

February 27, 2018

Melanie A. Bachman, Esq.  
Executive Director/Staff Attorney  
Connecticut Siting Council  
10 Franklin Square  
New Britain, CT 06051

Re: **Notice of Exempt Modification – Facility Modification  
723 Leetes Island Road, Branford, Connecticut**

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains fifteen (15) wireless telecommunications antennas at the 90-foot level of the existing 109-foot faux water tank tower at 723 Leetes Island Road in Branford, Connecticut (the “Property”). The facility is owned by Cellco. The Council approved the Leetes Island Road facility in 2011 (Docket No. 413). Cellco now intends to remove nine (9) of its existing antennas and install six (6) new antennas (three (3) model JAHH-65B-R3B, 700 MHz antennas and three (3) model JAHH-65B-R3B, 2100 MHz antennas), at the 90-foot level on the tower. Cellco also intends to install three (3) remote radio heads (“RRHs”) behind its antennas and two (2) HYBRIFLEX™ fiber optic antenna cables. Included in Attachment 1 are specifications for Cellco’s replacement antennas, RRHs and HYBRIFLEX™ cables.

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Branford First Selectman, James B. Cosgrove; Harry Smith, Branford’s Town Planner; and John Medlyn, the owner of the Property.

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

1. The proposed modifications will not result in an increase in the height of the existing tower. Cellco’s replacement antennas and RRHs will be installed at the same 90-foot level of the 109-foot faux water tank.

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2. The proposed modifications will not involve any change to ground-mounted equipment and, therefore, will not require the extension of the site boundary.

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

4. The operation of the replacement antennas will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A cumulative General Power Density table for Cellco's modified facility is included behind Attachment 2.

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

6. The faux water tank structure can support Cellco's proposed modifications. (See Structural Analysis Report included in Attachment 3).

A copy of the parcel map and owner information for the Property is included in Attachment 4. A Certificate of Mailing verifying that this filing was sent to municipal officials and the owner of the Property is included in Attachment 5.

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

Sincerely,



Kenneth C. Baldwin

Enclosures

Copy to:

James B. Cosgrove, Branford First Selectman  
Harry Smith, Branford Town Planner  
John Medlyn  
Tim Parks

# **ATTACHMENT 1**



## JAHH-65B-R3B

**8-port sector antenna, 2x 698–787, 2x 824–894 and 4x 1695–2360 MHz, 65° HPBW, 3x RET and low bands have diplexers. Internal SBT's on first LB(Port 1) and first HB (Port 5).**

- Internal SBT on low and high band allow remote RET control from the radio over the RF jumper cable
- One RET for 700MHz, one RET for 850MHz, and one RET for both high bands to ensure same tilt level for 4x Rx or 4x MIMO
- Internal filter on low band and interleaved dipole technology providing for attractive, low wind load mechanical package
- Separate RS-485 RET input/output for low and high band

### Electrical Specifications

| Frequency Band, MHz                  | 698–787    | 824–894    | 1695–1880  | 1850–1990  | 1920–2200  | 2300–2360  |
|--------------------------------------|------------|------------|------------|------------|------------|------------|
| Gain, dBi                            | 14.5       | 15.8       | 18.0       | 18.4       | 18.5       | 18.8       |
| Beamwidth, Horizontal, degrees       | 67         | 65         | 63         | 63         | 65         | 68         |
| Beamwidth, Vertical, degrees         | 12.4       | 10.5       | 5.7        | 5.2        | 4.9        | 4.4        |
| Beam Tilt, degrees                   | 2–14       | 2–14       | 0–10       | 0–10       | 0–10       | 0–10       |
| USLS (First Lobe), dB                | 18         | 18         | 20         | 20         | 21         | 23         |
| Front-to-Back Ratio at 180°, dB      | 32         | 34         | 31         | 35         | 36         | 38         |
| Isolation, dB                        | 25         | 25         | 25         | 25         | 25         | 25         |
| Isolation, Intersystem, dB           | 30         | 30         | 30         | 30         | 30         | 30         |
| VSWR   Return Loss, dB               | 1.5   14.0 | 1.5   14.0 | 1.5   14.0 | 1.5   14.0 | 1.5   14.0 | 1.5   14.0 |
| PIM, 3rd Order, 2 x 20 W, dBc        | -153       | -153       | -153       | -153       | -153       | -153       |
| Input Power per Port, maximum, watts | 350        | 350        | 350        | 350        | 350        | 300        |
| Polarization                         | ±45°       | ±45°       | ±45°       | ±45°       | ±45°       | ±45°       |
| Impedance                            | 50 ohm     | 50 ohm     | 50 ohm     | 50 ohm     | 50 ohm     | 50 ohm     |

### Electrical Specifications, BASTA\*

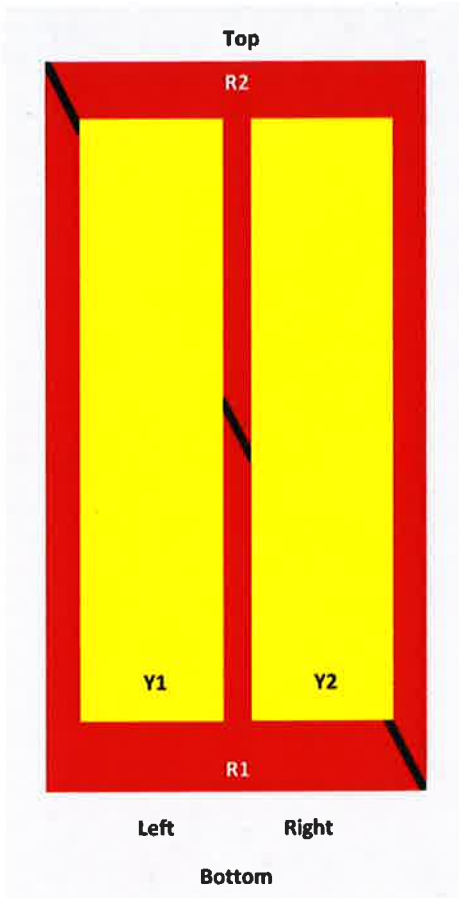
| Frequency Band, MHz                         | 698–787    | 824–894    | 1695–1880  | 1850–1990  | 1920–2200  | 2300–2360  |
|---|------------|------------|------------|------------|------------|------------|
| Gain by all Beam Tilts, average, dBi        | 14.3       | 14.9       | 17.6       | 18.1       | 18.2       | 18.5       |
| Gain by all Beam Tilts Tolerance, dB        | ±0.3       | ±0.5       | ±0.6       | ±0.4       | ±0.5       | ±0.6       |
| Gain by Beam Tilt, average, dBi             | 2°   14.3  | 2°   15.0  | 0°   17.2  | 0°   17.6  | 0°   17.7  | 0°   17.9  |
|   | 8°   14.3  | 8°   14.9  | 5°   17.6  | 5°   18.2  | 5°   18.3  | 5°   18.7  |
|   | 14°   14.3 | 14°   15.4 | 10°   17.6 | 10°   18.2 | 10°   18.3 | 10°   18.7 |
| Beamwidth, Horizontal Tolerance, degrees    | ±1.2       | ±1.4       | ±4         | ±2.4       | ±2.9       | ±2.7       |
| Beamwidth, Vertical Tolerance, degrees      | ±0.9       | ±0.5       | ±0.3       | ±0.2       | ±0.3       | ±0.1       |
| USLS, beampeak to 20° above beampeak, dB    | 18         | 17         | 17         | 18         | 19         | 18         |
| Front-to-Back Total Power at 180° ± 30°, dB | 25         | 24         | 26         | 29         | 27         | 29         |
| CPR at Boresight, dB                        | 22         | 23         | 20         | 21         | 21         | 24         |
| CPR at Sector, dB                           | 11         | 12         | 11         | 11         | 11         | 8          |

\* CommScope® supports NGMN recommendations on Base Station Antenna Standards (BASTA). To learn more about the benefits of BASTA, download the [whitepaper Time to Raise the Bar on BSAs](#).

JAHH-65B-R3B

## Array Layout

JAHH-65A-R3B JAHH-65B-R3B JAHH-65C-R3B



| Array | Freq (MHz) | Conns | RET (SRET) | AISG RET UID     |
|-------|------------|-------|------------|------------------|
| R1    | 698-798    | 1-2   | 1          | ANXXXXXXXXXXXXX1 |
| R2    | 824-894    | 3-4   | 2          | ANXXXXXXXXXXXXX2 |
| Y1    | 1695-2360  | 5-6   | 3          | ANXXXXXXXXXXXXX3 |
| Y2    | 1695-2360  | 7-8   |            |                  |

View from the front of the antenna

(Sizes of colored boxes are not true depictions of array sizes)

## General Specifications

|                          |   |
|--------------------------|---|
| Operating Frequency Band | 1695 – 2360 MHz   698 – 787 MHz   824 – 894 MHz |
| Antenna Type             | Sector  |
| Band                     | Multiband                                       |
| Performance Note         | Outdoor usage                                   |

## Mechanical Specifications

|                                  |               |
|----------------------------------|---------------|
| RF Connector Quantity, total     | 8             |
| RF Connector Quantity, low band  | 4             |
| RF Connector Quantity, high band | 4             |
| RF Connector Interface           | 4.3-10 Female |

JAHH-65B-R3B

|                       |  |
|-----------------------|--|
| Color                 | Light gray   |
| Grounding Type        | RF connector body grounded to reflector and mounting bracket |
| Radiator Material     | Aluminum   Low loss circuit board                            |
| Radome Material       | Fiberglass, UV resistant                                     |
| Reflector Material    | Aluminum   |
| RF Connector Location | Bottom   |
| Wind Loading, frontal | 746.0 N @ 150 km/h<br>167.7 lbf @ 150 km/h                   |
| Wind Loading, lateral | 243.0 N @ 150 km/h<br>54.6 lbf @ 150 km/h                    |
| Wind Loading, rear    | 776.0 N @ 150 km/h<br>174.5 lbf @ 150 km/h                   |
| Wind Speed, maximum   | 241 km/h   150 mph   |

## Dimensions

|                                  |                     |
|----------------------------------|---------------------|
| Length                           | 1828.0 mm   72.0 in |
| Width                            | 350.0 mm   13.8 in  |
| Depth                            | 208.0 mm   8.2 in   |
| Net Weight, without mounting kit | 28.7 kg   63.3 lb   |

## Remote Electrical Tilt (RET) Information

|   |                                   |
|---|-----------------------------------|
| Input Voltage                                 | 10–30 Vdc                         |
| Internal Bias Tee                             | Port 1   Port 5                   |
| Internal RET                                  | High band (1)   Low band (2)      |
| Power Consumption, idle state, maximum        | 2 W                               |
| Power Consumption, normal conditions, maximum | 13 W                              |
| Protocol                                      | 3GPP/AISG 2.0 (Single RET)        |
| RET Interface                                 | 8-pin DIN Female   8-pin DIN Male |
| RET Interface, quantity                       | 2 female   2 male                 |

## Packed Dimensions

|                 |                     |
|-----------------|---------------------|
| Length          | 1975.0 mm   77.8 in |
| Width           | 456.0 mm   18.0 in  |
| Depth           | 357.0 mm   14.1 in  |
| Shipping Weight | 42.0 kg   92.6 lb   |

## Regulatory Compliance/Certifications

|                            |  |
|----------------------------|--|
| <b>Agency</b>              | <b>Classification</b>  |
| RoHS 2011/65/EU            | Compliant by Exemption   |
| China RoHS SJ/T 11364-2006 | Above Maximum Concentration Value (MCV)  |
| ISO 9001:2008              | Designed, manufactured and/or distributed under this quality management system |



JAHH-65B-R3B

## Included Products

BSAMNT-1 — Wide Profile Antenna Downtilt Mounting Kit for 2.4 - 4.5 in (60 - 115 mm) OD round members. Kit contains one scissor top bracket set and one bottom bracket set.

## \* Footnotes

Performance Note      Severe environmental conditions may degrade optimum performance

# B66a RRH4x45W

## Datasheet

Radio Technology

FDD-LTE

### Feature description:

- Remote Radio Head 4x4.5W or 2x90W Switchable via SW

Power Output

4 x 4.5 W or 2x90W (SW Switchable)  
w/o fans

IBW

70MHz

OBW

60 MHz

RF Sharing

LTE

Mass/Volume

25.8kg/56.9 lb Weight  
655H x 299W x 182D mm  
25.8"x11.8"x7.2"  
29.7L / 35.5L

Antenna Conf.

4Tx/4Rx

Temperature

-40 to 55 °C

IP class

IP65

Input Power

DC 48 V

Cooling

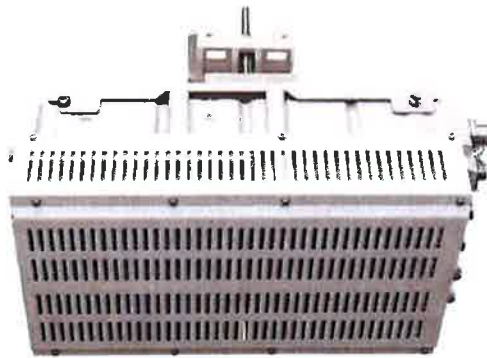
Natural Convection

Mounting

Wall, Pole mount

BBU connection

2x 9.8Gbps SFP(Rate 7 HW ready)





## B66a RRH 4x45 – Interfaces

### Power:

- Max power: 816W (add 58W for AISG)
- Breaker size: 25A
- Max distance with 6ga power feed and 5.5V drop: 284 feet

### RF Interfaces:

- 4.3/10 Connectors
- No monitoring ports(Spectrum analyzer SW takes place of monitoring ports)

### AISG:

- Two Smart Bias-T
- One AISG port

## B66 Details

- Max power for a single carrier is:
  - 2x60W for 10,15,20 MHz carrier
  - 2x40W for 5 MHz carrier
- Multi-Carrier Support with AWS-1 carriers: 15.1
- Multi-Carrier Support with AWS-3 carriers: 16.2

### Carrier power: Multi-carrier

- Assuming 2 Tx power can be assigned per carrier subject to 40W max for 5Mhz, 60W for larger in 2T, cut that power in half for 4T
- Example:B4 (20Mhz) and AWS3 (10MHz)
  - Power can be varied between those two carriers, can go 60W for 20 MHz carrier, 30W for 10 MHz carrier to use the 90W in 2T.
  - It could be 45/45 for 20Mhz/10Mhz if desired.



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

**Product Description**

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

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

**Features/Benefits**

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

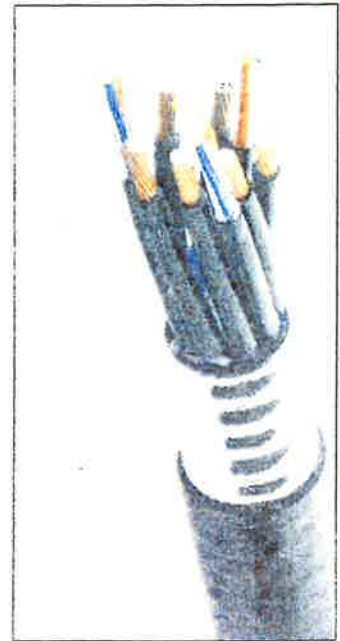


Figure 1: HYBRIFLEX Series

**Technical Specifications**

|                       |                                |            |             |
|-----------------------|--------------------------------|------------|-------------|
| Outer Conductor Armor | Corrugated Aluminum            | [mm (in.)] | 46.5 (1.83) |
| Jacket                | Polyethylene, PE               | [mm (in.)] | 50.3 (1.98) |
| UV-Protection         | Individual and External Jacket |            | Yes         |

|  |  |                |                        |
|--|--|----------------|------------------------|
| Weight, Approximate                      |  | [kg/m (lb/ft)] | 1.9 (1.30)             |
| Minimum Bending Radius, Single Bending   |  | [mm (in.)]     | 200 (8)                |
| Minimum Bending Radius, Repeated Bending |  | [mm (in.)]     | 500 (20)               |
| Recommended/Maximum Clamp Spacing        |  | [m (ft)]       | 1.0 / 1.2 (3.25 / 4.0) |

|  |  |                   |              |
|--|--|-------------------|--------------|
| DC-Resistance Outer Conductor Armor                  |  | [Ω/km (Ω/1000ft)] | 0.68 (0.205) |
| DC-Resistance Power Cable, 8.4mm <sup>2</sup> (8AWG) |  | [Ω/km (Ω/1000ft)] | 2.1 (0.307)  |

|                                       |  |            |                                   |
|---------------------------------------|--|------------|-----------------------------------|
| Version                               |  |            | Single-mode OM3                   |
| Quantity, Fiber Count                 |  |            | 16 (8 pairs)                      |
| Core/Clad                             |  | [μm]       | 50/125                            |
| Primary Coating (Acrylate)            |  | [μm]       | 245                               |
| Buffer Diameter, Nominal              |  | [μm]       | 900                               |
| Secondary Protection, Jacket, Nominal |  | [mm (in.)] | 2.0 (0.08)                        |
| Minimum Bending Radius                |  | [mm (in.)] | 104 (4.1)                         |
| Insertion Loss @ wavelength 850nm     |  | dB/km      | 3.0                               |
| Insertion Loss @ wavelength 1310nm    |  | dB/km      | 1.0                               |
| Standards (Meets or exceeds)          |  |            | UL94-V0, UL1666<br>RoHS Compliant |

|                                  |  |            |   |
|----------------------------------|--|------------|---|
| Size (Power)                     |  | [mm (AWG)] | 8.4 (8)   |
| Quantity, Wire Count (Power)     |  |            | 16 (8 pairs)  |
| Size (Alarm)                     |  | [mm (AWG)] | 0.8 (18)  |
| Quantity, Wire Count (Alarm)     |  |            | 4 (2 pairs)   |
| Type                             |  |            | UV protected  |
| Strands                          |  |            | 19  |
| Primary Jacket Diameter, Nominal |  | [mm (in.)] | 6.8 (0.27)  |
| Standards (Meets or exceeds)     |  |            | NFPA 130, ICEA S-95-658<br>UL Type XHHW-2, UL 44<br>UL-LS Limited Smoke, UL VW-1<br>IEEE-383 (1974), IEEE1202/FT4<br>RoHS Compliant |

|                          |  |           |                         |
|--------------------------|--|-----------|-------------------------|
| Installation Temperature |  | [°C (°F)] | -40 to +65 (-40 to 149) |
| Operation Temperature    |  | [°C (°F)] | -40 to +65 (-40 to 149) |

\* This data is provisional and subject to change

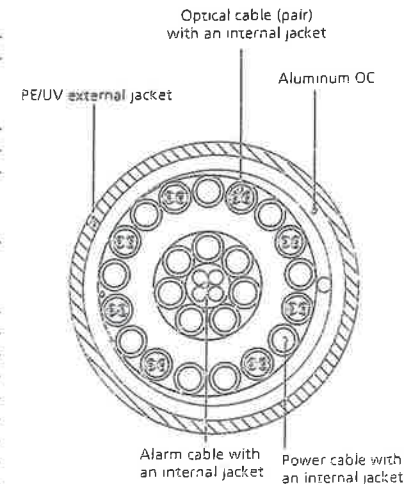


Figure 2: Construction Detail

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

# **ATTACHMENT 2**

| Site Name: Bramford S<br>Tower Height: 109' |            | General   | Power  | Density | CALC.<br>POWER<br>DENS | FREQ.  | MAX.<br>PERMISS.<br>EXP. | FRACTION<br>MPE | Total |
|---|------------|-----------|--------|---------|------------------------|--------|--------------------------|-----------------|-------|
| CARRIER                                     | # OF CHAN. | WATTS ERP | HEIGHT |         |                        |        |                          |                 |       |
| *AT&T                                       | 1          | 500       | 100    | 880     | 0.0203                 | 0.5867 | 0.35%                    |                 |       |
| *AT&T                                       | 1          | 500       | 100    | 1900    | 0.0203                 | 1.0000 | 0.20%                    |                 |       |
| *AT&T                                       | 3          | 296       | 100    | 880     | 0.0361                 | 0.5867 | 0.62%                    |                 |       |
| *AT&T                                       | 1          | 427       | 100    | 1900    | 0.0174                 | 1.0000 | 0.17%                    |                 |       |
| *AT&T                                       | 1          | 500       | 100    | 740     | 0.0203                 | 0.4933 | 0.41%                    |                 |       |
| *T-Mobile                                   | 8          | 101       | 80     | 1945    | 0.0530                 | 1.0000 | 0.53%                    |                 |       |
| *T-Mobile                                   | 2          | 806       | 80     | 2100    | 0.1059                 | 1.0000 | 1.06%                    |                 |       |
| Verizon PCS                                 | 0          | 0         | 90     | 0.0000  | 1970                   | 1.0000 | 0.00%                    |                 |       |
| Verizon Cellular                            | 0          | 0         | 90     | 0.0000  | 869                    | 0.5793 | 0.00%                    |                 |       |
| Verizon AWS                                 | 1          | 3128      | 90     | 0.1389  | 2145                   | 1.0000 | 13.89%                   |                 |       |
| Verizon 700                                 | 1          | 945       | 90     | 0.0419  | 746                    | 0.4973 | 8.43%                    |                 | 25.7% |
| * Source: Siting Council                    |            |           |        |         |                        |        |                          |                 |       |

# **ATTACHMENT 3**

**(REVISED)**  
**STRUCTURAL ANALYSIS REPORT**

For

**Branford South CT**

723 Leetes Island Road  
Branford, CT 06405

**Antennas Mounted within Stealth Water Tank;  
Equipment at Ground Level**



Prepared for:

**verizon**<sup>✓</sup>

99 East River Drive  
East Hartford, CT 06108

Dated: February 22, 2018 (Rev1)  
November 21, 2017

Prepared by:



**HGD** | **HUDSON**  
Design Group LLC

45 Beechwood Drive  
North Andover, MA 01845  
Phone: (978) 557-5553

[www.hudsondesigngroupllc.com](http://www.hudsondesigngroupllc.com)



### **SCOPE OF WORK:**

Hudson Design Group LLC (HDG) has been authorized by Verizon to conduct a structural evaluation of the structure supporting the proposed Verizon equipment located in the areas depicted in the latest HDG's construction drawings.

This report represents this office's findings, conclusions and recommendations pertaining to the support of Verizon's proposed equipment.

This office conducted an on-site visual survey of the above areas on November 2, 2017. Attendees included Jonathan Schallack (HDG – Field Technician).

### **CONCLUSION SUMMARY:**

Building plans were unavailable and could not be obtained for our use. A limited visual survey of the structure was completed in or near the areas of the proposed work. The following documents were used for our reference:

- Steel fabrication drawings by Stealth dated March 9, 2012.

Based on our evaluation, we have determined that the existing structure **IS CAPABLE** of supporting the proposed loading.

### **APPURTENANCE/EQUIPMENT CONFIGURATION:**

(6) LPA-80063-6CF-EDIN-0 Antennas (70.9"x15.0"x13.1" – Wt. = 27 lbs/each)

(3) RRH 4x30-B13 RRH's (21.6"x12.0"x9.0" – Wt. = 26 lbs/each)

(2) Junction Box (23.0"x15.7"x10.3" – Wt. =27 lbs/each)

**(6) JAHH-65B-R3B Antennas (72.0"x13.8"x8.2" – Wt. = 63 lbs/each)**

**(3) RRH 4x45-AWS RRH's (27.2"x12.1"x7.0" – Wt. = 53 lbs/each)**

*\*Proposed Equipment shown in bold*

### **FEEDER LINES:**

(6) 1-5/8" Coax Cables

**(2) 1-1/4" Hybrld Cables**





**DESIGN CRITERIA:**

1. International Building Code 2012 with 2016 Connecticut State Building Code Amendments; ASCE 7-10 Minimum Design Loads for Buildings and Other Structures.

Wind Analysis:

|                                  |         |                         |
|----------------------------------|---------|-------------------------|
| Ultimate Wind Speed, $V_{ult}$ : | 130 mph | (CTSBC 2016 Appendix N) |
| Nominal Wind Speed, $V_{asd}$ :  | 101 mph | (CTSBC 2016 Appendix N) |
| Category:                        | B       |                         |

Roof:

|                      |        |
|----------------------|--------|
| Ground Snow, $P_g$ : | 30 psf |
|----------------------|--------|

2. EIA/TIA -222- G Structural Standards for Steel Antenna Towers and Antenna Supporting Structures

|                        |           |                    |
|------------------------|-----------|--------------------|
| County:                | New Haven |                    |
| Max. Wind Speed:       | 115 mph   | (Basic Wind Speed) |
| Min. Speed (with ice): | 50 mph    | (Basic Wind Speed) |
| Nominal Ice Thickness: | 3/4 inch  |                    |

3. Approximate height above grade to center line of antennas:

90' +/-



### **ANTENNA SUPPORT RECOMMENDATIONS:**

The new antennas are proposed to be mounted on existing pipe masts fastened to existing steel grating secured with G clips within the existing Stealth water tank.

The equipment is to be hidden within the existing fiberglass enclosure. The existing enclosure will not have any additional wind load.

### **RRH SUPPORT RECOMMENDATIONS:**

The new RRH's are proposed to be mounted to new unistrut components secured in the interior of the Stealth water tank.

#### Limitations and assumptions:

1. Reference the latest HDG construction drawings for all the equipment locations details.
2. Mount all equipment per manufacturer's specifications.
3. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities.
4. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer requirements.
5. HDG is not responsible for any modifications completed prior to and hereafter which HDG was not directly involved.
6. If field conditions differ from what is assumed in this report, then the engineer of record is to be notified as soon as possible.
7. A condition assessment of the existing structure was not part of the scope of work.

**FIELD PHOTOS:**



**Photo 1:** Sample photo illustrating existing water tank.



**Photo 2:** Sample photo illustrating existing equipment located under canopy.



**HUDSON**  
Design Group LLC

## Calculations

Date: 2/22/18

Project Name: Brandford South CT

Designed By: BD      Checked By: MSC



**HUDSON**  
Design Group

### ICE WEIGHT CALCULATIONS

Thickness of ice (in): 0.75

\* Density of ice used = 56 PCF

#### LPA-80063-6CF-EDIN-0 Antenna

Weight of ice based on total radial SF area:

|                                    |        |         |
|------------------------------------|--------|---------|
| Depth (in):                        | 13.1   |         |
| height (in):                       | 70.9   |         |
| Width (in):                        | 15.0   |         |
| Total weight of ice on object:     |        | 106 lbs |
| Weight of object:                  | 27 lbs |         |
| Combined weight of ice and object: |        | 133 lbs |

#### JAHH-65B-R3B Antenna

Weight of ice based on total radial SF area:

|                                    |        |         |
|------------------------------------|--------|---------|
| Depth (in):                        | 8.2    |         |
| height (in):                       | 72.0   |         |
| Width (in):                        | 13.8   |         |
| Total weight of ice on object:     |        | 83 lbs  |
| Weight of object:                  | 63 lbs |         |
| Combined weight of ice and object: |        | 146 lbs |

#### RRH 4x30-B13 RRH

Weight of ice based on total radial SF area:

|                                    |        |        |
|------------------------------------|--------|--------|
| Depth (in):                        | 9.0    |        |
| height (in):                       | 21.6   |        |
| Width (in):                        | 12.0   |        |
| Total weight of ice on object:     |        | 27 lbs |
| Weight of object:                  | 26 lbs |        |
| Combined weight of ice and object: |        | 53 lbs |

#### RRH 4x45-AWS RRH

Weight of ice based on total radial SF area:

|                                    |        |        |
|------------------------------------|--------|--------|
| Depth (in):                        | 7.0    |        |
| height (in):                       | 27.2   |        |
| Width (in):                        | 12.1   |        |
| Total weight of ice on object:     |        | 29 lbs |
| Weight of object:                  | 53 lbs |        |
| Combined weight of ice and object: |        | 82 lbs |

#### Junction Box

Weight of ice based on total radial SF area:

|                                    |        |        |
|------------------------------------|--------|--------|
| Depth (in):                        | 10.3   |        |
| height (in):                       | 23.0   |        |
| Width (in):                        | 15.7   |        |
| Total weight of ice on object:     |        | 37 lbs |
| Weight of object:                  | 27 lbs |        |
| Combined weight of ice and object: |        | 64 lbs |

#### 2" pipe

Per foot weight of ice:

|                                   |       |          |
|-----------------------------------|-------|----------|
| diameter (in):                    | 2.375 |          |
| Per foot weight of ice on object: |       | 2 lbs/ft |

Date: 02/22/2018

Project Name: Branford South CT

Designed By: BD      Checked By: MSC



**HUDSON**  
Design Group LLC

### Steel Grating Calculations

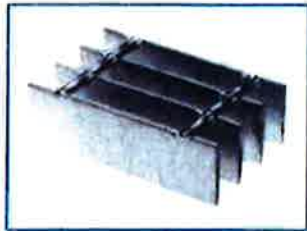
|                                    |             |
|------------------------------------|-------------|
| <b>Load</b>                        | 63 lb       |
| <b>Base Plate Length</b>           | 6 in        |
| <b>Base Plate Width</b>            | 6 in        |
| <b>BP Area</b>                     | 0.25 sq. ft |
| <b>Load per sq ft.</b>             | 252.0 psf   |
| <b>Load per sq in.</b>             | 1.8 psi     |
| <b>Safe Allowable Uniform Load</b> | 281 psf     |

|                     |           |   |         |             |
|---------------------|-----------|---|---------|-------------|
| <b>Applied Load</b> | 252.0 psf | < | 281 psf | <b>GOOD</b> |
|---------------------|-----------|---|---------|-------------|

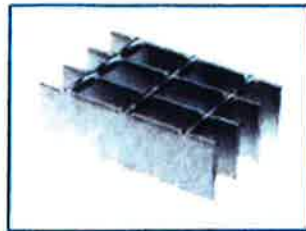
# Steel Bar Grating

## WELDED

1-3/16" Center to Center of Bearing Bars



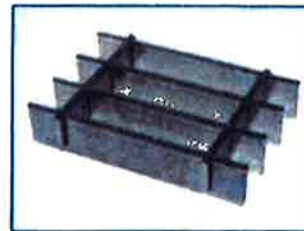
**19-W-4**  
Cross Rods 4" C/C



**19-W-2**  
Cross Rods 2" C/C

## PRESS-LOCKED

1-3/16" Center to Center of Bearing Bars



**19-P-4**  
Cross Bars 4" C/C



**19-P-2**  
Cross Bars 2" C/C

### LOAD & DEFLECTION TABLE

| Bar Size       | Symbol | Approx Weight per sq ft | Sec. Mod Per Ft. D1 Width | SPAN (Length of Bearing Bar) |       |       |       |       |       |       |       |       |       |       |
|----------------|--------|-------------------------|---------------------------|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                |        |                         |                           | 2'-0"                        | 2'-6" | 3'-0" | 3'-6" | 4'-0" | 4'-6" | 5'-0" | 5'-6" |       |       |       |
| 3/4" x 1/8"    | W      | 3.9                     | 0.118                     | U                            | 355   | 227   | 158   | 116   | 89    | 70    |       |       |       |       |
|                | P      | 4.3                     |                           | D                            | 0.099 | 0.155 | 0.223 | 0.304 | 0.397 | 0.503 |       |       |       |       |
| 3/4" x 3/16"   | W      | 4.4                     | 0.178                     | C                            | 355   | 284   | 237   | 203   | 178   | 158   |       |       |       |       |
|                | P      | 5.2                     |                           | D                            | 0.079 | 0.124 | 0.179 | 0.243 | 0.318 | 0.402 |       |       |       |       |
| 1" x 1/8"      | W      | 5.8                     | 0.211                     | U                            | 533   | 341   | 237   | 174   | 133   | 105   |       |       |       |       |
|                | P      | 6.4                     |                           | D                            | 0.099 | 0.155 | 0.223 | 0.304 | 0.397 | 0.503 |       |       |       |       |
| 1" x 3/16"     | W      | 6.2                     | 0.316                     | C                            | 533   | 428   | 355   | 305   | 266   | 237   |       |       |       |       |
|                | P      | 7.8                     |                           | D                            | 0.079 | 0.124 | 0.179 | 0.243 | 0.318 | 0.402 |       |       |       |       |
| 1-1/4" x 1/8"  | W      | 5.0                     | 0.329                     | U                            | 632   | 404   | 281   | 206   | 158   | 125   |       |       |       |       |
|                | P      | 5.4                     |                           | D                            | 0.074 | 0.116 | 0.168 | 0.228 | 0.298 | 0.377 | 0.466 | 0.563 |       |       |
| 1-1/4" x 3/16" | W      | 5.5                     | 0.493                     | C                            | 632   | 505   | 421   | 361   | 316   | 281   |       |       |       |       |
|                | P      | 6.3                     |                           | D                            | 0.060 | 0.093 | 0.134 | 0.182 | 0.238 | 0.302 | 0.372 | 0.451 |       |       |
| 1-1/2" x 1/8"  | W      | 7.2                     | 0.474                     | U                            | 947   | 606   | 421   | 309   | 237   | 187   |       |       |       |       |
|                | P      | 8.1                     |                           | D                            | 0.074 | 0.116 | 0.168 | 0.228 | 0.298 | 0.377 | 0.466 | 0.563 |       |       |
| 1-1/2" x 3/16" | W      | 7.8                     | 0.711                     | C                            | 947   | 758   | 632   | 541   | 474   | 421   |       |       |       |       |
|                | P      | 9.5                     |                           | D                            | 0.060 | 0.093 | 0.134 | 0.182 | 0.238 | 0.302 | 0.372 | 0.451 |       |       |
| 1-3/4" x 3/16" | W      | 6.1                     | 0.967                     | U                            | 987   | 632   | 439   | 322   | 247   | 195   |       |       |       |       |
|                | P      | 6.8                     |                           | D                            | 0.060 | 0.093 | 0.134 | 0.182 | 0.238 | 0.302 | 0.372 | 0.451 |       |       |
| 2" x 3/16"     | W      | 8.6                     | 1.263                     | C                            | 987   | 789   | 658   | 564   | 493   | 439   |       |       |       |       |
|                | P      | 8.1                     |                           | D                            | 0.048 | 0.074 | 0.107 | 0.146 | 0.191 | 0.241 | 0.298 | 0.360 | 0.429 | 0.504 |
| 2-1/4" x 3/16" | W      | 8.9                     | 1.599                     | U                            | 1480  | 947   | 658   | 483   | 370   | 292   |       |       |       |       |
|                | P      | 10.2                    |                           | D                            | 0.060 | 0.093 | 0.134 | 0.182 | 0.238 | 0.302 | 0.372 | 0.451 | 0.536 | 0.629 |
| 2-1/2" x 3/16" | W      | 8.5                     | 1.974                     | C                            | 1480  | 1184  | 987   | 846   | 740   | 658   |       |       |       |       |
|                | P      | 12.1                    |                           | D                            | 0.048 | 0.074 | 0.107 | 0.146 | 0.191 | 0.241 | 0.298 | 0.360 | 0.429 | 0.504 |
| 3" x 3/16"     | W      | 7.2                     | 0.803                     | U                            | 1421  | 909   | 632   | 464   | 355   | 281   |       |       |       |       |
|                | P      | 7.9                     |                           | D                            | 0.050 | 0.078 | 0.112 | 0.152 | 0.199 | 0.251 | 0.310 | 0.376 | 0.447 | 0.524 |
| 3-1/2" x 3/16" | W      | 7.7                     | 0.803                     | C                            | 1421  | 1137  | 947   | 812   | 711   | 632   |       |       |       |       |
|                | P      | 9.2                     |                           | D                            | 0.040 | 0.062 | 0.089 | 0.122 | 0.159 | 0.201 | 0.248 | 0.300 | 0.358 | 0.420 |
| 4" x 3/16"     | W      | 10.5                    | 0.967                     | U                            | 2132  | 1364  | 947   | 698   | 533   | 421   |       |       |       |       |
|                | P      | 11.8                    |                           | D                            | 0.050 | 0.078 | 0.112 | 0.152 | 0.199 | 0.251 | 0.310 | 0.376 | 0.447 | 0.524 |
| 4-1/2" x 3/16" | W      | 11.2                    | 1.263                     | C                            | 2132  | 1705  | 1421  | 1218  | 1066  | 947   |       |       |       |       |
|                | P      | 13.6                    |                           | D                            | 0.040 | 0.062 | 0.089 | 0.122 | 0.159 | 0.201 | 0.248 | 0.300 | 0.358 | 0.420 |
| 5" x 3/16"     | W      | 12.2                    | 1.599                     | U                            | 2901  | 1857  | 1289  | 947   | 725   | 573   |       |       |       |       |
|                | P      | 13.5                    |                           | D                            | 0.043 | 0.067 | 0.096 | 0.130 | 0.170 | 0.215 | 0.266 | 0.322 | 0.383 | 0.450 |
| 5-1/2" x 3/16" | W      | 12.8                    | 1.974                     | C                            | 2901  | 2321  | 1934  | 1658  | 1451  | 1289  |       |       |       |       |
|                | P      | 15.4                    |                           | D                            | 0.034 | 0.053 | 0.077 | 0.104 | 0.136 | 0.172 | 0.213 | 0.257 | 0.306 | 0.360 |
| 6" x 3/16"     | W      | 13.9                    | 1.263                     | U                            | 3789  | 2425  | 1684  | 1237  | 947   | 749   |       |       |       |       |
|                | P      | 15.2                    |                           | D                            | 0.037 | 0.058 | 0.084 | 0.114 | 0.149 | 0.189 | 0.233 | 0.282 | 0.335 | 0.393 |
| 6-1/2" x 3/16" | W      | 14.5                    | 1.599                     | C                            | 3789  | 3032  | 2526  | 2165  | 1895  | 1684  |       |       |       |       |
|                | P      | 17.1                    |                           | D                            | 0.030 | 0.047 | 0.067 | 0.091 | 0.119 | 0.151 | 0.186 | 0.225 | 0.268 | 0.315 |
| 7" x 3/16"     | W      | 15.5                    | 1.974                     | U                            | 4796  | 3069  | 2132  | 1566  | 1199  | 947   |       |       |       |       |
|                | P      | 16.8                    |                           | D                            | 0.033 | 0.052 | 0.074 | 0.101 | 0.132 | 0.168 | 0.207 | 0.250 | 0.298 | 0.350 |
| 7-1/2" x 3/16" | W      | 16.1                    | 1.263                     | C                            | 4796  | 3837  | 3197  | 2741  | 2398  | 2132  |       |       |       |       |
|                | P      | 18.7                    |                           | D                            | 0.026 | 0.041 | 0.060 | 0.081 | 0.106 | 0.134 | 0.166 | 0.200 | 0.238 | 0.280 |
| 8" x 3/16"     | W      | 17.2                    | 1.599                     | U                            | 5921  | 3789  | 2632  | 1933  | 1480  | 1170  |       |       |       |       |
|                | P      | 18.5                    |                           | D                            | 0.030 | 0.047 | 0.067 | 0.091 | 0.119 | 0.151 | 0.186 | 0.225 | 0.268 | 0.315 |
| 8-1/2" x 3/16" | W      | 17.8                    | 1.974                     | C                            | 5921  | 4737  | 3947  | 3383  | 2961  | 2632  |       |       |       |       |
|                | P      | 20.4                    |                           | D                            | 0.024 | 0.037 | 0.054 | 0.073 | 0.095 | 0.121 | 0.149 | 0.180 | 0.215 | 0.252 |

U = safe uniform load, psf  
 C = safe concentrated load, ptwf  
 D = deflection, inches  
 E = modulus of elasticity, 29,000,000 psi  
 F = fiber stress, 18,000 psi

**Material:** ASTM A-569 standard

**Deflection:** Spans and loads to the right of the bold line exceed 1/4" deflection for uniform load of 100 psf which provides safe pedestrian comfort. These can be exceeded for other types of loads with engineer's approval.

**Serrated Bars:** For serrated grating, the depth of grating required for a specified load is 1/4" deeper than that shown in the table.

**General:** Loads and deflections are theoretical and based on static loading.

### W/P-19 PANEL WIDTH (inches)

Note: P-Press-Locked cross bars typically extend 1/8" each side, W-Welded cross rods may extend 1/8" each side. Panel widths do not include these extensions.

| No. of Bars | 2       | 3       | 4       | 5        | 6        | 7       | 8      | 9       | 10       | 11       | 12      | 13      | 14     | 15       | 16       |
|-------------|---------|---------|---------|----------|----------|---------|--------|---------|----------|----------|---------|---------|--------|----------|----------|
| 1/8" Bar    | 1 1/16  | 2 1/2   | 3 11/16 | 4 7/8    | 6 1/16   | 7 1/4   | 8 7/16 | 9 9/8   | 10 13/16 | 12       | 13 3/16 | 14 3/8  | 15 3/8 | 16 3/4   | 17 15/16 |
| 3/16" Bar   | 1 3/8   | 2 9/16  | 3 3/4   | 4 5/16   | 6 1/8    | 7 5/16  | 8 1/2  | 9 11/16 | 10 7/8   | 12 1/16  | 13 1/4  | 14 7/16 | 15 5/8 | 16 13/16 | 18       |
| No. of Bars | 17      | 18      | 19      | 20       | 21       | 22      | 23     | 24      | 25       | 26       | 27      | 28      | 29     | 30       | 31       |
| 1/8" Bar    | 19 1/8  | 20 5/16 | 21 1/2  | 22 11/16 | 23 7/8   | 25 1/16 | 26 1/4 | 27 7/16 | 28 5/8   | 29 13/16 | 31      | 32 3/16 | 33 3/8 | 34 9/16  | 35 3/4   |
| 3/16" Bar   | 19 3/16 | 20 3/8  | 21 1/8  | 22 3/4   | 23 15/16 | 25 1/8  | 26 3/8 | 27 1/2  | 28 11/16 | 29 7/8   | 31 1/16 | 32 1/4  | 33 1/8 | 34 3/8   | 35 13/16 |

# **ATTACHMENT 4**

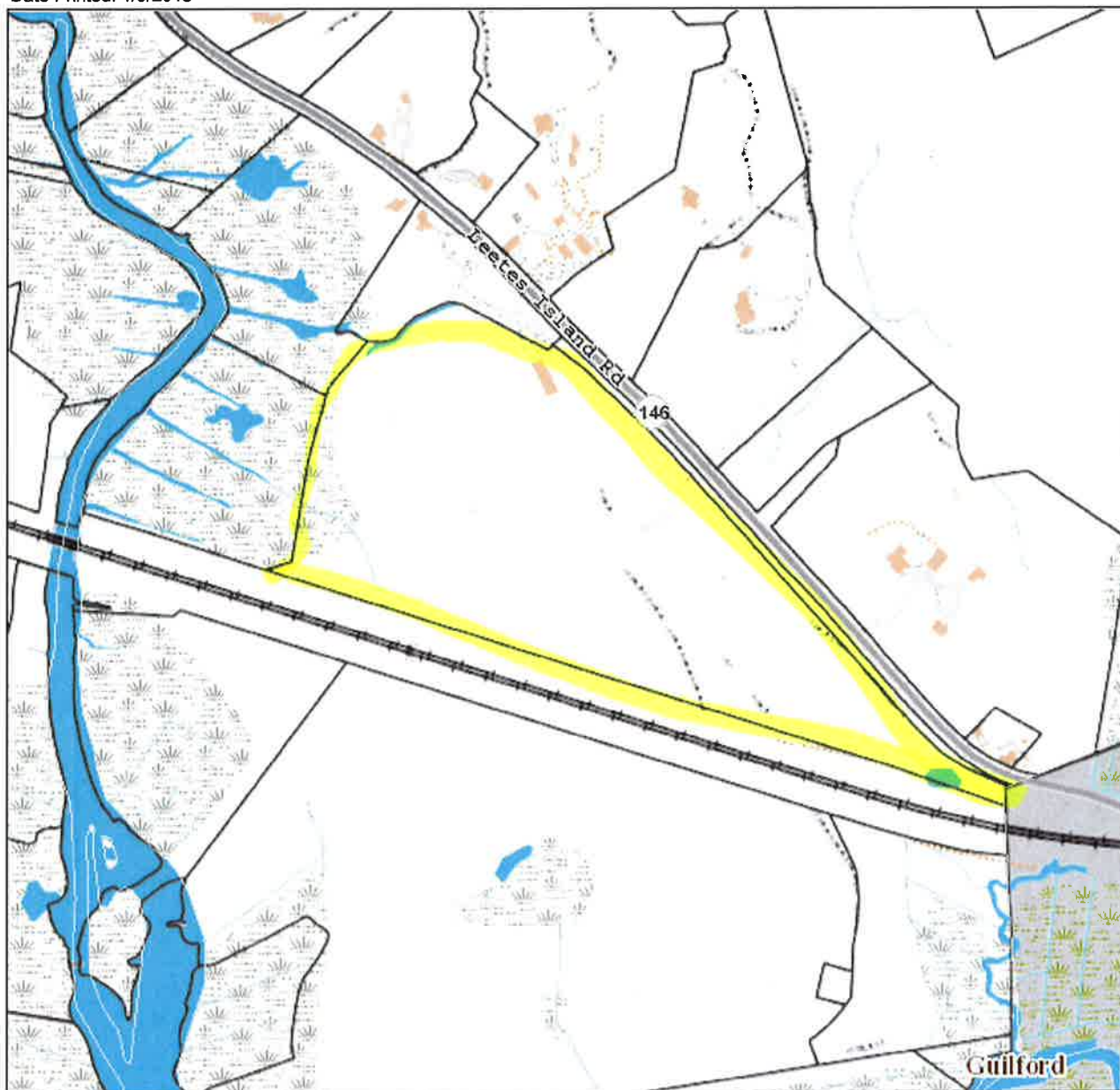


# Town of Branford

Geographic Information System (GIS)

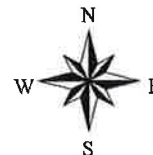


Date Printed: 1/9/2018



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# 723 LEETES ISLAND RD

**Location** 723 LEETES ISLAND RD

**Mblu** K09/000 004/ 00008/ /

**Acct#** 005957

**Owner** MEDLYN JAMES JOHN

**Assessment** \$252,200

**Appraisal** \$372,400

**PID** 13123

**Building Count** 1

## Current Value

| Appraisal      |              |           |           |
|----------------|--------------|-----------|-----------|
| Valuation Year | Improvements | Land      | Total     |
| 2014           | \$41,300     | \$331,100 | \$372,400 |

| Assessment     |              |           |           |
|----------------|--------------|-----------|-----------|
| Valuation Year | Improvements | Land      | Total     |
| 2014           | \$28,900     | \$223,300 | \$252,200 |

## Owner of Record

**Owner** MEDLYN JAMES JOHN

**Sale Price** \$0

**Co-Owner**

**Certificate**

**Address** 710 LEETES ISLAND RD  
BRANFORD, CT 06405

**Book & Page** 0270/0272

**Sale Date** 08/29/1975

## Ownership History

| Ownership History |            |             |             |            |
|-------------------|------------|-------------|-------------|------------|
| Owner             | Sale Price | Certificate | Book & Page | Sale Date  |
| MEDLYN JAMES JOHN | \$0        |             | 0270/0272   | 08/29/1975 |

## Building Information

### Building 1 : Section 1

**Year Built:**

**Living Area:** 0

**Replacement Cost:** \$0

**Building Percent**

**Good:**

**Replacement Cost**

**Less Depreciation:** \$0

| Building Attributes |             |
|---------------------|-------------|
| Field               | Description |
|                     |             |

|                    |              |
|--------------------|--------------|
| Style              | Outbuildings |
| Model              |              |
| Grade:             |              |
| Stories:           |              |
| Occupancy          |              |
| Exterior Wall 1    |              |
| Exterior Wall 2    |              |
| Roof Structure:    |              |
| Roof Cover         |              |
| Interior Wall 1    |              |
| Interior Wall 2    |              |
| Interior Flr 1     |              |
| Interior Flr 2     |              |
| Heat Fuel          |              |
| Heat Type:         |              |
| AC Type:           |              |
| Total Bedrooms:    |              |
| Total Bthrms:      |              |
| Total Half Baths:  |              |
| Total Xtra Fixtrs: |              |
| Total Rooms:       |              |
| Bath Style:        |              |
| Kitchen Style:     |              |
| Cottage Cmplx      |              |
| Cottage Adj        |              |

### Building Photo



(<http://images.vgsi.com/photos/BranfordCTPhotos//default.jpg>)

### Building Layout

Building Layout

| Building Sub-Areas (sq ft)     | Legend |
|--------------------------------|--------|
| No Data for Building Sub-Areas |        |

### Extra Features

| Extra Features             | Legend |
|----------------------------|--------|
| No Data for Extra Features |        |

### Land

#### Land Use

|                               |      |
|-------------------------------|------|
| <b>Use Code</b>               | 7100 |
| <b>Description</b>            | FARM |
| <b>Zone</b>                   | R5   |
| <b>Neighborhood</b>           | 0080 |
| <b>Alt Land Appr Category</b> | No   |

#### Land Line Valuation

|                        |           |
|------------------------|-----------|
| <b>Size (Acres)</b>    | 19.12     |
| <b>Frontage</b>        |           |
| <b>Depth</b>           |           |
| <b>Assessed Value</b>  | \$223,300 |
| <b>Appraised Value</b> | \$331,100 |

### Outbuildings

| Outbuildings |                |          |                 |           |          | Legend |
|--------------|----------------|----------|-----------------|-----------|----------|--------|
| Code         | Description    | Sub Code | Sub Description | Size      | Value    | Bldg # |
| GRN3         | PIPE & PLASTIC |          |                 | 3264 S.F. | \$0      | 1      |
| PAV2         | PAVING-CONC    |          |                 | 940 S.F.  | \$3,100  | 1      |
| FN4          | FENCE-8' CHAIN |          |                 | 2080 L.F. | \$25,000 | 1      |
| SHD6         | SHED COM MAS   |          |                 | 360 S.F.  | \$7,900  | 1      |
| SHD6         | SHED COM MAS   |          |                 | 240 S.F.  | \$5,300  | 1      |

### Valuation History

| Appraisal      |              |           |           |
|----------------|--------------|-----------|-----------|
| Valuation Year | Improvements | Land      | Total     |
| 2016           | \$41,300     | \$331,100 | \$372,400 |
| 2015           | \$41,300     | \$331,100 | \$372,400 |
| 2014           | \$41,300     | \$331,100 | \$372,400 |

| Assessment     |              |           |           |
|----------------|--------------|-----------|-----------|
| Valuation Year | Improvements | Land      | Total     |
| 2016           | \$28,900     | \$223,300 | \$252,200 |
| 2015           | \$28,900     | \$223,300 | \$252,200 |
| 2014           | \$28,900     | \$223,300 | \$252,200 |

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# **ATTACHMENT 5**



**Certificate of Mailing — Firm**

Name and Address of Sender  
**Kenneth C. Baldwin, Esq.**  
**Robinson & Cole LLP**  
**280 Trumbull Street**  
**Hartford, CT 06103**

TOTAL NO. of Pieces Listed by Sender: **3**

TOTAL NO. of Pieces Received at Post Office™: **3**

Postmaster, per (name of receiving employee): *[Signature]*

Affix Stamp Here  
**Postmark with Date of Receipt.**

neopost  
 02/27/2018  
**US POSTAGE \$002.38**

ZIP 06103  
 041L122093

| USPS® Tracking Number<br>Firm-specific Identifier | Address<br>(Name, Street, City, State, and ZIP Code™)  | Postage | Fee | Special Handling | Parcel Airlift |
|---|--|---------|-----|------------------|----------------|
| 1.  | James B. Cosgrove, First Selectman<br>Town of Branford<br>1019 Main Street<br>Branford, CT 06405 |         |     |                  |                |
| 2.  | Harry Smith, Town Planner<br>Town of Branford<br>1019 Main Street<br>Branford, CT 06405          |         |     |                  |                |
| 3.  | John Medlyn<br>710 Leetes Island Road<br>Branford, CT 06405                                      |         |     |                  |                |
| 4.  |  |         |     |                  |                |
| 5.  |  |         |     |                  |                |
| 6.  |  |         |     |                  |                |

