



January 29, 2015

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

Regarding: Notice of Exempt Modification – Addition of 3 radio heads previously approved
Property Address: 219 Nells Rock Road, Shelton, CT (the “Property”)
Applicant: AT&T Mobility (“AT&T”)

Dear Ms. Bachman:

AT&T currently maintains a wireless telecommunications facility on an existing 162.5 foot self-supporting lattice tower (“tower”) location on the Property. AT&T’s facility consists of nine (9) wireless telecommunications antenna at 162 feet. The tower is controlled by SNET. The Council approved the previous application on December 23, 2011, reference number EM-CING-126-111207. This application (attached) granted AT&T the use of 6 radio heads at this location. The approval expired one year from the issue date. During that time AT&T made the changes to the site per the approval but only installed three (3) of the six (6) radio heads that they received approval. AT&T would now like to install the additional three (3) radio heads that were originally approved under EM-CING-126-111207.

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 and Planning and Zoning Administrator for the City of Shelton. A copy of this letter is also being sent to AT&T Towers, the owner of the structure that AT&T is located.

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 additional, previously approved 3 radio heads will be installed at 158.5 foot level of the 162.5foot monopole.
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 (attached) for AT&T's modified facility was provided in the application which led to the December 23, 2011 Decision.

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 Group dated September 8, 2011).

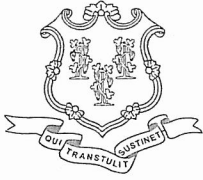
For the foregoing reasons AT&T respectfully requests that the proposed addition of 3 radio heads previously approved be allowed within the exempt modifications under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

A handwritten signature in cursive script that reads "David P. Cooper".

David P. Cooper
Director of Site Acquisition
Empire Telecom

CC: Mark A Lauretti, Mayor, City of Shelton
Richard Shultz, Planning and Zoning Administrator, City of Shelton
SNET



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@ct.gov

www.ct.gov/csc

CT 2113

December 23, 2011

Stephen Kelleher, Real Estate Consultant
New Cingular Wireless PCS, LLC
960 Turnpike Street, Suite 28
Canton, MA 02021

RE: **EM-CING-126-111207** - New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 219 Nells Rock Road, Shelton, Connecticut.

Dear Ms. Fournier:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

- Any deviation from the proposed modification as specified in this notice and supporting materials with Council shall render this acknowledgement invalid;
- Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
- Not less than 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
- The validity of this action shall expire one year from the date of this letter; and
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration;

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated December 6, 2011. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

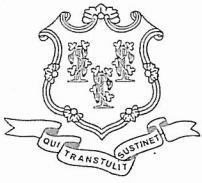
Very truly yours,

Linda Roberts
Executive Director

LR/CDM/laf

c: The Honorable Mark A. Lauretti, Mayor, City of Shelton
Richard Schultz, Planning Administrator, City of Shelton
RCC Consultants





STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

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www.ct.gov/csc

December 8, 2011

The Honorable Mark A. Lauretti
Mayor
City of Shelton
54 Hill Street
P. O. Box 364
Shelton, CT 06484

RE: **EM-CING-126-111207** - New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 219 Nells Rock Road, Shelton, Connecticut.

Dear Mayor Lauretti:

The Connecticut Siting Council (Council) received this request to modify an existing telecommunications facility, pursuant to Regulations of Connecticut State Agencies Section 16-50j-72.

If you have any questions or comments regarding this proposal, please call me or inform the Council by December 22, 2011.

Thank you for your cooperation and consideration.

Very truly yours,

Linda Roberts
Executive Director

LR/jbw

Enclosure: Notice of Intent

c: Richard Schultz, Planning Administrator, City of Shelton

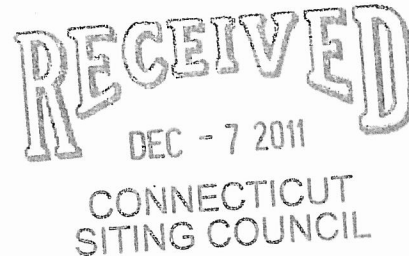


New Cingular Wireless PCS, LLC
960 Turnpike Street, Suite 28
Canton, MA 02021
Phone: (508) 404-8917
Fax: (617) 249-0819

Stephen Kelleher
Real Estate Consultant

December 6, 2011

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



Re: Request by New Cingular Wireless PCS, LLC for an Order Approving an Exempt Modification of an Existing tower at 219 Nells Rock Road, Shelton, CT.

Dear Chairman Stein and Members of the Council:

In order to accommodate technological changes, implement Long Term Evolution ("LTE") capabilities, and enhance system performance in the State of Connecticut, New Cingular Wireless PCS, LLC ("AT&T") plans to modify the equipment configurations at many of its existing cell sites. Please accept this letter and attachments as notification, pursuant to R.C.S.A Section 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A Section 16-50j-72(b)(2). In compliance with R.C.S.A Section 16-50j-73, a copy of this letter and attachments is being sent to the chief elected official of the municipality in which the affected cell site is located.

LTE is a new high-performance air interface for cellular mobile communications. It is designed to increase the capacity and speed of mobile telephone networks.

Attached is a summary of the planned modifications, including power density calculations reflecting the change in AT&T's operations of the site. Also, included is documentation of the structural sufficiency of the tower to accommodate the revised antenna configuration.

The changes to the facility do not constitute modifications as defined in Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed or altered. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in R.C.S.A Section 16-50j-72(b)(2).

1. The height of the overall structure will be unaffected.
2. The proposed changes will not extend the site boundaries. There will be no effect on the site compound other than some enlarged equipment pads as may be noted in the attachments
3. The proposed changes will not increase the noise level at the existing facility by six

decibels or more.

4. LTE will utilize additional radio frequencies newly licensed by the FCC for cellular mobile communications. However, the changes will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site.

For the foregoing reasons, New Cingular Wireless respectfully submits that the proposed changes at the referenced site constitute exempt modifications under R.C.S.A Section 16-50j-72(b)(2).

Please feel free to contact me at 508-404-8917 with questions concerning this matter. Thank you for your consideration.

Sincerely,

A handwritten signature in dark ink, appearing to read "Stephen Kelleher". The signature is fluid and cursive, with a large initial "S" and a stylized "K".

Stephen Kelleher
Real Estate Consultant

Attachments



WIRELESS COMMUNICATIONS FACILITY

CT2113

SHELTON

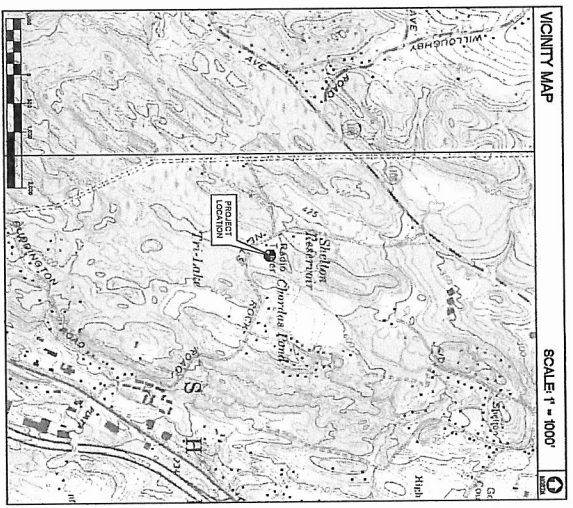
219 NELLE ROCK ROAD

SHELTON, CT 06484

SITE DIRECTIONS	
FROM: 500 DIVERSITY DRIVE, ROCK HILL, CONNECTICUT	TO: 219 NELLE ROCK ROAD, SHELTON, CT
1. Start out going NE on Route 1A (Diversity Drive) toward Capital Blvd.	
2. Turn left onto West Street.	0.1 mi
3. Turn left onto West Street, on the left toward New Haven.	0.2 mi
4. Merge onto CT-15 S / WATER CROSS ROAD into EXIT 17.	21.9 mi
5. Turn left onto WEST STREET / CT-34 W.	0.3 mi
6. Turn left onto BRIDGE STREET.	0.07 mi
7. Turn right onto WEST STREET / CT-108.	0.1 mi
8. Take the first left onto WEST STREET / CT-108.	0.4 mi
9. Turn left onto NELLE ROCK RD.	
10. Take the first left onto WEST STREET / CT-108.	
11. Turn left onto NELLE ROCK RD.	
12. Turn left onto NELLE ROCK RD.	
13. 219 NELLE ROCK ROAD is on the left.	

GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2005 INTERNATIONAL BUILDING CODE, THE 2005 INTERNATIONAL PLUMBING CODE, THE 2005 INTERNATIONAL MECHANICAL CODE, THE 2005 INTERNATIONAL ELECTRICAL CODE AND LOCAL CODES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AUTHORITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AUTHORITIES.
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PROJECT SUMMARY

1. THE PROPOSED SCOPE OF WORK GENERALLY CONSISTS OF THE INSTALLATION OF ONE (1) LITE ANTENNA WITH SPECTRA ANTENNA MOUNTED ON THE EXISTING TOWER. THE ANTENNA WILL BE INSTALLED WITHIN THE EXISTING TOWER. THE ANTENNA WILL BE INSTALLED WITHIN THE EXISTING TOWER. THE ANTENNA WILL BE INSTALLED WITHIN THE EXISTING TOWER.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AUTHORITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AUTHORITIES.

PROJECT INFORMATION

ALERT SITE NUMBER:	CT2113
ALERT SITE NAME:	SHELTON
SITE ADDRESS:	219 NELLE ROCK ROAD, SHELTON, CT 06484
LESSOR/APPLICANT:	ROCK HILL, CT 06067
ENGINEER:	CONTECH ENGINEERING, INC., 500 DIVERSITY DRIVE, SUITE 3A, BEAVERTON, CT 06040
PROJECT COORDINATOR:	LATITUDE: 41°18'15" N, LONGITUDE: 72°47'35" W, DIVERSITY DRIVE, 2400' AMSL

SHEET INDEX

SHEET NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	1
N-1	NOTES AND SPECIFICATIONS	1
C-1	PLANS AND ELEVATION	1
C-2	LITE SYSTEM EQUIPMENT PLANS & DETAILS	1
C-3	ELECTRICAL DETAILS AND NOTES	1
C-4	ELECTRICAL DETAILS	1

DESIGNED BY: CFC
CHECKED BY: CFC
DATE: 03/24/11
SCALE: AS SHOWN
SHEET NO.: 11037206

AT&T MOBILITY
WIRELESS COMMUNICATIONS FACILITY
SITE NUMBER: CT2113
SITE NAME: SHELTON
219 NELLE ROCK RD
SHELTON, CT 06484

www.Centelity.com

CONTECH ENGINEERING, INC.
500 DIVERSITY DRIVE, SUITE 3A
BEAVERTON, CT 06040
PHONE: 860.670.0000
FAX: 860.670.0001

at&t

PROFESSIONAL ENGINEER SEAL
DATE: 03/24/11
BY: [Signature]
FOR: [Signature]

CONSTRUCTION - CLIENT REVIEW

DESIGN BASIS

GOVERNING CODE: 2003 INTERNATIONAL BUILDING CODE (IBC) AS MODIFIED BY THE 2003 CONNECTICUT STATE BUILDING CODE AND 2009 AMENDMENTS.

- BUILDING CLASSIFICATION: II (BASED ON IBC TABLE 1604.5)
- BASIC WIND SPEED (OTHER STRUCTURES): 105 MPH (3 SECOND GUST) [EXPOSURE B/AVERAGE FACTOR: 1.0 BASED ON ASCE 7-02] PER 2003 INTERNATIONAL BUILDING CODE (IBC) AS MODIFIED BY THE 2005 CONNECTICUT SUPPLEMENT AND 2009 AMENDMENT.
- SEISMIC LOAD DOES NOT CONTROL; PER ASCE 7-05 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES.

GENERAL NOTES

1. IF ANY FUEL CONDITIONS EXIST WHICH PRECLUDE COMPLIANCE WITH THE DEMANDS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL PROCEED WITH AFFECTED WORK AFTER CONSULT IS SATISFACTORILY RESOLVED.
2. DEMANDS AND DETAILS SHALL BE CHECKED AGAINST THE PRE MANUFACTURED EQUIPMENT BUILDING SHOP DRAWINGS.
3. THE CONTRACTOR SHALL VERIFY AND COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS, STAYS AND ANCHOR BOLTS AS REQUIRED BY ALL INSTRUCTIONS.
4. REFER TO DEMAND 11 FOR ADDITIONAL NOTES AND REQUIREMENTS.

SITE NOTES

1. THE CONTRACTOR SHALL DO UTILITIES PRIOR TO THE START OF CONSTRUCTION.
2. ALL EXISTING UTILITIES WERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES.
3. ALL RIGGING, STUPE, DEBRIS, STEPS, STUPE AND OTHER REFUSE SHALL BE REMOVED OF SITE AND BE LEGALLY DISPOSED. AT AN APPROVED COST.
4. THE SET SHALL BE GRADED TO CLASH SURFACE WATER TO FLOW AWAY FROM THE EQUIPMENT AND TO THE NEAREST DRAINAGE DITCH.
5. ALL EQUIPMENT OR MATERIAL SHALL BE MOVED ON PAVED OR GRAVEL, FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY TALL OR UNSTABILIZED.
6. THE EQUIPMENT SHALL BE CONNECTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO INSURED SURFACE APPLICATION.
7. THE AREA OF THE CURBING DISTURBED BY THE WORK SHALL BE RETURNED TO THEIR ORIGINAL CONDITION.
8. CONTRACTOR SHALL MAINTAIN INSURANCE TO PROTECT THE PUBLIC CONSTRUCTION, PERSONAL PROPERTIES AND EQUIPMENT. CONTRACTOR SHALL BE COOPERATED WITH THE LOCAL AGENCIES FOR EMISSION AND SEDIMENT CONTROL.

EARTHWORK NOTES

1. COMPLETED GAVEL TILL SHALL BE UNBUSHED AND PLACED AS A FOUNDATION FOR STRUCTURES, WHERE SHOWN ON THE CONTRACT DRAWINGS OR DIRECTED BY THE ENGINEER.
2. CHARGED STONE TILL SHALL BE PLACED IN 12" MAX. LIFTS AND CONSOLIDATED USING A VIBRATING POLE SHIMMER WITH A MINIMUM OF 6 PASSES OF CHARGE PER FOOT.
3. REINFORCING BARS SHALL BE PLACED IN THE GAVEL TILL TO BE PLACED ABOVE RUN GAVEL WITHIN THE FOLLOWING SPACING:

	<u>MIN. SPACING</u>
SIZE #8	1X SPACING
"#7	1'0"
"#6	1'0"
"#5	9'-10"
"#4	8'-0"
"#3	4'-8"
4. CHARGED STONE TO BE UNBUSHED, CLEAN, WHO PROCESS AGGREGATE WITHIN THE FOLLOWINGKIN
FOUNDATION REQUIREMENTS:

	<u>MAX. SPACING</u>
SIZE #8	1X SPACING
"#7	8'-0"-10'
"#6	8'-0"-15'
"#5	6'-0"-5'
5. SECTIONS ACROSS THE FOUNDATION WALLS SHALL BE FREE OF ORGANIC MATERIAL, TOPSOIL, DEBRIS, AND OTHER UNDESIRABLE MATERIAL.
6. GRADING AND FINISH TILL SHALL BE INSTALLED IN 6" MAX. LIFTS, COMPACTED TO 95% MIN. AT EACH 4" OF DENSITY.
7. NOT WORKER SPECIFIC FOR SEPARATION PURPOSES SHALL BE UPHOLD 140L ON EROSION APPROVED EQUAL.

FOUNDATION CONSTRUCTION NOTES

- [illegible]

CONCRETE CONSTRUCTION NOTES

1. CONCRETE REINFORCEMENT SHALL CONFORM TO THE FOLLOWING STANDARDS:
 - ACI 301 – STANDARD PRACTICE FOR SELECTING REINFORCEMENT FOR NORMAL AND HEAVYWEIGHT CONCRETE.
 - ACI 303 – SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS.
 - ACI 302 – GUIDE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION.
 - ACI 308 – RECOMMENDED PRACTICE FOR MIXING, PLACING, TRANSPORTING, AND PLACING CONCRETE.
 - ACI 308.1 STANDARD SPECIFICATION FOR COLD WEATHER CONCRETE.
 - ACI 310 – BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.
2. CONCRETE SHALL DEVELOP COMPRESSIVE STRENGTH IN 28 DAYS AS FOLLOWS:

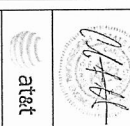
SLAB OR CONCRETE	3,000 PSI
WALL OR CONCRETE	3,000 PSI
POST-TENSIONED CONCRETE	3,000 PSI
3. REINFORCING STEEL SHALL BE:

– PORTLAND CEMENT, ASTM A101, TYPE I, 60K (40K/60K YIELD)
– REINFORCING STEEL, ASTM A615, 60K (40K/60K YIELD)
– WELDED WIRE FABRIC, ASTM A185, TYPE 60K (40K/60K YIELD)
4. WELDED WIRE FABRIC SHALL CONFORM TO ASTM-A-185.
5. ALL DETAILING, FABRICATING, AND ERECTION OF REINFORCING BARS, UNLESS OTHERWISE NOTED, MUST CONFORM TO THE REINFORCING STEEL INSTITUTE (R.S.I.) MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCING CONCRETE STRUCTURES.
6. CONCRETE COVER OVER REINFORCING SHALL CONFORM TO THE FOLLOWING, UNLESS OTHERWISE SHOWN:

WEDDING OF TENDONS	3 INCHES
REINFORCING NOT EXPOSED TO DRAIN OR WATER*	1-1/2 INCHES
7. NO STEEL WIRE, UNTIL FIBER TIES, OR ANY OTHER MEANS, SHALL REMAIN WITHIN THE REQUIRED COVER OF ANY CONCRETE SURFACE.
8. ALL REINFORCEMENT SHALL BE CONTINUOUS UNLESS OTHERWISE NOTED. BARBERS SHALL BE TIED, AND ALL REINFORCEMENT SHALL BE TIED TOGETHER AT INTERSECTIONS WITHIN ANY CONCRETE. STEEL DETAILS SHALL COMPLY WITH ACI 315 RECOMMENDATIONS UNLESS OTHERWISE SHOWN.
9. NO TACK WELDING OF REINFORCEMENT SHALL BE PERMITTED.
10. NO CHLORIDE DILUENTS OR ADJUVANTS CONTAINING MORE THAN 1% CHLORIDE BY WEIGHT OF ADJUVANT/CHLORIDE SHALL BE USED IN THE CONCRETE.
11. UNLESS OTHERWISE NOTED, ALL W/6 SPACES SHALL BE 48 BAR DIAMETERS.
12. UNLESS OTHERWISE NOTED, ALL W/6 SPACES SHALL BE 48 BAR DIAMETERS.

GENERAL NOTES (REFERENCE)

CONTRACTOR TO REFER TO THE GENERAL NOTES ON SHEET T-1 FOR ADDITIONAL INFORMATION

[illegible]

CENTEK Engineering
Centek Corporation
(708) 455-6550
(708) 455-6557 Fax
652 North Harvard Road
Berford, CT 06405
www.CentekEng.com

AT&T MOBILITY
WIRELESS COMMUNICATIONS FACILITY
SITE NUMBER: CT2113
SITE NAME: SHELTON
219 NELLIS ROCK RD.
SHELTON, CT 06484

DATE:	03/01/11
SCALE:	AS NOTED
JOB NO.	11107.C06

NOTES
AND
SPECIFICATIONS

N-1

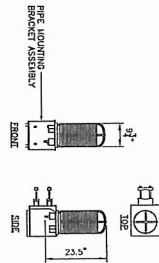
Sheet No. 2 of 6

[illegible]

SITE TYPE	ANTENNA MAKE/MODEL	QTY REQUIRED	ANTENNA LOCATION	WEIGHT
TOWER	RAYCP (GROUND)	(1) PER SITE	TOWER, ATTACHED TO TOWER	20 LBS.
TOWER	RAYCP (GROUND)	(1) PER SITE	TOWER, ATTACHED TO TOWER	20 LBS.

NOTES:

- CONNECTIONS TO COORDINATE FINAL SURGE ARRESTOR MODEL SELECTION(S) WITH MANUFACTURER.
- CONNECTIONS TO COORDINATE FINAL SURGE ARRESTOR MODEL SELECTION(S) WITH MANUFACTURER.

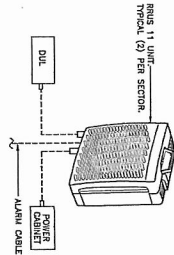


8 SURGE ARRESTOR DETAIL
SCALE 1/8" = 1'-0"

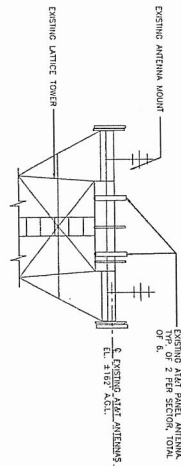
EQUIPMENT	DIMENSIONS	WEIGHT	CLEARANCES
ANTENNA	17.8" L x 17.3" W x 7.2" D	24 LBS.	ABOVE: 15' MIN.
ANTENNA	17.8" L x 17.3" W x 7.2" D	24 LBS.	BELOW: 0' MIN.

NOTES:

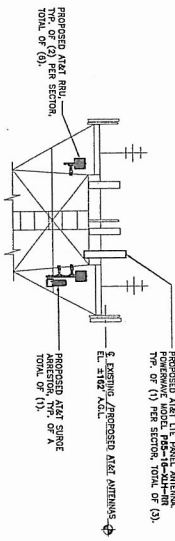
- CONNECTIONS TO COORDINATE FINAL SURGE ARRESTOR MODEL SELECTION WITH MANUFACTURER.



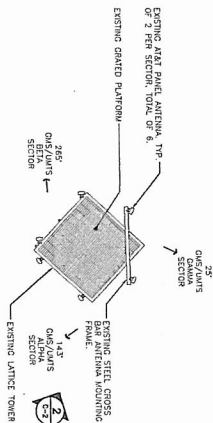
7 RRU DETAIL
SCALE 1/8" = 1'-0"



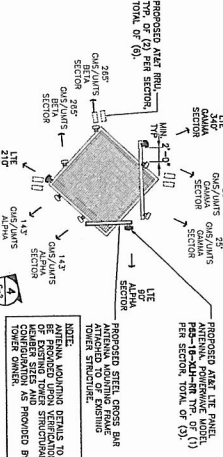
2 EXISTING ANTENNA SECTOR ELEVATION
SCALE 1/8" = 1'-0"



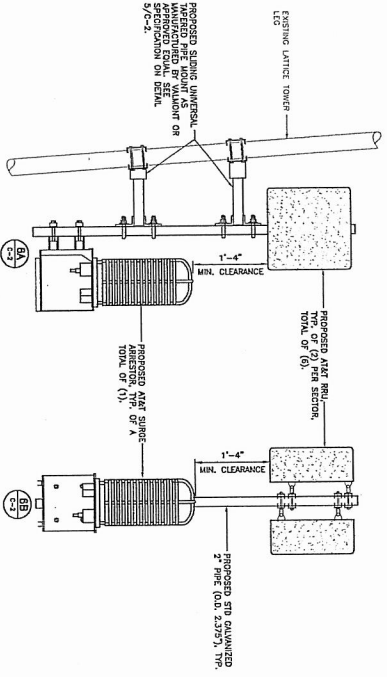
4 PROPOSED ANTENNA SECTOR ELEVATION
SCALE 1/8" = 1'-0"



1 EXISTING ANTENNA PLAN
SCALE 1/8" = 1'-0"



3 PROPOSED ANTENNA PLAN
SCALE 1/8" = 1'-0"



6A AND 6B RRU AND SURGE ARRESTOR MOUNTING DETAILS
SCALE 1/8" = 1'-0"

DATE	REVISION	DESCRIPTION
03/24/11	1	ISSUED FOR CONSTRUCTION
03/24/11	2	ISSUED FOR CONSTRUCTION
03/24/11	3	ISSUED FOR CONSTRUCTION
03/24/11	4	ISSUED FOR CONSTRUCTION

5 PROPOSED RRU MOUNTING PLAN
SCALE 1/8" = 1'-0"

AT&T MOBILITY

WIRELESS COMMUNICATIONS FACILITY

SITE NUMBER: CT2113

SITE NAME: CHATN

219 N. HILLS ROAD
SHELTON, CT 06484

DATE: 03/24/11

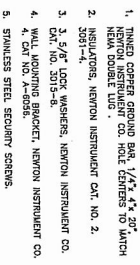
SCALE: AS SHOWN

JOB NO: 1107235

PROJECT: LITE SYSTEM EQUIPMENT PLANS AND DETAILS

REVISIONS

REV.	DATE	BY	DESCRIPTION
1	03/24/11	FLD	ISSUED FOR CONSTRUCTION
2	03/24/11	FLD	ISSUED FOR CONSTRUCTION
3	03/24/11	FLD	ISSUED FOR CONSTRUCTION
4	03/24/11	FLD	ISSUED FOR CONSTRUCTION





at&t

Marty Jelleme
AT&T Mobility
5405 Windward Pkwy
Alpharetta, GA 30004
(770) 708-6124



GPD GROUP
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.

Kevin Clements
12600 Deerfield Pkwy; Suite 2039
Alpharetta, GA 30004
(678) 762-3305
kclements@gpdgroup.com

GPD# 2011265.91
September 8, 2011

STRUCTURAL ANALYSIS REPORT

AT&T DESIGNATION:	Site USID:	SNET025
	Site FA:	10137492
	Site Name:	SHELTON
	AT&T Project:	Wireline AT&T Mobility Modification 6-23-2011

AT&T MOBILITY DESIGNATION:	Site Name:	Shelton
	Site Number:	CT 2113

ANALYSIS CRITERIA:	Codes:	TIA/EIA-222-F & 2003 IBC 90-mph with 0" ice 78-mph with 1/2" ice
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SITE DATA:	2 Oak Valley Road, Shelton, CT 06484, Fairfield County Latitude 41° 18' 15.012" N, Longitude 73° 7' 5.999" W 162.5' Self Support Tower
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Mr. Jelleme,

GPD is pleased to submit this Structural Analysis Report to determine the structural integrity of the aforementioned tower. The purpose of the analysis is to determine the suitability of the tower with the addition of the following proposed loading configuration:

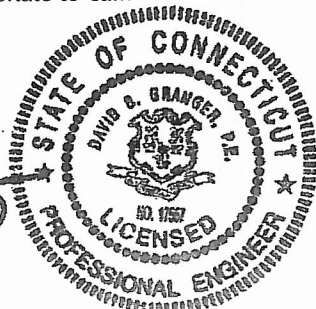
Elev. 162'	(3) Powerwave P65-16-XLH-RR Antennas on a 28' Platform w/ rails w/ (1) 1/2" Fiber Cables
	(6) Ericsson RRUS 11 Remote Radio Head Units on the same mount w/ (2) 7/8" DC Power Line
	(3) Raycap DC6-48-60-18-8F Dome Suppression Units on the same mount
	(1) GPS Unit on the same mount

Based on our analysis we have determined the tower and its foundations are sufficient for the proposed, existing, and reserved loadings as referenced in Appendix A.

We at GPD appreciate the opportunity of providing our continuing professional services to you and AT&T. If you have any questions please do not hesitate to call.

Respectfully submitted,

David B. Granger, P.E.
Connecticut #: 17557



SUMMARY & RESULTS

The purpose of this analysis was to verify whether the existing structure is capable of carrying the proposed loading configuration as specified by AT&T Mobility to AT&T. This report was commissioned by Mr. Marty Jelleme of AT&T.

TOWER SUMMARY AND RESULTS

Member	Capacity	Results
Legs	48.2%	Pass
Diagonals	99.8%	Pass
Horizontals	68.3%	Pass
Redundant Members	71.9%	Pass
Inner Bracing	40.2%	Pass
Member Bolts	59.6%	Pass
Anchor Rods	41.6%	Pass
Foundation (Compression)	35.7%	Pass
Foundation (Uplift)	63.3%	Pass

ANALYSIS METHOD

RISA 3D (version 8.1.3) and RISA Tower (version 5.4.2.0), commercially available software programs, were used to create a three-dimensional model of the tower and calculate primary member stresses for various dead, live, 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 based solely on this information.

DOCUMENTS PROVIDED

Document	Remarks	Source
Preliminary Tower Summary	AT&T Co-location document	Siterra
Site Lease Application	AT&T Application, dated 4/27/11	Siterra
Tower Mapping	GPD Group and MTSI Northeast, dated 7/1/10	Siterra
Foundation Mapping	WEI Project #: 2010-1160, dated 7/20/10	Siterra
Geotechnical Report	WEI Project #: 2010-1160, dated 7/20/10	Siterra
Previous Analysis	GPD Project #: 2010269.68 Rev. 1, dated 5/27/11	Siterra

ASSUMPTIONS

This 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. If no data is available, the foundation system is not verified.
6. The tower and structures have been properly maintained in accordance with TIA Standards and/or with manufacturer's specifications.
7. All welds and connections are assumed to develop at least the member capacity, unless determined otherwise and explicitly stated in this report.
8. All prior structural modifications, if any, are assumed to be as per data supplied/available, to have been properly installed and to be fully effective.
9. Tower Mounted Amplifiers are assumed to be installed behind antennas.
10. All existing loading was obtained from the previous analysis by GPD Project #: 2010269.68 Rev. 1 dated 5/27/11, site photos and the provided preliminary tower summary and is assumed to be accurate.
11. 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 soil failure criteria in the foundation analysis.
12. The existing AT&T loading elevation found in the mapping by GPD Group and MTSI Northeast, dated 7/1/10 was found to vary from the listed elevation within the provided preliminary tower summary. The existing elevations have been modeled based on the elevations reflected within the mapping.

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

DISCLAIMER OF WARRANTIES

GPD GROUP has performed a recent site visit to the tower to verify the member sizes and 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 GROUP in connection with this Structural Analysis are limited to a computer analysis of the tower structure and theoretical capacity of its main structural members. All tower components have been assumed to only resist dead loads when no other loads are applied. 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.

GPD GROUP 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 GROUP 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 feasibility of adding appurtenances usually accompanied by transmission lines to the structure.

It is the owner's responsibility to determine the amount of ice accumulation, 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 GROUP, 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.

GPD GROUP 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 GROUP 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 GROUP pursuant to this report will be limited to the total fee received for preparation of this report.

APPENDIX A

Tower Analysis Summary Form

General Info	SHELTON SNET025 10137492 9/8/2011 C-PD Group
Site Name Site Number FA Number Date of Analysis Company Performing Analysis	

Analysis Results (% Maximum Usage)	
Existing/Reserved + Future + Proposed Condition	
Tower (%)	98.9%
Anchor Rods (%)	41.6%
Foundation (%)	63.3%
Foundation Adequate?	YES

Design Parameters	Design Code Used	Trail/EIA-2022-F
Location of Tower (County, State)		2003 IBC
Basic Wind Speed (mph)		Fairfield CT
Ice Thickness (in)		90 Feet/land Mile
Structure Classification (I, II)		0.5
Exposure Category (B, C, D)		
Topographic Category (1 to 5)		

Tower Info	Description	Date
SST		
Tower Type (G, SST, MP)		
Tower Height (top of steel AGL)	162.5'	
Tower Manufacturer	n/a	
Tower Model	n/a	
Tower Design	n/a	
Foundation Design	n/a	
Galtech Report	WEI Project #: 2010-1160	7/20/2010
Tower Mapping	GPD Group and MTSI Northeast	7/17/2010
Previous Structural Analysis	GPD Project #: 2010259.580 Rev. 1	5/27/2011
Foundation Mapping	WEI Project #: 2010-1160	7/20/2011

Steel Yield Strength (ksi)	
Legs	36
Bracing	36
Member Bolts	A307
Anchor Rods	C1015

Existing / Reserved Loading

Exiting / Reserved Loading														
Antenna Owner			Antenna			Azimuth			Mount			Transmission Line		
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Leg/Face
Unknown	162.5	175	1	Light	Unknown	Beacon		1	Unknown	13" W5 x 13" Post	1	Unknown	1/2"	Face D
Unknown	162.5	173	1	Omni	Unknown	10' Omni		1	Unknown	28" Platform w/ rails	1	Unknown	7/2"	Face D
Unknown	162.5	165	1	Omni	Unknown	5' Omni		1	Unknown	on the same top platform	1	Unknown	1.5/4"	Face D
Unknown	162.5	163	2	Dipole	Unknown	10' Dipole		1	Unknown	10' Post with (2) 2' Side Arms	2	Unknown	7/8"	Face D
AT&T Mobility	162.5	163	2	Panel	Poverwave	RA21-7770.00	143	4	Unknown	on the same top platform	4	Unknown	1.5/8"	Face D
AT&T Mobility	162.5	161	4	Panel	Poverwave	RA21-7770.00	25-255	2	Unknown	on the same mount	8	Unknown	1.5/8"	Face D
AT&T Mobility	162.5	163	2	TMA	Poverwave	LGP21401			Unknown	on the same mounts				
AT&T Mobility	162.5	161	4	TMA	Poverwave	LGP21401			Unknown	on the same mounts				
Panel	150	150	6	Panel	Allion	7184.05		3	Unknown	14" T-Frames	6	Unknown	1.5/8"	Face B
Panel	144	144						2	Unknown	30" x 30" Cross Catwalk w/ rails				
Omniport	136	136	6	Panel	Calwave	APX16DW6-16DW-S-E-ACU		6	Unknown	Pipe Mounts	12	Unknown	1.5/8"	Face D
Omniport	136	139	6	TMA	Unknown	10'x7'x1' TMA			Unknown	on same mounts				
Omniport	136	135	12	RET	Unknown	ACU-A20-N			Unknown	on same mounts				
Omniport	124	124	6	Panel	Andrew	D8646F55ZAXY		3	Unknown	12" T-Frames	18	Unknown	1.5/8"	Face C
Omniport	124	124	3	Panel	Antel	LPA-18508012CFDN2			Unknown	on same mounts				
Omniport	124	124	3	Panel	Antel	5YA-70083-4CF-EDIN-4			Unknown	on same mounts				
Panel	112.5	112.5						1	Unknown	4.25" x 7' Catwalk				
Panel	87.5	87.5						2	Unknown	23" x 3' Catwalks				
Unknown	69	68	1	GPS	Unknown	GPS		1	Unknown	Leg Mounted	1	Unknown	1/2"	Face D
Unknown	85	85	1	GPS	Unknown	GPS		1	Unknown	Leg Mounted	1	Unknown	1/2"	Face D
Panel	62.5	62.5						1	Unknown	13" x 4.25' Catwalk				
Panel	35	35						1	Unknown	13" x 4.25' Catwalk				

Proposed Loading																
Antenna																
Antenna Owner			Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Lay/Place
AT&T Mobility			102.5	162	3	Panel	Powerwave	P65-16-XLHRR	90-210/340	1		on the existing mount	1	Fiber Cable	12"	Page D
AT&T Mobility			102.5	162	6	RRH	Ericsson	RRUS 11		2		on the same mount	2	OC Power	7/8"	Page D
AT&T Mobility			102.5	162	3	DSU	Roycap	DCS-416-60-18-8F		1		on the same mount	1	OC Power		
AT&T Mobility			102.5	162	1	GPS	Unknown	GPS		1		on the same mount	1			

Note: The proposed loading shall be installed in addition to the existing loading at the same elevation.

[illegible]

APPENDIX B

RISA Output Files and Calculations

RISATower GPD Group 520 South Main St. Akrón, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-2102	Job	SNET025 SHELTON	Page	1 of 5
	Project	2011265.91	Date	14:42:27 09/08/11
	Client	AT&T Mobility	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/EIA-222-F standard.

The following design criteria apply:

Tower is located in Fairfield County, Connecticut.

Basic wind speed of 90 mph.

Nominal ice thickness of 0.5000 in.

Ice density of 56 pcf.

A wind speed of 78 mph is used in combination with ice.

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 50 mph.

Pressures are calculated at each section.

Stress ratio used in tower member design is 1.333.

Local bending stresses due to climbing loads, feedline 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
Feedline	A	Yes	Af (CfAe)	150.00 - 10.00	0.0000	0	1	1	3.0000	3.0000	12.0000	8.40
Ladder (Af)												
LDF7-50A	A	Yes	Ar (CfAe)	150.00 - 10.00	0.0000	0	6	6	1.0000	1.9800		0.82
(1-5/8 FOAM)												
LDF4P-50A	C	Yes	Ar (CfAe)	65.00 - 10.00	0.0000	-0.45	3	2	0.2500	0.6300		0.15
(1/2 FOAM)												
LDF4P-50A	C	Yes	Ar (CfAe)	68.00 - 65.00	0.0000	-0.45	2	2	0.2500	0.6300		0.15
(1/2 FOAM)												
LDF4P-50A	C	Yes	Ar (CfAe)	162.50 - 68.00	0.0000	-0.45	1	1	0.2500	0.6300		0.15
(1/2 FOAM)												
2" Flex	C	Yes	Ar (CfAe)	162.50 - 10.00	0.0000	-0.44	1	1	0.2500	2.0000		0.32
Conduit												
Feedline	C	Yes	Af (CfAe)	162.50 - 10.00	0.0000	0	1	1	3.0000	3.0000	12.0000	8.40
Ladder (Af)												
LDF7-50A	C	Yes	Ar (CfAe)	136.00 - 10.00	0.0000	0.03	12	9	1.0000	1.9800		0.82
(1-5/8 FOAM)												
Feedline	C	Yes	Af (CfAe)	162.50 - 10.00	-1.0000	0.2	1	1	3.0000	3.0000	12.0000	8.40
Ladder (Af)												
LDF7-50A	C	Yes	Ar (CfAe)	162.50 - 10.00	-6.0000	0.2	12	4	1.0000	1.9800		0.82
(1-5/8 FOAM)												
LDF5-50A	C	Yes	Ar (CfAe)	162.50 - 10.00	-6.0000	0.22	2	1	1.0000	1.0900		0.33
(7/8 FOAM)												
LDF6-50A	C	Yes	Ar (CfAe)	162.50 - 10.00	-1.0000	0.23	1	1	1.0000	1.5500		0.66
(1-1/4 FOAM)												
1/2" Fiber	C	Yes	Ar (CfAe)	162.50 - 10.00	-5.0000	0.18	1	1	0.6300	0.6300		0.15
Cable												
7/8" DC	C	Yes	Ar (CfAe)	162.50 - 10.00	-5.0000	0.18	2	2	0.8750	0.8750		0.60
Power Cable												
LDF5-50A	D	Yes	Ar (CfAe)	162.50 - 10.00	0.0000	-0.48	1	1	1.0000	1.0900		0.33
(7/8 FOAM)												
Feedline	D	Yes	Af (CfAe)	124.00 - 10.00	0.0000	0.45	1	1	3.0000	3.0000	12.0000	8.40
Ladder (Af)												
LDF7-50A	D	Yes	Ar (CfAe)	124.00 - 10.00	0.0000	0.45	18	9	1.0000	1.9800		0.82

RISATower GPD Group 520 South Main St. Akrón, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-2102	Job	SNET025 SHELTON	Page	2 of 5
	Project	2011265.91	Date	14:42:27 09/08/11
	Client	AT&T Mobility	Designed by	lrife

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
(1-5/8 FOAM) LDF4P-50A (1/2 FOAM)	D	No	Ar (Leg)	92.00 - 10.00	0.0000	0	1	1	0.6300	0.6300		0.15

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight lb
28' Top Platform w/ rails	C	None		0.0000	162.50	No Ice 1/2" Ice	48.00 64.00	12590.000 16000.000
Flash Beacon Lighting	C	From Leg	0.00 0.00 12.50	0.0000	162.50	No Ice 1/2" Ice	2.70 3.10	50.000 70.000
W5 x 13' Mount	C	From Leg	0.00 0.00 6.25	0.0000	162.50	No Ice 1/2" Ice	5.42 7.00	210.000 280.000
10' Dipole	B	From Face	7.00 5.00 5.50	0.0000	162.50	No Ice 1/2" Ice	2.00 3.02	20.000 35.501
10' Dipole	B	From Face	7.00 5.00 -4.50	0.0000	162.50	No Ice 1/2" Ice	2.00 3.02	20.000 35.501
5' Omni	B	From Face	7.00 -3.00 5.00	0.0000	162.50	No Ice 1/2" Ice	1.00 1.39	15.000 22.865
10' P4x.237 Mount Pipe	D	From Face	7.00 -5.00 5.50	0.0000	162.50	No Ice 1/2" Ice	4.50 5.24	130.000 160.913
2' Standoff	D	From Face	6.50 -5.00 9.50	0.0000	162.50	No Ice 1/2" Ice	1.36 2.45	20.000 40.000
2' Standoff	D	From Face	7.50 -5.00 9.50	0.0000	162.50	No Ice 1/2" Ice	1.36 2.45	20.000 40.000
10' Omni	D	From Face	8.00 -5.00 15.50	0.0000	162.50	No Ice 1/2" Ice	2.00 3.02	25.000 40.501
W8 x 19' Beams	A	From Leg	2.87 0.88 1.00	17.0000	162.50	No Ice 1/2" Ice	17.00 19.00	290.000 340.000
W8 x 19' Beams	D	From Leg	2.92 -0.68 1.00	-13.0000	162.50	No Ice 1/2" Ice	17.00 19.00	290.000 340.000
(2) RA21.7770.00 w/Mount Pipe	A	From Leg	2.87 0.88 -1.50	17.0000	162.50	No Ice 1/2" Ice	7.15 7.82	66.000 118.259
(2) RA21.7770.00 w/Mount Pipe	D	From Leg	2.92 -0.68 -1.50	-13.0000	162.50	No Ice 1/2" Ice	7.15 7.82	66.000 118.259
(2) RA21.7770.00 w/Mount Pipe	C	From Face	0.50 0.00 0.50	0.0000	162.50	No Ice 1/2" Ice	7.15 7.82	66.000 118.259
(2) LGP21401	A	From Leg	2.87	17.0000	162.50	No Ice	1.29	14.000

RISATower GPD Group 520 South Main St. Akrón, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-2102	Job		Page
	SNET025 SHELTON		3 of 5
	Project	2011265.91	Date 14:42:27 09/08/11
	Client	AT&T Mobility	Designed by Irife

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight lb
			0.88			1/2" Ice	1.45	0.31	21.263
(2) LGP21401	D	From Leg	-1.50	-13.0000	162.50	No Ice	1.29	0.23	14.000
			2.92			1/2" Ice	1.45	0.31	21.263
(2) LGP21401	C	From Face	-0.68	0.0000	162.50	No Ice	1.29	0.23	14.000
			-1.50			1/2" Ice	1.45	0.31	21.263
P65-16-XLH-RR w/ Mount Pipe	A	From Leg	0.50	-28.0000	162.50	No Ice	8.64	6.36	89.550
			2.87			1/2" Ice	9.29	7.54	152.500
P65-16-XLH-RR w/ Mount Pipe	D	From Leg	0.88	-68.0000	162.50	No Ice	8.64	6.36	89.550
			-0.50			1/2" Ice	9.29	7.54	152.500
P65-16-XLH-RR w/ Mount Pipe	C	From Face	2.92	-53.0000	162.50	No Ice	8.64	6.36	89.550
			-0.68			1/2" Ice	9.29	7.54	152.500
(2) RRUS-11	A	From Leg	-0.50	-28.0000	162.50	No Ice	4.42	1.63	55.000
			0.50			1/2" Ice	4.71	1.84	80.775
(2) RRUS-11	D	From Leg	0.88	-68.0000	162.50	No Ice	4.42	1.63	55.000
			-0.50			1/2" Ice	4.71	1.84	80.775
(2) RRUS-11	C	From Face	2.92	-53.0000	162.50	No Ice	4.42	1.63	55.000
			-0.68			1/2" Ice	4.71	1.84	80.775
DC6-48-60-18-8F	A	From Leg	0.50	-28.0000	162.50	No Ice	1.27	1.27	20.000
			2.87			1/2" Ice	1.46	1.46	35.116
DC6-48-60-18-8F	D	From Leg	-0.50	-68.0000	162.50	No Ice	1.27	1.27	20.000
			2.92			1/2" Ice	1.46	1.46	35.116
DC6-48-60-18-8F	C	From Face	-0.68	-53.0000	162.50	No Ice	1.27	1.27	20.000
			-0.50			1/2" Ice	1.46	1.46	35.116
GPS	C	From Face	0.50	-53.0000	162.50	No Ice	0.17	0.17	0.870
			0.00			1/2" Ice	0.24	0.24	3.845
Sabre 14' T-Boom (1)	A	From Leg	-0.50	0.0000	150.00	No Ice	25.00	25.00	380.000
			2.00			1/2" Ice	33.12	33.12	556.690
Sabre 14' T-Boom (1)	B	From Leg	0.00	0.0000	150.00	No Ice	25.00	25.00	380.000
			2.00			1/2" Ice	33.12	33.12	556.690
Sabre 14' T-Boom (1)	C	From Leg	0.00	0.0000	150.00	No Ice	25.00	25.00	380.000
			2.00			1/2" Ice	33.12	33.12	556.690
(2) 7184.05 w/ Mount Pipe	A	From Leg	0.00	0.0000	150.00	No Ice	3.13	2.67	29.000
			4.00			1/2" Ice	3.52	3.35	55.701
(2) 7184.05 w/ Mount Pipe	B	From Leg	0.00	0.0000	150.00	No Ice	3.13	2.67	29.000
			4.00			1/2" Ice	3.52	3.35	55.701
(2) 7184.05 w/ Mount Pipe	C	From Leg	0.00	0.0000	150.00	No Ice	3.13	2.67	29.000
			4.00			1/2" Ice	3.52	3.35	55.701
30' x 30' Cross Catwalk w/	C	None	0.00	0.0000	144.00	No Ice	39.60	39.60	6670.000

RISATower GPD Group 520 South Main St. Akrón, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-2102	Job	SNET025 SHELTON	Page 4 of 5
	Project	2011265.91	Date 14:42:27 09/08/11
	Client	AT&T Mobility	Designed by Irife

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight lb
Handrails						1/2" Ice	50.00	50.00	8000.000
Additional Hand Rail Area	D	From Leg	0.00	0.0000	144.00	No Ice	7.00	5.00	340.000
			0.00			1/2" Ice	9.00	6.00	500.000
(2)	A	From Leg	0.50	0.0000	136.00	No Ice	7.31	3.67	65.000
APX16DWV-16DWV-S-E-A			0.00			1/2" Ice	8.01	4.72	112.157
CU w/ Mount Pipe			0.00						
(2)	B	From Leg	0.50	0.0000	136.00	No Ice	7.31	3.67	65.000
APX16DWV-16DWV-S-E-A			0.00			1/2" Ice	8.01	4.72	112.157
CU w/ Mount Pipe			0.00						
(2)	D	From Leg	0.50	0.0000	136.00	No Ice	7.31	3.67	65.000
APX16DWV-16DWV-S-E-A			0.00			1/2" Ice	8.01	4.72	112.157
CU w/ Mount Pipe			0.00						
(2) 10"x7"x4" TMA	A	From Leg	0.50	0.0000	136.00	No Ice	0.78	0.29	10.000
			0.00			1/2" Ice	0.90	0.38	15.056
(2) 10"x7"x4" TMA	B	From Leg	0.50	0.0000	136.00	No Ice	0.78	0.29	10.000
			0.00			1/2" Ice	0.90	0.38	15.056
(2) 10"x7"x4" TMA	D	From Leg	0.50	0.0000	136.00	No Ice	0.78	0.29	10.000
			0.00			1/2" Ice	0.90	0.38	15.056
(4) RET	A	From Leg	0.50	0.0000	136.00	No Ice	0.24	0.15	2.000
			0.00			1/2" Ice	0.31	0.20	4.436
(4) RET	B	From Leg	0.50	0.0000	136.00	No Ice	0.24	0.15	2.000
			0.00			1/2" Ice	0.31	0.20	4.436
(4) RET	D	From Leg	0.50	0.0000	136.00	No Ice	0.24	0.15	2.000
			0.00			1/2" Ice	0.31	0.20	4.436
Sabre 12' T-Boom (1)	A	From Leg	0.50	0.0000	124.00	No Ice	18.81	10.62	513.500
			0.00			1/2" Ice	24.75	15.16	719.590
Sabre 12' T-Boom (1)	C	From Leg	0.50	0.0000	124.00	No Ice	18.81	10.62	513.500
			0.00			1/2" Ice	24.75	15.16	719.590
Sabre 12' T-Boom (1)	D	From Leg	0.50	0.0000	124.00	No Ice	18.81	10.62	513.500
			0.00			1/2" Ice	24.75	15.16	719.590
(2) DB846F65ZAXY	A	From Leg	1.00	0.0000	124.00	No Ice	7.27	7.82	47.000
w/Mount Pipe			0.00			1/2" Ice	7.88	9.01	111.104
(2) DB846F65ZAXY	C	From Leg	1.00	0.0000	124.00	No Ice	7.27	7.82	47.000
w/Mount Pipe			0.00			1/2" Ice	7.88	9.01	111.104
(2) DB846F65ZAXY	D	From Leg	1.00	0.0000	124.00	No Ice	7.27	7.82	47.000
w/Mount Pipe			0.00			1/2" Ice	7.88	9.01	111.104
(2) LPA-185080/12CFDIN2	A	From Leg	1.00	0.0000	124.00	No Ice	3.77	6.21	36.000
w/ Mount Pipe			0.00			1/2" Ice	4.30	7.37	77.764
(2) LPA-185080/12CFDIN2	C	From Leg	1.00	0.0000	124.00	No Ice	3.77	6.21	36.000
w/ Mount Pipe			0.00			1/2" Ice	4.30	7.37	77.764
(2) LPA-185080/12CFDIN2	D	From Leg	1.00	0.0000	124.00	No Ice	3.77	6.21	36.000
w/ Mount Pipe			0.00			1/2" Ice	4.30	7.37	77.764

RISATower GPD Group 520 South Main St. Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-2102	Job	SNET025 SHELTON	Page	5 of 5
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	Client	AT&T Mobility	Designed by	Irife

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight lb
BXA-70063-6CF-EDIN-4 w/ Mount Pipe	A	From Leg	0.00 1.00 0.00 0.00	0.0000	124.00	No Ice 1/2" Ice	7.97 8.61	5.40 6.55	42.000 98.329
BXA-70063-6CF-EDIN-4 w/ Mount Pipe	C	From Leg	0.00 1.00 0.00 0.00	0.0000	124.00	No Ice 1/2" Ice	7.97 8.61	5.40 6.55	42.000 98.329
BXA-70063-6CF-EDIN-4 w/ Mount Pipe	D	From Leg	0.00 1.00 0.00 0.00	0.0000	124.00	No Ice 1/2" Ice	7.97 8.61	5.40 6.55	42.000 98.329
4.25' x 7' Catwalk	B	From Face	0.00 0.00 0.00	0.0000	112.50	No Ice 1/2" Ice	7.00 8.00	5.00 6.00	750.000 1000.000
23' x 3' Catwalk	A	From Face	0.00 0.00 0.00	0.0000	87.50	No Ice 1/2" Ice	38.00 45.00	5.00 6.00	1870.000 2800.000
23' x 3' Catwalk	B	From Face	0.00 0.00 0.00	0.0000	87.50	No Ice 1/2" Ice	38.00 45.00	5.00 6.00	1870.000 2800.000
GPS	D	From Leg	0.00 0.50 0.00 0.00	0.0000	68.00	No Ice 1/2" Ice	0.17 0.24	0.17 0.24	0.870 3.845
GPS	B	From Leg	0.00 0.50 0.00 0.00	0.0000	65.00	No Ice 1/2" Ice	0.17 0.24	0.17 0.24	0.870 3.845
13' x 4.25' Catwalk	B	From Face	0.00 0.00 0.00	0.0000	62.50	No Ice 1/2" Ice	18.85 26.00	7.00 8.00	1250.000 1750.000
13' x 4.25' Catwalk	B	From Face	0.00 0.00 0.00	0.0000	25.00	No Ice 1/2" Ice	18.85 26.00	7.00 8.00	1250.000 1750.000

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Therm (1E5 F) Density[k/ft^3]

Design Rules A [in2] lvy [in4]

Company : GPD Group
 Designer : Irife
 Job Number : 2011265.91

SNET025 SHELTON

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Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
34	TWR RED DIAG T7	L2 1/2x2 1/2x3/16	Column	Single Angle	A36	Typical	.902	.547	.547	.011
35	TWR INNER SUPP T7	2L2 1/2x2 1/2x3/16x3/8	Beam	Double Angle	A36	Typical	1.8	2.499	1.09	.021
36	TWR LEG T8	L8x8x7/8	Column	Single Angle	A36	Typical	13.2	79.6	79.6	3.46
37	TWR HORZ T8	LL3X2.5X4X3	Beam	Double Angle	A36	Typical	2.63	3.358	2.35	.055
38	TWR DIAG T8	2L2 1/2x3 1/2x1/4x3/4	Column	Double Angle	A36	Typical	2.88	9.97	1.55	.06
39	TWR RED HORZ T8	L2x2 1/2x3/16 HRA	Beam	Single Angle	A36	Typical	.809	.509	.291	.01
40	TWR RED HORZ 2 T8	LL2.5X2.5X4X3	Beam	Double Angle	A36	Typical	2.38	3.37	1.41	.049
41	TWR RED DIAG T8	L2 1/2x2 1/2x3/16	Column	Single Angle	A36	Typical	.902	.547	.547	.011
42	TWR RED DIAG 2 T8	L3 1/2x3x1/4	Column	Single Angle	A36	Typical	1.56	1.3	1.91	.036
43	TWR RED HIP T8	L4x4x3/8	Beam	Single Angle	A36	Typical	2.86	4.36	4.36	.141
44	TWR RED HIP 2 T8	L4x4x3/8	Beam	Single Angle	A36	Typical	2.86	4.36	4.36	.141
45	TWR RED HIPDIA T8	LL2.5X2.5X4X3	Column	Double Angle	A36	Typical	2.38	3.37	1.41	.049
46	TWR INNER SUPP T8	L3x3x1/4	Beam	Single Angle	A36	Typical	1.44	1.24	1.24	.032
47	TWR LEG T9	L8x8x1	Column	Single Angle	A36	Typical	15	89	89	5.08
48	TWR HORZ T9	2L3x3x3/8x3/8	Beam	Double Angle	A36	Typical	4.22	8.394	3.52	.198
49	TWR DIAG T9	2L3 1/2x3x3/8x3/4	Column	Double Angle	A36	Typical	4.59	10.369	5.45	.215
50	TWR RED HORZ T9	L2 1/2x2 1/2x3/16	Beam	Single Angle	A36	Typical	.902	.547	.547	.011
51	TWR RED HORZ 2 T9	LL2.5X2.5X4X3	Beam	Double Angle	A36	Typical	2.38	3.37	1.41	.049
52	TWR RED DIAG T9	L2 1/2x2 1/2x3/16	Column	Single Angle	A36	Typical	.902	.547	.547	.011
53	TWR RED DIAG 2 T9	LL2.5X2.5X4X3	Column	Double Angle	A36	Typical	2.13	1.862	1.31	.044
54	TWR RED SUBHOR T9	2L3 1/2x2 1/2x1/4x3/4	Beam	Double Angle	A36	Typical	2.88	4.365	3.6	.06
55	TWR RED SUBDIA T9	2L3x3x1/4	Column	Double Angle	A36	Typical	2.88	4.525	2.49	.06
56	TWR RED VERT T9	L3x3x1/4	Column	Single Angle	A36	Typical	1.44	1.24	1.24	.032
57	TWR RED HIP T9	L4x4x3/8	Beam	Single Angle	A36	Typical	2.86	4.36	4.36	.141
58	TWR RED HIP 2 T9	L4x4x3/8	Beam	Single Angle	A36	Typical	2.86	4.36	4.36	.141
59	TWR RED HIPDIA T9	L2 1/2x2 1/2x1/4	Column	Single Angle	A36	Typical	1.19	.703	.703	.025
60	TWR INNER SUPP T9	2L3x2 1/2x1/4x3/8	Beam	Double Angle	A36	Typical	2.63	3.373	2.35	.055
61	Corner Brace 1 T9	L2.5X2.5X4	Beam	Single Angle	A36	Typical	1.19	.703	.703	.025
62	Inner Square T9	LL2.5X2.5X4X3	Beam	Double Angle	A36	Typical	2.38	3.37	1.41	.049
63	Inner Square T8	LL2X2.5X3X3	Beam	Double Angle	A36	Typical	1.62	2.491	.583	.019
64	Corner Brace T8	L2.5X2.5X3	Beam	Single Angle	A36	Typical	.902	.547	.547	.011
65	Mid Girt T8	L2.5X2.5X4	Beam	Single Angle	A36	Typical	1.19	.703	.703	.025
66	Inner Square T7	LL2X2.5X3X3	Beam	Double Angle	A36	Typical	1.62	2.491	.583	.019
67	Corner Brace T7	L2.5X2.5X4	Beam	Single Angle	A36	Typical	1.19	.703	.703	.025
68	Mid Girt T7	L2.5X2.5X4	Beam	Single Angle	A36	Typical	1.19	.703	.703	.025
69	Inner Square T6	LL2X2.5X3X3	Beam	Double Angle	A36	Typical	1.62	2.491	.583	.019
70	Corner Brace T6	L2.5X2.5X3	Beam	Single Angle	A36	Typical	.902	.547	.547	.011
71	Inner Square T5	LL2X2.5X3X3	Beam	Double Angle	A36	Typical	1.62	2.491	.583	.019
72	Corner Brace T5	L2.5X2.5X3	Beam	Single Angle	A36	Typical	.902	.547	.547	.011
73	Inner Square T4	L3X2.5X4	Beam	Single Angle	A36	Typical	1.31	.743	1.17	.03
74	Corner Brace T4	L2.5X2X3	Beam	Single Angle	A36	Typical	.809	.291	.509	.01

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area (Member)	Surface (Plate)
1	Dead	None		-1		60	254	36		
2	No Ice Wind 0 deg	None				60	596	108		
3	No Ice Wind 45 deg	None				120	586	144		
4	No Ice Wind 90 deg	None				60	592	108		
5	No Ice Wind 135 deg	None				120	582	144		
6	No Ice Wind 180 deg	None				60	596	108		
7	No Ice Wind 225 deg	None				120	586	144		
8	No Ice Wind 270 deg	None				60	592	108		
9	No Ice Wind 315 deg	None				120	582	144		
10	Ice	None				60	248	420		
11	Temperature Drop	None						379		
12	Ice Wind 0 deg	None				60	596	108		
13	Ice Wind 45 deg	None				120	586	144		
14	Ice Wind 90 deg	None				60	592	108		
15	Ice Wind 135 deg	None				120	582	144		
16	Ice Wind 180 deg	None				60	596	108		
17	Ice Wind 225 deg	None				120	586	144		
18	Ice Wind 270 deg	None				60	592	108		
19	Ice Wind 315 deg	None				120	582	144		
20	Service Wind 0 deg	None				60	592	108		
21	Service Wind 45 deg	None				120	576	144		
22	Service Wind 90 deg	None				60	584	108		
23	Service Wind 135 deg	None				120	564	144		
24	Service Wind 180 deg	None				60	592	108		
25	Service Wind 225 deg	None				120	576	144		
26	Service Wind 270 deg	None				60	584	108		
27	Service Wind 315 deg	None				120	564	144		
28	Superimposed Self Weight	None						384		

	Description	Solve	PDelta	SRSS	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	
2	Dead+Wind 0 deg...	Yes			1	1	2	1	28	1	29	1	0		0	
3	Dead+Wind 45 de...	Yes			1	1	3	1	28	1	29	1	0		0	
4	Dead+Wind 90 de...	Yes			1	1	4	1	28	1	29	1	0		0	
5	Dead+Wind 135 d...	Yes			1	1	5	1	28	1	29	1	0		0	
6	Dead+Wind 180 d...	Yes			1	1	6	1	28	1	29	1	0		0	
7	Dead+Wind 225 d...	Yes			1	1	7	1	28	1	29	1	0		0	

Company : GPD Group
 Designer : Irife
 Job Number : 2011265.91

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Load Combinations (Continued)

Description	Solve	PDelta	SRSS	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
8 Dead+Wind 270 d..	Yes			1	1	8	1	28	1	29	1	0	1	0	1	0	1
9 Dead+Wind 315 d..	Yes			1	1	9	1	28	1	29	1	0	1	0	1	0	1
10 Dead+Ice+Temp	Yes			1	1	10	1	11	1	28	1	29	1	0	1	0	1
11 Dead+Wind 0 deg..	Yes			1	1	12	1	10	1	11	1	28	1	29	1	0	1
12 Dead+Wind 45 de..	Yes			1	1	13	1	10	1	11	1	28	1	29	1	0	1
13 Dead+Wind 90 de..	Yes			1	1	14	1	10	1	11	1	28	1	29	1	0	1
14 Dead+Wind 135 d..	Yes			1	1	15	1	10	1	11	1	28	1	29	1	0	1
15 Dead+Wind 180 d..	Yes			1	1	16	1	10	1	11	1	28	1	29	1	0	1
16 Dead+Wind 225 d..	Yes			1	1	17	1	10	1	11	1	28	1	29	1	0	1
17 Dead+Wind 270 d..	Yes			1	1	18	1	10	1	11	1	28	1	29	1	0	1
18 Dead+Wind 315 d..	Yes			1	1	19	1	10	1	11	1	28	1	29	1	0	1
19 Dead+Wind 0 deg..	Yes			1	1	20	1	28	1	29	1	0	1	0	1	0	1
20 Dead+Wind 45 de..	Yes			1	1	21	1	28	1	29	1	0	1	0	1	0	1
21 Dead+Wind 90 de..	Yes			1	1	22	1	28	1	29	1	0	1	0	1	0	1
22 Dead+Wind 135 d..	Yes			1	1	23	1	28	1	29	1	0	1	0	1	0	1
23 Dead+Wind 180 d..	Yes			1	1	24	1	28	1	29	1	0	1	0	1	0	1
24 Dead+Wind 225 d..	Yes			1	1	25	1	28	1	29	1	0	1	0	1	0	1
25 Dead+Wind 270 d..	Yes			1	1	26	1	28	1	29	1	0	1	0	1	0	1
26 Dead+Wind 315 d..	Yes			1	1	27	1	28	1	29	1	0	1	0	1	0	1

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	27.793	7	198.631	16	20.564	12	0	.004	5	0	1
2	min	-21.392	12	-134.695	3	-27.019	7	0	-.004	9	0	1
3 N190	max	21.186	18	197.679	14	20.713	18	0	.004	3	0	1
4	min	-27.631	5	-134.824	9	-27.024	5	0	-.004	7	0	1
5 N191	max	20.539	16	196.658	12	27.883	3	0	.005	9	0	1
6	min	-26.904	3	-135.049	7	-21.582	16	0	-.005	5	0	1
7 N192	max	26.976	9	196.586	18	27.773	9	0	.005	7	0	1
8	min	-20.656	14	-134.062	5	-21.328	14	0	-.005	3	0	1
9 Totals:	max	80.413	8	161.495	11	81.714	2					
10	min	-80.413	4	112.593	7	-81.714	6					

Envelope AISC 13th ASD Steel Code Checks

Member	Shape	Code Check	Loc [ft]	LC	Shear	Che..	Loc [ft]	Dir	LC	Pnc/om [k]	Pnt/om [k]	Mnzz/o... - Code c...	Cb	Eqn
1 M408A	L2.5X2.5X4	.009	0	13	.002	0	0	Y	1	4.52	25.653	- Code c...		
2 M409A	L2.5X2.5X4	.009	0	15	.002	0	0	Y	1	4.52	25.653	- Code c...		
3 M410A	L2.5X2.5X4	.009	0	17	.002	0	0	Y	1	4.52	25.653	- Code c...		

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Designer : Irife
Job Number : 2011265.91

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SNET025 SHELTON

Envelope AISC 13th ASD Steel Code Checks (Continued)

	Member	Shape	Code Check	Locfitl	LC	Shear Che., Locfitl	Dir	LC	Pnc/om [kl]	Pnt/om [kl]	Mnvy/o... - Code c...	Mnzz/o... - Code c...	Cb	Egn
4	M411A	L2.5X2.5X4	.009	0	11	.002	0	1	4.52	25.653	- Code c...	- Code c...		
5	M476A	L3X2.5X4	.004	0	16	.002	7.971	3	6	28.24	- Code c...	- Code c...		
6	M477	L3X2.5X4	.004	0	12	.002	7.971	2	6	28.24	- Code c...	- Code c...		
7	M478	L3X2.5X4	.004	0	16	.002	7.971	8	6	28.24	- Code c...	- Code c...		
8	M479	L3X2.5X4	.004	0	12	.002	7.971	5	6	28.24	- Code c...	- Code c...		
9	M461A	LL2X2.5X3X3	.072	5.37	17	.003	10.74	1	5.275	34.922	2.664	1.128	1	H1-1b
10	M462A	LL2X2.5X3X3	.072	5.37	18	.003	10.74	1	5.275	34.922	2.664	1.128	1	H1-1b
11	M463	LL2X2.5X3X3	.072	5.37	17	.003	10.74	1	5.275	34.922	2.664	1.128	1	H1-1b
12	M464	LL2X2.5X3X3	.072	5.37	18	.003	10.74	1	5.275	34.922	2.664	1.128	1	H1-1b
13	M465	LL2X2.5X3X3	.060	4.909	16	.003	9.817	3	6.314	34.922	2.664	1.128	1	H1-1b
14	M466	LL2X2.5X3X3	.060	4.909	12	.003	9.817	2	6.314	34.922	2.664	1.128	1	H1-1b
15	M467	LL2X2.5X3X3	.060	4.909	16	.003	9.817	7	6.314	34.922	2.664	1.128	1	H1-1b
16	M468	LL2X2.5X3X3	.060	4.909	12	.003	9.817	5	6.314	34.922	2.664	1.128	1	H1-1b
17	M447A	LL2X2.5X3X3	.098	6.293	18	.004	0	1	3.841	34.922	2.664	1.128	1	H1-1b
18	M448A	LL2X2.5X3X3	.098	6.293	17	.004	0	1	3.841	34.922	2.664	1.128	1	H1-1b
19	M449	LL2X2.5X3X3	.098	6.293	18	.004	0	1	3.841	34.922	2.664	1.128	1	H1-1b
20	M450	LL2X2.5X3X3	.098	6.293	17	.004	0	1	3.841	34.922	2.664	1.128	1	H1-1b
21	M451	LL2X2.5X3X3	.084	5.832	17	.003	11.663	1	4.473	34.922	2.664	1.128	1	H1-1b
22	M452	LL2X2.5X3X3	.084	5.832	18	.003	11.663	1	4.473	34.922	2.664	1.128	1	H1-1b
23	M453	LL2X2.5X3X3	.084	5.832	17	.003	11.663	1	4.473	34.922	2.664	1.128	1	H1-1b
24	M454	LL2X2.5X3X3	.084	5.832	18	.003	11.663	1	4.473	34.922	2.664	1.128	1	H1-1b
25	M438B	LL2X2.5X3X3	.208	6.755	11	.005	13.51	6	13.337	34.922	2.664	1.128	1	H1-1b
26	M439A	LL2X2.5X3X3	.208	6.755	17	.005	13.51	11	13.337	34.922	2.664	1.128	1	H1-1b
27	M440A	LL2X2.5X3X3	.112	6.755	18	.005	13.51	11	13.337	34.922	2.664	1.128	1	H1-1b
28	M441A	LL2X2.5X3X3	.208	7.216	15	.005	14.433	1	11.686	34.922	2.664	1.128	1	H1-1b
29	M423B	LL2X2.5X3X3	.230	7.216	17	.005	14.433	1	11.686	34.922	2.664	1.128	1	H1-1b
30	M424A	LL2X2.5X3X3	.230	7.216	13	.005	14.433	1	11.686	34.922	2.664	1.128	1	H1-1b
31	M425A	LL2X2.5X3X3	.230	7.216	11	.005	14.433	1	11.686	34.922	2.664	1.128	1	H1-1b
32	M426A	LL2X2.5X3X3	.230	7.216	13	.005	14.433	1	11.686	34.922	2.664	1.128	1	H1-1b
33	M404	LL2.5X2.5X4X3	.229	8.139	17	.006	16.279	16	21.978	51.305	3.605	2.273	1	H1-1b
34	M405	LL2.5X2.5X4X3	.248	8.139	15	.006	16.279	10	21.978	51.305	3.605	2.273	1	H1-1b
35	M406A	LL2.5X2.5X4X3	.197	8.139	13	.005	16.279	2	21.978	51.305	3.605	2.273	1	H1-1b
36	M407	LL2.5X2.5X4X3	.229	8.139	11	.006	16.279	12	21.978	51.305	3.605	2.273	1	H1-1b
37	M446	L2.5X2.5X4	.006	0	13	.002	0	12	6.563	25.653	- Code c...	- Code c...		
38	M447	L2.5X2.5X4	.006	0	11	.002	0	11	6.563	25.653	- Code c...	- Code c...		
39	M448	L2.5X2.5X4	.006	0	17	.002	6.755	16	6.563	25.653	- Code c...	- Code c...		
40	M431	L2.5X2.5X4	.006	0	13	.002	0	3	5.75	25.653	- Code c...	- Code c...		
41	M432	L2.5X2.5X4	.006	0	15	.002	7.216	5	5.75	25.653	- Code c...	- Code c...		
42	M433	L2.5X2.5X4	.006	0	17	.002	7.216	7	5.75	25.653	- Code c...	- Code c...		
43	M434	L2.5X2.5X4	.006	0	11	.002	7.216	2	5.75	25.653	- Code c...	- Code c...		
44	M9	L3 1/2x3 1/2x1/4	.301	0	8	.003	9.66	11	11.74	36.431	- Code c...	- Code c...		

Company : GPD Group
 Designer : Irife
 Job Number : 2011265.91

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Envelope AISC 13th ASD Steel Code Checks (Continued)

Member		Shape	Code Check		Loc[ft]	LC	Shear Che...	Loc[ft]	Dir	LC	Pnc/om [k]	Pnt/om [k]	Mnyy/o...	Mnzz/o...	Cb	Eqn
45	M10	L3 1/2x3 1/2x1/4	.303		0	4	.004	9.66	Z	12	11.74	36.431	- Code c...			
46	M11	L3 1/2x3 1/2x1/4	.294		0	6	.003	9.66	Z	16	11.74	36.431	- Code c...			
47	M12	L3 1/2x3 1/2x1/4	.296		0	2	.004	9.66	Z	18	11.74	36.431	- Code c...			
48	M13	L3 1/2x3 1/2x1/4	.279		0	4	.003	9.66	Z	15	11.74	36.431	- Code c...			
49	M14	L3 1/2x3 1/2x1/4	.277		0	8	.004	9.66	Z	15	11.74	36.431	- Code c...			
50	M15	L3 1/2x3 1/2x1/4	.321		0	2	.003	9.66	Z	13	11.74	36.431	- Code c...			
51	M16	L3 1/2x3 1/2x1/4	.318		0	6	.004	9.66	Z	14	11.74	36.431	- Code c...			
52	M19	L3 1/2x3x1/4	.722		0	8	.004	10.189	Z	18	8.108	33.629	- Code c...			
53	M30	L3 1/2x3x1/4	.722		0	4	.004	10.189	Z	12	8.108	33.629	- Code c...			
54	M31	L3 1/2x3x1/4	.762		0	6	.004	10.189	Z	16	8.108	33.629	- Code c...			
55	M32	L3 1/2x3x1/4	.764		0	2	.004	10.189	Z	18	8.108	33.629	- Code c...			
56	M33	L3 1/2x3x1/4	.734		0	4	.004	10.189	Z	14	8.108	33.629	- Code c...			
57	M34	L3 1/2x3x1/4	.734		0	8	.004	10.189	Z	16	8.108	33.629	- Code c...			
58	M35	L3 1/2x3x1/4	.735		0	2	.004	10.189	Z	12	8.108	33.629	- Code c...			
59	M36	L3 1/2x3x1/4	.732		0	6	.004	10.189	Z	14	8.108	33.629	- Code c...			
60	M54	L4x3x1/4	.822		0	8	.004	10.944	Z	18	8.283	36.431	- Code c...			
61	M55	L4x3x1/4	.821		0	4	.004	10.944	Z	12	8.283	36.431	- Code c...			
62	M56	L4x3x1/4	.864		0	6	.004	10.944	Z	16	8.283	36.431	- Code c...			
63	M57	L4x3x1/4	.865		0	2	.004	10.944	Z	18	8.283	36.431	- Code c...			
64	M58	L4x3x1/4	.840		0	4	.004	10.944	Z	14	8.283	36.431	- Code c...			
65	M59	L4x3x1/4	.840		0	8	.004	10.944	Z	16	8.283	36.431	- Code c...			
66	M60	L4x3x1/4	.832		0	2	.004	10.944	Z	12	8.283	36.431	- Code c...			
67	M61	L4x3x1/4	.831		0	6	.004	10.944	Z	14	8.283	36.431	- Code c...			
68	M74	L4x3x1/4	1.253		0	8	.004	11.73	Z	11	7.384	36.431	- Code c...			
69	M75	L4x3x1/4	1.255		0	4	.004	11.73	Z	11	7.384	36.431	- Code c...			
70	M76	L4x3x1/4	1.218		0	6	.004	11.73	Z	17	7.384	36.431	- Code c...			
71	M77	L4x3x1/4	1.227		0	2	.004	11.73	Z	15	7.384	36.431	- Code c...			
72	M78	L4x3x1/4	1.184		0	4	.004	11.73	Z	15	7.384	36.431	- Code c...			
73	M79	L4x3x1/4	1.180		0	8	.004	11.73	Z	15	7.384	36.431	- Code c...			
74	M80	L4x3x1/4	1.251		0	2	.004	11.73	Z	13	7.384	36.431	- Code c...			
75	M81	L4x3x1/4	1.244		0	6	.004	11.73	Z	13	7.384	36.431	- Code c...			
76	M91	2L2 1/2x2 1/2x1/4x...	.792		8.561	8	.003	8.561	Y	18	16.362	51.305	4.236	1.419	1	H1-1a
77	M94	2L2 1/2x2 1/2x1/4x...	.794		8.561	4	.003	8.561	Y	12	16.362	51.305	4.236	1.419	1	H1-1a
78	M98	2L2 1/2x2 1/2x1/4x...	.771		8.561	6	.003	8.561	Y	16	16.362	51.305	4.236	1.419	1	H1-1a
79	M101	2L2 1/2x2 1/2x1/4x...	.775		8.561	2	.003	8.561	Y	18	16.362	51.305	4.236	1.419	1	H1-1a
80	M105	2L2 1/2x2 1/2x1/4x...	.737		8.561	4	.003	8.561	Y	14	16.362	51.305	4.236	1.419	1	H1-1a
81	M108	2L2 1/2x2 1/2x1/4x...	.736		8.561	8	.003	8.561	Y	16	16.362	51.305	4.236	1.419	1	H1-1a
82	M112	2L2 1/2x2 1/2x1/4x...	.777		8.561	2	.003	8.561	Y	12	16.362	51.305	4.236	1.419	1	H1-1a
83	M115	2L2 1/2x2 1/2x1/4x...	.773		8.561	6	.003	8.561	Y	14	16.362	51.305	4.236	1.419	1	H1-1a
84	M124	2L2 1/2x2 1/2x1/4x...	.710		8.253	8	.003	8.253	Y	18	17.64	51.305	4.236	1.419	1	H1-1a
85	M127	2L2 1/2x2 1/2x1/4x...	.712		8.253	4	.003	8.253	Y	12	17.64	51.305	4.236	1.419	1	H1-1a

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Company	: GPD Group
Designer	: Irife
Job Number	: 2011265.91

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Envelope AISC 13th ASD Steel Code Checks (Continued)

Member		Shape	Code Check		Loc[ft]	LC	Shear Che...	Loc[ft]	Dir	LC	Pnc[om [k]	Pnt[om [k]	Mny[yo...	Minz[o...	Cb	Eqn
127	M358	2L3 1/2x3x3/8x3/4	.878		5.202	3	.003	10.403	y	16	27.271	98.946	8.83	6.476	1	H1-1a
128	M372	2L3 1/2x3x3/8x3/4	.814		5.202	3	.003	10.403	y	16	27.271	98.946	8.83	6.476	1	H1-1a
129	M377	2L3 1/2x3x3/8x3/4	.818		5.202	9	.003	10.403	y	14	27.271	98.946	8.83	6.476	1	H1-1a
130	M391	2L3 1/2x3x3/8x3/4	.870		5.202	9	.003	10.403	y	14	27.271	98.946	8.83	6.476	1	H1-1a
131	M396	2L3 1/2x3x3/8x3/4	.854		10.403	6	.003	10.403	y	12	27.271	98.946	8.83	4.048	1	H1-1a
132	M90	2L2 1/2x2 1/2x1/4x...	.592		10.964	17	.005	10.74	y	15	15.854	51.305	3.58	1.419	1	H1-1a
133	M97	2L2 1/2x2 1/2x1/4x...	.585		10.517	11	.005	10.74	y	13	15.854	51.305	3.58	1.419	1	H1-1a
134	M104	2L2 1/2x2 1/2x1/4x...	.558		10.517	17	.005	10.74	y	17	15.854	51.305	3.58	1.419	1	H1-1a
135	M111	2L2 1/2x2 1/2x1/4x...	.583		10.964	11	.005	10.74	y	17	15.854	51.305	3.58	1.419	1	H1-1a
136	M123	2L2 1/2x2 1/2x1/4x...	.435		9.613	4	.005	9.817	y	15	19.147	51.305	3.58	1.419	1	H1-1a
137	M130	2L2 1/2x2 1/2x1/4x...	.428		9.613	2	.005	9.817	y	13	19.147	51.305	3.58	1.419	1	H1-1a
138	M137	2L2 1/2x2 1/2x1/4x...	.412		10.022	4	.005	9.817	y	11	19.147	51.305	3.58	1.419	1	H1-1a
139	M144	2L2 1/2x2 1/2x1/4x...	.432		10.022	2	.005	9.817	y	17	19.147	51.305	3.58	1.419	1	H1-1a
140	M160	2L2 1/2x2 1/2x1/4x...	.911		12.324	13	.006	12.587	y	15	12.139	51.305	3.58	1.419	1	H1-1a
141	M167	2L2 1/2x2 1/2x1/4x...	.890		12.324	11	.006	12.587	y	13	12.139	51.305	3.58	1.419	1	H1-1a
142	M174	2L2 1/2x2 1/2x1/4x...	.851		12.849	13	.006	12.587	y	11	12.139	51.305	3.58	1.419	1	H1-1a
143	M181	2L2 1/2x2 1/2x1/4x...	.884		12.849	11	.006	12.587	y	17	12.139	51.305	3.58	1.419	1	H1-1a
144	M193	2L2 1/2x2 1/2x1/4x...	.738		11.42	13	.006	11.663	y	15	14.227	51.305	3.58	1.419	1	H1-1a
145	M200	2L2 1/2x2 1/2x1/4x...	.721		11.42	11	.006	11.663	y	13	14.227	51.305	3.58	1.419	1	H1-1a
146	M207	2L2 1/2x2 1/2x1/4x...	.715		11.663	13	.006	11.663	y	11	14.227	51.305	3.58	1.419	1	H1-1a
147	M214	2L2 1/2x2 1/2x1/4x...	.740		11.663	11	.006	11.663	y	17	14.227	51.305	3.58	1.419	1	H1-1a
148	M230	LL3X2.5X4X3	.681		13.791	17	.006	13.51	y	15	17.864	56.695	3.592	2.021	1	H1-1a
149	M237	LL3X2.5X4X3	.674		13.791	15	.006	13.51	y	13	17.864	56.695	3.592	2.021	1	H1-1a
150	M244	LL3X2.5X4X3	.644		13.791	13	.006	13.51	y	11	17.864	56.695	3.592	2.021	1	H1-1a
151	M251	LL3X2.5X4X3	.670		13.791	11	.006	13.51	y	17	17.864	56.695	3.592	2.021	1	H1-1a
152	M267	LL3X2.5X4X3	.837		14.433	13	.006	14.433	y	15	16.332	56.695	3.592	2.021	1	H1-1a
153	M278	LL3X2.5X4X3	.817		14.433	11	.006	14.433	y	13	16.332	56.695	3.592	2.021	1	H1-1a
154	M293	LL3X2.5X4X3	.775		14.433	17	.006	14.433	y	11	16.332	56.695	3.592	2.021	1	H1-1a
155	M308	LL3X2.5X4X3	.807		14.433	15	.006	14.433	y	17	16.332	56.695	3.592	2.021	1	H1-1a
156	M336	2L3x3x3/8x3/8	.517		5.765	12	.004	26.792	y	14	32.485	90.97	7.569	2.993	2....	H1-1a
157	M352	2L3x3x3/8x3/8	.521		26.792	16	.005	26.792	y	12	32.485	90.97	7.569	2.993	2....	H1-1a
158	M371	2L3x3x3/8x3/8	.495		26.792	14	.004	26.792	y	18	32.485	90.97	7.569	2.993	2....	H1-1a
159	M390	2L3x3x3/8x3/8	.514		5.765	14	.004	26.792	y	16	32.485	90.97	7.569	2.993	2....	H1-1a
160	M49	2L2x2 1/2x3/16x3/8	.247		5.636	16	.007	0	y	12	17.72	34.922	2.652	1.121	1....	H1-1b
161	M50	2L2x2 1/2x3/16x3/8	.246		5.636	12	.007	0	y	18	17.72	34.922	2.652	1.121	1....	H1-1b
162	M51	2L2x2 1/2x3/16x3/8	.247		5.636	16	.007	11.273	y	12	17.72	34.922	2.652	1.121	1....	H1-1b
163	M52	2L2x2 1/2x3/16x3/8	.246		5.636	12	.007	11.273	y	18	17.72	34.922	2.652	1.121	1....	H1-1b
164	M118	2L2 1/2x2 1/2x3/16...	.327		7.595	18	.009	15.189	y	12	18.757	38.802	2.672	1.737	1....	H1-1b
165	M119	2L2 1/2x2 1/2x3/16...	.328		7.595	16	.009	0	y	18	18.757	38.802	2.672	1.737	1....	H1-1b
166	M120	2L2 1/2x2 1/2x3/16...	.327		7.595	14	.009	15.189	y	12	18.757	38.802	2.672	1.737	1....	H1-1b
167	M121	2L2 1/2x2 1/2x3/16...	.328		7.595	12	.009	15.189	y	18	18.757	38.802	2.672	1.737	1....	H1-1b

Envelope A/SC 13th ASD Steel Code Checks (Continued)

Member		Shape	Code Check	Locfitl	LC	Shear Che.	Locfitl Dir	LC	Pnc/om [k]	Pnt/Vom [k]	Mnvw/o...	Mnzz/o...	Cb	Eqn
168	M151	2L2 1/2x2 1/2x3/16...	.280	6.942	18	.008	0	Y	16	21.08	38.802	2.672	1.737	1...H1-1b
169	M152	2L2 1/2x2 1/2x3/16...	.280	6.942	16	.008	0	Y	18	21.08	38.802	2.672	1.737	1...H1-1b
170	M153	2L2 1/2x2 1/2x3/16...	.280	6.942	14	.008	13.884	Y	16	21.08	38.802	2.672	1.737	1...H1-1b
171	M154	2L2 1/2x2 1/2x3/16...	.280	6.942	12	.008	0	Y	18	21.08	38.802	2.672	1.737	1...H1-1b
172	M188	2L2 1/2x2 1/2x3/16...	.437	8.9	18	.011	17.8	Y	12	14.364	38.802	2.672	1.737	1...H1-1b
173	M189	2L2 1/2x2 1/2x3/16...	.437	8.9	16	.011	0	Y	14	14.364	38.802	2.672	1.737	1...H1-1b
174	M190	2L2 1/2x2 1/2x3/16...	.437	8.9	14	.011	17.8	Y	12	14.364	38.802	2.672	1.737	1...H1-1b
175	M191	2L2 1/2x2 1/2x3/16...	.438	8.9	12	.011	0	Y	14	14.364	38.802	2.672	1.737	1...H1-1b
176	M221	2L2 1/2x2 1/2x3/16...	.380	8.247	18	.010	16.495	Y	12	16.516	38.802	2.672	1.737	1...H1-1b
177	M222	2L2 1/2x2 1/2x3/16...	.380	8.247	16	.010	0	Y	18	16.516	38.802	2.672	1.737	1...H1-1b
178	M223	2L2 1/2x2 1/2x3/16...	.380	8.247	14	.010	0	Y	12	16.516	38.802	2.672	1.737	1...H1-1b
179	M224	2L2 1/2x2 1/2x3/16...	.380	8.247	12	.010	16.495	Y	18	16.516	38.802	2.672	1.737	1...H1-1b
180	M258	2L2 1/2x2 1/2x3/16...	.536	9.553	18	.012	19.105	Y	12	12.468	38.802	2.672	1.737	1...H1-1b
181	M259	2L2 1/2x2 1/2x3/16...	.518	9.553	16	.012	19.105	Y	18	12.468	38.802	2.672	1.737	1...H1-1b
182	M260	2L2 1/2x2 1/2x3/16...	.519	9.553	14	.012	0	Y	12	12.468	38.802	2.672	1.737	1...H1-1b
183	M261	2L2 1/2x2 1/2x3/16...	.536	9.553	12	.012	19.105	Y	18	12.468	38.802	2.672	1.737	1...H1-1b
184	M327	L3x3x1/4	.005	10.205	7	.006	10.205	Y	12	5.058	31.042	- Code c...		
185	M328	L3x3x1/4	.005	10.205	5	.006	10.205	Z	13	5.058	31.042	- Code c...		
186	M329	L3x3x1/4	.005	10.205	3	.006	10.205	Y	11	5.058	31.042	- Code c...		
187	M330	L3x3x1/4	.005	10.205	9	.006	10.205	Y	17	5.058	31.042	- Code c...		
188	M412	2L3x2 1/2x1/4x3/8	.188	11.511	14	.006	11.511	Y	12	18.513	56.695	3.608	2.019	1...H1-1b
189	M413	2L3x2 1/2x1/4x3/8	.172	11.511	12	.006	11.511	Y	11	18.513	56.695	3.608	2.019	1...H1-1b
190	M414	2L3x2 1/2x1/4x3/8	.188	11.511	18	.006	11.511	Y	12	18.513	56.695	3.608	2.019	1...H1-1b
191	M415	2L3x2 1/2x1/4x3/8	.172	11.511	16	.006	11.511	Y	18	18.513	56.695	3.608	2.019	1...H1-1b
192	M412A	2L3x2 1/2x1/4x3/8	.051	6.034	15	.002	0	Y	18	16.149	56.695	3.608	3.23	1 H1-1b
193	M413A	2L3x2 1/2x1/4x3/8	.051	6.291	17	.002	12.325	Y	18	16.149	56.695	3.608	3.23	1 H1-1b
194	M414A	2L3x2 1/2x1/4x3/8	.050	6.034	17	.002	12.325	Y	12	16.149	56.695	3.608	3.23	1 H1-1b
195	M415A	2L3x2 1/2x1/4x3/8	.050	6.291	12	.002	0	Y	6	16.149	56.695	3.608	3.23	1 H1-1b
196	M416	2L3x2 1/2x1/4x3/8	.070	6.034	18	.003	12.325	Y	14	16.149	56.695	3.608	3.23	1 H1-1b
197	M417	2L3x2 1/2x1/4x3/8	.051	6.291	13	.002	0	Y	16	16.149	56.695	3.608	3.23	1 H1-1b
198	M418	2L3x2 1/2x1/4x3/8	.050	6.034	13	.002	0	Y	12	16.149	56.695	3.608	3.23	1 H1-1b
199	M419	2L3x2 1/2x1/4x3/8	.050	6.291	15	.002	0	Y	3	16.149	56.695	3.608	3.23	1 H1-1b
200	M1	L6x6x1/2	.087	0	16	.002	6.677	Y	3	96.904	123.952	- Code c...		
201	M2	L6x6x1/2	.086	0	14	.003	6.677	Y	2	96.904	123.952	- Code c...		
202	M3	L6x6x1/2	.081	0	12	.003	6.677	Z	6	96.904	123.952	- Code c...		
203	M4	L6x6x1/2	.082	0	18	.002	6.677	Z	5	96.904	123.952	- Code c...		
204	M21	L6x6x1/2	.193	0	16	.004	6.546	Y	4	97.287	123.952	- Code c...		
205	M22	L6x6x1/2	.196	0	14	.004	6.546	Z	8	97.287	123.952	- Code c...		
206	M23	L6x6x1/2	.191	0	12	.004	6.546	Z	6	97.287	123.952	- Code c...		
207	M24	L6x6x1/2	.189	0	18	.004	6.546	Y	6	97.287	123.952	- Code c...		
208	M41	L6x6x5/8	.253	0	16	.007	12.568	Z	2	120.666	153.269	- Code c...		

Envelope AISC 13th ASD Steel Code Checks (Continued)

Member		Shape	Code Check		Loc[ft]	LC	Shear Che...	Loc[ft] Dir	LC	Pnc/om [k]	Pnt/om [k]	Mnyy/o...	Mnzz/o...	Cb	Eqn
209	M42	L6x6x5/8	.257		0	14	.007	12.568 Y	2	120.666	153.269	- Code c...			
210	M43	L6x6x5/8	.254		0	12	.008	12.568 Y	8	120.666	153.269	- Code c...			
211	M44	L6x6x5/8	.250		0	18	.008	12.568 Z	4	120.666	153.269	- Code c...			
212	M66	L6x6x5/8	.377		0	16	.027	12.568 Y	4	120.961	153.269	- Code c...			
213	M67	L6x6x5/8	.376		0	14	.027	12.568 Z	8	120.961	153.269	- Code c...			
214	M68	L6x6x5/8	.365		0	12	.019	12.568 Z	6	120.961	153.269	- Code c...			
215	M69	L6x6x5/8	.364		0	18	.026	12.568 Y	6	120.961	153.269	- Code c...			
216	M86	L6x6x3/4	.480		0	16	.008	0 Y	5	146.203	181.94	- Code c...			
217	M87	L6x6x3/4	.480		0	14	.008	0 Z	7	146.203	181.94	- Code c...			
218	M88	L6x6x3/4	.468		0	12	.007	0 Y	9	146.203	181.94	- Code c...			
219	M89	L6x6x3/4	.466		0	9	.007	0 Z	3	146.203	181.94	- Code c...			
220	M156	L6x6x7/8	.610		0	16	.008	0 Y	14	168.549	209.749	- Code c...			
221	M157	L6x6x7/8	.602		0	14	.008	0 Y	12	168.549	209.749	- Code c...			
222	M158	L6x6x7/8	.595		0	12	.007	0 Y	18	168.549	209.749	- Code c...			
223	M159	L6x6x7/8	.600		0	18	.007	0 Y	7	168.549	209.749	- Code c...			
224	M226	L8x8x7/8	.472		0	16	.013	0 Y	14	252.009	284.551	- Code c...			
225	M227	L8x8x7/8	.467		0	14	.012	0 Y	12	252.009	284.551	- Code c...			
226	M228	L8x8x7/8	.464		0	12	.012	0 Y	18	252.009	284.551	- Code c...			
227	M229	L8x8x7/8	.466		0	18	.012	0 Y	16	252.009	284.551	- Code c...			
228	M263	L8x8x7/8	.594		0	16	.010	0 Y	14	229.294	284.551	- Code c...			
229	M264	L8x8x7/8	.587		16.757	14	.017	0 Y	12	229.294	284.551	- Code c...			
230	M265	L8x8x7/8	.582		16.757	12	.009	0 Y	18	229.294	284.551	- Code c...			
231	M266	L8x8x7/8	.584		16.757	18	.009	0 Y	16	229.294	284.551	- Code c...			
232	M332	L8x8x1	.642		0	16	.006	25.136 Y	14	259.839	323.353	- Code c...			
233	M333	L8x8x1	.639		0	14	.008	25.136 Y	12	259.839	323.353	- Code c...			
234	M334	L8x8x1	.634		0	12	.005	25.136 Y	18	259.839	323.353	- Code c...			
235	M335	L8x8x1	.634		0	18	.005	25.136 Y	16	259.839	323.353	- Code c...			
236	M272	L3 1/2x3x1/4	.077		0	5	.003	12.286 Z	14	4.633	33.629	- Code c...			
237	M277	L3 1/2x3x1/4	.016		12.286	18	.003	12.286 Z	18	4.633	33.629	- Code c...			
238	M283	L3 1/2x3x1/4	.072		0	3	.003	0 Z	12	4.633	33.629	- Code c...			
239	M288	L3 1/2x3x1/4	.016		12.286	17	.003	12.286 Z	14	4.633	33.629	- Code c...			
240	M298	L3 1/2x3x1/4	.083		0	9	.003	0 Z	17	4.633	33.629	- Code c...			
241	M303	L3 1/2x3x1/4	.015		12.286	15	.003	12.286 Z	13	4.633	33.629	- Code c...			
242	M313	L3 1/2x3x1/4	.088		0	7	.003	12.286 Z	16	4.633	33.629	- Code c...			
243	M318	L3 1/2x3x1/4	.014		12.286	13	.003	0 Z	12	4.633	33.629	- Code c...			
244	M341	LL2.5X2X4X3	.956		6.448	6	.004	0 Z	14	8.054	45.916	2.447	1.374	1	H1-1a
245	M346	LL2.5X2X4X3	.934		6.448	6	.004	0 Z	17	8.054	45.916	2.447	2.198	1	H1-1a
246	M357	LL2.5X2X4X3	.944		6.448	4	.004	13.457 Z	11	8.054	45.916	2.447	1.374	1	H1-1a
247	M362	LL2.5X2X4X3	.918		6.448	4	.004	13.457 Z	13	8.054	45.916	2.447	2.198	1	H1-1a
248	M376	LL2.5X2X4X3	.958		6.448	2	.004	0 Z	17	8.054	45.916	2.447	1.374	1	H1-1a
249	M381	LL2.5X2X4X3	.939		6.448	2	.004	0 Z	13	8.054	45.916	2.447	2.198	1	H1-1a

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Envelope AISC 13th ASD Steel Code Checks (Continued)

Member		Shape	Code Check	Locfit1	LC	Shear Che...Locfit1 Dir	LC	Pnc/om [kl]	Pnt/om [kl]	Mnyv/o...	Mnzz/o...	Cb	Eon
250	M395	L1.2.5X2X4X3	.943	6.448	8	.004	13.457	18	8.054	45.916	2.447	1.374	1 H1-1a
251	M400	L1.2.5X2X4X3	.928	6.448	8	.004	13.457	18	8.054	45.916	2.447	2.198	1 H1-1a
252	M93	L2x2 1/2x3/16_HRA	.144	0	5	.002	7.961	13	2.694	17.44	- Code c...		
253	M96	L2x2 1/2x3/16_HRA	.140	0	7	.002	7.961	12	2.694	17.44	- Code c...		
254	M100	L2x2 1/2x3/16_HRA	.138	0	3	.002	7.961	13	2.694	17.44	- Code c...		
255	M103	L2x2 1/2x3/16_HRA	.143	0	5	.002	0	15	2.694	17.44	- Code c...		
256	M107	L2x2 1/2x3/16_HRA	.145	0	9	.002	7.961	18	2.694	17.44	- Code c...		
257	M110	L2x2 1/2x3/16_HRA	.150	0	3	.002	0	18	2.694	17.44	- Code c...		
258	M114	L2x2 1/2x3/16_HRA	.149	0	7	.002	0	16	2.694	17.44	- Code c...		
259	M117	L2x2 1/2x3/16_HRA	.143	0	9	.002	0	18	2.694	17.44	- Code c...		
260	M126	L2x2 1/2x3/16_HRA	.103	0	5	.002	0	13	2.901	17.44	- Code c...		
261	M129	L2x2 1/2x3/16_HRA	.099	0	7	.002	0	18	2.901	17.44	- Code c...		
262	M133	L2x2 1/2x3/16_HRA	.098	0	3	.002	7.685	12	2.901	17.44	- Code c...		
263	M136	L2x2 1/2x3/16_HRA	.107	0	5	.002	7.685	12	2.901	17.44	- Code c...		
264	M140	L2x2 1/2x3/16_HRA	.108	0	9	.002	7.685	18	2.901	17.44	- Code c...		
265	M143	L2x2 1/2x3/16_HRA	.114	0	3	.002	7.685	12	2.901	17.44	- Code c...		
266	M147	L2x2 1/2x3/16_HRA	.113	0	7	.002	7.685	11	2.901	17.44	- Code c...		
267	M150	L2x2 1/2x3/16_HRA	.102	0	9	.002	7.685	12	2.901	17.44	- Code c...		
268	M163	L2 1/2x2 1/2x3/16	.132	0	5	.003	8.561	12	3.439	19.444	- Code c...		
269	M166	L2 1/2x2 1/2x3/16	.117	0	7	.003	8.561	16	3.439	19.444	- Code c...		
270	M170	L2 1/2x2 1/2x3/16	.129	0	3	.003	8.561	11	3.439	19.444	- Code c...		
271	M173	L2 1/2x2 1/2x3/16	.117	0	5	.003	8.561	15	3.439	19.444	- Code c...		
272	M177	L2 1/2x2 1/2x3/16	.130	0	9	.003	8.561	18	3.439	19.444	- Code c...		
273	M180	L2 1/2x2 1/2x3/16	.122	0	3	.003	8.561	14	3.439	19.444	- Code c...		
274	M184	L2 1/2x2 1/2x3/16	.131	0	7	.003	0	15	3.439	19.444	- Code c...		
275	M187	L2 1/2x2 1/2x3/16	.119	0	9	.003	8.561	15	3.439	19.444	- Code c...		
276	M196	L2 1/2x2 1/2x3/16	.117	0	5	.002	8.253	14	3.623	19.444	- Code c...		
277	M199	L2 1/2x2 1/2x3/16	.114	0	7	.002	0	14	3.623	19.444	- Code c...		
278	M203	L2 1/2x2 1/2x3/16	.114	0	3	.002	0	11	3.623	19.444	- Code c...		
279	M206	L2 1/2x2 1/2x3/16	.115	0	5	.002	0	14	3.623	19.444	- Code c...		
280	M210	L2 1/2x2 1/2x3/16	.116	0	9	.002	8.253	17	3.623	19.444	- Code c...		
281	M213	L2 1/2x2 1/2x3/16	.119	0	3	.002	0	14	3.623	19.444	- Code c...		
282	M217	L2 1/2x2 1/2x3/16	.118	0	7	.002	8.253	14	3.623	19.444	- Code c...		
283	M220	L2 1/2x2 1/2x3/16	.116	0	9	.002	0	11	3.623	19.444	- Code c...		
284	M233	L2 1/2x2 1/2x3/16	.305	0	14	.003	0	12	3.171	19.444	- Code c...		
285	M236	L2 1/2x2 1/2x3/16	.102	0	7	.003	8.881	18	3.171	19.444	- Code c...		
286	M240	L2 1/2x2 1/2x3/16	.286	0	12	.003	8.881	11	3.171	19.444	- Code c...		
287	M243	L2 1/2x2 1/2x3/16	.104	0	5	.003	8.881	10	3.171	19.444	- Code c...		
288	M247	L2 1/2x2 1/2x3/16	.291	0	18	.003	8.881	10	3.171	19.444	- Code c...		
289	M250	L2 1/2x2 1/2x3/16	.108	0	3	.003	8.881	14	3.171	19.444	- Code c...		
290	M254	L2 1/2x2 1/2x3/16	.293	0	16	.003	0	17	3.171	19.444	- Code c...		

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Envelope AISC 13th ASD Steel Code Checks (Continued)

Member		Shape	Code Check		Loc[ft]	LC	Shear Che...	Loc[ft]	Dir	LC	Pnc/om [k]	Pnt/om [k]	Mnyy/o...	Mnzz/o...	Cb	Eqn
291	M257	L2 1/2x2 1/2x3/16	.104		0	9	.003	8.881	Z	14	3.171	19.444	- Code c...			
292	M271	L2 1/2x2 1/2x3/16	.299		0	6	.002	0	Z	15	3.105	19.444	- Code c...			
293	M276	L2 1/2x2 1/2x3/16	.121		0	6	.002	0	Z	12	3.105	19.444	- Code c...			
294	M287	L2 1/2x2 1/2x3/16	.128		0	4	.002	0	Z	14	3.105	19.444	- Code c...			
295	M297	L2 1/2x2 1/2x3/16	.295		0	2	.002	0	Z	17	3.105	19.444	- Code c...			
296	M302	L2 1/2x2 1/2x3/16	.129		0	2	.002	0	Z	12	3.105	19.444	- Code c...			
297	M312	L2 1/2x2 1/2x3/16	.291		0	8	.002	0	Z	16	3.105	19.444	- Code c...			
298	M317	L2 1/2x2 1/2x3/16	.118		0	8	.002	0	Z	12	3.105	19.444	- Code c...			
299	M438A	L2 1/2x2 1/2x3/16	.648		9.35	13	.001	0	Y	13	3.105	19.444	- Code c...			
300	M340	L2 1/2x2 1/2x3/16	.073		0	7	.002	0	Z	16	2.804	19.444	- Code c...			
301	M345	L2 1/2x2 1/2x3/16	.073		0	5	.002	9.721	Z	17	2.804	19.444	- Code c...			
302	M356	L2 1/2x2 1/2x3/16	.062		0	5	.002	0	Z	15	2.804	19.444	- Code c...			
303	M361	L2 1/2x2 1/2x3/16	.077		0	3	.002	0	Z	15	2.804	19.444	- Code c...			
304	M375	L2 1/2x2 1/2x3/16	.064		0	3	.002	0	Z	11	2.804	19.444	- Code c...			
305	M380	L2 1/2x2 1/2x3/16	.071		0	9	.002	9.721	Z	13	2.804	19.444	- Code c...			
306	M394	L2 1/2x2 1/2x3/16	.072		0	9	.002	0	Z	15	2.804	19.444	- Code c...			
307	M399	L2 1/2x2 1/2x3/16	.065		0	7	.002	0	Z	18	2.804	19.444	- Code c...			
308	M435	L1.2.5X2.5X4X3	.051		5.667	12	.002	11.575	Y	14	10.985	51.305	3.605	2.273	1	H1-1b
309	M436	L1.2.5X2.5X4X3	.052		5.908	16	.002	11.575	Y	3	10.985	51.305	3.605	2.273	1	H1-1b
310	M437	L1.2.5X2.5X4X3	.051		5.667	14	.002	11.575	Y	3	10.985	51.305	3.605	2.273	1	H1-1b
311	M438	L1.2.5X2.5X4X3	.051		5.908	18	.002	0	Y	6	10.985	51.305	3.605	2.273	1	H1-1b
312	M439	L1.2.5X2.5X4X3	.052		5.667	14	.002	0	Y	2	10.985	51.305	3.605	2.273	1	H1-1b
313	M440	L1.2.5X2.5X4X3	.052		5.908	18	.002	0	Y	4	10.985	51.305	3.605	2.273	1	H1-1b
314	M441	L1.2.5X2.5X4X3	.051		5.667	16	.002	11.575	Y	7	10.985	51.305	3.605	2.273	1	H1-1b
315	M442	L1.2.5X2.5X4X3	.051		5.908	12	.002	0	Y	9	10.985	51.305	3.605	2.273	1	H1-1b
316	M290	L4x4x3/8	.002		0	14	.005	13.607	Z	10	10.011	61.653	- Code c...			
317	M305	L4x4x3/8	.002		0	12	.005	13.607	Z	10	10.011	61.653	- Code c...			
318	M320	L4x4x3/8	.002		0	18	.005	13.607	Z	10	10.011	61.653	- Code c...			
319	M324	L4x4x3/8	.002		0	16	.005	13.607	Z	10	10.011	61.653	- Code c...			
320	M365	L4x4x3/8	.004		0	14	.005	0	Z	10	7.436	61.653	- Code c...			
321	M384	L4x4x3/8	.005		0	12	.005	0	Z	10	7.436	61.653	- Code c...			
322	M403	L4x4x3/8	.005		0	18	.005	0	Z	10	7.436	61.653	- Code c...			
323	M406	L4x4x3/8	.005		0	16	.005	0	Z	10	7.436	61.653	- Code c...			
324	M270	L1.2.5X2.5X4X3	.051		4.811	18	.003	9.622	Z	12	17.053	51.305	3.605	2.273	1	H1-1b
325	M275	L1.2.5X2.5X4X3	.046		4.811	18	.003	9.622	Z	12	17.053	51.305	3.605	2.273	1	H1-1b
326	M281	L1.2.5X2.5X4X3	.061		4.811	16	.003	9.622	Z	11	17.053	51.305	3.605	2.273	1	H1-1b
327	M286	L1.2.5X2.5X4X3	.045		4.811	17	.003	9.622	Z	11	17.053	51.305	3.605	2.273	1	H1-1b
328	M296	L1.2.5X2.5X4X3	.052		4.811	14	.003	9.622	Z	16	17.053	51.305	3.605	2.273	1	H1-1b
329	M301	L1.2.5X2.5X4X3	.044		4.811	15	.003	9.622	Z	16	17.053	51.305	3.605	2.273	1	H1-1b
330	M311	L1.2.5X2.5X4X3	.052		4.811	12	.003	9.622	Z	14	17.053	51.305	3.605	2.273	1	H1-1b
331	M316	L1.2.5X2.5X4X3	.043		4.811	13	.003	9.622	Z	14	17.053	51.305	3.605	2.273	1	H1-1b

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Envelope AISC 13th ASD Steel Code Checks (Continued)

Member		Shape	Code Check		Loc[ft]	LC	Shear Che...	Dir	LC	Pnc/om [k]	Pnt/om [k]	Mnyy/o...	Mnzz/o...	Cb	Eqn
373	M235	L2 1/2x2 1/2x1/4	.060		0	3	.003	0	Z	13	7.265	25.653	- Code c...		
374	M239	L2 1/2x2 1/2x1/4	.137		0	7	.003	0	Z	10	7.265	25.653	- Code c...		
375	M242	L2 1/2x2 1/2x1/4	.059		0	9	.003	0	Z	14	7.265	25.653	- Code c...		
376	M246	L2 1/2x2 1/2x1/4	.130		0	5	.003	0	Z	10	7.265	25.653	- Code c...		
377	M249	L2 1/2x2 1/2x1/4	.060		0	7	.003	0	Z	12	7.265	25.653	- Code c...		
378	M253	L2 1/2x2 1/2x1/4	.126		0	3	.003	0	Z	10	7.265	25.653	- Code c...		
379	M256	L2 1/2x2 1/2x1/4	.059		0	5	.003	0	Z	11	7.265	25.653	- Code c...		
380	M269	L2x2 1/2x3/16_HRA	.085		0	2	.002	0	Z	12	7.549	17.44	- Code c...		
381	M274	L2x2 1/2x3/16_HRA	.049		0	11	.002	0	Z	13	7.549	17.44	- Code c...		
382	M280	L2x2 1/2x3/16_HRA	.124		0	13	.002	0	Z	10	7.549	17.44	- Code c...		
383	M285	L2x2 1/2x3/16_HRA	.047		0	8	.002	0	Z	12	7.549	17.44	- Code c...		
384	M295	L2x2 1/2x3/16_HRA	.085		0	6	.002	0	Z	10	7.549	17.44	- Code c...		
385	M300	L2x2 1/2x3/16_HRA	.046		0	6	.002	0	Z	10	7.549	17.44	- Code c...		
386	M310	L2x2 1/2x3/16_HRA	.081		0	4	.002	0	Z	14	7.549	17.44	- Code c...		
387	M315	L2x2 1/2x3/16_HRA	.044		0	4	.002	0	Z	10	7.549	17.44	- Code c...		
388	M338	L2 1/2x2 1/2x3/16	.044		0	3	.002	0	Z	16	8.266	19.444	- Code c...		
389	M343	L2 1/2x2 1/2x3/16	.043		0	9	.002	0	Z	17	8.266	19.444	- Code c...		
390	M354	L2 1/2x2 1/2x3/16	.041		0	18	.002	0	Z	14	8.266	19.444	- Code c...		
391	M359	L2 1/2x2 1/2x3/16	.043		0	7	.002	0	Z	15	8.266	19.444	- Code c...		
392	M373	L2 1/2x2 1/2x3/16	.039		0	7	.002	0	Z	12	8.266	19.444	- Code c...		
393	M378	L2 1/2x2 1/2x3/16	.040		0	5	.002	0	Z	13	8.266	19.444	- Code c...		
394	M392	L2 1/2x2 1/2x3/16	.042		0	5	.002	0	Z	11	8.266	19.444	- Code c...		
395	M397	L2 1/2x2 1/2x3/16	.040		0	3	.002	0	Z	11	8.266	19.444	- Code c...		
396	M348	2L3x3x1/4	.854		4.855	8	.002	10.132	Y	16	25.238	62.084	4.335	3.315	1...H1-1a
397	M349	2L3x3x1/4	.859		4.855	4	.002	0	Y	10	25.238	62.084	4.335	3.315	1...H1-1a
398	M367	2L3x3x1/4	.839		4.855	6	.002	10.132	Y	10	25.238	62.084	4.335	3.315	1...H1-1a
399	M368	2L3x3x1/4	.844		4.855	11	.002	0	Y	12	25.238	62.084	4.335	3.315	1...H1-1a
400	M386	2L3x3x1/4	.788		4.855	4	.002	10.132	Y	14	25.238	62.084	4.335	3.315	1...H1-1a
401	M387	2L3x3x1/4	.786		4.855	8	.002	0	Y	12	25.238	62.084	4.335	3.315	1...H1-1a
402	M408	2L3x3x1/4	.831		4.855	2	.002	10.132	Y	11	25.238	62.084	4.335	3.315	1...H1-1a

Company : GPD Group
Designer : Irife
Job Number : 2011265.91

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Envelope AISC 13th ASD Steel Code Checks (Continued)

Member	Shape	Code Check	Locfitl	LC	Shear Che.	Locfitl	Dir	LC	Pnc/om [k]	Pnt/om [k]	Mnv/o... Mnzz/o...	Cb	Eqn
414	M426	L3x3x1/4	.064	14	.001	9.801	Y	10	5.484	31.042	- Code c...		
415	M427	L3x3x1/4	.064	16	.001	0	Y	11	5.484	31.042	- Code c...		
416	M420A	L3x3x1/4	.006	12	.000	8.356	Y	16	7.544	31.042	- Code c...		
417	M421A	L3x3x1/4	.006	18	.000	8.356	Y	12	7.544	31.042	- Code c...		
418	M422A	L3x3x1/4	.006	16	.000	8.356	Y	17	7.544	31.042	- Code c...		
419	M423A	L3x3x1/4	.006	15	.000	8.356	Y	17	7.544	31.042	- Code c...		
420	M17	L2x2 1/2x1/4	.081	7	.004	6.554	Z	16	2.222	22.85	- Code c...		
421	M18	L2x2 1/2x1/4	.092	2	.004	6.554	Z	14	2.222	22.85	- Code c...		
422	M19	L2x2 1/2x1/4	.076	9	.004	6.554	Z	12	2.222	22.85	- Code c...		
423	M20	L2x2 1/2x1/4	.055	2	.004	6.554	Z	18	4.323	66.611	1.622	8.807	1 H1-1b
424	M37	C6X10.5	.101	13	.003	7.481	Y	17	4.323	66.611	1.622	8.807	1 H1-1b
425	M38	C6X10.5	.097	11	.003	7.481	Y	16	4.323	66.611	1.622	8.807	1 H1-1b
426	M39	C6X10.5	.093	13	.003	7.481	Y	18	4.323	66.611	1.622	8.807	1 H1-1b
427	M40	C6X10.5	.099	11	.003	7.481	Y	18	4.323	66.611	1.622	8.807	1 H1-1b
428	M62	2L2 1/2x3x1/4x3/8	.098	12	.005	8.407	Y	18	30.727	56.695	4.967	1.454	1 H1-1b
429	M63	2L2 1/2x3x1/4x3/8	.099	15	.005	8.407	Y	16	30.727	56.695	4.967	1.454	1 H1-1b
430	M64	2L2 1/2x3x1/4x3/8	.099	17	.005	8.407	Y	14	30.727	56.695	4.967	1.454	1 H1-1b
431	M65	2L2 1/2x3x1/4x3/8	.098	12	.005	8.407	Y	12	30.727	56.695	4.967	1.454	1 H1-1b
432	M82	2L2 1/2x3x1/4x3/8	.123	13	.005	9.333	Y	18	27.692	56.695	4.967	1.454	1 H1-1b
433	M83	2L2 1/2x3x1/4x3/8	.122	16	.005	9.333	Y	16	27.692	56.695	4.967	1.454	1 H1-1b
434	M84	2L2 1/2x3x1/4x3/8	.121	16	.005	9.333	Y	14	27.692	56.695	4.967	1.454	1 H1-1b
435	M85	2L2 1/2x3x1/4x3/8	.123	14	.005	9.333	Y	12	27.692	56.695	4.967	1.454	1 H1-1b
436	M5	MC18X58	.015	11	.003	12.25	Y	13	286.692	368.623	15.327	161.704	1 H1-1b
437	M6	MC18X58	.015	17	.003	12.25	Y	11	286.692	368.623	15.327	161.704	1 H1-1b
438	M7	MC18X58	.015	15	.003	12.25	Y	17	286.692	368.623	15.327	161.704	1 H1-1b
439	M8	MC18X58	.015	13	.003	12.25	Y	15	286.692	368.623	15.327	161.704	1 H1-1b
440	M25	2L3 1/2x3 1/2x1/4x...	.107	15	.005	14.096	Y	10	51.423	72.862	6.64	4.56	1 H1-1b
441	M26	2L3 1/2x3 1/2x1/4x...	.106	13	.005	14.096	Y	10	51.423	72.862	6.64	4.56	1 H1-1b
442	M27	2L3 1/2x3 1/2x1/4x...	.107	11	.005	14.096	Y	10	51.423	72.862	6.64	4.56	1 H1-1b
443	M28	2L3 1/2x3 1/2x1/4x...	.107	17	.005	14.096	Y	10	51.423	72.862	6.64	4.56	1 H1-1b
444	M45	2L3 1/2x3x1/4x3/8	.271	15	.009	15.942	Y	11	46.158	67.473	5.014	4.463	1 H1-1b
445	M46	2L3 1/2x3x1/4x3/8	.271	13	.009	15.942	Y	18	46.158	67.473	5.014	4.463	1 H1-1b
446	M47	2L3 1/2x3x1/4x3/8	.271	11	.009	15.942	Y	11	46.158	67.473	5.014	4.463	1 H1-1b
447	M48	2L3 1/2x3x1/4x3/8	.271	17	.009	15.942	Y	18	46.158	67.473	5.014	4.463	1 H1-1b
448	M70	2L3 1/2x3x1/4x3/8	.170	15	.006	17.788	Y	10	46.492	67.473	5.014	4.463	1 H1-1b
449	M71	2L3 1/2x3x1/4x3/8	.169	13	.006	17.788	Y	10	46.492	67.473	5.014	4.463	1 H1-1b
450	M72	2L3 1/2x3x1/4x3/8	.169	11	.006	17.788	Y	10	46.492	67.473	5.014	4.463	1 H1-1b
451	M73	2L3 1/2x3x1/4x3/8	.169	17	.006	17.788	Y	10	46.492	67.473	5.014	4.463	1 H1-1b

ASD Bolt Checks

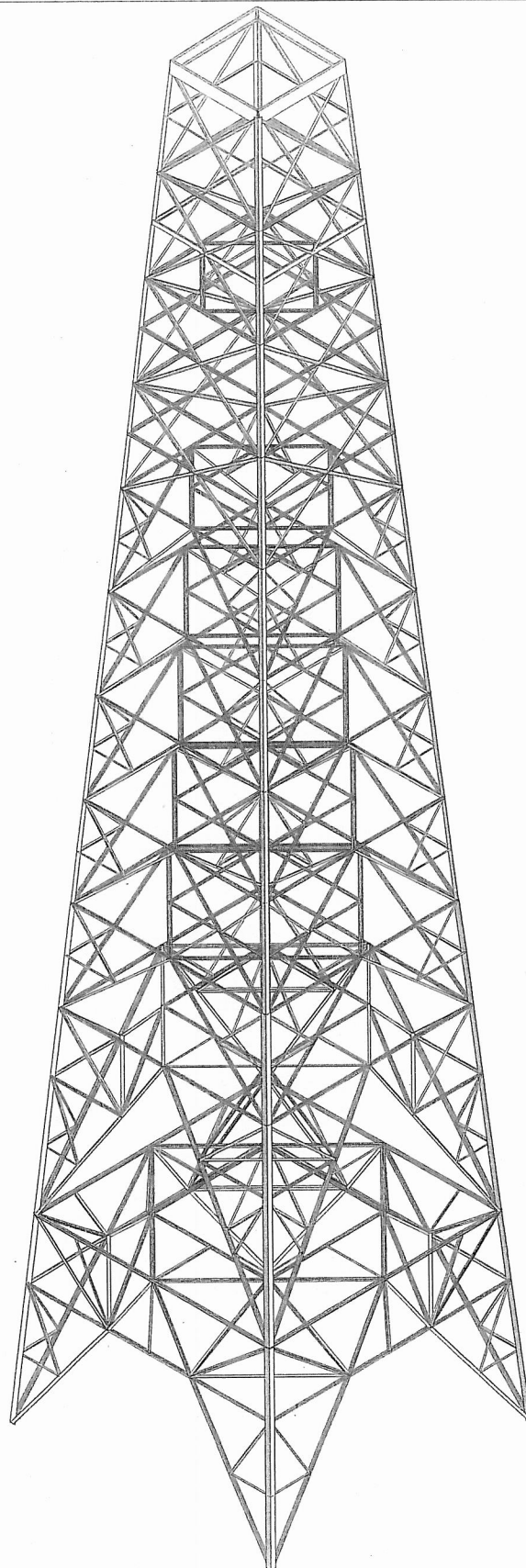
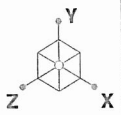
V_n/Ω (3/4" A307 - Assumed)
4.42 kips/bolt
 V_n/Ω (7/8" A307 - Assumed)
6.01 kips/bolt

Section	Leg Bolts	Shear Planes	r_n/Ω	r_{max}	% Capacity	Diagonal Bolts	Shear Planes	r_n/Ω	r_{max}	% Capacity	Horizontal Bolts	Shear Planes	r_n/Ω	r_{max}	% Capacity
T9	(36)	.75in	318.24	164.7	38.8%	(5)	.75in	44.2	21.8	36.9%	(3)	.75in	26.5	15.3	43.2%
T8	(32)	.75in	282.88	133.7	35.4%	(3)	.75in	26.5	21.1	59.6%	(3)	.75in	26.5	10.1	28.7%
T7	(28)	.75in	247.52	117.5	35.6%	(3)	.75in	26.5	13.9	39.3%	(2)	.75in	17.7	10.4	44.2%
T6	(28)	.75in	247.52	101.1	30.6%	(2)	.75in	17.7	13.4	56.9%	(2)	.75in	17.7	9.8	41.5%
T5	(20)	.75in	176.8	68.1	28.9%	(2)	.75in	17.7	12.2	51.8%	(2)	.75in	17.7	8.2	34.9%
T4	(16)	.75in	141.44	44.1	23.4%	(3)	.75in	13.3	8.7	49.3%	(2)	.75in	17.7	2.2	9.5%
T3						(3)	.75in	13.3	7.0	39.4%	(2)	.75in	17.7	1.7	7.4%
T2						(3)	.75in	13.3	6.0	33.7%	(2)	.75in	17.7	1.3	5.7%
T1	(16)	.75in	141.44	18.4	9.7%	(3)	.75in	13.3	3.5	20.0%	(2)	.75in	8.84	0.2	1.4%

Section	Anchor Rods	r_n/Ω	r_{max}	% Capacity
T9	(4)	2.25in	74.22	41.18
				41.6%

APPENDIX C

Tower Elevation Drawing



Solution: Envelope

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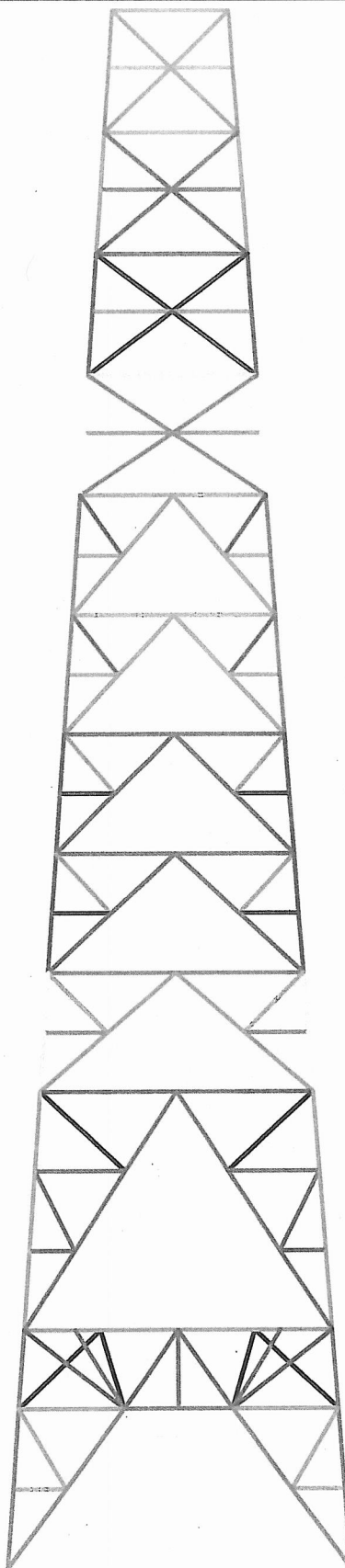
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Section Sets

	TWR_LEG_T1
	TWR_TOP_GIRT_T1
	TWR_DIAG_T1
	TWR_STEP_T1
	TWR_LEG_T2
	TWR_TOP_GIRT_T2
	TWR_DIAG_T2
	TWR_STEP_T2
	TWR_LEG_T3
	TWR_TOP_GIRT_T3
	TWR_INNER_SUPP_T3
	TWR_DIAG_T3
	TWR_STEP_T3
	TWR_LEG_T4
	TWR_TOP_GIRT_T4
	TWR_DIAG_T4
	TWR_STEP_T4
	TWR_LEG_T5
	TWR_HORZ_T5
	TWR_DIAG_T5
	TWR_RED_HORZ_T5
	TWR_RED_DIAG_T5
	TWR_INNER_SUPP_T5
	TWR_LEG_T6
	TWR_HORZ_T6
	TWR_DIAG_T6
	TWR_RED_HORZ_T6
	TWR_RED_DIAG_T6
	TWR_INNER_SUPP_T6
	TWR_LEG_T7
	TWR_HORZ_T7
	TWR_DIAG_T7
	TWR_RED_HORZ_T7
	TWR_RED_DIAG_T7
	TWR_INNER_SUPP_T7
	TWR_LEG_T8
	TWR_HORZ_T8
	TWR_DIAG_T8
	TWR_RED_HORZ_T8
	TWR_RED_HORZ_2_T8
	TWR_RED_DIAG_T8
	TWR_RED_DIAG_2_T8
	TWR_RED_HIP_2_T8
	TWR_RED_HIPDIA_T8
	TWR_INNER_SUPP_T8
	TWR_LEG_T9
	TWR_HORZ_T9
	TWR_DIAG_T9
	TWR_RED_HORZ_T9
	TWR_RED_HORZ_2_T9
	TWR_RED_DIAG_T9
	TWR_RED_DIAG_2_T9
	TWR_RED_SUBHOR_T9
	TWR_RED_SUBDIA_T9
	TWR_RED_VERT_T9
	TWR_RED_HIP_2_T9
	TWR_INNER_SUPP_T9
	Corner Brace 1_T9
	Inner Square_T9
	Inner Square_T8
	Corner Brace_T8
	Mid Girt_T8
	Inner Square_T7
	Corner Brace_T7
	Mid Girt_T7
	Inner Square_T6
	Corner Brace_T6
	Inner Square_T5
	Corner Brace_T5
	Inner Square_T4
	Corner Brace_T4

Solution: Envelope

GPD Group

Irife

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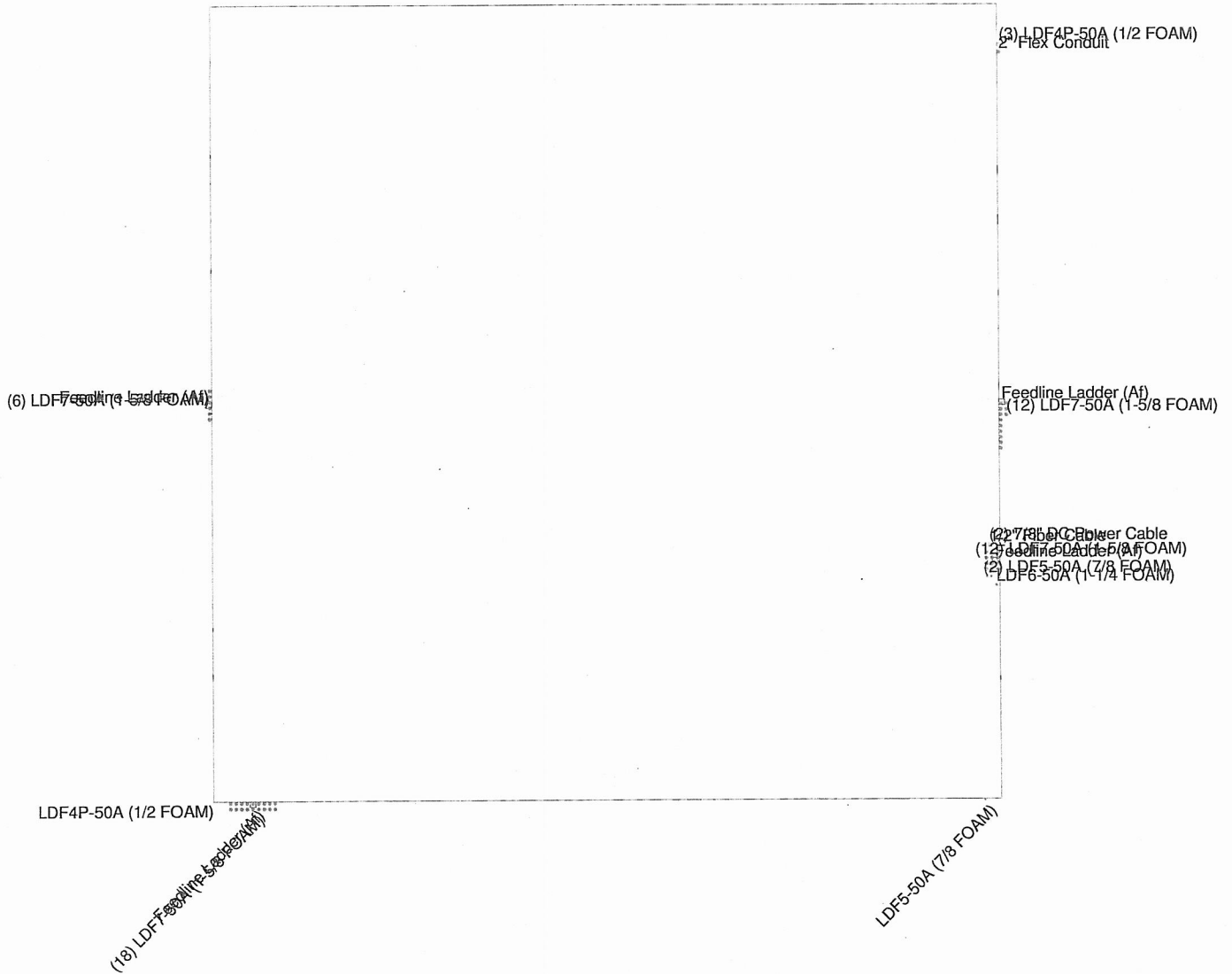
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Feedline Plan

Round _____ Flat

App In Face

App Out Face



 GPD Group 520 South Main St. Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-2102		Job: SNET025 SHELTON	
		Project: 2011265.91	
Client: AT&T Mobility	Drawn by: Irife	App'd:	
Code: TIA/EIA-222-F	Date: 09/08/11	Scale: NTS	
Path: N:\2011\2011265.91\TIA\Tower\SNET025.en	Dwg No. E-7		

APPENDIX G

Foundation Analysis



Mat Foundation Analysis
SNET025 SHELTON
2011265.91

General Info	
Code	TIA/EIA-222-F (ASD)
Bearing On	Soil
Foundation Type	Mono Pad
Pier Type	Square
Reinforcing Known	No
Max Capacity	1

Tower Reactions	
Moment, M	k-ft
Axial, P	198.631 k
Shear, V	38.717 k

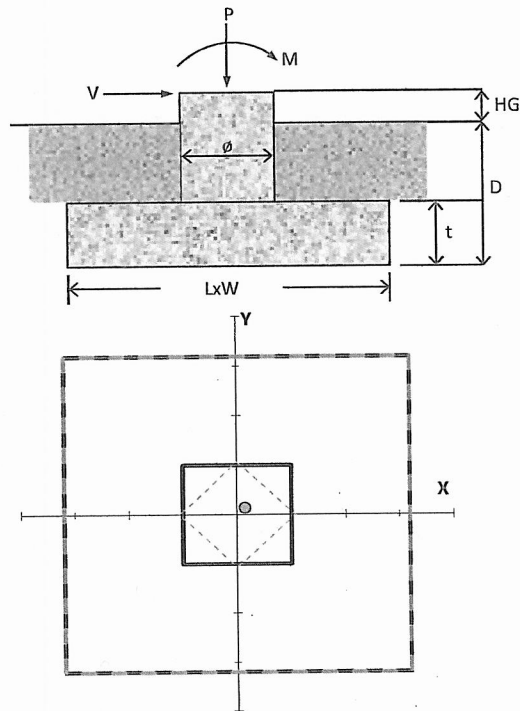
Pad & Pier Geometry	
Pier Width, ϕ	5 ft
Pad Length, L	16 ft
Pad Width, W	16 ft
Pad Thickness, t	2 ft
Depth, D	8 ft
Height Above Grade, HG	1 ft

Pad & Pier Reinforcing	
Rebar Fy	ksi
Concrete Fc'	ksi
Clear Cover	in
Reinforced Top & Bottom?	
Pad Reinforcing Size	
Pad Quantity Per Layer	
Pier Rebar Size	
Pier Quantity of Rebar	

Soil Properties	
Soil Type	Granular
Soil Unit Weight	120 pcf
Angle of Friction, ϕ	34 °
Bearing Type	Net
Ultimate Bearing	12 ksf
Water Table Depth	8 ft
Frost Depth	3.33 ft

Bearing Summary			Load Case
Q _{xmax}	1.83	ksf	1D+1W
Q _y max	1.83	ksf	1D+1W
Q _{max @ 45°}	2.31	ksf	1D+1W
Q _{(all) Gross}	6.48	ksf	
Controlling Capacity	35.7%	Pass	

Overturning Summary (Required FS=1.5)			Load Case
FS(ot)x	74880.16	≥1.5	1D+1W
FS(ot)y	74880.16	≥1.5	1D+1W
Controlling Capacity	0.0%	Pass	





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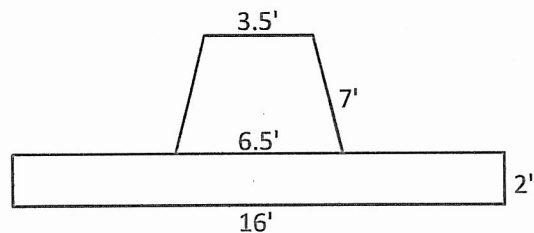
Job No. 2011265.91
Sheet No. 1 of 1

Calculated By: LR Date: 9/8/11
Checked By: AW Date: 9/8/11

Pad and Pier Uplift Analysis

$W_c = 92.81$ kips

$W_s = 278.0$ kips



$W_c/1.25 + W_s/2.0 = 213.2$ kips

$W_c/1.5 + W_s/1.5 = 247.2$ kips

Max Uplift = 135.0 kips

Rating = 63.3% OK



C Squared Systems, LLC
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Auburn, NH 03032
Phone: (603) 644-2800
support@csquaredsystems.com

Calculated Radio Frequency Emissions



CT2113

219 Nell's Rock Road, Shelton, CT 06484

October 25, 2011

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1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed modifications to the existing AT&T antenna arrays mounted on the existing lattice tower located at 219 Nell's Rock Road in Shelton, CT. Sprint, Verizon, T-Mobile, Clearwire, Pagenet, Arrow Bus, and Metricom all have antennas mounted on the tower. The coordinates of the tower are 41° 18' 15.09" N, -73° 7' 5.89" W.

AT&T is proposing the following modifications:

- 1) Install three dual-band (700 MHz/2100 MHz) LTE/AWS antennas (one per sector).

2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

In 1985, the FCC established rules to regulate radio frequency (RF) exposure from FCC licensed antenna facilities. In 1996, the FCC updated these rules, which were further amended in August 1997 by OET Bulletin 65 Edition 97-01. These new rules include Maximum Permissible Exposure (MPE) limits for transmitters operating between 300 kHz and 100 GHz. The FCC MPE limits are based upon those recommended by the National Council on Radiation Protection and Measurements (NCRP), developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI).

The FCC general population/uncontrolled limits set the maximum exposure to which most people may be subjected. General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm^2). The general population exposure limits for the various frequency ranges are defined in the attached "FCC Limits for Maximum Permissible Exposure (MPE)" in Attachment B of this report.

Higher exposure limits are permitted under the occupational/controlled exposure category, but only for persons who are exposed as a consequence of their employment and who have been made fully aware of the potential for exposure, and they must be able to exercise control over their exposure. General population/uncontrolled limits are five times more stringent than the levels that are acceptable for occupational, or radio frequency trained individuals. Attachment B contains excerpts from OET Bulletin 65 and defines the Maximum Exposure Limit.

Finally, it should be noted that the MPE limits adopted by the FCC for both general population/uncontrolled exposure and for occupational/controlled exposure incorporate a substantial margin of safety and have been established to be well below levels generally accepted as having the potential to cause adverse health effects.

3. RF Exposure Prediction Methods

The emission field calculation results displayed in the following figures were generated using the following formula as outlined in FCC bulletin OET 65:

$$\text{Power Density} = \left(\frac{1.6^2 \times \text{EIRP}}{4\pi \times R^2} \right) \times \text{Off Beam Loss}$$

Where:

EIRP = Effective Isotropic Radiated Power

$R = \text{Radial Distance} = \sqrt{H^2 + V^2}$

H = Horizontal Distance from antenna in meters

V = Vertical Distance from radiation center of antenna in meters

Ground reflection factor of 1.6

Off Beam Loss is determined by the selected antenna pattern

These calculations assume that the antennas are operating at 100 percent capacity and power, and that all channels are transmitting simultaneously. Obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. The calculations assume even terrain in the area of study and do not take into account actual terrain elevations which could attenuate the signal. As a result, the predicted signal levels reported below are much higher than the actual signal levels will be from the finished modifications.

4. Calculation Results

Table 1 below outlines the power density information for the site. All information for Sprint, Verizon, T-Mobile, Clearwire, Pagenet, Arrow Bus, and Metricom comes directly from the current CSC database. Because the proposed AT&T antennas are directional in nature, the majority of the RF power is focused out towards the horizon. As a result, there will be less RF power directed below the antennas relative to the horizon, and consequently lower power density levels around the base of the tower. Please refer to Attachment C for the vertical pattern of the proposed AT&T antennas. The calculated results for AT&T in Table 1 include a nominal 10 dB off-beam pattern loss to account for the lower relative gain below the antennas.

Carrier	Antenna Height (Feet)	Operating Frequency (MHz)	Number of Trans.	ERP Per Transmitter (Watts)	Power Density (mw/cm ²)	Limit	%MPE
Verizon	122	869	9	383	0.0833	0.5793	14.37%
Verizon	122	1970	7	446	0.0754	1.0000	7.54%
Verizon	122	757	1	787	0.0190	0.5047	3.77%
Sprint	155	1962.5			0.0201	1.0000	2.01%
Clearwire	114	2496	2	153	0.0085	1.0000	0.85%
Clearwire	119	23000	1	211	0.0054	1.0000	0.54%
Pagenet	181	931			0.0170	0.6207	2.74%
Arrow Bus	160				0.0038	0.2000	1.90%
T-Mobile GSM	135	1945	8	129	0.0204	1.0000	2.04%
T-Mobile UMTS	135	2100	2	516	0.0204	1.0000	2.04%
Metricom	171.5				0.0002	1.0000	0.02%
AT&T LTE	162	734	1	500	0.0069	0.4893	0.14%
AT&T UMTS	162	880	1	500	0.0069	0.5867	0.12%
AT&T UMTS	162	1900	1	500	0.0069	1.0000	0.07%
AT&T GSM	162	880	3	296	0.0122	0.5867	0.21%
AT&T AWS	162	2100	2	978	0.0268	1.0000	0.27%
						Total	38.61%

Table 1: Carrier Information^{1 2}

¹ Calculated values for AT&T include a -10 dB off-beam loss factor. Antenna specifics for Sprint, Verizon, T-Mobile, Clearwire, Pagenet, Arrow Bus, and Metricom were unavailable and therefore do not include any off-beam loss factor.

² Blank spaces indicate where information was unavailable from the CSC database.

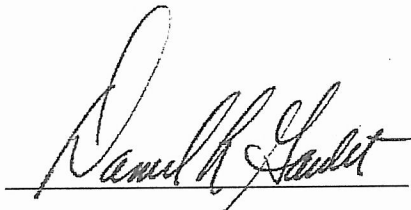
5. Conclusion

The above analysis verifies that emissions from the existing site will be below the maximum power density levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Even when using conservative methods, the cumulative power density from the proposed and existing transmit antennas at the existing facility is below the limits for the general public. The highest expected percent of Maximum Permissible Exposure at the base of the tower is 38.61% of the FCC limit.

As noted previously, obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. As a result, the predicted signal levels are more conservative (higher) than the actual signal levels will be from the finished modifications.

6. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate. The calculations follow guidelines set forth in ANSI/IEEE Std. C95.3, ANSI/IEEE Std. C95.1 and FCC OET Bulletin 65 Edition 97-01.


Daniel L. Goulet
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October 25, 2011

Date

Attachment A: References

OET Bulletin 65 - Edition 97-01 - August 1997 Federal Communications Commission Office of Engineering & Technology

ANSI C95.1-1982, American National Standard Safety Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 300 kHz to 100 GHz IEEE-SA Standards Board

IEEE Std C95.3-1991 (Reaff 1997), IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave IEEE-SA Standards Board

Attachment B: FCC Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure³

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	-	-	f/300	6
1500-100,000	-	-	5	6

(B) Limits for General Population/Uncontrolled Exposure⁴

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	f/1500	30
1500-100,000	-	-	1.0	30

f = frequency in MHz * Plane-wave equivalent power density

Table 2: FCC Limits for Maximum Permissible Exposure (MPE)

³ Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure

⁴ General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure

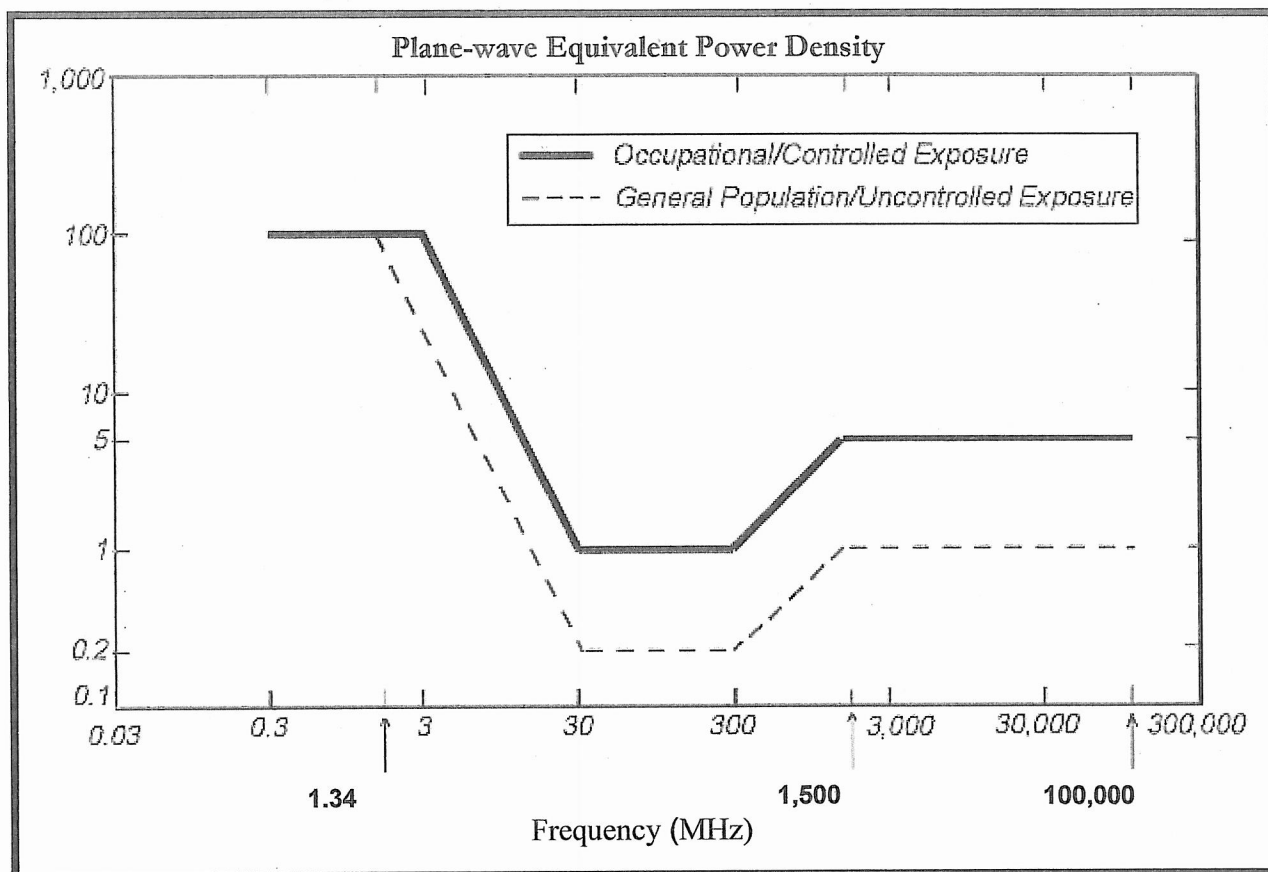
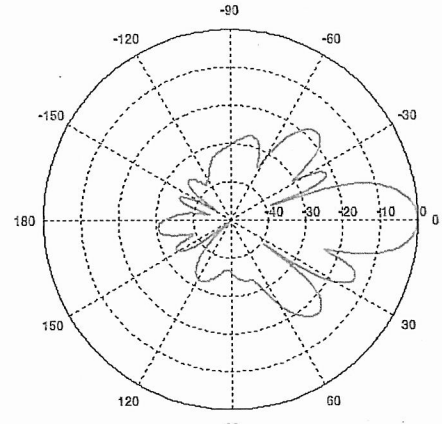
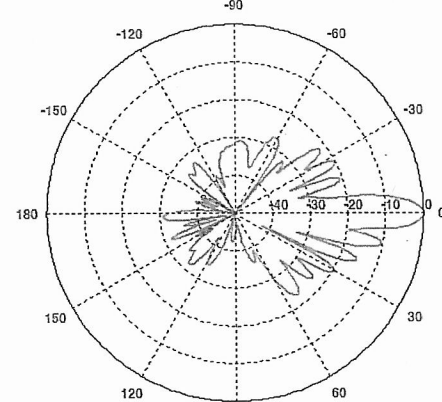
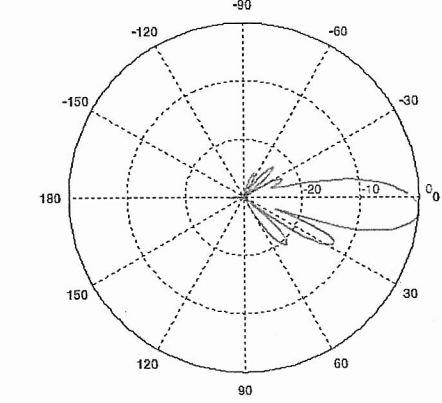


Figure 1: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

Attachment C: AT&T's Antenna Model Data Sheets and Electrical Patterns

850 MHz Manufacturer: Powerwave Model #: 7770 Frequency Band: 824-896 MHz Gain: 11.4 dBd Vertical Beamwidth: 15 deg Horizontal Beamwidth: 85 deg Polarization: Dual Linear ± 45 deg Size L x W x D: 55.4" x 11" x 4.9"	
1900 MHz Manufacturer: Powerwave Model #: 7770 Frequency Band: 1850-1990 MHz Gain: 13.4 dBd Vertical Beamwidth: 7 deg Horizontal Beamwidth: 90 deg Polarization: Dual Linear ± 45 deg Size L x W x D: 55.4" x 11" x 4.9"	
700 MHz Manufacturer: Powerwave Model #: P65-16-XLH-RR Frequency Band: 698-894 MHz Gain: 12.7 dBd Vertical Beamwidth: 14.7 deg Horizontal Beamwidth: 73 deg Polarization: Dual Linear ± 45 deg Size L x W x D: 72" x 12" x 6"	

2100 MHz

Manufacturer: Powerwave
 Model #: P65-16-XLH-RR
 Frequency Band: 1710-2170 MHz
 Gain: 15.4 dBd
 Vertical Beamwidth: 5.7 deg
 Horizontal Beamwidth: 52 deg
 Polarization: Dual Linear ± 45 deg
 Size L x W x D: 72" x 12" x 6"

