TS-CING-018-111011

original

New Cingular Wireless PCS, LLC
960 Turnpike Street, Suite 28
Canton, MA 02021
Phone: (860) 614-2250
Fax: (617) 249-0819

Andrew Thompson
Real Estate Consultant

September 26, 2011

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

Re: Request by New Cingular Wireless PCS, LLC for an Order Approving Shared Use of an Existing Radio Tower at 39 Carmen Hill Road, Brookfield, CT 06804

Dear Chairman Stein and Members of the Council:

Pursuant to Connecticut General Statutes (C.G.S.) Section 16-50aa, New Cingular Wireless PCS, LLC ("AT&T") hereby requests an order from the Connecticut Siting Council ("Council") for the proposed shared use by AT&T of an existing multicarrier telecommunications tower at 39 Carmen Hill Road, Brookfield, CT. AT&T operates under licenses issued by the Federal Communications Commission ("FCC") to provide wireless services in Litchfield and Fairfield Counties, which includes the area to be served by AT&T's proposed installation. A copy of this letter is being sent to the First Selectman of Brookfield.

Existing Tower Facility

The Brookfield facility is located on Carmen Hill Road. Site coordinates (NAD83) are N41° 29' 36.33" and W73° 25' 43.62".

The facility and the underlying property are owned and operated by Cumulus Broadcasting, LLC.

The existing facility consists of a 454-foot guyed wired lattice tower, with antennas extending to 499'. The tower is within a 48'-4" x 32'-6" compound surrounded by a stockade fence. T-Mobile, Sprint-Nextel, Clearwire (proposed), WRKI Radio, WINE Radio and the Town of Brookfield currently operate wireless communications equipment at the facility.

Proposed Shared Use of the Existing Tower Facility

As shown on the attached drawings and as further described below, AT&T proposes to install up to nine (9) Powerwave P65-17-XLH-RR panel antennas, or their functional equivalents, at a

centerline height of 165 feet above ground level. AT&T also proposes to place a 12' x 20' prefabricated concrete equipment shelter and an emergency electric power diesel generator at the base of the tower inside a proposed 20' x 48'-4" extension to the fenced in compound which is fully within the tower site area that expands out from the tower to the guy anchors. The dimensions for the extension to the compound were designed in the field and chosen to carefully mimic the dimensions and appearance of the existing fence. There will be no extension to the height of the existing tower as a result of this application.

Attached to this Notice are the following: a location map, site plans, a tower profile drawing, electric generator specifications, and a structural analysis report. As stated in the structural analysis report, the tower requires some modification work to be completed in order for AT&T to install its antennas. AT&T has agreed to complete this work prior to completing its own installation. The required modification report is also included as part of this request.

The Tower and AT&T's Proposed Tower Sharing

Cumulus Broadcasting LLC owns and operates the existing tower and underling property, which is principally used as a radio tower. The tower facility is principally a radio tower. AT&T respectfully requests an order pursuant to Section 16-50aa of the Connecticut General Statutes approving its shared use of the tower for the reasons more fully set forth below:

A. **Technical Feasibility.** After the required tower modifications have been completed, the approved tower will be structurally sound and capable of supporting the proposed shared use of the AT&T antennas at 165 feet AGL. The proposed shared use of this tower is therefore technically feasible.

B. **Legal Feasibility.** Under C.G.S §16-50aa, the Council has been authorized to issue an order approving the proposed shared use of a tower facility such as the facility located at Carmen Hill Road (C.G.S §16-50aa(c) (1)). The Council has previously approved tower sharing of this existing tower site. Under the authority vested in the Council by C.G.S §16-50aa, an order approving the shared use of the tower would permit it to obtain a building permit for the proposed installation.

C. **Environmental Feasibility.** The proposed shared use of this tower facility would have a minimal environmental effect for the following reasons:

1. The proposed installation would have an insignificant incremental visual impact and would not cause any significant change or alteration in the physical or environmental characteristics of the property. The addition of the proposed antennas would not increase the height of the existing radio tower. AT&T's equipment will be housed in an equipment shelter, and all construction will occur within the tower site boundaries.

2. The proposed installation would not increase noise levels at the existing facility by six decibels or more.

3. Operation of the additional antennas will not increase the total radio frequency electromagnetic radiation power density, measured at the tower base, to or above the standard adopted by the State of Connecticut and the FCC. The "worst-case" exposure

calculation in accordance with FCC OET Bulletin No. 65 (1997) for a point of interest at the base of the tower is as follows:

Carrier	MHz	#Channels	ERP/Ch	Ant Ht	Power Density (mW/cm2)	Power Density Limit	%MPE	Total	Note
WRKI FM radio	95.1	1	34000	486.5				8.65%	Field measurement of existing antennas taken 11/12/07, this is highest measured reading in area around tower.
WINE AM radio	0.94	1	1000	461.5					
Town Fire Dept	450	2	95	146					
Town Police Dept	450	4	68	132					
Town PW Dept	150	4	100	118					
T-Mobile	1950	8	1192	280.5					
Sprint/Nextel iDEN	851	3	1192	256.5					
Sprint/Nextel CDMA	1960	11	194.4	256.5	0.0117	1.0000	1.17%	1.82%	Calculated Sprint and Clearwire, added after the measurement
Clearwire	1960	2	153	155	0.0046	1.0000	0.46%		
Clearwire	1960	1	211	200	0.0019	1.0000	0.19%		
AT&T UMTS	880	1	500.0000	165	0.0066	0.5867	1.13%	5.76%	AT&T (Proposed)
AT&T UMTS	1900	1	500.0000	165	0.0066	1.0000	0.66%		
AT&T LTE	700	1	500.0000	165	0.0066	0.4667	1.42%		
AT&T GSM	1900	1	427.0000	165	0.0056	1.0000	0.56%		
AT&T GSM	880	3	296.0000	165	0.0117	0.5867	2.00%		
Total								**16.23%**	

* Power density parameters from Council records.

† Please note that the standard power density equation provided by the Council in its memo of January 22, 2001 incorporates a ground reflection factor of 2.56 (i.e., the square of 1.6) as described in FCC OET Bulletin No. 65.

As the table demonstrates, the cumulative "worst-case" power density would be 16.23 % of the ANSI/IEEE standard, as calculated for mixed frequency sites. Therefore, total power density levels resulting from AT&T's use of the tower facility would be within applicable standards.

The proposed installation would not require any water or sanitary facilities, or generate air emissions or discharges to water bodies. After construction is completed (approximately four weeks), the proposed installation would not generate any vehicular traffic other than periodic maintenance visits. The proposed use of the facility would therefore have a minimal environmental effect, and is environmentally feasible.

D. **Economic Feasibility.** AT&T has entered into an agreement with the Cumulus Broadcasting LLC to share use of the tower. The proposed facility sharing is therefore economically feasible.

E. **Public Safety Concerns.** As stated above, AT&T will make the necessary improvements to the existing tower ensuring that it will be structurally capable of supporting AT&T's proposed antennas, and radio frequency emissions fall well below State and Federal safety standards. AT&T is not aware of any other public safety concerns relative to the proposed sharing of the tower. In fact, the provision of new or improved wireless coverage in the area is expected to enhance the safety and welfare of Brookfield's residents.

For the reasons discussed above, the proposed shared use of the existing tower on Carmen Hill Road in the Town of Brookfield satisfies the criteria stated in C.G.S. §16-50aa and advances the General Assembly's and the Council's goal of preventing the proliferation of communication towers in Connecticut. AT&T therefore respectfully requests that the Council issue an order approving the proposed shared use. Thank you for your attention to this matter.

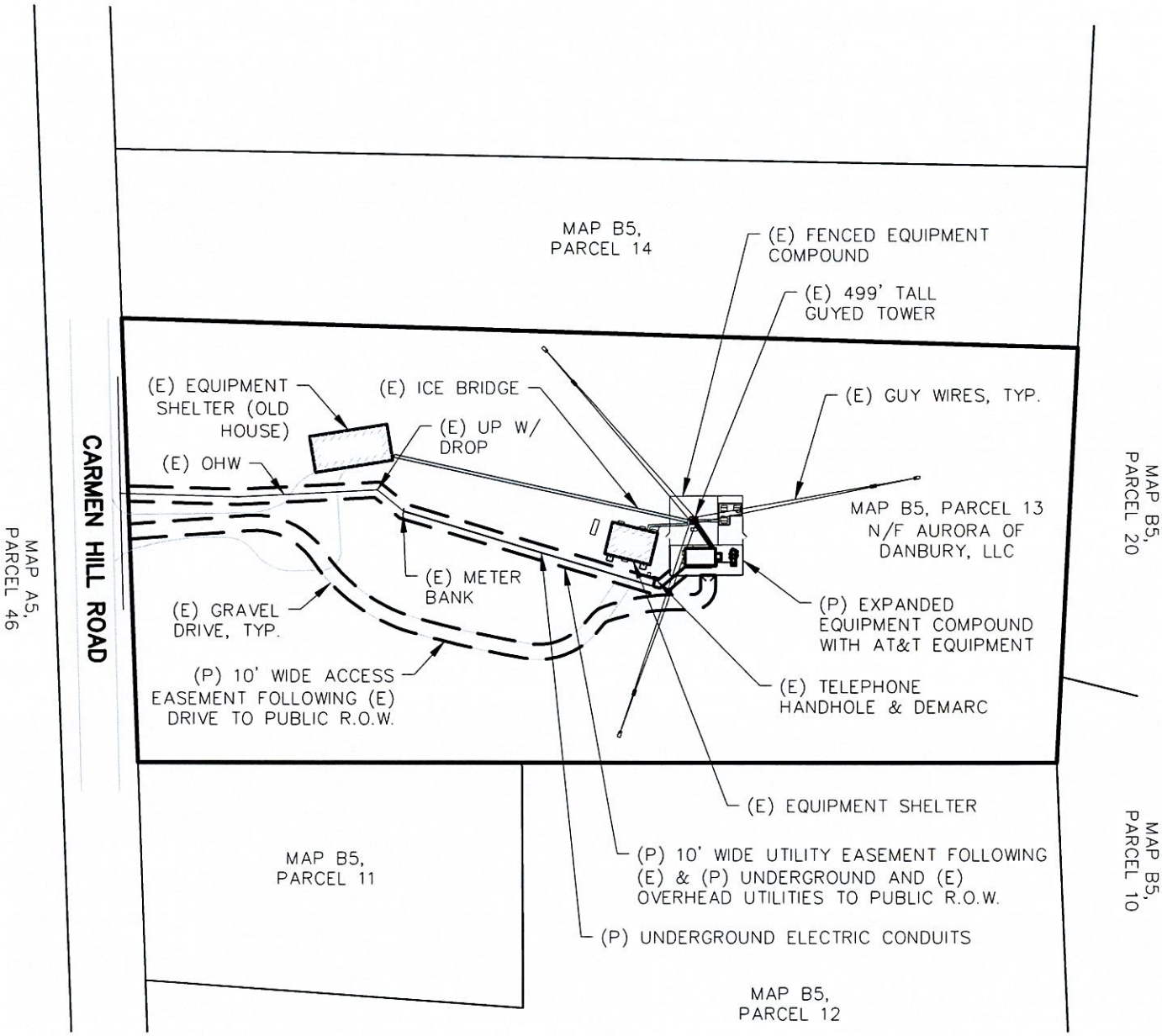
Please feel free to call me at (860) 614-2250 or Christopher Fisher, Esq. at (914) 761-1300 with questions concerning this tower sharing request. Thank you for your consideration in this matter

Respectfully yours,

Andrew Thompson
Real Estate Consultant

Enclosures

cc: Honorable Bill Davidson, First Selectmen, Town of Brookfield
Michele G. Briggs, Manager of Real Estate
Christopher B. Fisher, Esq.



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PLOT PLAN

SCALE: 1"=100'

NOTE: ALL EQUIPMENT LOCATIONS ARE APPROXIMATE AND ARE SUBJECT TO APPROVAL BY AT&T RF & STRUCTURAL ENGINEERS

ProTerra
DESIGN GROUP, LLC
1 Short Street, Suite 3 Ph:(413)320-4918
Northampton, MA 01060 Fax:(413)320-4917

LEASE EXHIBIT

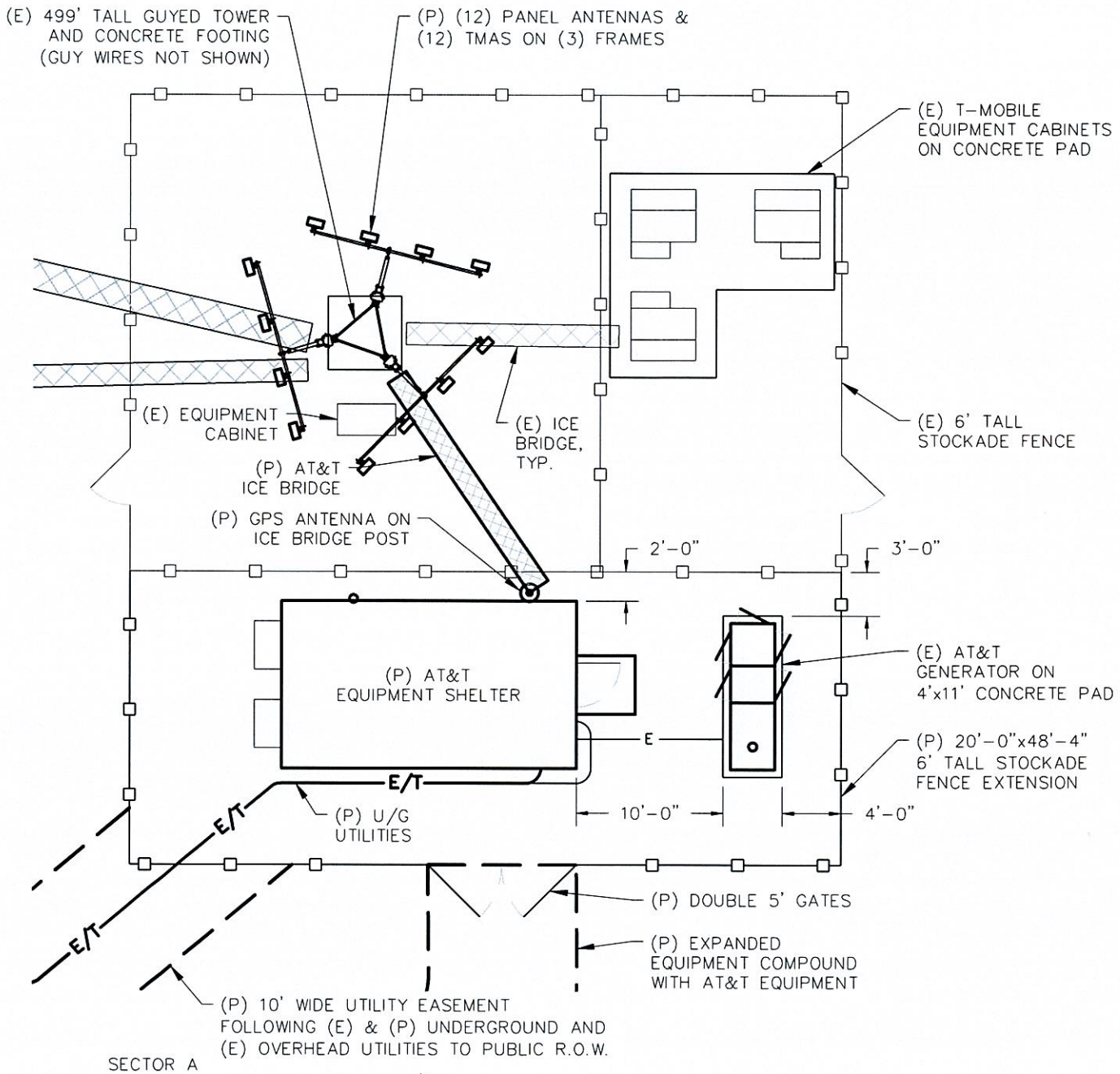
SITE NUMBER: CT 2547

SITE NAME: CARMEN HILL ROAD

ADDRESS: 39 CARMEN HILL ROAD
BROOKFIELD, CT 06804

at&t
NEW CINGULAR
WIRELESS PCS, LLC
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701
TEL: (508) 820-9696

DATE:	3/1/11
REVISION:	0
JOB NO.:	10-101
SHEET:	LE-1



AZIMUTH PLAN

SITE PLAN

SCALE: 1"=10'

NOTE: ALL EQUIPMENT LOCATIONS ARE APPROXIMATE AND ARE SUBJECT TO APPROVAL BY AT&T RF & STRUCTURAL ENGINEERS

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FRAMINGHAM, MA 01701
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REVISION: 0

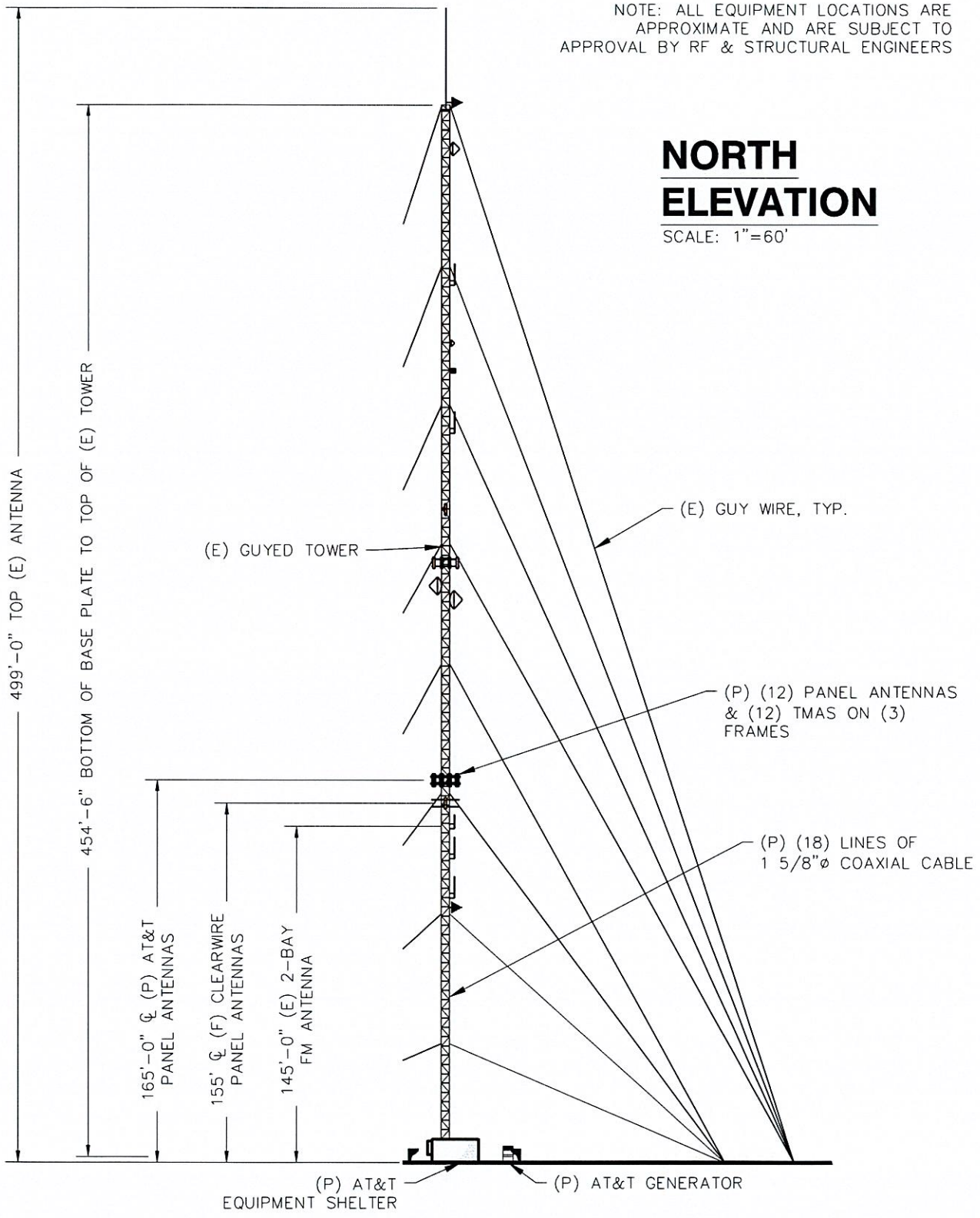
JOB NO.: 10-101

SHEET: LE-2

NOTE: ALL EQUIPMENT LOCATIONS ARE APPROXIMATE AND ARE SUBJECT TO APPROVAL BY RF & STRUCTURAL ENGINEERS

NORTH ELEVATION

SCALE: 1"=60'



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NEW CINGULAR
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FRAMINGHAM, MA 01701
TEL: (508) 820-9696

DATE:	3/1/11
REVISION:	0
JOB NO.:	10-101
SHEET:	LE-3

Stainless LLC

REPORT 361109

DATE: 6/14/2011

STRUCTURAL ANALYSIS

FOR A 499' G-48 GUYED TOWER

BROOKFIELD, CONNECTICUT

PREPARED BY: AP

CHECKED BY: IL

APPROVED: AP 6/15/11

GAF 6/17/11

Date	Sections	Remarks

Rev.	Date	Description

SECTION PAGE

APPENDIX

Rev.	Date	Description

A. AUTHORIZATION/PURPOSE

As authorized by Andrew Thompson, authorized representative of SAI Communications, Inc. a structural analysis was performed to investigate the adequacy of a 499' G-48 guyed tower in Brookfield, Connecticut to support specified equipment.

B. TOWER HISTORY

The tower was originally designed and furnished in 1995 by Stainless, Inc. It was designed in accordance with ANSI/EIA/TIA Standard 222-E for a basic wind speed of 85 mph with no ice and 73.6 mph with 1/2" radial ice thickness while supporting the following equipment:

1. One (1) ERI FML half-wave 4-bay antenna with radome side mounted on a pole at the top of the tower, and fed by one (1) 3" line.
2. One (1) 1-bay FM antenna at the 245' level, fed by one (1) 3" line.
3. Thirty (30) whip antennas on 6-position mounts and distributed as follows: six (6) each at the following levels: 430', 390', 350', 310', and 270'. Each antenna is fed by either a 7/8" or 1-5/8" line.
4. Three (3) 10' diameter grid dishes at the 220' level, each fed by one (1) 1-5/8" line.
5. One (1) three-wire detuning skirt from the ground to the 250' level.
6. One (1) inside climbing ladder with cable type safety device for the full height of the tower.
7. One (1) FAA red lighting system with circuits contained within one (1) 3/4" conduit for the full height of the tower.

Stainless LLC does not have any records of any structural modifications performed on the tower or its foundations since its original installation. For this analysis, Stainless LLC assumed the tower members and foundations remain as they were originally designed and built in 1995.

C. CONDITIONS INVESTIGATED

The analysis was performed for the tower supporting specified equipment based on the following sources:

- Stainless LLC Structural Analysis Report No. 361108 dated 9/29/2010.
- Stainless LLC Contract Proposal P11_3611_01 dated 5/10/2011.
- Emails from Andrew Thompson to Dave Bodossian of Stainless LLC dated 6/1/2011 and 6/2/2011, detailing existing and proposed equipment and final elevation of the radiation centers of the proposed panel antennas.

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1. One (1) ERI MP-4C-DA-HW with radome (**future**) side mounted on a pole at the top of the tower, and fed by one (1) existing 3" line.
2. One (1) small Yagi antenna at the 458' level, fed by one (1) 7/8" line.
3. One (1) 6' diameter grid dish at the 438' level, fed by one (1) 7/8" line.
4. One (1) ERI 2-bay FM antenna at the 380' level, fed by one (1) 1-5/8" line. (**Future relocation**)
5. One (1) Andrew 3' diameter dish at the 354' level, fed by one (1) 1/2" line.
6. One (1) 2' x 6' paraflector on a 5' side arm at the 342' level, fed by one (1) 7/8" line.
7. One (1) 10' whip antenna on a 4' side arm at the 316' level, fed by one (1) 1-1/4" line.
8. Three (3) EMS RR901800DP antennas at the 282' level, each fed by two (2) 1-5/8" lines.
9. One (1) Decibel DB844H90E and eleven (11) EMS RR651802DPL2W antennas mounted on three (3) 12' sector mounts at the 259' level, fed by one (1) 1-5/8" line to each.
10. One (1) 8' diameter grid dish at the 249' level, fed by one (1) 7/8" line.
11. One (1) 8' diameter grid dish at the 243' level, fed by one (1) 7/8" line.
12. Two (2) Andrew VHLP2-18, one (1) VHLP2.5-11 and one (1) VHLP4-11 dish antennas at the 200' level, each fed by one (1) 1/2" line. (**Proposed**)
13. Six (6) Powerwave P65-16-XLH-RR and three (3) P65-17-XLH-RR panel antennas on three (3) sector mounts at the 165' level, fed by twelve (12) 1-5/8" lines. Additional lines and equipment at about this level are two (2) Powerwave TT19-08BP111-001 TMAs and two (2) Ericsson RRUS11 remote radio heads per sector, and one (1) Raycap DC6-48-60-18-8F surge suppressor with one (1) 5/8" fiber cable and two (2) 5/8" control cables. (**Proposed**)
14. Three (3) Argus LLPX310R panel antennas and three (3) Samsung WiMAX Remote Radio Heads at the 155' level, fed by six (6) 5/16" lines. (**Proposed**)
15. One (1) 2-bay dipole antenna on a 4' side arm at the 145' level, fed by one (1) 7/8" line.
16. One (1) 2-bay dipole antenna on a 4' side arm at the 132' level, fed by one (1) 7/8" line.
17. One (1) 2-bay dipole antenna on a 4' side arm at the 115' level, fed by one (1) 7/8" line.
18. Two (2) CA5-FM Yagi antennas on a 6' side arm at the 110' level, fed by one (1) 7/8" line.
19. Three (3) detuning skirts from the ground to the 250' level.
20. One (1) 1-1/2" support conduit for the full height of the tower.

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21. One (1) inside climbing ladder with cable type safety device for the full height of the tower.

22. One (1) FAA red lighting system with circuits contained within one (1) 3/4" conduit for the full height of the tower.

The locations of the existing transmission lines were based upon Stainless LLC Report No. 361108 dated 9/29/2010. The locations of the proposed transmission lines were assumed in order to minimize wind load on the tower. The locations of all transmission lines are shown on page A-2 of this Report. Deviating from these appurtenance arrangements will invalidate the results presented in this Report.

D. LOADS AND STRESSES

The analysis was performed using a basic wind speed of 85 mph with no ice and 31 mph with 1" radial ice thickness. This load was calculated and applied in accordance with the provisions of ANSI/TIA/EIA Standard 222-F, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, effective March 29, 1996.

Allowable unit stresses and minimum safety factors used to evaluate the adequacy of the structure were also in accordance with this TIA/EIA Standard.

E. METHOD OF ANALYSIS

The analysis was performed using Stainless LLC's Beam-Column Analysis Program, a computer operation which idealizes the tower as a continuous beam-column on non-linear, elastic supports (guys) subject to simultaneous transverse (wind) and axial (dead, ice and vertical components of guy tensions) loads.

F. RESULTS

The tables presented below show the maximum percentage stress levels in each tower span:

LOCATION	TOWER COMPONENTS	% OF CAPACITY
Span 8 (Top)	Vertical members	58.2
	Diagonal members	62.7
	Guy wires	65.9
Span 7	Vertical members	88.5
	Diagonal members	50.6
	Guy wires	59.6

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Span 6	Vertical members	90.8
	Diagonal members	53.2
	Guy wires	64.1
Span 5	Vertical members	51.9
	Diagonal members	78.6
	Guy wires	72.4
Span 4	Vertical members	67.7
	Diagonal members	**146.8** (Fail)
	Guy wires	84.2
Span 3	Vertical members	73.7
	Diagonal members	**170.6** (Fail)
	Guy wires	**113.4** (Fail)
Span 2	Vertical members	77.2
	Diagonal members	**166.6** (Fail)
	Guy wires	**128.8** (Fail)
Span 1 (Bottom)	Vertical members	77.2
	Diagonal members	93.4
	Guy wires	102.9*

* Stress levels of up to 105% are considered acceptable by industry standards.

G. CONCLUSIONS AND RECOMMENDATIONS

Based on the preceding results, the following conclusions may be drawn:

1. The tower, supporting the equipment as specified in Section C above, is not adequate to achieve a basic wind speed of 85 mph with no ice and 31 mph with 1" radial ice thickness in accordance with the provisions of ANSI/TIA/EIA Standard 222-F.
2. In order for the tower to achieve a basic wind speed of 85 mph with no ice and 31 mph with 1" radial ice thickness in accordance with the provisions of ANSI/TIA/EIA Standard 222-F, the following modifications are required.
   a. Replace Level 2 existing 7/16" EHS guy wires with new, 9/16" EHS wires.
   b. Adjust the initial tensions in all guy levels to the following values at 60^0 F:

Guy Level	**Tension (kips)**
8 (Top)	10.8
7	9.9

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Guy Level	Tension (kips)
6	6.8
5	6.8
4	7.2
3	2.3
2	2.8
1	3.1

c. Replace the existing diagonal braces with new, higher capacity members at the following locations:

Location	No. of Bays
197.0' – 201.0'	1
145.0' – 165.0'	5
101.0' – 129.0'	7

3. The tables presented below show the maximum percentage stress levels in each tower span after the modifications listed above have been implemented:

LOCATION	TOWER COMPONENTS	% OF CAPACITY
Span 8 (Top)	Vertical members	56.9
	Diagonal members	60.2
	Guy wires	65.9
Span 7	Vertical members	86.0
	Diagonal members	57.0
	Guy wires	64.4
Span 6	Vertical members	88.3
	Diagonal members	59.6
	Guy wires	65.6
Span 5	Vertical members	55.4
	Diagonal members	75.8
	Guy wires	72.1
Span 4	Vertical members	63.9
	Diagonal members	65.1
	Guy wires	81.4
Span 3	Vertical members	67.6
	Diagonal members	66.2
	Guy wires	99.3

Rev.	Date	Description

Span 2	Vertical members	62.9
	Diagonal members	96.8
	Guy wires	100.0
Span 1 (Bottom)	Vertical members	62.9
	Diagonal members	64.3
	Guy wires	91.3

After all the recommended modifications to the tower have been done, the overall capacity rating of the tower is 100.0%.

4. It should be noted that Revision G of ANSI/TIA Standard 222 became effective January 1, 2006. This revision contains substantial changes from previous 222 standards. It is our opinion that the existing tower structure, with equipment as specified in section C of this report, would not be adequate for the minimum recommended requirements shown below for the Brookfield, Connecticut area:

   - Structure Classification II
   - 3-second gust basic wind speed of 90 mph with no ice
   - 3-second gust basic wind speed of 40 mph with 3/4 inch design ice thickness
   - Exposure Category C
   - Topographic Category 1
   - 0.3 earthquake spectral response acceleration at short periods (S_s)
   - Earthquake Site Class D

   The estimated 3-second gust basic wind speed and basic design ice thickness at which no overstresses occur are 70 mph with no ice and 40 mph with 3/4 inch design ice thickness.

   Please note that the opinion stated above is based on a preliminary review to identify the overall impact and/or feasibility of the proposed changed condition. Final acceptance of this changed condition must be based upon a rigorous structural analysis. Do not proceed with implementing this changed condition without first performing a rigorous structural analysis.

H. PROVISIONS OF ANALYSIS

The analysis performed and the conclusions contained herein are based on the assumption that the tower has been properly installed and maintained, including, but not limited to the following:

1. Proper alignment and plumbness.
2. Correct guy tensions.
3. Correct bolt tightness.
4. No significant deterioration or damage to any component.

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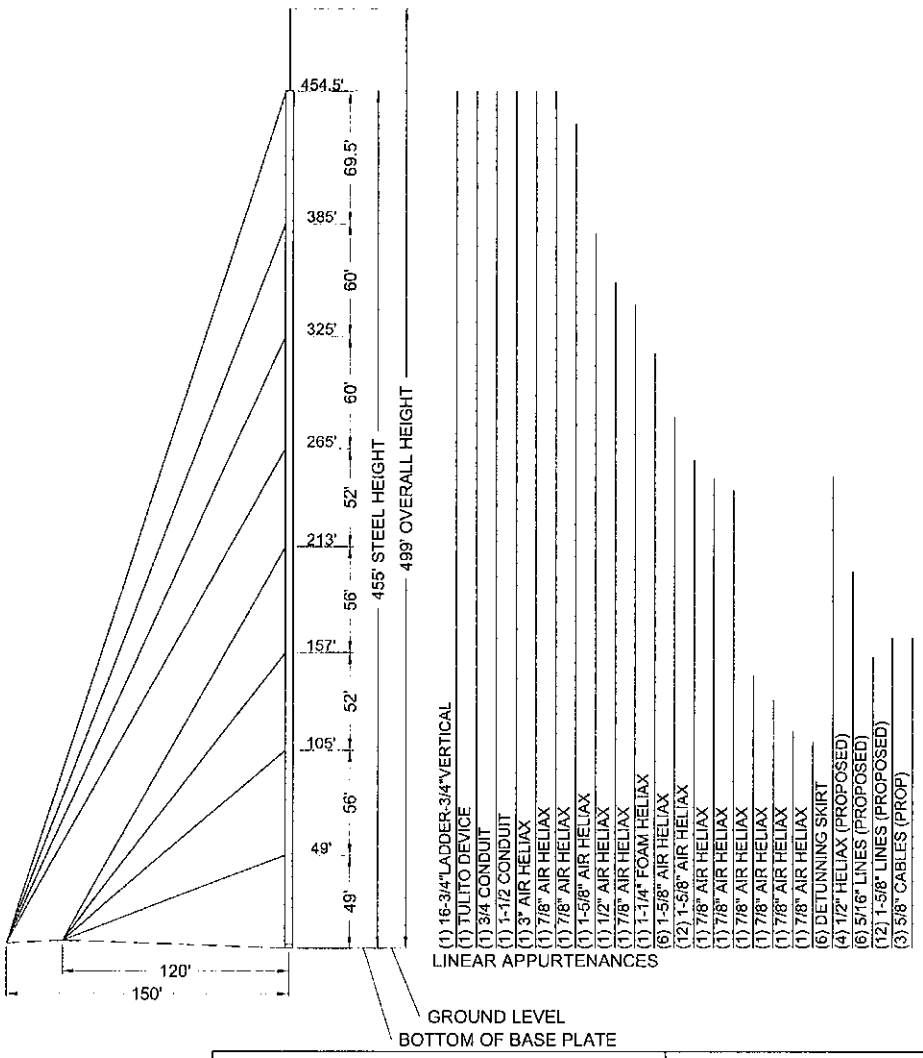
Furthermore, the information and conclusions contained in this Report were determined by application of the current "state-of-the-arts" engineering and analysis procedures and formulae, and Stainless LLC assumes no obligations to revise any of the information or conclusions contained in this Report in the event that such engineering and analysis procedures and formulae are hereafter modified or revised. In addition, under no circumstances will Stainless LLC have any obligation or responsibility whatsoever for or on account of consequential or incidental damages sustained by any person, firm or organization as a result of any information or conclusions contained in the Report, and the maximum liability of Stainless LLC, if any, pursuant to this Report shall be limited to the total funds actually received by Stainless LLC for preparation of this Report.

Customer has requested Stainless LLC to prepare and submit to Customer an engineering analysis with respect to the Subject Tower and has further requested Stainless LLC to make appropriate recommendations regarding suggested structural modifications and changes to the Subject Tower. In making such request of Stainless LLC, Customer has informed Stainless LLC that Customer will make a determination as to whether or not to implement any of the changes or modifications which may be suggested by Stainless LLC and that Customer will have any such changes or modifications made by riggers, erectors and other subcontractors of Customer's choice.

Customer hereby agrees and acknowledges that Stainless LLC shall have no liability whatsoever to Customer or to others for any work or services performed by any persons other than Stainless LLC in connection with the implementation of any structural changes or modifications recommended by Stainless LLC including but not limited to any services rendered for Customer or for others by riggers, erectors or other subcontractors. Customer acknowledges and agrees that any riggers, erectors or subcontractors retained or employed by Customer shall be solely responsible to Customer and to others for the quality of work performed by them and that Stainless LLC shall have no liability or responsibility whatsoever as a result of any negligence or breach of contract by any such rigger, erector or subcontractor.

DISCRETE APPURTENANCES			ELEV.
1.	1	TOP BEACON	496.5'
2.	1	TOP POLE	475'
3.	1	ERI MP-4C-DA-HW	475'
4.	1	SMALL YAGI	458'
5.	1	ANTENNA POLE PLATFORM	455'
6.	1	TRANSFER PLATFORM	446'
7.	1	(1)6' DIA. DISH (350 MHZ)	438'
8.	1	ERI 2-BAY FM	380'
9.	1	(1)3' DIA. STD M/W DISH	354'
10.	1	2' x 6' PARAFLECTOR W/MT	342'
11.	1	10' WHIP W/MT	316'
12.	3	EMS RR-901800DP	282'
13.	3	(4)EMS RR651802 ON 12'SM	259'
14.	2	BEACON	250'
15.	1	(1)8' GRID DISH (350 MHZ)	249'
16.	1	(1)8' GRID DISH (350 MHZ)	243'
17.	1	(4) ANDREW MW ANTS (PROP)	200'
18.	1	(12) PANEL ANTS W/ TMA (P)	165'
19.	3	ARGUS LLPX310R ANTS (PROP)	155'
20.	1	2-BAY FM W/MT	145'
21.	1	2-BAY FM W/MT	132'
22.	1	2-BAY FM W/MT	115'
23.	1	(2) YAGI ON 6' SA	110'



TOWER TYPE: G-45
STD: EIA/TIA-222-F
LOAD CASE(S)
85 MPH BASIC WIND SPEED WITH NO ICE
31 MPH BASIC WIND SPEED WITH 1" BASIC RADIAL ICE THICKNESS

Stainless LLC
1140 Welsh Road, Suite 250
North Wales, PA 19454

GENERAL ARRANGEMENT
BROOKFIELD, CT

CERTIFIED BY THE AISC-CAA INSTITUTE OF STEEL CONSTRUCTION TO HAVE THE EXPERIENCE, CAPABILITY, AND COMMITMENT MEETING THE REQUIREMENTS FOR FABRICATED STEEL B.E.D/MG STRUCTURES CATEGORY.

CERTIFIED FABRICATOR

REV	BY	DATE	REVISION DESCRIPTION	D.CK	DATE	E.CK	DATE
*							

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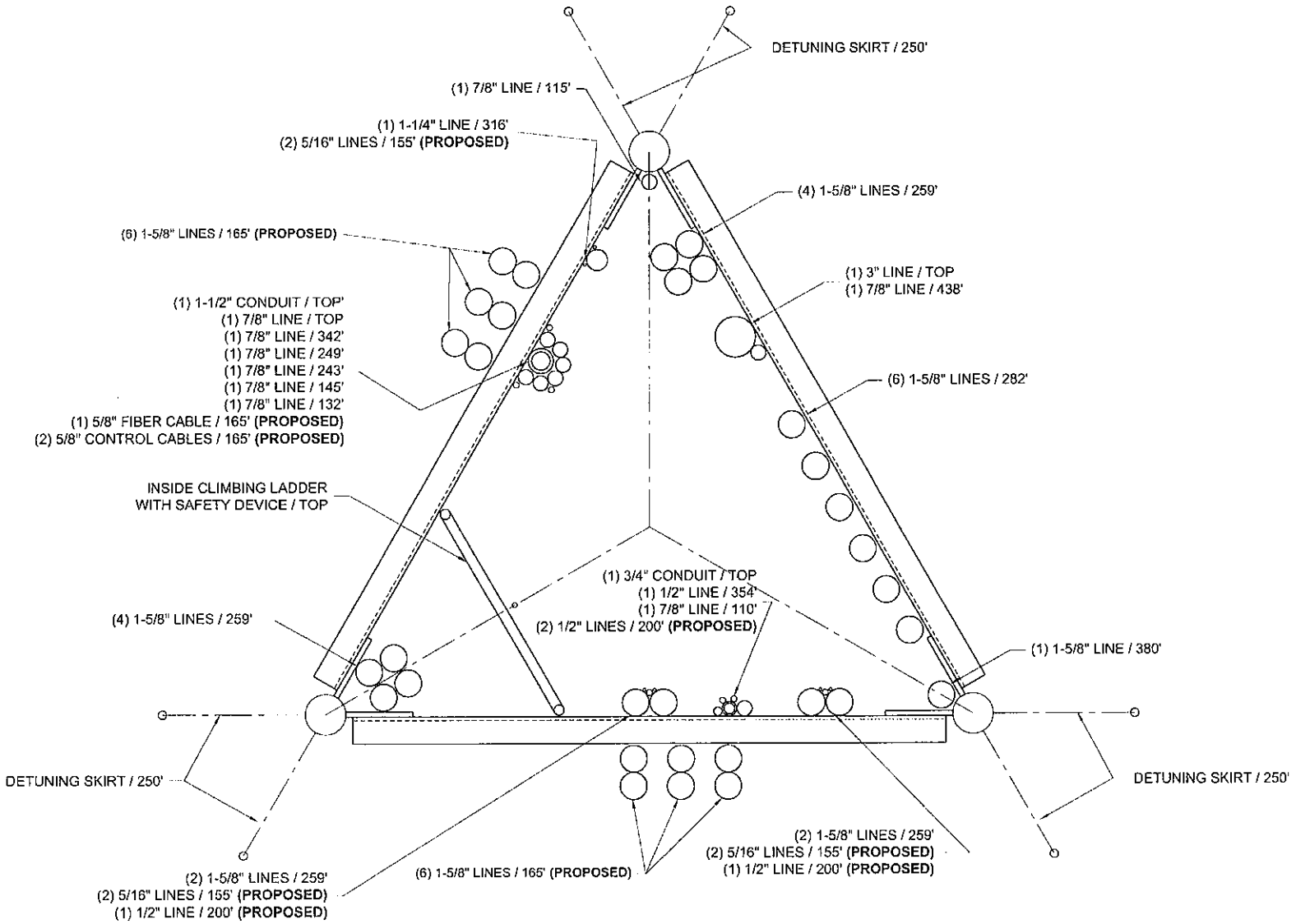
CHECKED BY	
ENGINEER REVIEW	
PROJECT NUMBER	361109
DRAWING NUMBER	A-1

6/12/11



TYPICAL TOWER CROSS SECTION

REV.	BY	DATE	REVISION DESCRIPTION	D.CK	DATE	E.CK	DATE
*							

PREPARED BY: AP 5.22.11
CHECKED BY:
ENGINEER REVIEW:
PROJECT NUMBER: 361109
DRAWING NUMBER: A-2

Stainless LLC
1140 Welsh Road, Suite 230
North Wales, PA 19454

LINEAR APPURTENANCES
BROOKFIELD, CT

Stainless LLC
1140 Welsh Road, Suite 250
North Wales, PA 19454

DESIGN DRAWINGS
EXISTING G48 TOWER
BROOKFIELD, CT

INDEX

Rev	Description	Drawn by	Date	Checked by	Date	Reviewed by	Date	Approved by	Date
—	Initial Release	RE	9/20/2011	LSC	9/20/11	CH	9/23/11	AP	9/23/11

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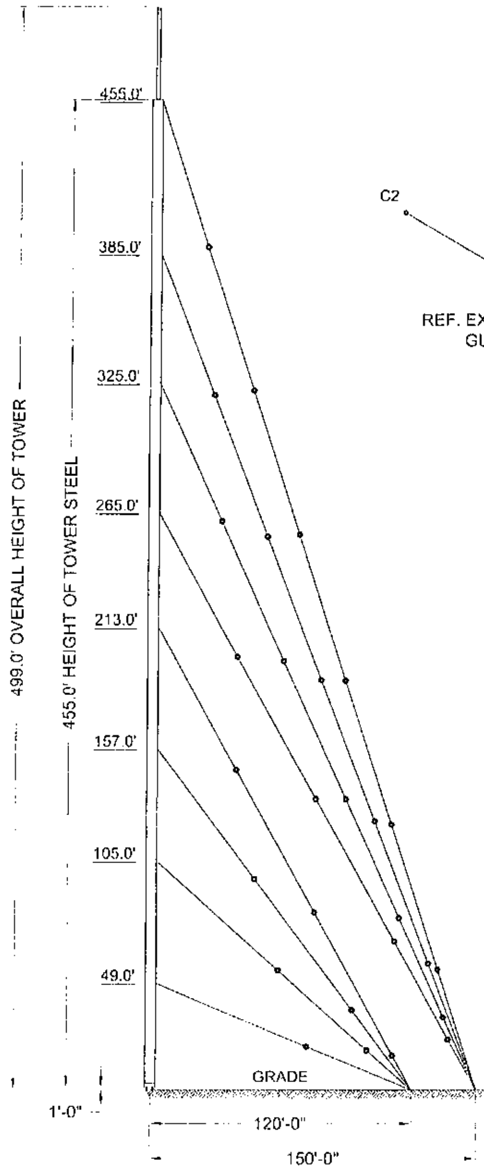
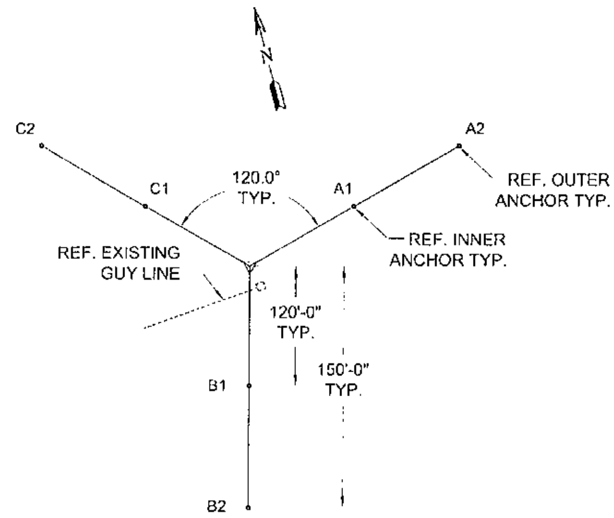
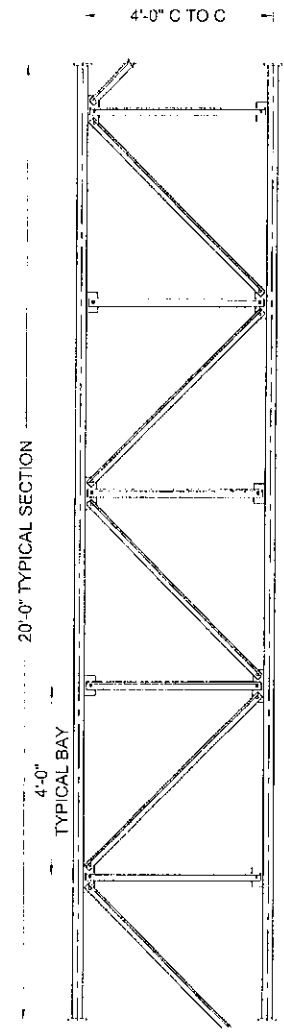
Project No.: 361110



ELEVATION VIEW



PLOT PLAN



TOWER DETAIL

NOTE:
1. SEE PAGE D01.01 FOR GENERAL ARRANGEMENT NOTES.

Stainless LLC
1140 Welsh Road, Suite 250
North Wales, PA 19454

GENERAL ARRANGEMENT
BROOKFIELD, CT

AISC CERTIFIED FABRICATOR

PREPARED BY	RE	9/22/11
CHECKED BY	[initials]	9/22/11
ENGINEER REVIEW	BP	9/23/11
PROJECT NUMBER	361110	
DRAWING NUMBER	D01.00	

REV	BY	DATE	REVISION DESCRIPTION	D.CK	DATE	E CK	DATE

1. The tower is a guyed, triangular, partially insulated, open face structure.

2. The tower was analyzed per Stainless LLC Report 361109 dated 6/14/2011 for a basic wind speed of 85 mph with no ice and 31 mph with 1" ice thickness in accordance with ANSI/TIA/EIA 222-F to support the following equipment:

   a. One (1) ERI MP-4C-DA-HW with radome (future) side mounted on a pole at the top of the tower, and fed by one (1) existing 3" line
   b. One (1) small Yagi antenna at the 458' level, fed by one (1) 7/8" line.
   c. One (1) 6' diameter grid dish at the 438' level, fed by one (1) 7/8" line.
   d. One (1) ERI 2-bay FM antenna at the 380' level, fed by one (1) 1-5/8" line. (Future relocation)
   e. One (1) Andrew 3' diameter dish at the 354' level, fed by one (1) 1/2" line.
   f. One (1) 2' x 6' paraflector on a 5' side arm at the 342' level, fed by one (1) 7/8" line
   g. One (1) 10' whip antenna on a 4' side arm at the 316' level, fed by one (1) 1-1/4" line.
   h. Three (3) EMS RR901800DP antennas at the 282' level, each fed by two (2) 1-5/8" lines
   i. One (1) Decibel DB844H90E and eleven (11) EMS RR651802DPL2W antennas mounted on three (3) 12' sector mounts at the 259' level, fed by one (1) 1-5/8" line to each.
   j. One (1) 8' diameter grid dish at the 249' level, fed by one (1) 7/8" line.
   k. One (1) 8' diameter grid dish at the 243' level, fed by one (1) 7/8" line.
   l. Two (2) Andrew VHLP2-18, one (1) VHLP2.5-11 and one (1) VHLP4-11 dish antennas at the 200' level, each fed by one (1) 1/2" line. (Proposed)
   m. Six (6) Powerwave P65-16-XLH-RR and three (3) P65-17-XLH-RR panel antennas on three (3) sector mounts at the 165' level, fed by twelve (12) 1-5/8" lines. Additional lines and equipment at about this level are two (2) Powerwave TT19-08BP111-001 TMAs and two (2) Ericsson RRUS11 remote radio heads per sector, and one (1) Raycap DC6-48-60-18-8F surge suppressor with one (1) 5/8" fiber cable and two (2) 5/8" control cables. (Proposed)
   n. Three (3) Argus LLPX310R panel antennas and three (3) Samsung WiMAX Remote Radio Heads at the 155' level, fed by six (6) 5/16" lines. (Proposed)
   o. One (1) 2-bay dipole antenna on a 4' side arm at the 145' level, fed by one (1) 7/8" line
   p. One (1) 2-bay dipole antenna on a 4' side arm at the 132' level, fed by one (1) 7/8" line.
   q. One (1) 2-bay dipole antenna on a 4' side arm at the 115' level, fed by one (1) 7/8" line.
   r. Two (2) CA5-FM Yagi antennas on a 6' side arm at the 110' level, fed by one (1) 7/8" line.
   s. Three (3) detuning skirts from the ground to the 250' level.
   t. One (1) 1-1/2" support conduit for the full height of the tower.
   u. One (1) inside climbing ladder with cable type safety device for the full height of the tower
   v. One (1) FAA red lighting system with circuits contained within one (1) 3/4" conduit for the full height of the tower.

3. In order to achieve a basic wind speed of 85 mph with no ice and 31 mph with 1" ice thickness in accordance with ANSI/TIA/EIA 222-F, the following modifications are required:

   a. Replace existing 7/16" EHS guy wires at Level 2 with new, 9/16" EHS guy wires
   b. Adjust the initial guy tensions to the following values at 60° F

Guy level	Tension (kips)
8A	10.8
7A	9.9
6A	6.8
5A	6.8
4A	7.2
3A	2.3
2A	2.8
1A	3.1

   c. Replace the existing diagonal braces with new, higher capacity members at the following bays:

Location	No. of bays
197.0' – 201.0'	1
145.0' – 165.0'	5
101.0' – 129.0'	7

4. Applicable codes and standards are as follows:

   a. ANSI/TIA/EIA 222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, March 1996
   b. AISC Specification for Structural Steel Buildings, March 2005
   c. RCSC Specification for Structural Joints Using ASTM A325 or A490 Bolts, June 2004.
   d. AWS Structural Welding Code, latest edition.
   e. ASTM A475-03 Standard Specification for Zinc-Coated Steel Wire Strand.
   f. ASTM A36 Standard Specification for Carbon Structural Steel
   g. ASTM A123 Standard Specification for Zinc (Hot-Dipped Galvanized) Coatings on Iron and Steel Products.

5. All end connection details of replacement members, including guy wires, shall develop the full strength of the member. It shall be the responsibility of the contractor to obtain field dimensions in order to properly design the connections

6. This contract is for the supply of a design drawing package only, and does not include shop drawings for fabrication purposes. The drawing package will include design information required for the modification materials, however it is anticipated that field verification by others will be necessary in order to complete the shop drawings for fabricating the modification materials.

7. Stainless LLC shall have no liability whatsoever to Customer or to others for any work or services performed by any person other than Stainless LLC in connection with the implementation of these modifications to the tower as recommended by Stainless LLC

   It is highly recommended that Stainless LLC be contracted with to perform the following functions to ensure that the supply and installation of these modification materials to the tower are in conformity with the requirements as set out in this design drawing package:

   - Shop drawing review
   - Erection drawing review
   - Post-modification installation inspection

8. All material shall be hot dip galvanized after fabrication

9. The installation drawings contained herein are based on the assumption that the tower has been properly installed and maintained, including, but not limited to the following:

   a. Proper alignment and plumbness.
   b. Correct guy tensions
   c. Correct bolt tightness.
   d. No significant deterioration or damage to any component

PREPARED BY: AP — 6/3/2011
CHECKED BY: [signature] — 6/24/11
ENGINEER REVIEW: [signature] — 6/23/11
PROJECT NUMBER: 361110
DRAWING NUMBER: D01.01

REV	BY	DATE	REVISION DESCRIPTION	CK	DATE	E CK	DATE

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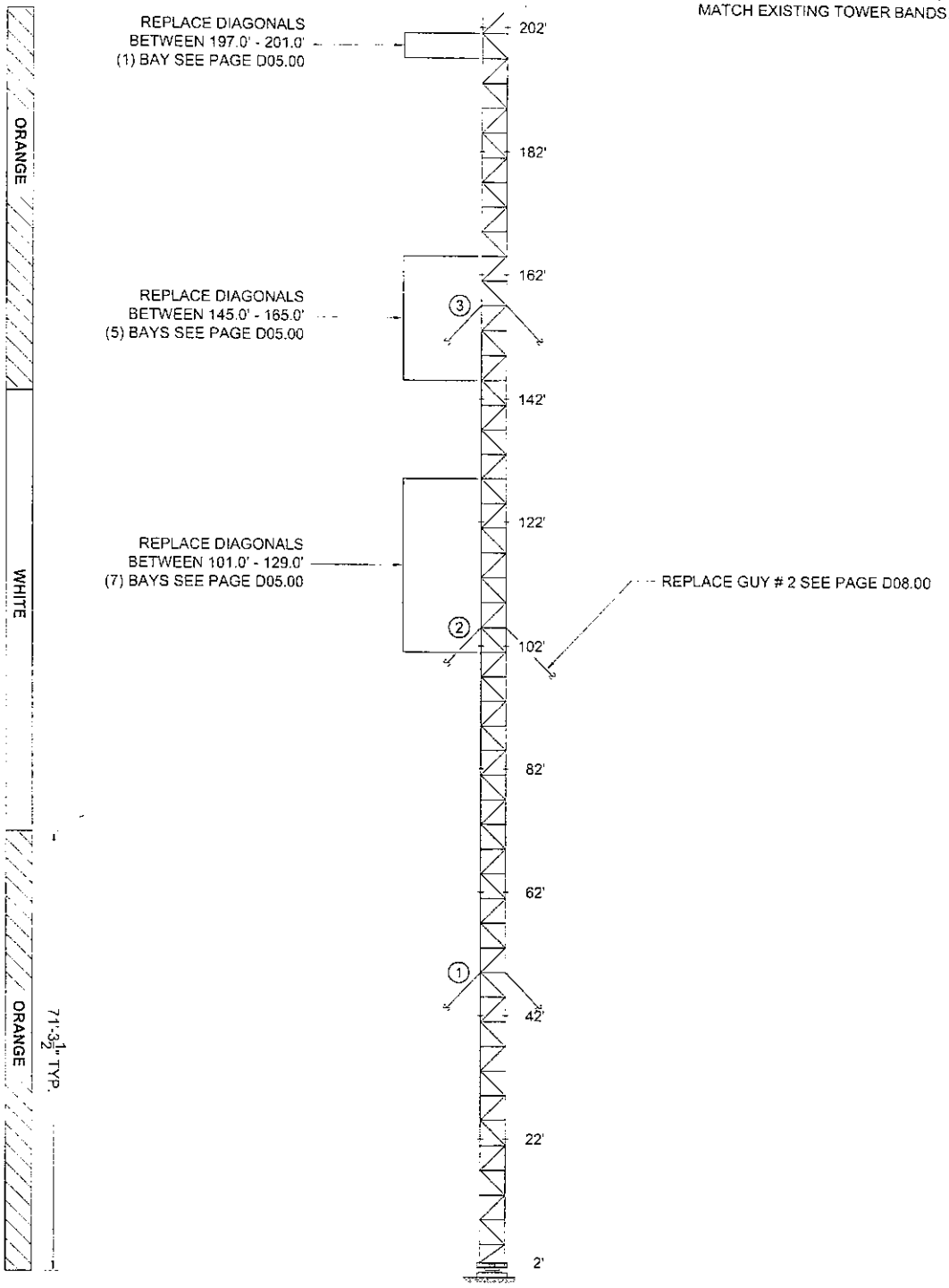
Stainless LLC
1140 Valley Forge Road, Suite 250
No 16 Valley, PA 19454

GENERAL ARRANGEMENT NOTES
BROOKFIELD, CT

CERTIFIED BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION TO HAVE THE EXPERIENCE, CAPABILITY, AND COMMITMENT MEETING THE REQUIREMENTS OF THE STEEL BUILDING STRUCTURES CATEGORY

CERTIFIED FABRICATOR

NOTE:
1. PAINT NEW TOWER MATERIAL TO MATCH EXISTING TOWER BANDS.



PAINT SCHEDULE	DIAGONAL REPLACEMENT	GUY LEVELS	FLANGE ELEVATION

Stainless LLC
1140 Welsh Road, Suite 250
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TOWER PROFILE
BROOKFIELD, CT

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REV	BY	DATE	REVISION DESCRIPTION	D.CK	DATE	E.CK	DATE

PREPARED BY	RE	9/22/11
CHECKED BY		9/22/11
ENGINEER REVIEW	AP	9/23/11
PROJECT NUMBER	361110	
DRAWING NUMBER	D04.00	

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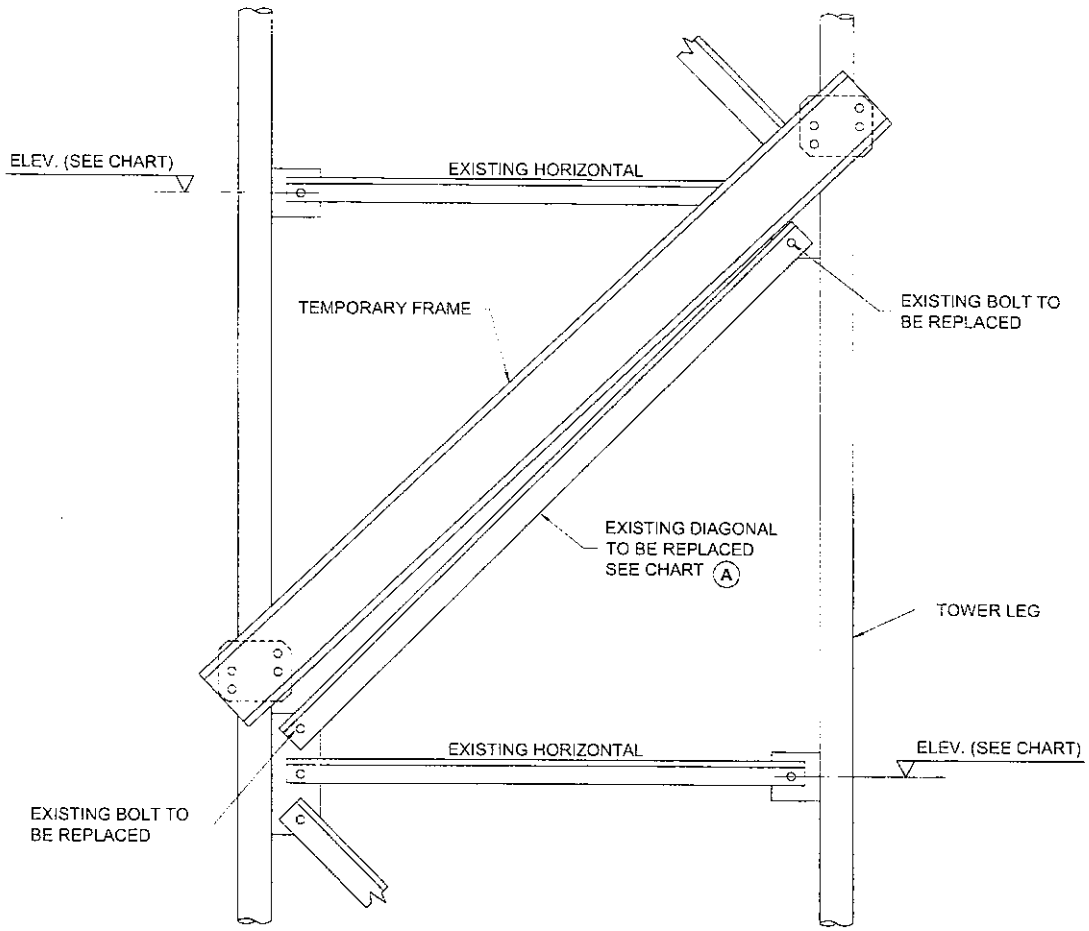

ELEVATION VIEW

DIAGONAL REPLACEMENTS			
ELEV.	BAYS	(A)	MAX DESIGN LOAD IN MEMBER
197.0' - 201.0'	1	L 2" x 2" x 1/4" A36	8.1 KIPS
145.0' - 165.0'	5	L 2" x 2" x 1/4" A36	8.1 KIPS
101.0' - 129.0'	7	L 2" x 2" x 1/4" A36	8.1 KIPS

NOTES:

1. A TEMPORARY FRAME MUST BE DESIGNED TO MAINTAIN THE STRUCTURAL INTEGRITY OF THE TOWER. THE FRAME SHALL BE INSTALLED PRIOR TO REMOVING ANY TOWER MEMBER UTLIZING THE FOLLOWING PROCEDURE:
   a. INSTALL TEMPORARY FRAME AT THE LOCATION THE DIAGONAL IS TO BE REPLACED.
   b. REMOVE AND REPLACE DIAGONAL ON FACE AND IN BAY THAT TEMPORARY FRAME IS INSTALLED.
   c. REMOVE AND REPLACE ONLY ONE MEMBER AT A TIME.
   d. REPEAT THIS PROCEDURE FOR EACH TOWER FACE.
2. REPEAT THIS PROCEDURE AT ALL LOCATIONS WHERE DIAGONALS ARE TO BE REPLACED.
3. FIELD VERIFY DIMENSIONS AND END CONNECTION DETAILS PRIOR TO FABRICATION OF REPLACEMENT DIAGONALS. SEE NOTE 5 ON DRAWING D01.01.

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TEMP. FRAME - DIAG. REPLACEMENTS
BROOKFIELD, CT

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PREPARED BY	RE	9/20/11
CHECKED BY	JC	9/22/11
ENGINEER REVIEW	AP	9/23/11
PROJECT NUMBER	361110	
DRAWING NUMBER	D05.00	

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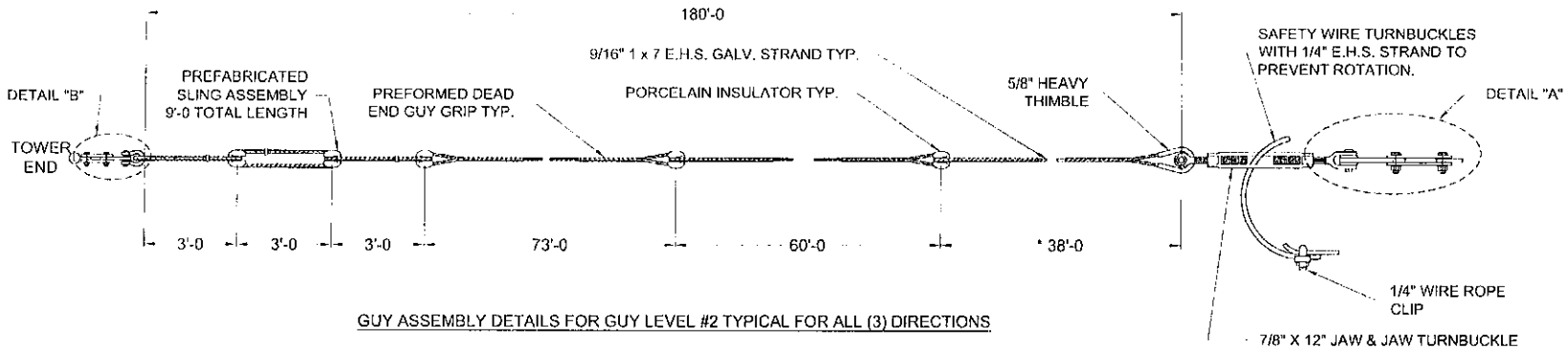
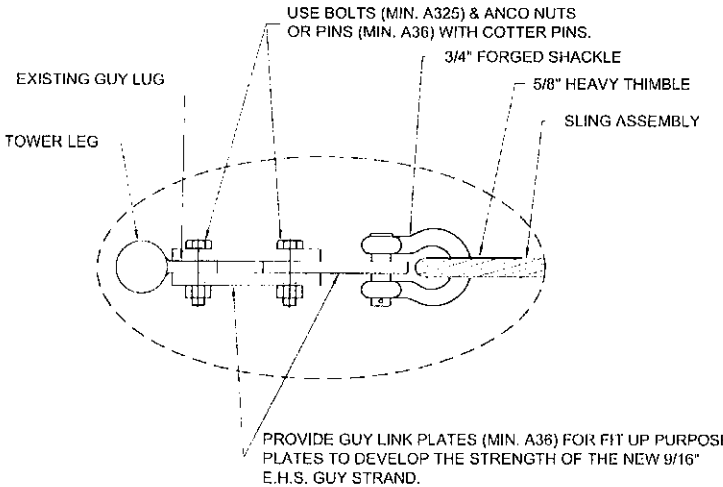
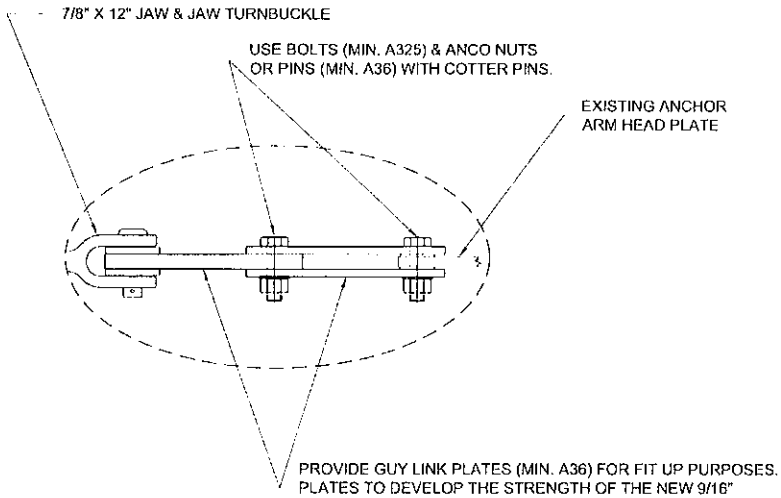


GUY ASSEMBLY DETAILS FOR GUY LEVEL #2 TYPICAL FOR ALL (3) DIRECTIONS



DETAIL "B"



DETAIL "A"

NOTES:
1. ALL GUYS ARE E.H.S. STRAND.
2. ALL DEADEND PREFORMED GUY GRIPS ARE FOR E.H.S. STRAND (LHL).
3. THE (3) INSULATORS NEXT TO THE TOWER ARE INSTALLED IN THE PREFABRICATED SLING ASSEMBLY.
4. * INCLUDES EXTRA 15 FT. OF STRAND FOR TAKEUP.
5. SEE PAGE D08.01 FOR INTERCEPTS AND TENSIONS.
6. FIELD VERIFY EXISTING END DETAILS AT ANCHOR PLATE AND GUY LUG. SEE NOTE 5 ON DRAWING D01.01.
7. ALL GUY WIRES INCLUDE INSTALLATION OF PROPERLY SIZED DAMPERS.

PREPARED BY: RE 9/22/11
CHECKED BY: JC 9/22/11
ENGINEER REVIEW: AP 9/23/11
PROJECT NUMBER: 361110
DRAWING NUMBER: D08.00

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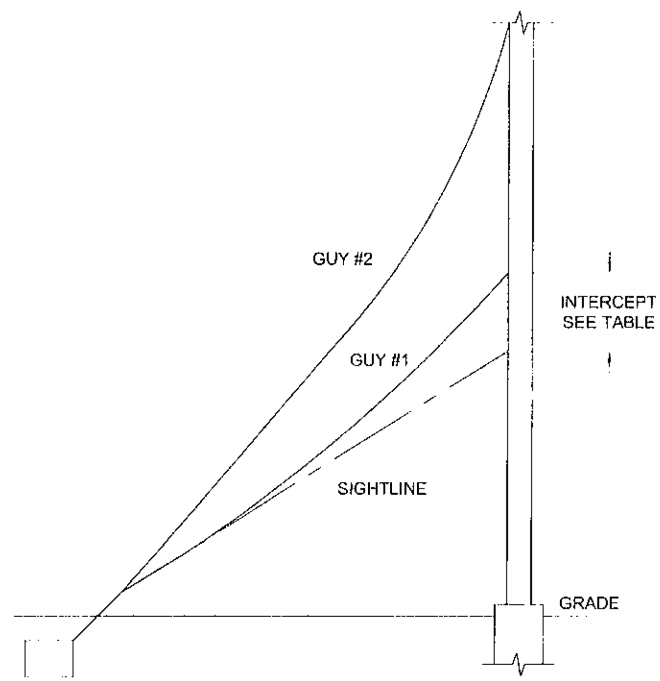
1140 Welsh Road, Suite 250
North Wales, PA 19454

EHS GUY ASSEMBLIES
BROOKFIELD, CT

CERTIFIED BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION TO IAS THE PERSONNEL, ORGANIZATION, EQUIPMENT, FACILITIES AND QUALITY CONTROL PROCEDURES MEET THE COMPETENCY REQUIREMENTS OF THE STEEL BUILDING STRUCTURES CERTIFICATION PROGRAM

CERTIFIED FABRICATOR

	0 DEG. F		30 DEG. F		60 DEG. F		100 DEG. F	
	ERECT. TENSION (LBS)	INTER-CEPT (FT)	ERECT. TENSION (LBS)	INTER-CEPT (FT)	ERECT. TENSION (LBS)	INTER-CEPT (FT)	ERECT. TENSION (LBS)	INTER-CEPT (FT)
1A	3873	0.9	3485	1.0	3100	1.2	2590	1.4
2A	3545	3.4	3164	3.8	2800	4.3	2350	5.1
3A	2698	4.2	2498	4.5	2300	4.9	2045	5.5
4A	7965	7.7	7584	8.0	7200	8.4	6707	9.0
5A	7529	12.6	7162	13.2	6800	13.9	6342	14.9
6A	7327	18.0	7062	18.6	6800	19.3	6468	20.2
7A	10432	23.6	10167	24.2	9900	24.8	9568	25.7
8A	11217	28.2	11013	28.6	10800	29.2	10545	29.8



ELEVATION VIEW

NOTES:

1. DURING THE INITIAL GUY TENSIONING PROCEDURES AND AT THE TIME OF INSPECTION, THE GUY TENSIONS AND/OR INTERCEPTS SHOULD BE IN ACCORDANCE WITH THE VALUES SHOWN ABOVE. USE THE TEMPERATURE WHICH ACTUALLY EXISTS AT THE TIME THE TENSION IS BEING CHECKED. FOR TEMPERATURES OTHER THAN THOSE SHOWN ABOVE, INTERPOLATE OR EXTRAPOLATE OTHER VALUES.
2. TOWER PLUMBING AND INITIAL TENSIONING OF GUYS SHOULD BE DONE ONLY IN CALM WEATHER AND WITH NO ICE ON GUYS.
3. USE INTERCEPTS AND TENSIONS IN GUY DIRECTION "A" ONLY.
4. GUY #1 IS BOTTOM GUY; GUY #2 IS NEXT, ETC.
5. USE SIGHT BAR FOR DETERMINING GUY INTERCEPTS.
6. TENSION AND/OR INTERCEPT TOLERANCES +/- 5%.

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INTERCEPTS & ERECTION TENSIONS
BROOKFIELD, CT

AISC CERTIFIED FABRICATOR

REV	BY	DATE	REVISION DESCRIPTION	D.CK	DATE	E.CK	DATE

PREPARED BY: RE
CHECKED BY: 9/22/11
ENGINEER REVIEW: AP 9/23/11
PROJECT NUMBER: 361110
DRAWING NUMBER: D08.01

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I. TIGHTENING OF BOLTS AND NUTS

A. All bolts are A-325 high strength bolts with Anco nuts, except U-bolts

B. All A325 high strength bolts shall be tightened by "snug tightening" method as specified in the current edition of "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS" except for locations as specified in the preceding erection drawings where they shall be tightened using the "turn of the nut" method

II. INSTALLING GUYS AND PLUMBING LINES

A. The tower is designed for the initial tensions as specified in the design drawings. It is important that the guys be tensioned, accurately to assure the stiffness of the tower.

B. Uneven terrain, temperature, plumbness of tower and wind are factors which affect guy tensions. If the tower is level and anchor distances are equal, the tensions in all three guys at a level will be equal when the tower is plumb. If the terrain of the tower site is uneven, the guys are not perfectly symmetrical and tensions in guys vary in the three directions. For this reason initial guy tensions are specified in one direction only. The tower should be plumbed with the specified tensions in the given guy direction.

C. Wind load on tower and guys changes the tension in all guys; therefore, plumb the tower in calm weather only.

D. When installing guys, all three permanent guys should be fastened to tower first. Then ALL GUYS SHOULD BE PULLED TO THE ANCHORS SIMULTANEOUSLY.

E. Temporary guys shall be provided during the process of replacing the permanent guy wires.

F. The plumbing of a tower or checking alignment of a tower shall be performed in accordance with Annex E of ANSI/TIA/EIA Standard 222-F

III. INSTALLATION

A. All work shown on these drawings shall be performed by a contractor who is qualified and experienced in tower installation work.

B. Contractor shall verify all dimensions, elevations and existing field conditions prior to fabricating or installing tower modification items.

C. Contractor shall observe safe construction practices and shall be responsible for all methods of construction, including proper and adequate bracing to the tower during the installation process. A temporary bracing frame shall be provided before any tower diagonal member is removed and replaced.

IV. TOWER PAINTING

A. The tower modification material shall be painted with International Orange and White in accordance with FAA Specifications and the Construction Permit (Refer to Dwg. D04.00). This includes all tower structural members and coaxial cable, conduits and other cables attached to the face of the tower. It does not include the tower ladder nor conduits and cables located in the interior of the tower. Paint to be supplied by the erector.

B. Painting can be performed in either of two ways.
1. On the ground prior to erection.
2. After tower is erected.

C. If method 1 is followed, all paint damage shall be repaired and touched up after assembly and erection of tower.

D. Painting should never be performed when temperature is below 45° Fahrenheit or when the steel is wet from rain or condensation.

E. All paint shall be applied on clean surfaces. Paint shall be applied smoothly, to a uniform thickness and without voids, pin holes, brush marks, laps, runs or other defects

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ERECTION NOTES
BROOKFIELD, CT

AISC CERTIFIED FABRICATOR

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REV	BY	DATE	REVISION DESCRIPTION	D CK	DATE	E CK	DATE

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CHECKED BY	RE	9/21/11
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PROJECT NUMBER	361110	
DRAWING NUMBER	D10.00	

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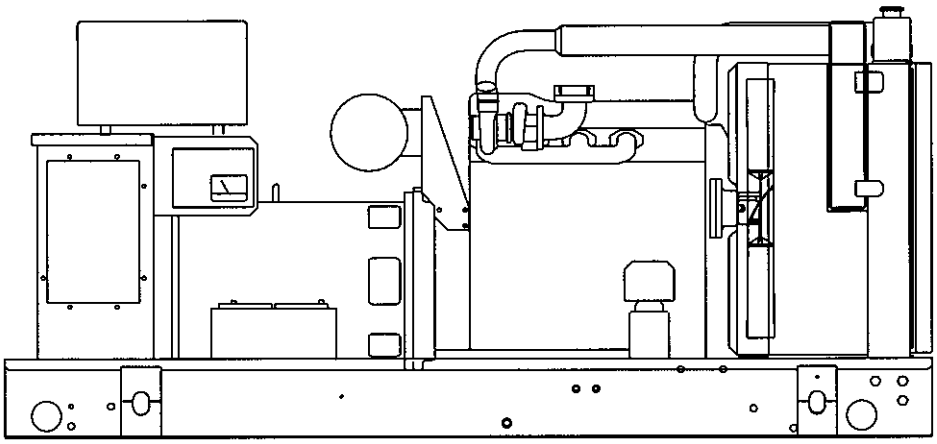
SD050

Liquid Cooled Diesel Engine Generator Sets

Standby Power Rating
50KW 60 Hz / 50KVA 50 Hz

Prime Power Rating
44KW 60 Hz / 44KVA 50 Hz



Power Matched
GENERAC 2.4DTA ENGINE
Turbocharged/Aftercooled
Tier III Compliant

FEATURES

- **INNOVATIVE DESIGN & PROTOTYPE TESTING** are key components of GENERAC'S success in "IMPROVING POWER BY DESIGN." But it doesn't stop there. Total commitment to component testing, reliability testing, environmental testing, destruction and life testing, plus testing to applicable CSA, NEMA, EGSA, and other standards, allows you to choose GENERAC POWER SYSTEMS with the confidence that these systems will provide superior performance.

- **TEST CRITERIA:**
  - ✓ PROTOTYPE TESTED
  - ✓ SYSTEM TORSIONAL TESTED
  - ✓ ELECTRO-MAGNETIC INTERFERENCE
  - ✓ NEMA MG1 EVALUATION
  - ✓ MOTOR STARTING ABILITY
  - ✓ SHORT CIRCUIT TESTING
  - ✓ UL COMPLIANCE AVAILABLE

- **SOLID-STATE, FREQUENCY COMPENSATED DIGITAL VOLTAGE REGULATION.** This state-of-the-art power maximizing regulation system is standard on all Generac models. It provides optimized FAST RESPONSE to changing load conditions and MAXIMUM MOTOR STARTING CAPABILITY by electronically torque-matching the surge loads to the engine.

- **SINGLE SOURCE SERVICE RESPONSE** from Generac's dealer network provides parts and service know-how for the entire unit, from the engine to the smallest electronic component. You are never on your own when you own a GENERAC POWER SYSTEM.

- **ECONOMICAL DIESEL POWER.** Low cost operation due to modern diesel engine technology. Better fuel utilization plus lower cost per gallon provide real savings.

- **LONGER ENGINE LIFE.** Generac heavy-duty diesels provide long and reliable operating life.

- **GENERAC TRANSFER SWITCHES, SWITCHGEAR AND ACCESSORIES.** Long life and reliability is synonymous with GENERAC POWER SYSTEMS. One reason for this confidence is that the GENERAC product line includes its own transfer systems, accessories, switchgear and controls for total system compatibility.

GENERAC®
POWER SYSTEMS, INC.

APPLICATION & ENGINEERING DATA

SD050

GENERATOR SPECIFICATIONS

TYPE	Four-pole, revolving field
ROTOR INSULATION	Class H
STATOR INSULATION	Class H
TOTAL HARMONIC DISTORTION	<3%
TELEPHONE INTERFERENCE FACTOR (TIF)	<50
ALTERNATOR	Self-ventilated and drip-proof
BEARINGS (PRE-LUBED & SEALED)	1
COUPLING	Direct, Flexible Disc
LOAD CAPACITY (STANDBY)	100%
LOAD CAPACITY (PRIME)	110%

NOTE: Emergency loading in compliance with NFPA 99, NFPA 110. Generator rating and performance in accordance with ISO8528-5, BS5514, SAE J1349, ISO3046 and DIN6271 standards.

VOLTAGE REGULATOR

TYPE	Full Digital
SENSING	3 Phase
REGULATION	± 1/4%
FEATURES	Built into H-100 Control Panel, V/F Adjustable Adjustable Voltage and Gain

GENERATOR FEATURES

- Revolving field heavy duty generator
- Quiet drive coupling
- Operating temperature rise 120°C above a 40°C ambient
- Insulation is Class H rated at 150°C rise
- All prototype models have passed three phase short circuit testing

CONTROL PANEL FEATURES

- TWO FOUR LINE LCD DISPLAYS READ:
  - Voltage (all phases)
  - Power factor
  - kVAR
  - Engine speed
  - Run hours
  - Fault history
  - Coolant temperature
  - Low oil pressure shutdown
  - Overvoltage
  - Low coolant level
  - Exercise speed
  - Current (all phases)
  - kW
  - Transfer switch status
  - Low fuel pressure
  - Service reminders
  - Oil pressure
  - Time and date
  - High coolant temp shutdown
  - Overspeed
  - Low coolant level
  - ATS selection
  - Not in auto position (flashing light)
- INTERNAL FUNCTIONS:
  - I^2T function for alternator protection from line to neutral and line to line short circuits
  - Emergency stop
  - Programmable auto crank function
  - 2 wire start for any transfer switch
  - Communicates with the Generac HTS transfer switch
  - Built-in 7 day exerciser
  - Adjustable engine speed at exerciser
  - RS232 port for GenLink® control
  - RS485 port remote communication
  - Canbus addressable
  - Governor controller and voltage regulator are built into the master control board
  - Temperature range -40°C to 70°C

ENGINE SPECIFICATIONS

MAKE	GENERAC/DEERE
MODEL	4024HF285B
ENGINE FAMILY	8JDXL03.0113
CYLINDERS	4
DISPLACEMENT	2.4 Liter (149 cu.in.)
BORE	86 mm (3.4 in.)
STROKE	105 mm (4.1 in.)
COMPRESSION RATIO	18:1
INTAKE AIR	Turbocharged/Aftercooled
NUMBER OF MAIN BEARINGS	5
CONNECTING RODS	4-Drop Forged Steel
CYLINDER HEAD	Cast Iron
PISTONS	4-Aluminum Alloy
CRANKSHAFT	Die Forged, Induction Hardened Steel

VALVE TRAIN

LIFTER TYPE	Solid
INTAKE VALVE MATERIAL	Heat Resistant Steel
EXHAUST VALVE MATERIAL	Heat Resistant Steel
HARDENED VALVE SEATS	Replaceable

ENGINE GOVERNOR

❒ ELECTRONIC	Standard
FREQUENCY REGULATION, NO-LOAD TO FULL LOAD	Isochronous
STEADY STATE REGULATION	±0.25%

LUBRICATION SYSTEM

TYPE OF OIL PUMP	Gear
OIL FILTER	Full flow, Cartridge
CRANKCASE CAPACITY	7.5 qts.

COOLING SYSTEM

TYPE OF SYSTEM	Pressurized, Closed Recovery
WATER PUMP	Pre-Lubed, Self-Sealing
TYPE OF FAN	Pusher
NUMBER OF FAN BLADES	6
DIAMETER OF FAN	560 mm (22 in.)
COOLANT HEATER	120V, 1000 W

FUEL SYSTEM

FUEL	#2D Fuel (Min Cetane #40) (Fuel should conform to ASTM Spec.)
FUEL FILTER	5 Micron
FUEL INJECTION PUMP	Bosch
FUEL PUMP	Mechanical
INJECTORS	Unit Type Multi-Hole, Nozzle
ENGINE TYPE	Pre-combustion
FUEL LINE (Supply)	6.35 mm (0.25 in.)
FUEL RETURN LINE	6.35 mm (0.25 in.)

ELECTRICAL SYSTEM

BATTERY CHARGE ALTERNATOR	20 Amps at 12 V
STARTER MOTOR	12 V
RECOMMENDED BATTERY	12 Volt, 90 A.H., 27F
GROUND POLARITY	Negative

Rating definitions - Standby: Applicable for supplying emergency power for the duration of the utility power outage. No overload capability is available for this rating. (All ratings in accordance with BS5514, ISO3046 and DIN6271). Prime (Unlimited Running Time): Applicable for supplying electric power in lieu of commercially purchased power. Prime power is the maximum power available at variable load. A 10% overload capacity is available for 1 hour in 12 hours. (All ratings in accordance with BS5514, ISO3046, ISO8528 and DIN6271).

GENERAC®
POWER SYSTEMS, INC.

SD050

OPERATING DATA

		STANDBY		PRIME	
		SD050		SD050	
GENERATOR OUTPUT VOLTAGE/KW-60Hz			Rated AMP		Rated AMP
120/240V, 1-phase, 1.0 pf		50	208	44	183
120/208V, 3-phase, 0.8 pf	NOTE: Consult your Generac dealer for additional voltages.	50	173	44	153
120/240V, 3-phase, 0.8 pf		50	150	44	133
277/480V, 3-phase, 0.8 pf		50	75	44	66
600V, 3-phase, 0.8 pf		50	60	44	53
GENERATOR OUTPUT VOLTAGE/KVA-50Hz			Rated AMP		Rated AMP
110/220V, 1-phase, 1.0 pf		40	182	35	159
115/200V, 3-phase, 0.8 pf	NOTE: Consult your Generac dealer for additional voltage	50	144	44	127
100/200V, 3-phase, 0.8 pf		50	144	44	127
231/400V, 3-phase, 0.8 pf		50	72	44	63
MOTOR STARTING KVA					
Maximum at 35% instantaneous voltage dip with standard alternator; 50/60 Hz		208/240/416V 82/100	480V 93/113	208/240/416V 82/100	480V 93/113
FUEL					
Fuel consumption—60 Hz	Load	25%	50% 75% 100%	25%	50% 75% 100%
	gal./hr.	1.12	2.19 3.21 4.16	0.99	1.93 2.82 3.66
	liters/hr.	4.25	8.3 12.13 15.76	3.74	7.3 10.68 13.87
	gal./hr.	0.9	1.75 2.56 3.33	0.79	1.54 2.26 2.93
Fuel consumption—50 Hz	liters/hr.	3.4	6.64 9.71 12.61	2.99	5.84 8.54 11.1
Fuel pump lift		40"		40"	
COOLING					
Coolant capacity	System - US gal. (lit.)	4.5 (17.0)		4.5 (17.0)	
	Engine - US gal. (lit.)	2.75 (10.4)		2.75 (10.4)	
Coolant flow/min.	60 Hz - US gal. (lit.)	28 (106)		28 (106)	
	50 Hz - US gal. (lit.)	23 (87)		23 (87)	
Heat rejection to coolant 60 Hz full load	BTU/hr.	135,900		109,000	
Heat rejection to coolant 50 Hz full load	BTU/hr.	115,500		92,600	
Inlet air	60 Hz - cfm (m^3/min.)	7500 (212.4)		7500 (212.4)	
	50 Hz - cfm (m^3/min.)	6225 (176.3)		6225 (176.3)	
Max. air temperature to radiator	°C (°F)	60 (140)		60 (140)	
Max. ambient temperature	°C (°F)	50 (122)		50 (122)	
COMBUSTION AIR REQUIREMENTS					
Flow at rated power	60 Hz - cfm (m^3/min.)	166 (4.7)		140 (4.0)	
	50 Hz - cfm (m^3/min.)	140 (4.0)		120 (3.4)	
EXHAUST					
Exhaust flow at rated output 60 Hz - cfm (m^3/min.)		448 (12.7)		380 (10.8)	
	50 Hz - cfm (m^3/min.)	380 (10.8)		320 (9.1)	
Max recommended back pressure	Inches Hg	2.2		2.2	
Exhaust temperature 60 Hz (full load)	°F (°C)	1044 (562)		925 (496)	
Exhaust outlet size		2.5" O.D. Turbo		2.5" O.D. Muffler	
ENGINE					
Rated RPM	60 Hz / 50 Hz	1800 / 1500		1800	
HP at rated KW	60 Hz / 50 Hz	79 / 64		64 / 52	
Piston speed	60 Hz - ft./min. (m/min.)	1536 (1230)		1536 (1230)	
	50 Hz - ft./min. (m/min.)	1279 (1025)		1279 (1025)	
BMEP	60 Hz / 50 Hz - psi	189 / 181		151 / 147	
DERATION FACTORS					
Temperature					
6.7% for every 10°C above - °C		25		25	
4.0% for every 10°F above - °F		77		77	
Altitude					
0.8% for every 100 m above - m		1067		1067	
2.6% for every 1000 ft. above - ft.		3500		3500	

STANDARD ENGINE & SAFETY FEATURES

SD050

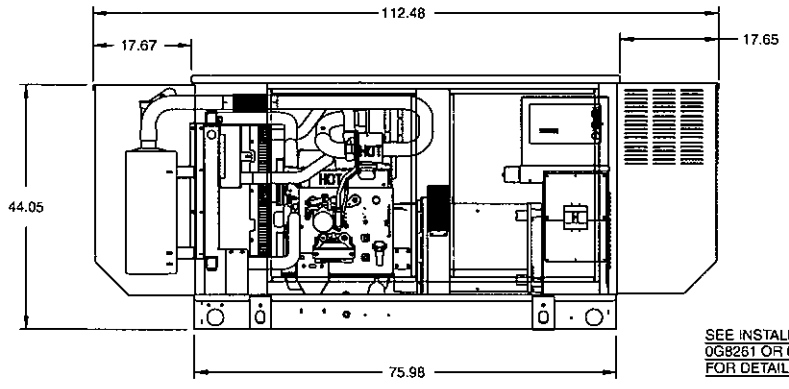
- High Coolant Temperature Automatic Shutdown
- Low Coolant Level Automatic Shutdown
- Low Oil Pressure Automatic Shutdown
- Overspeed Automatic Shutdown (Solid-state)
- Crank Limiter (Solid-state)
- Oil Drain Extension
- Radiator Drain Extension
- Factory-Installed Cool Flow Radiator
- Closed Coolant Recovery System
- UV/Ozone Resistant Hoses
- Rubber-Booted Engine Electrical Connections
- Coolant Heater
- Secondary Fuel Filter
- Fuel Lockoff Solenoid
- Stainless Steel Flexible Exhaust Connection
- Battery Charge Alternator
- Battery Cables
- Battery Tray
- Vibration Isolation of Unit to Mounting Base
- 12 Volt, Solenoid-activated Starter Motor
- Air Cleaner
- Fan Guard
- Control Console
- Radiator Duct Adaptor
- Ischronous Governor

OPTIONS

- **OPTIONAL COOLING SYSTEM ACCESSORIES**
  - ○ 208/240V Coolant Heater
- **OPTIONAL FUEL ACCESSORIES**
  - ○ Flexible Fuel Lines
  - ○ UL Listed Fuel Tanks
  - ○ Base Tank Low Fuel Alarm
  - ○ Primary Fuel Filters
- **OPTIONAL EXHAUST ACCESSORIES**
  - ○ Critical Exhaust Silencer
- **OPTIONAL ELECTRICAL ACCESSORIES**
  - ○ 2A Battery Charger
  - ○ 10A Dual Rate Battery Charger
  - ○ Battery, 12 Volt, 135 A.H.
- **OPTIONAL ALTERNATOR ACCESSORIES**
  - ○ Alternator Upsizing
  - ○ Alternator Strip Heater
  - ○ Alternator Tropicalization
  - ○ Voltage Changeover Switch
  - ○ Main Line Circuit Breaker
- **CONTROL CONSOLE OPTIONS**
  - ○ Digital Controller H100 (Bulletin 0172110SBY)
- **ADDITIONAL OPTIONAL EQUIPMENT**
  - ○ Automatic Transfer Switch
  - ○ Remote Relay Panels
  - ○ Unit Vibration Isolators
  - ○ Oil Make-Up System
  - ○ Oil Heater
  - ○ 5 Year Warranties
  - ○ Export Boxing
  - ○ GenLink® Communications Software
- **OPTIONAL ENCLOSURE**
  - ○ Weather Protective
  - ○ Sound Attenuated
  - ○ Aluminum and Stainless Steel
  - ○ Enclosed Muffler

Distributed by:

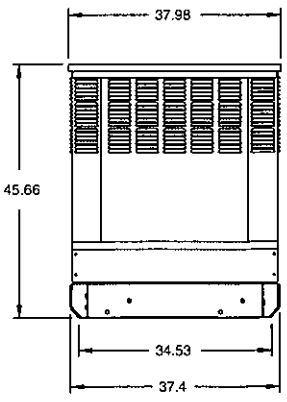
Design and specifications subject to change without notice. Dimensions shown are approximate. Contact your Generac dealer for certified drawings. DO NOT USE THESE DIMENSIONS FOR INSTALLATION PURPOSES.



APPLICABLE TO 2.4L G4 35 KW, 40 kW, 50 kW

LEFT SIDE VIEW, SOUND ATTENUATED ENCLOSURE.

SEE INSTALL DWG 0G8261 OR 0G8262 FOR DETAILS



REAR VIEW

mm [in]

WEIGHT: 2900 lbs.

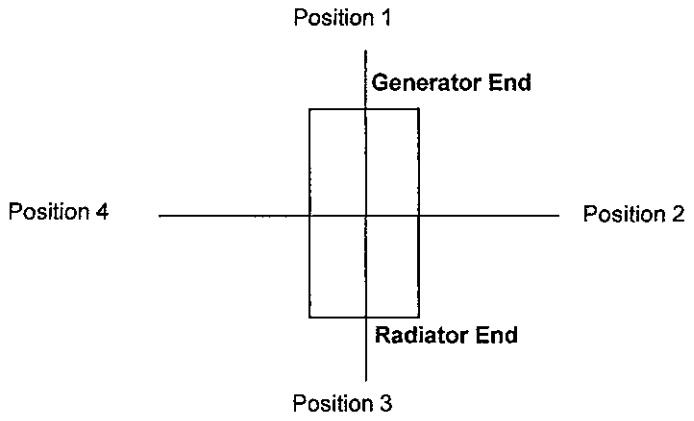
GENERAC POWER SYSTEMS, INC. • P.O. BOX 8 • WAUKESHA, WI 53187

262/544-4811 • FAX 262/544-4851

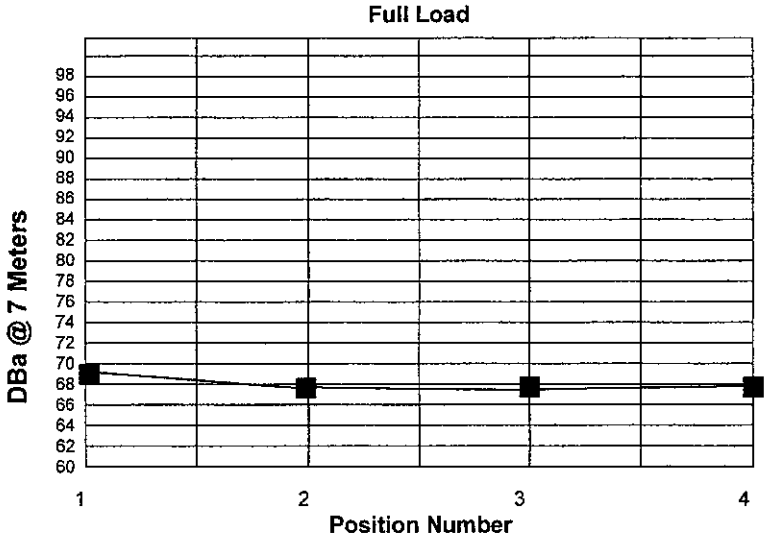
Bulletin 0176480SBY / Printed in USA 03.08

GENERAC®
POWER SYSTEMS, INC.

Measured Sound Performance
2.4 Liter Diesel Engine. SD50 with Level IIA Enclosure
Full Load Data



Measured Sound Levels – 60 Hertz



Data Table	
Pos #	DBa
1	68.9
2	66.4
3	66.7
4	66.6

Notes:

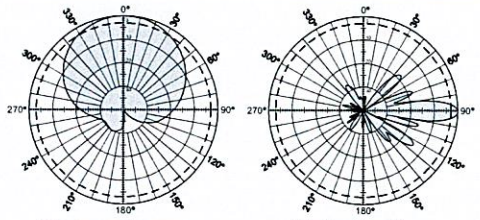
1. All positions 23 ft. (7 meters) from center of generator
2. Generator operating at **Rated Load**
3. Test conducted on a 100 foot diameter Blacktop Surface
4. Ambient Temperature 22° F 38% Rel Hum.
5. Ref Test No. B4168-T123

KATHREIN
SCALA DIVISION

800 10766
700 MHz Dual Band 8', 65 Degree Antenna RET

- X-polarized (+45° and -45°).
- UV resistant fiberglass radomes.
- Wideband vector dipole technology.
- DC Grounded metallic parts for impulse suppression.
- RET motor housed inside the radome and field replaceable.

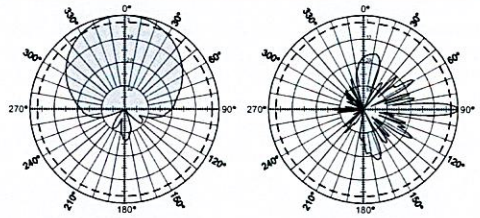
698–894 MHz



Horizontal pattern
±45°- polarization

Vertical pattern
±45°- polarization
0°–10° electrical downtilt

1710–2170 MHz



Horizontal pattern
±45°- polarization

Vertical pattern
±45°- polarization
0°–10° electrical downtilt

General specifications:

Frequency range	698–894 MHz // 1710–2170 MHz
Impedance	50 ohms
VSWR	<1.5:1
Intermodulation (2x20w)	IM3:< -150 dBc
Polarization	+45° and -45°
Connector	4 x 7-16 DIN female (long neck)
Isolation	intrasystem >30 dB // intersystem >35 dB
See reverse for order information.	

IRT specifications:

Logical interface ex factory[1)]	AISG 1.1
Protocols	AISG 1.1 and 3GPP/AISG 2.0 compliant
Hardware interface[2)]	2 x 8pin connector acc. IEC 60130-9; according to AISG: – RCUin (male): Control / Daisy chain in – RCUout (female): Daisy chain out
Power supply	10–30 V
Power Consumption	<1 W (standby); <8.5 W (motor activated)
Adjustment time (full range)	40 seconds
Adjustment cycles	>50,000
Certification	FCC 15.107 Class B Computing Devices

[1)] The protocol of the logical interface can be switched from AISG 1.1 to 3GPP/AISG 2.0 and vice versa with a vendor specific command. Start-up operation of the RCU 86010149 is possible in an RET system supporting AISG 1.1 or supporting 3GPP/AISG 2.0 after performing a layer 2 reset before address assignment. The protocol can also be changed as follows: AISG 1.1 to 3GPP: Enter "3GPP" into the additional data filed "Installer's ID" and perform a layer 7 reset or a power reset. 3GPP to AISG 1.1: Enter "AISG 1" into the additional datafield "Installer's ID" and perform a layer 2 reset or a power reset. After switching the protocol any other information can be entered into the "Installer's ID" field.

[2)] The tightning torque for fixing the connector must be 0.5 – 1.0 Nm ('hand-tightened'). The connector should be tightened by hand only!

Specifications:	**698–806 MHz**	**824–894 MHz**	**1710–1755 MHz**	**1850–1990 MHz**	**2110–2170 MHz**
Gain	16.4 dBi	16.8 dBi	18 dBi	18.5 dBi	18 dBi
Front-to-back ratio	>30 dB (co-polar) 34 dB (average)	>30 dB (co-polar) 34 dB (average)	>27 dB (co-polar) 34 dB (average)	>27 dB (co-polar) 34 dB (average)	>27 dB (co-polar) 34 dB (average)
Maximum input power per input	500 watts (at 50°C)	500 watts (at 50°C)	300 watts (at 50°C)	300 watts (at 50°C)	300 watts (at 50°C)
+45° and -45° polarization horizontal beamwidth	68° (half-power)	65° (half-power)	63° (half-power)	62° (half-power)	63° (half-power)
+45° and -45° polarization vertical beamwidth	9.5° (half-power)	8.7° (half-power)	5.8° (half-power)	5.8° (half-power)	5.8° (half-power)
Electrical downtilt continuously adjustable	0°–10°	0°–10°	0°–10°	0°–10°	0°–10°
Min sidelobe suppression for first sidelobe above main beam average	0° 5° 10° T 16 16 16 dB 18 20 18 dB	0° 5° 10° T 18 18 16 dB 20 20 20 dB	0° 5° 10° T 18 18 18 dB 20 22 20 dB	0° 5° 10° T 18 18 18 dB 20 22 20 dB	0° 5° 10° T 18 18 18 dB 20 22 20 dB
Cross polar ratio Main direction 0° Sector ±60°	25 dB (typical) >10 dB, 15 dB (avg)	20 dB (typical) >10 dB, 12 dB (avg)	25 dB (typical) >8 dB, 15 dB (avg)	30 dB (typical) >10 dB, 15 dB (avg)	25 dB (typical) >8 dB, 15 dB (avg)
Tracking, avg.	1 dB	1 dB	1.5 dB	1.5 dB	1.5 dB
Squint	±2.5°	±2.5°	±3°	±3°	±3°

RoHS Lead-Free

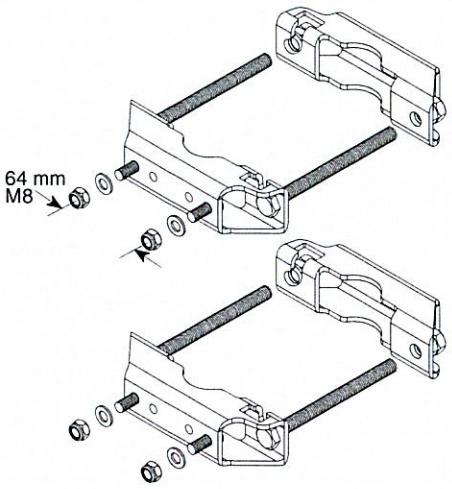
11225-C Feb 22, 2011
936.4135

AISG Antenna Interface Standards Group

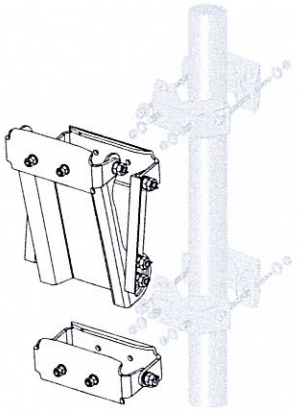
Kathrein Inc., Scala Division Post Office Box 4580 Medford, OR 97501 (USA) Phone: (541) 779-6500 Fax: (541) 779-3991
Email: communications@kathrein.com Internet: www.kathrein-scala.com

KATHREIN
SCALA DIVISION

800 10766
700 MHz Dual Band 8', 65 Degree Antenna RET



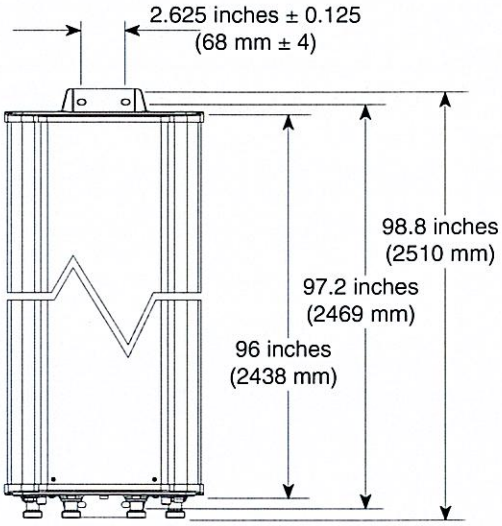
Mounting Brackets
for use with 2-point mount antennas
Mast dia. 2–4.5 inches (50–115 mm)
Weight: 4.4 lb (2 kg)



Mechanical Tilt Brackets
for use with 2-point mount antennas
Weight: 13 lb (5.9 kg)
(Model 850 10007)

Mechanical specifications:

Weight	58.4 lb (26.5 kg)
Dimensions	96 x 11.8 x 6 inches (2438 x 300 x 152 mm)
Wind load Front/Side/Rear Mounting category	at 93 mph (150kph) 286 lbf / 106 lbf / 297 lbf (1270 N) / (470 N) / (1320 N) H (Heavy)
Wind survival rating*	150 mph (240 kph)
Shipping dimensions	104.6 x 12.6 x 7.5 inches (2656 x 320 x 190 mm)
Shipping weight	71.6 lb (32.5 kg)
Mounting	Mounting hardware included for 2 to 4.6 inch (50 to 115 mm) OD masts.

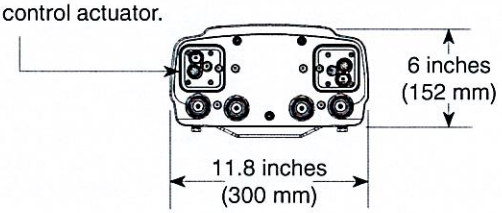


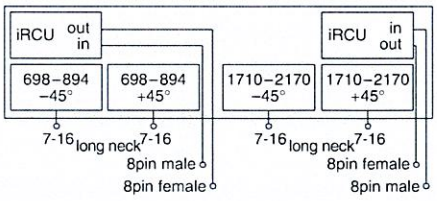
KATHREIN 860 10149

FC Tested To Comply With FCC Standards

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: Refer to part number 860 10149 for the specifications of the remote control actuator.





Order Information:

Model	Description
800 10766	Dualband antenna with mounting bracket 0°–10° // 0°–10° electrical downtilt
800 10766 K	Dualband antenna with mounting bracket and mechanical tilt bracket 0°–10° // 0°–10° electrical downtilt

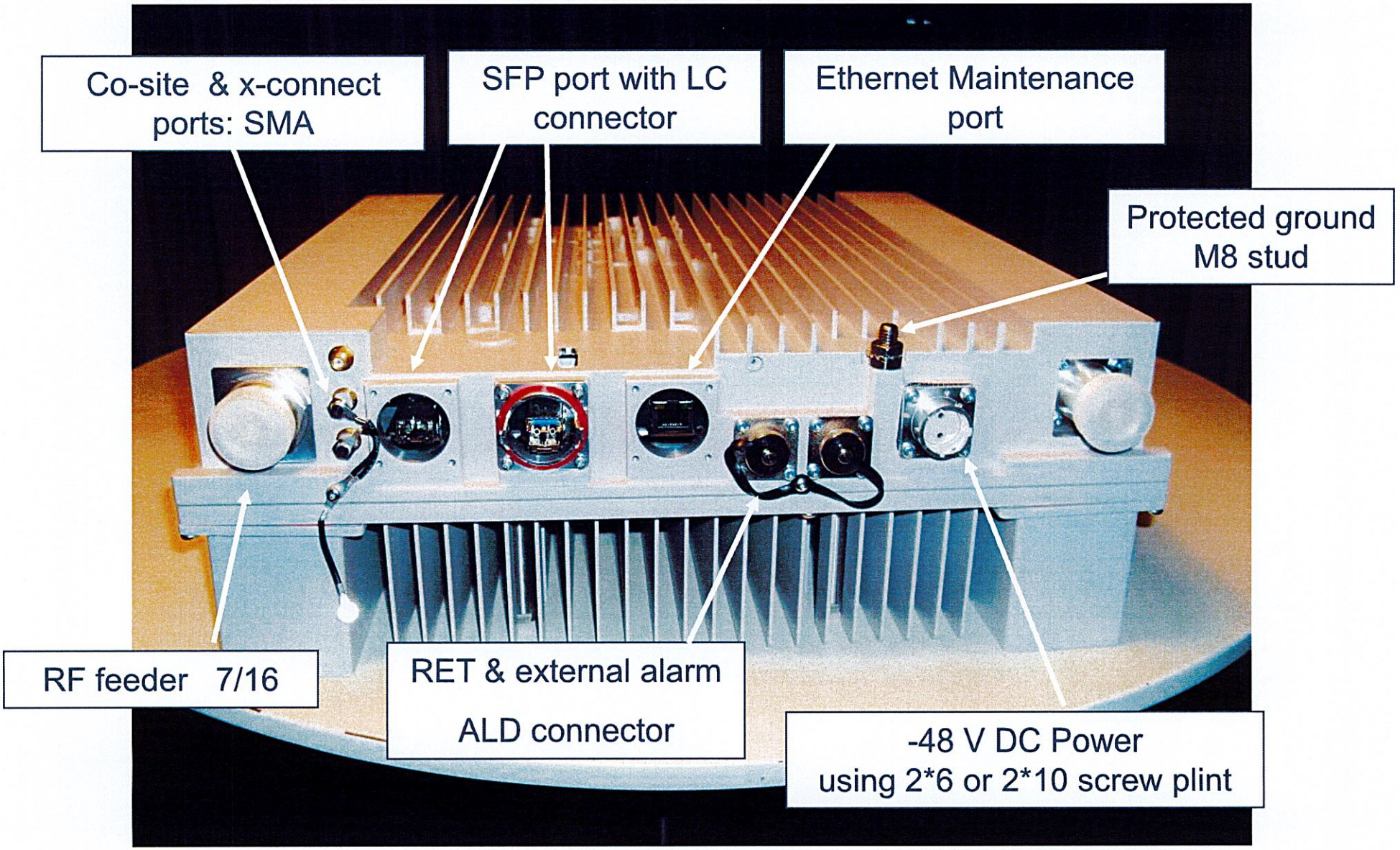
* Mechanical design is based on environmental conditions as stipulated in TIA-222-G-2 (December 2009) and/or ETS 300 019-1-4 which include the static mechanical load imposed on an antenna by wind at maximum velocity. See the Engineering Section of the catalog for further details.

All specifications are subject to change without notice. The latest specifications are available at www.kathrein-scala.com.

Kathrein Inc., Scala Division Post Office Box 4580 Medford, OR 97501 (USA) Phone: (541) 779-6500 Fax: (541) 779-3991
Email: communications@kathrein.com Internet: www.kathrein-scala.com

RRUS-11 I/F

RBS6000



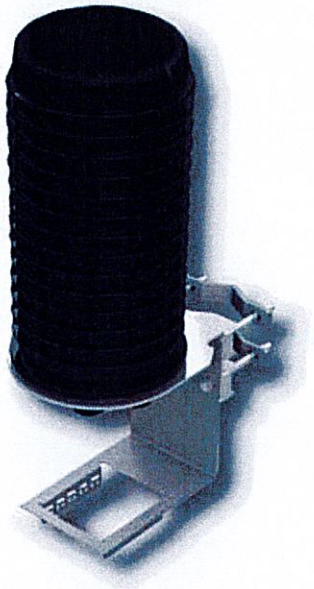
DC6-48-60-18-8F

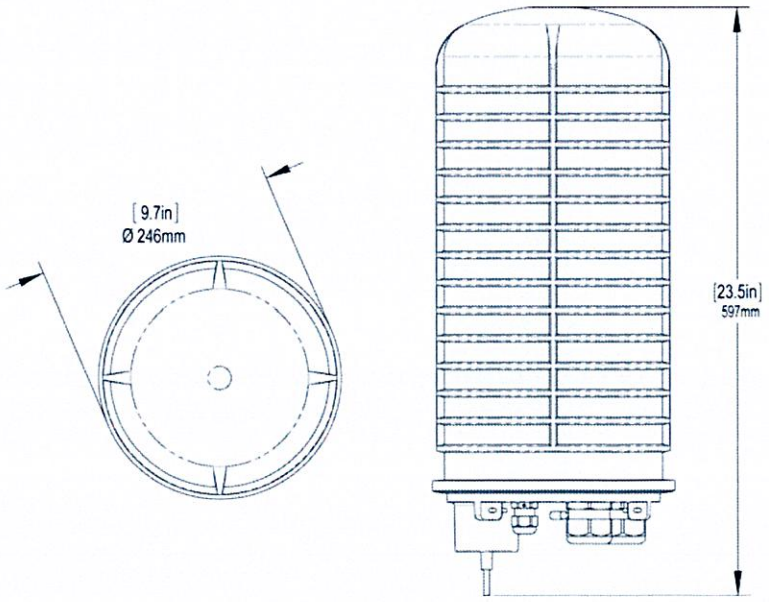
DC Surge Suppression Solution

The DC6-48-60-18 is a dual chambered, DC surge suppression system for use in multi-circuit, Distributed Antenna Systems. The system will protect up to 6 Remote Radio Heads from voltage surges and lightning, and connect up to 18 fiber pairs. The system is enclosed in a NEMA 4 rated, waterproof enclosure.

FEATURES

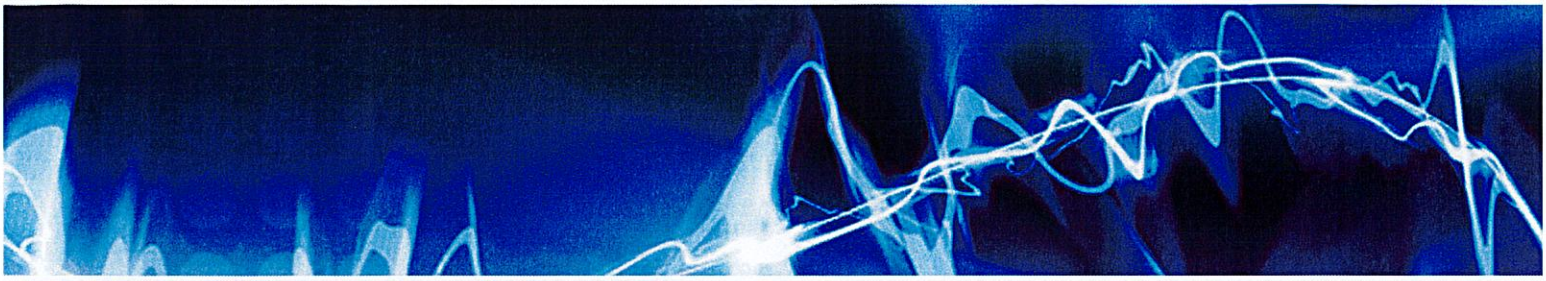
- Protects up to 6 Remote Radio Heads, each with its own protection circuit.
- Flexible design allows for installation at the top of a tower for Remote Radio Head protection.
- Includes fiber connections for up to 18 pairs of fiber.
- LED indicators on individual circuits provide visual indication of suppressor status.
- Form 'C' relays allow for remote monitoring of the suppressor status.
- Patented Strikesorb technology provides over 60 kA of surge current capacity per circuit.
- Strikesorb suppression modules are fully recognized to UL 1449-3rd Edition Safety Standard, meeting all intermediate and high current fault requirements to facilitate use in OEM applications.
- Raycap recommends that DC protection system be installed within 2 meters or 6 feet of the radio.
- Dome design is lightweight and aerodynamic providing maximum flexibility for installation on top of towers.





Raycap

Phone 208.777.1166 Toll Free 800.890.2569 Fax 208.777.4466 www.raycapsurgeprotection.com



DC6-48-60-18-8F

DC Power Surge Protection

Electrical Specifications	
Model Number	DC6-48-60-18-8F
Nominal Operating Voltage	48 VDC
Nominal Discharge Current (I_n)	20 kA 8/20 µs
Maximum Discharge Current (I_{max}) per NEMA LS-1	60 kA 8/20 µs
Maximum Continuous Operating Voltage (U_c)	75 VDC
Voltage Protection Rating	400 V

Mechanical Specifications	
Suppression Connection Method	Compression lug, #2-#14 AWG Copper, #2-#12 Aluminum
Fiber Connection Method	LC-LC Single mode duplex
Environmental Rating	IP 68, 7m 72hrs
Operating Temperature	-40° C to + 80° C
Storage Temperature	-70° C to + 80° C
Cold Temperature Cycling	IEC 61300-2-22e -30° C to + 60° C 200 hrs @ 5 psi
Resistance to Aggressive Materials	CEI IEC 61073-2 including acids and bases
UV Protection	ISO 4892-2 Method A Xenon-Arc 2160 hrs
Weight	20 lbs without Mounting Bracket

STANDARDS

Strikesorb modules are compliant to the following Surge Protection Device (SPD) Standards:

- ANSI/UL 1449 – 3rd Edition
- IEEE C62.41
- NEMA LS-1, IEC 61643-1:2005 2nd Edition:2005
- IEC 61643-12
- EN 61643-11:2002 (including A11:2007)

GS-07F-0435V

Certified to ISO 9001:2000

TÜV Rheinland of North America

Raycap, Inc. 806 W. Clearwater Loop • Post Falls • Idaho • 83854 • USA
Phone 208.777.1166 • Toll Free 800.890.2569 • Fax 208.777.4466 • www.raycapsurgeprotection.com

New Cingular Wireless PCS, LLC
960 Turnpike Street, Suite 28
Canton, MA 02021
Phone: (860) 614-2250
Fax: (617) 249-0819

Andrew Thompson
Real Estate Consultant

November 8, 2011

David Martin
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

Re: Request by New Cingular Wireless PCS, LLC for an Order Approving Shared Use of an Existing Radio Tower at 39 Carmen Hill Road, Brookfield, CT 06804

Mr. Martin:

Enclosed please find the stamped structural report and modification plans for the above mentioned filing. Please let me know if there are any questions.

I apologize for any inconvenience.

Respectfully yours,

Andrew Thompson
Real Estate Consultant

Stainless LLC

1140 Welsh Road, Suite 250
North Wales, PA 19454

DESIGN DRAWINGS
EXISTING G48 TOWER
BROOKFIELD, CT

INDEX

DESCRIPTION	DWG	REV	DATE
GENERAL ARRANGEMENT	D01.00		9/20/2011
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INTERCEPTS & ERECTION TENSIONS	D08.01		9/20/2011
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Rev	Description	Drawn by	Date	Checked by	Date	Reviewed by	Date	Approved by	Date
--	Initial Release	RE	9/20/2011	JC	9/22/11	GH	9/23/11	HP	9/23/11

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Project No.: 361110

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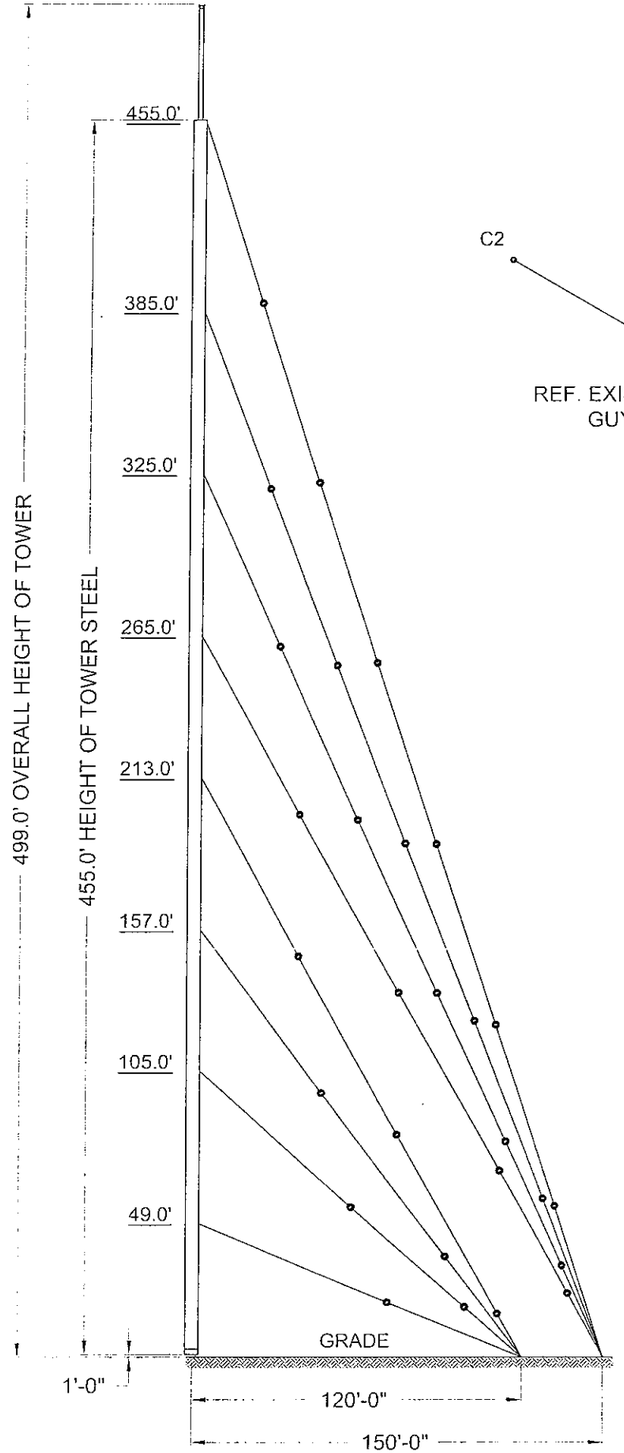
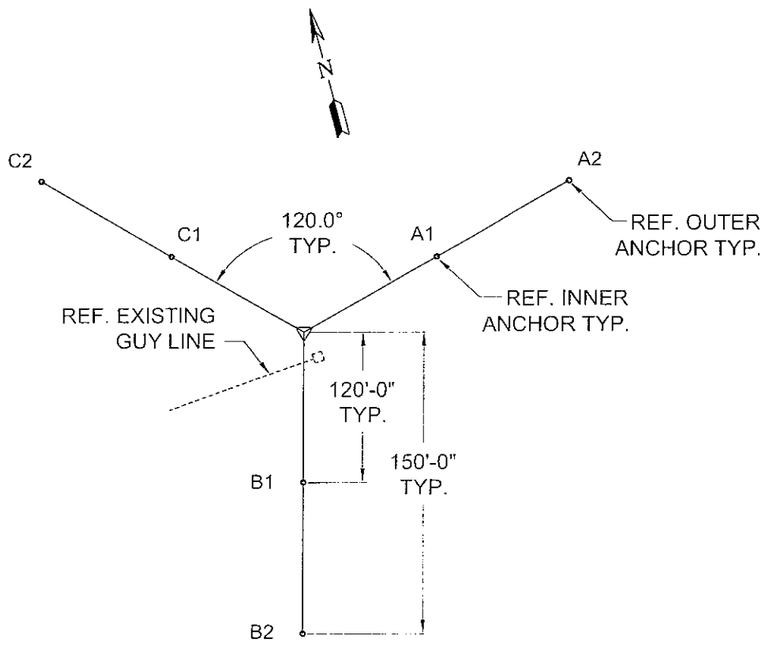
Member since 1995

STATE OF CONNECTICUT
GREGG A. FEHRMAN
No. 27523
LICENSED
PROFESSIONAL ENGINEER

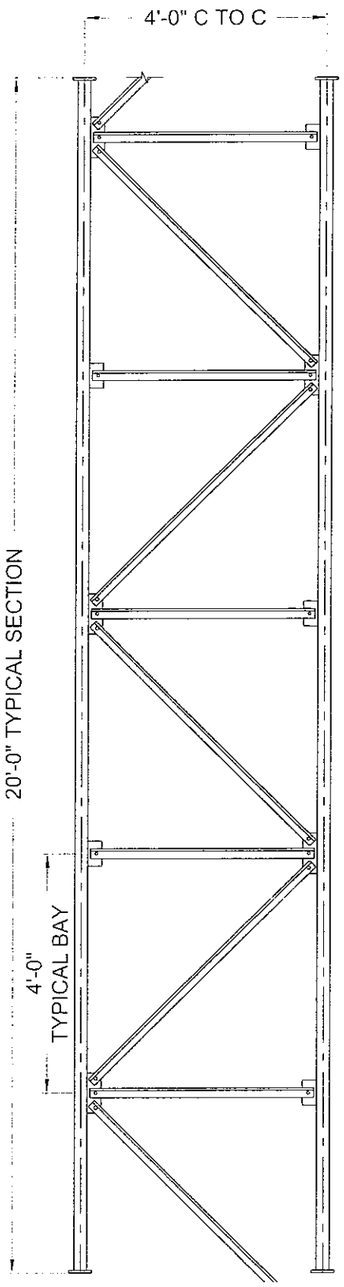
11/7/11



ELEVATION VIEW



PLOT PLAN



TOWER DETAIL

NOTE:
1. SEE PAGE D01.01 FOR GENERAL ARRANGEMENT NOTES.

PREPARED BY	RE 9/20/11
CHECKED BY	9/22/11
ENGINEER REVIEW	9/23/11
PROJECT NUMBER	361110
DRAWING NUMBER	D01.00

REV	BY	DATE	REVISION DESCRIPTION	D.CK	DATE	E.CK	DATE
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Stainless LLC
1140 Welsh Road, Suite 250
North Wales, PA 19454

GENERAL ARRANGEMENT
BROOKFIELD, CT

CERTIFIED BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION TO HAVE THE PERSONNEL, ORGANIZATION, EXPERIENCE, CAPABILITY, AND COMMITMENT MEETING THE REQUIREMENTS OF THE STEEL BUILDING STRUCTURES CATEGORY

CERTIFIED FABRICATOR

1. The tower is a guyed, triangular, partially insulated, open face structure.

2. The tower was analyzed per Stainless LLC Report 361109 dated 6/14/2011 for a basic wind speed of 85 mph with no ice and 31 mph with 1" ice thickness in accordance with ANSI/TIA/EIA 222-F to support the following equipment:

   a. One (1) ERI MP-4C-DA-HW with radome (future) side mounted on a pole at the top of the tower, and fed by one (1) existing 3" line.
   b. One (1) small Yagi antenna at the 458' level, fed by one (1) 7/8" line.
   c. One (1) 6' diameter grid dish at the 438' level, fed by one (1) 7/8" line.
   d. One (1) ERI 2-bay FM antenna at the 380' level, fed by one (1) 1-5/8" line. (Future relocation)
   e. One (1) Andrew 3' diameter dish at the 354' level, fed by one (1) 1/2" line.
   f. One (1) 2' x 6' paraflector on a 5' side arm at the 342' level, fed by one (1) 7/8" line.
   g. One (1) 10' whip antenna on a 4' side arm at the 316' level, fed by one (1) 1-1/4" line.
   h. Three (3) EMS RR901800DP antennas at the 282' level, each fed by two (2) 1-5/8" lines.
   i. One (1) Decibel DB844H90E and eleven (11) EMS RR651802DPL2W antennas mounted on three (3) 12' sector mounts at the 259' level, fed by one (1) 1-5/8" line to each.
   j. One (1) 8' diameter grid dish at the 249' level, fed by one (1) 7/8" line.
   k. One (1) 8' diameter grid dish at the 243' level, fed by one (1) 7/8" line.
   l. Two (2) Andrew VHLP2-18, one (1) VHLP2.5-11 and one (1) VHLP4-11 dish antennas at the 200' level, each fed by one (1) 1/2" line. (Proposed)
   m. Six (6) Powerwave P65-16-XLH-RR and three (3) P65-17-XLH-RR panel antennas on three (3) sector mounts at the 165' level, fed by twelve (12) 1-5/8" lines. Additional lines and equipment at about this level are two (2) Powerwave TT19-08BP111-001 TMAs and two (2) Ericsson RRUS11 remote radio heads per sector, and one (1) Raycap DC6-48-60-18-8F surge suppressor with one (1) 5/8" fiber cable and two (2) 5/8" control cables. (Proposed)
   n. Three (3) Argus LLPX310R panel antennas and three (3) Samsung WiMAX Remote Radio Heads at the 155' level, fed by six (6) 5/16" lines. (Proposed)
   o. One (1) 2-bay dipole antenna on a 4' side arm at the 145' level, fed by one (1) 7/8" line.
   p. One (1) 2-bay dipole antenna on a 4' side arm at the 132' level, fed by one (1) 7/8" line.
   q. One (1) 2-bay dipole antenna on a 4' side arm at the 115' level, fed by one (1) 7/8" line.
   r. Two (2) CA5-FM Yagi antennas on a 6' side arm at the 110' level, fed by one (1) 7/8" line.
   s. Three (3) detuning skirts from the ground to the 250' level.
   t. One (1) 1-1/2" support conduit for the full height of the tower.
   u. One (1) inside climbing ladder with cable type safety device for the full height of the tower.
   v. One (1) FAA red lighting system with circuits contained within one (1) 3/4" conduit for the full height of the tower.

3. In order to achieve a basic wind speed of 85 mph with no ice and 31 mph with 1" ice thickness in accordance with ANSI/TIA/EIA 222-F, the following modifications are required:

   a. Replace existing 7/16" EHS guy wires at Level 2 with new, 9/16" EHS guy wires.
   b. Adjust the initial guy tensions to the following values at 60° F.

Guy level	Tension (kips)
8A	10.8
7A	9.9
6A	6.8
5A	6.8
4A	7.2
3A	2.3
2A	2.8
1A	3.1

   c. Replace the existing diagonal braces with new, higher capacity members at the following bays:

Location	No. of bays
197.0' – 201.0'	1
145.0' – 165.0'	5
101.0' – 129.0'	7

4. Applicable codes and standards are as follows:

   a. ANSI/TIA/EIA 222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, March 1996.
   b. AISC Specification for Structural Steel Buildings, March 2005
   c. RCSC Specification for Structural Joints Using ASTM A325 or A490 Bolts, June 2004.
   d. AWS Structural Welding Code, latest edition.
   e. ASTM A475-03 Standard Specification for Zinc-Coated Steel Wire Strand.
   f. ASTM A36 Standard Specification for Carbon Structural Steel.
   g. ASTM A123 Standard Specification for Zinc (Hot-Dipped Galvanized) Coatings on Iron and Steel Products.

5. All end connection details of replacement members, including guy wires, shall develop the full strength of the member. It shall be the responsibility of the contractor to obtain field dimensions in order to properly design the connections.

6. This contract is for the supply of a design drawing package only, and does not include shop drawings for fabrication purposes. The drawing package will include design information required for the modification materials, however it is anticipated that field verification by others will be necessary in order to complete the shop drawings for fabricating the modification materials.

7. Stainless LLC shall have no liability whatsoever to Customer or to others for any work or services performed by any person other than Stainless LLC in connection with the implementation of these modifications to the tower as recommended by Stainless LLC.

   It is highly recommended that Stainless LLC be contracted with to perform the following functions to ensure that the supply and installation of these modification materials to the tower are in conformity with the requirements as set out in this design drawing package:

   - Shop drawing review
   - Erection drawing review
   - Post-modification installation inspection

8. All material shall be hot dip galvanized after fabrication.

9. The installation drawings contained herein are based on the assumption that the tower has been properly installed and maintained, including, but not limited to the following:

   a. Proper alignment and plumbness.
   b. Correct guy tensions.
   c. Correct bolt tightness.
   d. No significant deterioration or damage to any component.

PREPARED BY	AP 8/31/2011
CHECKED BY	
ENGINEER REVIEW	9/23/11
PROJECT NUMBER	361110
DRAWING NUMBER	D01.01

REV	BY	DATE	D.CK	DATE	E.CK	DATE

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Stainless LLC
1140 Welsh Road, Suite 250
North Wales, PA 19454

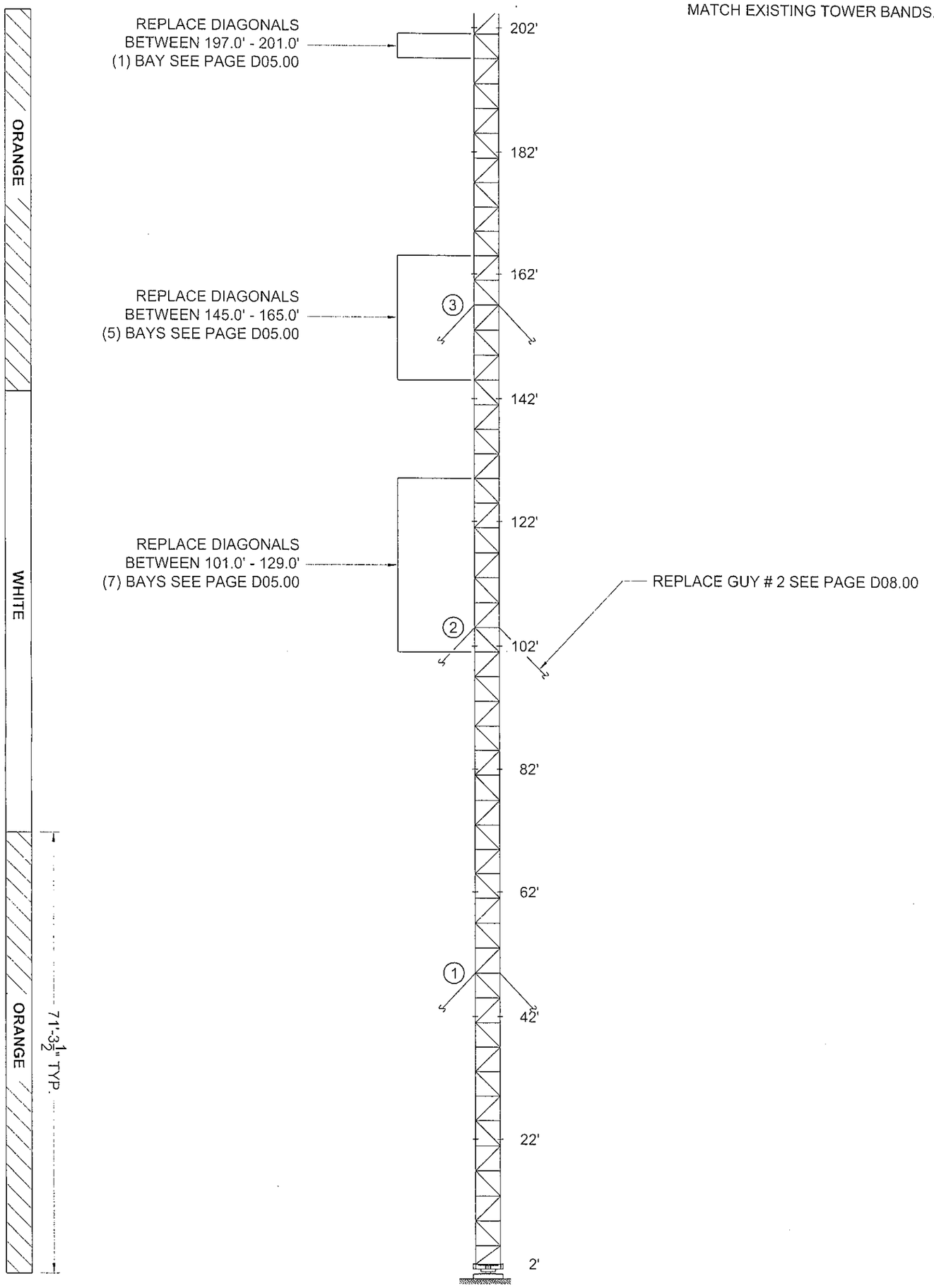
GENERAL ARRANGEMENT NOTES

BROOKFIELD, CT

CERTIFIED BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION TO HAVE THE PERSONNEL, ORGANIZATION, EXPERIENCE, CAPABILITY, AND COMMITMENT MEETING THE REQUIREMENTS OF THE STEEL BUILDING STRUCTURES CATEGORY

CERTIFIED STEEL FABRICATOR

NOTE:
1. PAINT NEW TOWER MATERIAL TO MATCH EXISTING TOWER BANDS.



PAINT SCHEDULE | DIAGONAL REPLACEMENT | GUY LEVELS | FLANGE ELEVATION

Stainless LLC
1140 Welsh Road, Suite 250
North Wales, PA 19454

TOWER PROFILE
BROOKFIELD, CT

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PREPARED BY	RE	9/20/11
CHECKED BY	SC	9/22/11
ENGINEER REVIEW	AP	9/22/11
PROJECT NUMBER	361110	
DRAWING NUMBER	D04.00	

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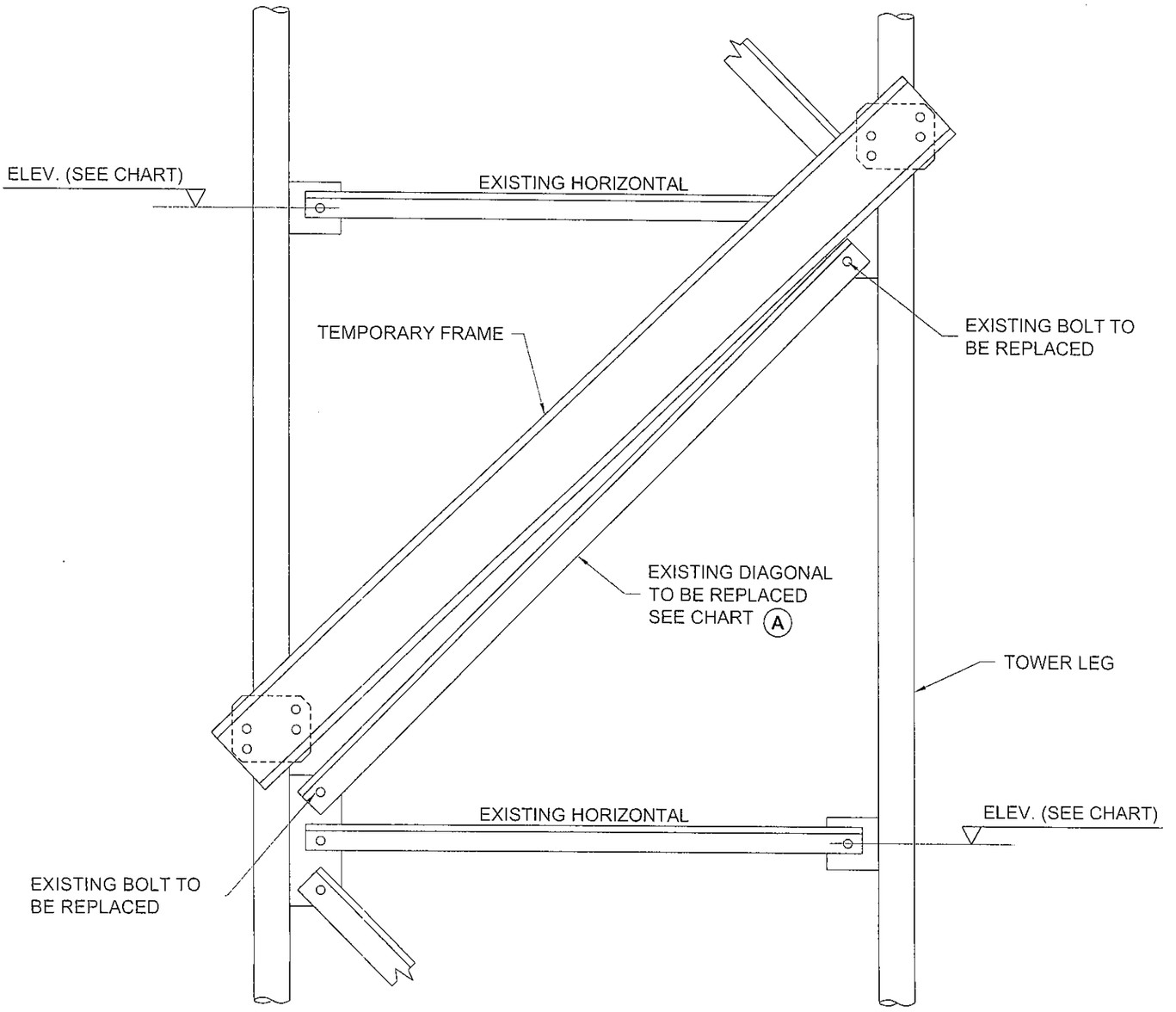

ELEVATION VIEW

DIAGONAL REPLACEMENTS			
ELEV.	BAYS	(A)	MAX DESIGN LOAD IN MEMBER
197.0' - 201.0'	1	L 2" x 2" x 1/4" A36	8.1 KIPS
145.0' - 165.0'	5	L 2" x 2" x 1/4" A36	8.1 KIPS
101.0' - 129.0'	7	L 2" x 2" x 1/4" A36	8.1 KIPS

NOTES:

1. A TEMPORARY FRAME MUST BE DESIGNED TO MAINTAIN THE STRUCTURAL INTEGRITY OF THE TOWER. THE FRAME SHALL BE INSTALLED PRIOR TO REMOVING ANY TOWER MEMBER UTLIZING THE FOLLOWING PROCEDURE:
   a. INSTALL TEMPORARY FRAME AT THE LOCATION THE DIAGONAL IS TO BE REPLACED.
   b. REMOVE AND REPLACE DIAGONAL ON FACE AND IN BAY THAT TEMPORARY FRAME IS INSTALLED.
   c. REMOVE AND REPLACE ONLY ONE MEMBER AT A TIME.
   d. REPEAT THIS PROCEDURE FOR EACH TOWER FACE.
2. REPEAT THIS PROCEDURE AT ALL LOCATIONS WHERE DIAGONALS ARE TO BE REPLACED.
3. FIELD VERIFY DIMENSIONS AND END CONNECTION DETAILS PRIOR TO FABRICATION OF REPLACEMENT DIAGONALS. SEE NOTE 5 ON DRAWING D01.01.

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TEMP. FRAME - DIAG. REPLACEMENTS
BROOKFIELD, CT

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PREPARED BY	RE	9/20/11
CHECKED BY	JC	9/22/11
ENGINEER REVIEW	AP	9/23/11
PROJECT NUMBER	361110	
DRAWING NUMBER	D05.00	

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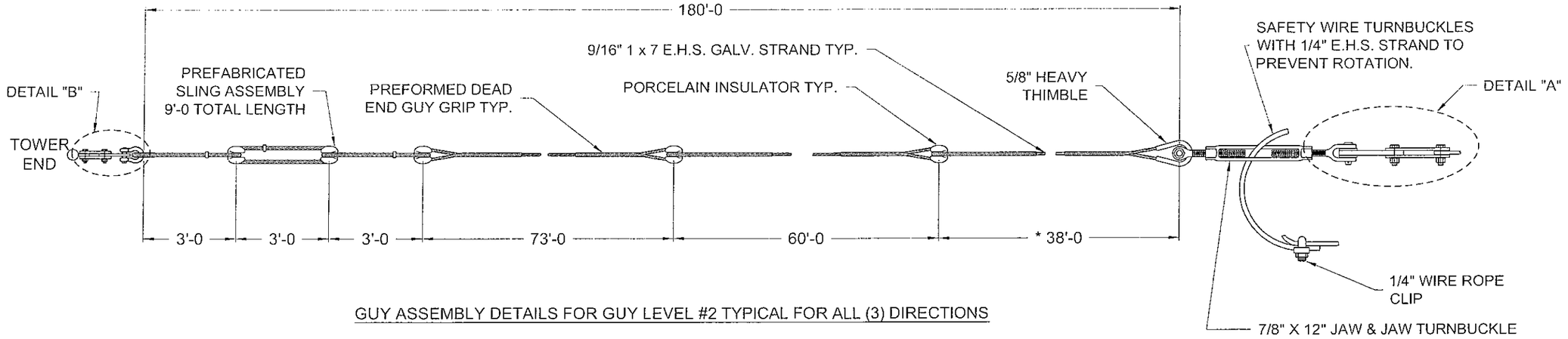
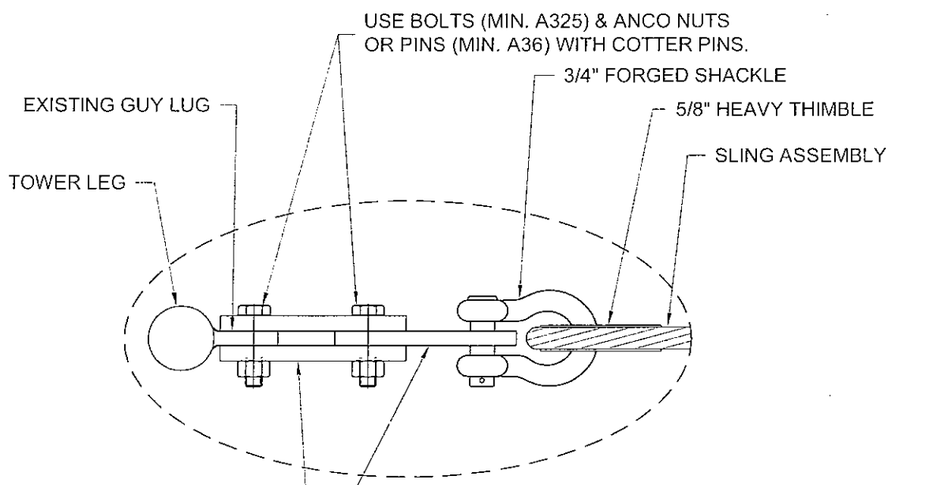
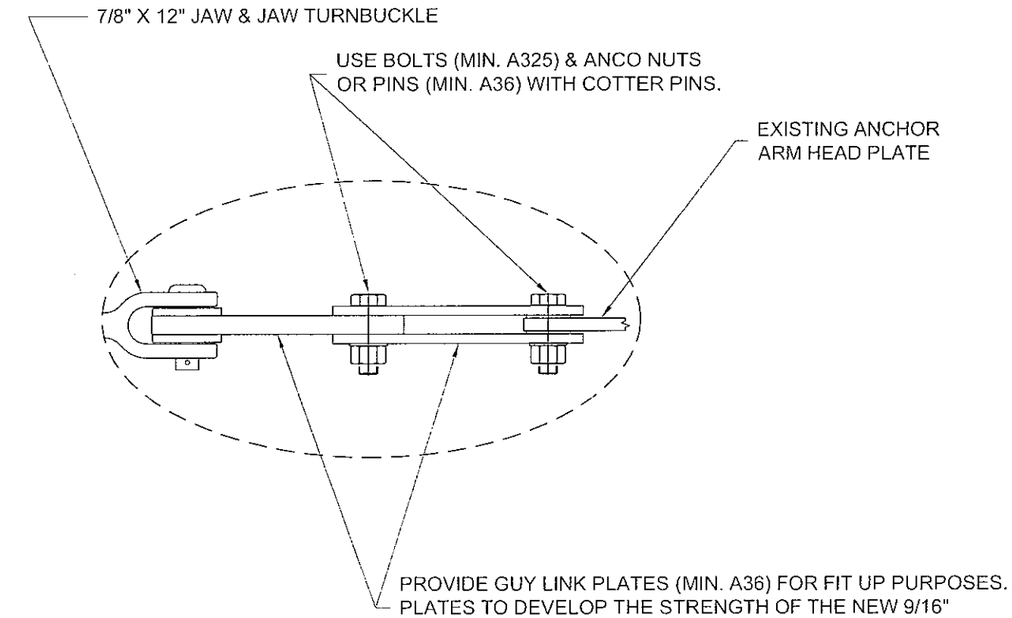


GUY ASSEMBLY DETAILS FOR GUY LEVEL #2 TYPICAL FOR ALL (3) DIRECTIONS



DETAIL "B"



DETAIL "A"

NOTES:
1. ALL GUYS ARE E.H.S. STRAND.
2. ALL DEADEND PREFORMED GUY GRIPS ARE FOR E.H.S. STRAND (LHL).
3. THE (3) INSULATORS NEXT TO THE TOWER ARE INSTALLED IN THE PREFABRICATED SLING ASSEMBLY.
4. * INCLUDES EXTRA 15 FT. OF STRAND FOR TAKEUP.
5. SEE PAGE D08.01 FOR INTERCEPTS AND TENSIONS.
6. FIELD VERIFY EXISTING END DETAILS AT ANCHOR PLATE AND GUY LUG. SEE NOTE 5 ON DRAWING D01.01.
7. ALL GUY WIRES INCLUDE INSTALLATION OF PROPERLY SIZED DAMPERS.

PREPARED BY	9/20/11
RE	JC 9/22/11
CHECKED BY	
ENGINEER REVIEW	AP 9/23/11
PROJECT NUMBER	361110
DRAWING NUMBER	D08.00

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REVISION DESCRIPTION

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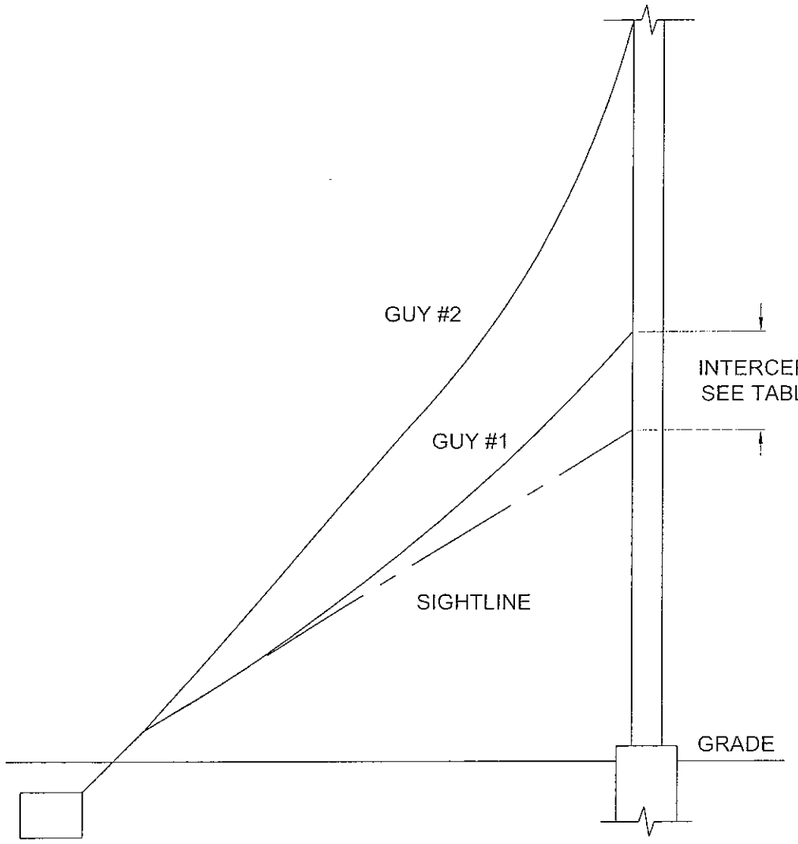
Stainless LLC
1140 Welsh Road, Suite 250
North Wales, PA 19454

EHS GUY ASSEMBLIES
BROOKFIELD, CT

CERTIFIED BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION TO HAVE THE PERSONNEL, ORGANIZATION, EXPERIENCE, CAPABILITY, AND COMMITMENT MEETING THE REQUIREMENTS OF THE STEEL BUILDING STRUCTURES CATEGORY

CERTIFIED FABRICATOR

	0 DEG. F		30 DEG. F		60 DEG. F		100 DEG. F	
	ERECT. TENSION (LBS)	INTER-CEPT (FT)	ERECT. TENSION (LBS)	INTER-CEPT (FT)	ERECT. TENSION (LBS)	INTER-CEPT (FT)	ERECT. TENSION (LBS)	INTER-CEPT (FT)
1A	3873	0.9	3485	1.0	3100	1.2	2590	1.4
2A	3545	3.4	3164	3.8	2800	4.3	2350	5.1
3A	2698	4.2	2498	4.5	2300	4.9	2045	5.5
4A	7965	7.7	7584	8.0	7200	8.4	6707	9.0
5A	7529	12.6	7162	13.2	6800	13.9	6342	14.9
6A	7327	18.0	7062	18.6	6800	19.3	6468	20.2
7A	10432	23.6	10167	24.2	9900	24.8	9568	25.7
8A	11217	28.2	11013	28.6	10800	29.2	10545	29.8



ELEVATION VIEW

NOTES:

1. DURING THE INITIAL GUY TENSIONING PROCEDURES AND AT THE TIME OF INSPECTION, THE GUY TENSIONS AND/OR INTERCEPTS SHOULD BE IN ACCORDANCE WITH THE VALUES SHOWN ABOVE. USE THE TEMPERATURE WHICH ACTUALLY EXISTS AT THE TIME THE TENSION IS BEING CHECKED. FOR TEMPERATURES OTHER THAN THOSE SHOWN ABOVE, INTERPOLATE OR EXTRAPOLATE OTHER VALUES.
2. TOWER PLUMBING AND INITIAL TENSIONING OF GUYS SHOULD BE DONE ONLY IN CALM WEATHER AND WITH NO ICE ON GUYS.
3. USE INTERCEPTS AND TENSIONS IN GUY DIRECTION "A" ONLY.
4. GUY #1 IS BOTTOM GUY; GUY #2 IS NEXT, ETC.
5. USE SIGHT BAR FOR DETERMINING GUY INTERCEPTS.
6. TENSION AND/OR INTERCEPT TOLERANCES +/- 5%.

PREPARED BY: 9/21/11
CHECKED BY: RE 9/22/11
ENGINEER REVIEW: MP 9/23/11
PROJECT NUMBER: 361110
DRAWING NUMBER: D08.01

REVISION DESCRIPTION

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Stainless LLC
1140 Welsh Road, Suite 250
North Wales, PA 19454

INTERCEPTS & ERECTION TENSIONS
BROOKFIELD, CT

CERTIFIED BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION TO HAVE THE PERSONNEL ORGANIZATION, EXPERIENCE, CAPABILITY, AND COMMITMENT TO MEET THE REQUIREMENTS OF THE STEEL BUILDING STRUCTURES CATEGORY.

CERTIFIED FABRICATOR

I. TIGHTENING OF BOLTS AND NUTS

A. All bolts are A-325 high strength bolts with Anco nuts, except U-bolts.

B. All A325 high strength bolts shall be tightened by "snug tightening" method as specified in the current edition of "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS" except for locations as specified in the preceding erection drawings where they shall be tightened using the "turn of the nut" method.

II. INSTALLING GUYS AND PLUMBING LINES

A. The tower is designed for the initial tensions as specified in the design drawings. It is important that the guys be tensioned, accurately to assure the stiffness of the tower.

B. Uneven terrain, temperature, plumbness of tower and wind are factors which affect guy tensions. If the tower is level and anchor distances are equal, the tensions in all three guys at a level will be equal when the tower is plumb. If the terrain of the tower site is uneven, the guys are not perfectly symmetrical and tensions in guys vary in the three directions. For this reason initial guy tensions are specified in one direction only. The tower should be plumbed with the specified tensions in the given guy direction.

C. Wind load on tower and guys changes the tension in all guys; therefore, plumb the tower in calm weather only.

D. When installing guys, all three permanent guys should be fastened to tower first. Then ALL GUYS SHOULD BE PULLED TO THE ANCHORS SIMULTANEOUSLY.

E. Temporary guys shall be provided during the process of replacing the permanent guy wires.

F. The plumbing of a tower or checking alignment of a tower shall be performed in accordance with Annex E of ANSI/TIA/EIA Standard 222-F

III. INSTALLATION

A. All work shown on these drawings shall be performed by a contractor who is qualified and experienced in tower installation work.

B. Contractor shall verify all dimensions, elevations and existing field conditions prior to fabricating or installing tower modification items.

C. Contractor shall observe safe construction practices and shall be responsible for all methods of construction, including proper and adequate bracing to the tower during the installation process. A temporary bracing frame shall be provided before any tower diagonal member is removed and replaced.

IV. TOWER PAINTING

A. The tower modification material shall be painted with International Orange and White in accordance with FAA Specifications and the Construction Permit (Refer to Dwg. D04.00). This includes all tower structural members and coaxial cable, conduits and other cables attached to the face of the tower. It does not include the tower ladder nor conduits and cables located in the interior of the tower. Paint to be supplied by the erector.

B. Painting can be performed in either of two ways.
1. On the ground prior to erection.
2. After tower is erected.

C. If method 1 is followed, all paint damage shall be repaired and touched up after assembly and erection of tower.

D. Painting should never be performed when temperature is below 45° Fahrenheit or when the steel is wet from rain or condensation.

E. All paint shall be applied on clean surfaces. Paint shall be applied smoothly, to a uniform thickness and without voids, pin holes, brush marks, laps, runs or other defects.

PREPARED BY	AP
CHECKED BY	
ENGINEER REVIEW	
PROJECT NUMBER	361110
DRAWING NUMBER	D10.00

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Stainless LLC
1140 Welsh Road, Suite 250
North Wales, PA 19454

ERECTION NOTES

BROOKFIELD, CT

CERTIFIED BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION TO HAVE THE PERSONNEL, ORGANIZATION, EXPERIENCE, CAPABILITY, AND COMMITMENT TO MEETING THE REQUIREMENTS OF THE STEEL BUILDING STRUCTURES CATEGORY

CERTIFIED FABRICATOR

Stainless LLC

REPORT 361109

DATE: 6/14/2011

STRUCTURAL ANALYSIS

FOR A 499' G-48 GUYED TOWER

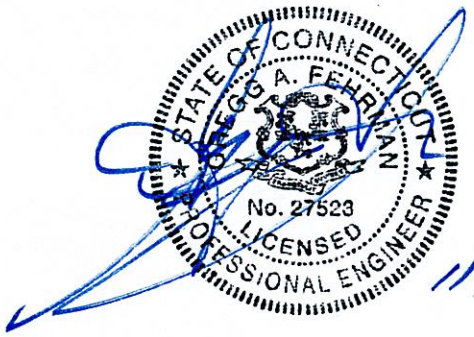
BROOKFIELD, CONNECTICUT

PREPARED BY: AP

CHECKED BY: TL

APPROVED: AP 6/15/11

GAF 6/17/11



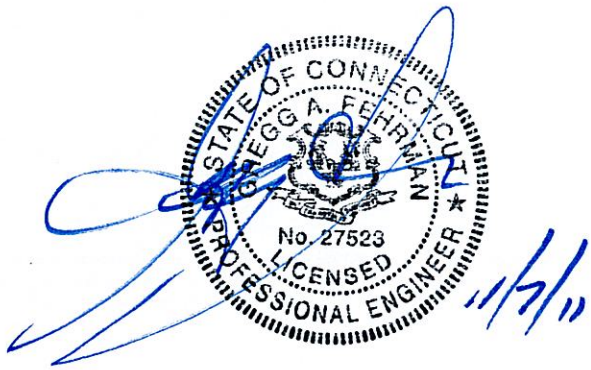
11/7/11

Date	Sections	Remarks

Rev.	Date	Description

SECTION PAGE

APPENDIX



Rev.	Date	Description

A. AUTHORIZATION/PURPOSE

As authorized by Andrew Thompson, authorized representative of SAI Communications, Inc. a structural analysis was performed to investigate the adequacy of a 499' G-48 guyed tower in Brookfield, Connecticut to support specified equipment.

B. TOWER HISTORY

The tower was originally designed and furnished in 1995 by Stainless, Inc. It was designed in accordance with ANSI/EIA/TIA Standard 222-E for a basic wind speed of 85 mph with no ice and 73.6 mph with 1/2" radial ice thickness while supporting the following equipment:

1. One (1) ERI FML half-wave 4-bay antenna with radome side mounted on a pole at the top of the tower, and fed by one (1) 3" line.
2. One (1) 1-bay FM antenna at the 245' level, fed by one (1) 3" line.
3. Thirty (30) whip antennas on 6-position mounts and distributed as follows: six (6) each at the following levels: 430', 390', 350', 310', and 270'. Each antenna is fed by either a 7/8" or 1-5/8" line.
4. Three (3) 10' diameter grid dishes at the 220' level, each fed by one (1) 1-5/8" line.
5. One (1) three-wire detuning skirt from the ground to the 250' level.
6. One (1) inside climbing ladder with cable type safety device for the full height of the tower.
7. One (1) FAA red lighting system with circuits contained within one (1) 3/4" conduit for the full height of the tower.

Stainless LLC does not have any records of any structural modifications performed on the tower or its foundations since its original installation. For this analysis, Stainless LLC assumed the tower members and foundations remain as they were originally designed and built in 1995.

C. CONDITIONS INVESTIGATED

The analysis was performed for the tower supporting specified equipment based on the following sources:

- Stainless LLC Structural Analysis Report No. 361108 dated 9/29/2010.
- Stainless LLC Contract Proposal P11_3611_01 dated 5/10/2011.
- Emails from Andrew Thompson to Dave Bodossian of Stainless LLC dated 6/1/2011 and 6/2/2011, detailing existing and proposed equipment and final elevation of the radiation centers of the proposed panel antennas.

Rev.	Date	Description

1. One (1) ERI MP-4C-DA-HW with radome (**future**) side mounted on a pole at the top of the tower, and fed by one (1) existing 3" line.
2. One (1) small Yagi antenna at the 458' level, fed by one (1) 7/8" line.
3. One (1) 6' diameter grid dish at the 438' level, fed by one (1) 7/8" line.
4. One (1) ERI 2-bay FM antenna at the 380' level, fed by one (1) 1-5/8" line. (**Future relocation**)
5. One (1) Andrew 3' diameter dish at the 354' level, fed by one (1) 1/2" line.
6. One (1) 2' x 6' paraflector on a 5' side arm at the 342' level, fed by one (1) 7/8" line.
7. One (1) 10' whip antenna on a 4' side arm at the 316' level, fed by one (1) 1-1/4" line.
8. Three (3) EMS RR901800DP antennas at the 282' level, each fed by two (2) 1-5/8" lines.
9. One (1) Decibel DB844H90E and eleven (11) EMS RR651802DPL2W antennas mounted on three (3) 12' sector mounts at the 259' level, fed by one (1) 1-5/8" line to each.
10. One (1) 8' diameter grid dish at the 249' level, fed by one (1) 7/8" line.
11. One (1) 8' diameter grid dish at the 243' level, fed by one (1) 7/8" line.
12. Two (2) Andrew VHLP2-18, one (1) VHLP2.5-11 and one (1) VHLP4-11 dish antennas at the 200' level, each fed by one (1) 1/2" line. (**Proposed**)
13. Six (6) Powerwave P65-16-XLH-RR and three (3) P65-17-XLH-RR panel antennas on three (3) sector mounts at the 165' level, fed by twelve (12) 1-5/8" lines. Additional lines and equipment at about this level are two (2) Powerwave TT19-08BP111-001 TMAs and two (2) Ericsson RRUS11 remote radio heads per sector, and one (1) Raycap DC6-48-60-18-8F surge suppressor with one (1) 5/8" fiber cable and two (2) 5/8" control cables. (**Proposed**)
14. Three (3) Argus LLPX310R panel antennas and three (3) Samsung WiMAX Remote Radio Heads at the 155' level, fed by six (6) 5/16" lines. (**Proposed**)
15. One (1) 2-bay dipole antenna on a 4' side arm at the 145' level, fed by one (1) 7/8" line.
16. One (1) 2-bay dipole antenna on a 4' side arm at the 132' level, fed by one (1) 7/8" line.
17. One (1) 2-bay dipole antenna on a 4' side arm at the 115' level, fed by one (1) 7/8" line.
18. Two (2) CA5-FM Yagi antennas on a 6' side arm at the 110' level, fed by one (1) 7/8" line.
19. Three (3) detuning skirts from the ground to the 250' level.
20. One (1) 1-1/2" support conduit for the full height of the tower.

Rev.	Date	Description

21. One (1) inside climbing ladder with cable type safety device for the full height of the tower.

22. One (1) FAA red lighting system with circuits contained within one (1) 3/4" conduit for the full height of the tower.

The locations of the existing transmission lines were based upon Stainless LLC Report No. 361108 dated 9/29/2010. The locations of the proposed transmission lines were assumed in order to minimize wind load on the tower. The locations of all transmission lines are shown on page A-2 of this Report. Deviating from these appurtenance arrangements will invalidate the results presented in this Report.

D. LOADS AND STRESSES

The analysis was performed using a basic wind speed of 85 mph with no ice and 31 mph with 1" radial ice thickness. This load was calculated and applied in accordance with the provisions of ANSI/TIA/EIA Standard 222-F, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, effective March 29, 1996.

Allowable unit stresses and minimum safety factors used to evaluate the adequacy of the structure were also in accordance with this TIA/EIA Standard.

E. METHOD OF ANALYSIS

The analysis was performed using Stainless LLC's Beam-Column Analysis Program, a computer operation which idealizes the tower as a continuous beam-column on non-linear, elastic supports (guys) subject to simultaneous transverse (wind) and axial (dead, ice and vertical components of guy tensions) loads.

F. RESULTS

The tables presented below show the maximum percentage stress levels in each tower span:

LOCATION	TOWER COMPONENTS	% OF CAPACITY
Span 8 (Top)	Vertical members	58.2
	Diagonal members	62.7
	Guy wires	65.9
Span 7	Vertical members	88.5
	Diagonal members	50.6
	Guy wires	59.6

Rev.	Date	Description

Span 6	Vertical members	90.8
	Diagonal members	53.2
	Guy wires	64.1
Span 5	Vertical members	51.9
	Diagonal members	78.6
	Guy wires	72.4
Span 4	Vertical members	67.7
	Diagonal members	**146.8** (Fail)
	Guy wires	84.2
Span 3	Vertical members	73.7
	Diagonal members	**170.6** (Fail)
	Guy wires	**113.4** (Fail)
Span 2	Vertical members	77.2
	Diagonal members	**166.6** (Fail)
	Guy wires	**128.8** (Fail)
Span 1 (Bottom)	Vertical members	77.2
	Diagonal members	93.4
	Guy wires	102.9*

* Stress levels of up to 105% are considered acceptable by industry standards.

G. CONCLUSIONS AND RECOMMENDATIONS

Based on the preceding results, the following conclusions may be drawn:

1. The tower, supporting the equipment as specified in Section C above, is not adequate to achieve a basic wind speed of 85 mph with no ice and 31 mph with 1" radial ice thickness in accordance with the provisions of ANSI/TIA/EIA Standard 222-F.
2. In order for the tower to achieve a basic wind speed of 85 mph with no ice and 31 mph with 1" radial ice thickness in accordance with the provisions of ANSI/TIA/EIA Standard 222-F, the following modifications are required.
   a. Replace Level 2 existing 7/16" EHS guy wires with new, 9/16" EHS wires.
   b. Adjust the initial tensions in all guy levels to the following values at 60^0 F:

Guy Level	**Tension (kips)**
8 (Top)	10.8
7	9.9

Rev.	Date	Description

Guy Level	Tension (kips)
6	6.8
5	6.8
4	7.2
3	2.3
2	2.8
1	3.1

c. Replace the existing diagonal braces with new, higher capacity members at the following locations:

Location	No. of Bays
197.0' – 201.0'	1
145.0' – 165.0'	5
101.0' – 129.0'	7

3. The tables presented below show the maximum percentage stress levels in each tower span after the modifications listed above have been implemented:

LOCATION	TOWER COMPONENTS	% OF CAPACITY
Span 8 (Top)	Vertical members	56.9
	Diagonal members	60.2
	Guy wires	65.9
Span 7	Vertical members	86.0
	Diagonal members	57.0
	Guy wires	64.4
Span 6	Vertical members	88.3
	Diagonal members	59.6
	Guy wires	65.6
Span 5	Vertical members	55.4
	Diagonal members	75.8
	Guy wires	72.1
Span 4	Vertical members	63.9
	Diagonal members	65.1
	Guy wires	81.4
Span 3	Vertical members	67.6
	Diagonal members	66.2
	Guy wires	99.3

Rev.	Date	Description

Span 2	Vertical members	62.9
	Diagonal members	96.8
	Guy wires	100.0
Span 1 (Bottom)	Vertical members	62.9
	Diagonal members	64.3
	Guy wires	91.3

After all the recommended modifications to the tower have been done, the overall capacity rating of the tower is 100.0%.

4. It should be noted that Revision G of ANSI/TIA Standard 222 became effective January 1, 2006. This revision contains substantial changes from previous 222 standards. It is our opinion that the existing tower structure, with equipment as specified in section C of this report, would not be adequate for the minimum recommended requirements shown below for the Brookfield, Connecticut area:

   - Structure Classification II
   - 3-second gust basic wind speed of 90 mph with no ice
   - 3-second gust basic wind speed of 40 mph with 3/4 inch design ice thickness
   - Exposure Category C
   - Topographic Category 1
   - 0.3 earthquake spectral response acceleration at short periods (S_s)
   - Earthquake Site Class D

   The estimated 3-second gust basic wind speed and basic design ice thickness at which no overstresses occur are 70 mph with no ice and 40 mph with 3/4 inch design ice thickness.

   Please note that the opinion stated above is based on a preliminary review to identify the overall impact and/or feasibility of the proposed changed condition. Final acceptance of this changed condition must be based upon a rigorous structural analysis. Do not proceed with implementing this changed condition without first performing a rigorous structural analysis.

H. PROVISIONS OF ANALYSIS

The analysis performed and the conclusions contained herein are based on the assumption that the tower has been properly installed and maintained, including, but not limited to the following:

1. Proper alignment and plumbness.
2. Correct guy tensions.
3. Correct bolt tightness.
4. No significant deterioration or damage to any component.

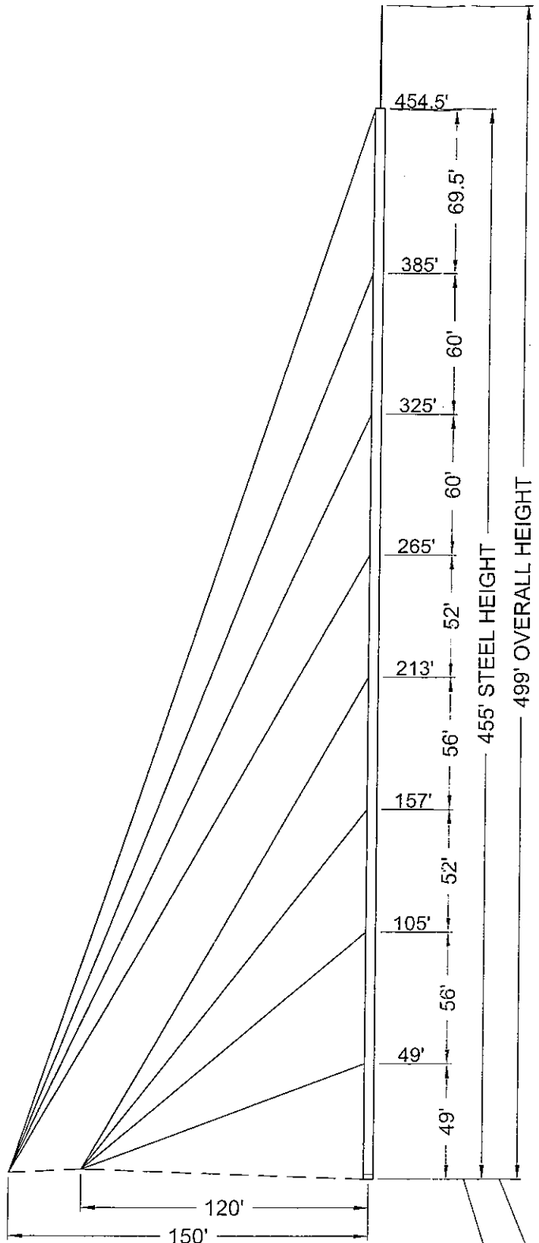
Rev.	Date	Description

Furthermore, the information and conclusions contained in this Report were determined by application of the current "state-of-the-arts" engineering and analysis procedures and formulae, and Stainless LLC assumes no obligations to revise any of the information or conclusions contained in this Report in the event that such engineering and analysis procedures and formulae are hereafter modified or revised. In addition, under no circumstances will Stainless LLC have any obligation or responsibility whatsoever for or on account of consequential or incidental damages sustained by any person, firm or organization as a result of any information or conclusions contained in the Report, and the maximum liability of Stainless LLC, if any, pursuant to this Report shall be limited to the total funds actually received by Stainless LLC for preparation of this Report.

Customer has requested Stainless LLC to prepare and submit to Customer an engineering analysis with respect to the Subject Tower and has further requested Stainless LLC to make appropriate recommendations regarding suggested structural modifications and changes to the Subject Tower. In making such request of Stainless LLC, Customer has informed Stainless LLC that Customer will make a determination as to whether or not to implement any of the changes or modifications which may be suggested by Stainless LLC and that Customer will have any such changes or modifications made by riggers, erectors and other subcontractors of Customer's choice.

Customer hereby agrees and acknowledges that Stainless LLC shall have no liability whatsoever to Customer or to others for any work or services performed by any persons other than Stainless LLC in connection with the implementation of any structural changes or modifications recommended by Stainless LLC including but not limited to any services rendered for Customer or for others by riggers, erectors or other subcontractors. Customer acknowledges and agrees that any riggers, erectors or subcontractors retained or employed by Customer shall be solely responsible to Customer and to others for the quality of work performed by them and that Stainless LLC shall have no liability or responsibility whatsoever as a result of any negligence or breach of contract by any such rigger, erector or subcontractor.

DISCRETE APPURTENANCES			ELEV.
1.	1	TOP BEACON	496.5'
2.	1	TOP POLE	475'
3.	1	ERI MP-4C-DA-HW	475'
4.	1	SMALL YAGI	458'
5.	1	ANTENNA POLE PLATFORM	455'
6.	1	TRANSFER PLATFORM	446'
7.	1	(1)6' DIA. DISH (350 MHZ)	438'
8.	1	ERI 2-BAY FM	380'
9.	1	(1)3' DIA. STD M/W DISH	354'
10.	1	2' x 6' PARAFLECTOR W/MT	342'
11.	1	10' WHIP W/MT	316'
12.	3	EMS RR-901800DP	282'
13.	3	(4)EMS RR651802 ON 12'SM	259'
14.	2	BEACON	250'
15.	1	(1)8' GRID DISH (350 MHZ)	249'
16.	1	(1)8' GRID DISH (350 MHZ)	243'
17.	1	(4) ANDREW MW ANTS (PROP)	200'
18.	1	(12) PANEL ANTS W/ TMA (P)	165'
19.	3	ARGUS LLPX310R ANTS (PROP)	155'
20.	1	2-BAY FM W/MT	145'
21.	1	2-BAY FM W/MT	132'
22.	1	2-BAY FM W/MT	115'
23.	1	(2) YAGI ON 6' SA	110'



LINEAR APPURTENANCES

- (1) 16-3/4"LADDER-3/4"VERTICAL
- (1) TULITO DEVICE
- (1) 3/4 CONDUIT
- (1) 1-1/2 CONDUIT
- (1) 3" AIR HELIAX
- (1) 7/8" AIR HELIAX
- (1) 7/8" AIR HELIAX
- (1) 1-5/8" AIR HELIAX
- (1) 1/2" AIR HELIAX
- (1) 7/8" AIR HELIAX
- (1) 1-1/4" FOAM HELIAX
- (6) 1-5/8" AIR HELIAX
- (12) 1-5/8" AIR HELIAX
- (1) 7/8" AIR HELIAX
- (1) 7/8" AIR HELIAX
- (1) 7/8" AIR HELIAX
- (1) 7/8" AIR HELIAX
- (1) 7/8" AIR HELIAX
- (6) DETUNNING SKIRT
- (4) 1/2" HELIAX (PROPOSED)
- (6) 5/16" LINES (PROPOSED)
- (12) 1-5/8" LINES (PROPOSED)
- (3) 5/8" CABLES (PROP)

TOWER TYPE: G-45
STD: EIA/TIA-222-F
LOAD CASE(S)
85 MPH BASIC WIND SPEED WITH NO ICE
31 MPH BASIC WIND SPEED WITH 1" BASIC RADIAL ICE THICKNESS

PREPARED BY	AP	6/7/2011	
CHECKED BY			
ENGINEER REVIEW			
PROJECT NUMBER	361109		
DRAWING NUMBER	A-1		

	D.CK	DATE	E.CK	DATE
REVISION DESCRIPTION				

REV	BY	DATE
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Stainless LLC
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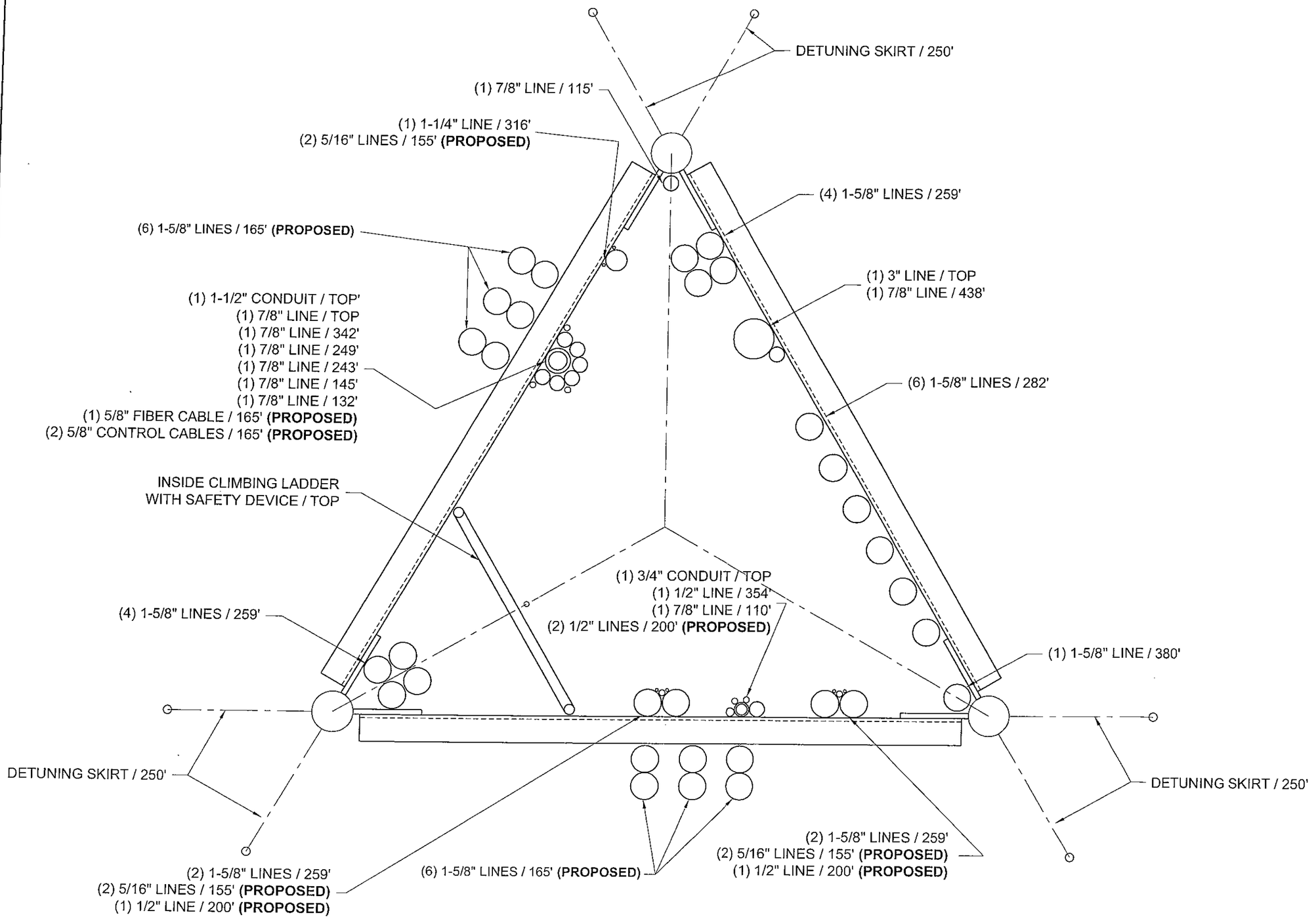
GENERAL ARRANGEMENT
BROOKFIELD, CT

CERTIFIED BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION TO HAVE THE PERSONNEL, ORGANIZATION, EXPERIENCE, CAPABILITY, AND COMMITMENT MEETING THE REQUIREMENTS OF THE STEEL BUILDING STRUCTURES CATEGORY.

CERTIFIED FABRICATOR



TYPICAL TOWER CROSS SECTION

PREPARED BY	AP	6/2/2011				
CHECKED BY						
ENGINEER REVIEW						
PROJECT NUMBER	361109					
DRAWING NUMBER	A-2					

REV	BY	DATE	REVISION DESCRIPTION	D.CK	DATE	E.CK	DATE
*	*	*	*	*	*		

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LINEAR APPURTENANCES
BROOKFIELD, CT