	2.916	23	.002	5.832	y 19	6.81	26.198	1.609	.644	1	H2-1
150	M535	L2X2.5X3	.115	4	19	.002	8	y 16	3.619	26.198	1.609	.627	1	H2-1
151	M517	L2X2.5X3	.225	4	2	.002	0	y 16	3.619	26.198	1.609	.627	1	H2-1
152	M507	L2X2.5X3	.328	4	2	.002	8	y 16	3.619	26.198	1.609	.627	1	H2-1
153	M497	L2X2.5X3	.287	4	6	.002	0	y 16	3.619	26.198	1.609	.627	1	H2-1



Company : GPD
 Designer : Irife
 Job Number : 2018702.01
 Model Name : 27016 SHELTON EAST CENTRAL

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Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y	phi*Mn z-z	Cb	Eqn
154	M482	L2X2.5X3	.308	4	2	.002	0	y 8	3.619	26.198	1.609	.627	1	H2-1
155	M472	2L2-1/2x2-1/2x...	.048	0	2	.002	8	y 8	26.081	58.32	4.017	2.611	1	H1-1b*
156	M458	L4x4x6	.057	4	2	.002	0	y 8	41.657	92.664	4.398	8.566	1	H2-1
157	M426	L2.5x2.5x4	.206	4	2	.002	0	y 16	6.777	38.556	1.114	1.972	1	H2-1
158	M526	L3x2.5x4	.045	3.986	16	.002	7.971	y 16	8.813	42.768	1.251	2.172	1	H2-1
159	M527	L3x2.5x4	.045	3.986	8	.002	7.971	y 8	8.813	42.768	1.251	2.172	1	H2-1
160	M528	L3x2.5x4	.044	3.986	14	.001	7.971	y 10	8.813	42.768	1.251	2.172	1	H2-1
161	M529	L3x2.5x4	.045	3.986	10	.001	7.971	y 14	8.813	42.768	1.251	2.172	1	H2-1
162	M508	LL2.5x2x3x3	.043	4.909	14	.002	0	z 2	16.604	53.136	2.725	2.524	1	H1-1b
163	M509	LL2.5x2x3x3	.043	4.909	10	.002	0	z 6	16.604	53.136	2.725	2.524	1	H1-1b
164	M510	LL2.5x2x3x3	.041	4.909	14	.002	0	z 10	16.604	53.136	2.725	2.524	1	H1-1b
165	M511	LL2.5x2x3x3	.041	4.909	10	.002	0	z 14	16.604	53.136	2.725	2.524	1	H1-1b
166	M498	LL2.5x2x3x3	.058	5.37	14	.003	0	z 2	13.873	53.136	2.725	2.524	1	H1-1b
167	M499	LL2.5x2x3x3	.059	5.37	10	.003	0	z 6	13.873	53.136	2.725	2.524	1	H1-1b
168	M500	LL2.5x2x3x3	.051	5.37	14	.003	0	z 10	13.873	53.136	2.725	2.524	1	H1-1b
169	M501	LL2.5x2x3x3	.052	5.37	10	.003	0	z 14	13.873	53.136	2.725	2.524	1	H1-1b
170	M483	LL2.5x2x3x3	.095	5.832	24	.003	0	z 6	11.764	53.136	2.725	2.524	1	H1-1b
171	M484	LL2.5x2x3x3	.091	5.832	21	.003	11.663	z 2	11.764	53.136	2.725	2.524	1	H1-1b
172	M485	LL2.5x2x3x3	.056	5.832	2	.003	0	z 14	11.764	53.136	2.725	2.524	1	H1-1b
173	M486	LL2.5x2x3x3	.068	5.832	12	.003	0	z 2	11.764	53.136	2.725	2.524	1	H1-1b
174	M473	LL2.5x2x3x3	.084	6.293	12	.003	12.587	z 2	10.1	53.136	2.725	2.524	1	H1-1b
175	M474	LL2.5x2x3x3	.085	6.293	12	.003	12.587	z 6	10.1	53.136	2.725	2.524	1	H1-1b
176	M475	LL2.5x2x3x3	.068	6.293	6	.003	12.587	z 10	10.1	53.136	2.725	2.524	1	H1-1b
177	M476	LL2.5x2x3x3	.068	6.293	2	.003	12.587	z 14	10.1	53.136	2.725	2.524	1	H1-1b
178	M459	LL2.5x2x3x3	.121	6.755	12	.004	13.51	z 2	10.465	53.136	2.725	1.577	1	H1-1b
179	M460	LL2.5x2x3x3	.124	6.755	12	.004	0	z 6	10.465	53.136	2.725	1.577	1	H1-1b
180	M461	LL2.5x2x3x3	.101	6.755	6	.004	13.51	z 10	10.465	53.136	2.725	1.577	1	H1-1b
181	M462	LL2.5x2x3x3	.101	6.755	2	.004	0	z 14	10.465	53.136	2.725	1.577	1	H1-1b
182	M441	2L3x2-1/2x1/4x...	.107	7.216	22	.004	14.433	z 14	22.832	85.212	5.423	3.034	1	H1-1b
183	M442	2L3x2-1/2x1/4x...	.107	7.216	26	.004	0	z 10	22.832	85.212	5.423	3.034	1	H1-1b
184	M443	2L3x2-1/2x1/4x...	.108	7.216	24	.004	14.433	z 6	22.832	85.212	5.423	3.034	1	H1-1b
185	M444	2L3x2-1/2x1/4x...	.108	7.216	24	.004	0	z 2	22.832	85.212	5.423	3.034	1	H1-1b
186	M409	LL2.5x2.5x4x3	.112	8.139	22	.004	0	z 6	18.589	77.112	5.321	2.083	1	H1-1b
187	M410	LL2.5x2.5x4x3	.112	8.139	26	.004	16.279	z 2	18.589	77.112	5.321	2.083	1	H1-1b
188	M411	LL2.5x2.5x4x3	.113	8.139	24	.004	16.279	z 6	18.589	77.112	5.321	2.083	1	H1-1b
189	M412	LL2.5x2.5x4x3	.113	8.139	24	.004	0	z 2	18.589	77.112	5.321	2.083	1	H1-1b
190	M49	2L2-1/2x2x3/16...	.220	5.636	25	.010	11.273	z 24	14.189	53.136	2.713	1.572	1	H1-1b
191	M50	2L2-1/2x2x3/16...	.197	5.636	19	.010	0	z 26	14.189	53.136	2.713	1.572	1	H1-1b
192	M51	2L2-1/2x2x3/16...	.220	5.636	24	.010	0	z 24	14.189	53.136	2.713	1.572	1	H1-1b
193	M52	2L2-1/2x2x3/16...	.192	5.636	20	.010	0	z 26	14.189	53.136	2.713	1.572	1	H1-1b



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y	phi*Mn z-z	Cb	Eqn
194	M118	2L2-1/2x2-1/2x...	.239	6.942	24	.011	13.884	z 24	18.665	58.32	4.017	1.632	1	H1-1b
195	M119	2L2-1/2x2-1/2x...	.208	6.942	20	.011	13.884	z 22	18.665	58.32	4.017	1.632	1	H1-1b
196	M120	2L2-1/2x2-1/2x...	.239	6.942	24	.011	0	z 24	18.665	58.32	4.017	1.632	1	H1-1b
197	M121	2L2-1/2x2-1/2x...	.205	6.942	20	.011	0	z 26	18.665	58.32	4.017	1.632	1	H1-1b
198	M155	2L2-1/2x2-1/2x...	.268	7.595	24	.011	15.189	z 25	15.733	58.32	4.017	1.632	1	H1-1b
199	M156	2L2-1/2x2-1/2x...	.242	7.595	20	.012	15.189	z 22	15.733	58.32	4.017	1.632	1	H1-1b
200	M157	2L2-1/2x2-1/2x...	.268	7.595	24	.011	0	z 23	15.733	58.32	4.017	1.632	1	H1-1b
201	M158	2L2-1/2x2-1/2x...	.239	7.595	20	.011	0	z 25	15.733	58.32	4.017	1.632	1	H1-1b
202	M192	2L2-1/2x2-1/2x...	.310	8.247	24	.012	16.495	z 25	13.428	58.32	4.017	1.632	1	H1-1b
203	M193	2L2-1/2x2-1/2x...	.293	8.247	20	.013	16.495	z 22	13.428	58.32	4.017	1.632	1	H1-1b
204	M194	2L2-1/2x2-1/2x...	.342	8.247	24	.013	0	z 24	13.428	58.32	4.017	1.632	1	H1-1b
205	M195	2L2-1/2x2-1/2x...	.295	8.247	20	.013	0	z 22	13.428	58.32	4.017	1.632	1	H1-1b
206	M229	2L2-1/2x2-1/2x...	.355	8.9	24	.013	17.8	z 25	11.811	58.32	4.017	1.632	1	H1-1b
207	M230	2L2-1/2x2-1/2x...	.331	8.9	24	.013	0	z 22	11.811	58.32	4.017	2.611	1	H1-1b
208	M231	2L2-1/2x2-1/2x...	.355	8.9	24	.013	0	z 23	11.811	58.32	4.017	1.632	1	H1-1b
209	M232	2L2-1/2x2-1/2x...	.325	8.9	24	.013	17.8	z 23	11.811	58.32	4.017	2.611	1	H1-1b
210	M266	2L2-1/2x2-1/2x...	.426	9.553	24	.015	19.105	z 25	10.292	58.32	4.017	1.632	1	H1-1b
211	M267	2L2-1/2x2-1/2x...	.403	9.553	24	.015	0	z 22	10.292	58.32	4.017	2.611	1	H1-1b
212	M268	2L2-1/2x2-1/2x...	.426	9.553	24	.015	0	z 23	10.292	58.32	4.017	1.632	1	H1-1b
213	M269	2L2-1/2x2-1/2x...	.397	9.553	24	.014	19.105	z 23	10.292	58.32	4.017	2.611	1	H1-1b
214	M327	L3x3x1/4	.145	0	14	.008	10.205	z 24	7.602	46.656	.673	2.651	1	H2-1
215	M328	L3x3x1/4	.148	0	10	.008	10.205	z 20	7.602	46.656	.673	2.651	1	H2-1
216	M329	L3x3x1/4	.147	20.411	10	.008	10.205	z 24	7.602	46.656	.673	2.651	1	H2-1
217	M330	L3x3x1/4	.113	0	2	.008	10.205	z 21	7.602	46.656	.673	2.651	1	H2-1
218	M392	2L3x2-1/2x1/4x...	.121	11.511	23	.007	11.511	z 21	27.824	85.212	5.423	3.034	1	H1-1b
219	M393	2L3x2-1/2x1/4x...	.076	11.511	20	.007	11.511	z 26	27.824	85.212	5.423	4.855	1	H1-1b
220	M394	2L3x2-1/2x1/4x...	.122	11.511	25	.007	11.511	z 25	27.824	85.212	5.423	3.034	1	H1-1b
221	M395	2L3x2-1/2x1/4x...	.078	11.511	24	.007	11.511	z 23	27.824	85.212	5.423	4.855	1	H1-1b
222	M533	L2X2.5X3	.013	2.161	4	.001	0	y 10	12.015	26.198	1.609	.655	1	H2-1
223	M534	L2X2.5X3	.013	2.161	4	.001	0	y 14	12.015	26.198	1.609	.655	1	H2-1
224	M515	L2X2.5X3	.053	2.483	12	.002	4.965	y 22	9.396	26.198	1.609	.651	1	H2-1
225	M516	L2X2.5X3	.053	2.483	12	.002	0	y 19	9.396	26.198	1.609	.651	1	H2-1
226	M505	L2X2.5X3	.076	2.689	12	.002	0	y 19	8.008	26.198	1.609	.648	1	H2-1
227	M506	L2X2.5X3	.076	2.689	12	.002	5.378	y 19	8.008	26.198	1.609	.648	1	H2-1
228	M495	L2X2.5X3	.107	2.917	12	.002	0	y 19	6.805	26.198	1.609	.644	1	H2-1
229	M496	L2X2.5X3	.107	2.917	12	.002	5.834	y 19	6.805	26.198	1.609	.644	1	H2-1
230	M480	L2X2.5X3	.134	3.163	12	.002	6.325	y 19	5.79	26.198	1.609	.641	1	H2-1
231	M481	L2X2.5X3	.134	3.163	12	.002	6.325	y 19	5.79	26.198	1.609	.641	1	H2-1
232	M470	L2.5x2.5x4	.117	3.422	12	.002	6.843	y 12	9.262	38.556	1.114	2.068	1	H2-1
233	M471	L2.5x2.5x4	.117	3.422	12	.002	0	y 12	9.262	38.556	1.114	2.068	1	H2-1



Company : GPD
 Designer : Irife
 Job Number : 2018702.01
 Model Name : 27016 SHELTON EAST CENTRAL

Checked By: _____

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y	phi*Mn z-z	Cb	Eqn
234	M456	L2.5x2.5x3	.192	3.691	12	.002	7.383	y 12	6.025	29.192	.873	1.404	1	H2-1
235	M457	L2.5x2.5x3	.192	3.691	12	.002	7.383	y 12	6.025	29.192	.873	1.404	1	H2-1
236	M424	L2.5x2.5x4	.182	4.255	12	.003	0	y 20	5.989	38.556	1.114	1.932	1	H2-1
237	M425	L2.5x2.5x4	.182	4.255	12	.003	0	y 20	5.989	38.556	1.114	1.932	1	H2-1
238	M1	L6x6x1/2	.086	2.356	24	.003	0	y 6	145.646	186.3	5.312	28.768	1	H2-1
239	M2	L6x6x1/2	.086	1.44	22	.004	0	y 2	145.646	186.3	5.312	28.768	1	H2-1
240	M3	L6x6x1/2	.085	2.226	20	.004	0	z 10	145.646	186.3	5.312	28.768	1	H2-1
241	M4	L6x6x1/2	.087	0	26	.004	0	z 6	145.646	186.3	5.312	28.768	1	H2-1
242	M21	L6x6x1/2	.146	3.273	24	.008	12.568	y 6	146.222	186.3	5.312	28.808	1	H2-1
243	M22	L6x6x1/2	.155	2.749	22	.011	12.568	y 2	146.222	186.3	5.312	28.808	1	H2-1
244	M23	L6x6x1/2	.160	3.404	20	.011	12.568	z 10	146.222	186.3	5.312	28.808	1	H2-1
245	M24	L6x6x1/2	.151	3.797	26	.011	12.568	z 6	146.222	186.3	5.312	28.808	1	H2-1
246	M41	L6x6x5/8	.194	7.986	12	.004	12.568	z 2	181.223	230.344	6.62	36.329	1	H2-1
247	M42	L6x6x5/8	.190	7.986	8	.004	12.568	y 2	181.223	230.344	6.62	36.329	1	H2-1
248	M43	L6x6x5/8	.195	7.986	4	.004	12.568	y 14	181.223	230.344	6.62	36.329	1	H2-1
249	M44	L6x6x5/8	.197	7.986	16	.004	12.568	z 6	181.223	230.344	6.62	36.329	1	H2-1
250	M66	L6x6x5/8	.269	3.011	12	.017	12.568	z 2	181.667	230.344	6.62	36.356	1	H2-1
251	M67	L6x6x5/8	.268	2.749	8	.016	12.568	z 14	181.667	230.344	6.62	36.356	1	H2-1
252	M68	L6x6x5/8	.266	2.88	4	.012	12.568	z 10	181.667	230.344	6.62	36.356	1	H2-1
253	M69	L6x6x5/8	.268	2.88	16	.016	12.568	y 10	181.667	230.344	6.62	36.356	1	H2-1
254	M86	L6x6x3/4	.259	10.081	12	.005	0	y 8	219.956	273.375	7.874	42.663	1	H2-1
255	M87	L6x6x3/4	.259	3.797	8	.005	0	z 12	219.956	273.375	7.874	42.663	1	H2-1
256	M88	L6x6x3/4	.258	9.95	4	.004	0	y 16	219.956	273.375	7.874	42.663	1	H2-1
257	M89	L6x6x3/4	.259	9.95	16	.004	0	y 12	219.956	273.375	7.874	42.663	1	H2-1
258	M123	L6x6x3/4	.344	3.273	12	.005	0	y 8	219.956	273.375	7.874	42.663	1	H2-1
259	M124	L6x6x3/4	.345	3.273	8	.005	0	z 12	219.956	273.375	7.874	42.663	1	H2-1
260	M125	L6x6x3/4	.341	3.273	4	.005	0	y 16	219.956	273.375	7.874	42.663	1	H2-1
261	M126	L6x6x3/4	.344	9.688	16	.005	0	y 12	219.956	273.375	7.874	42.663	1	H2-1
262	M160	L6x6x7/8	.359	3.273	12	.005	0	y 8	253.44	315.394	9.128	48.216	1	H2-1
263	M161	L6x6x7/8	.357	3.273	8	.005	0	z 12	253.44	315.394	9.128	48.216	1	H2-1
264	M162	L6x6x7/8	.358	3.273	4	.005	0	y 16	253.44	315.394	9.128	48.216	1	H2-1
265	M163	L6x6x7/8	.365	3.273	16	.005	0	y 12	253.44	315.394	9.128	48.216	1	H2-1
266	M197	L6x6x7/8	.417	3.273	12	.006	0	y 8	253.44	315.394	9.128	48.216	1	H2-1
267	M198	L6x6x7/8	.416	3.273	8	.006	0	z 12	253.44	315.394	9.128	48.216	1	H2-1
268	M199	L6x6x7/8	.416	9.557	4	.005	0	y 16	253.44	315.394	9.128	48.216	1	H2-1
269	M200	L6x6x7/8	.423	9.557	16	.005	0	z 4	253.44	315.394	9.128	48.216	1	H2-1
270	M234	L8x8x3/4	.368	2.88	12	.008	0	y 8	328.455	370.575	14.199	79.541	1	H2-1
271	M235	L8x8x3/4	.367	2.88	8	.008	0	z 12	328.455	370.575	14.199	79.541	1	H2-1
272	M236	L8x8x3/4	.368	2.88	4	.008	0	z 8	328.455	370.575	14.199	79.541	1	H2-1
273	M237	L8x8x3/4	.373	2.88	16	.008	0	z 4	328.455	370.575	14.199	79.541	1	H2-1



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y	phi*Mn z-z	Cb	Eqn
274	M271	L8x8x7/8	.393	17.543	12	.006	0	y 8	345.459	428.794	16.437	90.618	1	H2-1
275	M272	L8x8x7/8	.394	17.543	8	.006	0	z 12	345.459	428.794	16.437	90.618	1	H2-1
276	M273	L8x8x7/8	.391	17.543	4	.006	0	y 16	345.459	428.794	16.437	90.618	1	H2-1
277	M274	L8x8x7/8	.396	17.543	16	.006	0	z 4	345.459	428.794	16.437	90.618	1	H2-1
278	M332	L8X8X1_HRA	.406	16.495	12	.006	16.757	y 24	391.033	486	18.665	101.127	1	H2-1
279	M333	L8X8X1_HRA	.407	16.234	8	.006	16.757	z 22	391.033	486	18.665	101.127	1	H2-1
280	M334	L8X8X1_HRA	.409	16.495	4	.006	16.757	y 20	391.033	486	18.665	101.127	1	H2-1
281	M335	L8X8X1_HRA	.411	16.495	16	.006	16.757	z 26	391.033	486	18.665	101.127	1	H2-1
282	M401	L2.5x2.5x4	.120	2.47	22	.001	5.156	y 8	16.194	38.556	1.114	2.224	1	H2-1
283	M402	L2.5x2.5x4	.051	1.357	22	.001	2.713	y 16	30.324	38.556	1.114	2.505	1	H2-1
284	M403	L2.5x2.5x4	.119	2.47	24	.001	5.156	y 24	16.194	38.556	1.114	2.224	1	H2-1
285	M404	L2.5x2.5x4	.051	1.357	24	.001	0	y 20	30.324	38.556	1.114	2.505	1	H2-1
286	M405	L2.5x2.5x4	.119	2.47	20	.002	5.156	y 20	16.194	38.556	1.114	2.224	1	H2-1
287	M406	L2.5x2.5x4	.051	1.357	20	.001	0	y 24	30.324	38.556	1.114	2.505	1	H2-1
288	M407	L2.5x2.5x4	.120	2.47	26	.001	0	y 16	16.194	38.556	1.114	2.224	1	H2-1
289	M408	L2.5x2.5x4	.051	1.357	26	.001	2.713	y 8	30.324	38.556	1.114	2.505	1	H2-1
290	M280	L3x3-1/2x1/4	.039	0	11	.006	12.286	z 26	6.974	50.625	1.301	3.568	1	H2-1
291	M285	L3x3-1/2x1/4	.035	1.152	11	.005	0	z 20	6.974	50.625	1.301	2.891	1	H2-1
292	M291	L3x3-1/2x1/4	.032	0	7	.006	12.286	z 25	6.974	50.625	1.301	3.568	1	H2-1
293	M296	L3x3-1/2x1/4	.041	1.152	7	.005	0	z 24	6.974	50.625	1.301	2.891	1	H2-1
294	M304	L3x3-1/2x1/4	.037	0	3	.006	12.286	z 24	6.974	50.625	1.301	3.568	1	H2-1
295	M309	L3x3-1/2x1/4	.040	1.152	3	.005	12.286	z 23	6.974	50.625	1.301	2.891	1	H2-1
296	M317	L3x3-1/2x1/4	.041	0	15	.006	12.286	z 21	6.974	50.625	1.301	3.568	1	H2-1
297	M322	L3x3-1/2x1/4	.034	1.152	15	.005	0	z 21	6.974	50.625	1.301	2.891	1	H2-1
298	M341	2L2-1/2x2x1/4x...	.118	6.607	26	.005	0	y 25	12.583	69.012	3.669	3.3	1	H1-1b
299	M346	2L2-1/2x2x1/4x...	.119	6.607	20	.004	0	y 21	12.583	69.012	3.669	3.3	1	H1-1b
300	M353	2L2-1/2x2x1/4x...	.118	6.607	25	.005	0	y 23	12.583	69.012	3.669	3.3	1	H1-1b
301	M358	2L2-1/2x2x1/4x...	.118	6.607	25	.004	13.214	y 19	12.583	69.012	3.669	3.3	1	H1-1b
302	M367	2L2-1/2x2x1/4x...	.118	6.607	22	.005	0	y 21	12.583	69.012	3.669	3.3	1	H1-1b
303	M372	2L2-1/2x2x1/4x...	.119	6.607	24	.004	13.214	y 25	12.583	69.012	3.669	3.3	1	H1-1b
304	M381	2L2-1/2x2x1/4x...	.117	6.607	21	.005	13.214	y 19	12.583	69.012	3.669	3.3	1	H1-1b
305	M386	2L2-1/2x2x1/4x...	.118	6.607	21	.004	13.214	y 23	12.583	69.012	3.669	3.3	1	H1-1b
306	M93	L2-1/2x2-1/2x3...	.040	0	11	.004	7.685	z 25	6.596	29.236	.351	1.426	1	H2-1
307	M96	L2-1/2x2-1/2x3...	.038	0	11	.004	0	z 21	6.596	29.236	.351	1.426	1	H2-1
308	M100	L2-1/2x2-1/2x3...	.037	0	7	.004	7.685	z 23	6.596	29.236	.351	1.426	1	H2-1
309	M103	L2-1/2x2-1/2x3...	.041	0	7	.004	7.685	z 19	6.596	29.236	.351	1.426	1	H2-1
310	M107	L2-1/2x2-1/2x3...	.040	0	17	.004	7.685	z 21	6.596	29.236	.351	1.426	1	H2-1
311	M110	L2-1/2x2-1/2x3...	.041	0	5	.004	7.685	z 25	6.596	29.236	.351	1.426	1	H2-1
312	M114	L2-1/2x2-1/2x3...	.041	0	13	.004	7.685	z 19	6.596	29.236	.351	1.426	1	H2-1
313	M117	L2-1/2x2-1/2x3...	.039	0	17	.004	0	z 23	6.596	29.236	.351	1.426	1	H2-1



Company : GPD
 Designer : Irife
 Job Number : 2018702.01
 Model Name : 27016 SHELTON EAST CENTRAL

Checked By: _____

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y	phi*Mn z-z	Cb	Eqn
314	M130	L2-1/2x2-1/2x3...	.063	0	9	.004	7.961	z 24	6.066	29.236	.351	1.402	1	H2-1
315	M133	L2-1/2x2-1/2x3...	.061	0	13	.004	7.961	z 22	6.066	29.236	.351	1.402	1	H2-1
316	M137	L2-1/2x2-1/2x3...	.060	0	5	.004	0	z 22	6.066	29.236	.351	1.402	1	H2-1
317	M140	L2-1/2x2-1/2x3...	.063	0	9	.004	0	z 20	6.066	29.236	.351	1.402	1	H2-1
318	M144	L2-1/2x2-1/2x3...	.064	0	17	.004	0	z 20	6.066	29.236	.351	1.402	1	H2-1
319	M147	L2-1/2x2-1/2x3...	.064	0	5	.004	7.961	z 26	6.066	29.236	.351	1.402	1	H2-1
320	M151	L2-1/2x2-1/2x3...	.064	0	13	.004	0	z 26	6.066	29.236	.351	1.402	1	H2-1
321	M154	L2-1/2x2-1/2x3...	.063	0	17	.004	7.961	z 24	6.066	29.236	.351	1.402	1	H2-1
322	M167	L2-1/2x2-1/2x3...	.073	0	9	.004	8.253	z 20	5.598	29.236	.351	1.379	1	H2-1
323	M170	L2-1/2x2-1/2x3...	.070	0	13	.004	8.253	z 22	5.598	29.236	.351	1.379	1	H2-1
324	M174	L2-1/2x2-1/2x3...	.069	0	5	.004	0	z 26	5.598	29.236	.351	1.379	1	H2-1
325	M177	L2-1/2x2-1/2x3...	.072	0	9	.004	8.253	z 20	5.598	29.236	.351	1.379	1	H2-1
326	M181	L2-1/2x2-1/2x3...	.073	0	17	.004	0	z 20	5.598	29.236	.351	1.379	1	H2-1
327	M184	L2-1/2x2-1/2x3...	.075	0	5	.004	8.253	z 26	5.598	29.236	.351	1.379	1	H2-1
328	M188	L2-1/2x2-1/2x3...	.074	0	13	.004	0	z 22	5.598	29.236	.351	1.379	1	H2-1
329	M191	L2-1/2x2-1/2x3...	.073	0	17	.004	0	z 24	5.598	29.236	.351	1.379	1	H2-1
330	M204	L2-1/2x2-1/2x3...	.090	0	9	.004	8.561	z 20	5.169	29.236	.351	1.355	1	H2-1
331	M207	L2-1/2x2-1/2x3...	.086	0	13	.004	0	z 23	5.169	29.236	.351	1.355	1	H2-1
332	M211	L2-1/2x2-1/2x3...	.085	0	5	.004	0	z 26	5.169	29.236	.351	1.355	1	H2-1
333	M214	L2-1/2x2-1/2x3...	.088	0	9	.004	0	z 24	5.169	29.236	.351	1.355	1	H2-1
334	M218	L2-1/2x2-1/2x3...	.089	0	17	.004	0	z 20	5.169	29.236	.351	1.355	1	H2-1
335	M221	L2-1/2x2-1/2x3...	.091	0	5	.004	8.561	z 26	5.169	29.236	.351	1.355	1	H2-1
336	M225	L2-1/2x2-1/2x3...	.090	0	13	.004	8.561	z 22	5.169	29.236	.351	1.355	1	H2-1
337	M228	L2-1/2x2-1/2x3...	.089	0	17	.004	0	z 24	5.169	29.236	.351	1.355	1	H2-1
338	M241	L2-1/2x2-1/2x3...	.165	0	9	.005	0	z 20	4.765	29.236	.351	1.33	1	H2-1
339	M244	L2-1/2x2-1/2x3...	.160	0	13	.005	8.881	z 22	4.765	29.236	.351	1.33	1	H2-1
340	M248	L2-1/2x2-1/2x3...	.160	0	5	.005	8.881	z 26	4.765	29.236	.351	1.33	1	H2-1
341	M251	L2-1/2x2-1/2x3...	.162	0	9	.005	0	z 20	4.765	29.236	.351	1.33	1	H2-1
342	M255	L2-1/2x2-1/2x3...	.162	0	17	.005	8.881	z 20	4.765	29.236	.351	1.33	1	H2-1
343	M258	L2-1/2x2-1/2x3...	.164	0	5	.005	0	z 26	4.765	29.236	.351	1.33	1	H2-1
344	M262	L2-1/2x2-1/2x3...	.163	0	13	.005	8.881	z 22	4.765	29.236	.351	1.33	1	H2-1
345	M265	L2-1/2x2-1/2x3...	.164	0	17	.005	0	z 24	4.765	29.236	.351	1.33	1	H2-1
346	M279	L2-1/2x2-1/2x3...	.138	0	11	.003	9.35	z 25	4.666	29.236	.351	1.324	1	H2-1
347	M284	L2-1/2x2-1/2x3...	.134	0	11	.003	9.35	z 21	4.666	29.236	.351	1.324	1	H2-1
348	M290	L2-1/2x2-1/2x3...	.134	0	7	.003	9.35	z 23	4.666	29.236	.351	1.324	1	H2-1
349	M295	L2-1/2x2-1/2x3...	.139	0	7	.003	9.35	z 19	4.666	29.236	.351	1.324	1	H2-1
350	M303	L2-1/2x2-1/2x3...	.135	0	3	.003	9.35	z 21	4.666	29.236	.351	1.324	1	H2-1
351	M308	L2-1/2x2-1/2x3...	.140	0	3	.003	0	z 25	4.666	29.236	.351	1.324	1	H2-1
352	M316	L2-1/2x2-1/2x3...	.140	0	15	.003	9.35	z 19	4.666	29.236	.351	1.324	1	H2-1
353	M321	L2-1/2x2-1/2x3...	.135	0	15	.003	9.35	z 23	4.666	29.236	.351	1.324	1	H2-1



Company : GPD
 Designer : Irife
 Job Number : 2018702.01
 Model Name : 27016 SHELTON EAST CENTRAL

Checked By: _____

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y	phi*Mn z-z	Cb	Eqn
354	M340	L2-1/2x2-1/2x3...	.415	9.642	12	.003	4.821	y 24	4.299	29.236	.351	1.298	1	H2-1
355	M345	L2-1/2x2-1/2x3...	.417	9.341	8	.004	4.821	y 22	4.299	29.236	.351	1.298	1	H2-1
356	M352	L2-1/2x2-1/2x3...	.100	0	9	.004	9.642	y 22	4.299	29.236	.351	1.298	1	H2-1
357	M357	L2-1/2x2-1/2x3...	.104	0	5	.004	9.642	y 20	4.299	29.236	.351	1.298	1	H2-1
358	M366	L2-1/2x2-1/2x3...	.410	9.642	4	.003	4.821	y 20	4.299	29.236	.351	1.298	1	H2-1
359	M371	L2-1/2x2-1/2x3...	.417	9.441	16	.004	4.821	y 26	4.299	29.236	.351	1.298	1	H2-1
360	M380	L2-1/2x2-1/2x3...	.104	0	17	.004	9.642	y 26	4.299	29.236	.351	1.298	1	H2-1
361	M385	L2-1/2x2-1/2x3...	.099	0	13	.004	9.642	y 24	4.299	29.236	.351	1.298	1	H2-1
362	M427	L2x2x3	.100	3.837	26	.002	0	y 10	2.911	23.393	.558	.875	1	H2-1
363	M428	L2x2x3	.050	3.837	24	.002	0	y 23	2.911	23.393	.558	.875	1	H2-1
364	M429	L2x2x3	.100	3.837	22	.002	0	y 2	2.911	23.393	.558	.875	1	H2-1
365	M430	L2x2x3	.040	2.716	26	.002	5.431	y 4	5.811	23.393	.558	.988	1	H2-1
366	M431	L2x2x3	.040	2.716	22	.002	5.431	y 4	5.811	23.393	.558	.988	1	H2-1
367	M432	L2x2x3	.054	4	24	.002	8	y 8	2.678	23.393	.558	.861	1	H2-1
368	M298	2L2-1/2x2-1/2x...	.090	5.667	21	.004	0	y 22	16.51	77.112	5.381	3.414	1	H1-1b
369	M311	2L2-1/2x2-1/2x...	.090	5.667	26	.004	11.575	y 20	16.51	77.112	5.381	3.414	1	H1-1b
370	M324	2L2-1/2x2-1/2x...	.090	5.667	24	.004	0	y 26	16.51	77.112	5.381	3.414	1	H1-1b
371	M326	2L2-1/2x2-1/2x...	.090	5.667	22	.004	0	y 24	16.51	77.112	5.381	3.414	1	H1-1b
372	M445	2L2-1/2x2-1/2x...	.034	5.667	20	.002	0	z 16	16.51	77.112	5.381	3.414	1	H1-1b
373	M446	2L2-1/2x2-1/2x...	.034	5.667	21	.002	11.575	z 12	16.51	77.112	5.381	3.414	1	H1-1b
374	M447	2L2-1/2x2-1/2x...	.034	5.667	26	.002	0	z 12	16.51	77.112	5.381	3.414	1	H1-1b
375	M448	2L2-1/2x2-1/2x...	.034	5.667	24	.002	0	z 8	16.51	77.112	5.381	3.414	1	H1-1b
376	M361	2L2-1/2x2-1/2x...	.100	6.006	20	.004	12.268	y 24	14.698	77.112	5.381	3.414	1	H1-1b
377	M375	2L2-1/2x2-1/2x...	.099	6.006	26	.004	12.268	y 22	14.698	77.112	5.381	3.414	1	H1-1b
378	M389	2L2-1/2x2-1/2x...	.100	6.006	24	.004	12.268	y 20	14.698	77.112	5.381	3.414	1	H1-1b
379	M391	2L2-1/2x2-1/2x...	.100	6.006	23	.004	0	y 26	14.698	77.112	5.381	3.414	1	H1-1b
380	M413	2L2-1/2x2-1/2x...	.060	6.262	22	.002	12.268	y 8	14.698	77.112	5.381	3.414	1	H1-1b
381	M414	2L2-1/2x2-1/2x...	.061	6.006	20	.002	0	y 4	14.698	77.112	5.381	3.414	1	H1-1b
382	M415	2L2-1/2x2-1/2x...	.060	6.006	26	.002	12.268	y 16	14.698	77.112	5.381	3.414	1	H1-1b
383	M416	2L2-1/2x2-1/2x...	.060	6.006	23	.002	0	y 12	14.698	77.112	5.381	3.414	1	H1-1b
384	M297	L4x4x3/8	.003	0	22	.006	0	z 20	15.047	92.664	1.773	7.349	1	H2-1
385	M310	L4x4x3/8	.003	0	19	.006	0	z 26	15.047	92.664	1.773	7.349	1	H2-1
386	M323	L4x4x3/8	.003	0	19	.006	0	z 24	15.047	92.664	1.773	7.349	1	H2-1
387	M325	L4x4x3/8	.003	0	24	.006	0	z 22	15.047	92.664	1.773	7.349	1	H2-1
388	M360	L4x4x3/8	.003	0	22	.007	15.348	z 24	11.828	92.664	1.773	7.016	1	H2-1
389	M374	L4x4x3/8	.004	0	20	.007	0	z 22	11.828	92.664	1.773	7.016	1	H2-1
390	M388	L4x4x3/8	.003	0	26	.007	15.348	z 20	11.828	92.664	1.773	7.016	1	H2-1
391	M390	L4x4x3/8	.005	0	24	.007	15.348	z 26	11.828	92.664	1.773	7.016	1	H2-1
392	M278	2L2-1/2x2-1/2x...	.085	4.811	26	.005	9.622	y 20	25.631	77.112	5.381	3.414	1	H1-1b
393	M283	2L2-1/2x2-1/2x...	.086	4.811	20	.005	9.622	y 22	25.631	77.112	5.381	3.414	1	H1-1b



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y	phi*Mn z-z	Cb	Eqn
394	M289	2L2-1/2x2-1/2x...	.086	4.811	24	.005	9.622	y 22	25.631	77.112	5.381	3.414	1	H1-1b
395	M294	2L2-1/2x2-1/2x...	.085	4.811	26	.005	9.622	y 20	25.631	77.112	5.381	3.414	1	H1-1b
396	M302	2L2-1/2x2-1/2x...	.085	4.811	22	.005	9.622	y 24	25.631	77.112	5.381	3.414	1	H1-1b
397	M307	2L2-1/2x2-1/2x...	.085	4.811	24	.005	9.622	y 26	25.631	77.112	5.381	3.414	1	H1-1b
398	M315	2L2-1/2x2-1/2x...	.084	4.811	20	.005	9.622	y 22	25.631	77.112	5.381	3.414	1	H1-1b
399	M320	2L2-1/2x2-1/2x...	.085	4.811	22	.005	9.622	y 24	25.631	77.112	5.381	3.414	1	H1-1b
400	M339	2L2-1/2x2-1/2x...	.107	5.426	26	.005	0	y 24	19.988	77.112	5.381	3.414	1	H1-1b
401	M344	2L2-1/2x2-1/2x...	.102	5.426	20	.005	0	y 22	19.988	77.112	5.381	3.414	1	H1-1b
402	M351	2L2-1/2x2-1/2x...	.098	5.426	25	.005	0	y 22	19.988	77.112	5.381	3.414	1	H1-1b
403	M356	2L2-1/2x2-1/2x...	.124	5.2	25	.005	0	y 20	19.988	77.112	5.381	3.414	1	H1-1b
404	M365	2L2-1/2x2-1/2x...	.127	5.652	22	.005	10.853	y 20	19.988	77.112	5.381	3.414	1	H1-1b
405	M370	2L2-1/2x2-1/2x...	.101	5.426	24	.005	0	y 26	19.988	77.112	5.381	3.414	1	H1-1b
406	M379	2L2-1/2x2-1/2x...	.097	5.426	21	.005	0	y 26	19.988	77.112	5.381	3.414	1	H1-1b
407	M384	2L2-1/2x2-1/2x...	.103	5.426	21	.005	0	y 24	19.988	77.112	5.381	3.414	1	H1-1b
408	M92	L2-1/2x2x3/16	.032	0	3	.004	0	z 26	10.615	26.198	.264	1.286	1	H2-1
409	M95	L2-1/2x2x3/16	.031	0	3	.004	0	z 20	10.615	26.198	.264	1.286	1	H2-1
410	M99	L2-1/2x2x3/16	.030	0	15	.004	0	z 24	10.615	26.198	.264	1.286	1	H2-1
411	M102	L2-1/2x2x3/16	.032	0	15	.004	0	z 26	10.615	26.198	.264	1.286	1	H2-1
412	M106	L2-1/2x2x3/16	.031	0	9	.004	0	z 22	10.615	26.198	.264	1.286	1	H2-1
413	M109	L2-1/2x2x3/16	.032	0	13	.004	0	z 20	10.615	26.198	.264	1.286	1	H2-1
414	M113	L2-1/2x2x3/16	.032	0	5	.004	0	z 20	10.615	26.198	.264	1.286	1	H2-1
415	M116	L2-1/2x2x3/16	.031	0	9	.004	0	z 22	10.615	26.198	.264	1.286	1	H2-1
416	M129	L2-1/2x2x3/16	.054	0	17	.004	5.37	z 26	8.835	26.198	.264	1.249	1	H2-1
417	M132	L2-1/2x2x3/16	.052	0	5	.004	5.37	z 23	8.835	26.198	.264	1.249	1	H2-1
418	M136	L2-1/2x2x3/16	.052	0	13	.004	5.37	z 21	8.835	26.198	.264	1.249	1	H2-1
419	M139	L2-1/2x2x3/16	.053	0	17	.004	5.37	z 25	8.835	26.198	.264	1.249	1	H2-1
420	M143	L2-1/2x2x3/16	.054	0	9	.004	5.37	z 23	8.835	26.198	.264	1.249	1	H2-1
421	M146	L2-1/2x2x3/16	.054	0	13	.004	5.37	z 20	8.835	26.198	.264	1.249	1	H2-1
422	M150	L2-1/2x2x3/16	.054	0	5	.004	5.37	z 21	8.835	26.198	.264	1.249	1	H2-1
423	M153	L2-1/2x2x3/16	.054	0	9	.004	5.37	z 25	8.835	26.198	.264	1.249	1	H2-1
424	M166	L2-1/2x2x3/16	.073	0	17	.004	5.832	z 26	7.439	26.198	.264	1.213	1	H2-1
425	M169	L2-1/2x2x3/16	.070	0	5	.004	5.832	z 20	7.439	26.198	.264	1.213	1	H2-1
426	M173	L2-1/2x2x3/16	.070	0	13	.004	5.832	z 21	7.439	26.198	.264	1.213	1	H2-1
427	M176	L2-1/2x2x3/16	.071	0	17	.004	5.832	z 25	7.439	26.198	.264	1.213	1	H2-1
428	M180	L2-1/2x2x3/16	.072	0	9	.004	5.832	z 26	7.439	26.198	.264	1.213	1	H2-1
429	M183	L2-1/2x2x3/16	.072	0	13	.004	5.832	z 23	7.439	26.198	.264	1.213	1	H2-1
430	M187	L2-1/2x2x3/16	.072	0	5	.004	5.832	z 21	7.439	26.198	.264	1.213	1	H2-1
431	M190	L2-1/2x2x3/16	.072	0	9	.004	5.832	z 25	7.439	26.198	.264	1.213	1	H2-1
432	M203	L2-1/2x2x3/16	.100	0	17	.004	6.293	z 26	6.349	26.198	.264	1.179	1	H2-1
433	M206	L2-1/2x2x3/16	.098	0	5	.004	6.293	z 20	6.349	26.198	.264	1.179	1	H2-1



Company : GPD
 Designer : Irife
 Job Number : 2018702.01
 Model Name : 27016 SHELTON EAST CENTRAL

Checked By: _____

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y	phi*Mn z-z	Cb	Eqn
434	M210	L2-1/2x2x3/16	.097	0	13	.004	6.293	z 24	6.349	26.198	.264	1.179	1	H2-1
435	M213	L2-1/2x2x3/16	.098	0	17	.004	6.293	z 26	6.349	26.198	.264	1.179	1	H2-1
436	M217	L2-1/2x2x3/16	.099	0	9	.004	6.293	z 22	6.349	26.198	.264	1.179	1	H2-1
437	M220	L2-1/2x2x3/16	.099	0	13	.004	6.293	z 20	6.349	26.198	.264	1.179	1	H2-1
438	M224	L2-1/2x2x3/16	.099	0	5	.004	6.293	z 20	6.349	26.198	.264	1.179	1	H2-1
439	M227	L2-1/2x2x3/16	.100	0	9	.004	6.293	z 22	6.349	26.198	.264	1.179	1	H2-1
440	M240	L2-1/2x2-1/2x1/4	.101	0	17	.004	0	z 26	10.917	38.475	.461	2.121	1	H2-1
441	M243	L2-1/2x2-1/2x1/4	.099	0	5	.004	0	z 20	10.917	38.475	.461	2.121	1	H2-1
442	M247	L2-1/2x2-1/2x1/4	.099	0	13	.004	0	z 25	10.917	38.475	.461	2.121	1	H2-1
443	M250	L2-1/2x2-1/2x1/4	.098	0	17	.004	0	z 25	10.917	38.475	.461	2.121	1	H2-1
444	M254	L2-1/2x2-1/2x1/4	.099	0	9	.004	0	z 23	10.917	38.475	.461	2.121	1	H2-1
445	M257	L2-1/2x2-1/2x1/4	.099	0	13	.004	0	z 20	10.917	38.475	.461	2.121	1	H2-1
446	M261	L2-1/2x2-1/2x1/4	.098	0	5	.004	0	z 21	10.917	38.475	.461	2.121	1	H2-1
447	M264	L2-1/2x2-1/2x1/4	.101	0	9	.004	0	z 21	10.917	38.475	.461	2.121	1	H2-1
448	M277	L2-1/2x2x3/16	.054	0	3	.005	0	y 22	11.352	26.198	.264	1.301	1	H2-1
449	M282	L2-1/2x2x3/16	.053	0	3	.005	0	y 20	11.352	26.198	.264	1.301	1	H2-1
450	M288	L2-1/2x2x3/16	.052	0	15	.005	0	y 20	11.352	26.198	.264	1.301	1	H2-1
451	M293	L2-1/2x2x3/16	.053	0	15	.006	0	y 26	11.352	26.198	.264	1.301	1	H2-1
452	M301	L2-1/2x2x3/16	.052	0	11	.005	0	y 26	11.352	26.198	.264	1.301	1	H2-1
453	M306	L2-1/2x2x3/16	.053	0	11	.005	0	y 24	11.352	26.198	.264	1.301	1	H2-1
454	M314	L2-1/2x2x3/16	.053	0	7	.005	0	y 24	11.352	26.198	.264	1.301	1	H2-1
455	M319	L2-1/2x2x3/16	.052	0	7	.005	0	y 22	11.352	26.198	.264	1.301	1	H2-1
456	M338	L2-1/2x2-1/2x3...	.019	0	4	.005	5.426	y 21	13.065	29.236	.351	1.609	1	H2-1
457	M343	L2-1/2x2-1/2x3...	.019	0	16	.005	5.426	y 21	13.065	29.236	.351	1.609	1	H2-1
458	M350	L2-1/2x2-1/2x3...	.029	0	16	.005	5.426	y 26	13.065	29.236	.351	1.609	1	H2-1
459	M355	L2-1/2x2-1/2x3...	.030	0	12	.005	5.426	y 20	13.065	29.236	.351	1.609	1	H2-1
460	M364	L2-1/2x2-1/2x3...	.018	0	12	.005	5.426	y 25	13.065	29.236	.351	1.609	1	H2-1
461	M369	L2-1/2x2-1/2x3...	.018	0	8	.005	5.426	y 25	13.065	29.236	.351	1.609	1	H2-1
462	M378	L2-1/2x2-1/2x3...	.029	0	8	.005	5.426	y 22	13.065	29.236	.351	1.609	1	H2-1
463	M383	L2-1/2x2-1/2x3...	.029	0	4	.005	5.426	y 24	13.065	29.236	.351	1.609	1	H2-1
464	M347	2L2-1/2x3-1/2x...	.106	9.063	23	.005	9.063	y 25	7.402	93.312	9.918	2.218	1	H1-1b
465	M359	2L2-1/2x3-1/2x...	.106	9.063	21	.005	9.063	y 23	7.402	93.312	9.918	2.218	1	H1-1b
466	M373	2L2-1/2x3-1/2x...	.105	9.063	19	.005	9.063	y 21	7.402	93.312	9.918	2.218	1	H1-1b
467	M387	2L2-1/2x3-1/2x...	.105	9.063	25	.005	9.063	y 26	7.402	93.312	9.918	2.218	1	H1-1b
468	M540	L2.5x2.5x3	.012	3.702	26	.000	6.706	y 12	7.302	29.192	.873	1.457	1	H2-1
469	M541	L2.5x2.5x3	.012	3.702	25	.000	0	y 8	7.302	29.192	.873	1.457	1	H2-1
470	M542	L2.5x2.5x3	.012	3.702	23	.000	6.706	y 21	7.302	29.192	.873	1.457	1	H2-1
471	M543	L2.5x2.5x3	.012	3.702	21	.000	0	y 25	7.302	29.192	.873	1.457	1	H2-1
472	M536	L2.5x2.5x3	.022	3.673	20	.000	0	y 23	7.422	29.192	.873	1.461	1	H2-1
473	M537	L2.5x2.5x3	.022	3.673	25	.001	0	y 21	7.422	29.192	.873	1.461	1	H2-1



Company : GPD
 Designer : Irife
 Job Number : 2018702.01
 Model Name : 27016 SHELTON EAST CENTRAL

Checked By: _____

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y	phi*Mn z-z	Cb	Eqn
474	M538	L2.5x2.5x3	.022	3.673	23	.001	0	y 22	7.422	29.192	.873	1.461	1	H2-1
475	M539	L2.5x2.5x3	.022	3.673	21	.000	0	y 25	7.422	29.192	.873	1.461	1	H2-1
476	M522	L2.5x2.5x3	.012	3.649	20	.000	0	y 23	7.516	29.192	.873	1.465	1	H2-1
477	M523	L2.5x2.5x3	.012	3.649	25	.000	0	y 4	7.516	29.192	.873	1.465	1	H2-1
478	M524	L2.5x2.5x3	.012	3.649	23	.000	0	y 16	7.516	29.192	.873	1.465	1	H2-1
479	M525	L2.5x2.5x3	.012	3.649	21	.000	6.61	y 12	7.516	29.192	.873	1.465	1	H2-1
480	M518	L2.5x2.5x3	.856	1.918	23	.000	0	y 14	7.594	29.192	.873	1.467	1	H2-1
481	M519	L2.5x2.5x3	.846	1.918	21	.001	6.576	y 26	7.594	29.192	.873	1.467	1	H2-1
482	M520	L2.5x2.5x3	.836	1.918	19	.001	0	y 22	7.594	29.192	.873	1.467	1	H2-1
483	M521	L2.5x2.5x3	.840	1.918	25	.000	0	y 10	7.594	29.192	.873	1.467	1	H2-1
484	M397	L3x3x1/4	.007	12.534	23	.000	0	y 6	5.04	46.656	.673	2.416	1	H2-1
485	M398	L3x3x1/4	.007	12.534	19	.000	0	y 26	5.04	46.656	.673	2.416	1	H2-1
486	M399	L3x3x1/4	.007	12.534	19	.000	0	y 2	5.04	46.656	.673	2.416	1	H2-1
487	M400	L3x3x1/4	.007	12.534	19	.000	12.534	y 21	5.04	46.656	.673	2.416	1	H2-1
488	M433	L3x3x1/4	.039	0	22	.001	0	y 6	10.668	46.656	.673	2.828	1	H2-1
489	M434	L3x3x1/4	.039	0	22	.001	0	y 23	10.668	46.656	.673	2.828	1	H2-1
490	M435	L3x3x1/4	.039	0	24	.001	0	y 25	10.668	46.656	.673	2.828	1	H2-1
491	M436	L3x3x1/4	.039	0	24	.001	8.615	y 10	10.668	46.656	.673	2.828	1	H2-1
492	M437	L3x3x1/4	.039	0	26	.001	0	y 26	10.668	46.656	.673	2.828	1	H2-1
493	M438	L3x3x1/4	.039	0	26	.001	0	y 14	10.668	46.656	.673	2.828	1	H2-1
494	M439	L3x3x1/4	.043	0	20	.001	8.615	y 21	10.668	46.656	.673	2.828	1	H2-1
495	M440	L3x3x1/4	.042	0	20	.001	8.615	y 2	10.668	46.656	.673	2.828	1	H2-1
496	M17	L3x2-1/2x1/4	.017	8.466	25	.005	6.554	z 20	20.579	42.525	.536	2.498	1	H2-1
497	M18	L3x2-1/2x1/4	.018	8.466	23	.005	6.554	z 26	20.579	42.525	.536	2.498	1	H2-1
498	M19	L3x2-1/2x1/4	.016	8.466	21	.005	6.554	z 23	20.579	42.525	.536	2.498	1	H2-1
499	M20	L3x2-1/2x1/4	.014	8.466	19	.005	6.554	z 21	20.579	42.525	.536	2.498	1	H2-1
500	M37	C6x8.2	.051	7.481	25	.006	7.481	y 26	20.619	77.436	2.108	10.347	1	H1-1b
501	M38	C6x8.2	.055	7.481	10	.006	7.481	y 24	20.619	77.436	2.108	10.347	1	H1-1b*
502	M39	C6x8.2	.053	0	14	.006	7.481	y 23	20.619	77.436	2.108	10.347	1	H1-1b*
503	M40	C6x8.2	.050	7.481	23	.006	7.481	y 21	20.619	77.436	2.108	10.347	1	H1-1b
504	M62	L3x2-1/2x1/4	.026	6.13	25	.006	8.407	z 19	14.249	42.525	.536	2.295	1	H2-1
505	M63	L3x2-1/2x1/4	.023	6.13	23	.006	8.407	z 25	14.249	42.525	.536	2.295	1	H2-1
506	M64	L3x2-1/2x1/4	.023	10.86	7	.006	8.407	z 23	14.249	42.525	.536	2.295	1	H2-1
507	M65	L3x2-1/2x1/4	.025	6.13	19	.006	8.407	z 21	14.249	42.525	.536	2.295	1	H2-1
508	M82	L3x2-1/2x1/4	.030	12.055	17	.007	9.333	z 19	12.021	42.525	.536	2.202	1	H2-1
509	M83	L3x2-1/2x1/4	.024	12.055	13	.007	9.333	z 26	12.021	42.525	.536	2.202	1	H2-1
510	M84	L3x2-1/2x1/4	.021	0	13	.007	9.333	z 22	12.021	42.525	.536	2.232	1	H2-1
511	M85	L3x2-1/2x1/4	.030	6.611	9	.007	9.333	z 20	12.021	42.525	.536	2.202	1	H2-1
512	M5	MC18x58_HRA	.019	6.125	19	.003	0	y 26	202.265	554.04	23.037	198.366	1	H1-1b
513	M6	MC18x58_HRA	.019	6.125	25	.003	12.25	y 19	202.265	554.04	23.037	198.366	1	H1-1b



Company : GPD
 Designer : Irife
 Job Number : 2018702.01
 Model Name : 27016 SHELTON EAST CENTRAL

Checked By: _____

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y	phi*Mn z-z	Cb	Eqn
514	M7	MC18x58_HRA	.019	6.125	23	.003	12.25	y 24	202.265	554.04	23.037	198.366	1	H1-1b
515	M8	MC18x58_HRA	.019	6.125	21	.003	0	y 19	202.265	554.04	23.037	198.366	1	H1-1b
516	M25	2L3-1/2x3x5/16...	.036	10.572	23	.003	7.048	y 25	54.189	125.388	9.481	8.24	1	H1-1b
517	M26	2L3-1/2x3x5/16...	.036	10.572	21	.003	7.048	y 23	54.189	125.388	9.481	8.24	1	H1-1b
518	M27	2L3-1/2x3x5/16...	.036	10.572	19	.003	7.048	y 25	54.189	125.388	9.481	8.24	1	H1-1b
519	M28	2L3-1/2x3x5/16...	.036	10.572	25	.003	7.048	y 23	54.189	125.388	9.481	8.24	1	H1-1b
520	M45	2L3x2-1/2x1/4x...	.059	7.971	23	.004	7.971	y 20	51.046	85.212	5.423	3.034	1	H1-1b
521	M46	2L3x2-1/2x1/4x...	.100	7.971	21	.008	10.13	z 22	51.046	85.212	5.423	3.034	1	H1-1b
522	M47	2L3x2-1/2x1/4x...	.100	7.971	19	.008	5.812	z 19	51.046	85.212	5.423	3.034	1	H1-1b
523	M48	2L3x2-1/2x1/4x...	.059	7.971	25	.004	7.971	y 23	51.046	85.212	5.423	3.034	1	H1-1b
524	M70	2L3x2-1/2x1/4x...	.111	8.894	23	.005	8.894	y 20	17.249	85.212	5.423	3.034	1	H1-1b
525	M71	2L3x2-1/2x1/4x...	.111	8.894	21	.005	8.894	y 26	17.249	85.212	5.423	3.034	1	H1-1b
526	M72	2L3x2-1/2x1/4x...	.111	8.894	19	.005	8.894	y 22	17.249	85.212	5.423	3.034	1	H1-1b
527	M73	2L3x2-1/2x1/4x...	.111	8.894	25	.005	8.894	y 20	17.249	85.212	5.423	3.034	1	H1-1b

Bolt Checks

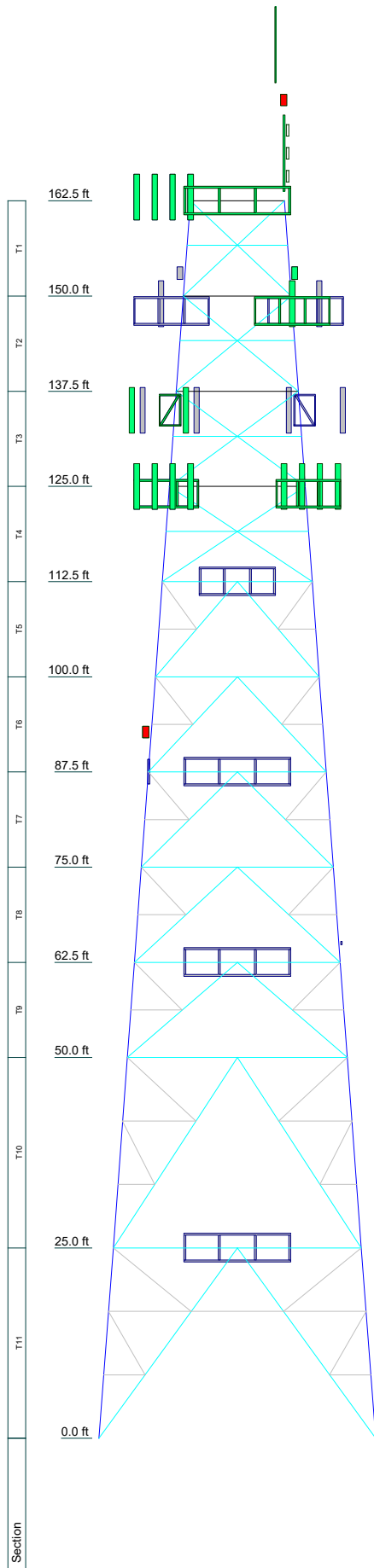
Section #	Elevation	Component Type	Bolt Grade	Bolt Size (in)	# of Bolts	Maximum Load (k)	Maximum Load per Bolt (k)	Allowable Load per Bolt (k)	Ratio	Allowable Ratio	% Capacity	Criteria
T1	162.5	Diagonal	A307	0.75	5	5.077	1.015	8.946	0.114	1.000	11.4%	Bolt Shear
		Secondary Horizontal	A307	0.75	2	0.199	0.1	8.946	0.011	1.000	1.1%	Bolt Shear
T2	150	Leg	A307	0.75	16	23.552	2.944	17.892	0.165	1.000	16.5%	Bolt DS
		Diagonal	A307	0.75	4	7.399	1.85	8.946	0.207	1.000	20.7%	Bolt Shear
		Secondary Horizontal	A307	0.75	3	1.125	0.375	8.946	0.042	1.000	4.2%	Bolt Shear
T3	137.5	Diagonal	A307	0.75	5	7.888	1.578	8.946	0.176	1.000	17.6%	Bolt Shear
		Secondary Horizontal	A307	0.75	2	0.269	0.134	8.946	0.015	1.000	1.5%	Bolt Shear
T4	125	Leg	A307	0.75	16	49.122	6.14	17.892	0.343	1.000	34.3%	Bolt DS
		Top Girt	A307	0.75	2	4.425	2.212	17.892	0.124	1.000	12.4%	Bolt Shear
		Redundant Vertical	A307	0.75	1	6.493	6.493	8.946	0.726	1.000	72.6%	Bolt Shear
		Secondary Horizontal	A307	0.75	2	0.34	0.17	8.946	0.019	1.000	1.9%	Bolt Shear
		Diagonal	A307	0.75	4	9.7	2.425	8.946	0.271	1.000	27.1%	Bolt Shear
T5	112.5	Horizontal	A307	0.75	2	7.824	3.912	17.892	0.219	1.000	21.9%	Bolt Shear
		Diagonal	A307	0.75	2	13.322	6.661	17.892	0.372	1.000	37.2%	Bolt Shear
T6	100	Leg	A307	0.75	20	76.125	7.612	17.892	0.425	1.000	42.5%	Bolt DS
		Horizontal	A307	0.75	2	8.796	4.398	17.892	0.246	1.000	24.6%	Bolt Shear
		Diagonal	A307	0.75	2	12.595	6.298	17.892	0.352	1.000	35.2%	Bolt Shear
		Inner Corner	A307	0.75	2	1.863	0.932	8.057	0.116	1.000	11.6%	Member Block Shear
T7	87.5	Horizontal	A307	0.75	2	9.169	4.584	17.892	0.256	1.000	25.6%	Bolt Shear
		Diagonal	A307	0.75	2	13.269	6.634	17.892	0.371	1.000	37.1%	Bolt Shear
T8	75	Leg	A307	0.75	28	107.853	7.704	17.892	0.431	1.000	43.1%	Bolt DS
		Horizontal	A307	0.75	2	9.417	4.708	17.892	0.263	1.000	26.3%	Bolt Shear
		Diagonal	A307	0.75	2	13.351	6.676	17.892	0.373	1.000	37.3%	Bolt Shear
		Inner Corner	A307	0.75	2	1.722	0.861	8.057	0.107	1.000	10.7%	Member Block Shear
T9	62.5	Leg	A307	0.75	28	123.312	8.808	17.892	0.492	1.000	49.2%	Bolt DS
		Horizontal	A307	0.75	2	9.912	4.956	17.892	0.277	1.000	27.7%	Bolt Shear
		Diagonal	A307	0.75	3	13.696	4.565	17.892	0.255	1.000	25.5%	Bolt Shear
		Inner Corner	A307	0.75	2	2.073	1.036	8.946	0.116	1.000	11.6%	Bolt Shear
T10	50	Leg	A307	0.75	32	138.273	8.642	17.892	0.483	1.000	48.3%	Bolt DS
		Horizontal	A307	0.75	3	10.702	3.567	17.892	0.199	1.000	19.9%	Bolt Shear
		Diagonal	A325N	0.75	3	20.473	6.824	31.266	0.218	1.000	21.8%	Member Block Shear
		Inner Corner	A307	0.75	2	2.364	1.182	8.946	0.132	1.000	13.2%	Bolt Shear
T11	25	Leg	A307	0.75	36	168.215	9.345	17.892	0.522	1.000	52.2%	Bolt DS
		Horizontal	A307	0.75	3	11.72	3.907	17.892	0.218	1.000	21.8%	Bolt Shear
		Diagonal	A307	0.75	5	21.418	4.284	17.892	0.239	1.000	23.9%	Bolt Shear
		Redundant Diagonal	A307	0.75	2	1.808	0.904	8.057	0.112	1.000	11.2%	Member Block Shear
		Redundant Brace	A307	0.75	2	1.817	0.908	8.946	0.102	1.000	10.2%	Bolt Shear
		Inner Corner	A307	0.75	2	2.182	1.091	8.946	0.122	1.000	12.2%	Bolt Shear

Maximum Capacity	72.6%
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APPENDIX C

Tower Elevation Drawing

DESIGNED APPURTENANCE LOADING



TYPE	ELEVATION	TYPE	ELEVATION
(3) DC6-48-60-18-8F Surge Suppression Unit	167	(2) 2.5" x 3.5" Mount Pipe	153
(3) RRUS 11	165	(2) Pipe Mount 6"x2.375"	148
(3) RRUS 32	165	(2) Pipe Mount 6"x2.375"	148
(3) RRUS 32 B2	165	APXVSP18-C-A20 w/ Mount Pipe	148
(3) RRUS 12	165	APXVSP18-C-A20 w/ Mount Pipe	148
(3) RRUS B14 4478	165	APXVSP18-C-A20 w/ Mount Pipe	148
(3) RRUS 32 B66	165	14' Sector Frame	148
2' Standoff	162.5	14' Sector Frame	148
15' Dipole	162.5	14' Sector Frame	148
Pipe Mount 14"x2.875"	162.5	30' x 30' Cross Catwalk w/ Handrails	144
2' Standoff	162.5	2' Standoff	135
2' Standoff	162.5	2' Standoff	135
10' Omni	162.5	2' Standoff	135
W8 x 19' Beams	162.5	AIR21 B4A/B2P w/ mount pipe	135
W8 x 19' Beams	162.5	AIR21 B4A/B2P w/ mount pipe	135
RA21.7770.00 w/Mount Pipe	162.5	AIR21 B4A/B2P w/ mount pipe	135
RA21.7770.00 w/Mount Pipe	162.5	DBXNH-6565A-A2M w/ mount pipe	135
RA21.7770.00 w/Mount Pipe	162.5	DBXNH-6565A-A2M w/ mount pipe	135
HPA-65R-BUU-H6 w/ Mount Pipe	162.5	DBXNH-6565A-A2M w/ mount pipe	135
HPA-65R-BUU-H6 w/ Mount Pipe	162.5	RRUS 11 B2	135
HPA-65R-BUU-H6 w/ Mount Pipe	162.5	RRUS 11 B2	135
QS66512-2 w/ Mount Pipe	162.5	RRUS 11 B2	135
QS66512-2 w/ Mount Pipe	162.5	RRUS 11 B12	135
QS66512-2 w/ Mount Pipe	162.5	RRUS 11 B12	135
80010965 w/ Mount Pipe	162.5	RRUS 11 B12	135
80010965 w/ Mount Pipe	162.5	RRUS 11 B12	135
(2) 7020.00 RET	162.5	KRY 112 144/1	135
(2) 7020.00 RET	162.5	KRY 112 144/1	135
(2) 7020.00 RET	162.5	12' Sector Frame	124
(2) 7020.00 RET	162.5	12' Sector Frame	124
(2) LGP21401	162.5	12' Sector Frame	124
(2) LGP21401	162.5	(2) DB846F65ZAXY w/Mount Pipe	124
(2) LGP21401	162.5	(2) DB846F65ZAXY w/Mount Pipe	124
(2) TPX-070821	162.5	(2) DB846F65ZAXY w/Mount Pipe	124
(2) TPX-070821	162.5	BXA-185085/12CF w/ Mount Pipe	124
(2) TPX-070821	162.5	BXA-185063/12CF w/ mount pipe	124
Smart Bias-T	162.5	BXA-185063/12CF w/ mount pipe	124
Smart Bias-T	162.5	(2) SBNHH-1D65B w/ Mount Pipe	124
Smart Bias-T	162.5	(2) SBNHH-1D45B w/ Mount Pipe	124
WCS-IMFT-AMT	162.5	(2) SBNHH-1D65B w/ Mount Pipe	124
WCS-IMFT-AMT	162.5	B13 RRH 4X30	124
Flash Beacon Lighting	162.5	B13 RRH 4X30	124
W5 x 13' Mount	162.5	B13 RRH 4X30	124
15' Dipole	162.5	B25 RRH4X30	124
10' Dipole	162.5	B25 RRH4X30	124
Pipe Mount 14"x2.875"	162.5	B25 RRH4X30	124
2' Standoff	162.5	B66A RRH4X45	124
28' Square Platform w/ Rails	162.5	B66A RRH4X45	124
800MHZ 2X50W RRH	153	B66A RRH4X45	124
800MHZ 2X50W RRH	153	DB-T1-6Z-8AB-OZ	124
800MHZ 2X50W RRH	153	DB-T1-6Z-8AB-OZ	124
800 External Notch Filter	153	4.25' x 7' Catwalk	112.5
800 External Notch Filter	153	Side Light	92
800 External Notch Filter	153	Side Light	92
1900MHz 4X40W RRH	153	23' x 3' Catwalk	87.5
1900MHz 4X40W RRH	153	23' x 3' Catwalk	87.5
1900MHz 4X40W RRH	153	GPS-TMG-HR-26N	65
(2) 2.5" x 3.5" Mount Pipe	153	13' x 4.25' Catwalk	62.5
(2) 2.5" x 3.5" Mount Pipe	153	13' x 4.25' Catwalk	25

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A36	36 ksi	58 ksi			

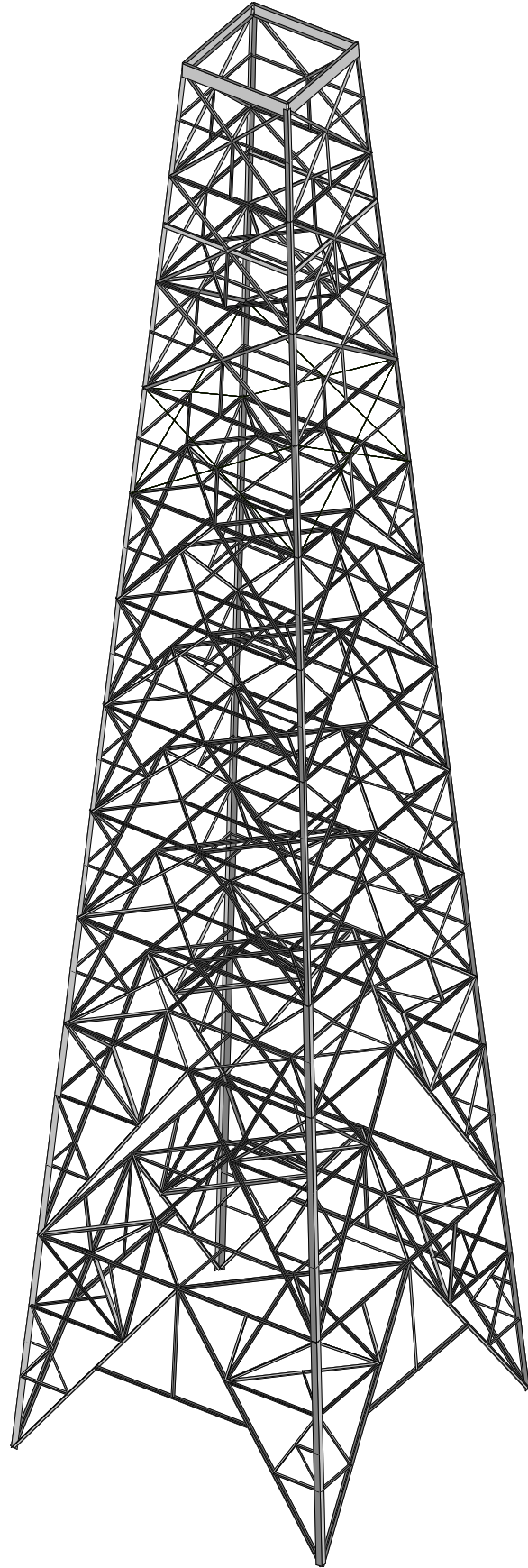
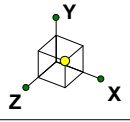
TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-G Standard.
3. Tower designed for a 97 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft

GPD

520 South Main Street Suite 2531
Akron, Ohio 44311
Phone: (330) 572-2100
FAX: (330) 572-2101

Job: 27016 SHELTON EAST CENTRAL		
Project: 2018702.01		
Client: Empire Telecom	Drawn by: jlrife	App'd:
Code: TIA-222-G	Date: 03/02/18	Scale: NTS
Path: T:\ATandT\SNET02517 2018702.01 Empire SA\Software Models\TNS\SNET02517		Dwg No. E-1



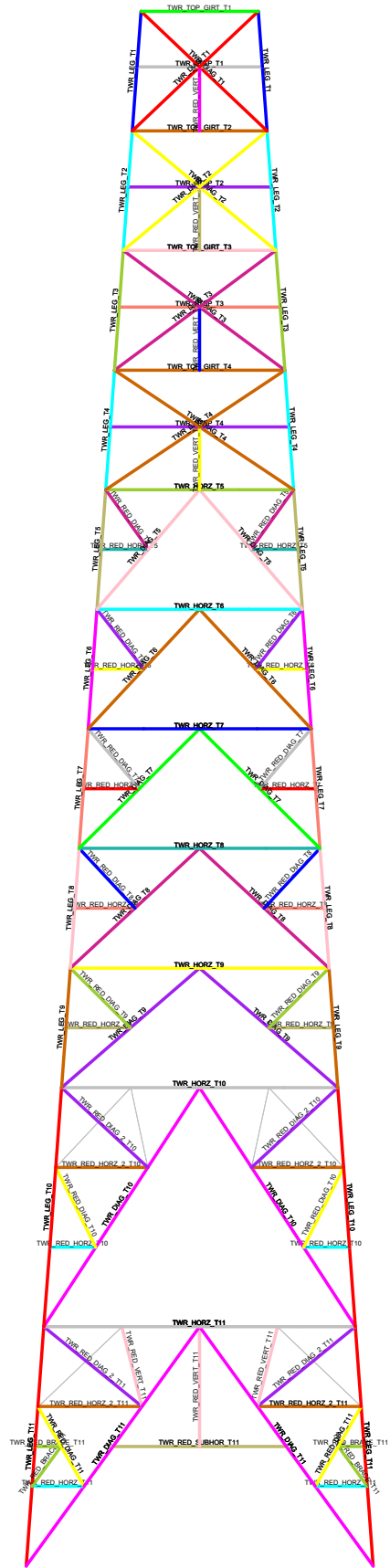
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2018702.01

27016 SHELTON EAST CENTRAL

SNET025.r3d



- Section Sets
- TWR_LEG_T1
 - TWR_TOP_GIRT_T1
 - TWR_DIAG_T1
 - TWR_STEP_T1
 - TWR_RED_VERT_T1
 - TWR_LEG_T2
 - TWR_TOP_GIRT_T2
 - TWR_DIAG_T2
 - TWR_STEP_T2
 - TWR_RED_VERT_T2
 - TWR_LEG_T3
 - TWR_TOP_GIRT_T3
 - TWR_INNER_SUPP_T3
 - TWR_DIAG_T3
 - TWR_STEP_T3
 - TWR_RED_VERT_T3
 - TWR_INNER_SQ_T3
 - TWR_INNER_CORNER_T3
 - TWR_INNER_TRI_T3
 - TWR_INNER_LADDER_T3
 - TWR_LEG_T4
 - TWR_TOP_GIRT_T4
 - TWR_RED_VERT_T4
 - TWR_STEP_T4
 - TWR_LEG_T5
 - TWR_HORZ_T5
 - TWR_DIAG_T5
 - TWR_RED_HORZ_T5
 - TWR_INNER_SUPP_T5
 - TWR_INNER_SQ_T5
 - TWR_INNER_CORNER_T5
 - TWR_INNER_TRI_T5
 - TWR_INNER_LADDER_T5
 - TWR_LEG_T6
 - TWR_HORZ_T6
 - TWR_DIAG_T6
 - TWR_RED_HORZ_T6
 - TWR_RED_DIAG_T6
 - TWR_INNER_SUPP_T6
 - TWR_INNER_SQ_T6
 - TWR_INNER_CORNER_T6
 - TWR_INNER_TRI_T6
 - TWR_INNER_LADDER_T6
 - TWR_LEG_T7
 - TWR_HORZ_T7
 - TWR_DIAG_T7
 - TWR_RED_HORZ_T7
 - TWR_RED_DIAG_T7
 - TWR_INNER_SUPP_T7
 - TWR_INNER_SQ_T7
 - TWR_INNER_CORNER_T7
 - TWR_INNER_BRACE_T7
 - TWR_INNER_GIRT_T7
 - TWR_INNER_TRI_T7
 - TWR_INNER_LADDER_T7
 - TWR_LEG_T8
 - TWR_HORZ_T8
 - TWR_DIAG_T8
 - TWR_RED_HORZ_T8
 - TWR_RED_DIAG_T8
 - TWR_INNER_SUPP_T8
 - TWR_INNER_SQ_T8
 - TWR_INNER_CORNER_T8
 - TWR_INNER_TRI_T8
 - TWR_INNER_LADDER_T8
 - TWR_LEG_T9
 - TWR_HORZ_T9
 - TWR_DIAG_T9
 - TWR_RED_HORZ_T9
 - TWR_RED_DIAG_T9
 - TWR_INNER_SUPP_T9
 - TWR_INNER_SQ_T9
 - TWR_INNER_CORNER_T9
 - TWR_INNER_BRACE_T9
 - TWR_INNER_TRI_T9
 - TWR_INNER_LADDER_T9
 - TWR_LEG_T10
 - TWR_HORZ_T10
 - TWR_DIAG_T10
 - TWR_RED_HORZ_T10
 - TWR_RED_DIAG_T10
 - TWR_RED_HORZ_2_T10
 - TWR_RED_DIAG_2_T10
 - TWR_RED_HIP_2_T10
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 - TWR_INNER_SQ_T10
 - TWR_INNER_CORNER_T10
 - TWR_INNER_BRACE_T10
 - TWR_INNER_TRI_T10
 - TWR_INNER_LADDER_T10
 - TWR_LEG_T11
 - TWR_HORZ_T11
 - TWR_DIAG_T11
 - TWR_RED_HORZ_T11
 - TWR_RED_HORZ_2_T11
 - TWR_RED_DIAG_T11
 - TWR_RED_DIAG_2_T11
 - TWR_RED_SUBHOR_T11
 - TWR_RED_BRACE_T11
 - TWR_RED_VERT_T11
 - TWR_RED_HIP_2_T11
 - TWR_RED_HIPDIA_2_T11
 - TWR_INNER_SUPP_T11
 - TWR_INNER_SQ_T11
 - TWR_INNER_CORNER_T11
 - TWR_INNER_BRACE_T11
 - TWR_INNER_TRI_T11
 - TWR_INNER_LADDER_T11
 - TWR_DIAG_T4

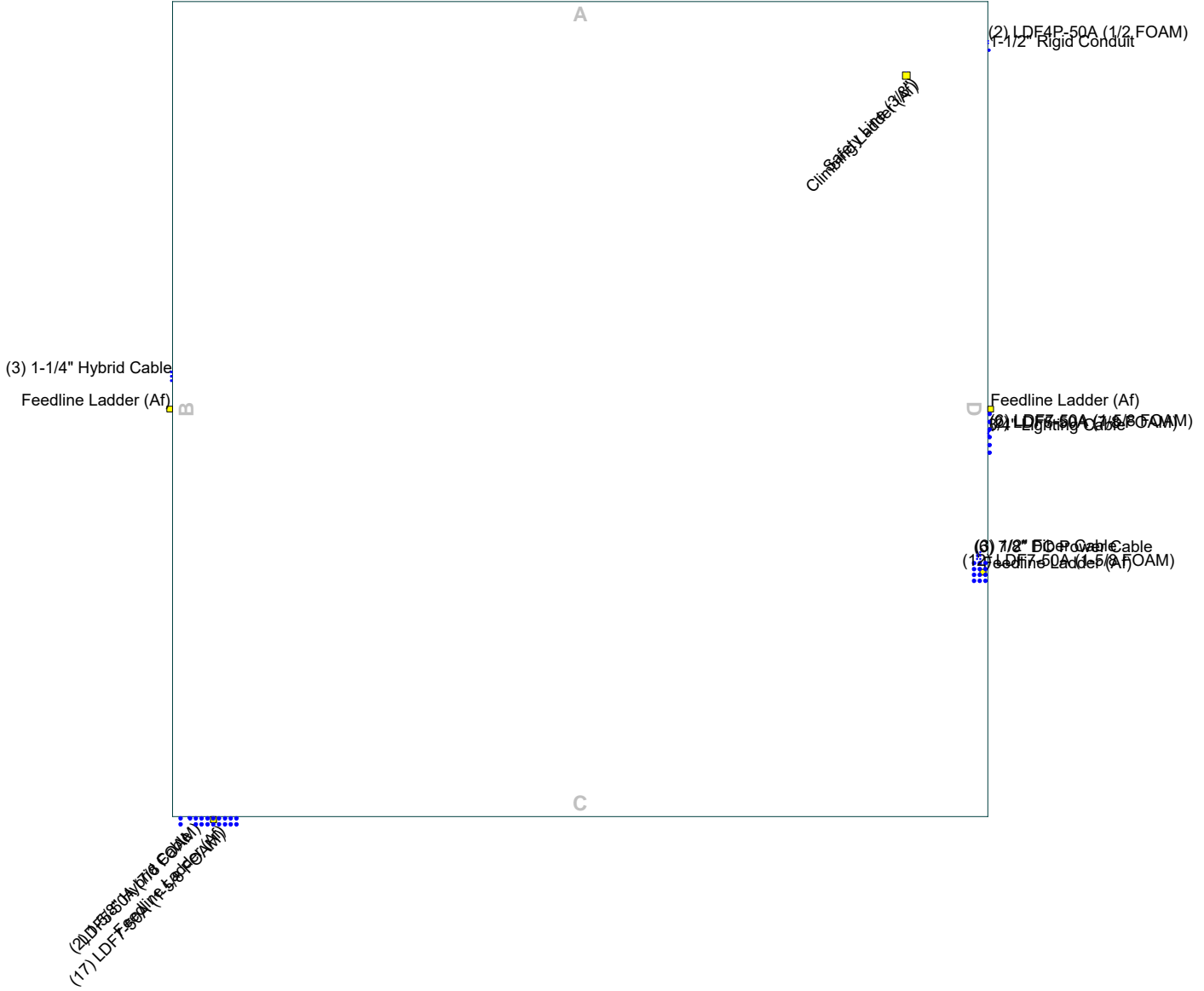
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 Irife
 2018702.01

27016 SHELTON EAST CENTRAL

SNET025.r3d

Feed Line Plan

— Round
 — Flat
 — App In Face
 — App Out Face



<p>GPD 520 South Main Street Suite 2531 Akron, Ohio 44311 Phone: (330) 572-2100 FAX: (330) 572-2101</p>	Job: 27016 SHELTON EAST CENTRAL		
	Project: 2018702.01		
	Client: Empire Telecom	Drawn by: Irife	App'd:
	Code: TIA-222-G	Date: 03/02/18	Scale: NTS
	Path: T:\ATandT\SNET02517 2018702.01 Empire_SAI\Software_Models\TNX\SNET025.dwg		Dwg No. E-7

APPENDIX D

Anchor Rod Analysis



Self-Support Anchor Rod Analysis
27016 SHELTON EAST CENTRAL
2018702.01

General Info	
Code	TIA-222-G
Modified Anchor Rods	No
Clear Distance > d _b	No
Leg Eccentricity	No
Max Capacity	1.05

Tower Reactions	
Detail Type =	d
Eta Factor, η =	0.50
Down Load, P _u =	194.87 kips
Down Load Shear, V _u =	33.80 kips
Uplift, P _u =	134.25 kips
Uplift Shear, V _u =	25.81 kips

Anchor Rods	
Number of Anchor Rods, N =	4
Anchor Rod Grade =	C-1015
Anchor Rod Diameter, d _d =	2.25 in
Tensile, F _{ub} =	56 ksi

Anchor Rod Results		
(P _u + V _u /η)	65.6	kips
φ*R _{nt} = φ*F _{ub} *A _n =	145.6	kips
Anchor Rod Stress Ratio =	45.1%	OK

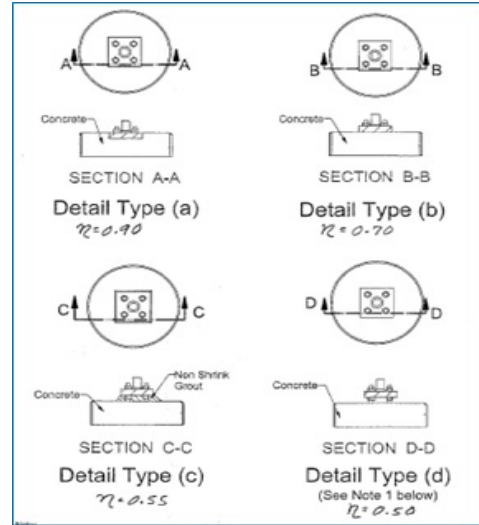


Figure 4-4 of TIA-222-G

APPENDIX E

Foundation Analysis



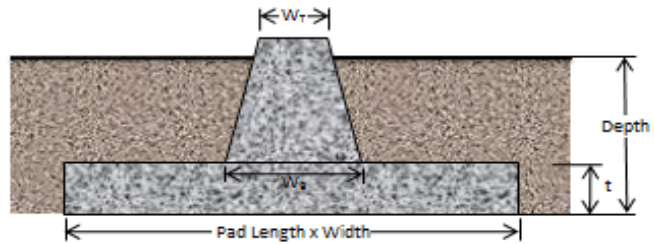
Individual Pad and Frustum Uplift Check
27016 SHELTON EAST CENTRAL
2018702.01

Tower Reactions	
Uplift	134.248 k

Uplift Summary		
Capacity	46.4%	OK

General Info	
Code	TIA-222-G
Max Capacity	1.05

Pad & Pier Geometry		
Pier Top Width W_T	3.5	ft
Pier Bottom Width W_B	7.5	ft
Pad Length, L	15	ft
Pad Width, W	15	ft
Pad Thickness, t	2	ft
Depth, D	8	ft
Height Above Grade, HG	1	ft



Soil Capacity Calculations		
W_s	220.76	k
W_c	100.66	k
Uplift Resistance	289.28	k

Soil Properties					
Ignored Depth	3.5	ft	Water Table	8	ft
Layer	C, psf	ϕ , degrees	γ_{soil} pcf	$\gamma_{concrete}$ pcf	d, ft
1	0	0	125	150	3.5
2	0	38	125	150	4.5
3	0	42	145	150	1
4	12000	0	155	150	5



Mat Foundation Analysis
27016 SHELTON EAST CENTRAL
2018702.01

General Info	
Foundation Criteria	GPD
TIA Code	TIA-222-G
Soil Code	AASHTO 2012
Concrete Code	ACI 318-11
Seismic Design Category	B
Tower Height	162.5 ft
Bearing On	Soil
Foundation Type	SS Individual Pad
Pier Type	Square
Reinforcing Known	No
Max Bearing Capacity	105%
Max Overturning Capacity	105%

Tower Reactions	
Moment, M	
Axial, P	194.873 k
Shear, V	33.795 k

Pad & Pier Geometry	
Pier Width, ϕ	5.62 ft
Pad Length, L [y]	15 ft
Pad Width, W [x]	15 ft
Pad Thickness, t	2 ft
Depth, D	8 ft
Height Above Grade, HG	1 ft
Tower Centroid, X	7.5 ft
Tower Centroid, Y	7.5 ft
Tower Eccentricity	0.0000 ft

Pad & Pier Reinforcing	
Rebar Fy	60 ksi
Concrete F'c	3 ksi
Pier Reinforcing Clear Cover	3 in
Shear Rebar Type	Tie
Shear Rebar Size	# 4
Pad Reinforcing Clear Cover	3 in
Reinforced Top & Bottom?	Yes
Pad Reinforcing Size	# 8
Pad Quantity Per Layer	5
Pier Rebar Size	# 10
Pier Quantity of Rebar	7

Soil Properties	
Soil Type	Granular
Soil Unit Weight	125 pcf
Angle of Friction, ϕ	38
Base Friction Coeff. Provided in Geo?	Yes
Base Friction Coefficient, μ	0.5
Bearing Type	Net
Ultimate Bearing	18 ksf
Water Table Depth	99 ft
Frost Depth	3.5 ft

GPD Mat Foundation Analysis - V3.2

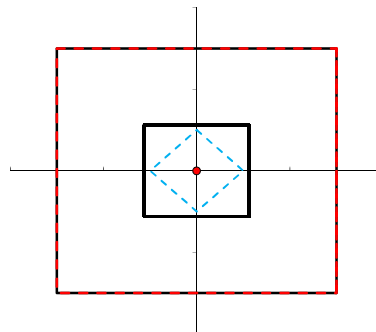
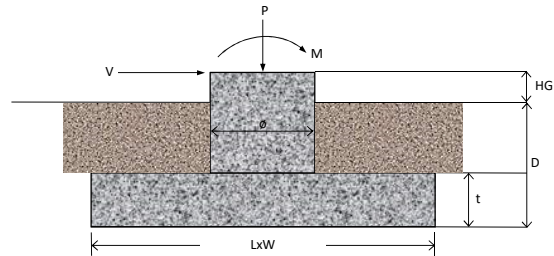
Bearing Summary					
Case	Demand/Limits	Capacity/Availability	Check	Eccentricity	Load Case
Qxmax	2.56 ksf	14.25 ksf	OK, <= 105%	L/150000.0	1.2D+1.6W
Qymax	2.56 ksf	14.25 ksf	OK, <= 105%	W/150000.0	1.2D+1.6W
Qmax @ 45°	2.18 ksf	14.25 ksf	OK, <= 105%	W/25000.0	1.2D+1.6W
Controlling Capacity		17.9%	Pass		

Overturning Summary					
Case	Demand/Limits	Capacity/Availability	Check	Load Case	
Ovtx	0.1 k-ft	2754.8 k-ft	0.0% OK	0.9D+1.6W	
Ovty	0.1 k-ft	2754.8 k-ft	0.0% OK	0.9D+1.6W	
Ovtxy	0.3 k-ft	3673.1 k-ft	0.0% OK	0.9D+1.6W	
Controlling Capacity		0.0%	Pass		

Sliding Summary					
Case	Demand/Limits	Capacity/Availability	Check	Load Case	
Slidingx	33.8 k	246.8 k	13.7% OK	0.9D+1.6W	
Slidingy	33.8 k	246.8 k	13.7% OK	0.9D+1.6W	
Controlling Capacity		13.7%	Pass		

Reinforcement Summary					
Component	Demand/Limits	Capacity/Availability	Check	Load Case	
Pad Flexural Bending	13.4 k-ft	22.8 k-ft	58.8% OK	1.2D+1.6W	
One-Way Shear in Pad	56.1 k	288.4 k	19.4% OK	1.2D+1.6W	
Two-Way Shear in Pad	206.6 k	1114.3 k	18.5% OK	0.9D+1.6W	
Compression on Pier	234.7 k	13917.4 k	1.7% OK	1.2D+1.6W	
Moment on Pier	206.6 k-ft	1341.0 k-ft	15.4% OK	1.2D+1.6W	
As Min Pad Met?	0.53 sq. in.	0.59 sq. in.	Yes		
As Min Pier Met?	8.89 sq. in.	22.74 sq. in.	No		
Controlling Capacity		58.8%	Pass		

<- Minimum reinforcement assumed





Radio Frequency Emissions Analysis Report

AT&T Existing Facility

Site ID: CT2113

FA#: 10034975

Shelton East Central
219 Nells Road Road
Shelton, CT 06484

March 19, 2018

Centerline Communications Project Number: 950006-109

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	10.74 %



March 19, 2018

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

Emissions Analysis for Site: **CT2113 – Shelton East Central**

Centerline Communications, LLC (“Centerline”) was directed to analyze the proposed AT&T facility located at **219 Nells Road Road, Shelton, 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.

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 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ 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 population 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 population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The general population exposure limits for the 700 and 850 MHz Bands are approximately $467 \mu\text{W}/\text{cm}^2$ and $567 \mu\text{W}/\text{cm}^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) bands is $1000 \mu\text{W}/\text{cm}^2$. 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 performed for the proposed AT&T Wireless antenna facility located at **219 Nells Road Road, Shelton, 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 tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
LTE	700 MHz	2	40
LTE	1900 MHz (PCS)	4	40
LTE	700 MHz (Band 14)	4	40
LTE	2100 MHz (AWS)	4	30
LTE	850 MHz	2	40
LTE	2300 MHz (WCS)	4	30
UMTS	850 MHz	2	30

Table 1: Channel Data Table



The following antennas listed in *Table 2* were used in the modeling for transmission in the 700 MHz, 850 MHz, 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) 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.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	CCI HPA-65R-BUU-H6	163
A	2	Kathrein 800-10965	163
A	3	Quintel QS66512-2	163
A	4	Powerwave 7770	163
B	1	CCI HPA-65R-BUU-H6	163
B	2	Kathrein 800-10965	163
B	3	Quintel QS66512-2	163
B	4	Powerwave 7770	163
C	1	CCI HPA-65R-BUU-H6	163
C	2	Kathrein 800-10965	163
C	3	Quintel QS66512-2	163
C	4	Powerwave 7770	163

Table 2: Antenna Data

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



RESULTS

Per the calculations completed for the proposed AT&T configurations *Table 3* shows resulting emissions power levels and percentages of the FCC’s allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	CCI HPA-65R-BUU-H6	700 MHz / 1900 MHz (PCS)	11.95 / 14.75	6	220	5,716.66	0.99
Antenna A2	Kathrein 800-10965	700 MHz (Band 14) / 2100 MHz (AWS)	12.65 / 15.95	8	280	7,667.84	1.61
Antenna A3	Quintel QS66512-2	850 MHz / 2300 MHz (WCS)	11.35 / 14.85	6	200	4,757.57	0.82
Antenna A4	Powerwave 7770	850 MHz	11.4	2	60	828.23	0.21
Sector A Composite MPE%							3.63
Antenna B1	CCI HPA-65R-BUU-H6	700 MHz / 1900 MHz (PCS)	11.95 / 14.75	6	220	5,716.66	0.99
Antenna B2	Kathrein 800-10965	700 MHz (Band 14) / 2100 MHz (AWS)	12.65 / 15.95	8	280	7,667.84	1.61
Antenna B3	Quintel QS66512-2	850 MHz / 2300 MHz (WCS)	11.35 / 14.85	6	200	4,757.57	0.82
Antenna B4	Powerwave 7770	850 MHz	11.4	2	60	828.23	0.21
Sector B Composite MPE%							3.63
Antenna C1	CCI HPA-65R-BUU-H6	700 MHz / 1900 MHz (PCS)	11.95 / 14.75	6	220	5,716.66	0.99
Antenna C2	Kathrein 800-10965	700 MHz (Band 14) / 2100 MHz (AWS)	12.65 / 15.95	8	280	7,667.84	1.61
Antenna C3	Quintel QS66512-2	850 MHz / 2300 MHz (WCS)	11.35 / 14.85	6	200	4,757.57	0.82
Antenna C4	Powerwave 7770	850 MHz	11.4	2	60	828.23	0.21
Sector C Composite MPE%							3.63

Table 3: AT&T Emissions Levels



The Following table (*table 4*) shows all additional carriers on site and their MPE% as recorded in the CSC active MPE database for this facility along with the newly calculated maximum AT&T MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, all three sectors have the same configuration yielding the same results on all three sectors. *Table 5* below shows a summary for each AT&T Sector as well as the composite MPE value for the site.

Site Composite MPE%	
Carrier	MPE%
AT&T – Max Sector Value	3.63 %
Verizon Wireless	4.24 %
Sprint	0.48 %
Clearwire	0.15 %
PageNet	0.27 %
Arrow Bus	0.04 %
T-Mobile	1.93 %
Metricom	0.00 %
Site Total MPE %:	10.74 %

Table 4: All Carrier MPE Contributions

AT&T Sector A Total:	3.63 %
AT&T Sector B Total:	3.63 %
AT&T Sector C Total:	3.63 %
Site Total:	10.74 %

Table 5: Site MPE Summary



FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated AT&T sector(s). For this site, all three sectors have the same configuration yielding the same results on all three sectors.

AT&T _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
AT&T 700 MHz LTE	2	470.03	163	1.37	700 MHz	467	0.29%
AT&T 1900 MHz (PCS) LTE	4	1,194.15	163	6.97	1900 MHz (PCS)	1000	0.70%
AT&T 700 MHz LTE	4	736.31	163	4.30	700 MHz	467	0.92%
AT&T 2100 MHz (AWS) LTE	4	1,180.65	163	6.89	2100 MHz (AWS)	1000	0.69%
AT&T 850 MHz LTE	2	545.83	163	1.59	850 MHz	567	0.28%
AT&T 2300 MHz (WCS) LTE	4	916.48	163	5.35	2300 MHz (WCS)	1000	0.53%
AT&T 850 MHz UMTS	2	414.12	163	1.21	850 MHz	567	0.21%
						Total:	3.63%

Table 6: AT&T Maximum Sector MPE Power Values



Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population 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 population exposure to RF Emissions are shown here:

AT&T Sector	Power Density Value (%)
Sector A:	3.63 %
Sector B:	3.63 %
Sector C:	3.63 %
AT&T Maximum Total (per sector):	3.63 %
Site Total:	10.74 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **10.74 %** of the allowable FCC established general population 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.

A handwritten signature in black ink, appearing to read 'Scott Heffernan', is written over a light blue horizontal line.

Scott Heffernan
RF Engineering Director
Centerline Communications, LLC
95 Ryan Drive, Suite 1
Raynham, MA 02767

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Joseph Bullaro, Building Official
City of Shelton
54 Hill Street, Third Floor
Shelton, CT 06484



9590 9402 1271 5246 8908 81

2. Article Number (Transfer from service label)

7016 2140 0000 9458 7068

PS Form 3811, July 2015 PSN 7530-02-000-9053

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X Brad Brown

- Agent
- Addressee

B. Received by (Printed Name)

BRAD BROWN

C. Date of Delivery

D. Is delivery address different from item 1? Yes
If YES, enter delivery address below: No

3. Service Type

- Adult Signature
- Adult Signature Restricted Delivery
- Certified Mail®
- Certified Mail Restricted Delivery
- Collect on Delivery
- Collect on Delivery Restricted Delivery
- Insured Mail
- Insured Mail Restricted Delivery (over \$500)
- Priority Mail Express®
- Registered Mail™
- Registered Mail Restricted Delivery
- Return Receipt for Merchandise
- Signature Confirmation™
- Signature Confirmation Restricted Delivery

Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Rick Schultz, ADCC
Planning and Zoning Administrator
City of Shelton
54 Hill Street, Third Floor
Shelton, CT 06484



9590 9402 1271 5246 8908 74

2. Article Number (Transfer from service label)

7016 2140 0000 9458 7099

PS Form 3811, July 2015 PSN 7530-02-000-9053

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X Brad Brown

- Agent
- Addressee

B. Received by (Printed Name)

BRAD BROWN

C. Date of Delivery

D. Is delivery address different from item 1? Yes
If YES, enter delivery address below: No

3. Service Type

- Adult Signature
- Adult Signature Restricted Delivery
- Certified Mail®
- Certified Mail Restricted Delivery
- Collect on Delivery
- Collect on Delivery Restricted Delivery
- Insured Mail
- Insured Mail Restricted Delivery (over \$500)
- Priority Mail Express®
- Registered Mail™
- Registered Mail Restricted Delivery
- Return Receipt for Merchandise
- Signature Confirmation™
- Signature Confirmation Restricted Delivery

Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

The Honorable Mark A. Lauretti
Mayor, City of Shelton
54 Hill Street
Shelton, CT 06484



9590 9402 1271 5246 8909 35

2. Article Number (Transfer from service label)

7016 2140 0000 9458 7075

PS Form 3811, July 2015 PSN 7530-02-000-9053

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X Brad Brown

- Agent
- Addressee

B. Received by (Printed Name)

BRAD BROWN

C. Date of Delivery

D. Is delivery address different from item 1? Yes
If YES, enter delivery address below: No

3. Service Type

- Adult Signature
- Adult Signature Restricted Delivery
- Certified Mail®
- Certified Mail Restricted Delivery
- Collect on Delivery
- Collect on Delivery Restricted Delivery
- Insured Mail
- Insured Mail Restricted Delivery (over \$500)
- Priority Mail Express®
- Registered Mail™
- Registered Mail Restricted Delivery
- Return Receipt for Merchandise
- Signature Confirmation™
- Signature Confirmation Restricted Delivery

Domestic Return Receipt