

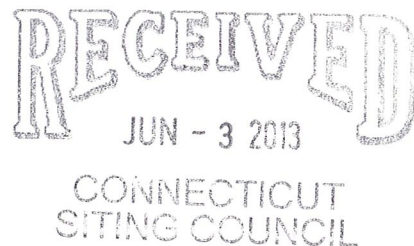
KENNETH C. BALDWIN

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Fax (860) 275-8299
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EM-VER-015-130603

Also admitted in Massachusetts

May 29, 2013



ORIGINAL

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

Re: **Notice of Exempt Modification – Facility Modification
1330 Chopsey Hill Road, Bridgeport, Connecticut**

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains twelve (12) antennas at the 155-foot level of the existing 240-foot lattice tower at 1330 Chopsey Hill Road in Bridgeport. The tower is owned by Global Tower Partners. The Council approved Cellco’s use of this tower in 1990. Cellco now intends to replace six (6) of its existing antennas with three (3) model BXA-80063-6BF cellular antennas and three (3) model BXA-171063-8BF AWS antennas at the same height on the tower. Cellco also intends to install six (6) remote radio heads (“RRHs”) behind its antennas and one (1) HYBRIFLEX™ antenna cable. Attached behind Tab 1 are the specifications for the replacement antennas, RRHs and HYBRIFLEX™ cable.

Please accept this letter 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 Bill Finch, Mayor of the City of Bridgeport. A copy of this letter is also being sent to Cell Tower Lease Acquisition LLC, the owner of the property on which the tower is located.

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



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Melanie A. Bachman
May 29, 2013
Page 2

1. The proposed modifications will not result in an increase in the height of the existing tower. Cellco's replacement antennas and RRHs will be located at the 155-foot level of the 240-foot tower.
2. The proposed modifications will not involve any change to ground-mounted equipment and, therefore, will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A cumulative General Power Density table for Cellco's modified facility is included behind Tab 2.
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, with certain modifications, can support Cellco's proposed antenna modifications. (See Structural Analysis Report and Post Modification Structural Report attached behind Tab 3).

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

Sincerely,



Kenneth C. Baldwin

Enclosures
Copy to:

Bill Finch, Bridgeport Mayor
Cell Tower Lease Acquisition LLC
Sandy M. Carter

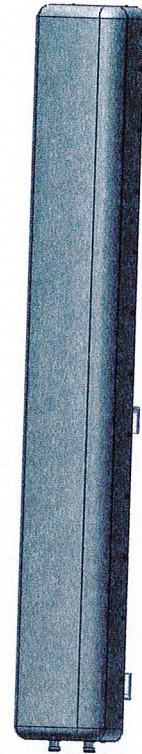


BXA-80063-6BF-EDIN-X

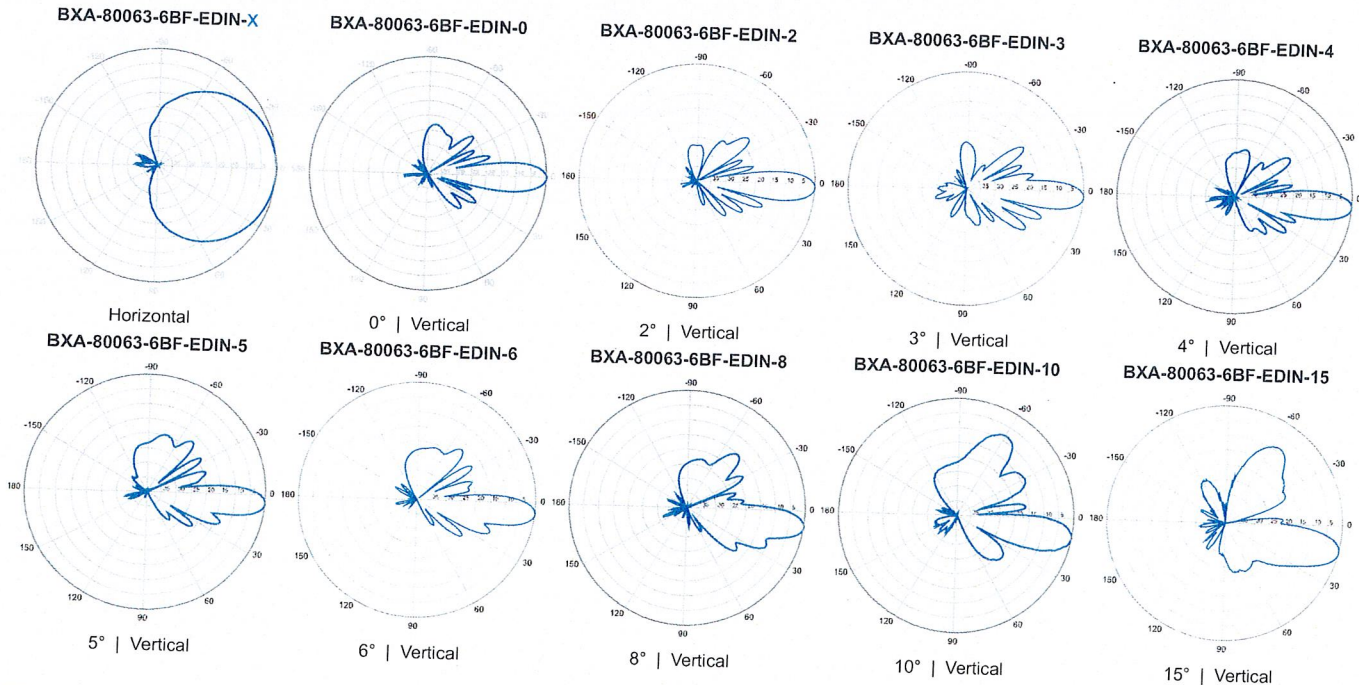
X-Pol | FET Panel | 63° | 14.5 dBd

Replace 'X' with desired electrical downtilt.

Antenna is also available with N connector(s). Replace "EDIN" with "N" in the model number when ordering.



| Electrical Characteristics | |
|---|---|
| Frequency bands | 806-900 MHz* |
| *Optional frequency band for iDEN | 806-941 MHz (specify when ordering) |
| Polarization | ±45° |
| Horizontal beamwidth | 63° |
| Vertical beamwidth | 11° |
| Gain | 14.5 dBd (16.6 dBi) |
| Electrical downtilt (X) | 0, 2, 3, 4, 5, 6, 8, 10, 15 |
| Impedance | 50Ω |
| VSWR | ≤1.4:1 |
| Upper sidelobe suppression (0°) | -18.2 dB |
| Front-to-back ratio (+/-30°) | -36.3 dB |
| Null fill | 5% (-26.02 dB) |
| Isolation between ports | < -25 dB |
| Input power with EDIN connectors | 500 W |
| Input power with N connectors | 300 W |
| Lightning protection | Direct Ground |
| Connector(s) | 2 Ports / EDIN or N / Female / Bottom |
| Mechanical Characteristics | |
| Dimensions Length x Width x Depth | 1742 x 285 x 135 mm 68.6 x 11.2 x 5.3 in |
| Depth with z-brackets | 175 mm 6.9 in |
| Weight without mounting brackets | 8.7 kg 19.2 lbs |
| Survival wind speed | > 201 km/hr > 125 mph |
| Wind area | Front: 0.50 m ² Side: 0.24 m ² Front: 5.3 ft ² Side: 2.5 ft ² |
| Wind load @ 161 km/hr (100 mph) | Front: 733 N Side: 386 N Front: 164 lbf Side: 88 lbf |
| Mounting Options | |
| | Part Number Fits Pipe Diameter Weight |
| 3-Point Mounting & Downtilt Bracket Kit | 36210008 40-115 mm 1.57-4.5 in 6.9 kg 15.2 lbs |
| Concealment Configurations | For concealment configurations, order BXA-80063-6BF-EDIN-X-FP |

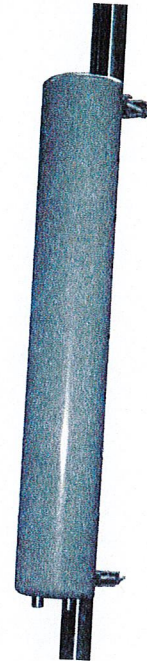


Quoted performance parameters are provided to offer typical or range values only and may vary as a result of normal manufacturing and operational conditions. Extreme operational conditions and/or stress on structural supports is beyond our control. Such conditions may result in damage to this product. Improvements to product may be made without notice.

BXA-171063-8BF-EDIN-X

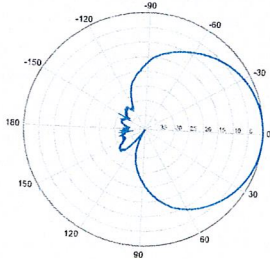
X-Pol | FET Panel | 63° | 17.4 dBi

Replace "X" with desired electrical downtilt.

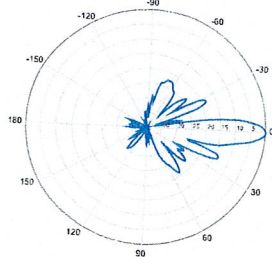


| Electrical Characteristics | 1710-2170 MHz | | |
|---|--|--|---------------------|
| | 1710-1880 MHz | 1850-1990 MHz | 1920-2170 MHz |
| Frequency bands | 1710-1880 MHz | 1850-1990 MHz | 1920-2170 MHz |
| Polarization | ±45° | ±45° | ±45° |
| Horizontal beamwidth | 68° | 65° | 60° |
| Vertical beamwidth | 7° | 7° | 7° |
| Gain | 14.5 dBd / 16.6 dBi | 14.9 dBd / 17.0 dBi | 15.3 dBd / 17.4 dBi |
| Electrical downtilt (X) | | 0, 2, 4, 8 | 15.3 dBd / 17.4 dBi |
| Impedance | | 50Ω | |
| VSWR | | ≤1.5:1 | |
| First upper sidelobe | | < -17 dB | |
| Front-to-back ratio | | > 30 dB | |
| In-band isolation | | > 25 dB | |
| IM3 (20W carrier) | | < -150 dBc | |
| Input power | | 300 W | |
| Lightning protection | | Direct Ground | |
| Connector(s) | | 2 Ports / EDIN / Female / Bottom | |
| Operating temperature | | -40° to +60° C / -40° to +140° F | |
| Mechanical Characteristics | | | |
| Dimensions Length x Width x Depth | 1225 x 154 x 105 mm | | 48.2 x 6.1 x 4.1 in |
| Depth with t-brackets | 133 mm | | 5.2 in |
| Weight without mounting brackets | 4.2 kg | | 9.2 lbs |
| Survival wind speed | 296 km/hr | | 184 mph |
| Wind area | Front: 0.19 m ² Side: 0.14 m ² | Front: 2.0 ft ² Side: 1.5 ft ² | |
| Wind load @ 161 km/hr (100 mph) | Front: 281 N Side: 223 N | Front: 63 lbf Side: 50 lbf | |
| Mounting Options | | | |
| | Part Number | Fits Pipe Diameter | Weight |
| 2-Point Mounting Bracket Kit | 26799997 | 50-102 mm 2.0-4.0 in | 2.3 kg 5 lbs |
| 2-Point Mounting & Downtilt Bracket Kit | 26799999 | 50-102 mm 2.0-4.0 in | 3.6 kg 8 lbs |
| Concealment Configurations | For concealment configurations, order BXA-171063-8BF-EDIN-X-FP | | |

BXA-171063-8BF-EDIN-X

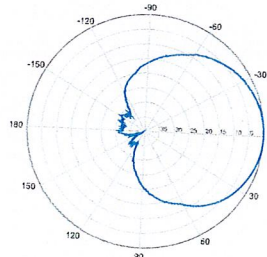


Horizontal | 1710-1880 MHz
BXA-171063-8BF-EDIN-0

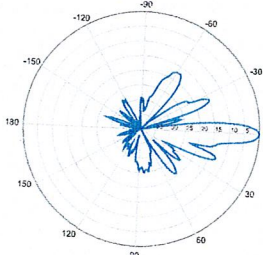


0° | Vertical | 1710-1880 MHz

BXA-171063-8BF-EDIN-X

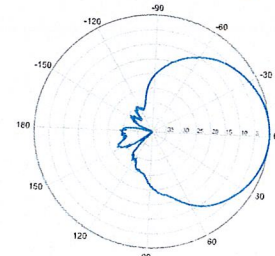


Horizontal | 1850-1990 MHz
BXA-171063-8BF-EDIN-0

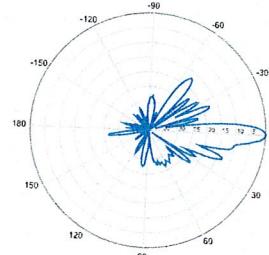


0° | Vertical | 1850-1990 MHz

BXA-171063-8BF-EDIN-X



Horizontal | 1920-2170 MHz
BXA-171063-8BF-EDIN-0



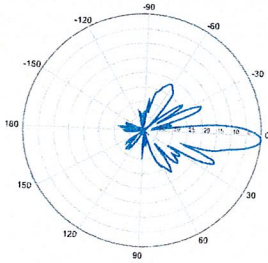
0° | Vertical | 1920-2170 MHz

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BXA-171063-8BF-EDIN-X

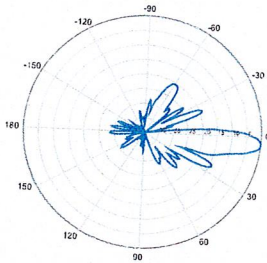
X-Pol | FET Panel | 63° | 17.4 dBi

BXA-171063-8BF-EDIN-2



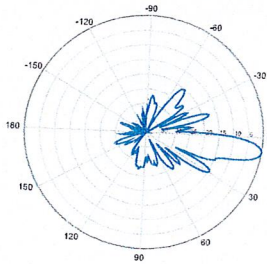
2° | Vertical | 1710-1880 MHz

BXA-171063-8BF-EDIN-4



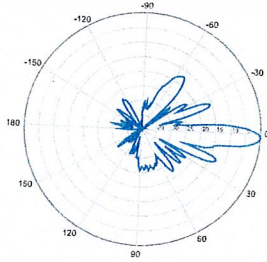
4° | Vertical | 1710-1880 MHz

BXA-171063-8BF-EDIN-8



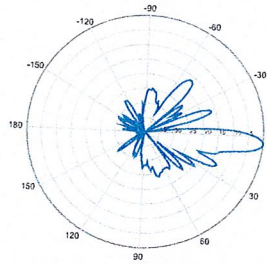
8° | Vertical | 1710-1880 MHz

BXA-171063-8BF-EDIN-2



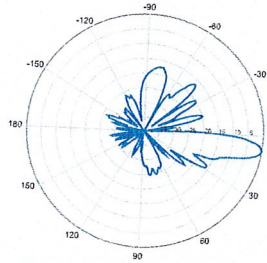
2° | Vertical | 1850-1990 MHz

BXA-171063-8BF-EDIN-4



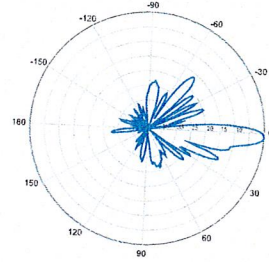
4° | Vertical | 1850-1990 MHz

BXA-171063-8BF-EDIN-8



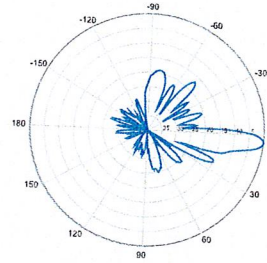
8° | Vertical | 1850-1990 MHz

BXA-171063-8BF-EDIN-2



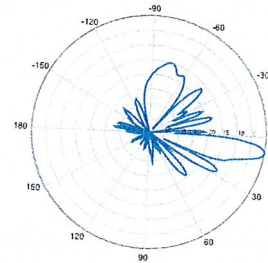
2° | Vertical | 1920-2170 MHz

BXA-171063-8BF-EDIN-4



4° | Vertical | 1920-2170 MHz

BXA-171063-8BF-EDIN-8



8° | Vertical | 1920-2170 MHz

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Alcatel-Lucent RRH2x40-07-U

REMOTE RADIO HEAD

The Alcatel-Lucent RRH2x40-07-U is a high-power, small form-factor Remote Radio Head (RRH) operating in the North American Digital Dividend / 700MHz frequency band (3GPP Band 13). The Alcatel-Lucent RRH2x40-07-U is designed with an eco-efficient approach, providing operators with the means to achieve high quality and capacity coverage with minimum site requirements.



A distributed eNodeB expands deployment options by using two components, a Base Band Unit (BBU) containing the digital assets and a separate RRH containing the radio-frequency (RF) elements. This modular design optimizes available space and allows the main components of an eNodeB to be installed separately, within the same site or several kilometres apart.

The Alcatel-Lucent RRH2x40-07-U is linked to the BBU by an optical-fiber connection carrying downlink and uplink digital radio signals along with operations, administration and maintenance (OA&M) information. The Alcatel-Lucent RRH2x40-07-U has two transmit RF paths, 40 W RF output power per transmit path, and is designed to manage up to two-way receive diversity. The device is ideally suited to support macro coverage, with multiple-input multiple-output (MIMO) 2x2 operation in up to 10 MHz of bandwidth.

The Alcatel-Lucent RRH2x40-07-U is designed to make available all the benefits of a distributed eNodeB, with excellent RF characteristics, with low

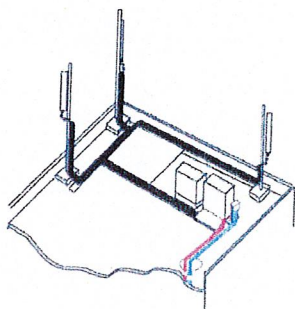
capital expenditures (CAPEX) and low operating expenditures (OPEX). The limited space available in some sites may prevent the installation of traditional single-cabinet BTS equipment or require costly cranes to be employed, leaving coverage holes. However, many of these sites can host an Alcatel-Lucent RRH2x40-07-U installation, providing more flexible site selection and improved network quality along with greatly reduced installation time and costs.

Fast, low-cost installation and deployment

The Alcatel-Lucent RRH2x40-07-U is a zero-footprint solution and operates noise-free, simplifying negotiations with site property owners and minimizing environmental impacts. Installation can easily be done by a single person because the Alcatel-Lucent RRH2x40-07-U is compact and weighs less than 23 kg (50 lb), eliminating the need for a crane to hoist the BTS cabinet to the rooftop. A site can be in operation in less than one day — a fraction of the time required for a traditional BTS.

Excellent RF performance

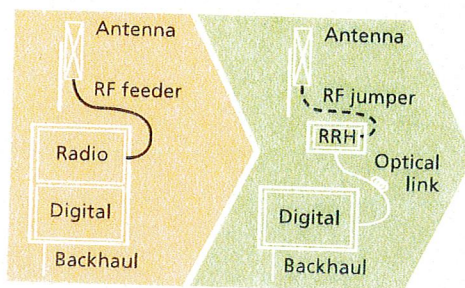
Because of its small size and weight, the Alcatel-Lucent RRH2x40-07-U can be installed close to the antenna. Operators can therefore locate the Alcatel-Lucent RRH2x40-07-U where RF engineering is deemed ideal, minimizing trade-offs between available sites and RF optimum sites. The RF feeder cost and installation costs are reduced or eliminated, and there is no need for a Tower Mounted Amplifier (TMA) because losses introduced by the RF feeder are greatly reduced. The Alcatel-Lucent RRH2x40-07-U provides more RF power while at the same time consuming less electricity.



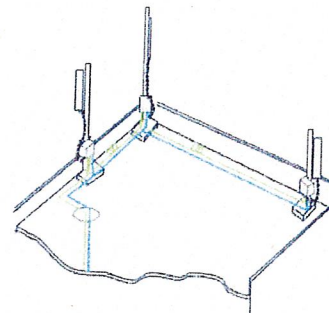
Macro

Features

- Zero-footprint deployment
- Easy installation, with a lightweight unit can be carried and set up by one person
- Optimized RF power, with flexible site selection and elimination of a TMA
- Convection-cooled (fanless), noise-free, and heaterless unit
- Best-in-class power efficiency, with significantly reduced energy consumption



RRH for space-constrained cell sites



Distributed

Benefits

- Leverages existing real estate with lower site costs
- Reduces installation costs, with fewer installation materials and simplified logistics
- Decreases power costs and minimizes environmental impacts, with the potential for eco-sustainable power options
- Improves RF performance and adds flexibility to network planning

Technical specifications

Physical dimensions

- Height: 390 mm (15.4 in.)
- Width: 380 mm (15 in.)
- Depth: 210 mm (8.2 in.)
- Weight (without mounting kit): less than 23 kg (50 lb)

Power

- Power supply: -48V

Operating environment

- Outdoor temperature range:
 - With solar load: -40°C to +50°C (-40°F to +122°F)
 - Without solar load: -40°C to +55°C (-40°F to +131°F)
- Passive convection cooling (no fans)

- Enclosure protection
 - IP65 (International Protection rating)

RF characteristics

- Frequency band: 700 MHz; 3GPP Band 13
- Bandwidth: up to 10 MHz
- RF output power at antenna port:
 - 40 W nominal RF power for each Tx port
- Rx diversity: 2-way or 4-way
- Noise figure: below 2.5 dB typical
- ALD features
 - TMA
 - Remote electrical tilt (RET) support (AISG v2.0)

Optical characteristics

Type/number of fibers

- Up to 3.12 Gb/s line bit rate
- Single-mode variant
 - One SM fiber (9/125 μm) per RRH2x, carrying UL and DL using CWDM (at 1550/1310 nm)
- Multi-mode variant
 - Two MM fibers (50/125 μm) per RRH2x: one carrying UL, the other carrying DL (at 850 nm)

Optical fiber length

- Up to 500 m (0.31 mi), using MM fiber
- Up to 20 km (12.43 mi), using SM fiber

Alarms and ports

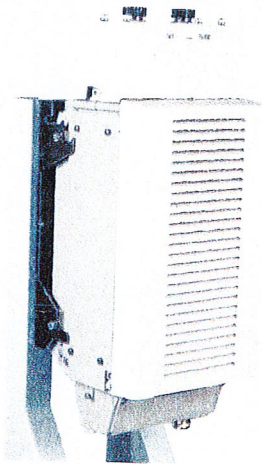
- Six external alarms
- Two optical ports to support daisy-chaining

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Alcatel-Lucent RRH2x40-AWS

REMOTE RADIO HEAD

The Alcatel-Lucent RRH2x40-AWS is a high-power, small form-factor Remote Radio Head (RRH) operating in the AWS frequency band (1700/2100MHz - 3GPP Band 4). The Alcatel-Lucent RRH2x40-AWS is designed with an eco-efficient approach, providing operators with the means to achieve high quality and capacity coverage with minimum site requirements.



A distributed eNodeB expands deployment options by using two components, a Base Band Unit (BBU) containing the digital assets and a separate RRH containing the radio-frequency (RF) elements. This modular design optimizes available space and allows the main components of an eNodeB to be installed separately, within the same site or several kilometres apart.

The Alcatel-Lucent RRH2x40-AWS is linked to the BBU by an optical-fiber connection carrying downlink and uplink digital radio signals along with operations, administration and maintenance (OA&M) information. The Alcatel-Lucent RRH2x40-AWS has two transmit RF paths, 40 W RF output power per transmit path, and is designed to manage up to four-way receive diversity. The device is ideally suited to support macro coverage, with multiple-input multiple-output (MIMO) 2x2 operation in up to 20 MHz of bandwidth.

The Alcatel-Lucent RRH2x40-AWS is designed to make available all the benefits of a distributed eNodeB, with excellent RF characteristics, with low

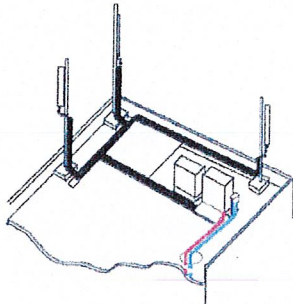
capital expenditures (CAPEX) and low operating expenditures (OPEX). The limited space available in some sites may prevent the installation of traditional single-cabinet BTS equipment or require costly cranes to be employed, leaving coverage holes. However, many of these sites can host an Alcatel-Lucent RRH2x40-AWS installation, providing more flexible site selection and improved network quality along with greatly reduced installation time and costs.

Fast, low-cost installation and deployment

The Alcatel-Lucent RRH2x40-AWS is a zero-footprint solution and operates noise-free, simplifying negotiations with site property owners and minimizing environmental impacts. Installation can easily be done by a single person because the Alcatel-Lucent RRH2x40-AWS is compact and weighs less than 20 kg (44 lb), eliminating the need for a crane to hoist the BTS cabinet to the rooftop. A site can be in operation in less than one day — a fraction of the time required for a traditional BTS.

Excellent RF performance

Because of its small size and weight, the Alcatel-Lucent RRH2x40-AWS can be installed close to the antenna. Operators can therefore locate the Alcatel-Lucent RRH2x40-AWS where RF engineering is deemed ideal, minimizing trade-offs between available sites and RF optimum sites. The RF feeder cost and installation costs are reduced or eliminated, and there is no need for a Tower Mounted Amplifier (TMA) because losses introduced by the RF feeder are greatly reduced. The Alcatel-Lucent RRH2x40-AWS provides more RF power while at the same time consuming less electricity.



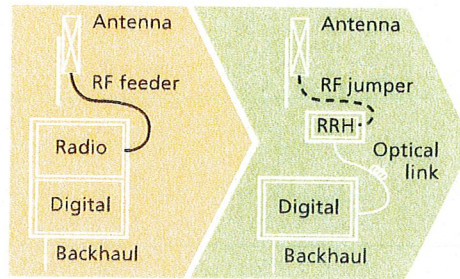
Macro

Features

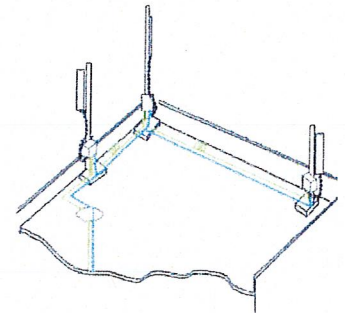
- Zero-footprint deployment
- Easy installation, with a lightweight unit can be carried and set up by one person
- Optimized RF power, with flexible site selection and elimination of a TMA
- Convection-cooled (fanless)
- Noise-free
- Best-in-class power efficiency, with significantly reduced energy consumption

Benefits

- Leverages existing real estate with lower site costs
- Reduces installation costs, with fewer installation materials and simplified logistics
- Decreases power costs and minimizes environmental impacts, with the potential for eco-sustainable power options
- Improves RF performance and adds flexibility to network planning



RRH for space-constrained cell sites



Distributed

Technical specifications

Physical dimensions

- Height: 620 mm (24.4 in.)
- Width: 270 mm (10.63 in.)
- Depth: 170mm (6.7 in.)
- Weight (without mounting kit): less than 20 kg (44 lb)

Power

- Power supply: -48VDC

Operating environment

- Outdoor temperature range:
 - With solar load: -40°C to +50°C (-40°F to +122°F)
 - Without solar load: -40°C to +55°C (-40°F to +131°F)

- Passive convection cooling (no fans)
- Enclosure protection
 - IP65 (International Protection rating)

RF characteristics

- Frequency band: 1700/2100 MHz (AWS); 3GPP Band 4
- Bandwidth: up to 20 MHz
- RF output power at antenna port: 40 W nominal RF power for each Tx port
- Rx diversity: 2-way or 4-way with optional Rx Diversity module
- Noise figure: below 2.0 dB typical
- Antenna Line Device features
 - TMA and Remote electrical tilt (RET) support via AISG v2.0

Optical characteristics

Type/number of fibers

- Single-mode variant
 - One Single Mode Single Fiber per RRH2x, carrying UL and DL using CWDM
 - Single mode dual fiber (SM/DF)
- Multi-mode variant
 - Two Multi-mode fibers per RRH2x: one carrying UL, the other carrying DL

Optical fiber length

- Up to 500 m (0.31 mi), using MM fiber
- Up to 20 km (12.43 mi), using SM fiber

Digital Ports and Alarms

- Two optical ports to support daisy-chaining
- Six external alarms

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HYBRIFLEX™ RRH Hybrid Feeder Cabling Solution, 1-5/8", Single-Mode Fiber

Product Description

RFS' HYBRIFLEX Remote Radio Head (RRH) hybrid feeder cabling solution combines optical fiber and DC power for RRHs in a single lightweight aluminum corrugated cable, making it the world's most innovative solution for RRH deployments.

It was developed to reduce installation complexity and costs at Cellular sites. HYBRIFLEX allows mobile operators deploying an RRH architecture to standardize the RRH installation process and eliminate the need for and cost of cable grounding. HYBRIFLEX combines optical fiber (multi-mode or single-mode) and power in a single corrugated cable. It eliminates the need for junction boxes and can connect multiple RRHs with a single feeder. Standard RFS CELLFLEX® accessories can be used with HYBRIFLEX cable. Both pre-connectorized and on-site options are available.

Features/Benefits

- Aluminum corrugated armor with outstanding bending characteristics - minimizes installation time and enables mechanical protection and shielding
- Same accessories as 1 5/8" coaxial cable
- Outer conductor grounding - Eliminates typical grounding requirements and saves on installation costs
- Lightweight solution and compact design - Decreases tower loading
- Robust cabling - Eliminates need for expensive cable trays and ducts
- Installation of tight bundled fiber optic cable pairs directly to the RRH - Reduces CAPEX and wind load by eliminating need for interconnection
- Optical fiber and power cables housed in single corrugated cable - Saves CAPEX by standardizing RRH cable installation and reducing installation requirements
- Outdoor polyethylene jacket - Ensures long-lasting cable protection

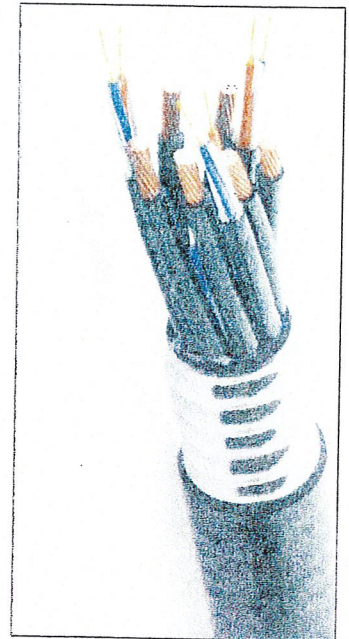


Figure 1: HYBRIFLEX Series

Technical Specifications

| | | | |
|--|--------------------------------|-------------------|--|
| Structure | | | |
| Outer Conductor Armor: | Corrugated Aluminum | (mm (in)) | 46.5 (1.83) |
| Jacket: | Polyethylene, PE | (mm (in)) | 50.3 (1.98) |
| UV-Protection: | Individual and External Jacket | | Yes |
| Mechanical Properties | | | |
| Weight, Approximate | | [kg/m (lb/ft)] | 1.9 (1.30) |
| Minimum Bending Radius, Single Bending | | (mm (in)) | 200 (8) |
| Minimum Bending Radius, Repeated Bending | | (mm (in)) | 500 (20) |
| Recommended/Maximum Clamp Spacing | | (m (ft)) | 1.0 / 1.2 (3.25 / 4.0) |
| Electrical Properties | | | |
| DC-Resistance Outer Conductor Armor | | [Ω/km (Ω/1000ft)] | 068 (0.205) |
| DC-Resistance Power Cable, 8 4mm ² (8AWG) | | [Ω/km (Ω/1000ft)] | 2.1 (0.307) |
| Fiber Optic Properties | | | |
| Version | | | Single-mode OM3 |
| Quantity, Fiber Count | | | 16 (8 pairs) |
| Core/Clad | | [μm] | 50/125 |
| Primary Coating (Acrylate) | | [μm] | 245 |
| Buffer Diameter, Nominal | | [μm] | 900 |
| Secondary Protection, Jacket, Nominal | | (mm (in)) | 2.0 (0.08) |
| Minimum Bending Radius | | (mm (in)) | 104 (4.1) |
| Insertion Loss @ wavelength 850nm | | dB/km | 3.0 |
| Insertion Loss @ wavelength 1310nm | | dB/km | 1.0 |
| Standards (Meets or exceeds) | | | UL94-V0, UL1666 RoHS Compliant |
| DC Power Cable Properties | | | |
| Size (Power) | | (mm (AWG)) | 8.4 (8) |
| Quantity, Wire Count (Power) | | | 16 (8 pairs) |
| Size (Alarm) | | (mm (AWG)) | 0.8 (18) |
| Quantity, Wire Count (Alarm) | | | 4 (2 pairs) |
| Type | | | UV protected |
| Strands | | | 19 |
| Primary Jacket Diameter, Nominal | | (mm (in)) | 6.8 (0.27) |
| Standards (Meets or exceeds) | | | NFPA 130, IEC 60332-3-21 UL Type XHHW-2, UL 44 UL-LS Limited Smoke, UL VW-1 IEEE-383 (1974), IEEE1202/FT4 RoHS Compliant |
| Environment | | | |
| Installation Temperature | | [°C (°F)] | -40 to +65 (-40 to 149) |
| Operation Temperature | | [°C (°F)] | -40 to +65 (-40 to 149) |

* This data is provisional and subject to change

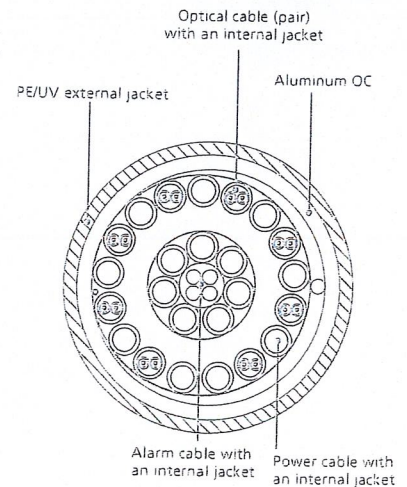


Figure 2: Construction Detail

All information contained in the present datasheet is subject to confirmation at time of ordering.

| Site Name: North Bridgeport Tower Height: Verizon @ 155ft | | General | | Power | | Density | | | | | | | |
|--|------------|-------------|------------|------------------|-------------|--------------------|--------------|-------|--|--|--|--|---------------|
| CARRIER | # OF CHAN. | WATTS ERP | HEIGHT | CALC. POWER DENS | FREQ. | MAX. PERMISS. EXP. | FRACTION MPE | Total | | | | | |
| *Marcus | 5 | 100 | 217 | 0.0038 | 450 | 0.3000 | 1.27% | | | | | | |
| *Marcus | 5 | 100 | 217 | 0.0038 | 450 | 0.3000 | 1.27% | | | | | | |
| *Marcus | 1 | 0.1 | 237 | 0.0000 | 5.8GHZ | 1.0000 | 0.00% | | | | | | |
| *AT&T UMTS | 1 | 500 | 165 | 0.0066 | 1900 | 1.0000 | 0.66% | | | | | | |
| *AT&T UMTS | 1 | 500 | 165 | 0.0066 | 880 | 0.5867 | 1.13% | | | | | | |
| *AT&T GSM | 1 | 427 | 165 | 0.0056 | 1900 | 1.0000 | 0.56% | | | | | | |
| *AT&T LTE | 1 | 500 | 165 | 0.0066 | 734 | 0.4893 | 1.35% | | | | | | |
| *Red Star | 1 | 150 | 217 | 0.0011 | 44 | 0.2000 | 0.57% | | | | | | |
| *Metrocall | 1 | 150 | 239 | 0.0009 | 75 | 0.2000 | 0.47% | | | | | | |
| *Metrocall | 1 | 3500 | 240 | 0.0218 | 930 | 0.6200 | 3.52% | | | | | | |
| *Clinton Tower | 1 | 3500 | 223 | 0.0253 | 930 | 0.6200 | 4.08% | | | | | | |
| *AAT | 1 | 3500 | 235 | 0.0228 | 930 | 0.6200 | 3.68% | | | | | | |
| *Nextel | 8 | 100 | 187 | 0.0082 | 851 | 0.5673 | 1.45% | | | | | | |
| *Clearwire | 2 | 153 | 187 | 0.0031 | 2496 | 1.0000 | 0.31% | | | | | | |
| *Clearwire | 1 | 211 | 187 | 0.0022 | 11 GHz | 1.0000 | 0.22% | | | | | | |
| *Sprint CDMA/LTE | 7 | 778 | 180.6 | 0.0600 | 1900 | 1.0000 | 6.00% | | | | | | |
| *Sprint CDMA/LTE | 1 | 438 | 180.6 | 0.0048 | 850 | 0.5667 | 0.85% | | | | | | |
| *Sprint/Nextel WiMAX | 3 | 562 | 187 | 0.0173 | 2657 | 1.0000 | 1.73% | | | | | | |
| *Sprint/Nextel Microwave | 2 | 4074 | 180 | 0.0904 | 19500 | 1.0000 | 9.04% | | | | | | |
| *Sprint/Nextel Microwave | 2 | 1097 | 180 | 0.0243 | 22500 | 1.0000 | 2.43% | | | | | | |
| *Sprint/Nextel Microwave | 2 | 692 | 180 | 0.0154 | 22500 | 1.0000 | 1.54% | | | | | | |
| *T-Mobile LTE | 2 | 24 | 205 | 0.0004 | 2100 | 1.0000 | 0.04% | | | | | | |
| *T-Mobile GSM/UMTS | 2 | 12 | 205 | 0.0002 | 1950 | 1.0000 | 0.02% | | | | | | |
| *T-Mobile UMTS | 2 | 12 | 205 | 0.0002 | 2100 | 1.0000 | 0.02% | | | | | | |
| *MetroPCS | 7 | 735 | 195 | 0.0487 | 2310 | 1.0000 | 4.87% | | | | | | |
| Verizon PCS | 15 | 236 | 155 | 0.0530 | 1970 | 1.0000 | 5.30% | | | | | | |
| Verizon Cellular | 9 | 247 | 155 | 0.0333 | 869 | 0.5793 | 5.74% | | | | | | |
| Verizon AWS | 1 | 1750 | 155 | 0.0262 | 2145 | 1.0000 | 2.62% | | | | | | |
| Verizon 700 | 1 | 1050 | 155 | 0.0157 | 698 | 0.4653 | 3.38% | | | | | | |
| * Source: Siting Council | | | | | | | | | | | | | 64.14% |



Structural Components, LLC
2400 Central Ave.
Suite A-1 South
Boulder, CO 80301

Voice: 866-386-7622
Fax: 303-962-3577

February 19, 2013

John Hernandez
Global Tower Partners
750 Park of Commerce Blvd.
Suite 300
Boca Raton, FL 33487

Re: Structural Analysis Report
Structure: 240ft ROHN Self Support Tower
Site Address: 1000 Trumbull Ave., Bridgeport, CT 06606
Lat: 41.21962°N, Long: 73.20134°W
Site Name: Verizon - North Bridgeport
GTP - Tartaglia
Site Number: GTP - CT-5035
SC Number: 130116
Status: **FAILS (139.3% Capacity)**

Dear Mr. Hernandez:

Per your request, Structural Components, LLC has completed a structural analysis for the above referenced project to verify the tower's compliance to the following design criteria:

| | |
|--------------------------------------|---|
| Standard: | TIA/EIA-222-F <i>Structural Standards for Steel Antenna Towers and Antenna Supporting Structures</i> |
| Building Code: | 2003 International Building Code |
| Design Basic Wind Speed without Ice: | 85 mph fastest mile (equivalent to 100 mph 3-second gust) |
| Design Basic Wind Speed with Ice: | 74 mph fastest mile (equivalent to 88 mph 3-second gust) |
| Ice Thickness: | 1/2" radial |
| Serviceability Basic Wind Speed: | 50 mph fastest mile (equivalent to 60 mph 3-second gust) |

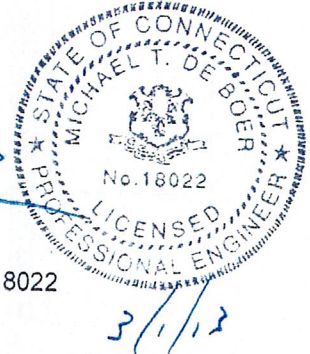
Please refer to the following structural analysis report, which gives complete details of the tower loading, results, information provided, and necessary assumptions.

We trust you find this report satisfactory. Please do not hesitate to contact us if you should have any questions or concerns.

Best Regards,
Structural Components LLC

Roger Beckner, E.I.T.
Structural Engineering Dept

Michael DeBoer, P.E.
Connecticut P.E. # 0018022
Expires: 01/31/2014



LOADING CONFIGURATION CONT.

| Elev. (ft) ⁽¹⁾ | Appurtenance | Line | Face ⁽²⁾ | Notes |
|---------------------------|--|------------|---------------------|---------------------|
| 137.0 | (1) 8' x 1.5" Omni (1) Side Arm Mount | --- | --- | DEAD ⁽³⁾ |
| 132.0 | (1) 4' 32-Element Yagi (1) Side Arm Mount | (1) 7/16" | AB | DEAD ⁽³⁾ |
| 118.0 | (1) 10' x 2" Omni (1) Side Arm Mount | (1) 7/8" | BC | Existing |
| 108.0 | (1) 10' x 3" Omni (1) Side Arm Mount | (1) 1-1/4" | BC | Existing |
| 99.0 | (1) 4' 32-Element Yagi (1) Side Arm Mount | (1) 7/16" | AB | DEAD ⁽³⁾ |
| 80.0 | (1) Empty Side Arm Mount | --- | --- | Existing |
| 22.0 | (1) 3' Dish w/o Radome (1) Pipe Mount | (1) CAT5 | CA | Existing |
| 20.0 | (1) GPS w/ Mount | (1) 1/2" | CA | Verizon Existing |
| 8.0 | (1) GPS w/ Mount | (1) 1/2" | CA | T-Mobile Existing |

- 1) Elevations reference centerline of panel, yagi, and dish antennas, and base of whip antennas, in relation to the base of the tower.
- 2) "Face" designates which face of the tower (AB, BC, CA) the coax is assumed to be placed. See coax layout in Appendix A for assumed placement. If coax placement differs from what is noted in this report, contact Structural Components for further analysis.
- 3) The loads that are considered as "DEAD" have been considered in the current analysis. The loads should be removed from the tower to provide additional capacity.
- 4) Sprint's temporary loading has been considered in the current analysis.

3 PROVIDED INFORMATION AND ASSUMPTIONS

Information about the tower was provided by Global Tower Partners. Structural Components, LLC visited the site on 12/22/2012 for a line and antenna mapping.

| Data | Document | Author | Date | File |
|--------------------------------|---|--|--------------------------|--------------------|
| Tower | Original Tower Design Structural Analysis | UNR-Rohn Structural Components, LLC | 03/09/1988 12/28/2012 | 23253DB 121086 |
| Existing and Proposed Loads | Collocation Application Existing Loading Table | GTP/Verizon GTP | 01/15/2013 11/16/2012 | CT-5035 CT-5035 |
| Foundation | Original Tower Design | UNR-Rohn | 03/09/1988 | 23253DB |
| Soils | Geotechnical Report | Soiltesting, Inc. | 01/06/1988 | G96-1987-87 |

The following assumptions were made in order to complete the analysis. These assumptions must be checked. If they do not accurately represent the existing or proposed tower, foundation, soil, and loading conditions, we must be notified so that we can make the appropriate changes to our analysis, conclusions, and recommendations.

1. The tower and foundation are constructed as shown in the provided drawings, previous structural analysis reports, mapping reports, photos, and/or other documents.
2. The tower and foundation are in good condition with no corrosion, damage or fatiguing issues which could reduce the carrying capacity of the tower.
3. The tower has been properly maintained in accordance with industry standards.
4. The tower and foundation have not been modified except as indicated in the provided information or in this report.
5. The pipe grades for all members are assumed to have a yield stress of 50ksi. All other members are 36ksi yield stress.
6. All connection bolts are considered to be A325N.

4 CONCLUSIONS

To the best of our knowledge and belief the tower does not satisfy the requirements of the applicable codes and standards having jurisdiction over the work for the loadings and conditions as outlined in this report. **Structural modifications are required at this time.**

5 RECOMMENDATIONS

Provided the assumptions outlined are accurate, we recommend the following modifications:

1. Replace or reinforce Redundant Diagonals 1 from 0-30ft.
2. Replace or reinforce Main Diagonals from 0-30ft.
3. Replace or reinforce Main Diagonals from 100 - 120ft
4. Replace or reinforce Main Diagonals from 140 - 160ft.
5. Provide a more recent geotechnical report in order for a more accurate description of the soils.

Please note that these upgrade recommendations are for estimation purposes only.

A descriptive and detailed reinforcement modification recommendation, with a structural analysis of proof of passing is available upon order.

Full modification drawings are also available upon order.

| | | |
|--|---|--------------------------------------|
| tnxTower Structural Components, LLC 2400 Central Ave, Suite A-1 South Boulder, CO 80301 Phone: (866) 386-7266 FAX: (303) 962-9087 | Job 130116 | Page 1 of 33 |
| | Project Tartaglia (CT-5035) | Date 14:08:24 02/19/13 |
| | Client GTP | Designed by RB |

Tower Input Data

The main tower is a 3x free standing tower with an overall height of 240.00 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 10.93 ft at the top and 40.33 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 85 mph.
- Nominal ice thickness of 0.5000 in.
- Ice density of 56 pcf.
- A wind speed of 74 mph is used in combination with ice.
- Temperature drop of 50 °F.
- Deflections calculated using a wind speed of 50 mph.
- A non-linear (P-delta) analysis was used.
- 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.

Options

- | | | |
|--|--|---|
| <ul style="list-style-type: none"> Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification √ Use Code Stress Ratios √ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile Include Bolts In Member Capacity Leg Bolts Are At Top Of Section √ Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) Add IBC .6D+W Combination | <ul style="list-style-type: none"> Distribute Leg Loads As Uniform Assume Legs Pinned √ Assume Rigid Index Plate √ Use Clear Spans For Wind Area √ Use Clear Spans For KL/r Retension Guys To Initial Tension Bypass Mast Stability Checks √ Use Azimuth Dish Coefficients √ Project Wind Area of Appurt. Autocalc Torque Arm Areas SR Members Have Cut Ends √ Sort Capacity Reports By Component Triangulate Diamond Inner Bracing | <ul style="list-style-type: none"> Treat Feedline Bundles As Cylinder Use ASCE 10 X-Brace Ly Rules √ Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation √ Consider Feedline Torque √ Include Angle Block Shear Check <li style="padding-left: 40px;">Poles Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets |
|--|--|---|

| | | | | |
|--|---------|---------------------|-------------|-------------------|
| tnxTower Structural Components, LLC 2400 Central Ave, Suite A-1 South Boulder, CO 80301 Phone: (866) 386-7266 FAX: (303) 962-9087 | Job | 130116 | Page | 3 of 33 |
| | Project | Tartaglia (CT-5035) | Date | 14:08:24 02/19/13 |
| | Client | GTP | Designed by | RB |
| | | | | |

| Tower Section | Tower Elevation ft | Diagonal Spacing ft | Bracing Type | Has K Brace End Panels | Has Horizontals | Top Girt Offset in | Bottom Girt Offset in |
|---------------|-----------------------|------------------------|--------------|------------------------|-----------------|-----------------------|--------------------------|
| T5 | 160.00-140.00 | 10.00 | K Brace Down | No | Yes | 0.0000 | 0.0000 |
| T6 | 140.00-120.00 | 10.00 | K Brace Down | No | Yes | 0.0000 | 0.0000 |
| T7 | 120.00-100.00 | 20.00 | K1 Down | No | Yes | 0.0000 | 0.0000 |
| T8 | 100.00-80.00 | 20.00 | K1 Down | No | Yes | 0.0000 | 0.0000 |
| T9 | 80.00-60.00 | 20.00 | K1 Down | No | Yes | 0.0000 | 0.0000 |
| T10 | 60.00-30.00 | 30.00 | K2 Down | No | Yes | 0.0000 | 0.0000 |
| T11 | 30.00-0.00 | 30.00 | K2 Down | No | Yes | 0.0000 | 0.0000 |

Tower Section Geometry (cont'd)

| Tower Elevation ft | Leg Type | Leg Size | Leg Grade | Diagonal Type | Diagonal Size | Diagonal Grade |
|-----------------------|----------|--------------------|------------------|---------------|------------------------|------------------|
| T1 240.00-220.00 | Pipe | P8x.5 (8" x-str) | A572-50 (50 ksi) | Pipe | P2x.154 (2" Std.) | A572-50 (50 ksi) |
| T2 220.00-200.00 | Pipe | P8x.5 (8" x-str) | A572-50 (50 ksi) | Pipe | P2.5x.203 (2 1/2" std) | A572-50 (50 ksi) |
| T3 200.00-180.00 | Pipe | P8x.5 (8" x-str) | A572-50 (50 ksi) | Pipe | P2.5x.203 (2 1/2" std) | A572-50 (50 ksi) |
| T4 180.00-160.00 | Pipe | P8x.5 (8" x-str) | A572-50 (50 ksi) | Pipe | P2.5x.203 (2 1/2" std) | A572-50 (50 ksi) |
| T5 160.00-140.00 | Pipe | ROHN 8 EH | A572-50 (50 ksi) | Pipe | P2.5x.203 (2 1/2" std) | A572-50 (50 ksi) |
| T6 140.00-120.00 | Pipe | P8x.5 (8" x-str) | A572-50 (50 ksi) | Pipe | P3x.216 (3" std) | A572-50 (50 ksi) |
| T7 120.00-100.00 | Pipe | P8x.5 (8" x-str) | A572-50 (50 ksi) | Pipe | P2.5x.203 (2 1/2" std) | A572-50 (50 ksi) |
| T8 100.00-80.00 | Pipe | ROHN 8 EH | A572-50 (50 ksi) | Pipe | P3x.216 (3" std) | A572-50 (50 ksi) |
| T9 80.00-60.00 | Pipe | P10x.5 (10" x-str) | A572-50 (50 ksi) | Pipe | P3x.216 (3" std) | A572-50 (50 ksi) |
| T10 60.00-30.00 | Pipe | P10x.5 (10" x-str) | A572-50 (50 ksi) | Pipe | P3x.216 (3" std) | A572-50 (50 ksi) |
| T11 30.00-0.00 | Pipe | P10x.5 (10" x-str) | A572-50 (50 ksi) | Pipe | P3x.216 (3" std) | A572-50 (50 ksi) |

Tower Section Geometry (cont'd)

| Tower Elevation ft | No. of Mid Girts | Mid Girt Type | Mid Girt Size | Mid Girt Grade | Horizontal Type | Horizontal Size | Horizontal Grade |
|-----------------------|------------------|---------------|---------------|----------------|-----------------|------------------------|------------------|
| T1 240.00-220.00 | None | Flat Bar | | A36 (36 ksi) | Pipe | P2x.154 (2" Std.) | A572-50 (50 ksi) |
| T2 220.00-200.00 | None | Flat Bar | | A36 (36 ksi) | Pipe | P2x.154 (2" Std.) | A572-50 (50 ksi) |
| T3 200.00-180.00 | None | Flat Bar | | A36 (36 ksi) | Pipe | P2x.154 (2" Std.) | A572-50 (50 ksi) |
| T4 180.00-160.00 | None | Flat Bar | | A36 (36 ksi) | Pipe | P2.5x.203 (2 1/2" std) | A572-50 (50 ksi) |
| T5 160.00-140.00 | None | Flat Bar | | A36 (36 ksi) | Pipe | P2.5x.203 (2 1/2" std) | A572-50 (50 ksi) |

| | | |
|--|---------------------------------------|----------------------------------|
| tnxTower Structural Components, LLC 2400 Central Ave, Suite A-1 South Boulder, CO 80301 Phone: (866) 386-7266 FAX: (303) 962-9087 | Job 130116 | Page 5 of 33 |
| | Project Tartaglia (CT-5035) | Date 14:08:24 02/19/13 |
| | Client GTP | Designed by RB |

| Tower Elevation ft | Redundant Bracing Grade | Redundant Type | Redundant Size | K Factor |
|-----------------------|-------------------------|----------------|------------------------|----------|
| T8 100.00-80.00 | A572-50 (50 ksi) | Hip Diagonal | P2.5x.203 (2.5" Std) | 1 |
| | | Horizontal (1) | P1.5x.145 (1 1/2" std) | 1 |
| | | Diagonal (1) | P2x.154 (2" Std.) | 1 |
| | | Hip (1) | P1.5x.145 (1 1/2" std) | 1 |
| T9 80.00-60.00 | A572-50 (50 ksi) | Hip Diagonal | P2.5x.203 (2 1/2" std) | 1 |
| | | Horizontal (1) | P1.5x.145 (1 1/2" std) | 1 |
| | | Diagonal (1) | P2x.154 (2" Std.) | 1 |
| | | Hip (1) | P1.5x.145 (1 1/2" std) | 1 |
| T10 60.00-30.00 | A572-50 (50 ksi) | Hip Diagonal | P3x.216 (3" std) | 1 |
| | | Horizontal (1) | P1.5x.145 (1 1/2" std) | 1 |
| | | Horizontal (2) | P2x.154 (2" Std.) | 1 |
| | | Diagonal (1) | P1.5x.145 (1 1/2" std) | 1 |
| | | Diagonal (2) | P2x.154 (2" Std.) | 1 |
| | | Hip (1) | P1.5x.145 (1 1/2" std) | 1 |
| T11 30.00-0.00 | A572-50 (50 ksi) | Hip (2) | P1.5x.145 (1 1/2" std) | 1 |
| | | Hip Diagonal | P3x.216 (3" std) | 1 |
| | | Horizontal (1) | P1.5x.145 (1 1/2" std) | 1 |
| | | Horizontal (2) | P2x.154 (2" Std.) | 1 |
| | | Diagonal (1) | P1.5x.145 (1 1/2" std) | 1 |
| | | Diagonal (2) | P2.5x.203 (2 1/2" std) | 1 |
| | | Hip (1) | P1.5x.145 (1 1/2" std) | 1 |
| | | Hip (2) | P2x.154 (2" Std.) | 1 |
| | | Hip Diagonal | P3x.216 (3" std) | 1 |

Tower Section Geometry (cont'd)

| Tower Elevation ft | Gusset Area (per face) ft ² | Gusset Thickness in | Gusset Grade | Adjust. Factor A _f | Adjust. Factor A _r | Weight Mult. | Double Angle Stitch Bolt Spacing Diagonals in | Double Angle Stitch Bolt Spacing Horizontals in |
|-----------------------|--|------------------------|-----------------|----------------------------------|----------------------------------|--------------|---|---|
| T1 240.00-220.00 | 0.00 | 0.0000 | A36 (36 ksi) | 1 | 1 | 1 | 36.0000 | 36.0000 |
| T2 220.00-200.00 | 0.00 | 0.0000 | A36 (36 ksi) | 1 | 1 | 1 | 36.0000 | 36.0000 |
| T3 200.00-180.00 | 0.00 | 0.0000 | A36 (36 ksi) | 1 | 1 | 1 | 36.0000 | 36.0000 |
| T4 180.00-160.00 | 0.00 | 0.0000 | A36 (36 ksi) | 1 | 1 | 1 | 36.0000 | 36.0000 |
| T5 160.00-140.00 | 0.00 | 0.0000 | A36 (36 ksi) | 1 | 1 | 1 | 36.0000 | 36.0000 |
| T6 140.00-120.00 | 0.00 | 0.0000 | A36 (36 ksi) | 1 | 1 | 1 | 36.0000 | 36.0000 |
| T7 120.00-100.00 | 0.00 | 0.0000 | A36 (36 ksi) | 1 | 1 | 1 | 36.0000 | 36.0000 |
| T8 100.00-80.00 | 0.00 | 0.0000 | A36 (36 ksi) | 1 | 1 | 1 | 36.0000 | 36.0000 |
| T9 80.00-60.00 | 0.00 | 0.0000 | A36 (36 ksi) | 1 | 1 | 1 | 36.0000 | 36.0000 |
| T10 60.00-30.00 | 0.00 | 0.0000 | A36 (36 ksi) | 1 | 1 | 1 | 36.0000 | 36.0000 |
| T11 30.00-0.00 | 0.00 | 0.0000 | A36 (36 ksi) | 1 | 1 | 1 | 36.0000 | 36.0000 |

| | | | | |
|--|---------|---------------------|-------------|-------------------|
| tnxTower Structural Components, LLC 2400 Central Ave, Suite A-1 South Boulder, CO 80301 Phone: (866) 386-7266 FAX: (303) 962-9087 | Job | 130116 | Page | 7 of 33 |
| | Project | Tartaglia (CT-5035) | Date | 14:08:24 02/19/13 |
| | Client | GTP | Designed by | RB |

| Tower Elevation ft | Leg | | Diagonal | | Top Girt | | Bottom Girt | | Mid Girt | | Long Horizontal | | Short Horizontal | |
|-----------------------|---------------------------|---|---------------------------|------|---------------------------|------|---------------------------|------|---------------------------|------|---------------------------|------|---------------------------|------|
| | Net Width Deduct in | U | Net Width Deduct in | U | Net Width Deduct in | U | Net Width Deduct in | U | Net Width Deduct in | U | Net Width Deduct in | U | Net Width Deduct in | U |
| T10 60.00-30.00 | 0.0000 | 1 | 0.0000 | 0.75 | 0.0000 | 0.75 | 0.0000 | 0.75 | 0.0000 | 0.75 | 0.0000 | 0.75 | 0.0000 | 0.75 |
| T11 30.00-0.00 | 0.0000 | 1 | 0.0000 | 0.75 | 0.0000 | 0.75 | 0.0000 | 0.75 | 0.0000 | 0.75 | 0.0000 | 0.75 | 0.0000 | 0.75 |

Tower Section Geometry (cont'd)

| Tower Elevation ft | Leg Connection Type | Leg | | Diagonal | | Top Girt | | Bottom Girt | | Mid Girt | | Long Horizontal | | Short Horizontal | |
|-----------------------|------------------------|-----------------|-----|-----------------|-----|-----------------|-----|-----------------|-----|-----------------|-----|-----------------|-----|------------------|-----|
| | | Bolt Size in | No. | Bolt Size in | No. | Bolt Size in | No. | Bolt Size in | No. | Bolt Size in | No. | Bolt Size in | No. | Bolt Size in | No. |
| T1 240.00-220.00 | Flange | 1.0000 | 8 | 0.6250 | 3 | 0.6250 | 2 | 0.6250 | 0 | 0.6250 | 0 | 0.6250 | 2 | 0.6250 | 0 |
| T2 220.00-200.00 | Flange | 1.0000 | 8 | 0.6250 | 3 | 0.6250 | 2 | 0.6250 | 0 | 0.6250 | 0 | 0.6250 | 2 | 0.6250 | 0 |
| T3 200.00-180.00 | Flange | 1.0000 | 8 | 0.6250 | 3 | 0.6250 | 2 | 0.6250 | 0 | 0.6250 | 0 | 0.6250 | 2 | 0.6250 | 0 |
| T4 180.00-160.00 | Flange | 1.0000 | 8 | 0.6250 | 3 | 0.6250 | 2 | 0.6250 | 0 | 0.6250 | 0 | 0.6250 | 2 | 0.6250 | 0 |
| T5 160.00-140.00 | Flange | 1.0000 | 8 | 0.6250 | 3 | 0.6250 | 2 | 0.6250 | 0 | 0.6250 | 0 | 0.6250 | 2 | 0.6250 | 0 |
| T6 140.00-120.00 | Flange | 1.0000 | 8 | 0.6250 | 3 | 0.6250 | 2 | 0.6250 | 0 | 0.6250 | 0 | 0.6250 | 2 | 0.6250 | 0 |
| T7 120.00-100.00 | Flange | 1.0000 | 8 | 0.7500 | 3 | 0.7500 | 2 | 0.7500 | 0 | 0.6250 | 0 | 0.7500 | 2 | 0.6250 | 0 |
| T8 100.00-80.00 | Flange | 1.0000 | 12 | 0.7500 | 3 | 0.7500 | 2 | 0.6250 | 0 | 0.6250 | 0 | 0.7500 | 2 | 0.6250 | 0 |
| T9 80.00-60.00 | Flange | 1.0000 | 12 | 0.7500 | 3 | 0.7500 | 2 | 0.6250 | 0 | 0.6250 | 0 | 0.7500 | 2 | 0.6250 | 0 |
| T10 60.00-30.00 | Flange | 1.0000 | 12 | 0.7500 | 3 | 0.7500 | 2 | 0.6250 | 0 | 0.6250 | 0 | 0.7500 | 2 | 0.6250 | 0 |
| T11 30.00-0.00 | Flange | 1.0000 | 0 | 0.8750 | 3 | 0.7500 | 2 | 0.6250 | 0 | 0.6250 | 0 | 0.7500 | 2 | 0.6250 | 0 |

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 |
|--------------------------|-------------------|-----------------|-------------------|-----------------|----------------------|--------------------------------|----|-----------------|------------------------|----------------------------|-----------------|---------------|
| LDF6-50A (1-1/4 FOAM) | C | Yes | Ar (CfAe) | 240.00 - 5.00 | 0.0000 | 0.49 | 1 | 1 | 1.5500 | 1.5500 | | 0.66 |
| LDF5-50A (7/8 FOAM) | A | Yes | Ar (CfAe) | 230.00 - 5.00 | 0.0000 | -0.48 | 2 | 2 | 0.5000 | 1.0900 | | 0.33 |
| LDF6-50A (1-1/4 FOAM) | C | Yes | Ar (CfAe) | 223.00 - 5.00 | 0.0000 | 0.47 | 1 | 1 | 1.5500 | 1.5500 | | 0.66 |
| LDF7-50A (1-5/8 FOAM) | A | Yes | Ar (CfAe) | 212.00 - 5.00 | -3.0000 | 0.4 | 12 | 6 | 0.5000 | 1.9800 | | 0.82 |
| LDF5-50A | A | Yes | Ar (CfAe) | 196.00 - 5.00 | 0.0000 | -0.46 | 1 | 1 | 1.0900 | 1.0900 | | 0.33 |

| | | | | |
|--|---------|---------------------|-------------|-------------------|
| tnxTower Structural Components, LLC 2400 Central Ave, Suite A-1 South Boulder, CO 80301 Phone: (866) 386-7266 FAX: (303) 962-9087 | Job | 130116 | Page | 9 of 33 |
| | Project | Tartaglia (CT-5035) | Date | 14:08:24 02/19/13 |
| | Client | GTP | Designed by | RB |
| | | | | |

| Tower Section | Tower Elevation ft | Face | A_R ft ² | A_F ft ² | C_{AA} In Face ft ² | C_{AA} Out Face ft ² | Weight lb |
|---------------|-----------------------|------|--------------------------|--------------------------|--|---|--------------|
| T4 | 180.00-160.00 | C | 7.660 | 0.000 | 0.000 | 0.000 | 45.54 |
| | | A | 29.650 | 0.000 | 0.000 | 0.000 | 256.92 |
| | | B | 47.827 | 0.000 | 0.000 | 0.000 | 406.08 |
| T5 | 160.00-140.00 | C | 34.900 | 0.000 | 0.000 | 0.000 | 182.04 |
| | | A | 64.575 | 0.000 | 0.000 | 0.000 | 578.10 |
| | | B | 53.767 | 0.000 | 0.000 | 0.000 | 435.60 |
| T6 | 140.00-120.00 | C | 36.967 | 0.000 | 0.000 | 0.000 | 192.60 |
| | | A | 70.350 | 0.000 | 0.000 | 0.000 | 631.40 |
| | | B | 54.397 | 0.000 | 0.000 | 0.000 | 437.40 |
| T7 | 120.00-100.00 | C | 36.967 | 0.000 | 0.000 | 0.000 | 192.60 |
| | | A | 70.350 | 0.000 | 0.000 | 0.000 | 631.40 |
| | | B | 54.817 | 0.000 | 0.000 | 0.000 | 438.60 |
| T8 | 100.00-80.00 | C | 39.635 | 0.000 | 0.000 | 0.000 | 203.82 |
| | | A | 70.350 | 0.000 | 0.000 | 0.000 | 631.40 |
| | | B | 55.814 | 0.000 | 0.000 | 0.000 | 441.45 |
| T9 | 80.00-60.00 | C | 41.367 | 0.000 | 0.000 | 0.000 | 212.40 |
| | | A | 70.350 | 0.000 | 0.000 | 0.000 | 631.40 |
| | | B | 55.867 | 0.000 | 0.000 | 0.000 | 441.60 |
| T10 | 60.00-30.00 | C | 41.367 | 0.000 | 0.000 | 0.000 | 212.40 |
| | | A | 105.525 | 0.000 | 0.000 | 0.000 | 947.10 |
| | | B | 83.800 | 0.000 | 0.000 | 0.000 | 662.40 |
| T11 | 30.00-0.00 | C | 62.050 | 0.000 | 0.000 | 0.000 | 318.60 |
| | | A | 89.414 | 0.000 | 0.000 | 0.000 | 793.65 |
| | | B | 69.833 | 0.000 | 0.000 | 0.000 | 552.00 |
| | | C | 51.708 | 0.000 | 0.000 | 265.50 | |

Feed Line/Linear Appurtenances Section Areas - With Ice

| Tower Section | Tower Elevation ft | Face or Leg | Ice Thickness in | A_R ft ² | A_F ft ² | C_{AA} In Face ft ² | C_{AA} Out Face ft ² | Weight lb |
|---------------|-----------------------|-------------|---------------------|--------------------------|--------------------------|--|---|--------------|
| T1 | 240.00-220.00 | A | 0.500 | 1.742 | 1.325 | 0.000 | 0.000 | 25.61 |
| | | B | | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| | | C | | 8.221 | 0.000 | 0.000 | 0.000 | 77.31 |
| T2 | 220.00-200.00 | A | 0.500 | 6.463 | 15.050 | 0.000 | 0.000 | 379.85 |
| | | B | | 0.993 | 2.067 | 0.000 | 0.000 | 59.44 |
| | | C | | 11.833 | 0.000 | 0.000 | 0.000 | 109.82 |
| T3 | 200.00-180.00 | A | 0.500 | 11.237 | 23.317 | 0.000 | 0.000 | 619.77 |
| | | B | | 11.034 | 22.794 | 0.000 | 0.000 | 621.61 |
| | | C | | 12.365 | 0.620 | 0.000 | 0.000 | 122.15 |
| T4 | 180.00-160.00 | A | 0.500 | 13.407 | 28.037 | 0.000 | 0.000 | 741.25 |
| | | B | | 21.127 | 45.783 | 0.000 | 0.000 | 1051.50 |
| | | C | | 30.400 | 20.667 | 0.000 | 0.000 | 528.56 |
| T5 | 160.00-140.00 | A | 0.500 | 26.750 | 62.417 | 0.000 | 0.000 | 1652.16 |
| | | B | | 22.617 | 51.983 | 0.000 | 0.000 | 1140.41 |
| | | C | | 33.800 | 20.667 | 0.000 | 0.000 | 559.16 |
| T6 | 140.00-120.00 | A | 0.500 | 29.233 | 67.583 | 0.000 | 0.000 | 1800.77 |
| | | B | | 24.247 | 51.983 | 0.000 | 0.000 | 1150.50 |
| | | C | | 33.800 | 20.667 | 0.000 | 0.000 | 559.16 |
| T7 | 120.00-100.00 | A | 0.500 | 29.233 | 67.583 | 0.000 | 0.000 | 1800.77 |
| | | B | | 25.333 | 51.983 | 0.000 | 0.000 | 1157.22 |
| | | C | | 38.635 | 20.667 | 0.000 | 0.000 | 597.88 |
| T8 | 100.00-80.00 | A | 0.500 | 29.233 | 67.583 | 0.000 | 0.000 | 1800.77 |
| | | B | | 27.914 | 51.983 | 0.000 | 0.000 | 1173.18 |
| | | C | | 41.533 | 20.667 | 0.000 | 0.000 | 623.43 |
| T9 | 80.00-60.00 | A | 0.500 | 29.233 | 67.583 | 0.000 | 0.000 | 1800.77 |
| | | B | | 28.050 | 51.983 | 0.000 | 0.000 | 1174.02 |
| | | C | | 41.533 | 20.667 | 0.000 | 0.000 | 623.43 |

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| | Project Tartaglia (CT-5035) | Date 14:08:24 02/19/13 |
| | Client GTP | Designed by RB |

| Section | Elevation | CP _x | CP _z | CP _x Ice | CP _z Ice |
|---------|---------------|-----------------|-----------------|------------------------|------------------------|
| | ft | in | in | in | in |
| T2 | 220.00-200.00 | -5.2859 | -4.2636 | -5.4312 | -2.6664 |
| T3 | 200.00-180.00 | -4.9954 | -17.4278 | -5.4433 | -13.3372 |
| T4 | 180.00-160.00 | -4.0927 | -7.1620 | -5.7622 | -4.3511 |
| T5 | 160.00-140.00 | -8.8142 | -10.1752 | -9.8973 | -6.4241 |
| T6 | 140.00-120.00 | -10.9324 | -9.6403 | -11.5009 | -5.7402 |
| T7 | 120.00-100.00 | -12.7488 | -9.8934 | -13.1413 | -5.0644 |
| T8 | 100.00-80.00 | -13.2459 | -9.3839 | -13.4384 | -4.1024 |
| T9 | 80.00-60.00 | -13.3089 | -9.4021 | -13.6797 | -4.1615 |
| T10 | 60.00-30.00 | -14.5738 | -10.2625 | -14.9011 | -4.5172 |
| T11 | 30.00-0.00 | -14.3660 | -9.3411 | -15.4924 | -3.5317 |

Discrete Tower Loads

| Description | Face or Leg | Offset Type | Offsets: Horz Lateral Vert ft ft ft | Azimuth Adjustment ° | Placement ft | C _A A ₁ Front ft ² | C _A A ₂ Side ft ² | Weight lb | |
|-----------------------------|-------------------|----------------|---|----------------------------|-----------------|---|--|--------------|--------|
| 5/8" x 8' Lightning Rod | B | From Face | 0.00 | 0.0000 | 240.00 | No Ice | 0.50 | 0.50 | 10.00 |
| | | | 0.00 | | | 1/2" Ice | 1.31 | 1.31 | 15.56 |
| | | | 5.00 | | | | | | |
| Flash Beacon Lighting | C | From Leg | 0.00 | 0.0000 | 240.00 | No Ice | 2.70 | 2.70 | 50.00 |
| | | | 0.00 | | | 1/2" Ice | 3.10 | 3.10 | 70.00 |
| | | | 0.00 | | | | | | |
| 3" Dia 10' Omni | C | From Leg | 1.00 | 0.0000 | 240.00 | No Ice | 3.00 | 3.00 | 25.00 |
| | | | 0.00 | | | 1/2" Ice | 4.03 | 4.03 | 46.79 |
| | | | 5.00 | | | | | | |
| 4" dia x 4' pipe mount | C | From Leg | 0.00 | 0.0000 | 240.00 | No Ice | 1.21 | 1.21 | 43.20 |
| | | | 0.00 | | | 1/2" Ice | 1.47 | 1.47 | 54.83 |
| | | | 0.00 | | | | | | |
| 2' Side Arm Mount | B | From Leg | 1.50 | 0.0000 | 240.00 | No Ice | 2.00 | 2.00 | 50.00 |
| | | | 0.00 | | | 1/2" Ice | 3.00 | 3.00 | 100.00 |
| | | | 0.00 | | | | | | |
| 3" Dia 8' Omni (DEAD) | A | From Leg | 3.00 | 0.0000 | 235.00 | No Ice | 2.40 | 2.40 | 20.00 |
| | | | 0.00 | | | 1/2" Ice | 3.19 | 3.19 | 37.51 |
| | | | 4.00 | | | | | | |
| 3" Dia 8' Omni | A | From Leg | 3.00 | 0.0000 | 230.00 | No Ice | 2.40 | 2.40 | 20.00 |
| | | | 0.00 | | | 1/2" Ice | 3.19 | 3.19 | 37.51 |
| | | | 4.00 | | | | | | |
| 4" Dia 8' Omni | B | From Leg | 3.00 | 0.0000 | 230.00 | No Ice | 2.40 | 2.40 | 20.00 |
| | | | 0.00 | | | 1/2" Ice | 3.19 | 3.19 | 37.51 |
| | | | 4.00 | | | | | | |
| 4" x 12' Omni | C | From Leg | 3.00 | 0.0000 | 223.00 | No Ice | 3.60 | 3.60 | 30.00 |
| | | | 0.00 | | | 1/2" Ice | 4.83 | 4.83 | 56.06 |
| | | | 4.00 | | | | | | |
| 2' Side Arm Mount (DEAD) | C | From Leg | 1.50 | 0.0000 | 235.00 | No Ice | 2.00 | 2.00 | 50.00 |
| | | | 0.00 | | | 1/2" Ice | 3.00 | 3.00 | 100.00 |
| | | | 0.00 | | | | | | |
| 2' Side Arm Mount | A | From Leg | 1.50 | 0.0000 | 230.00 | No Ice | 2.00 | 2.00 | 50.00 |
| | | | 0.00 | | | 1/2" Ice | 3.00 | 3.00 | 100.00 |
| | | | 0.00 | | | | | | |
| 2' Side Arm Mount | A | From Leg | 1.50 | 0.0000 | 230.00 | No Ice | 2.00 | 2.00 | 50.00 |
| | | | 0.00 | | | 1/2" Ice | 3.00 | 3.00 | 100.00 |
| | | | 0.00 | | | | | | |

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| | Project Tartaglia (CT-5035) | Date 14:08:24 02/19/13 |
| | Client GTP | Designed by RB |

| Description | Face or Leg | Offset Type | Offsets: | | Azimuth Adjustment | Placement | C _A A ₁ Front | C _A A ₁ Side | Weight |
|--------------------------------|-------------|-------------|----------|---------|--------------------|-----------|-------------------------------------|------------------------------------|---------|
| | | | Horz | Lateral | | | | | |
| | | | 0.00 | | | | | | |
| (2) 1900MHz 2x40W RRU (Sprint) | C | From Leg | 3.00 | | 0.0000 | 180.60 | No Ice | 2.94 | 44.00 |
| | | | 0.00 | | | | 1/2" Ice | 3.17 | 63.32 |
| | | | 0.00 | | | | | | |
| 800MHz 2x50W RRU (Sprint) | A | From Leg | 3.00 | | 0.0000 | 180.60 | No Ice | 2.94 | 54.00 |
| | | | 0.00 | | | | 1/2" Ice | 3.17 | 75.64 |
| | | | 0.00 | | | | | | |
| 800MHz 2x50W RRU (Sprint) | B | From Leg | 3.00 | | 0.0000 | 180.60 | No Ice | 2.94 | 54.00 |
| | | | 0.00 | | | | 1/2" Ice | 3.17 | 75.64 |
| | | | 0.00 | | | | | | |
| 800MHz 2x50W RRU (Sprint) | C | From Leg | 3.00 | | 0.0000 | 180.60 | No Ice | 2.94 | 54.00 |
| | | | 0.00 | | | | 1/2" Ice | 3.17 | 75.64 |
| | | | 0.00 | | | | | | |
| Notch Filters (Sprint) | A | From Leg | 3.00 | | 0.0000 | 180.60 | No Ice | 0.87 | 9.45 |
| | | | 0.00 | | | | 1/2" Ice | 0.99 | 15.75 |
| | | | 0.00 | | | | | | |
| Notch Filters (Sprint) | B | From Leg | 3.00 | | 0.0000 | 180.60 | No Ice | 0.87 | 9.45 |
| | | | 0.00 | | | | 1/2" Ice | 0.99 | 15.75 |
| | | | 0.00 | | | | | | |
| Notch Filters (Sprint) | C | From Leg | 3.00 | | 0.0000 | 180.60 | No Ice | 0.87 | 9.45 |
| | | | 0.00 | | | | 1/2" Ice | 0.99 | 15.75 |
| | | | 0.00 | | | | | | |
| LLPX310R (Clearwire) | A | From Leg | 3.00 | | 0.0000 | 180.60 | No Ice | 4.90 | 29.00 |
| | | | 0.00 | | | | 1/2" Ice | 5.25 | 55.14 |
| | | | 0.00 | | | | | | |
| LLPX310R (Clearwire) | B | From Leg | 3.00 | | 0.0000 | 180.60 | No Ice | 4.90 | 29.00 |
| | | | 0.00 | | | | 1/2" Ice | 5.25 | 55.14 |
| | | | 0.00 | | | | | | |
| LLPX310R (Clearwire) | C | From Leg | 3.00 | | 0.0000 | 180.60 | No Ice | 4.90 | 29.00 |
| | | | 0.00 | | | | 1/2" Ice | 5.25 | 55.14 |
| | | | 0.00 | | | | | | |
| DAP Heads (Clearwire) | A | From Leg | 2.00 | | 0.0000 | 180.60 | No Ice | 3.54 | 45.00 |
| | | | 0.00 | | | | 1/2" Ice | 3.80 | 70.08 |
| | | | 0.00 | | | | | | |
| DAP Heads (Clearwire) | B | From Leg | 2.00 | | 0.0000 | 180.60 | No Ice | 3.54 | 45.00 |
| | | | 0.00 | | | | 1/2" Ice | 3.80 | 70.08 |
| | | | 0.00 | | | | | | |
| DAP Heads (Clearwire) | C | From Leg | 2.00 | | 0.0000 | 180.60 | No Ice | 3.54 | 45.00 |
| | | | 0.00 | | | | 1/2" Ice | 3.80 | 70.08 |
| | | | 0.00 | | | | | | |
| (2) 950F65T4E-M | A | From Leg | 3.00 | | 0.0000 | 174.00 | No Ice | 6.13 | 16.00 |
| | | | 0.00 | | | | 1/2" Ice | 6.59 | 54.95 |
| | | | 0.00 | | | | | | |
| (2) 5' x 5" x 2" PCS Panels | B | From Leg | 3.00 | | 0.0000 | 174.00 | No Ice | 3.26 | 50.00 |
| | | | 0.00 | | | | 1/2" Ice | 3.64 | 66.14 |
| | | | 0.00 | | | | | | |
| (2) 5' x 5" x 2" PCS Panels | C | From Leg | 3.00 | | 0.0000 | 174.00 | No Ice | 3.26 | 50.00 |
| | | | 0.00 | | | | 1/2" Ice | 3.64 | 66.14 |
| | | | 0.00 | | | | | | |
| (3) 10' Sector Frames | C | From Leg | 0.00 | | 0.0000 | 174.00 | No Ice | 23.00 | 700.00 |
| | | | 0.00 | | | | 1/2" Ice | 34.00 | 1000.00 |
| | | | 0.00 | | | | | | |
| 4" Dia 20' Omni | C | From Leg | 1.00 | | 0.0000 | 164.00 | No Ice | 4.00 | 55.00 |
| | | | 0.00 | | | | 1/2" Ice | 6.00 | 100.00 |
| | | | 0.00 | | | | | | |
| (2) 7770 (AT&T) | A | From Leg | 3.00 | | 0.0000 | 164.00 | No Ice | 5.88 | 35.00 |
| | | | 0.00 | | | | 1/2" Ice | 6.31 | 67.63 |

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|--|---------|---------------------|-------------|-------------------|
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| | Project | Tartaglia (CT-5035) | Date | 14:08:24 02/19/13 |
| | Client | GTP | Designed by | RB |

| 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-171063-8CF (Verizon) | A | From Leg | 3.00 0.00 0.00 | 0.0000 | 155.00 | No Ice 1/2" Ice | 2.94 3.26 | 2.16 2.46 | 10.50 29.28 |
| BXA-171063-8CF (Verizon) | B | From Leg | 3.00 0.00 0.00 | 0.0000 | 155.00 | No Ice 1/2" Ice | 2.94 3.26 | 2.16 2.46 | 10.50 29.28 |
| BXA-171063-8CF (Verizon) | C | From Leg | 3.00 0.00 0.00 | 0.0000 | 155.00 | No Ice 1/2" Ice | 2.94 3.26 | 2.16 2.46 | 10.50 29.28 |
| BXA-70063-6CF (Verizon) | A | From Leg | 3.00 0.00 0.00 | 0.0000 | 155.00 | No Ice 1/2" Ice | 7.73 8.27 | 4.16 4.60 | 14.00 56.49 |
| BXA-70063-6CF (Verizon) | B | From Leg | 3.00 0.00 0.00 | 0.0000 | 155.00 | No Ice 1/2" Ice | 7.73 8.27 | 4.16 4.60 | 14.00 56.49 |
| BXA-70063-6CF (Verizon) | C | From Leg | 3.00 0.00 0.00 | 0.0000 | 155.00 | No Ice 1/2" Ice | 7.73 8.27 | 4.16 4.60 | 14.00 56.49 |
| MGD3-800 (Verizon) | A | From Leg | 3.00 0.00 0.00 | 0.0000 | 155.00 | No Ice 1/2" Ice | 3.23 3.57 | 2.37 2.70 | 15.00 35.03 |
| MGD3-800 (Verizon) | B | From Leg | 3.00 0.00 0.00 | 0.0000 | 155.00 | No Ice 1/2" Ice | 3.23 3.57 | 2.37 2.70 | 15.00 35.03 |
| MGD3-800 (Verizon) | C | From Leg | 3.00 0.00 0.00 | 0.0000 | 155.00 | No Ice 1/2" Ice | 3.23 3.57 | 2.37 2.70 | 15.00 35.03 |
| (2) FD9R6004/2C-3L Diplexer (Verizon) | A | From Leg | 2.00 0.00 0.00 | 0.0000 | 155.00 | No Ice 1/2" Ice | 0.37 0.45 | 0.08 0.14 | 2.60 4.90 |
| (2) FD9R6004/2C-3L Diplexer (Verizon) | B | From Leg | 2.00 0.00 0.00 | 0.0000 | 155.00 | No Ice 1/2" Ice | 0.37 0.45 | 0.08 0.14 | 2.60 4.90 |
| (2) FD9R6004/2C-3L Diplexer (Verizon) | C | From Leg | 2.00 0.00 0.00 | 0.0000 | 155.00 | No Ice 1/2" Ice | 0.37 0.45 | 0.08 0.14 | 2.60 4.90 |
| (2) ALU RRH2X40 AWS (Verizon) | A | From Leg | 2.00 0.00 0.00 | 0.0000 | 155.00 | No Ice 1/2" Ice | 2.53 2.76 | 1.59 1.80 | 44.00 61.44 |
| (2) ALU RRH2X40 AWS (Verizon) | B | From Leg | 2.00 0.00 0.00 | 0.0000 | 155.00 | No Ice 1/2" Ice | 2.53 2.76 | 1.59 1.80 | 44.00 61.44 |
| (2) ALU RRH2X40 AWS (Verizon) | C | From Leg | 2.00 0.00 0.00 | 0.0000 | 155.00 | No Ice 1/2" Ice | 2.53 2.76 | 1.59 1.80 | 44.00 61.44 |
| DB T1 6Z 8AB OZ (Verizon) | C | From Leg | 1.00 0.00 0.00 | 0.0000 | 155.00 | No Ice 1/2" Ice | 5.60 5.92 | 2.33 2.56 | 44.00 80.13 |
| (3) 10' Sector Frames (Verizon) | C | From Leg | 0.00 0.00 0.00 | 0.0000 | 155.00 | No Ice 1/2" Ice | 23.00 34.00 | 23.00 34.00 | 700.00 1000.00 |
| Small Light | A | From Leg | 0.50 0.00 0.00 | 0.0000 | 140.00 | No Ice 1/2" Ice | 0.13 0.19 | 0.13 0.19 | 2.00 4.01 |
| Small Light | B | From Leg | 0.50 0.00 0.00 | 0.0000 | 140.00 | No Ice 1/2" Ice | 0.13 0.19 | 0.13 0.19 | 2.00 4.01 |

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| | | | | |

| Description | Face or Leg | Offset Type | Offsets: | | Azimuth Adjustment | Placement | C _{AA} Front | C _{AA} Side | Weight | |
|---------------------------------|-------------|-------------|----------|--------------|--------------------|-----------|-----------------------|----------------------|----------------|-------------------|
| | | | Horz | Lateral Vert | | | | | | |
| | | | ft | ft | ° | ft | ft ² | ft ² | lb | |
| AIR 21 B4A B2P (TMobile) | C | From Leg | 3.00 | 0.00 | 0.0000 | 202.00 | No Ice 1/2" Ice | 6.53 4.36 | 4.36 4.77 | 70.00 111.90 |
| KRY 112 144/1 (TMobile) | A | From Leg | 2.00 | 0.00 | 0.0000 | 202.00 | No Ice 1/2" Ice | 0.41 0.50 | 0.17 0.24 | 11.00 14.18 |
| KRY 112 144/1 (TMobile) | B | From Leg | 2.00 | 0.00 | 0.0000 | 202.00 | No Ice 1/2" Ice | 0.41 0.50 | 0.17 0.24 | 11.00 14.18 |
| KRY 112 144/1 (TMobile) | C | From Leg | 2.00 | 0.00 | 0.0000 | 202.00 | No Ice 1/2" Ice | 0.41 0.50 | 0.17 0.24 | 11.00 14.18 |
| (3) 10' Sector Frames (TMobile) | C | None | | | 0.0000 | 202.00 | No Ice 1/2" Ice | 23.00 34.00 | 23.00 34.00 | 700.00 1000.00 |

Dishes

| Description | Face or Leg | Dish Type | Offset Type | Offsets: | | Azimuth Adjustment | 3 dB Beam Width | Elevation | Outside Diameter | Aperture Area | Weight | |
|----------------------|-------------|--------------------------|-------------|----------|--------------|--------------------|-----------------|-----------|------------------|--------------------|--------------|----------------|
| | | | | Horz | Lateral Vert | | | | | | | |
| | | | ft | ft | ° | ° | ft | ft | ft ² | lb | | |
| 3ft Dish w/o Radome | C | Paraboloid w/o Radome | From Leg | 1.00 | 0.00 | 0.0000 | | 22.00 | 3.00 | No Ice 1/2" Ice | 7.07 7.47 | 50.00 88.35 |
| VHLP800-11 | A | Paraboloid w/o Radome | From Leg | 2.00 | 0.00 | 0.0000 | | 187.00 | 3.00 | No Ice 1/2" Ice | 7.07 7.47 | 47.60 85.95 |
| 2ft HP Dish w/Shroud | B | Paraboloid w/Shroud (HP) | From Leg | 2.00 | 0.00 | 0.0000 | | 187.00 | 2.00 | No Ice 1/2" Ice | 3.14 3.41 | 27.00 45.00 |
| 2ft HP Dish w/Shroud | C | Paraboloid w/Shroud (HP) | From Leg | 2.00 | 0.00 | 0.0000 | | 187.00 | 2.00 | No Ice 1/2" Ice | 3.14 3.41 | 27.00 45.00 |

Load Combinations

| Comb. No. | Description |
|-----------|----------------------------|
| 1 | Dead Only |
| 2 | Dead+Wind 0 deg - No Ice |
| 3 | Dead+Wind 30 deg - No Ice |
| 4 | Dead+Wind 60 deg - No Ice |
| 5 | Dead+Wind 90 deg - No Ice |
| 6 | Dead+Wind 120 deg - No Ice |
| 7 | Dead+Wind 150 deg - No Ice |
| 8 | Dead+Wind 180 deg - No Ice |
| 9 | Dead+Wind 210 deg - No Ice |

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| Elevation ft | Appurtenance | Gov. Load Comb. | Deflection in | Tilt ° | Twist ° | Radius of Curvature ft |
|-----------------|-----------------------|-----------------------|------------------|-----------|------------|------------------------------|
| 223.00 | 4" x 12' Omni | 37 | 2.104 | 0.0531 | 0.0301 | 556257 |
| 212.00 | (2) HBX-6516DS-VTM | 37 | 1.976 | 0.0531 | 0.0297 | 474573 |
| 202.00 | AIR 21 B2AB4P | 37 | 1.858 | 0.0530 | 0.0291 | 475977 |
| 196.00 | 3' Yagi | 37 | 1.785 | 0.0528 | 0.0286 | 554157 |
| 187.00 | VHLP800-11 | 37 | 1.675 | 0.0524 | 0.0279 | 910596 |
| 180.60 | (3) 10' Sector Frames | 37 | 1.597 | 0.0520 | 0.0273 | Inf |
| 174.00 | (2) 950F65T4E-M | 37 | 1.515 | 0.0515 | 0.0266 | 676292 |
| 164.00 | 4" Dia 20' Omni | 37 | 1.391 | 0.0504 | 0.0253 | 319671 |
| 155.00 | BXA-80063/6 | 37 | 1.276 | 0.0492 | 0.0239 | Inf |
| 140.00 | Small Light | 37 | 1.088 | 0.0464 | 0.0213 | 123119 |
| 137.00 | 1.5" Dia 8' Omni | 37 | 1.052 | 0.0457 | 0.0209 | 139678 |
| 132.00 | 2' Side Arm Mount | 37 | 0.995 | 0.0444 | 0.0201 | 251421 |
| 118.00 | 2' Side Arm Mount | 37 | 0.837 | 0.0405 | 0.0179 | 422494 |
| 108.00 | 2' Side Arm Mount | 38 | 0.723 | 0.0376 | 0.0157 | 134475 |
| 99.00 | 3' Yagi | 37 | 0.628 | 0.0348 | 0.0139 | 73010 |
| 80.00 | Side Arm Mount | 35 | 0.464 | 0.0277 | 0.0113 | 280046 |
| 22.00 | 3ft Dish w/o Radome | 31 | 0.086 | 0.0084 | 0.0031 | 149282 |
| 20.00 | GPS Unit w/ mt | 31 | 0.077 | 0.0076 | 0.0028 | 164210 |
| 8.00 | GPS Unit w/ mt | 31 | 0.029 | 0.0031 | 0.0011 | 410525 |

Maximum Tower Deflections - Design Wind

| Section No. | Elevation ft | Horz. Deflection in | Gov. Load Comb. | Tilt ° | Twist ° |
|----------------|-----------------|---------------------------|-----------------------|-----------|------------|
| T1 | 240 - 220 | 6.693 | 15 | 0.1505 | 0.0989 |
| T2 | 220 - 200 | 6.046 | 15 | 0.1508 | 0.0968 |
| T3 | 200 - 180 | 5.376 | 15 | 0.1505 | 0.0932 |
| T4 | 180 - 160 | 4.681 | 15 | 0.1480 | 0.0887 |
| T5 | 160 - 140 | 3.971 | 15 | 0.1424 | 0.0816 |
| T6 | 140 - 120 | 3.249 | 15 | 0.1330 | 0.0701 |
| T7 | 120 - 100 | 2.587 | 15 | 0.1182 | 0.0595 |
| T8 | 100 - 80 | 1.936 | 15 | 0.1018 | 0.0456 |
| T9 | 80 - 60 | 1.420 | 15 | 0.0807 | 0.0362 |
| T10 | 60 - 30 | 0.972 | 19 | 0.0624 | 0.0279 |
| T11 | 30 - 0 | 0.390 | 19 | 0.0333 | 0.0133 |

Critical Deflections and Radius of Curvature - Design Wind

| Elevation ft | Appurtenance | Gov. Load Comb. | Deflection in | Tilt ° | Twist ° | Radius of Curvature ft |
|-----------------|-------------------------|-----------------------|------------------|-----------|------------|------------------------------|
| 240.00 | 5/8" x 8' Lightning Rod | 15 | 6.693 | 0.1505 | 0.0989 | 662880 |
| 235.00 | 3" Dia 8' Omni | 15 | 6.532 | 0.1506 | 0.0985 | 662880 |
| 230.00 | 3" Dia 8' Omni | 15 | 6.371 | 0.1507 | 0.0980 | 331440 |
| 223.00 | 4" x 12' Omni | 15 | 6.144 | 0.1508 | 0.0972 | 195592 |
| 212.00 | (2) HBX-6516DS-VTM | 15 | 5.781 | 0.1509 | 0.0955 | 165527 |
| 202.00 | AIR 21 B2AB4P | 15 | 5.444 | 0.1506 | 0.0936 | 159561 |
| 196.00 | 3' Yagi | 15 | 5.238 | 0.1502 | 0.0924 | 187191 |
| 187.00 | VHLP800-11 | 15 | 4.926 | 0.1492 | 0.0904 | 330399 |
| 180.60 | (3) 10' Sector Frames | 15 | 4.702 | 0.1481 | 0.0889 | 519097 |
| 174.00 | (2) 950F65T4E-M | 15 | 4.471 | 0.1467 | 0.0871 | 243486 |

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| Section No. | Elevation ft | Component Type | Bolt Grade | Bolt Size in | Number Of Bolts | Maximum Load per Bolt lb | Allowable Load lb | Ratio Load Allowable | Allowable Ratio | Criteria |
|-------------|-----------------|----------------|------------|-----------------|-----------------|-----------------------------|----------------------|----------------------|-----------------|--------------|
| T9 | 80 | Leg | A325N | 1.0000 | 12 | 11259.00 | 34557.50 | 0.326 ✓ | 1.333 | Bolt Tension |
| | | Diagonal | A325N | 0.7500 | 3 | 7111.81 | 9277.52 | 0.767 ✓ | 1.333 | Bolt Shear |
| | | Horizontal | A325N | 0.7500 | 2 | 6658.14 | 9277.52 | 0.718 ✓ | 1.333 | Bolt Shear |
| T10 | 60 | Leg | A325N | 1.0000 | 12 | 13101.40 | 34557.50 | 0.379 ✓ | 1.333 | Bolt Tension |
| | | Diagonal | A325N | 0.7500 | 3 | 9378.87 | 9277.52 | 1.011 ✓ | 1.333 | Bolt Shear |
| | | Horizontal | A325N | 0.7500 | 2 | 7242.94 | 9277.52 | 0.781 ✓ | 1.333 | Bolt Shear |
| T11 | 30 | Diagonal | A325N | 0.8750 | 3 | 9833.10 | 12627.70 | 0.779 ✓ | 1.333 | Bolt Shear |
| | | Horizontal | A325N | 0.7500 | 2 | 8089.27 | 9277.52 | 0.872 ✓ | 1.333 | Bolt Shear |

Compression Checks

Leg Design Data (Compression)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P/P _a |
|-------------|-----------------|--------------------|---------|----------------------|----------------|-----------------------|----------------------|----------------|-----------------------------|------------------------|
| T1 | 240 - 220 | P8x.5 (8" x-str) | 20.03 | 6.68 | 27.8 K=1.00 | 27.415 | 12.7627 | -3578.32 | 349895.00 | 0.010 ✓ |
| T2 | 220 - 200 | P8x.5 (8" x-str) | 20.04 | 10.02 | 41.8 K=1.00 | 25.579 | 12.7627 | -10941.50 | 326464.00 | 0.034 ✓ |
| T3 | 200 - 180 | P8x.5 (8" x-str) | 20.05 | 10.03 | 41.8 K=1.00 | 25.576 | 12.7627 | -26296.80 | 326426.00 | 0.081 ✓ |
| T4 | 180 - 160 | P8x.5 (8" x-str) | 20.05 | 10.03 | 41.8 K=1.00 | 25.576 | 12.7627 | -46822.30 | 326426.00 | 0.143 ✓ |
| T5 | 160 - 140 | ROHN 8 EH | 20.05 | 10.03 | 41.8 K=1.00 | 25.576 | 12.7627 | -74883.10 | 326426.00 | 0.229 ✓ |
| T6 | 140 - 120 | P8x.5 (8" x-str) | 20.05 | 10.03 | 41.8 K=1.00 | 25.576 | 12.7627 | -105867.00 | 326426.00 | 0.324 ✓ |
| T7 | 120 - 100 | P8x.5 (8" x-str) | 20.05 | 10.03 | 41.8 K=1.00 | 25.576 | 12.7627 | -122259.00 | 326426.00 | 0.375 ✓ |
| T8 | 100 - 80 | ROHN 8 EH | 20.06 | 10.03 | 41.8 K=1.00 | 25.575 | 12.7627 | -152610.00 | 326400.00 | 0.468 ✓ |
| T9 | 80 - 60 | P10x.5 (10" x-str) | 20.05 | 10.03 | 33.2 K=1.00 | 26.753 | 16.1007 | -183529.00 | 430750.00 | 0.426 ✓ |
| T10 | 60 - 30 | P10x.5 (10" x-str) | 30.08 | 10.03 | 33.2 K=1.00 | 26.753 | 16.1007 | -216215.00 | 430750.00 | 0.502 ✓ |
| T11 | 30 - 0 | P10x.5 (10" x-str) | 30.08 | 10.03 | 33.2 K=1.00 | 26.753 | 16.1007 | -263248.00 | 430750.00 | 0.611 ✓ |

Diagonal Design Data (Compression)

| | | | | |
|--|---------|---------------------|-------------|-------------------|
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| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P/P _a |
|-------------|-----------------|------------------------|---------|----------------------|-----------------|-----------------------|----------------------|----------------|-----------------------------|---------------------------|
| T11 | 30 - 0 | P3.5x.226 (3 1/2" std) | 36.58 | 17.84 | 160.2 K=1.00 | 5.819 | 2.6795 | -16178.50 | 15593.60 | 1.038 ✓ |

Top Girt Design Data (Compression)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P/P _a |
|-------------|-----------------|-------------------|---------|----------------------|----------------|-----------------------|----------------------|----------------|-----------------------------|---------------------------|
| T1 | 240 - 220 | P2x.154 (2" Std.) | 10.93 | 5.10 | 77.8 K=1.00 | 19.446 | 1.0745 | -332.49 | 20895.00 | 0.016 ✓ |

Redundant Horizontal (1) Design Data (Compression)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P/P _a |
|-------------|-----------------|------------------------|---------|----------------------|-----------------|-----------------------|----------------------|----------------|-----------------------------|---------------------------|
| T7 | 120 - 100 | P1.5x.145 (1 1/2" std) | 6.29 | 5.93 | 114.4 K=1.00 | 11.413 | 0.7995 | -2121.71 | 9123.81 | 0.233 ✓ |
| T8 | 100 - 80 | P1.5x.145 (1 1/2" std) | 6.92 | 6.56 | 126.4 K=1.00 | 9.341 | 0.7995 | -2649.10 | 7468.07 | 0.355 ✓ |
| T9 | 80 - 60 | P1.5x.145 (1 1/2" std) | 7.58 | 7.14 | 137.5 K=1.00 | 7.895 | 0.7995 | -3185.01 | 6311.95 | 0.505 ✓ |
| T10 | 60 - 30 | P1.5x.145 (1 1/2" std) | 5.47 | 5.02 | 96.8 K=1.00 | 15.429 | 0.7995 | -3752.26 | 12335.10 | 0.304 ✓ |
| T11 | 30 - 0 | P1.5x.145 (1 1/2" std) | 6.10 | 5.65 | 108.9 K=1.00 | 12.596 | 0.7995 | -4568.48 | 10069.60 | 0.454 ✓ |

Redundant Horizontal (2) Design Data (Compression)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P/P _a |
|-------------|-----------------|-------------------|---------|----------------------|-----------------|-----------------------|----------------------|----------------|-----------------------------|---------------------------|
| T10 | 60 - 30 | P2x.154 (2" Std.) | 10.94 | 10.50 | 160.0 K=1.00 | 5.832 | 1.0745 | -3752.26 | 6266.24 | 0.599 ✓ |
| T11 | 30 - 0 | P2x.154 (2" Std.) | 12.19 | 11.75 | 179.1 K=1.00 | 4.657 | 1.0745 | -4568.48 | 5003.56 | 0.913 ✓ |

Redundant Diagonal (1) Design Data (Compression)

| | | |
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| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P/P _a |
|-------------|-----------------|-------------------|---------|----------------------|-----------------|-----------------------|----------------------|----------------|-----------------------------|---------------------------|
| T11 | 30 - 0 | P2x.154 (2" Std.) | 12.19 | 12.19 | 185.9 K=1.00 | 4.321 | 1.0745 | -44.20 | 4642.74 | 0.010 |

Redundant Hip Diagonal Design Data (Compression)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P/P _a |
|-------------|-----------------|------------------------|---------|----------------------|-----------------|-----------------------|----------------------|----------------|-----------------------------|---------------------------|
| T7 | 120 - 100 | P2.5x.203 (2.5" Std) | 15.07 | 15.07 | 190.9 K=1.00 | 4.096 | 1.7040 | -63.30 | 6980.15 | 0.009 |
| T8 | 100 - 80 | P2.5x.203 (2 1/2" std) | 15.92 | 15.92 | 201.6 K=1.00 | 3.673 | 1.7040 | -63.63 | 6259.44 | 0.010 |
| T9 | 80 - 60 | P3x.216 (3" std) | 16.81 | 16.81 | 173.3 K=1.00 | 4.970 | 2.2285 | -54.49 | 11074.80 | 0.005* |
| T10 | 60 - 30 | P3x.216 (3" std) | 17.80 | 17.80 | 183.6 K=1.00 | 4.429 | 2.2285 | -90.93 | 9870.93 | 0.009 |
| T11 | 30 - 0 | P3x.216 (3" std) | 19.19 | 19.19 | 197.9 K=1.00 | 3.811 | 2.2285 | -89.70 | 8493.69 | 0.011 |

* DL controls

Inner Bracing Design Data (Compression)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P/P _a |
|-------------|-----------------|-------------------|---------|----------------------|-----------------|-----------------------|----------------------|----------------|-----------------------------|---------------------------|
| T1 | 240 - 220 | L2x2x1/8 | 5.46 | 5.46 | 164.9 K=1.00 | 5.490 | 0.4844 | -5.76 | 2659.43 | 0.002 |
| T2 | 220 - 200 | L2x2x1/8 | 7.03 | 7.03 | 212.1 K=1.00 | 3.320 | 0.4844 | -5.44 | 1608.11 | 0.003 |
| T3 | 200 - 180 | L2 1/2x2 1/2x3/16 | 8.21 | 8.21 | 199.1 K=1.00 | 3.767 | 0.9020 | -6.61 | 3397.38 | 0.002 |
| T4 | 180 - 160 | L3x3x3/16 | 9.46 | 9.46 | 190.5 K=1.00 | 4.113 | 1.0900 | -9.76 | 4483.33 | 0.002 |
| T5 | 160 - 140 | L3 1/2x3 1/2x1/4 | 10.71 | 10.71 | 185.2 K=1.00 | 4.352 | 1.6900 | -11.64 | 7354.08 | 0.002 |
| T6 | 140 - 120 | L3 1/2x3 1/2x1/4 | 11.96 | 11.96 | 206.9 K=1.00 | 3.490 | 1.6900 | -12.51 | 5897.59 | 0.002 |
| T7 | 120 - 100 | P2x.154 (2" Std.) | 12.59 | 12.59 | 191.9 K=1.00 | 4.054 | 1.0745 | -22.80 | 4356.59 | 0.005 |
| T8 | 100 - 80 | P3x.216 (3" std) | 13.84 | 13.84 | 142.7 K=1.00 | 7.332 | 2.2285 | -26.15 | 16338.30 | 0.002 |
| T9 | 80 - 60 | P3x.216 (3" std) | 15.17 | 15.17 | 156.4 K=1.00 | 6.104 | 2.2285 | -26.19 | 13602.10 | 0.002 |
| T10 | 60 - 30 | P3x.216 (3" std) | 16.42 | 16.42 | 169.3 K=1.00 | 5.210 | 2.2285 | -34.92 | 11609.60 | 0.003 |
| T11 | 30 - 0 | P3x.216 (3" std) | 18.29 | 18.29 | 188.6 | 4.196 | 2.2285 | -36.61 | 9351.47 | 0.004 |

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| | Client GTP | Designed by RB |

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio $\frac{P}{P_a}$ |
|-------------|-----------------|--|---------|----------------------|-------|-----------------------|----------------------|----------------|-----------------------------|--------------------------|
| T5 | 160 - 140 | P2.5x.203 (2 1/2" std) | 15.12 | 14.64 | 185.5 | 30.000 | 1.7040 | 12790.80 | 51121.50 | 0.250 |
| T6 | 140 - 120 | HI-3 (1.77 CR) - 132 P3x.216 (3" std) | 16.08 | 15.62 | 161.1 | 30.000 | 2.2285 | 13373.10 | 66854.10 | 0.200 |
| T7 | 120 - 100 | P2.5x.203 (2 1/2" std) | 24.33 | 12.17 | 154.1 | 30.000 | 1.7040 | 19582.30 | 51121.50 | 0.383 |
| T8 | 100 - 80 | HI-3 (1.85 CR) - 198 P3x.216 (3" std) | 25.11 | 12.56 | 129.5 | 30.000 | 2.2285 | 19708.60 | 66854.10 | 0.295 |
| T9 | 80 - 60 | P3x.216 (3" std) | 25.88 | 12.94 | 133.5 | 30.000 | 2.2285 | 20604.10 | 66854.10 | 0.308 |
| T10 | 60 - 30 | P3x.216 (3" std) | 35.15 | 11.72 | 120.8 | 30.000 | 2.2285 | 27451.70 | 66854.10 | 0.411 |
| T11 | 30 - 0 | P3x.216 (3" std) | 36.16 | 12.05 | 124.3 | 30.000 | 2.2285 | 28308.10 | 66854.10 | 0.423 |
| | | HI-3 (1.36 CR) - 355/2 | | | | | | | | |

Horizontal Design Data (Tension)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio $\frac{P}{P_a}$ |
|-------------|-----------------|------------------------|---------|----------------------|-------|-----------------------|----------------------|----------------|-----------------------------|--------------------------|
| T1 | 240 - 220 | P2x.154 (2" Std.) | 12.26 | 5.77 | 88.0 | 30.000 | 1.0745 | 983.06 | 32235.90 | 0.030 |
| T2 | 220 - 200 | P2x.154 (2" Std.) | 14.05 | 6.67 | 101.6 | 30.000 | 1.0745 | 2477.72 | 32235.90 | 0.077 |
| T3 | 200 - 180 | P2x.154 (2" Std.) | 16.43 | 7.85 | 119.7 | 30.000 | 1.0745 | 4011.13 | 32235.90 | 0.124 |
| T4 | 180 - 160 | P2.5x.203 (2 1/2" std) | 18.93 | 9.10 | 115.3 | 30.000 | 1.7040 | 7062.75 | 51121.50 | 0.138 |
| T5 | 160 - 140 | P2.5x.203 (2 1/2" std) | 21.43 | 10.35 | 131.1 | 30.000 | 1.7040 | 9765.52 | 51121.50 | 0.191 |
| T6 | 140 - 120 | P2.5x.203 (2 1/2" std) | 23.93 | 11.60 | 147.0 | 30.000 | 1.7040 | 10748.10 | 51121.50 | 0.210 |
| T7 | 120 - 100 | P2.5x.203 (2 1/2" std) | 25.18 | 12.23 | 154.9 | 30.000 | 1.7040 | 11263.70 | 51121.50 | 0.220 |
| T8 | 100 - 80 | P3x.216 (3" std) | 27.68 | 13.48 | 139.0 | 30.000 | 2.2285 | 11888.50 | 66854.10 | 0.178 |
| T9 | 80 - 60 | P3x.216 (3" std) | 30.33 | 14.81 | 152.7 | 30.000 | 2.2285 | 13316.30 | 66854.10 | 0.199 |
| T10 | 60 - 30 | P3x.216 (3" std) | 32.83 | 15.97 | 164.7 | 30.000 | 2.2285 | 14353.00 | 66854.10 | 0.215 |
| T11 | 30 - 0 | P3.5x.226 (3 1/2" std) | 36.58 | 17.84 | 160.2 | 30.000 | 2.6795 | 15768.80 | 80386.20 | 0.196 |

Top Girt Design Data (Tension)

| | | | | |
|--|---------|---------------------|-------------|-------------------|
| tnxTower Structural Components, LLC 2400 Central Ave, Suite A-1 South Boulder, CO 80301 Phone: (866) 386-7266 FAX: (303) 962-9087 | Job | 130116 | Page | 29 of 33 |
| | Project | Tartaglia (CT-5035) | Date | 14:08:24 02/19/13 |
| | Client | GTP | Designed by | RB |

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio $\frac{P}{P_a}$ |
|----------------------|-----------------|------|---------|----------------------|------|-----------------------|----------------------|----------------|-----------------------------|--------------------------|
| HI-3 (1.46 CR) - 358 | | | | | | | | | | ✓ |

Redundant Diagonal (2) Design Data (Tension)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio $\frac{P}{P_a}$ |
|-------------|-----------------|------------------------|---------|----------------------|-------|-----------------------|----------------------|----------------|-----------------------------|--------------------------|
| T10 | 60 - 30 | P2x.154 (2" Std.) | 14.37 | 13.75 | 209.6 | 30.000 | 1.0745 | 2464.09 | 32235.90 | 0.076 |
| T11 | 30 - 0 | P2.5x.203 (2 1/2" std) | 15.30 | 14.70 | 186.2 | 30.000 | 1.7040 | 2865.31 | 51121.50 | 0.056 |

Redundant Hip (1) Design Data (Tension)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio $\frac{P}{P_a}$ |
|-------------|-----------------|------------------------|---------|----------------------|-------|-----------------------|----------------------|----------------|-----------------------------|--------------------------|
| T10 | 60 - 30 | P1.5x.145 (1 1/2" std) | 5.47 | 5.47 | 105.5 | 30.000 | 0.7995 | 8.66 | 23983.70 | 0.000 |
| T11 | 30 - 0 | P1.5x.145 (1 1/2" std) | 6.10 | 6.10 | 117.5 | 30.000 | 0.7995 | 7.05 | 23983.70 | 0.000 |

Redundant Hip (2) Design Data (Tension)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio $\frac{P}{P_a}$ |
|-------------|-----------------|------------------------|---------|----------------------|-------|-----------------------|----------------------|----------------|-----------------------------|--------------------------|
| T10 | 60 - 30 | P1.5x.145 (1 1/2" std) | 10.94 | 10.94 | 210.9 | 30.000 | 0.7995 | 12.55 | 23983.70 | 0.001 |
| T11 | 30 - 0 | P2x.154 (2" Std.) | 12.19 | 12.19 | 185.9 | 30.000 | 1.0745 | 9.23 | 32235.90 | 0.000 |

Redundant Hip Diagonal Design Data (Tension)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio $\frac{P}{P_a}$ |
|-------------|-----------------|------------------------|---------|----------------------|-------|-----------------------|----------------------|----------------|-----------------------------|--------------------------|
| T7 | 120 - 100 | P2.5x.203 (2.5" Std) | 15.07 | 15.07 | 190.9 | 30.000 | 1.7040 | 98.35 | 51121.50 | 0.002 |
| T8 | 100 - 80 | P2.5x.203 (2 1/2" std) | 15.92 | 15.92 | 201.6 | 30.000 | 1.7040 | 92.71 | 51121.50 | 0.002 |

| | | | | |
|--|---------|---------------------|-------------|-------------------|
| tnxTower Structural Components, LLC 2400 Central Ave, Suite A-1 South Boulder, CO 80301 Phone: (866) 386-7266 FAX: (303) 962-9087 | Job | 130116 | Page | 31 of 33 |
| | Project | Tartaglia (CT-5035) | Date | 14:08:24 02/19/13 |
| | Client | GTP | Designed by | RB |
| | | | | |

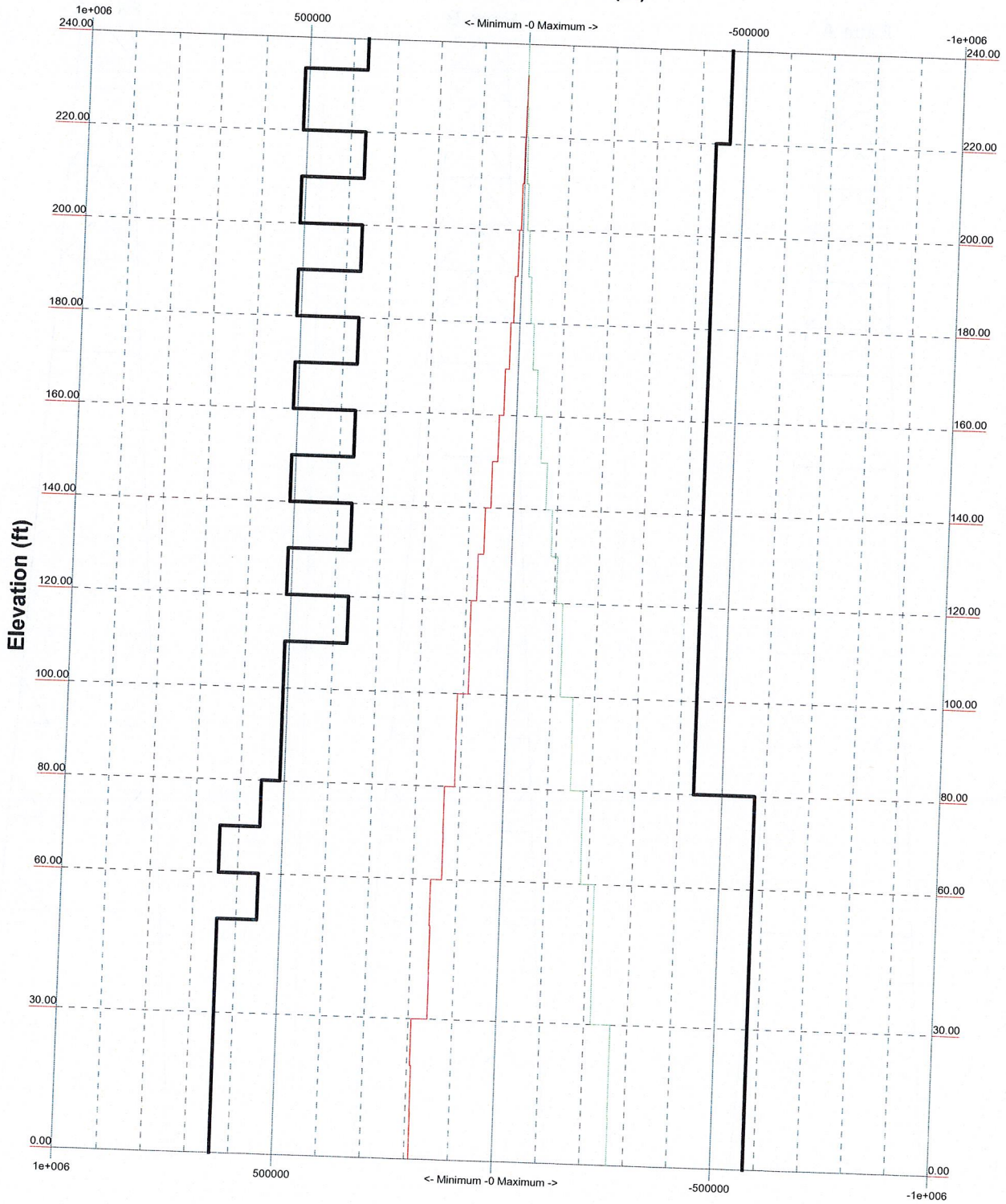
| Section No. | Elevation ft | Component Type | Size | Critical Element | P lb | SF*P _{allow} lb | % Capacity | Pass Fail |
|-------------|--------------|-----------------------|------------------------|------------------|-----------|--------------------------|------------|-----------|
| T2 | 220 - 200 | Diagonal | P2.5x.203 (2 1/2" std) | 50 | -4184.52 | 14773.24 | 28.3 | Pass |
| T3 | 200 - 180 | Diagonal | P2.5x.203 (2 1/2" std) | 77 | -6124.90 | 12887.78 | 47.5 | Pass |
| T4 | 180 - 160 | Diagonal | P2.5x.203 (2 1/2" std) | 104 | -10073.20 | 11259.34 | 89.5 | Pass |
| T5 | 160 - 140 | Diagonal | P2.5x.203 (2 1/2" std) | 131 | -13130.60 | 9860.35 | 133.2 | Fail X |
| T6 | 140 - 120 | Diagonal | P3x.216 (3" std) | 158 | -13819.00 | 17089.59 | 80.9 | Pass |
| T7 | 120 - 100 | Diagonal | P2.5x.203 (2 1/2" std) | 195 | -19899.70 | 14285.76 | 139.3 | Fail X |
| T8 | 100 - 80 | Diagonal | P3x.216 (3" std) | 231 | -20294.00 | 26455.25 | 76.7 | Pass |
| T9 | 80 - 60 | Diagonal | P3x.216 (3" std) | 264 | -21335.40 | 24899.11 | 85.7 | Pass |
| T10 | 60 - 30 | Diagonal | P3x.216 (3" std) | 309 | -28136.60 | 30375.74 | 92.6 | Pass |
| T11 | 30 - 0 | Diagonal | P3x.216 (3" std) | 360 | -29499.30 | 28700.95 | 102.8 | Fail X |
| T1 | 240 - 220 | Horizontal | P2x.154 (2" Std.) | 13 | -946.32 | 24879.51 | 3.8 | Pass |
| T2 | 220 - 200 | Horizontal | P2x.154 (2" Std.) | 49 | -2475.49 | 20518.74 | 12.1 | Pass |
| T3 | 200 - 180 | Horizontal | P2x.154 (2" Std.) | 76 | -3946.92 | 14918.54 | 26.5 | Pass |
| T4 | 180 - 160 | Horizontal | P2.5x.203 (2 1/2" std) | 103 | -7009.79 | 25509.62 | 27.5 | Pass |
| T5 | 160 - 140 | Horizontal | P2.5x.203 (2 1/2" std) | 130 | -9622.16 | 19722.13 | 48.8 | Pass |
| T6 | 140 - 120 | Horizontal | P2.5x.203 (2 1/2" std) | 157 | -10475.30 | 15702.07 | 66.7 | Pass |
| T7 | 120 - 100 | Horizontal | P2.5x.203 (2 1/2" std) | 194 | -11134.80 | 14138.06 | 78.8 | Pass |
| T8 | 100 - 80 | Horizontal | P3x.216 (3" std) | 227 | -12218.80 | 22955.72 | 53.2 | Pass |
| T9 | 80 - 60 | Horizontal | P3x.216 (3" std) | 260 | -13231.70 | 19022.44 | 69.6 | Pass |
| T10 | 60 - 30 | Horizontal | P3x.216 (3" std) | 303 | -14485.90 | 16355.91 | 88.6 | Pass |
| T11 | 30 - 0 | Horizontal | P3.5x.226 (3 1/2" std) | 354 | -16178.50 | 20786.27 | 77.8 | Pass |
| T1 | 240 - 220 | Top Girt | P2x.154 (2" Std.) | 4 | -332.49 | 27853.03 | 1.2 | Pass |
| T7 | 120 - 100 | Redund Horz 1 Bracing | P1.5x.145 (1 1/2" std) | 190 | -2121.71 | 12162.04 | 17.4 | Pass |
| T8 | 100 - 80 | Redund Horz 1 Bracing | P1.5x.145 (1 1/2" std) | 223 | -2649.10 | 9954.94 | 26.6 | Pass |
| T9 | 80 - 60 | Redund Horz 1 Bracing | P1.5x.145 (1 1/2" std) | 256 | -3185.01 | 8413.83 | 37.9 | Pass |
| T10 | 60 - 30 | Redund Horz 1 Bracing | P1.5x.145 (1 1/2" std) | 295 | -3752.26 | 16442.69 | 22.8 | Pass |
| T11 | 30 - 0 | Redund Horz 1 Bracing | P1.5x.145 (1 1/2" std) | 356 | -4568.48 | 13422.78 | 34.0 | Pass |
| T10 | 60 - 30 | Redund Horz 2 Bracing | P2x.154 (2" Std.) | 306 | -3752.26 | 8352.90 | 44.9 | Pass |
| T11 | 30 - 0 | Redund Horz 2 Bracing | P2x.154 (2" Std.) | 347 | -4568.48 | 6669.75 | 68.5 | Pass |
| T7 | 120 - 100 | Redund Diag 1 Bracing | P1.5x.145 (1 1/2" std) | 191 | -1938.40 | 3690.90 | 52.5 | Pass |
| T8 | 100 - 80 | Redund Diag 1 Bracing | P2x.154 (2" Std.) | 224 | -2259.14 | 7436.18 | 30.4 | Pass |
| T9 | 80 - 60 | Redund Diag 1 Bracing | P2x.154 (2" Std.) | 257 | -2559.50 | 6887.41 | 37.2 | Pass |
| T10 | 60 - 30 | Redund Diag 1 Bracing | P1.5x.145 (1 1/2" std) | 297 | -3812.00 | 4204.34 | 90.7 | Pass |
| T11 | 30 - 0 | Redund Diag 1 Bracing | P1.5x.145 (1 1/2" std) | 348 | -4272.75 | 3905.21 | 109.4 | Fail X |
| T10 | 60 - 30 | Redund Diag 2 Bracing | P2x.154 (2" Std.) | 298 | -2464.09 | 4867.13 | 50.6 | Pass |
| T11 | 30 - 0 | Redund Diag 2 Bracing | P2.5x.203 (2 1/2" std) | 359 | -2865.31 | 9778.67 | 29.3 | Pass |
| T7 | 120 - 100 | Redund Hip 1 Bracing | P1.5x.145 (1 1/2" std) | 201 | -38.08 | 10812.88 | 0.4 | Pass |
| T8 | 100 - 80 | Redund Hip 1 Bracing | P1.5x.145 (1 1/2" std) | 234 | -40.05 | 8947.71 | 0.4 | Pass |
| T9 | 80 - 60 | Redund Hip 1 Bracing | P1.5x.145 (1 1/2" std) | 267 | -37.39 | 7449.24 | 0.5 | Pass |
| T10 | 60 - 30 | Redund Hip 1 Bracing | P1.5x.145 (1 1/2" std) | 314 | -89.68 | 14294.69 | 0.6 | Pass |
| T11 | 30 - 0 | Redund Hip 1 Bracing | P1.5x.145 (1 1/2" std) | 365 | -88.95 | 11523.08 | 0.8 | Pass |
| T10 | 60 - 30 | Redund Hip 2 Bracing | P1.5x.145 (1 1/2" std) | 319 | -44.68 | 3576.40 | 1.2 | Pass |

| | | | | |
|--|---------|---------------------|-------------|-------------------|
| tnxTower Structural Components, LLC 2400 Central Ave, Suite A-1 South Boulder, CO 80301 Phone: (866) 386-7266 FAX: (303) 962-9087 | Job | 130116 | Page | 33 of 33 |
| | Project | Tartaglia (CT-5035) | Date | 14:08:24 02/19/13 |
| | Client | GTP | Designed by | RB |

| Section No. | Elevation ft | Component Type | Size | Critical Element | P lb | SF*P _{allow} lb | % Capacity | Pass Fail |
|-------------|--------------|----------------|------|------------------|------|--------------------------|------------|---------------|
| RATING = | | | | | | | 139.3 | Fail X |

Program Version 6.0.0.8 - 9/7/2011 File:Z:/Jobs/GTP/Tartaglia - CT-5035/130116 - RFQ QTE PO SA
 INV/Analysis/Calcs/130116.Tartaglia.CT-5035.Verizon.Re-Analysis.20130219.eri

TIA/EIA-222-F - 85 mph/74 mph 0.5000 in Ice
 Leg Capacity ——— Leg Compression (lb)



| | | | |
|--|---|----------------|----------------------|
|  sctower.net | Structural Components, LLC 2400 Central Ave, Suite A-1 South Boulder, CO 80301 Phone: (866) 386-7266 FAX: (303) 962-9087 | | Job: 130116 |
| | Project: Tartaglia (CT-5035) | | |
| | Client: GTP | Drawn by: RB | App'd: |
| | Code: TIA/EIA-222-F | Date: 02/19/13 | Scale: NTS |
| | | | Path: Dwg No. E-3 |

INDIVIDUAL PIER AND PAD FOUNDATION

Template := "PierPadSS-F.xmcd"

Version := 1.00



2400 Central Ave., Suite A-1 South
Boulder, CO 80301
866-386-7622

PROJECT DATA

Job: 130116
Client: GTP
Site: Tartaglia (CT-5035)
Model: 240ft ROHN SST

FOUNDATION DESIGN REACTIONS

Overdesign Factor: $\alpha := 1.00$
Compression: $C := 309.7 \cdot \text{kips} \cdot \alpha$ $C = 309.7 \cdot \text{kips}$
Uplift: $U := 212.5 \cdot \text{kips} \cdot \alpha$ $U = 212.5 \cdot \text{kips}$
Shear: $S := 46.4 \cdot \text{kips} \cdot \alpha$ $S = 46.4 \cdot \text{kips}$
Moment: $M := 0 \cdot \text{ft} \cdot \text{kips} \cdot \alpha$ $M = 0.0 \cdot \text{kips}$

DESIGN CODES AND STANDARDS

- TIA/EIA-222-F, "TIA/EIA Standard - Structural Standards for Steel Antenna Towers and Antenna Supporting Structures," 1996.
- ACI 318-05, "Building Code Requirements for Structural Concrete and Commentary," 2005.

Allow for reduction in required development length due to excess reinforcement per ACI 12.2.5, 12.3.3.1, and 12.5.3.4?

red := 1
0 - No Reduction (Design Mode)
1 - Allow Reduction (Analysis Mode)

SITE & GEOTECHNICAL DATA

Soil Parameters: Foundation analysis based on presumptive soil parameters, Section 7.1.3 of TIA/EIA-222-F.

Soil Unit Weight: $\gamma := 0.100 \cdot \text{kcf}$

Angle of Internal Friction: $\phi := 30 \cdot \text{deg}$

Allowable Bearing Pressure: $B_c := 4 \cdot \text{ksf}$

Cohesion: $c := 0 \cdot \text{ksf}$

Passive Pressure Coefficient: $K_p := \tan\left(\frac{\phi}{2} + 45 \cdot \text{deg}\right)^2$ $K_p = 3.00$

Sliding Friction Coefficient: $\mu := 0$

Depth Neglected: $D_n := 0 \cdot \text{ft}$

Depth of Water: $D_w := 0 \cdot \text{ft}$

Seismic Zone: $Z := 1$

MATERIAL SPECIFICATIONS

Concrete
Compressive Strength: $f'_c := 3000 \cdot \text{psi}$ Clear Cover: $cc := 3 \cdot \text{in}$
Unit Weight: $\gamma_{\text{conc}} := 0.150 \cdot \text{kcf}$

Rebar
Yield Strength: $F_y := 60 \cdot \text{ksi}$
Elastic Modulus: $E := 29000 \cdot \text{ksi}$

BEARING CAPACITY

Soil Volume: $V_{\text{soil}} := \left(W^2 - \frac{\pi}{4} \cdot D_p^2 \right) \cdot (D - T)$ $V_{\text{soil}} = 2.567 \times 10^3 \cdot \text{ft}^3$ $V_{\text{soil}} = 95.075 \cdot \text{yd}^3$

Soil Weight: $W_{\text{tsoil}} := V_{\text{soil}} \cdot \gamma$ $W_{\text{tsoil}} = 256.702 \cdot \text{kips}$

Soil Weight Removed: $W_{\text{tsoil.rem}} := W^2 \cdot D \cdot \gamma$ $W_{\text{tsoil.rem}} = 331.898 \cdot \text{kips}$

Total Download: $P := C + W_{\text{tconc}} + W_{\text{tsoil}}$ $P = 680.39 \cdot \text{kips}$

Overturing Moment: $M_{\text{ot}} := M + S \cdot (D + E)$ $M_{\text{ot}} = 719.2 \cdot \text{ft} \cdot \text{kips}$

Bearing Area: $\text{Area} := W^2$ $\text{Area} = 221.266 \cdot \text{ft}^2$

Section Modulus: $\text{Sect} := \frac{W^3}{6}$ $\text{Sect} = 548.554 \cdot \text{ft}^3$

Gross Bearing Pressure: $P_{\text{pos}} := \frac{P}{\text{Area}} + \frac{M_{\text{ot}}}{\text{Sect}}$ $P_{\text{pos}} = 4.386 \cdot \text{ksf}$

$$P_{\text{neg}} := \frac{P}{\text{Area}} - \frac{M_{\text{ot}}}{\text{Sect}} \quad P_{\text{neg}} = 1.764 \cdot \text{ksf}$$

Net Bearing Pressure: $P_{\text{pos.net}} := \frac{P - W_{\text{tsoil.rem}}}{\text{Area}} + \frac{M_{\text{ot}}}{\text{Sect}}$ $P_{\text{pos.net}} = 2.886 \cdot \text{ksf}$

$$P_{\text{neg.net}} := \frac{P - W_{\text{tsoil.rem}}}{\text{Area}} - \frac{M_{\text{ot}}}{\text{Sect}} \quad P_{\text{neg.net}} = 0.264 \cdot \text{ksf}$$

Allowable Bearing Pressure: $B_c = 4 \cdot \text{ksf}$

Check: $\text{Check}_{\text{bear}} := \text{if}(B_c \geq P_{\text{pos.net}}, \text{"OK"}, \text{"NO GOOD"})$ $\text{Check}_{\text{bear}} = \text{"OK"}$

$$\text{Ratio}_{\text{bear}} := \frac{P_{\text{pos.net}}}{B_c} \quad \text{Ratio}_{\text{bear}} = 0.722$$

CONCRETE STRENGTH CAPACITY

Load Factor: LF := 1.3

CONCRETE SHEAR CAPACITY

Shear Strength Reduction Factor: $\phi_s := 0.85$ [ACI 9.3.2.3]

Effective Shear Depth: $d := T - cc - 0.5 \cdot \text{in}$ $d = 26.5 \cdot \text{in}$

ONE-WAY SHEAR

Bearing Pressure Slope: $P_{\text{slope}} := \frac{P_{\text{pos}} - P_{\text{neg}}}{W}$ $P_{\text{slope}} = 0.176 \cdot \frac{\text{ksf}}{\text{ft}}$

Bearing Pressure at Edge of Pier: $P_{\text{edge}} := P_{\text{pos}} - P_{\text{slope}} \cdot \left(\frac{W - D_p}{2} \right)$ $P_{\text{edge}} = 3.472 \cdot \text{ksf}$

Effective Shear Width: $b_w := W$ $b_w = 14.875 \cdot \text{ft}$

Factored Shear Force: $V_{u1} := LF \cdot \frac{P_{\text{pos}} + P_{\text{edge}}}{2} \cdot W \cdot \frac{W - D_p}{2}$ $V_{u1} = 394.115 \cdot \text{kips}$

Nominal Shear Strength from Concrete: $V_{c1} := 2 \cdot \sqrt{f'_c} \cdot b_w \cdot d \cdot \sqrt{\text{psi}}$ $V_{c1} = 518.173 \cdot \text{kips}$

Nominal Shear Strength from Reinforcement: $V_{s1} := 0 \cdot \text{kips}$

Nominal Shear Strength: $V_{n1} := V_{c1} + V_{s1}$ $V_{n1} = 518.173 \cdot \text{kips}$ [ACI 11.1.1, Eqn. 11-2]

Check: $\text{Check}_{\text{shear.1}} := \text{if}(\phi_s \cdot V_{n1} \geq V_{u1}, \text{"OK"}, \text{"NO GOOD"})$ $\text{Check}_{\text{shear.1}} = \text{"OK"}$

$\text{Ratio}_{\text{shear.1}} := \frac{V_{u1}}{\phi_s \cdot V_{n1}}$ $\text{Ratio}_{\text{shear.1}} = 0.895$

TWO-WAY SHEAR

Shear Perimeter: $b_o := \pi \cdot (D_p + d)$ $b_o = 21.075 \cdot \text{ft}$ [ACI 11.12.1.2]

Factored Shear Force: $V_{u2} := LF \cdot C$ $V_{u2} = 402.61 \cdot \text{kips}$

Nominal Shear Strength from Concrete: $V_{c2} := 4 \cdot \sqrt{f'_c} \cdot b_o \cdot d \cdot \sqrt{\text{psi}}$ $V_{c2} = 1.468 \times 10^3 \cdot \text{kips}$

Nominal Shear Strength from Reinforcement: $V_{s2} := 0 \cdot \text{kips}$

Nominal Shear Strength: $V_{n2} := V_{c2} + V_{s2}$ $V_{n2} = 1.468 \times 10^3 \cdot \text{kips}$ [ACI 11.12.2.1, Eqn. 11-37]

Check: $\text{Check}_{\text{shear.2}} := \text{if}(\phi_s \cdot V_{n2} \geq V_{u2}, \text{"OK"}, \text{"NO GOOD"})$ $\text{Check}_{\text{shear.2}} = \text{"OK"}$

$\text{Ratio}_{\text{shear.2}} := \frac{V_{u2}}{\phi_s \cdot V_{n2}}$ $\text{Ratio}_{\text{shear.2}} = 0.323$

Subject: Fwd: FW: CT-5035

From: Steve Dorau <sdorau@structuralcomponents.net>

Date: 2/18/2013 8:58 AM

To: Kym Mercier <kmercier@structuralcomponents.net>

CC: Ryan Guerrero <rguerrero@structuralcomponents.net>, 'Alex Michaelis' <amichaelis@structuralcomponents.net>, Kyle Jackson <kjackson@structuralcomponents.net>, Roger Beckner <rbeckner@structuralcomponents.net>, Jeffery Ham <jham@structuralcomponents.net>

Kym, can you please setup this new SA job for GTP? SC previously analyzed this tower. Thanks.

Note: This tower was analyzed in December for two carriers. Verizon (2nd carrier in Dec.) is proposing a change in the rad center and the quantity of RRHs. This will be a quick change to the report and analysis.

Original Message -----

Subject:FW: CT-5035

Date:Fri, 15 Feb 2013 15:46:59 -0700

From:Ryan Guerrero <rguerrero@structuralcomponents.net>

To:<sdorau@structuralcomponents.net>

CC:'Wes Culver' <wculver@structuralcomponents.net>

Hi Steve-

Can you please set up this new GTP SA with the document checklist and send out to Kym and the SA crew?

Thanks

Ryan

From: John Hernandez [<mailto:jhernandez@gtpsites.com>]

Sent: Friday, February 15, 2013 1:13 PM

To: Ryan Guerrero

Subject: CT-5035

Hey Ryan,

This is a 240 ft self support that requires a SA. Please see attached docs for additional info.

Can you please provide a price and turnaround time?

Thanks

John Hernandez
Structural Engineer in Training



GLOBAL TOWER PARTNERS Collocation Application

| | | | |
|---|--|---|--|
| Check one: New <input type="checkbox"/> Addition to Existing <input type="checkbox"/> Modification <input checked="" type="checkbox"/> | | LEASE # 17924 VERSION 7 | |
| PLEASE RETURN THIS APPLICATION TO: rcrews@gtpsites.com GTP 750 Park of Commerce Blvd Suite 300 Boca Raton, FL 33487-3612 Attn: Leasing | | E-Mail: rcrews@gtpsites.com Office: (561) 843-8416 Fax: (561) 982-7032 | |
| | | GTP Site #: US CT 5035 GTP Site Name: Tartaglia GTP Date Received: 10-22-12 Revision Dates: 10-22-12, 10-23-12, 11-14-12, 12-21-12, 12-27-12, 1-4-13, 1-15-13 (Coax) RSM Approval: Charles Laurette 11.29.12 | |

| APPLICANT/CARRIER INFORMATION | | | |
|---|--|--------------------|--|
| Carrier Name: | Verizon Wireless | Contact Name: | Alex Tyurin |
| Carrier Site Name: | North Bridgeport | Contact Number: | 860-803-8213 |
| Carrier Site Number: | N/A | Contact Fax: | 860-290-8951 |
| Carrier Legal Entity Name: | Cellco Partnership | Contact Address: | 99 east River Dr, 9 th Floor, East Hartford, CT 06108 |
| State of registration: | Delaware | Contact E-mail: | Aleksey.tyurin@verizonwireless.com |
| Type of entity (LP, LLC, Corp) d/b/a/ (If applicable) | Partnership | Additional E-mail: | |
| Notice Address for Lease: | Verizon Wireless 180 Washington Valley Rd, Bedminster, NJ 07921 | Other: | |
| With copies to: | | Carrier NOC# | 800-852-2671 |
| Carrier Invoice Address: | Same as above | | |
| Carrier Invoice Contact - Name, Title, Phone No. | Attn: Real Estate | | |

| ADDITIONAL CARRIER INFORMATION | |
|-----------------------------------|--------------------------------|
| Leasing Contact Name/Number: | Alex Tyurin / 860-803-8213 |
| RF Contact Name/Number: | Dany Bustamante / 860-803-8237 |
| Construction Contact Name/Number: | Mark Gauger / 203-494-0023 |
| Emergency Contact Name/Number: | NOCC 800-852-2671 |

| SITE INFORMATION | | | | | | |
|------------------|---|----|-------|---|----------------------------|---------|
| Latitude: | 41 | 13 | 10.35 | N | Existing Structure Type: | Lattice |
| Longitude: | 73 | 12 | 06.40 | W | Existing Structure Height: | 240' |
| Site Address: | 1330 Chopsey Hill Rd (also known as 1000 Trumbull Avenue), Bridgeport, CT | | | | | |

| Antenna Equipment Specifications | | | | | | |
|--|---|---|---|------------------------|--|----------|
| Sectors (1, 2, 3 etc. - if applicable) | 1 | 2 | 3 | | | |
| Equipment Type (Panel, Omni, RRU, TMA, RET, MW Dish etc.) | panel | panel | panel | Diplexers | RRH and main Distribution Box | GP S |
| Installation Status (Existing, Proposed etc.) | Existing and Remaining / Proposed (highlighted) | Existing and Remaining / Proposed (highlighted) | Existing and Remaining / Proposed (highlighted) | Existing and Remaining | Proposed | Existing |
| Rad Center AGL (ft) | 155' | 155' | 155' | 155' | 155' | 20' |
| Equipment Mount Height (ft) | 152' | 152' | 152' | 152' | 152' | 20' |
| Equipment Mount Type | platform | platform | platform | platform | Behind antennas | |
| Equipment Quantity | 4 | 4 | 4 | 6 (2/sector) | (6) / (1) | 1 |
| Equipment Manufacturer | Antel | Antel | Antel | RFS | Alcatel Lucent / RFS | |
| Equipment Model # | (1)BXA70063/6CF (1)BXA 80063/6BF (proposed); (1) BXA171063/8BF (proposed); (1) MG D3-800TO | (1)BXA70063/6CF (1)BXA 80063/6BF (proposed); (1) BXA171063/8BF (proposed); (1) MG D3-800TO | (1)BXA70063/6CF (1)BXA 80063/6BF (proposed); (1) BXA171063/8BF (proposed); (1) MG D3-800TO | FD9R6004/2C-3L | ALU RH2X40 AWS for RRH DB T1 6Z 8AB OZ for MDB | |
| Equipment Weight (per item in lbs)) | 17 lbs/19.2 lbs/10.5 lbs/15 lbs | 17 lbs/19.2 lbs/10.5 lbs/15 lbs | 17 lbs/19.2 lbs/10.5 lbs/15 lbs | 2.6 lbs | 44 lbs for both | |
| Equipment Dimensions (HxWxD) | | | | 5.8"x6.5"x1.5" | 24.4"x10.67"x6.7" for RRH and | |



Structural Components, LLC
2400 Central Ave.
Suite A-1 South
Boulder, CO 80301

Voice: 866-386-7622
Fax: 303-962-3577

December 28, 2012

Juan Palacio
Global Tower Partners
750 Park of Commerce Blvd.
Suite 300
Boca Raton, FL 33487

Re: Structural Analysis Report
Structure: 240ft ROHN Self Support Tower
Site Address: 1000 Trumbull Ave., Bridgeport, CT 06606
Lat: 41.21962°N, Long: 73.20134°W
Site Name: Verizon - North Bridgeport
GIP - Tartaglia
Site Number: GTP - CT-5035
SC Number: 121086
Status: **FAILS (138% Capacity)**

Dear Mr. Palacio:

Per your request, Structural Components, LLC has completed a structural analysis for the above referenced project to verify the tower's compliance to the following design criteria:

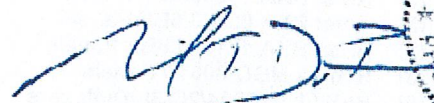
| | |
|--------------------------------------|---|
| Standard: | TIA/EIA-222-F <i>Structural Standards for Steel Antenna Towers and Antenna Supporting Structures</i> |
| Building Code: | 2003 International Building Code |
| Design Basic Wind Speed without Ice: | 85 mph fastest mile (equivalent to 100 mph 3-second gust) |
| Design Basic Wind Speed with Ice: | 74 mph fastest mile (equivalent to 88 mph 3-second gust) |
| Ice Thickness: | 1/2" radial |
| Serviceability Basic Wind Speed: | 50 mph fastest mile (equivalent to 60 mph 3-second gust) |

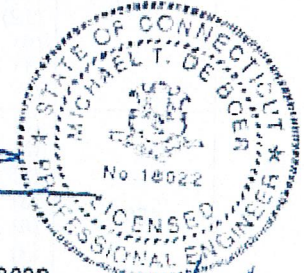
Please refer to the following structural analysis report, which gives complete details of the tower loading, results, information provided, and necessary assumptions.

We trust you find this report satisfactory. Please do not hesitate to contact us if you should have any questions or concerns.

Best Regards,
Structural Components LLC

Kyle Jackson, E.I.T.
Structural Engineering Dept


Michael DeBoer, P.E.
Connecticut P.E. # 0018022
Expires: 01/31/2013



12/28/12

LOADING CONFIGURATION CONT.

| Elev. (ft) ⁽¹⁾ | Appurtenance | Line | Face ⁽²⁾ | Notes |
|---------------------------|--|------------|---------------------|---------------------|
| 137.0 | (1) 8' x 1.5" Omni (1) Side Arm Mount | --- | --- | DEAD ⁽³⁾ |
| 132.0 | (1) 4' 32-Element Yagi (1) Side Arm Mount | (1) 7/16" | AB | DEAD ⁽³⁾ |
| 118.0 | (1) 10' x 2" Omni (1) Side Arm Mount | (1) 7/8" | BC | Existing |
| 108.0 | (1) 10' x 3" Omni (1) Side Arm Mount | (1) 1-1/4" | BC | Existing |
| 99.0 | (1) 4' 32-Element Yagi (1) Side Arm Mount | (1) 7/16" | AB | DEAD ⁽³⁾ |
| 80.0 | (1) Empty Side Arm Mount | --- | --- | Existing |
| 22.0 | (1) 3' Dish w/o Radome (1) Pipe Mount | (1) CAT5 | CA | Existing |
| 20.0 | (1) GPS w/ Mount | (1) 1/2" | CA | Verizon Existing |
| 8.0 | (1) GPS w/ Mount | (1) 1/2" | CA | T-Mobile Existing |

- 1) Elevations reference centerline of panel, yagi, and dish antennas, and base of whip antennas, in relation to the base of the tower.
- 2) "Face" designates which face of the tower (AB, BC, CA) the coax is assumed to be placed. See coax layout in Appendix A for assumed placement. If coax placement differs from what is noted in this report, contact Structural Components for further analysis.
- 3) The loads that are considered as "DEAD" have been considered in the current analysis. The loads should be removed from the tower to provide additional capacity.
- 4) Sprint's temporary loading has been considered in the current analysis.

3 PROVIDED INFORMATION AND ASSUMPTIONS

Information about the tower was provided by Global Tower Partners. Structural Components, LLC visited the site on 12/22/2012 for a line and antenna mapping.

| Data | Document | Author | Date | File |
|--------------------------------|--|----------------------------|------------|-------------|
| Tower | Original Tower Design Structural Analysis | UNR-Rohn | 03/09/1988 | 23253DB |
| | | GTP | 11/16/2012 | CT-5035 |
| Existing and Proposed Loads | Collocation Application Collocation Application Existing Loading Table Mapping Report | GTP/Verizon | 11/14/2012 | CT-5035 |
| | | GTP/T-Mobile | 12/04/2012 | CT-5035 |
| | | GTP | 11/16/2012 | CT-5035 |
| | | Structural Components, LLC | 12/23/2012 | 110928 |
| Foundation | Original Tower Design | UNR-Rohn | 03/09/1988 | 23253DB |
| Soils | Geotechnical Report | Soiltesting, Inc. | 01/06/1988 | G96-1987-87 |

The following assumptions were made in order to complete the analysis. These assumptions must be checked. If they do not accurately represent the existing or proposed tower, foundation, soil, and loading conditions, we must be notified so that we can make the appropriate changes to our analysis, conclusions, and recommendations.

1. The tower and foundation are constructed as shown in the provided drawings, previous structural analysis reports, mapping reports, photos, and/or other documents.
2. The tower and foundation are in good condition with no corrosion, damage or fatiguing issues which could reduce the carrying capacity of the tower.
3. The tower has been properly maintained in accordance with industry standards.
4. The tower and foundation have not been modified except as indicated in the provided information or in this report.
5. The pipe grades for all members are assumed to have a yield stress of 50ksi. All other members are 36ksi yield stress.
6. All connection bolts are considered to be A325N.

4 CONCLUSIONS

To the best of our knowledge and belief the tower does not satisfy the requirements of the applicable codes and standards having jurisdiction over the work for the loadings and conditions as outlined in this report. **Structural modifications are required at this time.**

5 RECOMMENDATIONS

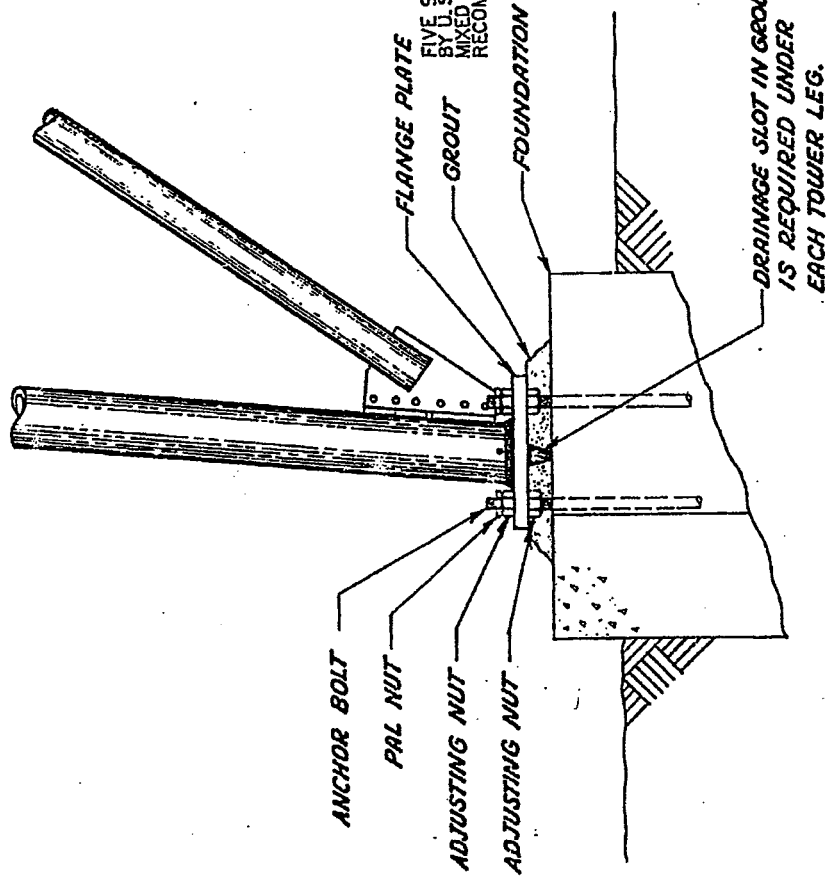
Provided the assumptions outlined are accurate, we recommend the following modifications:

1. Replace the redundant diagonals from 0 - 30ft with a larger 2" std. pipe.
2. Replace the diagonals from 100 - 120ft and from 140 - 160ft with a larger 3" std. pipe.
3. Provide a more recent geotechnical report in order for a more accurate description of the soils.

Please note that these upgrade recommendations are for estimation purposes only.

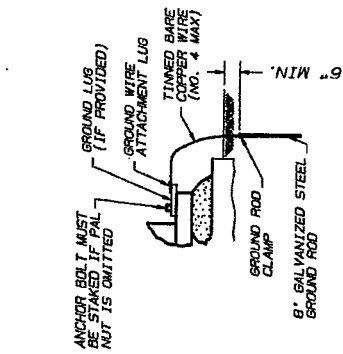
A descriptive and detailed reinforcement modification recommendation, with a structural analysis of proof of passing is available upon order.

Full modification drawings are also available upon order.

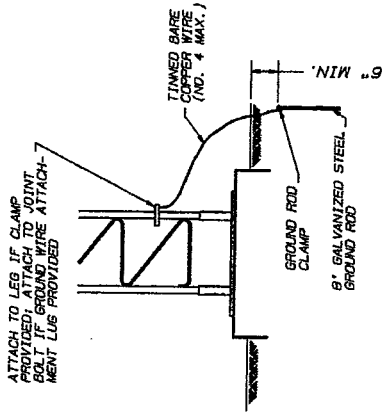


FIVE STAR SPECIAL GROUT 100 AS MANUFACTURED BY FIVE STAR GROUT CORPORATION OR APPROVED EQUAL MIXED AND INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

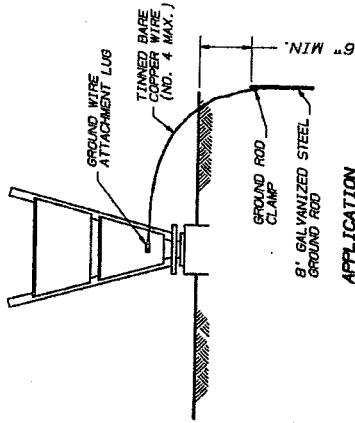
| | | | |
|--|----------------|-----------------|----------------|
| R2 REVISION | | DATE | BY |
| NO. | | DESCRIPTION | REVISIONS |
| R O H N | | | |
| TITLE GROUTING & DRAINAGE DETAIL | | | |
| FOR PORTAL & M.W. SERIES SECTIONS | | | |
| FILE NO. | | | |
| THIS DRAWING IS THE PROPERTY OF ROHN. IT IS NOT TO BE REPRODUCED, COPIED, OR TRACED IN WHOLE OR IN PART WITHOUT OUR WRITTEN CONSENT. | | | |
| SCALE | MATERIAL | FINISH | WT. |
| NONE | | | |
| UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE GIVEN IN INCHES | | | |
| DESIGNED BY | DRAWN BY | CHECKED BY | DATE |
| T.S. OAH | J.P. | J.P. | 12-1-69 |
| APPROVED BY | DATE | PROJECT NO. | REV. |
| M.P. | 12/2/69 | B 691111 | R2 |



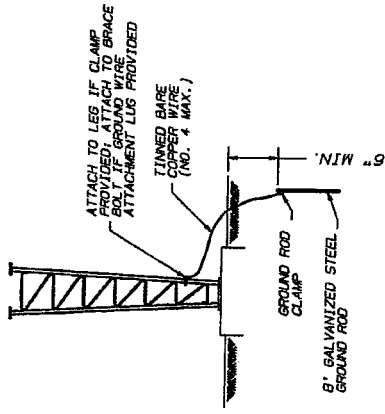
APPLICATION
SELF-SUPPORTING TOWERS AND GUYED TOWERS WITH ANCHOR BOLTS



APPLICATION
NO. 250, 450 & 550 TOWERS WITH PLAY BASE



APPLICATION
NO. 550, 650, 550, 30, 40, 50, 60, 70 TOWERS WITH TAPERED BASE

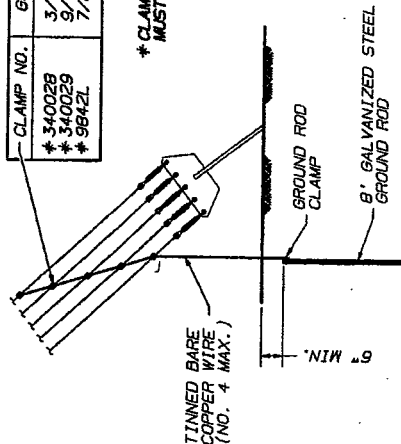


APPLICATION
NO. 650 & J TOWERS WITH TAPERED BASE

BASE GROUNDING KITS (BGK)

| CLAMP NO. | GUY WIRE SIZE |
|-----------|---|
| * 340028 | 3/16" - 1/2" |
| * 340029 | 9/16" - 3/4" |
| * 9842L | 7/8" - 1" (SEE INSTALL. DETAIL 8801367) |

* CLAMP IS NOT INCLUDED IN GROUNDING KIT. MUST BE ORDERED AS A SEPARATE ITEM.



ANCHOR GROUNDING KITS

GUY WIRE GROUNDING (AGK)

GENERAL NOTES

1. USE SUFFICIENT BEND RADIUS TO PREVENT KINKING OF THE GROUND WIRE.
2. CUT WIRE TO PROPER LENGTHS. DO NOT COIL GROUND WIRE.

| REV. | REV. GUY WIRE GROUND CLAMP NOTE | BY | DATE | APP'D | DATE | REV. | DATE |
|------|---------------------------------|-----|----------|-------|----------|------|----------|
| 1 | REV. 880 ANSL/TIA/EA-232-F | JER | 11-20-73 | JER | 11-20-73 | 1 | 11-20-73 |
| 2 | REV. 880 ANSL/TIA/EA-232-F | CW | 11-27-73 | CW | 11-27-73 | 2 | 11-27-73 |

No. 1. Revision Description

THIS DRAWING IS THE PROPERTY OF ROHN. IT IS NOT TO BE REPRODUCED OR COPIED IN WHOLE OR IN PART WITHOUT OUR WRITTEN CONSENT.

Series: 8085 By: JER Date: 11-20-73 Title: TOWER GROUNDING METHODS

Drawing: MOU 11-27-73

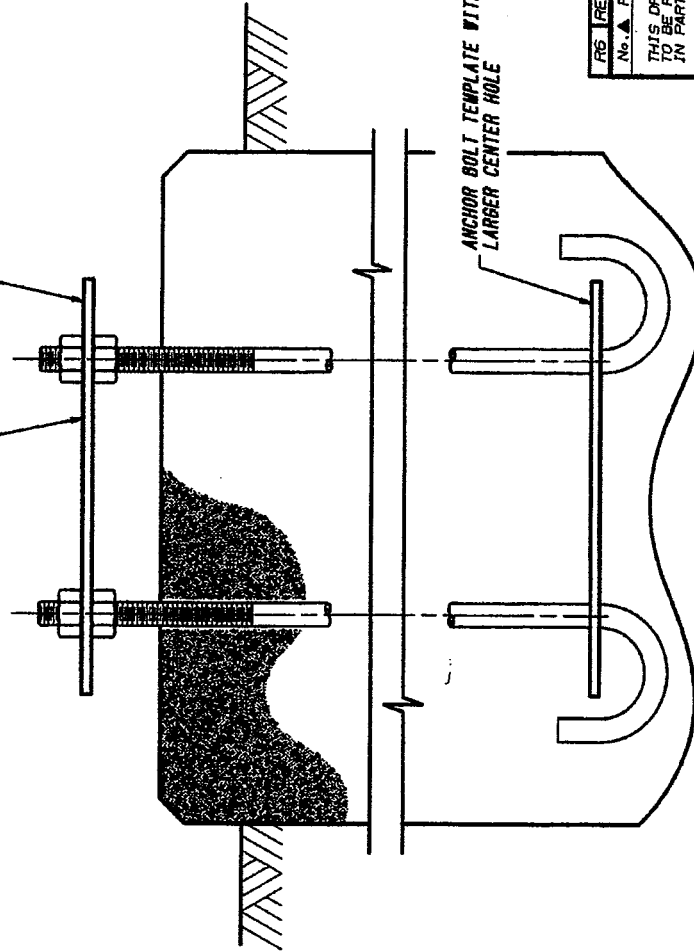
App. Eng.: CW 11-27-73

App. Sec'y: MF 12-7-73

ENG. FILE: DRAWING NO.: C731105 R6

ANCHOR BOLT SETTING TEMPLATE - (SEE ANCHOR BOLT LAYOUT OR FOUNDATION DETAIL OF EACH TOWER SITE FOR TEMPLATE PART NO.) FOR 6" THRU 12" LEGS ONLY. LOCATE TEMPLATE SUCH THAT SCRIBED LINE PASSING THROUGH CENTER HOLE AND 2 CENTER PUNCH MARKS IS ON LINE TO TOWER AXIS. REMOVE TEMPLATE BEFORE ERECTING TOWER. SEE ANCHOR BOLT LAYOUT OR FOUNDATION DETAIL FOR FURTHER INFORMATION CONCERNING ANCHOR BOLT ORIENTATION

ANCHOR BOLT TEMPLATE WITH
1/8" CENTER HOLE



ANCHOR BOLT TEMPLATE WITH
LARGER CENTER HOLE

CHECK ANCHOR BOLT SIZE, NUMBER, SPACING AND BOLT
CIRCLE DIAMETER ON PLATES, BOTH TOP AND BOTTOM,
AGAINST ANCHOR BOLT LAYOUT OR FOUNDATION DETAIL.
DRAWINGS BEFORE INSTALLATION.

| | | | | | |
|---|---------|---|-------------------|------|---------|
| RG | REDRAWN | 1/11/90 | WFF | 212 | 73 |
| No. \blacktriangle Revision Description | | \blacktriangle Date \blacktriangle Rev. By \blacktriangle Ckd. By \blacktriangle Appd. By | | | |
| THIS DRAWING IS THE PROPERTY OF ROHN. IT IS NOT TO BE REPRODUCED, COPIED OR TRACED IN WHOLE OR IN PART WITHOUT OUR WRITTEN CONSENT. | | | | | |
| Scale: | NONE | By | OH | Date | 4/7/73 |
| Drawn: | | Checked: | TS | | 4/13/73 |
| App. Eng.: | CW | | | | 4/13/73 |
| Parent File: | | | | | |
| ANCHOR BOLT TEMPLATE INSTALLATION | | | ENG. FILE: | | |
| | | | DWG. NO.: B730521 | | |
| | | | SHEET 1 OF 1 | | |
| | | | REV. 06 | | |

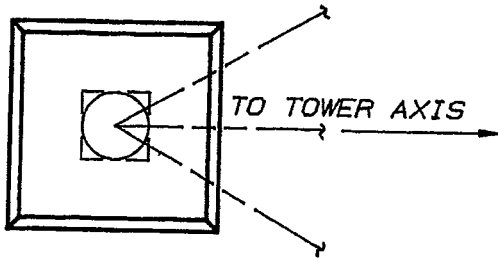
ROHN

NOTE: IT IS THE RESPONSIBILITY OF THE FOUNDATION CONTRACTOR TO VERIFY THAT THE CORRECT ANCHOR BOLT TEMPLATE AND FOUNDATION DIMENSIONS SHOWN ON RESPECTIVE SITE DRAWINGS ARE BEING USED.

FOUNDATION SCHEDULE

| "A" | "B" | "C" | "D" | "E" | H-BARS | V-BARS | TIES |
|--------|-------------|-------|--------|-------|------------|------------|-------|
| 15'-6" | 14'-10 1/2" | 4'-6" | 15'-0" | 2'-6" | (17) NO. 7 | (24) NO. 9 | NO. 5 |

NOTE: SEE DRAWING A880342 FOR FOUNDATION LAYOUT AND ANCHORAGE EMBEDMENTS



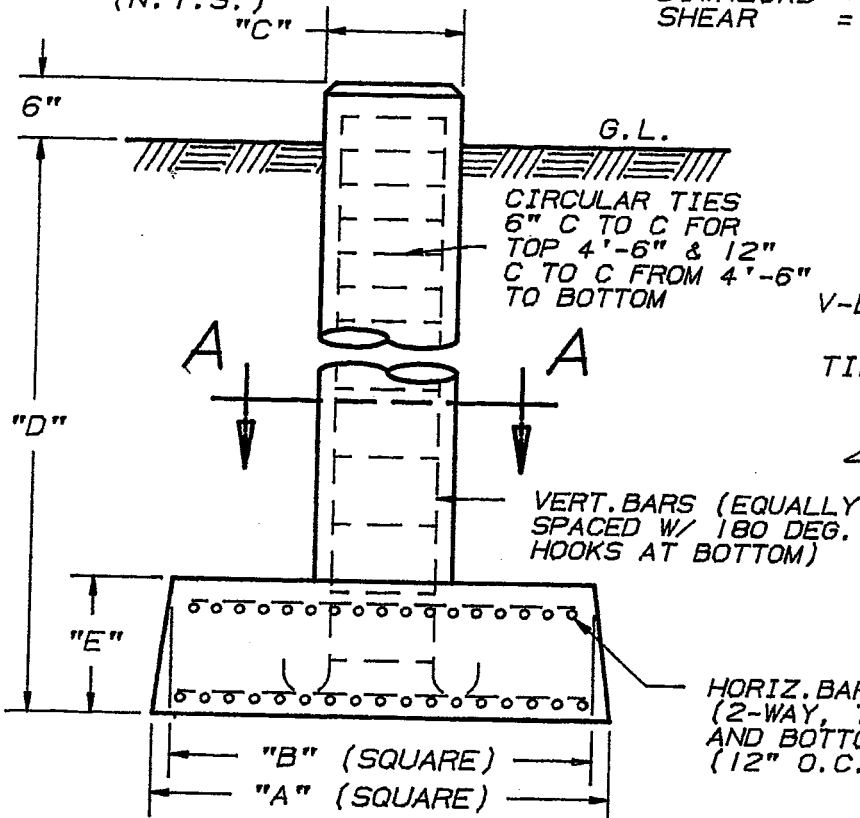
PLAN VIEW
(N.T.S.)

VOLUME OF CONCRETE

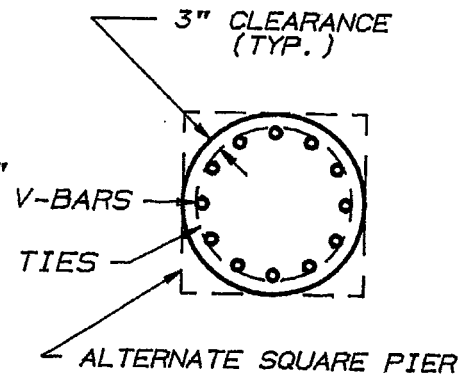
| ROUND PIER | SQUARE PIER |
|-------------------------|---------------|
| 29.0 CU. YDS. (PER LEG) | 31.1 CU. YDS. |
| 87.0 CU. YDS. (TOTAL) | 93.3 CU. YDS. |

REACTIONS

UPLIFT = 381.1 KIPS
 DOWNLOAD = 452.6 KIPS
 SHEAR = 52.6 KIPS



ELEVATION VIEW
(N.T.S.)



SECTION A-A
(N.T.S.)

SHEET 1 OF 2

(N.T.S.)

TOWER SITE: BRIDGEPORT, CT.
 TOWER ASSY DWG: C880400

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| | |
|----------------------------------|----------------|
| DRAWN BY: KTL | DATE: 1/28/88 |
| CHECKED BY: <i>[Signature]</i> | DATE: 1-28-88 |
| APP'D. ENG: XK | DATE: 1-28-'88 |
| APP'D. SALES: <i>[Signature]</i> | DATE: 1-28-88 |
| FILE NUMBER: | 23253DB |
| DRAWING NUMBER: | A880341-1 |

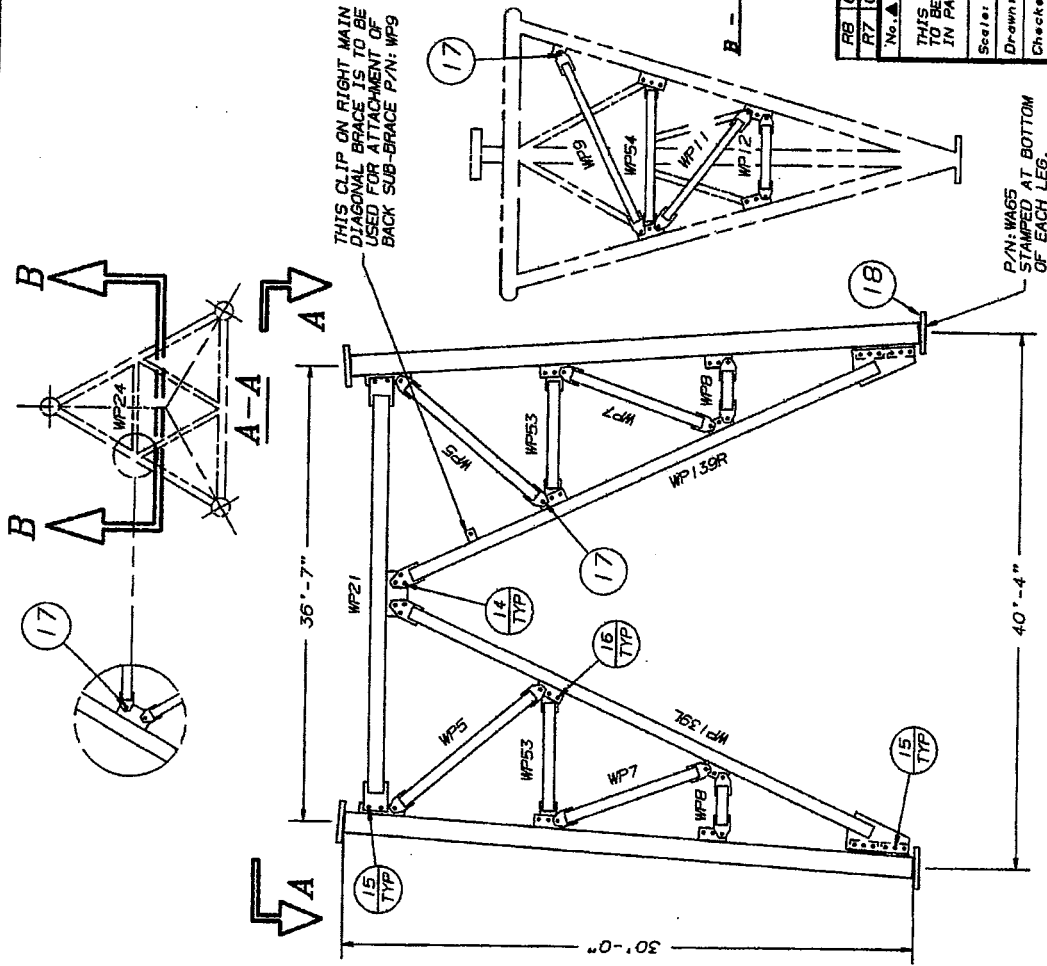
UNR-ROHN

TITLE:
PIER & PAD FOUNDATION DETAIL
FOR
CLINTON TOWER SERVICE

BILL OF MATERIAL

| ITEM | QUN. | PART NO. | DESCRIPTION | DWG. NO. |
|------|------|----------|-------------------------------------|-----------|
| 1 | 3 | WAG5 | LEG (PIPE 10 EH) | SK7506368 |
| 2 | 3 | WP139L | LEFT MAIN DIAG. BRACE (PIPE 3 STD) | C991030 |
| 3 | 3 | WP139R | RIGHT MAIN DIAG. BRACE (PIPE 3 STD) | C991030 |
| 4 | 3 | WP21 | MAIN HORIZ. BRACE (PIPE 3.5 STD) | SK731106 |
| 5 | 6 | WFS | SUB-DIAG. BRACE (PIPE 2.5 STD) | C821639 |
| 6 | 6 | WFS3 | SUB-HORIZ. BRACE (PIPE 2 STD) | C821640 |
| 7 | 6 | WP7 | SUB-DIAG. BRACE (PIPE 1.5 STD) | C821639 |
| 8 | 6 | WP9 | SUB-HORIZ. BRACE (PIPE 1.5 STD) | C821639 |
| 9 | 3 | WFS4 | SUB-DIAG. BRACE (PIPE 3 STD) | C821640 |
| 10 | 3 | WFS4 | SUB-DIAG. BRACE (PIPE 2.00 STD) | C821640 |
| 11 | 3 | WP11 | SUB-DIAG. BRACE (PIPE 2.5 STD) | C821639 |
| 12 | 3 | WP12 | SUB-HORIZ. BRACE (PIPE 1.5 STD) | C821639 |
| 13 | 3 | WP24 | SUB-HORIZ. BRACE (PIPE 3 STD) | C821640 |
| 14 | 18 | 2100618A | BOLT ASSY (.88 X 2.25") | C770404 |
| 15 | 48 | 2100476A | BOLT ASSY (.75 X 2.00") | C770404 |
| 16 | 54 | 2100306A | BOLT ASSY (.63 X 1.75") | C770404 |
| 17 | 24 | 2100316A | BOLT ASSY (.63 X 2.00") | C770404 |
| 18 | 36 | 230029 | PAL NUT (1.00") | N/A |
| 19 | 72 | 5/8STEP | STEP BOLT ASSY | 8651264 |

NOTE:
ALL BRACE BOLTS ARE .63 X 1.75"
UNLESS OTHERWISE NOTED.



| No. | Revision Description | Date | Rev. By | App. By |
|-----|---|----------|---------|---------|
| R6 | CHANGED WP10 TO WFS4 | 10/28/04 | CMH | KYL |
| R7 | CHANGED TWO-PIECE BRACES INTO ONE-PIECE | 11/10/08 | LLK | KYL |

Scale: NONE

Drawn: OH 11/21/73
Checked: TS 12/07/73
App. Eng.: CW 12/17/73
Parent File:

SECTION ASSY. MWP 30' 10EH BASE

ENG. FILE: B731223

DWG. NO.: B731223

SHEET 1 OF 1

REV. 8

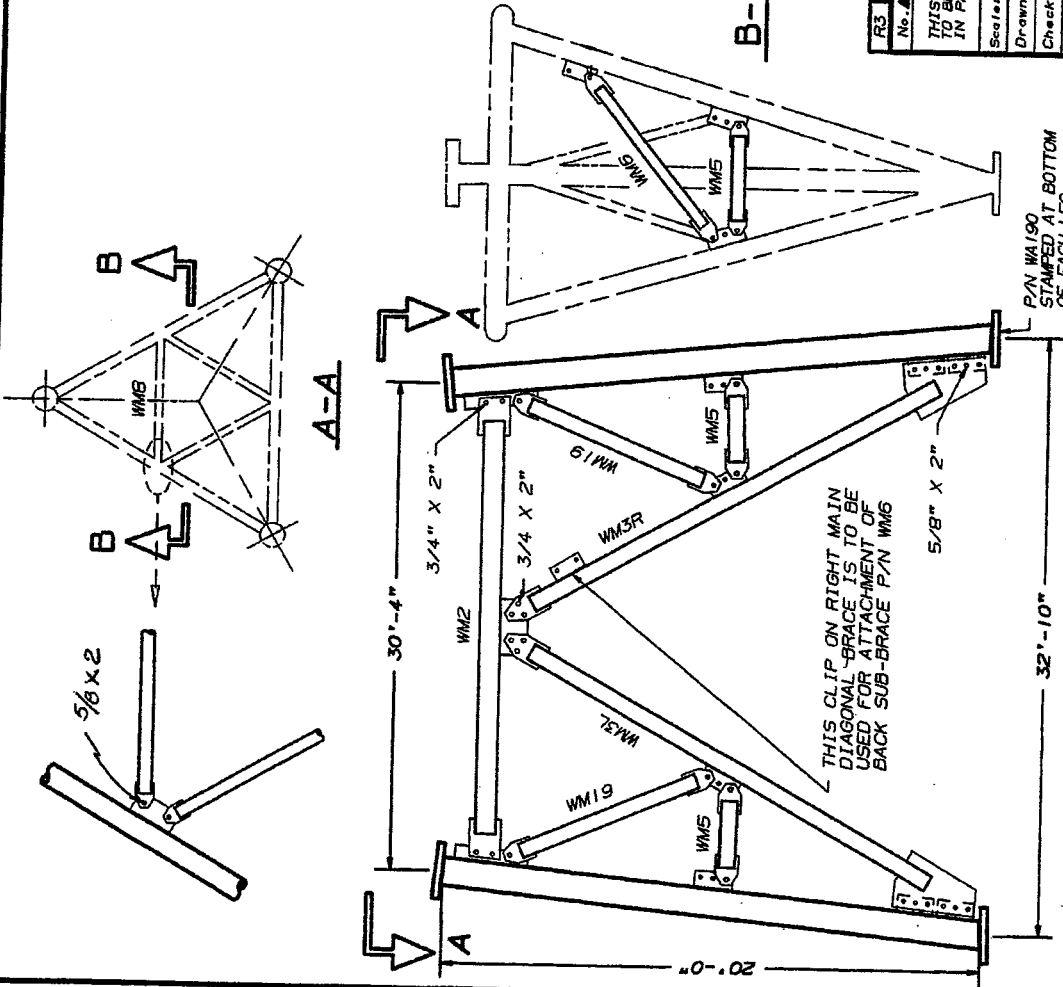
R O H N

BILL OF MATERIAL

| ITEM | QUAN. | PART NO. | DESCRIPTION | DWG. NO. |
|------|-------|----------|-------------------------------|----------|
| 1 | 3 | WA190 | LEG MMK-M 10EH 20' 20 20 | B800159 |
| 2 | 3 | WM2 | BRACE H MM 35TDX29.24' | SK731106 |
| 3 | 3 | WM3L | BRACE D MM 35TDX23.9' | SK731114 |
| 4 | 3 | WM3R | BRACE D MM 35TDX23.9' | SK731114 |
| 5 | 6 | WM19 | BRACE 2 STD PIPE | C821639 |
| 6 | 9 | WM5 | BRACE SUB MM 1.55TDX6.64' | C821639 |
| 7 | 3 | WM6 | BRACE BSDI MM 35TDX14.84' | C821639 |
| 8 | 3 | WM8 | BRACE HSI MM 35TDX14.28 | C821639 |
| 9 | 36 | 2100306A | BOLT ASSY 5/8 X 1 3/4" | C770404 |
| 10 | 42 | 2100316A | BOLT ASSY 3/4 X 2" | C770404 |
| 11 | 30 | 2100478A | BOLT ASSY 3/4 X 2" | C770404 |
| 12 | 48 | 5/8STEP | STEPBOLT ASSY 5/8X6-1/2 W/DEN | B851284 |
| 13 | 36 | 2101646A | BOLT ASSY 1 X 5-3/4 HSB A325 | C770404 |

NOTE:
ALL BRACE BOLTS ARE 5/8" X 1 3/4"
UNLESS OTHERWISE NOTED.

B-B



| | | | | | |
|---|------|----------|--------------------------|---------|----------|
| R3 REDRAWN / WM19 WAS WM4WV | | 08-17-04 | CMH | JD777 | RR |
| No. A Revision Description | | Date | Rev. By | Cr'd By | App'd By |
| THIS DRAWING IS THE PROPERTY OF ROHN. IT IS NOT TO BE REPRODUCED, COPIED OR TRACED IN WHOLE OR IN PART WITHOUT OUR WRITTEN CONSENT. | | | | | |
| Scale: | NONE | By | Title: | | |
| Drawn: | KTL | Date | MM19 | | |
| Checked: | OH | Date | SECTION ASSY MM 20' 10EH | | |
| App. Eng.: | TS | Date | DRAWING NO.: B800159 R3 | | |
| App. Sales: | GR | Date | ENG. FILE: | | |

BILL OF MATERIAL

| ITEM | QTY. | PART NO. | DESCRIPTION | DWG. NO. |
|------|------|----------|----------------------------|------------|
| 1 | 3 | WA 34 | LEG 8" X 8" STD. PIPE | SK 730400B |
| 2 | 3 | WK 2 | BRACE 2 1/2" STD. PIPE | SK 731106 |
| 3 | 3 | WK 19R | BRACE 2 1/2" STD. PIPE | SK 731114 |
| 4 | 3 | WK 19L | BRACE 2 1/2" STD. PIPE | SK 731114 |
| 5 | 6 | WK 4 | BRACE 1 1/2" STD. PIPE | CB21638 |
| 6 | 9 | WK 5 | BRACE 1 1/2" STD. PIPE | CB21638 |
| 7 | 3 | WK 6 | BRACE 2 1/2" STD. PIPE | CB21638 |
| 8 | | | | |
| 9 | 3 | WK 8 | BRACE 2" STD. PIPE | CB21638 |
| 10 | 42 | 210030GA | 5/8 x 1 1/4 BOLT ASSY | C770404 |
| 11 | 36 | 210031GA | 5/8 x 2 BOLT ASSY | C770404 |
| 12 | 30 | 210047GA | 3/4 x 2 BOLT ASSY | C770404 |
| 13 | 24 | 210164CA | 1 x 5 3/4 FLANGE BOLT ASSY | C770404 |

| NO. | DESCRIPTION | REVISIONS | DATE | BY |
|-----|---|-----------|---------|------|
| R5 | REVISED WK 40 TO WKS | | 9-29-73 | JRE |
| R4 | 210164CA HAS 210070GA | | 3-1-84 | UHD |
| R3 | ADDED BRACE PIN'S & REV. Dwg # No.'s | | 1-26-82 | Av16 |
| R2 | WKS TO 40; WK 7 TO 41; WK 9 TO 15 STD. PIPE; BOLT FLOWING | | 6-17-81 | AGD |
| R1 | REF. Dwg. No. REVISION | | 1-28-79 | OK |

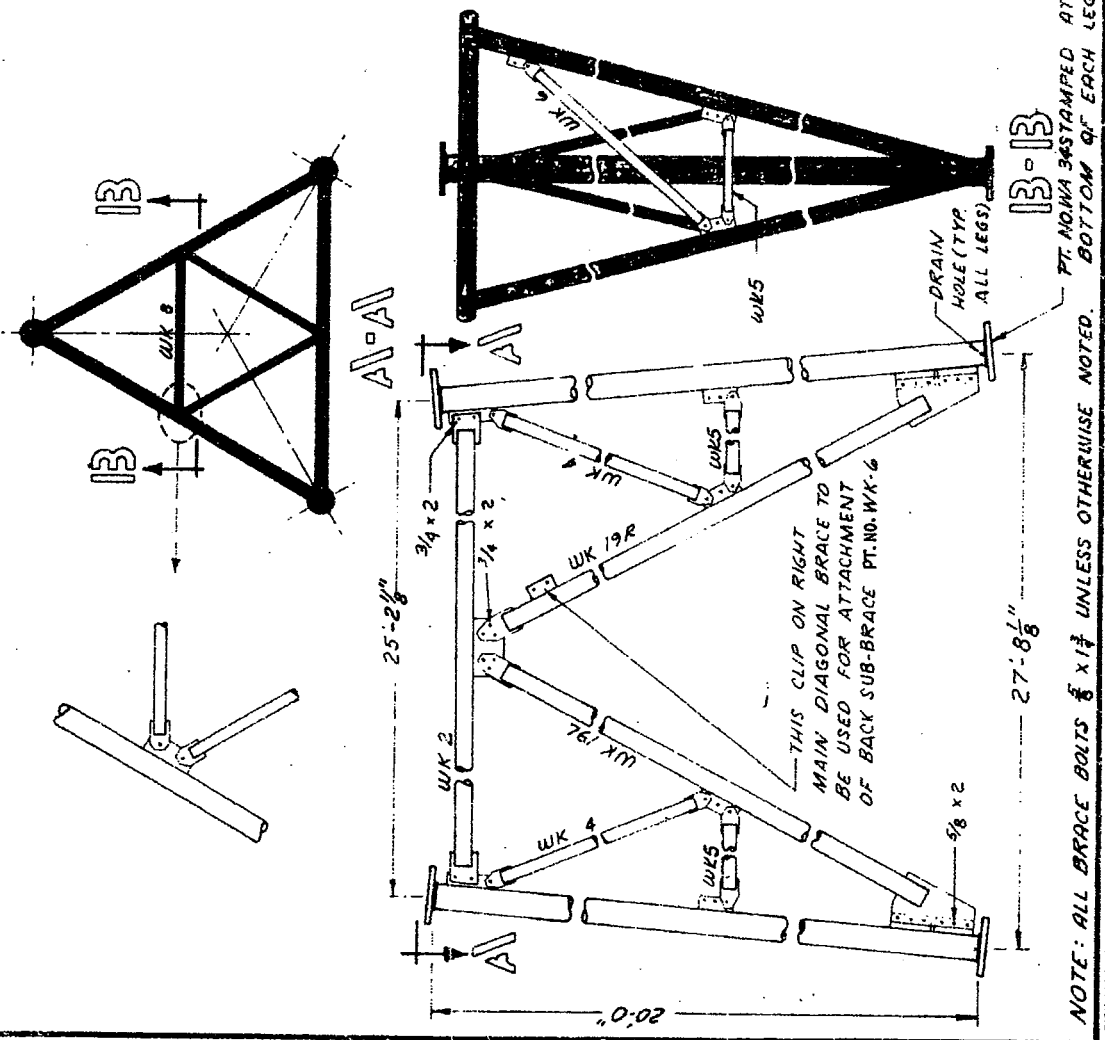
ROHN MANUFACTURING

MWK12

SECTION ASSY MWK 20' BEH 2.5STD

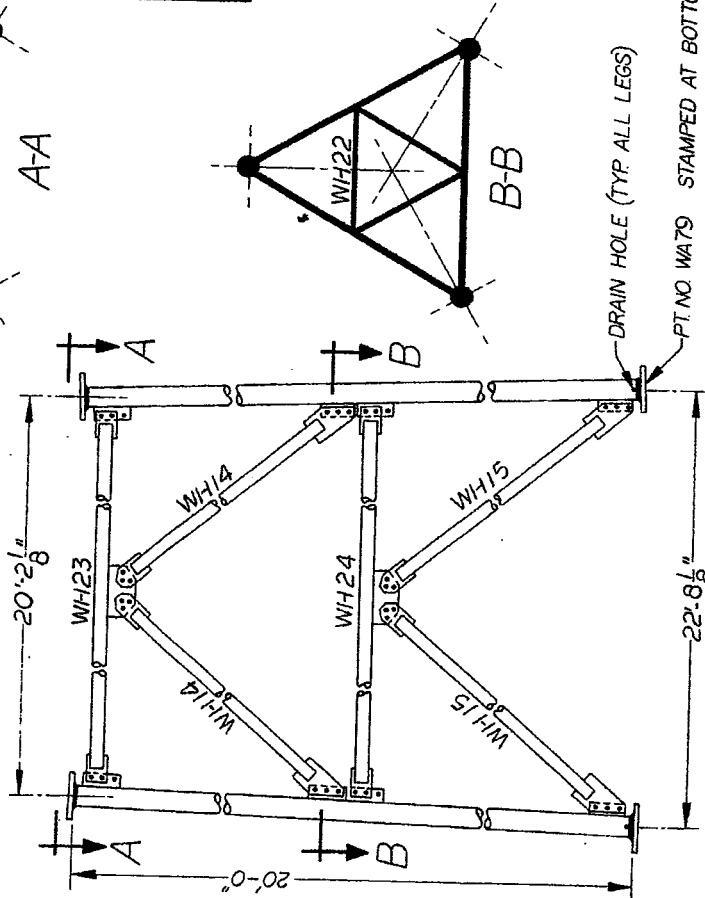
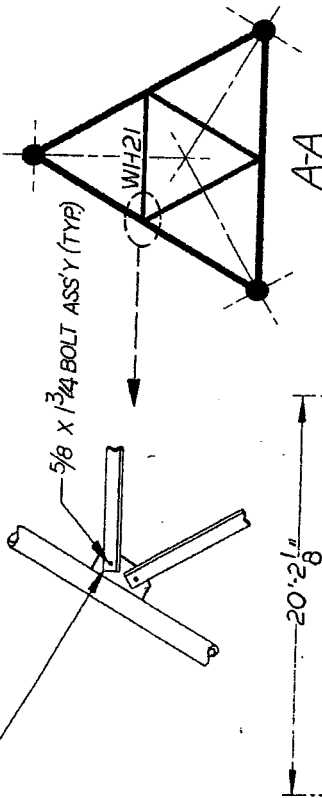
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DATE: 5-29-73
 DRAWN BY: J.S.
 CHECKED BY: OK
 DATE: 6-5-73
 FILE NO.: B 730744 R
 DWG. NO.: 5



NOTE: ALL BRACE BOLTS 5/8 x 1 1/2 UNLESS OTHERWISE NOTED. BOTTOM OF EACH LEG.

NOTE: INSTALL BRACES ON UNDERNEATH SIDE OF BRACE PLATE IF PLATFORM IS TO BE INSTALLED OVER BRACES.



NOTE: ALL BRACE BOLTS 5/8 X 1 3/4 UNLESS OTHERWISE NOTED.

BILL OF MATERIAL

| ITEM | QUAN | PT. NO. | DESCRIPTION | DWG. NO. |
|------|------|----------|-----------------------------|-----------|
| 1 | 3 | WA79 | LEG 8EH PIPE | SK740213B |
| 2 | 3 | WH23 | BRACE 2 1/2STD PIPE | SK731121 |
| 3 | 3 | WH24 | BRACE 2 1/2STD PIPE | SK731121 |
| 4 | 3 | WH21 | BRACE 1 3/4 X 3 1/2 X 1/4 | SK731119 |
| 5 | 3 | WH22 | BRACE 1 3/4 X 3 1/2 X 1/4 | SK731119 |
| 6 | 6 | WH14 | BRACE 2 1/2STD PIPE | SK731116 |
| 7 | 6 | WH15 | BRACE 2 1/2STD PIPE | SK731118 |
| 8 | 108 | 210030GA | 5/8 X 1 3/4 BRACE BOLT ASSY | C770404 |
| 9 | 24 | 210164GA | 1 X 5 3/4 FLANGE BOLT ASSY | C770404 |

No. **A** Revision Description **6** Date **▲** By **6**

MWH48
Title
SECTION ASSY MWH 20' 8EH

Scale **NONE**
Unless otherwise specified, dimensions are given in inches.

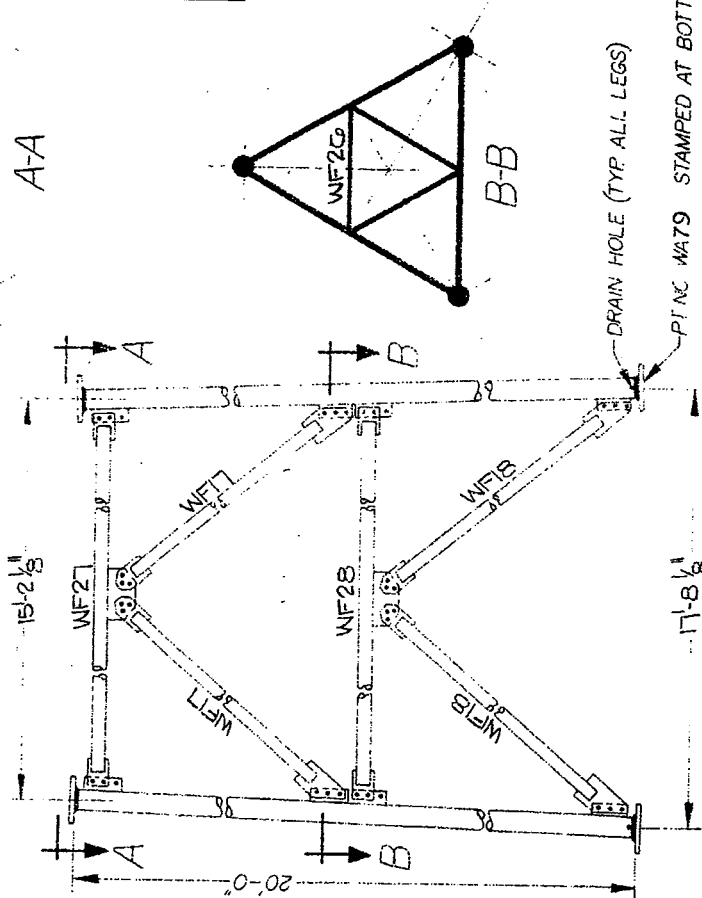
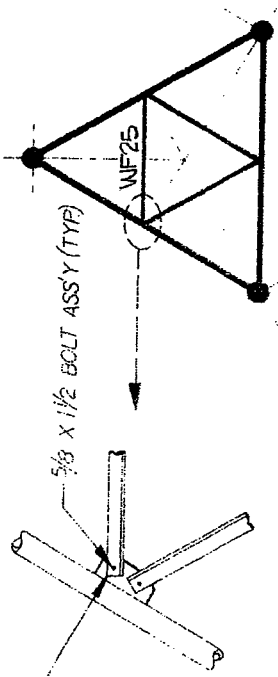
Drawn by **WRF** Date **9-11-83**
Checked by **WRF** Date **9-8-83**
Approved by Engineering **WRF** Date **10-6-83**
Approved by Production **WRF** Date **10-6-83**

Tolerances: Decimals **---** Fractions **---** Angles **---**
Material **---** Finish **---** Weight **---**

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File Number **---**

Approved by Sales **WRF** Date **8-31-81**
Drawing Number **B831023**

NOTE: INSTALL BRACES ON UNDERNEATH SIDE OF BRACE PLATE IF PLATFORM IS TO BE INSTALLED OVER BRACES



A-A

B-B

DRAIN HOLE (TYP ALL LEGS)

PI NC W479 STAMPED AT BOTTOM OF EACH LEG

NOTE: ALL BRACE BOLTS 5/8 X 1 3/4 UNLESS OTHERWISE NOTED

BILL OF MATERIAL

| ITEM | QUAN | PT. NO. | DESCRIPTION | DWG. NO. |
|------|------|----------|-----------------------------|-----------|
| 1 | 3 | W479 | LEG. PIPE 8X-STR | SK740238P |
| 2 | 3 | WF27 | BRACE-2STD PIPE | SK73121 |
| 3 | 3 | WF28 | BRACE-2STD PIPE | SK73121 |
| 4 | 6 | WF17 | BRACE-2 1/2 STD PIPE | SK73118 |
| 5 | 6 | WF18 | BRACE-2 1/2 STD PIPE | SK73118 |
| 6 | 3 | WF25 | BRACE-L2 1/2 X 2 1/2 X 3/16 | SK73119 |
| 7 | 3 | WF26 | BRACE-L2 1/2 X 2 1/2 X 3/16 | SK73117 |
| 8 | 96 | 2100306A | 5/8 X 1 3/4 BOLT ASSY | CT10404 |
| 9 | 12 | 2100296A | 5/8 X 1 1/2 BOLT ASSY | CT10404 |
| 10 | 24 | 2101646A | 1 1/2 X 5 3/4 BOLT ASSY | CT10404 |

MWF46

Unarco-Rohm

SECTION ASSY MWF 20' 8EH

DATE: 8-17-82

BY: MM B-19-BZ

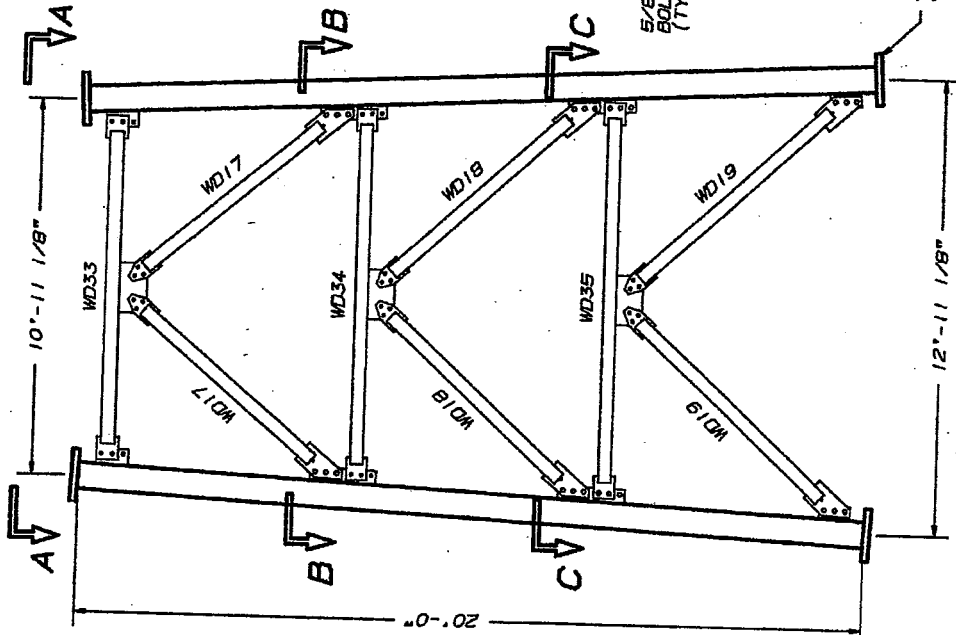
CHK: AS 8-24-82

APPROVED BY: [Signature]

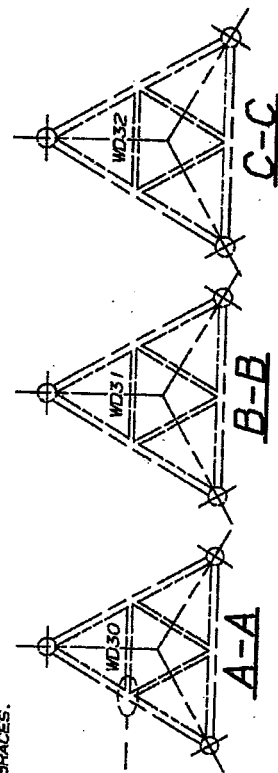
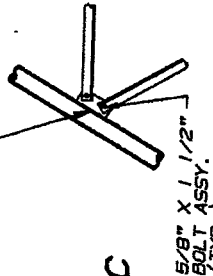
DATE: 8-24-82

DRAWING NUMBER: B820687

NOTE: ALL BRACE BOLTS ARE 5/8" X 1 3/4" UNLESS OTHERWISE NOTED.



NOTE: INSTALL BRACES ON UNDERNEATH SIDE OF BRACE PLATE IF PLATFORM IS TO BE INSTALLED OVER BRACES.

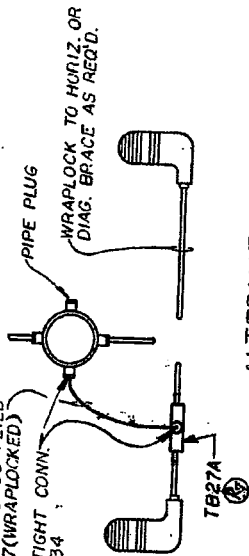


BILL OF MATERIAL

| ITEM | QUAN. | PART NO. | DESCRIPTION | DWG. NO. |
|------|-------|----------|-----------------------------|----------|
| 1 | 3 | WA397 | LEG Ø X-STRONG PIPE | BB20611 |
| 2 | 6 | WD17 | BRACE 2" STD PIPE | SK73111B |
| 3 | 6 | WD18 | BRACE 2" STD PIPE | SK73111B |
| 4 | 6 | WD19 | BRACE 2" STD PIPE | SK73111B |
| 5 | 3 | WD30 | BRACE L2 X 2 X 1/8 | SK73111B |
| 6 | 3 | WD31 | BRACE L2 X 2 X 1/8 | SK73111B |
| 7 | 3 | WD32 | BRACE L2 X 2 X 1/8 | SK73111B |
| 8 | 3 | WD33 | BRACE 2" STD PIPE | SK731121 |
| 9 | 3 | WD34 | BRACE 2" STD PIPE | SK731121 |
| 10 | 3 | WD35 | BRACE 2" STD PIPE | SK731121 |
| 11 | 144 | 2100306A | 5/8 X 1 3/4 BRACE BOLT ASSY | C770404 |
| 12 | 18 | 2100296A | 5/8 X 1 1/2 BRACE BOLT ASSY | C770404 |
| 13 | 24 | 2101646A | 1 X 5 3/4 FLANGE BOLT ASSY | C770404 |

| | | | | |
|---|----------------------|------|----------|---------------------------|
| REVISION | 2-10-82 | BFM | CRD | TS |
| No. 1 | Revision Description | Date | Rev By | Chk By |
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| Scale: | | By | Date | Title: |
| Drawn by: | | WFF | 7-31-82 | MWD58 |
| Checked by: | | BSW | 8-3-82 | SECTION ASSY MWD 20' Ø EH |
| App. Eng.: | | TS | 8-3-82 | |
| App. Sales: | | MF | 10-18-82 | |
| DRAWING NO. 1 | | | | BB20612 |
| ENG. FILE: | | | | |

15' SERVICE CORD SUPPLIED
P/N KH2437 (WRAPLOCKED)
WATERTIGHT CONN.
P/N 25334



ALTERNATE 'A'

ALTERNATE 'C'
FOR USE WHEN JUNCTION BOX IS NOT
AT SAME ELEV. AS OBI SIDE LIGHTS

TO 3RD OBI
IF REQ'D.

TB27A
IF REQ'D.

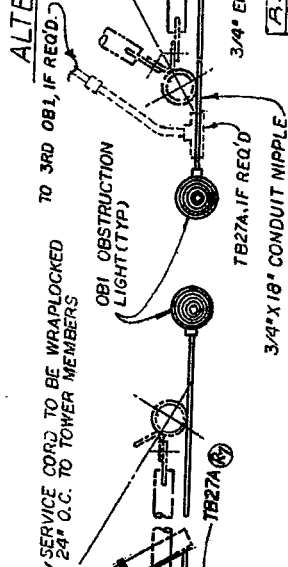
INSIDE COR.
LADDER
(REF.)

JUNCTION BOX
25334

15' SO CORD
25334

3/4" X 18" NIPPLE FOR
SSV - 24' LG FOR MW

18" NIPPLE FOR SSV
& MW TOWERS



SERVICE CORD TO BE WRAPLOCKED
24' O.C. TO TOWER MEMBERS

OBI OBSTRUCTION
LIGHT (TYP)

TB27A-IF REQ'D

3/4" X 18" CONDUIT NIPPLE

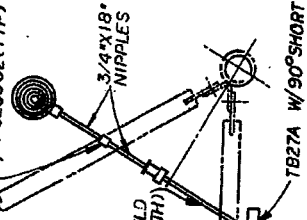
ALTERNATE 'B'

TO 3RD OBI, IF REQ'D.

JUNCTION BOX

3/4" CONDUIT FIELD
CUT TO REQ'D LGTH

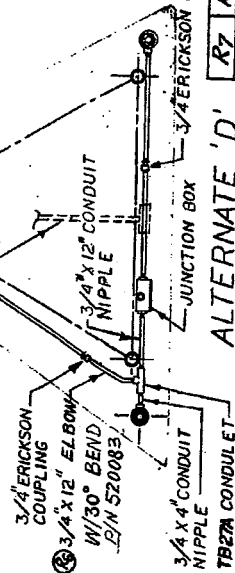
3/4" ERICKSON COUPLING
(TYP)



TB27A W/90° SHORT ELBOW

- NOTES**
1. IN ALTERNATE 'A' & 'C' TB27A IS CONNECTED TO MAIN CONDUIT RUN WITH SO CORD.
 2. CONDUIT LENGTHS, OTHER THAN THOSE SHOWN, VARY AND MUST BE DETERMINED ACCORDING TO THE TOWER FACE WIDTH.
 3. LOCKNUTS PROVIDED FOR EVERY CONNECTION.

ALL HORIZONTAL RUNS OF
CONDUIT MUST BE SUPPORTED
A MAXIMUM OF 10 FT. ON
CENTERS
(MAY GO THROUGH
CENTROID OF TOWER
SPACE PERMITTING)



ALTERNATE 'D'

3/4 ERICKSON COUPLING

3/4 X 12" CONDUIT NIPPLE

JUNCTION BOX

3/4 X 4" CONDUIT NIPPLE

TB27A CONDULET

| | | | |
|-----|----------------------|---------|-----|
| No. | Revision Description | Date | By |
| R5 | ADDED ALTERNATE 'D' | 3-27-86 | PLB |
| R4 | CHANGED WAS TB27 | 12-1-85 | WAO |
| R3 | REWORK | 12-1-85 | WAO |
| | | | WAO |

ROHN®

**ALTERNATE CONNECTION METHODS
FOR OBSTRUCTION LIGHTS**

| | | |
|-------------------------|------|---|
| Scale | NONE | Unless otherwise specified, dimensions are given in inches. |
| Drawn By | WAO | Tolerances |
| Checked By | JHD | Decimals |
| Approved by Engineering | WAO | Fractions |
| Approved by Production | WAO | Finish |
| | | Angles |
| | | Weight |

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Approved by Sales
Date 4-15-86
Drawing Number
B820454 R7

R7 REVISED JUNCTION BOXES

R6 CHANGED TO 52008 WAS 441/665

12-1-86 JHD

3/15/86 WAO

| ASSEMBLY NUMBER | BEACON PLATE | | CAP PLATE | | BOLT ASSEMBLY | | |
|-----------------|--------------|------|-----------|------|---------------|----------|------|
| | PART NO. | QTY. | PART NO. | QTY. | SIZE | PT. NO. | QTY. |
| APL1W2WA | APL1W2W | 1 | --- | --- | 3/8X1-1/4 | 210056A | 6 |
| APL3WNA | APL3WN | 1 | --- | --- | 3/8X1-1/4 | 210056A | 6 |
| APL4A | APL4 | 1 | --- | --- | 1/2X1-1/2 | 2100188A | 4 |
| APL4HA | APL4H | 1 | CP4H | 2 | 5/8X1-3/4 | 2100306A | 8 |
| APL5A | APL5 | 1 | CP50 | 2 | 5/8 X 2 | 2100316A | 8 |
| APL6A | APL6 | 1 | CP60 | 2 | 3/4 X 2 | 2100476A | 8 |
| APL7A | APL7 | 1 | CP70 | 2 | 7/8 X 3 | 2100626A | 8 |
| APL95A | APL95 | 1 | CP95 | 2 | 1 X 3 | 2100676A | 8 |
| APL85A | APL85 | 1 | --- | --- | 7/8 X 3 | 2100626A | 4 |
| APL78A | APL78 | 1 | --- | --- | 1 X 3-1/4 | 2101046A | 4 |
| APL788A | APL788 | 1 | --- | --- | 3/4 X 3 | 2100516A | 4 |
| APL6A2 | APL6 | 1 | --- | --- | 3/4X2-3/4 | 2100506A | 4 |

REFERENCE DRAWINGS

(* FAB DWG. FOR SHOP USE ONLY)

- * 1. FOR BEACON PLATE FABRICATION SEE DWG. NO. SK730369.
- * 2. FOR CAP PLATE FABRICATION SEE DWG. NO. B760639.
- * 3. FOR BOLT ASSEMBLY SEE DWG. NO. C770404.
- * 4. FOR APL95 BEACON PLATE FABRICATION SEE DWG. NO. B800450.
- * 5. FOR APL1W2W FABRICATION SEE DWG. NO. SK740429.
- * 6. FOR APL3WN FABRICATION SEE DWG. NO. A730902.

| | | | | |
|--|-----|----------------|-----------------------|-----------|
| R11 REDRAWN & DELETED SECTIONS FROM CHART | | 11/20/82 | WEB | ZZ |
| No. ▲ Revision Description | | ▲ Date | ▲ Rev. By | ▲ Chd. By |
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| Scale: NONE | | By | Date | Title: |
| Drawn: | TLP | 10/12/82 | BEACON PLATE ASSEMBLY | |
| Checked: | KTL | 10/19/82 | | |
| App. Eng.: | TS | 10/19/82 | | |
| App. Sales: | MF | 10/19/82 | | |
| DRAWING NO.: | | | B760624R11 | |

SOILTESTING, INC.

140 OXFORD ROAD

OXFORD, CONN. 06483

CLIENT E & F Development Corp.

SHEET 1 OF 1
MOLE NO B-101

PROJECT NO. G96-1987-87

BORING LOCATIONS
per sketch

FOREMAN - DRILLER
BD mc

PROJECT NAME
Proposed Radio Tower

INSPECTOR

LOCATION
Chopnsey Hill: Bridgeport, CT

OFFSET

GROUND WATER OBSERVATIONS
AT none FT. AFTER 0 HOURS
AT _____ FT. AFTER _____ HOURS

CASING TYPE HSA SAMPLER SS CORE BAR N x M
SIZE ID 3 3/4" 1 3/8" 2 3/8"
HAMMER WT 140# dia
HAMMER FALL 30"

Date Start 12-22-87 Date Fin. 12-23-87
SURFACE ELEV _____
GROUND WATER ELEV _____

| DEPTH | CASING BLOWS PER FOOT | SAMPLE | | | | DEPTH @ BOY | BLOWS PER 6" ON SAMPLER (FORCE ON TUBE) | CORING TIME PER FT (MIN) | DENSITY OR CONSIST | STRATA CHANGE DEPTH | FIELD IDENTIFICATION OF SOIL REMARKS INCL COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC |
|-------|-----------------------|--------|------|-----|-----|-------------|---|--------------------------|--------------------|---|---|
| | | NO | TYPE | PEN | REC | | | | | | |
| | | 1 | ss | 17 | 5 | 1'5" | 3 5 | | 6" | topsoil | |
| | | | | | | | 12 | | 12" | brn FM SAND, lit silt, lit gravel | |
| | | | | | | | | | 4'0" | boulders, cobbles AUGER REFUSAL | |
| 5 | | 1 | c | 30 | 8 | 6'6" | | 8.0 | RUN #1 | 6'6" RCD=0% (#1) possible boulder or highly frag bedrock to 14'0" RCD=16% (#2) 10'6" followed core barrel w/ auger to 14'0" 14'0" 15'6" BOULDERS RCD=0% (#3) | |
| | | | | | | | | 5.0 | | | |
| | | 2 | c | 48 | 19 | 10'6" | | 7.5 | RUN #2 | | |
| | | | | | | | | 8.5 | | | |
| 10 | | | | | | | | 5.5 | | | |
| | | | | | | | | 7.5 | | | |
| | | | | | | | | 7.5 | | | |
| 15 | | 2 | ss | 2" | 2" | 15'2" | 50/2" | | RUN #3 | | |
| | | 3 | c | 6 | 6 | 15'6" | | 9.0 | | | |
| | | | | | | | | 8.0 | | | |
| | | | | | | | | 9.0 | | | |
| 20 | | 4 | c | 60 | 59 | 20'6" | | 9.0 | RUN #4 | 20'6" possible bedrock RCD=21% (#4) | |
| | | | | | | | | 9.0 | | | |
| | | 5 | c | 36 | 27 | 23'6" | | 8.5 | RUN #5 | 23'6" RCD=46% (#5) | |
| | | | | | | | | 8.5 | | | |
| 25 | | | | | | | | 9.0 | | | |
| | | | | | | | | 8.5 | | | |
| | | 6 | c | 54 | 51 | 28'0" | | 9.0 | RUN #6 | 28'0" RCD=59% (#6) E.O.B. | |
| | | | | | | | | 9.0 | | | |
| 30 | | | | | | | | 9.0 | | | |
| | | | | | | | | | | | |
| 35 | | | | | | | | | | | |
| | | | | | | | | | | | |
| 40 | | | | | | | | | | | |

TOTAL N&M FTG = 19.5'

GROUND SURFACE TO _____ FT. USED _____ CASING THEN _____ CASING TO _____ FT. HOLE NO. B-101

D DRY W. WASHED P. PIT A. AUGER U.P. UNDISTURBED PISTON C = COARSE
 UB UNDISTURBED BALL CHECK T. THINWALL V. VANE TEST M = MEDIUM
 OE OPEN END SAMPLER SS SPLIT TUBE SAMPLER H. S. A. - HOLLOW STEM AUGER F = FINE
 PROPORTIONS USED: TRACE 0-10% LITTLE 10-20% SOME = 20-35% AND = 35-50%

| | | |
|---|--|--|
| SOILTESTING, INC. 140 OXFORD ROAD OXFORD, CONN. 06483 | CLIENT <u>E & F Development Corp.</u> PROJECT # <u>G96-1987-87</u> PROJECT NAME <u>Proposed Radio Tower</u> LOCATION <u>Choppsey Hill: Bridgeport, CT</u> | SHEET <u>1</u> OF <u>1</u> HOLE NO <u>B-103</u> BORING LOCATIONS <u>per sketch</u> OFFSET Date Start <u>12-29-87</u> Date Fin. <u>12-31-87</u> SURFACE ELEV _____ GROUND WATER ELEV _____ |
| FOREMAN - DRILLER <u>BD mc</u> | INSPECTOR _____ | |
| GROUND WATER OBSERVATIONS none AT _____ FT AFTER <u>0</u> HOURS AT _____ FT AFTER _____ HOURS | TYPE <u>HSA</u> CASING <u>3 3/4"</u> SAMPLER <u>SS</u> CORE BAR <u>N x M</u> SIZE ID <u>3 3/4"</u> <u>1 3/8"</u> <u>2 3/8"</u> HAMMER W' <u>140#</u> <u>30"</u> dia HAMMER FALL _____ | |

| DEPTH | CASING BLOWS PER FOOT | SAMPLE | | | | BLOWS PER 6 ON SAMPLER (FORCE ON TUBE) | | | CORING TIME PER FT (MIN) | DENSITY OR CONSIST MOIST | STRATA CHANGE DEPTH ELEV | FIELD IDENTIFICATION OF SOIL REMARKS INCL COLOR, LOSS OF WASH WATER, BEANS IN ROCK, ETC |
|-------|-----------------------|--------|------|-----|-----|--|-----|------|--------------------------|--------------------------|--------------------------|---|
| | | NO | TYPE | PER | REC | DEPTH @ BOT | 0-6 | 6-12 | | | | |
| | | 1 | ss | 24 | 4 | 2'0" | 2 | 3 | | | | brn FM SAND, lit gravel, lit cobbles |
| | | 1 | c | 12 | 12 | 4'6" | 5 | 4 | | | | |
| 5 | | 2 | c | 24 | 4 | 6'6" | | | 8.5 | RUN #1 | 3'6" | boulders from 3'6" ROD=0%(#1) |
| | | | | | | | | | 5.5 | | 4'6" | |
| | | | | | | | | | 8.5 | RUN #2 | 6'6" | ROD=0%(#2) |
| | | | | | | | | | 9.0 | | | |
| | | | | | | | | | 7.5 | | | |
| 10 | | 3 | c | 30 | 12 | 9'0" | | | 8.0 | RUN #3 | 9'0" | ROD=0%(#3) possible boulders to 9' |
| | | 4 | c | 12 | 11 | 10'0" | | | 8.5 | RUN #4 | 10'0" | ROD=0%(#4) |
| | | | | | | | | | 9.0 | | | |
| | | 5 | c | 24 | 20 | 12'0" | | | 8.5 | RUN #5 | 12'0" | ROD=50%(#5) |
| | | | | | | | | | 8.5 | | | |
| | | | | | | | | | 9.0 | | | possible bedrock from 10' |
| 15 | | 6 | c | 54 | 28 | 16'6" | | | 8.5 | RUN #6 | 16'6" | ROD=35%(#6) |
| | | | | | | | | | 8.5 | | | |
| | | | | | | | | | 9.0 | | | |
| 20 | | 7 | c | 60 | 59 | 21'6" | | | 9.0 | RUN #7 | 21'6" | ROD=60%(#7) |
| | | | | | | | | | 9.0 | | | |
| | | | | | | | | | 8.5 | | | |
| | | | | | | | | | 9.0 | | | |
| 25 | | 8 | c | 60 | 57 | 26'6" | | | 9.0 | RUN #8 | 26'6" | ROD=48%(#8) |
| | | | | | | | | | 9.0 | | | E.O.B. |
| 30 | | | | | | | | | | | | |
| 35 | | | | | | | | | | | | |
| 40 | | | | | | | | | | | | TOTAL NCM FIG = 23.0' |

| | | | |
|--|-----------------------|-------------------------------|-----------------------|
| GROUND SURFACE TO _____ FT. | USED _____ CASING | THEN _____ CASING TO _____ FT | HOLE NO. <u>B-103</u> |
| D DRY | W WASHED | P PIT | A AUGER |
| UB UNDISTURBED BALL CHECK | T THINWALL | UP UNDISTURBED PISTON | C COARSE |
| OE OPEN END SAMPLER | SS SPLIT TUBE SAMPLER | H.S.A. - HOLLOW STEM AUGER | M MEDIUM |
| PROPORTIONS USED: TRACE 0-10%, LITTLE 10-20%, SOME = 20-35%, AND = 35-50%. | | | F FINE |

SOILTESTING, INC.

**140 OXFORD ROAD
OXFORD, CONN. 06483**

CLIENT **E & F Development Corp.**

SHEET 1 OF 1
HOLE NO B-201A

FOREMAN - DRILLER
BD mc

PROJECT NO.
G96-1987-87

BORING LOCATIONS
per sketch
4' south of B-201

INSPECTOR

PROJECT NAME
Proposed Radio Tower

LOCATION
Chopnosey Hill; Bridgeport, CT

OFFSET

GROUND WATER OBSERVATIONS
AT _____ FT AFTER _____ HOURS
AT _____ FT AFTER _____ HOURS

CASING TYPE **HSA** SAMPLER **SS** CORRELATION **NXM**
SIZE I.D. **3 3/4"** **1 3/8"** **2 1/8"**
HAMMER W.T. **140#** BIT
HAMMER FALL **30"** dia

Date Start **1-5-88** Date Fin. **1-5-88**
SURFACE ELEV _____
GROUND WATER ELEV _____

| DEPTH | CASING BLOWS PER FOOT | SAMPLE | | | | | BLOWS PER 6 ON SAMPLER (FORCE ON TUBE) | | | CORING TIME PER FT (MIN) | DENSITY OR CONSIST | STRATA CHANGE DEPTH | FIELD IDENTIFICATION OF SOIL REMARKS INCL COLOR, LOSS OF WASH WATER, BEAMS IN ROCK, ETC |
|-------|-----------------------|--------|------|-----|-------|----------------|--|------|-------|--------------------------|--------------------|---|---|
| | | NO | TYPE | PEN | REC | DEPTH (TO BOT) | 0-6 | 6-12 | 12-18 | | | | |
| 5 | 1 | ss | 24 | 4" | 2'0" | 2 | 2 | | | RUN #1 | 3'4" | red brn FM SAND, lit silt, lit cobbles | |
| | 2 | ss | 6 | 4 | 5'6" | 50/6 | | | | | 5'6" | boulders, cobbles & FC SAND, some FC gravel RQD=0%(#1) | |
| | 1 | c | 36 | 22 | 8'0" | | | | | | | 8'0" | |
| 10 | 2 | c | 32 | 20 | 10'8" | | | | | RUN #2 | 9'0" | boulders | |
| | | | | | | | | | | | | 10'8" | possible bedrock from 9' RQD=25%(#2) |
| | | | | | | | | | | | | | |
| 15 | 3 | c | 44 | 40 | 14'0" | | | | | RUN #3 | 14'0" | RQD=34%(#3) | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| 20 | 4 | c | 54 | 40 | 18'6" | | | | | RUN #4 | 18'6" | RQD=22%(#4) | |
| | 5 | c | 12 | 12 | 19'6" | | | | | | | | |
| | | | | | | | | | | | | | |
| 25 | 6 | c | 26 | 26 | 21'8" | | | | | RUN #5 | 19'6" | RQD=0%(#5) | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| 30 | | | | | | | | | | RUN #6 | 21'8" | RQD=0%(#6) E.O.B. | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| 35 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| 40 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

TOTAL NXM FIG = 17.0'

GROUND SURFACE TO _____ FT. USED _____ CASING THEN _____ CASING TO _____ FT

HOLE NO. B-201A

D DRY W. WASHED P. PIT A. AUGER UP. UNDISTURBED PISTON C = COARSE
 UB UNDISTURBED BALL CHECK T. THINWALL V. VANE TEST M = MEDIUM
 OE OPEN END SAMPLER SS SPLIT TUBE SAMPLER H.S.A. - HOLLOW STEM AUGER F = FINE
 PROPORTIONS USED: TRACE - 0-10%, LITTLE 10-20%, SOME = 20-35%, AND = 35-50%.

SOILTESTING, INC.

**140 OXFORD ROAD
OXFORD, CONN. 06483**

CLIENT E & F Development Corp.

SHEET 1 OF 1
HOLE NO B-203

FOREMAN - DRILLER
BD mc

PROJECT NO.
G96-1987-87

BORING LOCATIONS
per sketch

INSPECTOR

PROJECT NAME
Proposed Radio Tower

LOCATION
Choppsey Hill; Bridgenport, CT

OFFSET

GROUND WATER OBSERVATIONS
AT none FT AFTER 0 HOURS
AT _____ FT AFTER _____ HOURS

CASING TYPE HSA SAMPLER SS CORE BAR NXM
SIZE ID 3 3/4" 1 3/8" 2 1/8"
HAMMER Wt 140# BIT 30"
HAMMER FALL 30" dia

Date Start 12-24-87 Date Fin. 12-24-87
SURFACE ELEV _____
GROUND WATER ELEV _____


| DEPTH | CASING BLOWS PER FOOT | SAMPLE | | | | | BLOWS PER 6" ON SAMPLER (FORCE ON TUBE) | | | CORING TIME PER FT (MIN) | DENSITY OR CONSIST MOIST | STRATA CHANGE DEPTH ELEV | FIELD IDENTIFICATION OF SOIL REMARKS, INCL COLOR, LOSS OF WASH WATER, BEANS IN ROCK, ETC |
|-------|-----------------------|--------|------|-----|-------|-------------|---|------|-------|--------------------------|--------------------------|--------------------------|--|
| | | NO | TYPE | PEN | REC | DEPTH @ BOT | 0-6 | 6-12 | 12-18 | | | | |
| | | | | | | | | | | | | | |
| | | 1 | ss | 18 | 8 | 1'6" | 2 | 4 | 6 | | | | brn FC SAND & EC GRAVEL, boulders, cobbles |
| | | 1 | c | 18 | 4 1/2 | 5'0" | | | | | | 3'6" | AUGER REFUSAL |
| 5 | | 2 | c | 39 | 7 | 8'3" | | | | 9.0 | RUN #1 | 5'0" | boulders & cobbles |
| | | | | | | | | | | 5.0 | | | RQD=0%(#1) |
| | | | | | | | | | | 7.5 | RUN #2 | | RQD=0%(#2) |
| | | | | | | | | | | 5.5 | | | possible boulders to 8'3" |
| | | | | | | | | | | 8.0 | RUN #3 | 8'3" | RQD=69%(#3) |
| 10 | | 3 | c | 21 | 17 | 10'0" | | | | 8.5 | | | possible bedrock from 8'3" |
| | | | | | | | | | | 9.0 | RUN #4 | 10'0" | RQD=46%(#4) |
| | | | | | | | | | | 9.0 | | | |
| | | | | | | | | | | 9.0 | | | |
| 15 | | 4 | c | 48 | 37 | 14'0" | | | | 9.0 | RUN #5 | 14'0" | RQD=71%(#5) |
| | | | | | | | | | | 9.0 | | | |
| | | | | | | | | | | 9.0 | | | |
| | | | | | | | | | | 9.0 | RUN #6 | 18'8" | RQD=27%(#6) |
| 20 | | | | | | | | | | 9.0 | | | |
| | | | | | | | | | | 8.5 | | | |
| | | | | | | | | | | 9.0 | | | |
| | | 6 | c | 60 | 60 | 23'8" | | | | 9.5 | | | E.O.B. |
| | | | | | | | | | | 9.5 | | | |
| 25 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| 35 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| 40 | | | | | | | | | | | | | |

TOTAL NXM FTG = 20.2'

GROUND SURFACE TO _____ FT. USED _____ CASING THEN _____ CASING TO _____ FT

HOLE NO. B-203

D DRY W. WASHED P. PIT A. AUGER U. UNDISTURBED PISTON C = COARSE
 UB UNDISTURBED BALL CHECK T. THINWALL V. VANE TEST M = MEDIUM
 OE OPEN END SAMPLER SS SPLIT TUBE SAMPLER H.S.A. - HOLLOW STEM AUGER F = FINE
 PROPORTIONS USED: TRACE 0-10%, LITTLE 10-20%, SOME = 20-35%, AND = 35-50%.

| | | | | |
|---|--|---|-----------------------------|-------------------------------------|
|  GLENMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734 | Structure: 240' Self Supported Tower | Customer Name: GTP | City: Bridgeport | Proposed Carrier: Verizon |
| | Project: Post Mods SA | Customer Site Name: Tartaglia | County: Fairfield | Date: 04/05/2013 |
| | Job #: CT-5035, Tartaglia | Customer Site #: CT-5035 | State: CT | Page: 1 of 38 |

Global Tower Partners, LLC
 750 Park of Commerce, Suite 300
 Boca Raton, FL 33487

Attn: John Bozzetto
jbozzetto@atpsites.com
 561-886-5877

Steve Sirignano
ssirignano@atpsites.com
 561-886-3952

All documents and details are prepared under the direct supervision of a registered professional engineer under the laws of State of **Connecticut**. Enclosed calculations are certified and meet all specified purchaser requirements.

Proposed modification

- Reinforce Main Diagonals:
 - 1) 0' – 30' Install L2.5"x2.5"x3/8" (This has already been done per Inspection)
 - 2) 100' – 120' Install L2.5"x2.5"x3/8" (This has already been done per Inspection)
 - 3) 140' – 160' Install ½ pipe 3.5"OD x .30" thick
- Reinforce Redundant Diagonals:
 - 1) 10' – 20' Install ½ pipe 2.375"OD x .154" thick

Maximum stress ratio after the proposed modification:

- Tower Legs - 46%
- Tower Main Bracings - 93% (1)
- Tower Redundant Bracings – 91% (2)
- Foundation – Acceptable (3)

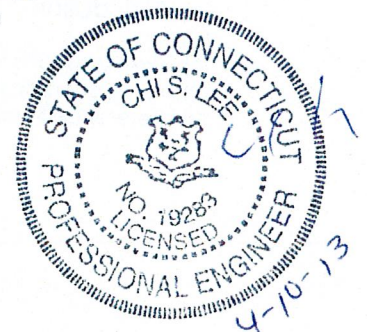
Notes:


- (1) Pre-Mods ratio was 140%. Reference Structural Components LLC Report "CT-5035_SA_021913_Verizon.pdf"
- (2) Pre-Mods ratio was 110%. Reference Structural Components LLC Report "CT-5035_SA_021913_Verizon.pdf"
- (3) Reference Structural Components LLC Report "CT-5035_SA_021913_Verizon.pdf"

With the proposed modification listed above, we concluded that the 240 ft Self Supported Tower and its foundation is structurally capable of supporting the proposed equipment and meets the requirements per **TIA/EIA-222-F-1996 & 2003 IBC** standards.

Prepared by
 Xinguo Cai, PhD, PE
 Project Engineer
 GlenMartin Holding Inc.
 Phone: 573-227-0031
 Email: xinguo.cai@glenmartin.com

Reviewed by
 Chi S. Lee, P.E., S.E.
 Consulting Engineer
 5801 Lorraine Ave. Sioux City, IA 51106
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 Email: chislee-pe@q.com




| | | | | |
|--|--|---|-----------------------------|-------------------------------------|
|  GLEMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734 | Structure: 240' Self Supported Tower | Customer Name: GTP | City: Bridgeport | Proposed Carrier: Verizon |
| | Project: Post Mods SA | Customer Site Name: Tartaglia | County: Fairfield | Date: 04/05/2013 |
| | Job #: CT-5035, Tartaglia | Customer Site #: CT-5035 | State: CT | Page: 3 of 38 |

Conclusion

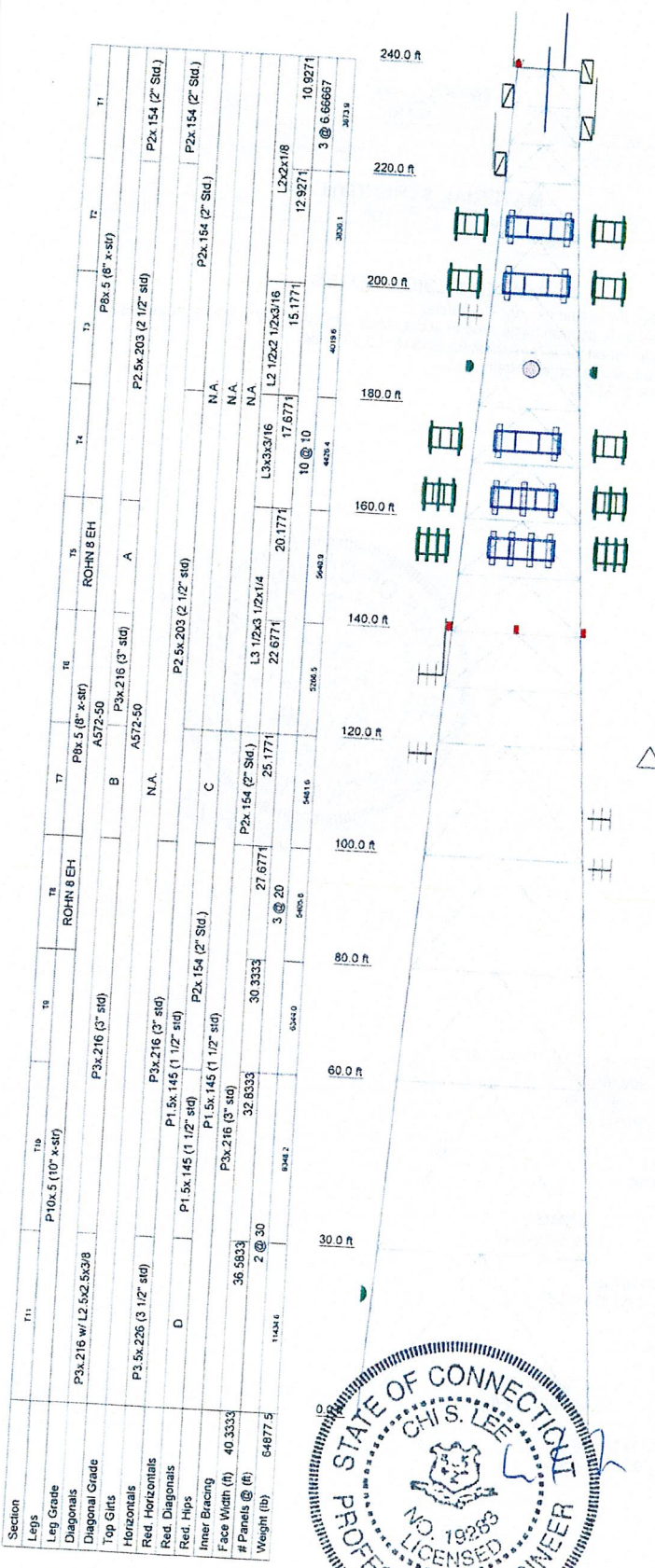
With the proposed modification listed above, we concluded that the 240 ft Self Supported Tower and its foundation is structurally capable of supporting the proposed equipment and meets the requirements per **TIA/EIA-222-F-1996 & 2003 IBC** standards.

Client should note that in the event a significant equipment modification is desired, separate specific analysis should be performed to guarantee structural integrity.

| | | | | |
|--|--|---|-----------------------------|-------------------------------------|
|  GLEMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734 | Structure: 240' Self Supported Tower | Customer Name: GTP | City: Bridgeport | Proposed Carrier: Verizon |
| | Project: Post Mods SA | Customer Site Name: Tartaglia | County: Fairfield | Date: 04/05/2013 |
| | Job #: CT-5035, Tartaglia | Customer Site #: CT-5035 | State: CT | Page: 5 of 38 |

APPENDIX 1. Analysis disclosure notes

- 1) All information produced through GlenMartin is the property of GlenMartin. Reproduction or modification of documentation in whole or part is strictly prohibited without GlenMartin written permission. This effort ensures both protection and safety of analysis studies.
- 2) All structures analyzed by GlenMartin assume proper installation from initial construction with successive maintenance performed on a routine basis. No comments can be made as to potential corrosion or misuse due to overloading, damage or member substitutes. Reduction in capacity due to cyclic loading has not been considered. All studies reflect data provided through client and applicable summary data sheets.
- 3) The client shall be responsible for supplying accurate and complete information as to proposed appurtenance loading. GlenMartin assumes field observations have been made or will be performed for verification of supplied data.
- 4) GlenMartin is not responsible for informing insurance carriers, regulatory officials or other concerned parties as to the proposed alterations to structure loading. Client accepts all liability and responsibility as to the use of and application of supplied review analysis.
- 5) Wind and Ice loading of all structures based on supplied request of client. Assumed loading shall be based on latest ANSI/EIA/TIA 222 code if not specified. Review of product conformance to local, state, or federal requirements is the responsibility of client.
- 6) Load carrying capacity of proposed mounts or hardware has not been investigated. Auxiliary studies may be made of such appurtenances at an additional cost to client.
- 7) Stresses due to erection have not been considered in this study.
- 8) All work performed on structure is the responsibility of client. All safety procedures, equipment, temporary guying, scaffolding, or other working aids shall be reviewed by client.



DESIGNED APPURTENANCE LOADING

| TYPE | ELEVATION | TYPE | ELEVATION |
|----------------------------------|-----------|---------------------------------------|-----------|
| 5/8" x 8" Lighting Rod | 240 | (3) 10' Sector Frames | 174 |
| Flash Beacon Lighting | 240 | (4) LGP21901 Diplexer (ATI) | 164 |
| 3" Dia 10' Omni | 240 | (4) LGP21901 Diplexer (ATI) | 164 |
| 4" dia x 4" pipe mount | 240 | (4) LGP21901 Diplexer (ATI) | 164 |
| 2' Side Arm Mount | 240 | DC6-48-60-18-8F (ATD) | 164 |
| 3" Dia 8' Omni (DEAD) | 235 | (3) 10' Sector Frames | 164 |
| 2' Side Arm Mount (DEAD) | 235 | (2) RRU 11 Single (ATI) | 164 |
| 4" Dia 8' Omni | 230 | (4) LGP 21401 (ATI) | 164 |
| 3" Dia 8' Omni | 230 | (4) LGP 21401 (ATI) | 164 |
| 2' Side Arm Mount | 230 | (4) LGP 21401 (ATI) | 164 |
| 2' Side Arm Mount | 230 | 4" Dia 20' Omni | 164 |
| 2' Side Arm Mount | 230 | (2) 7770 (ATI) | 164 |
| 4" x 12' Omni | 223 | (2) 7770 (ATI) | 164 |
| 2' Side Arm Mount | 223 | (2) 7770 (ATI) | 164 |
| (2) HBX-6516DS-VTM (MetroPCS) | 212 | P65-16-XLH-RR (ATI) | 164 |
| (2) HBX-6516DS-VTM (MetroPCS) | 212 | P65-16-XLH-RR (ATI) | 164 |
| (2) HBX-6516DS-VTM (MetroPCS) | 212 | P65-16-XLH-RR (ATI) | 164 |
| (3) 10' Sector Frames (MetroPCS) | 212 | (2) RRU 11 Single (ATI) | 164 |
| AIR 21 B2AB4P (T-Mobile) | 202 | (2) RRU 11 Single (ATI) | 164 |
| AIR 21 B2AB4P (T-Mobile) | 202 | (2) FD9R6004/2C-3L Diplexer (Verizon) | 155 |
| AIR 21 B4A B2P (T-Mobile) | 202 | (2) FD9R6004/2C-3L Diplexer (Verizon) | 155 |
| AIR 21 B4A B2P (T-Mobile) | 202 | (2) ALU RRH2X40 AWS (Verizon) | 155 |
| AIR 21 B4A B2P (T-Mobile) | 202 | (2) ALU RRH2X40 AWS (Verizon) | 155 |
| KRY 112 144/1 (T-Mobile) | 202 | (2) ALU RRH2X40 AWS (Verizon) | 155 |
| KRY 112 144/1 (T-Mobile) | 202 | DB T1 6Z 8AB OZ (Verizon) | 155 |
| KRY 112 144/1 (T-Mobile) | 202 | (3) 10' Sector Frames (Verizon) | 155 |
| (3) 10' Sector Frames (T-Mobile) | 202 | 3' Yagi | 196 |
| 4" dia x 4" pipe mount | 196 | BXA-80063/6 (Verizon) | 155 |
| 4" dia x 4" pipe mount | 196 | BXA-80063/6 (Verizon) | 155 |
| 4" dia x 4" pipe mount | 187 | BXA-80063/6 (Verizon) | 155 |
| 4" dia x 4" pipe mount | 187 | BXA-171063-8CF (Verizon) | 155 |
| 4" dia x 4" pipe mount | 187 | BXA-171063-8CF (Verizon) | 155 |
| VHLP900-11 | 187 | BXA-171063-8CF (Verizon) | 155 |
| 2ft HP Dish w/Shroud | 187 | BXA-70063-6CF (Verizon) | 155 |
| 2ft HP Dish w/Shroud | 187 | BXA-70063-6CF (Verizon) | 155 |
| Notch Filters (Sprint) | 180.6 | BXA-70063-6CF (Verizon) | 155 |
| Notch Filters (Sprint) | 180.6 | MGD3-800 (Verizon) | 155 |
| Notch Filters (Sprint) | 180.6 | MGD3-800 (Verizon) | 155 |
| LLPX310R (Clearwire) | 180.6 | MGD3-800 (Verizon) | 155 |
| LLPX310R (Clearwire) | 180.6 | (2) FD9R6004/2C-3L Diplexer (Verizon) | 155 |
| LLPX310R (Clearwire) | 180.6 | Small Light | 140 |
| DAP Heads (Clearwire) | 180.6 | Small Light | 140 |
| DAP Heads (Clearwire) | 180.6 | Small Light | 140 |
| DAP Heads (Clearwire) | 180.6 | Small Light | 140 |
| APXVSP18-C-A20 (Sprint) | 180.6 | 1.5" Dia 8' Omni (DEAD) | 137 |
| APXVSP18-C (Sprint) | 180.6 | 2' Side Arm Mount (DEAD) | 137 |
| (2) 1900MHz 2x40W RRU (Sprint) | 180.6 | 2' Side Arm Mount (DEAD) | 132 |
| (2) 1900MHz 2x40W RRU (Sprint) | 180.6 | 4' Yagi (DEAD) | 132 |
| (2) 1900MHz 2x40W RRU (Sprint) | 180.6 | 2' Side Arm Mount (DEAD) | 118 |
| (3) 10' Sector Frames (Sprint) | 180.6 | 2' Dia 10' Omni | 118 |
| (2) RR90-11-00DBL (Sprint) | 180.6 | 2' Side Arm Mount (DEAD) | 108 |
| (2) RR90-11-00DBL (Sprint) | 180.6 | 3" Dia 10' Omni | 108 |
| (2) RR90-11-00DBL (Sprint) | 180.6 | 3' Yagi (DEAD) | 99 |
| APXVSP18-C-A20 (Sprint) | 180.6 | 2' Side Arm Mount (DEAD) | 99 |
| 800MHz 2x50W RRU (Sprint) | 180.6 | Side Arm Mount | 80 |
| 800MHz 2x50W RRU (Sprint) | 180.6 | 3ft Dish w/o Radome | 22 |
| 800MHz 2x50W RRU (Sprint) | 180.6 | 4" dia x 4" pipe mount | 22 |
| (2) 950F65T4E-M | 174 | GPS Unit w/ mt (Verizon) | 20 |
| (2) 5' x 5" x 2" PCS Panels | 174 | GPS Unit w/ mt (T-Mobile) | 8 |
| (2) 5' x 5" x 2" PCS Panels | 174 | | |

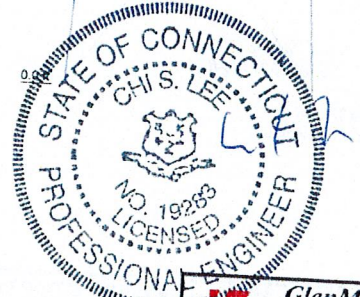
SYMBOL LIST

| MARK | SIZE | MARK | SIZE |
|------|---------------------------------|------|-----------------------------------|
| A | P2.5x.203 w/ 1/2 pipe 3.5"x300" | C | P1.5x.145 (1 1/2" std) |
| B | P2.5x.203 w/ L2.5x2.5x3/8 | D | P1.5x.145 w/ 1/2 pipe 2.375"x154" |

MATERIAL STRENGTH

| GRADE | Fy | Fu | GRADE | Fy | Fu |
|---------|--------|--------|-------|----|----|
| A572-50 | 50 ksi | 65 ksi | | | |


- TOWER DESIGN NOTES**
1. Tower is located in Fairfield County, Connecticut.
 2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
 3. Tower is also designed for a 74 mph basic wind with 0.50 in ice.
 4. Deflections are based upon a 50 mph wind.




GlenMartin Holding Inc.
 1604A Business Loop 70 W
 Columbia, MO 65202
 Phone: (800) 486-1223
 FAX: (660) 882-7200

Job: **Site: Tartaglia CT-5035**
 Project: **Post Mod SA for a 240 ft SST**
 Client: **GTP**
 Code: **TIA/EIA-222-F**
 Path:


Drawn by: **XIN**
 Date: **04/05/13**
 App'd:
 Scale: **NTS**
 Dwg No: **E-1**

| | | | | |
|---|--|---|-----------------------------|-------------------------------------|
|  GLENMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734 | Structure: 240' Self Supported Tower | Customer Name: GTP | City: Bridgeport | Proposed Carrier: Verizon |
| | Project: Post Mods SA | Customer Site Name: Tartaglia | County: Fairfield | Date: 04/05/2013 |
| | Job #: CT-5035, Tartaglia | Customer Site #: CT-5035 | State: CT | Page: 7 of 38 |

APPENDIX 3. Reinforced Member Property
 (see document in next page)

| | | | | |
|--|--|---|-----------------------------|-------------------------------------|
|  GLEMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734 | Structure: 240' Self Supported Tower | Customer Name: GTP | City: Bridgeport | Proposed Carrier: Verizon |
| | Project: Post Mods SA | Customer Site Name: Tartaglia | County: Fairfield | Date: 04/05/2013 |
| | Job #: CT-5035, Tartaglia | Customer Site #: CT-5035 | State: CT | Page: 8 of 38 |


APPENDIX 4. Tower Analysis Output
 (see document in next page)

| | | | | |
|--|--|---|-----------------------------|-------------------------------------|
|  GLEMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734 | Structure: 240' Self Supported Tower | Customer Name: GTP | City: Bridgeport | Proposed Carrier: Verizon |
| | Project: Past Mods SA | Customer Site Name: Tartaglia | County: Fairfield | Date: 04/05/2013 |
| | Job #: CT-5035, Tartaglia | Customer Site #: CT-5035 | State: CT | Page: 10 of 38 |

| Tower Section Geometry | | | | | | |
|------------------------|-----------------|-------------------|-------------|---------------|--------------------|----------------|
| Tower Section | Tower Elevation | Assembly Database | Description | Section Width | Number of Sections | Section Length |
| | ft | | | ft | | ft |
| T1 | 240.00-220.00 | | | 10.93 | 1 | 20.00 |
| T2 | 220.00-200.00 | | | 12.93 | 1 | 20.00 |
| T3 | 200.00-180.00 | | | 15.18 | 1 | 20.00 |
| T4 | 180.00-160.00 | | | 17.68 | 1 | 20.00 |
| T5 | 160.00-140.00 | | | 20.18 | 1 | 20.00 |
| T6 | 140.00-120.00 | | | 22.68 | 1 | 20.00 |
| T7 | 120.00-100.00 | | | 25.18 | 1 | 20.00 |
| T8 | 100.00-80.00 | | | 27.68 | 1 | 20.00 |
| T9 | 80.00-60.00 | | | 30.33 | 1 | 20.00 |
| T10 | 60.00-30.00 | | | 32.83 | 1 | 30.00 |
| T11 | 30.00-0.00 | | | 36.58 | 1 | 30.00 |

| Tower Section Geometry (cont'd) | | | | | | | |
|---------------------------------|-----------------|------------------|--------------|------------------------|-----------------|-----------------|--------------------|
| Tower Section | Tower Elevation | Diagonal Spacing | Bracing Type | Has K Brace End Panels | Has Horizontals | Top Girt Offset | Bottom Girt Offset |
| | ft | ft | | | | in | in |
| T1 | 240.00-220.00 | 6.67 | K Brace Down | No | Yes | 0.0000 | 0.0000 |
| T2 | 220.00-200.00 | 10.00 | K Brace Down | No | Yes | 0.0000 | 0.0000 |
| T3 | 200.00-180.00 | 10.00 | K Brace Down | No | Yes | 0.0000 | 0.0000 |
| T4 | 180.00-160.00 | 10.00 | K Brace Down | No | Yes | 0.0000 | 0.0000 |
| T5 | 160.00-140.00 | 10.00 | K Brace Down | No | Yes | 0.0000 | 0.0000 |
| T6 | 140.00-120.00 | 10.00 | K Brace Down | No | Yes | 0.0000 | 0.0000 |
| T7 | 120.00-100.00 | 20.00 | K Brace Down | No | Yes | 0.0000 | 0.0000 |
| T8 | 100.00-80.00 | 20.00 | K1 Down | No | Yes | 0.0000 | 0.0000 |
| T9 | 80.00-60.00 | 20.00 | K1 Down | No | Yes | 0.0000 | 0.0000 |
| T10 | 60.00-30.00 | 30.00 | K1 Down | No | Yes | 0.0000 | 0.0000 |
| T11 | 30.00-0.00 | 30.00 | K2 Down | No | Yes | 0.0000 | 0.0000 |

| Tower Section Geometry (cont'd) | | | | | | |
|---------------------------------|----------|--------------------|------------------|-----------------|----------------------------------|------------------|
| Tower Elevation | Leg Type | Leg Size | Leg Grade | Diagonal Type | Diagonal Size | Diagonal Grade |
| T1 240.00-220.00 | Pipe | P8x.5 (8" x-str) | A572-50 (50 ksi) | Pipe | P2x.154 (2" Std.) | A572-50 (50 ksi) |
| T2 220.00-200.00 | Pipe | P8x.5 (8" x-str) | A572-50 (50 ksi) | Pipe | P2.5x.203 (2 1/2" std) | A572-50 (50 ksi) |
| T3 200.00-180.00 | Pipe | P8x.5 (8" x-str) | A572-50 (50 ksi) | Pipe | P2.5x.203 (2 1/2" std) | A572-50 (50 ksi) |
| T4 180.00-160.00 | Pipe | P8x.5 (8" x-str) | A572-50 (50 ksi) | Pipe | P2.5x.203 (2 1/2" std) | A572-50 (50 ksi) |
| T5 160.00-140.00 | Pipe | ROHN 8 EH | A572-50 (50 ksi) | Arbitrary Shape | P2.5x.203 w/ 1/2 pipe 3.5"x.300" | A572-50 (50 ksi) |
| T6 140.00-120.00 | Pipe | P8x.5 (8" x-str) | A572-50 (50 ksi) | Pipe | P3x.216 (3" std) | A572-50 (50 ksi) |
| T7 120.00-100.00 | Pipe | P8x.5 (8" x-str) | A572-50 (50 ksi) | Arbitrary Shape | P2.5x.203 w/ L2.5x2.5x3/8 | A572-50 (50 ksi) |
| T8 100.00-80.00 | Pipe | ROHN 8 EH | A572-50 (50 ksi) | Pipe | P3x.216 (3" std) | A572-50 (50 ksi) |
| T9 80.00-60.00 | Pipe | P10x.5 (10" x-str) | A572-50 (50 ksi) | Pipe | P3x.216 (3" std) | A572-50 (50 ksi) |
| T10 60.00-30.00 | Pipe | P10x.5 (10" x-str) | A572-50 (50 ksi) | Pipe | P3x.216 (3" std) | A572-50 (50 ksi) |
| T11 30.00-0.00 | Pipe | P10x.5 (10" x-str) | A572-50 (50 ksi) | Arbitrary Shape | P3x.216 w/ L2.5x2.5x3/8 | A572-50 (50 ksi) |

| | | | | |
|--|--|---|-----------------------------|-------------------------------------|
|  GLENMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734 | Structure: 240' Self Supported Tower | Customer Name: GTP | City: Bridgeport | Proposed Carrier: Verizon |
| | Project: Post Mods SA | Customer Site Name: Tartaglia | County: Fairfield | Date: 04/05/2013 |
| | Job #: CT-5035, Tartaglia | Customer Site #: CT-5035 | State: CT | Page: 12 of 38 |

| Tower Elevation | Redundant Bracing Grade | Redundant Type | Redundant Size | K Factor |
|---------------------|-------------------------|--|--|--------------------------------------|
| ft | | | | |
| T7 120.00-100.00 | A572-50 (50 ksi) | Horizontal (1) Diagonal (1) Hip (1) | Pipe Pipe Pipe | 1 1 1 |
| T8 100.00-80.00 | A572-50 (50 ksi) | Hip Diagonal Horizontal (1) Diagonal (1) Hip (1) | Pipe Pipe Pipe | 1 1 1 1 |
| T9 80.00-60.00 | A572-50 (50 ksi) | Hip Diagonal Horizontal (1) Diagonal (1) Hip (1) | Pipe Pipe Pipe | 1 1 1 1 |
| T10 60.00-30.00 | A572-50 (50 ksi) | Hip Diagonal Horizontal (1) Horizontal (2) Diagonal (1) Diagonal (2) Hip (1) Hip (2) | Pipe Pipe Pipe Pipe Pipe Pipe | 1 1 1 1 1 1 1 |
| T11 30.00-0.00 | A572-50 (50 ksi) | Hip Diagonal Horizontal (1) Horizontal (2) Diagonal (1) Diagonal (2) Hip (1) Hip (2) Hip Diagonal | Pipe Pipe Arbitrary Shape Pipe | 1 1 1 1 1 1 1 1 |

Tower Section Geometry (Cont'd)

| Tower Elevation | Gusset Area (per face) | Gusset Thickness | Gusset Grade | Adjust. Factor A ₁ | Adjust. Factor A ₂ | Weight Mult. | Double Angle Stitch Bolt Spacing Diagonals in | Double Angle Stitch Bolt Spacing Horizontals in |
|---------------------|------------------------|------------------|-----------------|-------------------------------|-------------------------------|--------------|---|---|
| ft | ft ² | in | | | | | | |
| T1 240.00-220.00 | 0.00 | 0.0000 | A36 (36 ksi) | 1 | 1 | 1 | 36.0000 | 36.0000 |
| T2 220.00-200.00 | 0.00 | 0.0000 | A36 (36 ksi) | 1 | 1 | 1 | 36.0000 | 36.0000 |
| T3 200.00-180.00 | 0.00 | 0.0000 | A36 (36 ksi) | 1 | 1 | 1 | 36.0000 | 36.0000 |
| T4 180.00-160.00 | 0.00 | 0.0000 | A36 (36 ksi) | 1 | 1 | 1 | 36.0000 | 36.0000 |
| T5 160.00-140.00 | 0.00 | 0.0000 | A36 (36 ksi) | 1 | 1 | 1 | 36.0000 | 36.0000 |
| T6 140.00-120.00 | 0.00 | 0.0000 | A36 (36 ksi) | 1 | 1 | 1 | 36.0000 | 36.0000 |
| T7 120.00-100.00 | 0.00 | 0.0000 | A36 (36 ksi) | 1 | 1 | 1 | 36.0000 | 36.0000 |
| T8 100.00-80.00 | 0.00 | 0.0000 | A36 (36 ksi) | 1 | 1 | 1 | 36.0000 | 36.0000 |
| T9 80.00-60.00 | 0.00 | 0.0000 | A36 (36 ksi) | 1 | 1 | 1 | 36.0000 | 36.0000 |
| T10 60.00-30.00 | 0.00 | 0.0000 | A36 (36 ksi) | 1 | 1 | 1 | 36.0000 | 36.0000 |
| T11 30.00-0.00 | 0.00 | 0.0000 | A36 (36 ksi) | 1 | 1 | 1 | 36.0000 | 36.0000 |

Tower Section Geometry (cont'd)



GLENMARTIN
 1604 Business Loop 70 W, A
 Columbia, MO 65202
 Phone: (660) 880-2734

Structure:
 240' Self Supported Tower

Customer Name:
 GTP

City:
 Bridgeport

Proposed Carrier:
 Verizon

Project:
 Post Mods SA

Customer Site Name:
 Tartaglia

County:
 Fairfield

Date:
 04/05/2013

Job #:
 CT-5035, Tartaglia

Customer Site #:
 CT-5035

State:
 CT

Page:
 14 of 38

| 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 |
|-----------------------|-------------|--------------|----------------|---------------|----------------|--------------------------|----|-----------|------------------|----------------------|--------------|------------|
| LDF6-50A (1-1/4 FOAM) | C | Yes | Ar (CfAe) | 240.00 - 5.00 | 0.0000 | 0.49 | 1 | 1 | 1.5500 | 1.5500 | | 0.66 |
| LDF5-50A (7/8 FOAM) | A | Yes | Ar (CfAe) | 230.00 - 5.00 | 0.0000 | -0.48 | 2 | 2 | 0.5000 | 1.0900 | | 0.33 |
| LDF6-50A (1-1/4 FOAM) | C | Yes | Ar (CfAe) | 223.00 - 5.00 | 0.0000 | 0.47 | 1 | 1 | 1.5500 | 1.5500 | | 0.66 |
| LDF7-50A (1-5/8 FOAM) | A | Yes | Ar (CfAe) | 212.00 - 5.00 | -3.0000 | 0.4 | 12 | 6 | 0.5000 | 1.9800 | | 0.82 |
| LDF5-50A (7/8 FOAM) | A | Yes | Ar (CfAe) | 196.00 - 5.00 | 0.0000 | -0.46 | 1 | 1 | 1.0900 | 1.0900 | | 0.33 |
| LDF4-50A (1/2 FOAM) | B | Yes | Ar (CfAe) | 187.00 - 5.00 | 0.0000 | 0.25 | 4 | 4 | 0.5000 | 0.6300 | | 0.15 |
| LDF7-50A (1-5/8 FOAM) | C | Yes | Ar (CfAe) | 180.60 - 5.00 | -2.0000 | 0.4 | 6 | 6 | 0.5000 | 1.9800 | | 0.82 |
| 2" Rigid Conduit | B | Yes | Ar (CfAe) | 180.60 - 5.00 | 0.0000 | 0.3 | 2 | 2 | 1.0000 | 2.0000 | | 2.80 |
| LDF6-50A (1-1/4 FOAM) | C | Yes | Ar (CfAe) | 180.60 - 5.00 | 0.0000 | 0.25 | 3 | 3 | 1.5500 | 1.5500 | | 0.66 |
| LDF7-50A (1-5/8 FOAM) | B | Yes | Ar (CfAe) | 174.00 - 5.00 | 0.0000 | 0.45 | 6 | 6 | 0.5000 | 1.9800 | | 0.82 |
| LDF6-50A (1-1/4 FOAM) | C | Yes | Ar (CfAe) | 164.00 - 5.00 | 0.0000 | 0.35 | 1 | 1 | 1.5500 | 1.5500 | | 0.66 |
| LDF7-50A (1-5/8 FOAM) | A | Yes | Ar (CfAe) | 164.00 - 5.00 | -3.0000 | 0.45 | 12 | 6 | 0.5000 | 1.9800 | | 0.82 |
| LDF2-50A (3/8 FOAM) | A | Yes | Ar (CfAe) | 164.00 - 5.00 | -2.0000 | 0.35 | 3 | 3 | 0.4400 | 0.4400 | | 0.08 |
| LDF7-50A (1-5/8 FOAM) | A | Yes | Ar (CfAe) | 155.00 - 5.00 | 0.0000 | -0.35 | 12 | 6 | 0.5000 | 1.9800 | | 0.82 |
| 1" Conduit | C | Yes | Ar (CfAe) | 240.00 - 5.00 | 0.0000 | 0.4 | 1 | 1 | 1.0000 | 1.0000 | | 0.75 |
| LDF4-50A (1/2 FOAM) | B | Yes | Ar (CfAe) | 132.00 - 5.00 | 0.0000 | 0.49 | 1 | 1 | 0.6300 | 0.6300 | | 0.15 |
| LDF5-50A (7/8 FOAM) | C | Yes | Ar (CfAe) | 118.00 - 5.00 | 0.0000 | 0.2 | 1 | 1 | 1.0900 | 1.0900 | | 0.33 |
| LDF6-50A (1-1/4 FOAM) | C | Yes | Ar (CfAe) | 108.00 - 5.00 | 0.0000 | 0.42 | 1 | 1 | 1.5500 | 1.5500 | | 0.66 |
| LDF4P-50A (1/2 FOAM) | B | Yes | Ar (CfAe) | 99.00 - 5.00 | 0.0000 | 0.48 | 1 | 1 | 0.6300 | 0.6300 | | 0.15 |
| LDF4P-50A (1/2 FOAM) | A | Yes | Ar (CfAe) | 20.00 - 5.00 | 0.0000 | -0.5 | 1 | 1 | 0.6300 | 0.6300 | | 0.15 |
| Verizon Cat 5 | A | Yes | Ar (CfAe) | 22.00 - 5.00 | 0.0000 | -0.49 | 1 | 1 | 0.3750 | 0.3750 | | 0.10 |
| LDF4P-50A (1/2 FOAM) | A | Yes | Ar (CfAe) | 8.00 - 5.00 | 0.0000 | -0.48 | 1 | 1 | 0.6300 | 0.6300 | | 0.15 |
| *** | | | | | | | | | | | | |
| LDF7-50A (1-5/8 FOAM) | B | Yes | Ar (CfAe) | 202.00 - 5.00 | 0.0000 | -0.45 | 12 | 6 | 0.5000 | 1.9800 | | 0.82 |
| TMobile | | | | | | | | | | | | |
| 1-5/8" Hybrid | B | Yes | Ar (CfAe) | 202.00 - 5.00 | 0.0000 | -0.43 | 1 | 1 | 1.9800 | 1.9800 | | 0.82 |
| TMobile | | | | | | | | | | | | |
| 1-5/8" Hybrid | A | Yes | Ar (CfAe) | 155.00 - 5.00 | 0.0000 | -0.43 | 1 | 1 | 1.9800 | 1.9800 | | 0.82 |
| Verizon | | | | | | | | | | | | |

Feed Line/Linear Appurtenances Section Areas

| Tower Section | Tower Elevation ft | Face | A _R ft ² | A _F ft ² | C _{A,A} In Face ft ² | C _{A,A} Out Face ft ² | Weight lb |
|---------------|--------------------|------|--------------------------------|--------------------------------|--|---|-----------|
| T1 | 240.00-220.00 | A | 1.817 | 0.000 | 0.000 | 0.000 | 6.60 |
| | | B | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| | | C | 4.638 | 0.000 | 0.000 | 0.000 | 30.18 |
| T2 | 220.00-200.00 | A | 15.513 | 0.000 | 0.000 | 0.000 | 131.28 |
| | | B | 2.310 | 0.000 | 0.000 | 0.000 | 21.32 |
| | | C | 6.833 | 0.000 | 0.000 | 0.000 | 41.40 |




GLEMMARTIN
 1604 Business Loop 70 W, A
 Columbia, MO 65202
 Phone: (660) 880-2734

| | | | |
|--|---|-----------------------------|-------------------------------------|
| Structure: 240' Self Supported Tower | Customer Name: GTP | City: Bridgeport | Proposed Carrier: Verizon |
| Project: Post Mods SA | Customer Site Name: Tartaglia | County: Fairfield | Date: 04/05/2013 |
| Job #: CT-5035, Tartaglia | Customer Site #: CT-5035 | State: CT | Page: 16 of 38 |


| Tower Section | Tower Elevation ft | Face or Leg | Ice Thickness in | A _R ft ² | A _I ft ² | C _{A A} In Face ft ² | C _{A A} Out Face ft ² | Weight lb |
|---------------|--------------------|-------------|------------------|--------------------------------|--------------------------------|--|---|-----------|
| T11 | 30.00-0.00 | A | 0.500 | 40.935 | 84.479 | 0.000 | 0.000 | 2276.88 |
| | | B | | 35.063 | 64.979 | 0.000 | 0.000 | 1467.53 |
| | | C | | 51.917 | 25.833 | 0.000 | 0.000 | 779.29 |

Discrete Tower Loads


| Description | Face or Leg | Offset Type | Offsets: Horz Lateral Vert ft | Azimuth Adjustment ° | Placement ft | | C _{A A} Front ft ² | C _{A A} Side ft ² | Weight lb |
|----------------------------------|-------------|-------------|-------------------------------|----------------------|--------------|--------------------|--|---------------------------------------|-------------------|
| 5/8" x 8' Lightning Rod | B | From Face | 0.00 0.00 5.00 | 0.0000 | 240.00 | No Ice 1/2" Ice | 0.50 1.31 | 0.50 1.31 | 10.00 15.56 |
| Flash Beacon Lighting | C | From Leg | 0.00 0.00 0.00 | 0.0000 | 240.00 | No Ice 1/2" Ice | 2.70 3.10 | 2.70 3.10 | 50.00 70.00 |
| 3" Dia 10' Omni | C | From Leg | 1.00 0.00 5.00 | 0.0000 | 240.00 | No Ice 1/2" Ice | 3.00 4.03 | 3.00 4.03 | 25.00 46.79 |
| 4" dia x 4' pipe mount | C | From Leg | 0.00 0.00 0.00 | 0.0000 | 240.00 | No Ice 1/2" Ice | 1.21 1.47 | 1.21 1.47 | 43.20 54.83 |
| 2' Side Arm Mount | B | From Leg | 1.50 0.00 0.00 | 0.0000 | 240.00 | No Ice 1/2" Ice | 2.00 3.00 | 2.00 3.00 | 50.00 100.00 |
| 3" Dia 8' Omni (DEAD) | A | From Leg | 3.00 0.00 4.00 | 0.0000 | 235.00 | No Ice 1/2" Ice | 2.40 3.19 | 2.40 3.19 | 20.00 37.51 |
| 3" Dia 8' Omni | A | From Leg | 3.00 0.00 4.00 | 0.0000 | 230.00 | No Ice 1/2" Ice | 2.40 3.19 | 2.40 3.19 | 20.00 37.51 |
| 4" Dia 8' Omni | B | From Leg | 3.00 0.00 4.00 | 0.0000 | 230.00 | No Ice 1/2" Ice | 2.40 3.19 | 2.40 3.19 | 20.00 37.51 |
| 4" x 12' Omni | C | From Leg | 3.00 0.00 4.00 | 0.0000 | 223.00 | No Ice 1/2" Ice | 3.60 4.83 | 3.60 4.83 | 30.00 56.06 |
| 2' Side Arm Mount (DEAD) | C | From Leg | 1.50 0.00 0.00 | 0.0000 | 235.00 | No Ice 1/2" Ice | 2.00 3.00 | 2.00 3.00 | 50.00 100.00 |
| 2' Side Arm Mount | A | From Leg | 1.50 0.00 0.00 | 0.0000 | 230.00 | No Ice 1/2" Ice | 2.00 3.00 | 2.00 3.00 | 50.00 100.00 |
| 2' Side Arm Mount | A | From Leg | 1.50 0.00 0.00 | 0.0000 | 230.00 | No Ice 1/2" Ice | 2.00 3.00 | 2.00 3.00 | 50.00 100.00 |
| 2' Side Arm Mount | B | From Leg | 1.50 0.00 0.00 | 0.0000 | 230.00 | No Ice 1/2" Ice | 2.00 3.00 | 2.00 3.00 | 50.00 100.00 |
| 2' Side Arm Mount | C | From Leg | 1.50 0.00 0.00 | 0.0000 | 223.00 | No Ice 1/2" Ice | 2.00 3.00 | 2.00 3.00 | 50.00 100.00 |
| (2) HBX-6516DS-VTM (MetroPCS) | A | From Leg | 4.00 0.00 0.00 | 0.0000 | 212.00 | No Ice 1/2" Ice | 3.49 3.87 | 3.17 3.80 | 28.15 58.44 |
| (2) HBX-6516DS-VTM (MetroPCS) | B | From Leg | 4.00 0.00 0.00 | 0.0000 | 212.00 | No Ice 1/2" Ice | 3.49 3.87 | 3.17 3.80 | 28.15 58.44 |
| (2) HBX-6516DS-VTM (MetroPCS) | C | From Leg | 4.00 0.00 0.00 | 0.0000 | 212.00 | No Ice 1/2" Ice | 3.49 3.87 | 3.17 3.80 | 28.15 58.44 |
| (3) 10' Sector Frames (MetroPCS) | C | None | 0.00 | 0.0000 | 212.00 | No Ice 1/2" Ice | 23.00 34.00 | 23.00 34.00 | 700.00 1000.00 |

| | | | | |
|--|--|---|-----------------------------|-------------------------------------|
|  GLEMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734 | Structure: 240' Self Supported Tower | Customer Name: GTP | City: Bridgeport | Proposed Carrier: Verizon |
| | Project: Post Mods SA | Customer Site Name: Tartaglia | County: Fairfield | Date: 04/05/2013 |
| | Job #: CT-5035, Tartaglia | Customer Site #: CT-5035 | State: CT | Page: 18 of 38 |

| Description | Face or Leg | Offset Type | Offsets: | | Azimuth Adjustment | Placement | C.A.A. | | Weight | |
|-----------------------------|-------------|-------------|----------|------|--------------------|-----------|-----------------|-----------------|--------|---------|
| | | | Horz | Vert | | | Front | Side | | |
| | | | ft | ft | ° | ft | ft ² | ft ² | lb | |
| LLPX310R (Clearwire) | A | From Leg | 0.00 | | 0.0000 | 180.60 | Ice | | | |
| | | | 3.00 | | | | No Ice | 4.90 | 1.94 | 29.00 |
| | | | 0.00 | | | | 1/2" | 5.25 | 2.21 | 55.14 |
| LLPX310R (Clearwire) | B | From Leg | 0.00 | | 0.0000 | 180.60 | Ice | | | |
| | | | 3.00 | | | | No Ice | 4.90 | 1.94 | 29.00 |
| | | | 0.00 | | | | 1/2" | 5.25 | 2.21 | 55.14 |
| LLPX310R (Clearwire) | C | From Leg | 0.00 | | 0.0000 | 180.60 | Ice | | | |
| | | | 3.00 | | | | No Ice | 4.90 | 1.94 | 29.00 |
| | | | 0.00 | | | | 1/2" | 5.25 | 2.21 | 55.14 |
| DAP Heads (Clearwire) | A | From Leg | 2.00 | | 0.0000 | 180.60 | Ice | | | |
| | | | 0.00 | | | | No Ice | 3.54 | 2.27 | 45.00 |
| | | | 0.00 | | | | 1/2" | 3.80 | 2.51 | 70.08 |
| DAP Heads (Clearwire) | B | From Leg | 2.00 | | 0.0000 | 180.60 | Ice | | | |
| | | | 0.00 | | | | No Ice | 3.54 | 2.27 | 45.00 |
| | | | 0.00 | | | | 1/2" | 3.80 | 2.51 | 70.08 |
| DAP Heads (Clearwire) | C | From Leg | 2.00 | | 0.0000 | 180.60 | Ice | | | |
| | | | 0.00 | | | | No Ice | 3.54 | 2.27 | 45.00 |
| | | | 0.00 | | | | 1/2" | 3.80 | 2.51 | 70.08 |
| (2) 950F65T4E-M | A | From Leg | 3.00 | | 0.0000 | 174.00 | Ice | | | |
| | | | 0.00 | | | | No Ice | 6.13 | 4.24 | 16.00 |
| | | | 0.00 | | | | 1/2" | 6.59 | 4.62 | 54.95 |
| (2) 5' x 5" x 2" PCS Panels | B | From Leg | 3.00 | | 0.0000 | 174.00 | Ice | | | |
| | | | 0.00 | | | | No Ice | 3.26 | 1.67 | 50.00 |
| | | | 0.00 | | | | 1/2" | 3.64 | 2.16 | 66.14 |
| (2) 5' x 5" x 2" PCS Panels | C | From Leg | 3.00 | | 0.0000 | 174.00 | Ice | | | |
| | | | 0.00 | | | | No Ice | 3.26 | 1.67 | 50.00 |
| | | | 0.00 | | | | 1/2" | 3.64 | 2.16 | 66.14 |
| (3) 10' Sector Frames | C | From Leg | 0.00 | | 0.0000 | 174.00 | Ice | | | |
| | | | 0.00 | | | | No Ice | 23.00 | 23.00 | 700.00 |
| | | | 0.00 | | | | 1/2" | 34.00 | 34.00 | 1000.00 |
| 4" Dia 20' Omni | C | From Leg | 1.00 | | 0.0000 | 164.00 | Ice | | | |
| | | | 0.00 | | | | No Ice | 4.00 | 4.00 | 55.00 |
| | | | 0.00 | | | | 1/2" | 6.00 | 6.00 | 100.00 |
| (2) 7770 (AT&T) | A | From Leg | 3.00 | | 0.0000 | 164.00 | Ice | | | |
| | | | 0.00 | | | | No Ice | 5.88 | 2.93 | 35.00 |
| | | | 0.00 | | | | 1/2" | 6.31 | 3.27 | 67.63 |
| (2) 7770 (AT&T) | B | From Leg | 3.00 | | 0.0000 | 164.00 | Ice | | | |
| | | | 0.00 | | | | No Ice | 5.88 | 2.93 | 35.00 |
| | | | 0.00 | | | | 1/2" | 6.31 | 3.27 | 67.63 |
| (2) 7770 (AT&T) | C | From Leg | 3.00 | | 0.0000 | 164.00 | Ice | | | |
| | | | 0.00 | | | | No Ice | 5.88 | 2.93 | 35.00 |
| | | | 0.00 | | | | 1/2" | 6.31 | 3.27 | 67.63 |
| P65-16-XLH-RR (AT&T) | A | From Leg | 3.00 | | 0.0000 | 164.00 | Ice | | | |
| | | | 0.00 | | | | No Ice | 8.40 | 4.70 | 29.00 |
| | | | 0.00 | | | | 1/2" | 8.95 | 5.15 | 76.28 |
| P65-16-XLH-RR (AT&T) | B | From Leg | 3.00 | | 0.0000 | 164.00 | Ice | | | |
| | | | 0.00 | | | | No Ice | 8.40 | 4.70 | 29.00 |
| | | | 0.00 | | | | 1/2" | 8.95 | 5.15 | 76.28 |
| P65-16-XLH-RR (AT&T) | C | From Leg | 3.00 | | 0.0000 | 164.00 | Ice | | | |
| | | | 0.00 | | | | No Ice | 8.40 | 4.70 | 29.00 |
| | | | 0.00 | | | | 1/2" | 8.95 | 5.15 | 76.28 |
| (2) RRU 11 Single (AT&T) | A | From Leg | 2.00 | | 0.0000 | 164.00 | Ice | | | |
| | | | 0.00 | | | | No Ice | 2.94 | 1.52 | 54.00 |
| | | | 0.00 | | | | 1/2" | 3.17 | 1.69 | 75.64 |
| (2) RRU 11 Single (AT&T) | B | From Leg | 2.00 | | 0.0000 | 164.00 | Ice | | | |
| | | | 0.00 | | | | No Ice | 2.94 | 1.52 | 54.00 |
| | | | 0.00 | | | | 1/2" | 3.17 | 1.69 | 75.64 |
| (2) RRU 11 Single (AT&T) | C | From Leg | 2.00 | | 0.0000 | 164.00 | Ice | | | |
| | | | 0.00 | | | | No Ice | 2.94 | 1.52 | 54.00 |
| | | | 0.00 | | | | 1/2" | 3.17 | 1.69 | 75.64 |
| (4) LGP 21401 (AT&T) | A | From Leg | 2.00 | | 0.0000 | 164.00 | Ice | | | |
| | | | 0.00 | | | | No Ice | 0.95 | 0.37 | 17.50 |
| | | | 0.00 | | | | 1/2" | 1.09 | 0.48 | 23.31 |

| | | | | |
|---|--|---|-----------------------------|-------------------------------------|
|  GLENMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734 | Structure: 240' Self Supported Tower | Customer Name: GTP | City: Bridgeport | Proposed Carrier: Verizon |
| | Project: Post Mods SA | Customer Site Name: Tartaglia | County: Fairfield | Date: 04/05/2013 |
| | Job #: CT-5035, Tartaglia | Customer Site #: CT-5035 | State: CT | Page: 20 of 38 |

| Description | Face or Leg | Offset Type | Offsets: Horz Lateral Vert ft | Azimuth Adjustment ° | Placement ft | C.A.A. | | Weight lb |
|---------------------------------------|-------------|-------------|----------------------------------|-------------------------|-----------------|--------------------------|-------------------------|----------------------------|
| | | | | | | Front ft ² | Side ft ² | |
| (2) FD9R6004/2C-3L Diplexer (Verizon) | C | From Leg | 0.00 2.00 0.00 0.00 | 0.0000 | 155.00 | Ice No Ice 1/2" | 0.37 0.45 0.14 | 0.08 2.60 4.90 |
| (2) ALU RRH2X40 AWS (Verizon) | A | From Leg | 2.00 0.00 0.00 | 0.0000 | 155.00 | Ice No Ice 1/2" | 2.53 2.76 1.80 | 1.59 44.00 61.44 |
| (2) ALU RRH2X40 AWS (Verizon) | B | From Leg | 2.00 0.00 0.00 | 0.0000 | 155.00 | Ice No Ice 1/2" | 2.53 2.76 1.80 | 1.59 44.00 61.44 |
| (2) ALU RRH2X40 AWS (Verizon) | C | From Leg | 2.00 0.00 0.00 | 0.0000 | 155.00 | Ice No Ice 1/2" | 2.53 2.76 1.80 | 1.59 44.00 61.44 |
| DB T1 6Z 8AB OZ (Verizon) | C | From Leg | 1.00 0.00 0.00 | 0.0000 | 155.00 | Ice No Ice 1/2" | 5.60 5.92 2.56 | 2.33 44.00 80.13 |
| (3) 10' Sector Frames (Verizon) | C | From Leg | 0.00 0.00 0.00 | 0.0000 | 155.00 | Ice No Ice 1/2" | 23.00 34.00 34.00 | 23.00 700.00 1000.00 |
| Small Light | A | From Leg | 0.50 0.00 0.00 | 0.0000 | 140.00 | Ice No Ice 1/2" | 0.13 0.19 0.19 | 0.13 2.00 4.01 |
| Small Light | B | From Leg | 0.50 0.00 0.00 | 0.0000 | 140.00 | Ice No Ice 1/2" | 0.13 0.19 0.19 | 0.13 2.00 4.01 |
| Small Light | C | From Leg | 0.50 0.00 0.00 | 0.0000 | 140.00 | Ice No Ice 1/2" | 0.13 0.19 0.19 | 0.13 2.00 4.01 |
| 1.5" Dia 8' Omni (DEAD) | C | From Leg | 1.00 0.00 0.00 | 0.0000 | 137.00 | Ice No Ice 1/2" | 2.00 3.03 3.03 | 2.00 5.00 18.00 |
| 2' Side Arm Mount (DEAD) | C | From Leg | 1.00 0.00 0.00 | 0.0000 | 137.00 | Ice No Ice 1/2" | 2.00 3.00 3.00 | 2.00 50.00 100.00 |
| 2' Side Arm Mount (DEAD) | C | From Leg | 1.00 0.00 0.00 | 0.0000 | 132.00 | Ice No Ice 1/2" | 2.00 3.00 3.00 | 2.00 50.00 100.00 |
| 4' Yagi (DEAD) | C | From Leg | 1.00 0.00 0.00 | 0.0000 | 132.00 | Ice No Ice 1/2" | 2.08 3.79 3.79 | 2.08 30.95 51.64 |
| 3' Yagi (DEAD) | B | From Leg | 1.00 0.00 0.00 | 0.0000 | 99.00 | Ice No Ice 1/2" | 2.08 3.79 3.79 | 2.08 30.95 51.64 |
| 2' Side Arm Mount (DEAD) | B | From Leg | 0.00 0.00 0.00 | 0.0000 | 99.00 | Ice No Ice 1/2" | 2.00 3.00 3.00 | 2.00 50.00 100.00 |
| 2' Side Arm Mount (DEAD) | B | From Leg | 0.00 0.00 0.00 | 0.0000 | 118.00 | Ice No Ice 1/2" | 2.00 3.00 3.00 | 2.00 50.00 100.00 |
| 2' Side Arm Mount (DEAD) | B | From Leg | 0.00 0.00 0.00 | 0.0000 | 108.00 | Ice No Ice 1/2" | 2.00 3.00 3.00 | 2.00 50.00 100.00 |
| 2" Dia 10' Omni | C | From Leg | 1.00 0.00 0.00 | 0.0000 | 118.00 | Ice No Ice 1/2" | 2.00 3.03 3.03 | 2.00 10.00 25.00 |
| 3" Dia 10' Omni | B | From Leg | 1.00 0.00 0.00 | 0.0000 | 108.00 | Ice No Ice 1/2" | 3.00 4.03 4.03 | 3.00 25.00 46.79 |
| Side Arm Mount | C | None | | 0.0000 | 80.00 | Ice No Ice 1/2" | 6.00 8.00 8.00 | 6.00 100.00 150.00 |
| GPS Unit w/ mt (Verizon) | C | None | | 0.0000 | 20.00 | Ice No Ice 1/2" | 1.80 2.30 2.30 | 1.80 15.00 19.50 |

| | | | | |
|--|--|---|-----------------------------|-------------------------------------|
|  GLEMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734 | Structure: 240' Self Supported Tower | Customer Name: GTP | City: Bridgeport | Proposed Carrier: Verizon |
| | Project: Post Modis SA | Customer Site Name: Tartaglia | County: Fairfield | Date: 04/05/2013 |
| | Job #: CT-5035, Tartaglia | Customer Site #: CT-5035 | State: CT | Page: 22 of 38 |

G_H = 1.102

| Section Elevation ft | z ft | K _z | q _z psf | A _c ft ² | F a c e | A ₁ ft ² | A ₂ ft ² | A ₃ ft ² | Leg % | C _s A _a In Face ft ² | C _s A _a Out Face ft ² |
|-------------------------|---------|----------------|-----------------------|-----------------------------------|------------------|-----------------------------------|-----------------------------------|-----------------------------------|----------|--|---|
| T1 240.00-220.00 | 230.00 | 1.741 | 32 | 252.935 | A | 0.000 | 47.067 | 28.798 | 61.19 | 0.000 | 0.000 |
| | | | | | B | 0.000 | 45.384 | | 63.45 | 0.000 | 0.000 |
| | | | | | C | 0.000 | 49.680 | | 57.97 | 0.000 | 0.000 |
| T2 220.00-200.00 | 210.00 | 1.697 | 31 | 295.439 | A | 0.000 | 59.733 | 28.811 | 48.23 | 0.000 | 0.000 |
| | | | | | B | 0.000 | 47.327 | | 60.87 | 0.000 | 0.000 |
| | | | | | C | 0.000 | 51.578 | | 55.86 | 0.000 | 0.000 |
| T3 200.00-180.00 | 190.00 | 1.649 | 30 | 342.945 | A | 0.000 | 70.339 | 28.825 | 40.98 | 0.000 | 0.000 |
| | | | | | B | 0.000 | 70.229 | | 41.04 | 0.000 | 0.000 |
| | | | | | C | 0.000 | 54.090 | | 53.29 | 0.000 | 0.000 |
| T4 180.00-160.00 | 170.00 | 1.597 | 30 | 392.945 | A | 0.000 | 78.089 | 28.825 | 36.91 | 0.000 | 0.000 |
| | | | | | B | 0.000 | 95.207 | | 30.28 | 0.000 | 0.000 |
| | | | | | C | 0.000 | 83.033 | | 34.71 | 0.000 | 0.000 |
| T5 160.00-140.00 | 150.00 | 1.541 | 29 | 442.945 | A | 0.000 | 115.642 | 28.825 | 24.93 | 0.000 | 0.000 |
| | | | | | B | 0.000 | 105.515 | | 27.32 | 0.000 | 0.000 |
| | | | | | C | 0.000 | 89.775 | | 32.11 | 0.000 | 0.000 |
| T6 140.00-120.00 | 130.00 | 1.48 | 27 | 492.945 | A | 0.000 | 123.601 | 28.825 | 23.32 | 0.000 | 0.000 |
| | | | | | B | 0.000 | 108.631 | | 26.53 | 0.000 | 0.000 |
| | | | | | C | 0.000 | 92.274 | | 31.24 | 0.000 | 0.000 |
| T7 120.00-100.00 | 110.00 | 1.411 | 26 | 542.945 | A | 0.000 | 129.763 | 28.825 | 22.21 | 0.000 | 0.000 |
| | | | | | B | 0.000 | 111.631 | | 25.82 | 0.000 | 0.000 |
| | | | | | C | 0.000 | 93.827 | | 30.72 | 0.000 | 0.000 |
| T8 100.00-80.00 | 90.00 | 1.332 | 25 | 594.511 | A | 0.000 | 131.963 | 28.834 | 21.85 | 0.000 | 0.000 |
| | | | | | B | 0.000 | 114.562 | | 25.17 | 0.000 | 0.000 |
| | | | | | C | 0.000 | 97.243 | | 29.65 | 0.000 | 0.000 |
| T9 80.00-60.00 | 70.00 | 1.24 | 23 | 649.618 | A | 0.000 | 143.026 | 35.927 | 25.12 | 0.000 | 0.000 |
| | | | | | B | 0.000 | 124.550 | | 28.85 | 0.000 | 0.000 |
| | | | | | C | 0.000 | 106.057 | | 33.87 | 0.000 | 0.000 |
| T10 60.00-30.00 | 45.00 | 1.093 | 20 | 1068.17 | A | 0.000 | 213.710 | 53.890 | 25.22 | 0.000 | 0.000 |
| | | | | 7 | B | 0.000 | 188.129 | | 28.65 | 0.000 | 0.000 |
| | | | | | C | 0.000 | 162.524 | | 33.16 | 0.000 | 0.000 |
| T11 30.00-0.00 | 15.00 | 1 | 18 | 1180.67 | A | 0.000 | 213.206 | 53.890 | 25.28 | 0.000 | 0.000 |
| | | | | 7 | B | 0.000 | 189.398 | | 28.45 | 0.000 | 0.000 |
| | | | | | C | 0.000 | 166.942 | | 32.28 | 0.000 | 0.000 |

Discrete Appurtenance Pressures - No Ice G_H = 1.102

| Description | Aiming Azimuth ° | Weight lb | Offset, ft | Offset, ft | z ft | K _z | q _z psf | C _s A _c Front ft ² | C _s A _c Side ft ² |
|-------------------------|------------------------|--------------|---------------|---------------|---------|----------------|-----------------------|---|--|
| 5/8" x 8' Lightning Rod | 60.0000 | 10.00 | 2.73 | -1.58 | 245.00 | 1.773 | 33 | 0.50 | 0.50 |
| Flash Beacon Lighting | 240.0000 | 50.00 | -5.46 | 3.15 | 240.00 | 1.763 | 33 | 2.70 | 2.70 |
| 3" Dia 10' Omni | 240.0000 | 25.00 | -6.33 | 3.65 | 245.00 | 1.773 | 33 | 3.00 | 3.00 |
| 4" dia x 4' pipe mount | 240.0000 | 43.20 | -5.46 | 3.15 | 240.00 | 1.763 | 33 | 1.21 | 1.21 |
| 2' Side Arm Mount | 120.0000 | 50.00 | 6.76 | 3.90 | 240.00 | 1.763 | 33 | 2.00 | 2.00 |
| 3" Dia 8' Omni | 0.0000 | 20.00 | 0.00 | -9.60 | 239.00 | 1.761 | 33 | 2.40 | 2.40 |
| 3" Dia 8' Omni | 0.0000 | 20.00 | 0.00 | -9.89 | 234.00 | 1.750 | 32 | 2.40 | 2.40 |
| 4" Dia 8' Omni | 120.0000 | 20.00 | 8.56 | 4.94 | 234.00 | 1.750 | 32 | 2.40 | 2.40 |
| 4" x 12' Omni | 240.0000 | 30.00 | -8.91 | 5.15 | 227.00 | 1.735 | 32 | 3.60 | 3.60 |
| 2' Side Arm Mount | 240.0000 | 50.00 | -7.01 | 4.05 | 235.00 | 1.752 | 32 | 2.00 | 2.00 |
| 2' Side Arm Mount | 0.0000 | 50.00 | 0.00 | -8.39 | 230.00 | 1.741 | 32 | 2.00 | 2.00 |
| 2' Side Arm Mount | 0.0000 | 50.00 | 0.00 | -8.39 | 230.00 | 1.741 | 32 | 2.00 | 2.00 |
| 2' Side Arm Mount | 120.0000 | 50.00 | 7.26 | 4.19 | 230.00 | 1.741 | 32 | 2.00 | 2.00 |
| 2' Side Arm Mount | 240.0000 | 50.00 | -7.61 | 4.40 | 223.00 | 1.726 | 32 | 2.00 | 2.00 |
| HBX-6516DS-VTM | 0.0000 | 56.30 | 0.00 | -11.98 | 212.00 | 1.701 | 31 | 6.98 | 6.35 |
| HBX-6516DS-VTM | 120.0000 | 56.30 | 10.38 | 5.99 | 212.00 | 1.701 | 31 | 6.98 | 6.35 |
| HBX-6516DS-VTM | 240.0000 | 56.30 | -10.38 | 5.99 | 212.00 | 1.701 | 31 | 6.98 | 6.35 |
| {3} 10' Sector Frames | 0.0000 | 700.00 | 0.00 | 0.00 | 212.00 | 1.701 | 31 | 23.00 | 23.00 |
| 3' Yagi | 240.0000 | 30.95 | -9.14 | 5.28 | 196.00 | 1.664 | 31 | 2.08 | 2.08 |
| 4" dia x 4' pipe mount | 240.0000 | 43.20 | -7.84 | 4.53 | 196.00 | 1.664 | 31 | 1.21 | 1.21 |
| 4" dia x 4' pipe mount | 0.0000 | 43.20 | 0.00 | -9.70 | 187.00 | 1.641 | 30 | 1.21 | 1.21 |



GLENMARTIN
 1604 Business Loop 70 W, A
 Columbia, MO 65202
 Phone: (660) 880-2734

| | | | |
|--|---|-----------------------------|-------------------------------------|
| Structure: 240' Self Supported Tower | Customer Name: GTP | City: Bridgeport | Proposed Carrier: Verizon |
| Project: Post Mods SA | Customer Site Name: Tartaglia | County: Fairfield | Date: 04/05/2013 |
| Job #: CT-5035, Tartaglia | Customer Site #: CT-5035 | State: CT | Page: 24 of 38 |


| Description | Aiming Azimuth ° | Weight lb | Offset _x ft | Offset _y ft | z ft | K _z | q _z psf | C _A A _C Front ft ² | C _A A _C Side ft ² |
|------------------------|------------------|-----------|------------------------|------------------------|--------|----------------|--------------------|---|--|
| ALU RRH2X40 AWS | 120.0000 | 88.00 | 12.13 | 7.01 | 155.00 | 1.556 | 29 | 5.06 | 3.18 |
| ALU RRH2X40 AWS | 240.0000 | 88.00 | -12.13 | 7.01 | 155.00 | 1.556 | 29 | 5.06 | 3.18 |
| DB T1 6Z 8AB OZ | 240.0000 | 44.00 | -11.27 | 6.51 | 155.00 | 1.556 | 29 | 5.60 | 2.33 |
| (3) 10' Sector Frames | 240.0000 | 700.00 | -10.40 | 6.01 | 155.00 | 1.556 | 29 | 23.00 | 23.00 |
| Small Light | 0.0000 | 2.00 | 0.00 | -13.59 | 140.00 | 1.511 | 28 | 0.13 | 0.13 |
| Small Light | 120.0000 | 2.00 | 11.77 | 6.80 | 140.00 | 1.511 | 28 | 0.13 | 0.13 |
| Small Light | 240.0000 | 2.00 | -11.77 | 6.80 | 140.00 | 1.511 | 28 | 0.13 | 0.13 |
| 1.5" Dia 8' Omni | 240.0000 | 5.00 | -12.39 | 7.15 | 137.00 | 1.502 | 28 | 2.00 | 2.00 |
| 2' Side Arm Mount | 240.0000 | 50.00 | -12.39 | 7.15 | 137.00 | 1.502 | 28 | 2.00 | 2.00 |
| 2' Side Arm Mount | 240.0000 | 50.00 | -12.70 | 7.33 | 132.00 | 1.486 | 27 | 2.00 | 2.00 |
| 4' Yagi | 240.0000 | 30.95 | -12.70 | 7.33 | 132.00 | 1.486 | 27 | 2.08 | 2.08 |
| 3' Yagi | 120.0000 | 30.95 | 14.77 | 8.53 | 99.00 | 1.369 | 25 | 2.08 | 2.08 |
| 2' Side Arm Mount | 120.0000 | 50.00 | 13.90 | 8.03 | 99.00 | 1.369 | 25 | 2.00 | 2.00 |
| 2' Side Arm Mount | 120.0000 | 50.00 | 12.71 | 7.34 | 118.00 | 1.439 | 27 | 2.00 | 2.00 |
| 2' Side Arm Mount | 120.0000 | 50.00 | 13.34 | 7.70 | 108.00 | 1.403 | 26 | 2.00 | 2.00 |
| 2" Dia 10' Omni | 240.0000 | 10.00 | -13.58 | 7.84 | 118.00 | 1.439 | 27 | 2.00 | 2.00 |
| 3" Dia 10' Omni | 120.0000 | 25.00 | 14.20 | 8.20 | 108.00 | 1.403 | 26 | 3.00 | 3.00 |
| Side Arm Mount | 0.0000 | 100.00 | 0.00 | 0.00 | 80.00 | 1.288 | 24 | 6.00 | 6.00 |
| GPS Unit w/ mt | 0.0000 | 15.00 | 0.00 | 0.00 | 20.00 | 1.000 | 18 | 1.80 | 1.80 |
| 4" dia x 4' pipe mount | 0.0000 | 43.20 | 0.00 | 0.00 | 22.00 | 1.000 | 18 | 1.21 | 1.21 |
| GPS Unit w/ mt | 0.0000 | 15.00 | 0.00 | 0.00 | 8.00 | 1.000 | 18 | 1.80 | 1.80 |
| AIR 21 B2AB4P | 0.0000 | 83.00 | 0.00 | -11.63 | 202.00 | 1.678 | 31 | 6.53 | 4.36 |
| AIR 21 B2AB4P | 120.0000 | 83.00 | 10.07 | 5.82 | 202.00 | 1.678 | 31 | 6.53 | 4.36 |
| AIR 21 B2AB4P | 240.0000 | 83.00 | -10.07 | 5.82 | 202.00 | 1.678 | 31 | 6.53 | 4.36 |
| AIR 21 B4A B2P | 0.0000 | 70.00 | 0.00 | -11.63 | 202.00 | 1.678 | 31 | 6.53 | 4.36 |
| AIR 21 B4A B2P | 120.0000 | 70.00 | 10.07 | 5.82 | 202.00 | 1.678 | 31 | 6.53 | 4.36 |
| AIR 21 B4A B2P | 240.0000 | 70.00 | -10.07 | 5.82 | 202.00 | 1.678 | 31 | 6.53 | 4.36 |
| KRY 112 144/1 | 0.0000 | 11.00 | 0.00 | -10.63 | 202.00 | 1.678 | 31 | 0.41 | 0.17 |
| KRY 112 144/1 | 120.0000 | 11.00 | 9.21 | 5.32 | 202.00 | 1.678 | 31 | 0.41 | 0.17 |
| KRY 112 144/1 | 240.0000 | 11.00 | -9.21 | 5.32 | 202.00 | 1.678 | 31 | 0.41 | 0.17 |
| (3) 10' Sector Frames | 0.0000 | 700.00 | 0.00 | 0.00 | 202.00 | 1.678 | 31 | 23.00 | 23.00 |
| Sum Weight: | | 8805.10 | | | | | | | |

Dish Pressures - No Ice

| Elevation ft | Dish Description | Aiming Azimuth ° | Weight lb | Offset _x ft | Offset _y ft | K _z | A _A ft ² | q _z psf |
|--------------|----------------------|------------------|-----------|------------------------|------------------------|----------------|--------------------------------|--------------------|
| 22.00 | 3ft Dish w/o Radome | 240.0000 | 50.00 | -19.66 | 11.35 | 1.000 | 7.07 | 18 |
| 187.00 | VHLP800-11 | 0.0000 | 47.60 | 0.00 | -11.70 | 1.641 | 7.07 | 30 |
| 187.00 | 2ft HP Dish w/Shroud | 120.0000 | 27.00 | 10.13 | 5.85 | 1.641 | 3.14 | 30 |
| 187.00 | 2ft HP Dish w/Shroud | 240.0000 | 27.00 | -10.13 | 5.85 | 1.641 | 3.14 | 30 |
| | Sum Weight: | | 151.60 | | | | | |

Load Combinations

| Comb. No. | Description |
|-----------|----------------------------|
| 1 | Dead Only |
| 2 | Dead+Wind 0 deg - No Ice |
| 3 | Dead+Wind 30 deg - No Ice |
| 4 | Dead+Wind 60 deg - No Ice |
| 5 | Dead+Wind 90 deg - No Ice |
| 6 | Dead+Wind 120 deg - No Ice |
| 7 | Dead+Wind 150 deg - No Ice |
| 8 | Dead+Wind 180 deg - No Ice |
| 9 | Dead+Wind 210 deg - No Ice |
| 10 | Dead+Wind 240 deg - No Ice |
| 11 | Dead+Wind 270 deg - No Ice |
| 12 | Dead+Wind 300 deg - No Ice |

| | | | | |
|---|--|---|-----------------------------|-------------------------------------|
|  GLENMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734 | Structure: 240' Self Supported Tower | Customer Name: GTP | City: Bridgeport | Proposed Carrier: Verizon |
| | Project: Post Mods SA | Customer Site Name: Tartaglia | County: Fairfield | Date: 04/05/2013 |
| | Job #: CT-5035, Tartaglia | Customer Site #: CT-5035 | State: CT | Page: 26 of 38 |

| Elevation ft | Appurtenance | Gov. Load Comb. | Deflection in | Tilt ° | Twist ° | Radius of Curvature ft |
|-----------------|---------------------|-----------------------|------------------|-----------|------------|------------------------------|
| 137.00 | 1.5" Dia 8' Omni | 37 | 0.997 | 0.0472 | 0.0175 | Inf |
| 132.00 | 2' Side Arm Mount | 37 | 0.936 | 0.0459 | 0.0167 | 270192 |
| 118.00 | 2' Side Arm Mount | 37 | 0.777 | 0.0420 | 0.0146 | 85093 |
| 108.00 | 2' Side Arm Mount | 38 | 0.678 | 0.0387 | 0.0134 | 188893 |
| 99.00 | 3' Yagi | 38 | 0.595 | 0.0356 | 0.0123 | Inf |
| 80.00 | Side Arm Mount | 27 | 0.427 | 0.0285 | 0.0097 | 144876 |
| 22.00 | 3ft Dish w/o Radome | 31 | 0.047 | 0.0090 | 0.0018 | 80294 |
| 20.00 | GPS Unit w/ mt | 31 | 0.041 | 0.0082 | 0.0016 | 88323 |
| 8.00 | GPS Unit w/ mt | 31 | 0.013 | 0.0033 | 0.0006 | 220808 |


Maximum Tower Deflections - Design Wind

| Section No. | Elevation ft | Horz. Deflection in | Gov. Load Comb. | Tilt ° | Twist ° |
|----------------|-----------------|---------------------------|-----------------------|-----------|------------|
| T1 | 240 - 220 | 6.591 | 15 | 0.1566 | 0.0838 |
| T2 | 220 - 200 | 5.919 | 15 | 0.1569 | 0.0817 |
| T3 | 200 - 180 | 5.223 | 15 | 0.1566 | 0.0781 |
| T4 | 180 - 160 | 4.503 | 15 | 0.1541 | 0.0736 |
| T5 | 160 - 140 | 3.768 | 15 | 0.1485 | 0.0666 |
| T6 | 140 - 120 | 3.075 | 15 | 0.1377 | 0.0588 |
| T7 | 120 - 100 | 2.395 | 15 | 0.1228 | 0.0484 |
| T8 | 100 - 80 | 1.827 | 15 | 0.1042 | 0.0401 |
| T9 | 80 - 60 | 1.301 | 15 | 0.0832 | 0.0310 |
| T10 | 60 - 30 | 0.840 | 19 | 0.0649 | 0.0226 |
| T11 | 30 - 0 | 0.242 | 19 | 0.0357 | 0.0082 |

Critical Deflections and Radius of Curvature - Design Wind

| Elevation ft | Appurtenance | Gov. Load Comb. | Deflection in | Tilt ° | Twist ° | Radius of Curvature ft |
|-----------------|-------------------------|-----------------------|------------------|-----------|------------|------------------------------|
| 240.00 | 5/8" x 8' Lightning Rod | 15 | 6.591 | 0.1566 | 0.0838 | 613385 |
| 235.00 | 3" Dia 8' Omni | 15 | 6.424 | 0.1567 | 0.0834 | 613385 |
| 230.00 | 3" Dia 8' Omni | 15 | 6.257 | 0.1568 | 0.0829 | 306692 |
| 223.00 | 4" x 12' Omni | 15 | 6.021 | 0.1569 | 0.0821 | 181199 |
| 212.00 | (2) HBX-6516DS-VTM | 15 | 5.643 | 0.1570 | 0.0804 | 180020 |
| 202.00 | AIR 21 B2AB4P | 15 | 5.293 | 0.1567 | 0.0785 | 214294 |
| 196.00 | 3' Yagi | 15 | 5.081 | 0.1563 | 0.0773 | 190864 |
| 187.00 | VHLP800-11 | 15 | 4.758 | 0.1553 | 0.0754 | 141519 |
| 180.60 | (3) 10' Sector Frames | 15 | 4.525 | 0.1542 | 0.0738 | 130857 |
| 174.00 | (2) 950F65T4E-M | 15 | 4.281 | 0.1529 | 0.0717 | Inf |
| 164.00 | 4" Dia 20' Omni | 15 | 3.912 | 0.1500 | 0.0680 | 77937 |
| 155.00 | BXA-80063/6 | 15 | 3.592 | 0.1463 | 0.0648 | 87185 |
| 140.00 | Small Light | 15 | 3.075 | 0.1377 | 0.0588 | 130146 |
| 137.00 | 1.5" Dia 8' Omni | 15 | 2.970 | 0.1357 | 0.0574 | 291278 |
| 132.00 | 2' Side Arm Mount | 15 | 2.796 | 0.1322 | 0.0547 | 97972 |
| 118.00 | 2' Side Arm Mount | 15 | 2.333 | 0.1211 | 0.0475 | 29773 |
| 108.00 | 2' Side Arm Mount | 15 | 2.045 | 0.1122 | 0.0434 | 67267 |
| 99.00 | 3' Yagi | 15 | 1.800 | 0.1032 | 0.0397 | 585477 |
| 80.00 | Side Arm Mount | 15 | 1.301 | 0.0832 | 0.0310 | 50555 |
| 22.00 | 3ft Dish w/o Radome | 19 | 0.147 | 0.0267 | 0.0054 | 26593 |
| 20.00 | GPS Unit w/ mt | 19 | 0.128 | 0.0244 | 0.0048 | 29252 |
| 8.00 | GPS Unit w/ mt | 19 | 0.042 | 0.0099 | 0.0017 | 73129 |

Bolt Design Data

| | | | | |
|--|--|---|-----------------------------|-------------------------------------|
|  GLEMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734 | Structure: 240' Self Supported Tower | Customer Name: GTP | City: Bridgeport | Proposed Carrier: Verizon |
| | Project: Post Mods SA | Customer Site Name: Tartaglia | County: Fairfield | Date: 04/05/2013 |
| | Job #: CT-5035, Tartaglia | Customer Site #: CT-5035 | State: CT | Page: 28 of 38 |

| Section No. | Elevation ft | Size | L ft | L _v ft | Kl/r | F _c ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P P _a |
|-------------|-----------------|--------------------|---------|----------------------|----------------|-----------------------|----------------------|----------------|-----------------------------|------------------------------|
| T1 | 240 - 220 | P8x.5 (8" x-str) | 20.03 | 6.68 | 27.8 K=1.00 | 27.415 | 12.7627 | -3578.50 | 349895.00 | 0.010 |
| T2 | 220 - 200 | P8x.5 (8" x-str) | 20.04 | 10.02 | 41.8 K=1.00 | 25.579 | 12.7627 | -10942.50 | 326464.00 | 0.034 |
| T3 | 200 - 180 | P8x.5 (8" x-str) | 20.05 | 10.03 | 41.8 K=1.00 | 25.576 | 12.7627 | -26300.80 | 326426.00 | 0.081 |
| T4 | 180 - 160 | P8x.5 (8" x-str) | 20.05 | 10.03 | 41.8 K=1.00 | 25.576 | 12.7627 | -46859.30 | 326426.00 | 0.144 |
| T5 | 160 - 140 | ROHN 8 EH | 20.05 | 10.03 | 41.8 K=1.00 | 25.576 | 12.7627 | -75057.20 | 326426.00 | 0.230 |
| T6 | 140 - 120 | P8x.5 (8" x-str) | 20.05 | 10.03 | 41.8 K=1.00 | 25.576 | 12.7627 | -106289.00 | 326426.00 | 0.326 |
| T7 | 120 - 100 | P8x.5 (8" x-str) | 20.05 | 10.03 | 41.8 K=1.00 | 25.576 | 12.7627 | -122279.00 | 326426.00 | 0.375 |
| T8 | 100 - 80 | ROHN 8 EH | 20.06 | 10.03 | 41.8 K=1.00 | 25.575 | 12.7627 | -153433.00 | 326400.00 | 0.470 |
| T9 | 80 - 60 | P10x.5 (10" x-str) | 20.05 | 10.03 | 33.2 K=1.00 | 26.753 | 16.1007 | -184479.00 | 430750.00 | 0.428 |
| T10 | 60 - 30 | P10x.5 (10" x-str) | 30.08 | 10.03 | 33.2 K=1.00 | 26.753 | 16.1007 | -217351.00 | 430750.00 | 0.505 |
| T11 | 30 - 0 | P10x.5 (10" x-str) | 30.08 | 10.03 | 33.2 K=1.00 | 26.753 | 16.1007 | -264329.00 | 430750.00 | 0.614 |

Diagonal Design Data (Compression)

| Section No. | Elevation ft | Size | L ft | L _v ft | Kl/r | F _c ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P P _a |
|-------------|-----------------|-------------------------------------|---------|----------------------|-----------------|-----------------------|----------------------|----------------|-----------------------------|------------------------------|
| T1 | 240 - 220 | P2x.154 (2" Std.) | 9.29 | 8.77 | 133.7 K=1.00 | 8.351 | 1.0745 | -1450.38 | 8973.46 | 0.162 |
| T2 | 220 - 200 | P2.5x.203 (2 1/2" std) | 12.56 | 11.96 | 151.5 K=1.00 | 6.504 | 1.7040 | -4185.55 | 11082.70 | 0.378 |
| T3 | 200 - 180 | P2.5x.203 (2 1/2" std) | 13.35 | 12.81 | 162.2 K=1.00 | 5.674 | 1.7040 | -6119.48 | 9668.25 | 0.633 |
| T4 | 180 - 160 | P2.5x.203 (2 1/2" std) | 14.21 | 13.70 | 173.6 K=1.00 | 4.957 | 1.7040 | -9938.22 | 8446.62 | 1.177 |
| T5 | 160 - 140 | P2.5x.203 w/ 1/2 pipe 3.5"x.300" | 15.12 | 14.64 | 190.8 K=1.00 | 4.102 | 3.2000 | -13360.70 | 13127.00 | 1.018 |
| T6 | 140 - 120 | P3x.216 (3" std) | 16.08 | 15.62 | 161.1 K=1.00 | 5.753 | 2.2285 | -13799.50 | 12820.40 | 1.076 |
| T7 | 120 - 100 | P2.5x.203 w/ L2.5x2.5x3/8 | 24.33 | 12.17 | 156.3 K=1.00 | 6.112 | 3.4000 | -20441.90 | 20781.70 | 0.984 |
| T8 | 100 - 80 | P3x.216 (3" std) | 25.11 | 12.56 | 129.5 K=1.00 | 8.906 | 2.2285 | -20352.30 | 19846.40 | 1.025 |
| T9 | 80 - 60 | P3x.216 (3" std) | 25.88 | 12.94 | 133.5 K=1.00 | 8.382 | 2.2285 | -21386.20 | 18679.00 | 1.145 |
| T10 | 60 - 30 | P3x.216 (3" std) | 35.15 | 11.72 | 120.8 K=1.00 | 10.226 | 2.2285 | -28146.60 | 22787.50 | 1.235 |
| T11 | 30 - 0 | P3x.216 w/ L2.5x2.5x3/8 | 36.16 | 12.05 | 135.3 K=1.00 | 8.155 | 3.9490 | -30064.00 | 32204.00 | 0.934 |



GLEMARTIN
 1604 Business Loop 70 W, A
 Columbia, MO 65202
 Phone: (660) 880-2734

Structure:
 240' Self Supported Tower

Customer Name:
 GTP

City:
 Bridgeport

Proposed Carrier:
 Verizon

Project:
 Post Mods SA

Customer Site Name:
 Tartaglia

County:
 Fairfield

Date:
 04/05/2013

Job #:
 CT-5035, Tartaglia

Customer Site #:
 CT-5035

State:
 CT

Page:
 30 of 38

| Section No. | Elevation ft | Size | L ft | L _v ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P P _a |
|-------------|-----------------|-------------------|---------|----------------------|-----------------|-----------------------|----------------------|----------------|-----------------------------|------------------------------|
| T10 | 60 - 30 | P2x.154 (2" Std.) | 10.94 | 10.50 | 160.0 K=1.00 | 5.832 | 1.0745 | -3771.97 | 6266.24 | 0.602 |
| T11 | 30 - 0 | P2x.154 (2" Std.) | 12.19 | 11.75 | 179.1 K=1.00 | 4.657 | 1.0745 | -4587.24 | 5003.56 | 0.917 |

Redundant Diagonal (1) Design Data (Compression)


| Section No. | Elevation ft | Size | L ft | L _v ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P P _a |
|-------------|-----------------|---------------------------------------|---------|----------------------|-----------------|-----------------------|----------------------|----------------|-----------------------------|------------------------------|
| T7 | 120 - 100 | P1.5x.145 (1 1/2" std) | 11.50 | 10.77 | 207.6 K=1.00 | 3.463 | 0.7995 | -1938.73 | 2768.87 | 0.700 |
| T8 | 100 - 80 | P2x.154 (2" Std.) | 11.80 | 11.12 | 169.6 K=1.00 | 5.192 | 1.0745 | -2271.32 | 5578.53 | 0.407 |
| T9 | 80 - 60 | P2x.154 (2" Std.) | 12.19 | 11.56 | 176.2 K=1.00 | 4.808 | 1.0745 | -2572.75 | 5166.85 | 0.498 |
| T10 | 60 - 30 | P1.5x.145 (1 1/2" std) | 11.12 | 10.09 | 194.6 K=1.00 | 3.945 | 0.7995 | -3832.03 | 3154.04 | 1.215 |
| T11 | 30 - 0 | P1.5x.145 w/ 1/2 pipe 2.375"x.154" | 11.41 | 10.47 | 204.0 K=1.00 | 3.587 | 1.2960 | -4290.29 | 4649.08 | 0.923 |

Redundant Diagonal (2) Design Data (Compression)

| Section No. | Elevation ft | Size | L ft | L _v ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P P _a |
|-------------|-----------------|-------------------|---------|----------------------|-----------------|-----------------------|----------------------|----------------|-----------------------------|------------------------------|
| T10 | 60 - 30 | P2x.154 (2" Std.) | 14.37 | 13.75 | 209.6 K=1.00 | 3.398 | 1.0745 | -2477.03 | 3651.26 | 0.678 |
| T11 | 30 - 0 | P2.5x.203 | 15.30 | 14.70 | 186.3 K=1.00 | 4.305 | 1.7040 | -2877.07 | 7335.57 | 0.392 |

Redundant Hip (1) Design Data (Compression)

| Section No. | Elevation ft | Size | L ft | L _v ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P P _a |
|-------------|-----------------|------------------------|---------|----------------------|-----------------|-----------------------|----------------------|----------------|-----------------------------|------------------------------|
| T7 | 120 - 100 | P1.5x.145 (1 1/2" std) | 6.29 | 6.29 | 121.3 K=1.00 | 10.147 | 0.7995 | -36.20 | 8111.69 | 0.004 |
| T8 | 100 - 80 | P1.5x.145 (1 1/2" std) | 6.92 | 6.92 | 133.4 K=1.00 | 8.396 | 0.7995 | -39.57 | 6712.46 | 0.006 |
| T9 | 80 - 60 | P1.5x.145 (1 1/2" std) | 7.58 | 7.58 | 146.2 K=1.00 | 6.990 | 0.7995 | -37.41 | 5588.33 | 0.007 |
| T10 | 60 - 30 | P1.5x.145 (1 1/2" std) | 5.47 | 5.47 | 105.5 K=1.00 | 13.414 | 0.7995 | -89.81 | 10723.70 | 0.008 |
| T11 | 30 - 0 | P1.5x.145 (1 1/2" std) | 6.10 | 6.10 | 117.5 K=1.00 | 10.813 | 0.7995 | -105.19 | 8644.47 | 0.012 |

| | | | | |
|--|--|---|-----------------------------|-------------------------------------|
|  GLEMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734 | Structure: 240' Self Supported Tower | Customer Name: GTP | City: Bridgeport | Proposed Carrier: Verizon |
| | Project: Post Mods SA | Customer Site Name: Tartaglia | County: Fairfield | Date: 04/05/2013 |
| | Job #: CT-5035, Tartaglia | Customer Site #: CT-5035 | State: CT | Page: 32 of 38 |

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P P _a |
|-------------|-----------------|------|---------|----------------------|------|-----------------------|----------------------|----------------|-----------------------------|---------------------------|
|-------------|-----------------|------|---------|----------------------|------|-----------------------|----------------------|----------------|-----------------------------|---------------------------|


Tension Checks

Leg Design Data (Tension)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P P _a |
|-------------|-----------------|--------------------|---------|----------------------|------|-----------------------|----------------------|----------------|-----------------------------|---------------------------|
| T1 | 240 - 220 | P8x.5 (8" x-str) | 20.03 | 6.68 | 27.8 | 30.000 | 12.7627 | 767.87 | 382882.00 | 0.002 |
| T2 | 220 - 200 | P8x.5 (8" x-str) | 20.04 | 10.02 | 41.8 | 30.000 | 12.7627 | 4468.78 | 382882.00 | 0.012 |
| T3 | 200 - 180 | P8x.5 (8" x-str) | 20.05 | 10.03 | 41.8 | 30.000 | 12.7627 | 14814.30 | 382882.00 | 0.039 |
| T4 | 180 - 160 | P8x.5 (8" x-str) | 20.05 | 10.03 | 41.8 | 30.000 | 12.7627 | 29759.10 | 382882.00 | 0.078 |
| T5 | 160 - 140 | ROHN 8 EH | 20.05 | 10.03 | 41.8 | 30.000 | 12.7627 | 51484.40 | 382882.00 | 0.134 |
| T6 | 140 - 120 | P8x.5 (8" x-str) | 20.05 | 10.03 | 41.8 | 30.000 | 12.7627 | 76678.00 | 382882.00 | 0.200 |
| T7 | 120 - 100 | P8x.5 (8" x-str) | 20.05 | 10.03 | 41.8 | 30.000 | 12.7627 | 88154.90 | 382882.00 | 0.230 |
| T8 | 100 - 80 | ROHN 8 EH | 20.06 | 10.03 | 41.8 | 30.000 | 12.7627 | 112157.00 | 382882.00 | 0.293 |
| T9 | 80 - 60 | P10x.5 (10" x-str) | 20.05 | 10.03 | 33.2 | 30.000 | 16.1007 | 135371.00 | 483020.00 | 0.280 |
| T10 | 60 - 30 | P10x.5 (10" x-str) | 30.08 | 10.03 | 33.2 | 30.000 | 16.1007 | 159143.00 | 483020.00 | 0.329 |
| T11 | 30 - 0 | P10x.5 (10" x-str) | 30.08 | 10.03 | 33.2 | 30.000 | 16.1007 | 192808.00 | 483020.00 | 0.399 |

Diagonal Design Data (Tension)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P P _a |
|-------------|-----------------|-------------------------------------|---------|----------------------|-------|-----------------------|----------------------|----------------|-----------------------------|---------------------------|
| T1 | 240 - 220 | P2x.154 (2" Std.) | 9.29 | 8.77 | 133.7 | 30.000 | 1.0745 | 1350.04 | 32235.90 | 0.042 |
| T2 | 220 - 200 | P2.5x.203 (2 1/2" std) | 12.56 | 11.96 | 151.5 | 30.000 | 1.7040 | 4039.61 | 51121.50 | 0.079 |
| T3 | 200 - 180 | P2.5x.203 (2 1/2" std) | 13.35 | 12.81 | 162.2 | 30.000 | 1.7040 | 5933.17 | 51121.50 | 0.116 |
| T4 | 180 - 160 | P2.5x.203 (2 1/2" std) | 14.21 | 13.70 | 173.6 | 30.000 | 1.7040 | 9675.94 | 51121.50 | 0.189 |
| T5 | 160 - 140 | P2.5x.203 w/ 1/2 pipe 3.5"x.300" | 15.12 | 14.64 | 190.8 | 30.000 | 3.2000 | 12900.90 | 96000.00 | 0.134 |
| T6 | 140 - 120 | P3x.216 (3" std) | 16.08 | 15.62 | 161.1 | 30.000 | 2.2285 | 13353.60 | 66854.10 | 0.200 |
| T7 | 120 - 100 | P2.5x.203 w/ L2.5x2.5x3/8 | 24.33 | 12.17 | 156.3 | 30.000 | 3.4000 | 19857.40 | 102000.00 | 0.195 |
| T8 | 100 - 80 | P3x.216 (3" std) | 25.11 | 12.56 | 129.5 | 30.000 | 2.2285 | 19603.20 | 66854.10 | 0.293 |

| | | | | |
|---|--|---|-----------------------------|-------------------------------------|
|  GLENMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734 | Structure: 240' Self Supported Tower | Customer Name: GTP | City: Bridgeport | Proposed Carrier: Verizon |
| | Project: Post Mods SA | Customer Site Name: Tartaglia | County: Fairfield | Date: 04/05/2013 |
| | Job #: CT-5035, Tartaglia | Customer Site #: CT-5035 | State: CT | Page: 34 of 38 |

| Section No. | Elevation ft | Size | L ft | L _v ft | KI/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P P _a |
|-------------|-----------------|------------------------|---------|----------------------|-------|-----------------------|----------------------|----------------|--------------------------------|------------------------------|
| T8 | 100 - 80 | P1.5x.145 (1 1/2" std) | 6.92 | 6.56 | 126.4 | 30.000 | 0.7995 | 2663.38 | 23983.70 | 0.111 ✓ |
| T9 | 80 - 60 | P1.5x.145 (1 1/2" std) | 7.58 | 7.14 | 137.5 | 30.000 | 0.7995 | 3201.50 | 23983.70 | 0.133 ✓ |
| T10 | 60 - 30 | P1.5x.145 (1 1/2" std) | 5.47 | 5.02 | 96.8 | 30.000 | 0.7995 | 3771.97 | 23983.70 | 0.157 ✓ |
| T11 | 30 - 0 | P1.5x.145 (1 1/2" std) | 6.10 | 5.65 | 108.9 | 30.000 | 0.7995 | 4587.24 | 23983.70 | 0.191 ✓ |

Redundant Horizontal (2) Design Data (Tension)

| Section No. | Elevation ft | Size | L ft | L _v ft | KI/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P P _a |
|-------------|-----------------|-------------------|---------|----------------------|-------|-----------------------|----------------------|----------------|--------------------------------|------------------------------|
| T10 | 60 - 30 | P2x.154 (2" Std.) | 10.94 | 10.50 | 160.0 | 30.000 | 1.0745 | 3771.97 | 32235.90 | 0.117 ✓ |
| T11 | 30 - 0 | P2x.154 (2" Std.) | 12.19 | 11.75 | 179.1 | 30.000 | 1.0745 | 4587.24 | 32235.90 | 0.142 ✓ |


Redundant Diagonal (1) Design Data (Tension)

| Section No. | Elevation ft | Size | L ft | L _v ft | KI/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P P _a |
|-------------|-----------------|---------------------------------------|---------|----------------------|-------|-----------------------|----------------------|----------------|--------------------------------|------------------------------|
| T7 | 120 - 100 | P1.5x.145 (1 1/2" std) | 11.50 | 10.77 | 207.6 | 30.000 | 0.7995 | 1938.73 | 23983.70 | 0.081 ✓ |
| T8 | 100 - 80 | P2x.154 (2" Std.) | 11.80 | 11.12 | 169.6 | 30.000 | 1.0745 | 2271.32 | 32235.90 | 0.070 ✓ |
| T9 | 80 - 60 | P2x.154 (2" Std.) | 12.19 | 11.56 | 176.2 | 30.000 | 1.0745 | 2572.75 | 32235.90 | 0.080 ✓ |
| T10 | 60 - 30 | P1.5x.145 (1 1/2" std) | 11.12 | 10.09 | 194.6 | 30.000 | 0.7995 | 3832.03 | 23983.70 | 0.160 ✓ |
| T11 | 30 - 0 | P1.5x.145 w/ 1/2 pipe 2.375"x.154" | 11.41 | 10.47 | 204.0 | 30.000 | 1.2960 | 4290.29 | 38880.00 | 0.110 ✓ |

Redundant Diagonal (2) Design Data (Tension)

| Section No. | Elevation ft | Size | L ft | L _v ft | KI/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P P _a |
|-------------|-----------------|-------------------|---------|----------------------|-------|-----------------------|----------------------|----------------|--------------------------------|------------------------------|
| T10 | 60 - 30 | P2x.154 (2" Std.) | 14.37 | 13.75 | 209.6 | 30.000 | 1.0745 | 2477.03 | 32235.90 | 0.077 ✓ |
| T11 | 30 - 0 | P2.5x.203 | 15.30 | 14.70 | 186.3 | 30.000 | 1.7040 | 2877.07 | 51121.50 | 0.056 ✓ |


Redundant Hip (1) Design Data (Tension)

| | | | | |
|---|--|---|-----------------------------|-------------------------------------|
|  GLENMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734 | Structure: 240' Self Supported Tower | Customer Name: GTP | City: Bridgeport | Proposed Carrier: Verizon |
| | Project: Post Mods SA | Customer Site Name: Tartaglia | County: Fairfield | Date: 04/05/2013 |
| | Job #: CT-5035, Tartaglia | Customer Site #: CT-5035 | State: CT | Page: 36 of 38 |

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P/P _a |
|-------------|--------------|------------------|-------|-------------------|-------|--------------------|-------------------|-------------|--------------------------|------------------------|
| T11 | 30 - 0 | P3x.216 (3' std) | 18.29 | 18.29 | 188.6 | 30.000 | 2.2285 | 11.66 | 66854.10 | 0.000 |

Section Capacity Table

| Section No. | Elevation ft | Component Type | Size | Critical Element | P lb | SF*P _{allow} lb | % Capacity | Pass Fail |
|-------------|--------------|-----------------------|----------------------------------|------------------|------------|--------------------------|------------|-----------|
| T1 | 240 - 220 | Leg | P8x.5 (8" x-str) | 1 | -3578.50 | 466410.02 | 0.8 | Pass |
| T2 | 220 - 200 | Leg | P8x.5 (8" x-str) | 40 | -10942.50 | 435176.49 | 2.5 | Pass |
| T3 | 200 - 180 | Leg | P8x.5 (8" x-str) | 69 | -26300.80 | 435125.84 | 6.0 | Pass |
| T4 | 180 - 160 | Leg | P8x.5 (8" x-str) | 96 | -46859.30 | 435125.84 | 10.8 | Pass |
| T5 | 160 - 140 | Leg | ROHN 8 EH | 121 | -75057.20 | 435125.84 | 17.2 | Pass |
| T6 | 140 - 120 | Leg | P8x.5 (8" x-str) | 150 | -106289.00 | 435125.84 | 24.4 | Pass |
| T7 | 120 - 100 | Leg | P8x.5 (8" x-str) | 177 | -122279.00 | 435125.84 | 28.1 | Pass |
| T8 | 100 - 80 | Leg | ROHN 8 EH | 210 | -153433.00 | 435091.18 | 35.3 | Pass |
| T9 | 80 - 60 | Leg | P10x.5 (10" x-str) | 243 | -184479.00 | 574189.73 | 32.1 | Pass |
| T10 | 60 - 30 | Leg | P10x.5 (10" x-str) | 276 | -217351.00 | 574189.73 | 37.9 | Pass |
| T11 | 30 - 0 | Leg | P10x.5 (10" x-str) | 327 | -264329.00 | 574189.73 | 46.0 | Pass |
| T1 | 240 - 220 | Diagonal | P2x.154 (2" Std.) | 14 | -1450.38 | 11961.62 | 12.1 | Pass |
| T2 | 220 - 200 | Diagonal | P2.5x.203 (2 1/2" std) | 50 | -4185.55 | 14773.24 | 28.3 | Pass |
| T3 | 200 - 180 | Diagonal | P2.5x.203 (2 1/2" std) | 77 | -6119.48 | 12887.78 | 47.5 | Pass |
| T4 | 180 - 160 | Diagonal | P2.5x.203 (2 1/2" std) | 104 | -9938.22 | 11259.34 | 88.3 | Pass |
| T5 | 160 - 140 | Diagonal | P2.5x.203 w/ 1/2 pipe 3.5"x.300" | 131 | -13360.70 | 17498.29 | 76.4 | Pass |
| T6 | 140 - 120 | Diagonal | P3x.216 (3" std) | 158 | -13799.50 | 17089.59 | 80.7 | Pass |
| T7 | 120 - 100 | Diagonal | P2.5x.203 w/ L2.5x2.5x3/8 | 195 | -20441.90 | 27702.00 | 73.8 | Pass |
| T8 | 100 - 80 | Diagonal | P3x.216 (3" std) | 231 | -20352.30 | 26455.25 | 76.9 | Pass |
| T9 | 80 - 60 | Diagonal | P3x.216 (3" std) | 264 | -21386.20 | 24899.11 | 85.9 | Pass |
| T10 | 60 - 30 | Diagonal | P3x.216 (3" std) | 309 | -28146.60 | 30375.74 | 92.7 | Pass |
| T11 | 30 - 0 | Diagonal | P3x.216 w/ L2.5x2.5x3/8 | 360 | -30064.00 | 42927.93 | 70.0 | Pass |
| T1 | 240 - 220 | Horizontal | P2x.154 (2" Std.) | 13 | -947.02 | 24879.51 | 3.8 | Pass |
| T2 | 220 - 200 | Horizontal | P2x.154 (2" Std.) | 49 | -2476.04 | 20518.74 | 12.1 | Pass |
| T3 | 200 - 180 | Horizontal | P2x.154 (2" Std.) | 76 | -3943.25 | 14918.54 | 26.4 | Pass |
| T4 | 180 - 160 | Horizontal | P2.5x.203 (2 1/2" std) | 103 | -6915.01 | 25509.62 | 27.1 | Pass |
| T5 | 160 - 140 | Horizontal | P2.5x.203 (2 1/2" std) | 130 | -9696.96 | 19722.13 | 49.2 | Pass |
| T6 | 140 - 120 | Horizontal | P2.5x.203 (2 1/2" std) | 157 | -10455.40 | 15702.07 | 66.6 | Pass |
| T7 | 120 - 100 | Horizontal | P2.5x.203 (2 1/2" std) | 194 | -11378.30 | 14138.06 | 80.5 | Pass |
| T8 | 100 - 80 | Horizontal | P3x.216 (3" std) | 227 | -12035.20 | 22955.72 | 52.4 | Pass |
| T9 | 80 - 60 | Horizontal | P3x.216 (3" std) | 260 | -13257.10 | 19022.44 | 69.7 | Pass |
| T10 | 60 - 30 | Horizontal | P3x.216 (3" std) | 303 | -14489.00 | 16355.91 | 88.6 | Pass |
| T11 | 30 - 0 | Horizontal | P3.5x.226 (3 1/2" std) | 354 | -16399.00 | 20786.27 | 78.9 | Pass |
| T1 | 240 - 220 | Top Girt | P2x.154 (2" Std.) | 4 | -332.53 | 27853.03 | 1.2 | Pass |
| T7 | 120 - 100 | Redund Horz 1 Bracing | P1.5x.145 (1 1/2" std) | 190 | -2122.07 | 12162.04 | 17.4 | Pass |
| T8 | 100 - 80 | Redund Horz 1 Bracing | P1.5x.145 (1 1/2" std) | 223 | -2663.38 | 9954.94 | 26.8 | Pass |
| T9 | 80 - 60 | Redund Horz 1 Bracing | P1.5x.145 (1 1/2" std) | 256 | -3201.50 | 8413.83 | 38.1 | Pass |
| T10 | 60 - 30 | Redund Horz 1 Bracing | P1.5x.145 (1 1/2" std) | 295 | -3771.97 | 16442.69 | 22.9 | Pass |
| T11 | 30 - 0 | Redund Horz 1 Bracing | P1.5x.145 (1 1/2" std) | 346 | -4587.24 | 13422.78 | 34.2 | Pass |
| T10 | 60 - 30 | Redund Horz 2 Bracing | P2x.154 (2" Std.) | 296 | -3771.97 | 8352.90 | 45.2 | Pass |
| T11 | 30 - 0 | Redund Horz 2 Bracing | P2x.154 (2" Std.) | 347 | -4587.24 | 6669.75 | 68.8 | Pass |
| T7 | 120 - 100 | Redund Diag 1 Bracing | P1.5x.145 (1 1/2" std) | 191 | -1938.73 | 3690.90 | 52.5 | Pass |
| T8 | 100 - 80 | Redund Diag 1 Bracing | P2x.154 (2" Std.) | 230 | -2271.32 | 7436.18 | 30.5 | Pass |
| T9 | 80 - 60 | Redund Diag 1 Bracing | P2x.154 (2" Std.) | 263 | -2572.75 | 6887.41 | 37.4 | Pass |
| T10 | 60 - 30 | Redund Diag 1 Bracing | P1.5x.145 (1 1/2" std) | 297 | -3832.03 | 4204.34 | 91.1 | Pass |

| | | | | |
|--|--|---|-----------------------------|-------------------------------------|
|  GLEMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734 | Structure: 240' Self Supported Tower | Customer Name: GTP | City: Bridgeport | Proposed Carrier: Verizon |
| | Project: Post Mods SA | Customer Site Name: Tartaglia | County: Fairfield | Date: 04/05/2013 |
| | Job #: CT-5035, Tartaglia | Customer Site #: CT-5035 | State: CT | Page: 38 of 38 |

| Section No. | Elevation ft | Component Type | Size | Critical Element | P lb | SF*P _{allow} lb | % Capacity | Pass Fail |
|-------------|--------------|----------------|------|------------------|------|--|-------------|-------------|
| | | | | | | (T11) Redund Hip 2 Bracing | 1.2 | Pass |
| | | | | | | (T10) Redund Hip Diagonal Bracing | 0.9 | Pass |
| | | | | | | (T11) inner Bracing | 0.4 | Pass |
| | | | | | | (T11) Bolt Checks | 75.9 | Pass |
| | | | | | | RATING = | 92.7 | Pass |