Robinson + Cole

KENNETH C. BALDWIN

280 Trumbull Street
Hartford, CT 06103-3597
Main (860) 275-8200
Fax (860) 275-8299
kbaldwin@rc.com
Direct (860) 275-8345

Also admitted in Massachusetts

July 26, 2017

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**
24 Town House Road, Durham, Connecticut

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains two (2) wireless telecommunications antennas at the top of a 30-foot wood pole at the Durham Fairgrounds, 24 Town House Road in Durham, Connecticut (the "Property"). The tower and underlying property are owned by Durham Agricultural Fair Association, Inc. The Council approved Cellco's use of the pole in 2014 (Petition No. 1117). Cellco now intends to modify its facility by replacing its existing antennas with two (2) model NH65S-DG-F0M, 700/2100 MHz antennas at the same location on the wood pole. Cellco also intends to replace two (2) of its existing remote radio heads ("RRHs") with two (2) newer model RRHs and install two (2) new RRHs. Included in Attachment 1 are specifications for Cellco's replacement antennas and RRHs.

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 notice is being sent to Laura L. Francis, Durham's First Selectwoman; Geoffrey L. Cosgrove, Durham's Town Planner; and Durham Agricultural Fair Association, Inc., the owner of the Property and wood pole.

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 pole. Cellco's replacement antennas and RRHs will be installed at the same level and location on the existing 30-foot pole.

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 worst-case General Power Density table for Cellco's modified facility is included in Attachment 2.

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

6. The wood pole can support Cellco's proposed modifications. (*See* Structural Analysis Report included in Attachment 3).

A copy of the Town of Durham parcel map and Property owner information 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:
Laura L. Francis, Durham First Selectwoman
Geoffrey L. Cosgrove, Durham Town Planner
Durham Agricultural Fair Association, Inc.
Tim Parks

ATTACHMENT 1

Product Specifications

COMMSCOPE®

NH65S-DG-F0M

2-port small cell antenna, 2x (698-896 and 1710–2180 MHz), 65° HPBW with fixed tilt in the low band and manual tilt in the high band. Contains internal diplexer and active GPS L1 band antenna.

Electrical Specifications

Frequency Band, MHz	698–806	806–896	1710–1880	1850–1990	1920–2180
Gain, dBi	10.1	10.5	14.0	14.1	14.0
Beamwidth, Horizontal, degrees	69	65	60	60	61
Beamwidth, Vertical, degrees	39.9	35.7	14.1	13.5	13.1
Beam Tilt, degrees	0	0	0–16	0–16	0–16
USLS (First Lobe), dB	15	15	12	13	13
Front-to-Back Ratio at 180°, dB	24	32	24	25	25
Isolation, dB	25	25	25	25	25
VSWR | Return Loss, dB	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
Input Power per Port, maximum, watts	125	125	125	125	125
Polarization	±45°	±45°	±45°	±45°	±45°
Impedance	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm

Electrical Specifications, BASTA*

Frequency Band, MHz	698–806	806–896	1710–1880	1850–1990	1920–2180
Gain by all Beam Tilts, average, dBi	9.5	10.1	13.5	13.8	13.6
Gain by all Beam Tilts Tolerance, dB	±1.3	±0.8	±0.7	±0.5	±0.6
Gain by Beam Tilt, average, dBi			0 ° | 14.0 8 ° | 13.5 16 ° | 12.9	0 ° | 14.2 8 ° | 13.8 16 ° | 13.3	0 ° | 14.0 8 ° | 13.6 16 ° | 13.3
Beamwidth, Horizontal Tolerance, degrees	±7.5	±4.6	±5.1	±5.4	±7.7
Beamwidth, Vertical Tolerance, degrees	±6	±3.2	±1.1	±0.7	±0.8
USLS, beampeak to 20° above beampeak, dB			12	13	13
Front-to-Back Total Power at 180° ± 30°, dB	19	20	21	20	19
CPR at Boresight, dB	16	17	18	16	16
CPR at Sector, dB	9	5	9	9	10

* 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.

General Specifications

Operating Frequency Band	1710 – 2180 MHz | 698 – 896 MHz
Antenna Type	Small Cell
Band	Multiband
Internal GPS frequency band	1575.42 MHz
Internal GPS VSWR	2.0
Performance Note	Outdoor usage

Mechanical Specifications

RF Connector Quantity, total	2

Product Specifications

NH65S-DG-F0M

RF Connector Interface	7-16 DIN Female
Color	Light gray
GPS Connector Interface	4.1-9.5 DIN Female
GPS Connector Quantity	1
Grounding Type	RF connector inner conductor and body grounded to reflector and mounting bracket
Radiator Material	Aluminum | Low loss circuit board
Radome Material	Fiberglass, UV resistant
RF Connector Location	Bottom
RF Connector Quantity, diplexed low and high bands	2
Wind Loading, frontal	224.0 N @ 150 km/h 50.4 lbf @ 150 km/h
Wind Loading, lateral	65.0 N @ 150 km/h 14.6 lbf @ 150 km/h
Wind Loading, rear	263.0 N @ 150 km/h 59.1 lbf @ 150 km/h
Wind Speed, maximum	241 km/h | 150 mph

Dimensions

Length	728.0 mm | 28.7 in
Width	301.0 mm | 11.9 in
Depth	181.0 mm | 7.1 in
Net Weight, without mounting kit	7.6 kg | 16.8 lb

Packed Dimensions

Length	976.0 mm | 38.4 in
Width	409.0 mm | 16.1 in
Depth	299.0 mm | 11.8 in
Shipping Weight	13.9 kg | 30.6 lb

Regulatory Compliance/Certifications

Agency	Classification
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

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**

ALCATEL-LUCENT B13 RRH4X30-4R

Alcatel-Lucent B13 Remote Radio Head 4x30-4R is the newest addition of Remote Radio Head to the extended product line of Alcatel-Lucent's distributed Base Station solutions, aimed at facilitating smooth RF site acquisition and related civil engineering.

Supporting 2Tx/4Tx MIMO and 4-way Rx diversity, Alcatel-Lucent B13 RRH4x30-4R allows operators to have a compact radio solution to deploy LTE in the 700U band (700 MHz, 3GPP band 13), providing them with the means to achieve high capacity, high quality and high coverage with minimum site requirements.

The Alcatel-Lucent B13 RRH4x30-4R product has four transmit RF paths, offering the possibility to **select, via software only, 2Tx or 4Tx MIMO configurations** with either 2x60 W or 4x30 W RF output power. It supports also 4-way Rx diversity and up to 10MHz instantaneous bandwidth.

The Alcatel-Lucent B13 RRH4x30-4R is a near zero-footprint solution and operates noise free, simplifying negotiations with site property owners and minimizing environmental impacts.

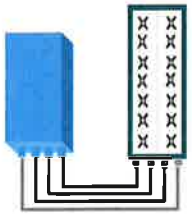
Its compactness and slim design makes the Alcatel-Lucent B13 RRH4x30-4R easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the RF feeder needs and installation costs.

FEATURES

- Supporting LTE in 700 MHz band (700U, 3GPP band 13)
- LTE 2Tx or 4Tx MIMO (SW switchable)
- Output power: Up to 2x60W or 4x30W
- 10MHz LTE carrier with 4Rx Diversity
- Convection-cooled (fan-less)
- Supports AISG 2.0 ALD devices (RET, TMA) through RS485 or RF ports

BENEFITS

- Compact to reduce additional footprint when adding LTE in 700U band
- MIMO scheme operation selection (2Tx or 4Tx) by software only
- Improves downlink spectral efficiency through MIMO4
- Increases LTE coverage thanks to 4Rx diversity capability and best in class Rx sensitivity
- Flexible mounting options: Pole or Wall



4x30W with 4T4R
or
2x60W with 2T4R

Can be switched between modes via SW w/o site visit

Alcatel·Lucent

Features & performance	
Number of TX/RX paths	4 duplexed (either 4T4R or 2T4R by SW)
Frequency band	U700 (C) (3GPP bands 13): DL: 746 - 756 MHz / UL: 777 - 787 MHz
Instantaneous bandwidth - #carriers	10MHz – 1 LTE carrier (in 10MHz occupied bandwidth)
LTE carrier bandwidth	10 MHz
RF output power	2x60W or 4x30W (by SW)
Noise figure – RX Diversity scheme	2 dB typ. (<2.5 dB max) – 2 or 4 way Rx diversity
Sizes (HxWxD) in mm (in.) **Volume in L** **Weight in kg (lb) (w/o mounting HW)**	550 x 305 x 230 (21.6" x 12.0" x 9") (with solar shield) 38 (with solar shield) 26 (57.2) (with solar shield)
DC voltage range **DC power consumption**	-40.5 to -57V at full performance, -38 to -57V with relaxation on power consumption 550W typical @100% RF load (in 2Tx or 4TX mode)
Environmental conditions **Wind load (@150km/h or 93mph)**	-40°C (-40°F) /+55°C (+131°F) IP65 Frontal:<200N / Lateral :<150N
Antenna ports	4 ports 7/16 DIN female (50 ohms) VSWR < 1.5
CPRI ports	2 CPRI ports (HW ready for Rate7, 9.8 Gbps) SFP single mode dual fiber
AISG interfaces	1 AISG2.0 output (RS485) Integrated Smart Bias Tees (x2)
Misc. Interfaces	4 external alarms (1 connector) – 4 RF Tx & 4 RF Rx monitor ports - 1 DC connector (2 pins)
Installation conditions	Pole and wall mounting
Regulatory compliance	3GPP 36.141 / 3GPP 36.113 / GR-1089-CORE / GR-3108-CORE / UL 60950-1 / FCC Part 27

ALCATEL-LUCENT B25 RRH4X30

Alcatel-Lucent Band 25 Remote Radio Head 4x30W is the new addition of Remote Radio Head to the extended product line of Alcatel-Lucent's distributed Base Station solutions, aimed at facilitating smooth RF site acquisition and related civil engineering.

Supporting 2Tx/4Tx MIMO and 4-way Rx diversity, Alcatel-Lucent B25 RRH4x30 allows operators to have a compact radio solution to deploy LTE in the PCS band (1.9 GHz, 3GPP band 25), providing them with the means to achieve high capacity, high quality and high coverage with minimum site requirements.

The Alcatel-Lucent B25 RRH4x30 product has four transmit RF paths, offering the possibility to **select, via software only, 2Tx or 4Tx MIMO configurations** with either 2x60 W or 4x30 W RF output power. It supports also 4-way Rx diversity, LTE carriers from 3 MHz up to 20 MHz and up to 65 MHz instantaneous bandwidth.

The Alcatel-Lucent B25 RRH4x30 is a near zero-footprint solution and operates noise free, simplifying negotiations with site property owners and minimizing environmental impacts.

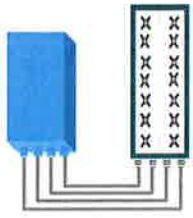
Its compactness and slim design makes the Alcatel-Lucent B25 RRH4x30 easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the RF feeder needs and installation costs.

FEATURES

- Supporting LTE in 1.9 GHz band (PCS, 3GPP band 2 & 25)
- LTE 2Tx or 4Tx MIMO (SW switchable)
- Output power: Up to 2x60W or 4x30W
- Ready for 3, 5, 10, 15 or 20MHz LTE carrier operation with 4Rx Diversity
- Ready to support up to 4 carriers anywhere in 65MHz instantaneous bandwidth
- Convection-cooled (fan-less)
- Supports AISG 2.0 devices (RET, TMA) through RS485 or RF ports

BENEFITS

- Compact to reduce additional footprint when adding LTE in PCS band
- MIMO scheme operation selection (2Tx or 4Tx) by software only
- Full flexibility for multiple carriers operation over entire PCS spectrum
- Improves downlink spectral efficiency and cell edge throughput through MIMO4
- Increases LTE coverage thanks to 4-way Rx diversity capability and best in class Rx sensitivity
- Flexible mounting options (Pole or Wall)



4x30W with 4T4R
or
2x60W with 2T4R

Can be switched between modes via SW w/o site visit

Alcatel·Lucent

TECHNICAL SPECIFICATIONS

Features & performance	
Number of TX/RX paths	4 duplexed (either 4T4R or 2T4R by SW)
Frequency band	3GPP bands 2 & 25 (PCS-G) DL: 1930 - 1995 MHz UL: 1850 - 1915 MHz
Instantaneous bandwidth - #carriers	65MHz – Up to 4 LTE carriers (in 40MHz occupied bandwidth)
LTE carrier bandwidth	3, 5, 10, 15 or 20 MHz
RF output power	2x60W or 4x30W (by SW)
Noise figure (3GPP band 2) **RX Diversity scheme**	2.0 dB typ. (<2.5 dB max) 2 or 4 way Rx diversity
Sizes (HxWxD)(w/ solar shield) in mm (in.) **Volume (w/ solar shield) in L** **Weight (w/ solar shield) in kg (lb)**	538 x 304 x 182 (21.2" x 12.0" x 7.2") 30 24 (53)
DC voltage range **DC power consumption**	-40.5 to -57V at full performance, -38 to -57V with relaxation on power consumption 580W typical @100% RF load
Environmental conditions **Wind load (@150km/h or 93mph)**	-40°C (-40°F) /+55°C (+131°F) IP65 Frontal:<200N / Lateral :<150N
Antenna ports	4 ports 7/16 DIN female (50 ohms) VSWR < 1.5 (> 14dB)
CPRI ports	2 CPRI ports (HW ready for Rate7 / 9.8 Gbps)
AISG interfaces	1 AISG2.0 output (RS485), +24V/2A DC power Integrated Smart Bias Tees (x2)
Misc. Interfaces	1 external alarms connector (4 alarms) 4 RF Tx & 4 RF Rx monitor ports 1 DC connector (2 pins)
Installation conditions	Pole and wall mounting
Regulatory compliance	3GPP 36.141 / 3GPP 36.113 / GR-1089-CORE / GR-3108-CORE / UL 60950-1 / FCC Part 27

ATTACHMENT 2

Site Name: Durham Fairgrounds, CT
Cumulative Power Density

Operator	Operating Frequency	Number of Trans.	ERP Per Trans.	Total ERP	Distance to Target	Calculated Power Density	Maximum Permissible Exposure*	Fraction of MPE
	(MHz)		(watts)	(watts)	(feet)	(mW/cm^2)	(mW/cm^2)	(%)
VZW PCS	1970	0	0	0	29	0.0000	1.0	0.00%
VZW Cellular	869	0	0	0	29	0.0000	0.579333333	0.00%
VZW AWS	2145	1	157	157	29	0.0671	1.0	6.71%
VZW 700	746	1	16	16.07	29	0.0069	0.497333333	1.38%

Total Percentage of Maximum Permissible Exposure 8.10%

*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Part 1 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-1992

MHz = Megahertz
mW/cm^2 = milliwatts per square centimeter
ERP = Effective Radiated Power

Absolute worst case maximum values used, including the following assumptions:

1. closest accessible point is distance from antenna to base of pole;

2. continuous transmission from all available channels at full power for indefinite time period; and,

3. all RF energy is assumed to be directed solely to the base of the pole.

ATTACHMENT 3

STRUCTURAL ANALYSIS REPORT

For

DURHAM FAIRGROUNDS CT

24 Townhouse Road
Durham, CT 06422

Antennas Mounted on an Existing Wood Pole

Prepared for:

verizon

99 East River Road, 9th Floor
East Hartford, CT 06108

Dated: April 7, 2017

Prepared by:

Hudson Design Group LLC

1600 Osgood Street Bldg. 20N Suite 3090
North Andover, MA 01845
(P) 978.557.5553 (F) 978.336.5586
www.hudsondesigngroupllc.com

Hudson Design Group LLC

SCOPE OF WORK:

Hudson Design Group LLC (HDG) has been authorized by Verizon to conduct a structural evaluation of the existing 30'+/- (A.G.L.) wood pole supporting the proposed Verizon's equipment and the existing utility lines.

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

CONCLUSION SUMMARY:

Based on our evaluation, we have determined that the existing wood pole **is in conformance** with the North American Wood Pole Coalition Technical Bulletin – The Wood Pole 2005: Design Considerations, Service Benefits, and Economical Reward for the loading considered under the criteria listed in this report. The wood pole structure is rated at **28.03%.**

The following documents were used for our reference:

- Structural analysis prepared by Centek dated November 17, 2014 (rev. 2).

APPURTENANCES CONFIGURATION:

Appurtenances	Elev.	Mount
(2) NH65S-DG-F0M Antennas	29'	Chain mount
(4) CBC721-DF Diplexers	28'	Chain mount
(2) 9768 CMRO B13 RRH's	27'	Chain mount
(2) OVP's	26'	Metal Straps
(2) 9768 CMRO B4 RRH's	25'	Chain mount
(2) Lighting Fixtures	24'	Bracket
(1) Loudspeaker	15'	Bracket

VERIZON COAX CABLES:

Coax Cables	Elev.	Mount
(2) Main Lines	30'	On Wood pole
(4) 1x1 Top Jumpers	30'	On Wood pole
(20) 1/2" Coax Jumpers	30'	On Wood pole
(4) Hybrid Jumpers	34'	On Wood pole

ANALYSIS RESULTS SUMMARY:

Component	Max. Stress Ratio	Elev. of Component (ft)	Pass/Fail
SYP H1	28.03 %	0 – 30	PASS

Referenced documents are attached.

Hudson Design Group LLC

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)
Risk Category:	II	
Exposure Category:	B	

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

City/Town:	Durham	
County:	Middlesex	
Wind Load:	120 mph	(Max Basic Wind Speed)
Nominal Ice Thickness:	3/4 inch	

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

   29'-0"+/-

Hudson Design Group LLC

EXISTING STRUCTURE:

The existing Southern Yellow Pine Class H1 (fb=8000 psi) wood pole is stands 30' tall (with 10' of the pole buried into the ground – total pole height = 40'). The wood pole circumference at 6' from the butt is 43.5 inches and the wood pole circumference at the top of pole is 29 inches.

ANTENNA/RRH/DIPLEXER SUPPORT RECOMMENDATIONS:

The new antennas, RRH's, and diplexers are proposed to be mounted on new pipe masts attached to new chain mount secured to the existing wood pole.

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. HDG did not perform any geotechnical analysis or investigation. Soil Information is unknown.

Hudson Design Group LLC

Calculations

Date: 04-06-2017
Project Name: Durham Fairgrounds CT
Designed By: GH Checked By: MSC

Hudson Design Group LLC

APPURTENANCES

2.6.5.2 Velocity Pressure Coeff:

$K_z = 2.01 (z/z_g)^{2/\alpha}$

z= 29 (ft)
z_g= 1200 (ft)
α= 7

K_z= 0.694

Kzmin ≤ Kz ≤ 2.01

Table 2-4

Exposure	Z_g	α	K_{zmin}	K_e
B	1200 ft	7.0	0.70	0.9
C	900 ft	9.5	0.85	1.0
D	700 ft	11.5	1.03	1.1

2.6.6.4 Topographic Factor:

Table 2-5

Topo. Category	K_t	f
2	0.43	1.25
3	0.53	2.0
4	0.72	1.5

$K_{zt} = [1+(K_e K_t/K_h)]^2$

$K_h = e^{(f*z/H)}$

K_{zt}= #DIV/0!

K_h= #DIV/0!
K_e= 0 (from Table 2-4)
K_t= 0 (from Table 2-5)
f= 0 (from Table 2-5)
z= 29
H= 0 (Ht. of the crest above surrounding terrain)
K_{zt}= 1.00

(If Category 1 then K_{zt}=1.0)

Category= 1

Date: 04-06-2017
Project Name: Durham Fairgrounds CT
Designed By: GH Checked By: MSC

Hudson Design Group LLC

2.6.7 Gust Effect Factor

2.6.7.1 Self Supporting Lattice Structures

Gh = 1.0 Latticed Structures > 600 ft

Gh = 0.85 Latticed Structures 450 ft or less

Gh = 0.85 + 0.15 [h/150 - 3.0] h= ht. of structure

h=	30	Gh=	0.85
2.6.7.2 Guyed Masts		Gh=	0.85
2.6.7.3 Pole Structures		Gh=	1.1
2.6.9 Appurtenances		Gh=	1.0

2.6.7.4 Structures Supported on Other Structures
(Cantilivered tubular or latticed spines, pole, structures on buildings (ht. : width ratio > 5)

Gh=	1.35	**Gh=**	**1.00**

Date: 04-06-2017
Project Name: Durham Fairgrounds CT
Designed By: GH Checked By: MSC

Hudson Design Group LLC

2.6.9.2 Design Wind Force on Appurtenances

$$F = q_z * G_h * (EPA)_A$$

$$q_z = 0.00256 * K_z * K_{zt} * K_d * V_{max}^2 * I$$

K_z=	0.694
K_{zt}=	1.0
K_d=	0.95
V_{max}=	120
I=	1.0

q_z= 24.30

Table 2-2

Structure Type	Wind Direction Probability Factor, Kd
Latticed structures with triangular, square or rectangular cross sections	0.85
Tubular pole structures, latticed structures with other cross sections, appurtenances	0.95

Determine Cf:

If lattice Structure See Manual

If Tubular Pole Structure, Use Corrected Value from Table 2.7 Below

C mph.ft	Round	18 Sided	16 Sided	12 Sided	8 Sided
< 32 (Subcritical)	1.2	1.2	1.2	1.2	1.2
32 to 64 (Transitional)	$38.4/C^{1.0}$	$25.8/C^{0.885}$	$12.6/C^{0.678}$	$2.99/C^{0.263}$	1.2
> 64 (Supercritical)	0.6	0.65	0.75	1	1.2

$$C = (I * K_{zt} * K_z)^{0.5} * V * D$$

D = Outside diameter for rounds: 0.25 feet

C= 24.99 **Cf= 1.2**

Date: 04-06-2017
Project Name: Durham Fairgrounds CT
Designed By: GH Checked By: MSC

Hudson Design Group LLC

Determine Ca:

Table 2-8

Force Coefficients (Ca) for Appurtenances				
Member Type		Aspect Ratio ≤ 2.5	Aspect Ratio = 7	Aspect Ratio ≥ 25
		Ca	Ca	Ca
Flat		1.2	1.4	2.0
Round	C < 32 (Subcritical)	0.7	0.8	1.2
	32 ≤ C ≤ 64 (Transitional)	$3.76/(C^{0.485})$	$3.37/(C^{0.415})$	$38.4/(C^{1.0})$
	C > 64 (Supercritical)	0.5	0.6	0.6

Aspect Ratio is the overall length/width ratio in the plane normal to the wind direction.
(Aspect ratio is independent of the spacing between support points of a linear appurtenance, and the section length considered to have uniform wind load).

Note: Linear interpolation may be used for aspect ratios other than those shown.

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	Ca	Force (lbs) (normal)
NH65S-DG-F0M (front)	28.7	11.9	7.1	2.37	2.41	1.20	69
NH65S-DG-F0M (side)	28.7	7.1	11.9	1.42	4.04	1.27	44
9768 CMRO B13 (front)	17.9	6.8	7.9	0.85	2.63	1.21	25
9768 CMRO B13 (side)	17.9	7.9	6.8	0.98	2.27	1.20	29
9768 CMRO B4 (front)	17.9	6.8	6.2	0.85	2.63	1.20	25
9768 CMRO B4 (side)	17.9	6.2	6.8	0.77	2.89	1.22	23
OVB (front)	19.2	15.7	10.3	2.09	1.22	1.20	61
OVB (side)	19.2	10.3	15.7	1.37	1.86	1.20	40
CBC721-DF Diplexer	7.7	6.0	1.6	0.32	1.28	1.20	9
Lighting Fixture	18.0	18.0	6.0	2.25	1.00	1.20	66
Loudspeaker	10.0	18.0	10.0	1.25	0.56	1.20	36

Date: 04-06-2017
Project Name: Durham Fairgrounds CT
Designed By: GH Checked By: MSC

Hudson Design Group LLC

WOOD POLE

2.6.5.2 Velocity Pressure Coeff:

$K_z = 2.01\ (z/z_g)^{2/\alpha}$

z= 30 (ft)
z_g= 1200 (ft)
α= 7

K_z= 0.701

Kzmin ≤ Kz ≤ 2.01

Table 2-4

Exposure	Z_g	α	K_{zmin}	K_e
B	1200 ft	7.0	0.70	0.9
C	900 ft	9.5	0.85	1.0
D	700 ft	11.5	1.03	1.1

2.6.6.4 Topographic Factor:

Table 2-5

Topo. Category	K_t	f
2	0.43	1.25
3	0.53	2.0
4	0.72	1.5

$K_{zt} = [1+(K_e K_t/K_h)]^2$

$K_h = e^{(f*z/H)}$

K_{zt}= #DIV/0!

K_h= #DIV/0!
K_e= 0 (from Table 2-4)
K_t= 0 (from Table 2-5)
f= 0 (from Table 2-5)
z= 30
H= 0 (Ht. of the crest above surrounding terrain)
K_{zt}= 1.00

(If Category 1 then K_{zt} =1.0)

Category= 1

Date: 04-06-2017
Project Name: Durham Fairgrounds CT
Designed By: GH Checked By: MSC

Hudson Design Group LLC

2.6.7 Gust Effect Factor

2.6.7.1 Self Supporting Lattice Structures

Gh = 1.0 Latticed Structures > 600 ft

Gh = 0.85 Latticed Structures 450 ft or less

Gh = 0.85 + 0.15 [h/150 - 3.0] h= ht. of structure

h=	30	Gh=	0.85

2.6.7.2 Guyed Masts Gh= 0.85

2.6.7.3 Pole Structures Gh= 1.1

2.6.9 Appurtenances Gh= 1.0

2.6.7.4 Structures Supported on Other Structures
(Cantilivered tubular or latticed spines, pole, structures on buildings (ht. : width ratio > 5)

Gh=	1.35	Gh=	1.10

Date: 04-06-2017
Project Name: Durham Fairgrounds CT
Designed By: GH Checked By: MSC

Hudson Design Group LLC

2.6.9.2 Design Wind Force on Appurtenances

$F = qz*Gh*(EPA)_A$

$q_z = 0.00256*K_z*K_{zt}*K_d*V_{max}^2*I$

K_z=	0.701
K_{zt}=	1.0
K_d=	0.95
V_{max}=	120
I=	1.0

q_z= 24.54

Table 2-2

Structure Type	Wind Direction Probability Factor, Kd
Latticed structures with triangular, square or rectangular cross sections	0.85
Tubular pole structures, latticed structures with other cross sections, appurtenances	0.95

Determine Cf:

If lattice Structure See Manual

If Tubular Pole Structure, Use Corrected Value from Table 2.7 Below

C mph.ft	Round	18 Sided	16 Sided	12 Sided	8 Sided
< 32 (Subcritical)	1.2	1.2	1.2	1.2	1.2
32 to 64 (Transitional)	$38.4/C^{1.0}$	$25.8/C^{0.885}$	$12.6/C^{0.678}$	$2.99/C^{0.263}$	1.2
> 64 (Supercritical)	0.6	0.65	0.75	1	1.2

$C = (I*K_{zt}*K_z)^{0.5}*V*D$

D = Outside diameter for rounds: 0.25 feet

C= 25.11 Cf= 1.2

Date: 04-06-2017
Project Name: Durham Fairgrounds CT
Designed By: GH Checked By: MSC

Hudson Design Group LLC

Determine Ca:

Table 2-8

Force Coefficients (Ca) for Appurtenances				
Member Type		**Aspect Ratio ≤ 2.5**	**Aspect Ratio = 7**	**Aspect Ratio ≥ 25**
		Ca	**Ca**	**Ca**
Flat		1.2	1.4	2.0
Round	**C < 32** (Subcritical)	0.7	0.8	1.2
	32 ≤ C ≤ 64 (Transitional)	$3.76/(C^{0.485})$	$3.37/(C^{0.415})$	$38.4/(C^{1.0})$
	C > 64 (Supercritical)	0.5	0.6	0.6

Aspect Ratio is the overall length/width ratio in the plane normal to the wind direction.
(Aspect ratio is independent of the spacing between support points of a linear appurtenance, and the section length considered to have uniform wind load).

Note: Linear interpolation may be used for aspect ratios other than those shown.

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	Ca	Force (lbs) (normal)
Pole + Lines	**360.0**	**14.5**	**14.5**	**36.25**	**24.83**	**1.20**	**1174**

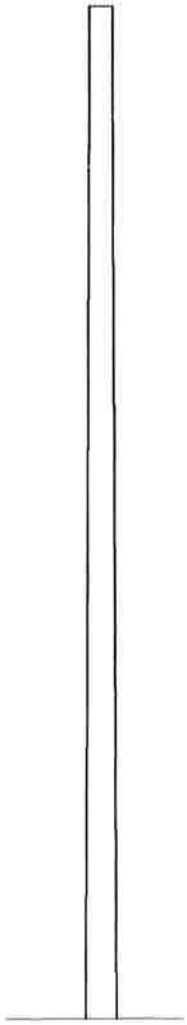
Date: 04-06-2017
Project Name: Durham Fairgrounds CT
Designed By: GH **Checked By:** MSC

Hudson Design Group LLC

Calculate Momment at the Base of Wood Pole

Item	Wind Load (lbs.)	Qty.	Total W Load (lbs.)	Distance (ft.)	Moment (lb-ft)
NH65S-DG-F0M	44	2	88	29	5104.0
CBC721-DF	9	4	36	28	4032.0
9768 CMRO B13	29	2	58	27	3132.0
OVP	40	2	80	26	4160.0
9768 CMRO B4	23	2	46	25	2300.0
Light Fixture	66	2	132	24	6336.0
Loudspeaker	36	1	36	15	540.0
Pole & Lines	1174	1	1174	15	17610.0

Total =	43214.0	lb-ft



← **88 lbs. @ 29 ft.**

← **36 lbs. @ 28 ft.**

← **58 lbs. @ 27 ft.**

← **80 lbs. @ 26 ft.**

← **46 lbs. @ 25 ft.**

← **132 lbs. @ 24 ft.**

← **36 lbs. @ 15 ft.**

← **1174 lbs. @ 15 ft.**

Date: 04-06-2017
Project Name: Durham Fairgrounds CT
Designed By: GH Checked By: MSC

Wood Pole Antenna Support Structure

Reference Codes:

-ANSI/TIA-222-G Structural Standards for Steel Antenna Towers and Antenna Supporting Structures

-North American Wood Council (NAWC)-Technical Bulletin, The Wood Pole 2005: Design Considerations Service Benefits, and Economic Reward

-United States Department of Agriculture (USDA)-Designated Fiber Stress for Wood Poles

-International Building Code 2012 (IBC 2012)

-2016 Connecticut State Building Code Amendments

APPURTENANCE BREAK-DOWN

Item	Wt. (lbs.)	Qty.
NH65S-DG-F0M Antenna	124	2
9768 CMRO RRH	23	4
CBC721-DF Diplexer	5	4
OVP	32	2
Light Fixture	30	2
Loudspeaker	20	1

FEEDER LINES

Item	Qty.
Main Line	2
1x1 Top Jumper	4
1/2" Coax Jumper	20
Hybrid Jumper	4

Date: 04-06-2017

Project Name: Durham Fairgrounds CT

Designed By: GH Checked By: MSC

Hudson Design Group LLC

Wood Fiber Strength	
Tree Species	***Fiber Strength (psi)***
Western Larch	8400
Souther Yellow Pine	**8000**
Douglas Fir	8000
Western Hemlock	7400
Alaska Cedar	7400
Northern Red Pine	6600
Long Pole Pine	6600
Western Fir	6600
Sitka Spruce	6600
White Spruce	6600
Ponderosa Pine	6000
Western Red Cedar	6000
Engelmann Spruce	5600
North White Cedar	4000

Maximum Moment= 43214 (ft-lbs)

$Mr_{allowable}$=	154184.03 (ft-lbs)

Structure Rating=	**28.03%**

Height of pole (AGL) = 30 ft

Total Pole Length = 40.00 ft

Ultimate Resisting Moment Calculation:

$$Mr= (K_r)(F_b)(C_g^3)$$

Mr= Ultimate Resisting Moment (ft-lbs)

Kr= Constant (0.000264)

Fb=Designated Pole Fiber Stress for Wood Species (psi)

Cg=Pole Circumference at ground line (in)

$$Cg= [(D_p-D_g)(C_b-C_t)/(D_p-D_b)]+C_t$$

Cb=Pole Circumference 6' from butt

Ct=Circumference at Top of Pole

Dp=Distance from butt of Pole to Top of Pole

Dg=Distance from butt of Pole to Ground Line (.10 x Dp) + 2')

Db=Distance from butt of Pole to classification Point per ANSI 05.1

Cg=	41.79

Hudson Design Group LLC

Referenced Documents

CENTEK engineering
Centered on Solutions
63-2 North Branford Road
Branford, CT 06405
www.centekeng.com
P: (203) 488-0580
F: (203) 488-8587

Subject:	Wood Pole Analysis
Location:	Durham, CT
Rev. 0: 11/17/14	Prepared by: T.J.L Checked by: C.F.C. Job No. 14094.000

Wood Pole Analysis:

Reactions:

Moment at Ground Line = $M_g := 51 \cdot kip \cdot ft$ (User Input from tnxTower)

Shear at Ground Line = $V_g := 2 \cdot kips$ (User Input from tnxTower)

Pole Properties:

Species = Southern Yellow Pine (User Input)

Class = H1 (User Input)

Fiber Strength = $F_b := 8000 \cdot psi$ (User Input North American Wood Pole Coalition)

Pole Circumference at Top of Pole = $C_t := 29 \cdot in$ (User Input ANSI 05.1)

Pole Circumference at 6-ft from Butt = $C_b := 43.5 \cdot in$ (User Input ANSI 05.1)

Distance from Butt of Pole to Top of Pole = $D_p := 40 \cdot ft$ (User Input)

Distance from Butt of Pole to Classification Point = $D_b := 6 \cdot ft$ (User Input ANSI 05.1)

Distance from Butt of Pole to Ground Line = $D_g := 10 \cdot ft$ (User Input)

Min. Required Pole Embedment = $Emb_{MIN} := D_p \cdot 0.1 + 2 \cdot ft = 6ft$

$$D_g := \begin{cases} D_g & \text{if } D_g > Emb_{MIN} \\ Emb_{MIN} & \text{otherwise} \end{cases} = 10ft$$

Pole Circumference at Ground Line = $C_g := \frac{(D_p - D_g) \cdot (C_b - C_t)}{(D_p - D_b)} + C_t = 41.794 \cdot in$

Calculation Constant = $K_r := 0.000264 \cdot \frac{ft}{in}$ (User Input North American Wood Pole Coalition)

Strength Reduction Factor = $\Phi := 0.85$ (User Input)

Ultimate Resisting Moment at Ground Line = $M_r := K_r \cdot F_b \cdot C_g^3 = 154.184 \cdot ft \cdot kips$

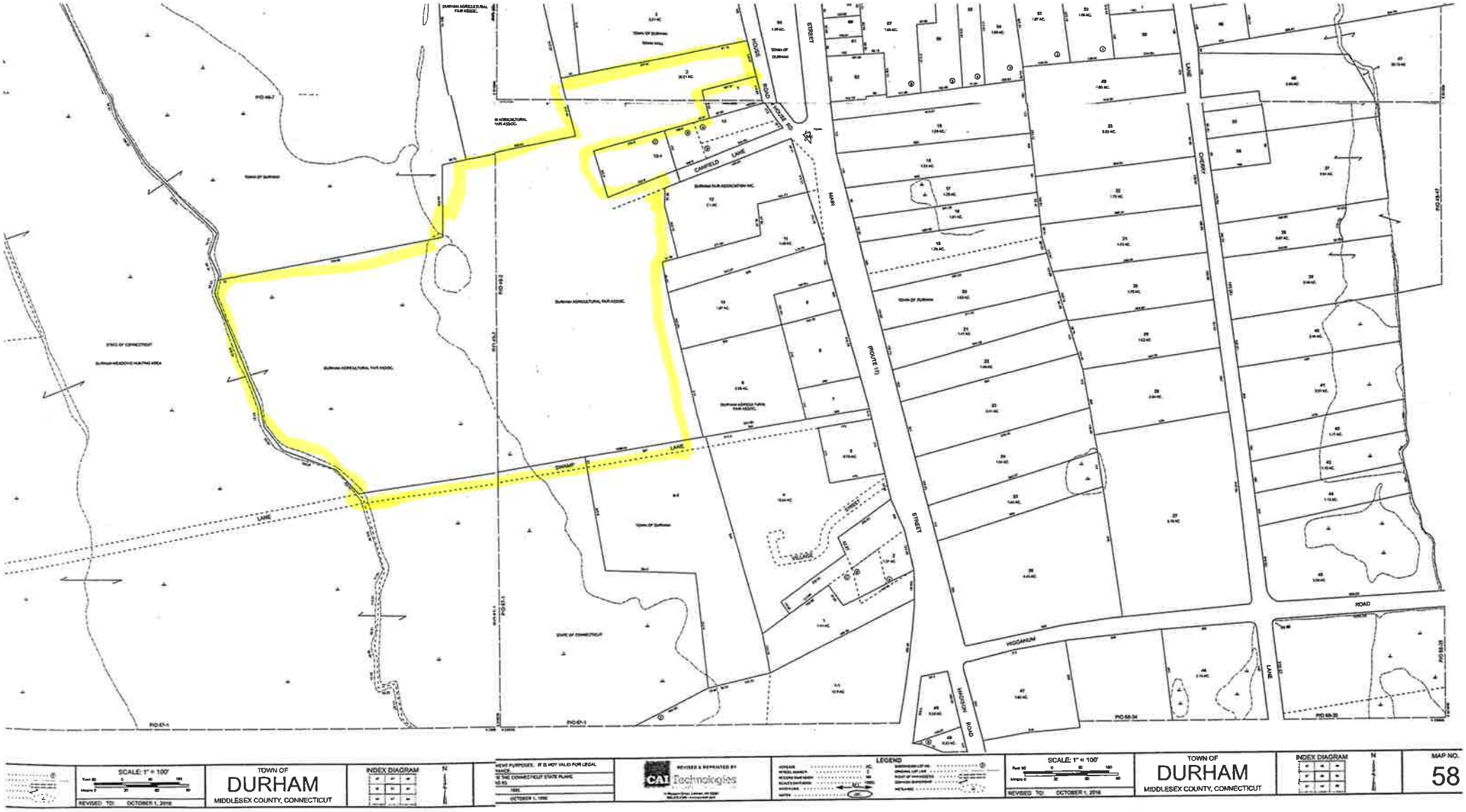
Resisting Moment at Ground Line = $M_{r'} := M_r \cdot \Phi = 131.056 \cdot ft \cdot kips$

$$\frac{M_g}{M_{r'}} = 38.9 \cdot \%$$

Wood Pole = $Wood\ Pole := if\left(\frac{M_g}{M_{r'}} \le 1.00, "OK", "Overstressed"\right)$

Wood Pole = "OK"

ATTACHMENT 4



SCALE: 1" = 100'

REVISED TO: OCTOBER 1, 2018

TOWN OF
DURHAM
MIDDLESEX COUNTY, CONNECTICUT

INDEX DIAGRAM

N

MAP NO.
58

MADE FOR TAX PURPOSES. IT IS NOT VALID FOR LEGAL PURPOSES.
BASED ON THE CONNECTICUT STATE PLANE NAD 83 (1992)
OCTOBER 1, 1998

REVISED & REPRINTED BY
CAI Technologies

LEGEND

SCALE: 1" = 100'

REVISED TO: OCTOBER 1, 2018

TOWN OF
DURHAM
MIDDLESEX COUNTY, CONNECTICUT

INDEX DIAGRAM

N

MAP NO.
58

Durham, CT : Commercial Property Record Card

[Back to Search Results] [Start a New Search][Help with Printing]

Search For Properties

Parcel ID | Name | Street Name: TOWN HOUSE RD | Search | Reset

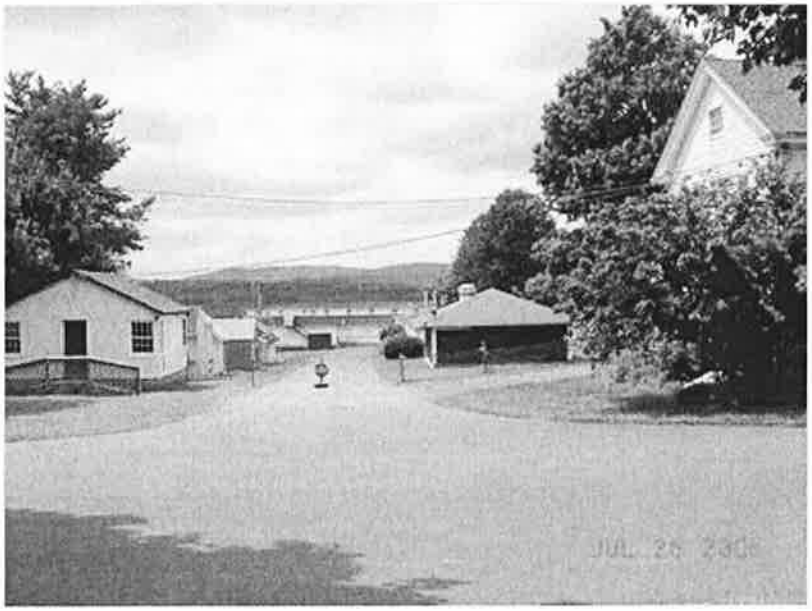
Parcel ID	Card	Routing No	Location	Zoning	State Class	Acres
D0079000	1	48 02+58 13	24 TOWN HOUSE RD	MR/FR	950 - n/a	30.510

Living Units
1

Owner Information

Durham Agricultural Fair Assoc
Pob 225
Durham CT 06422-0225

Property Picture



Deed Information

Book/Page: 69/431
Deed Date: 1965/12/09

Building Information

Building No: 0
Year Built: 0
No of Units: 0
Structure Type:
Grade:
Identical Units: 0

Valuation

Land:	$1,918,000
Building:	$2,460,600
Total:	$4,378,600
Net Assessment:	$3,065,020

Sales History

Book/Page	Date	Price	Type	Validity

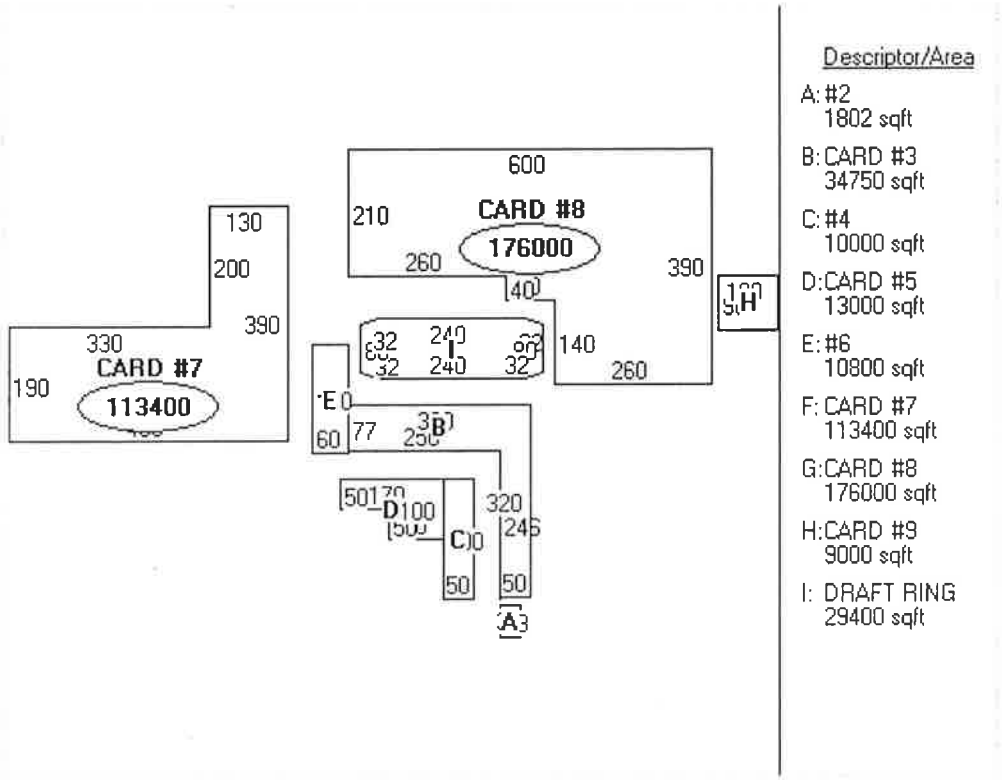
Out Building Information

Structure Code	Width	Lgth/SqFt	Year	RCNLD

Exterior/Interior Information

Levels	Size	Use Type	Ext. Walls	Const. Type	Partitions	Heating	A/C	Plumbing	Condition	Func.	Utility	Unadj. RCNLD

Building Sketch



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Comments regarding this service should be directed to: jphilip@townofdurhamct.org

Durham, CT : Commercial Property Record Card

[Back to Search Results] [Start a New Search][Help with Printing]

Search For Properties

Parcel ID | Name | Street Name: TOWN HOUSE RD | Search | Reset

Parcel ID	Card	Routing No	Location	Zoning	State Class	Acres
D0079000	2	48 02+58 13	24 TOWN HOUSE RD	MR/FR	950 - n/a	30.510

Living Units
1

Owner Information
Durham Agricultural Fair Assoc
Pob 225
Durham CT 06422-0225

Property Picture

Deed Information
Book/Page: 69/431
Deed Date: 1965/12/09

Building Information
Building No: 1
Year Built: 1880
No of Units: 1
Structure Type: Res-1 Family
Grade: A-
Identical Units: 1

Valuation
Land:	$1,918,000
Building:	$2,460,600
Total:	$4,378,600
Net Assessment:	$3,065,020

Sales History

Book/Page	Date	Price	Type	Validity

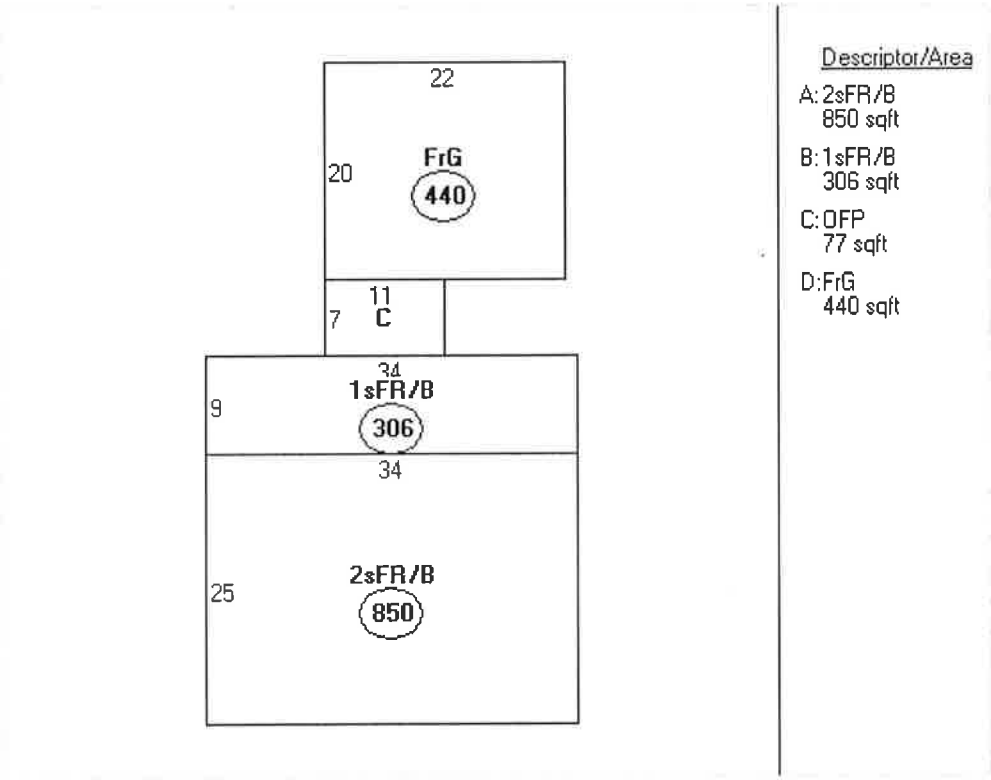
Out Building Information

Structure Code	Width	Lgth/SqFt	Year	RCNLD

Exterior/Interior Information

Levels	Size	Use Type	Ext. Walls	Const. Type	Partitions	Heating	A/C	Plumbing	Condition	Func. Utility	Unadj. RCNLD
B1-B1	1x1156	Unfinished Res Bsmt		Wood Joist	Normal	None	None	Normal	Normal	Normal	8480
01-01	1x1156	Multi-Use Office	Frame	Wood Joist	Normal	Hw/Steam	None	Normal	Normal	Normal	45380
02-02	1x850	Multi-Use Office	Frame	Wood Joist	Normal	Hw/Steam	None	Normal	Normal	Normal	29450

Building Sketch



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Search For Properties

Parcel ID **Name** **Street Name**

TOWN HOUSE RD

Search Reset

Parcel ID	Card	Routing No	Location	Zoning	State Class	Acres
D0079000	3	48 02+58 13	24 TOWN HOUSE RD	MR/FR	950 - n/a	30.510

Living Units
1

Owner Information

Durham Agricultural Fair Assoc
Pob 225
Durham CT 06422-0225

Property Picture

Deed Information

Book/Page: 69/431
Deed Date: 1965/12/09

Building Information

Building No: 0
Year Built: 0
No of Units: 0
Structure Type:
Grade:
Identical Units: 0

Valuation

Land:	$1,918,000
Building:	$2,460,600
Total:	$4,378,600
Net Assessment:	$3,065,020

Sales History

Book/Page	Date	Price	Type	Validity

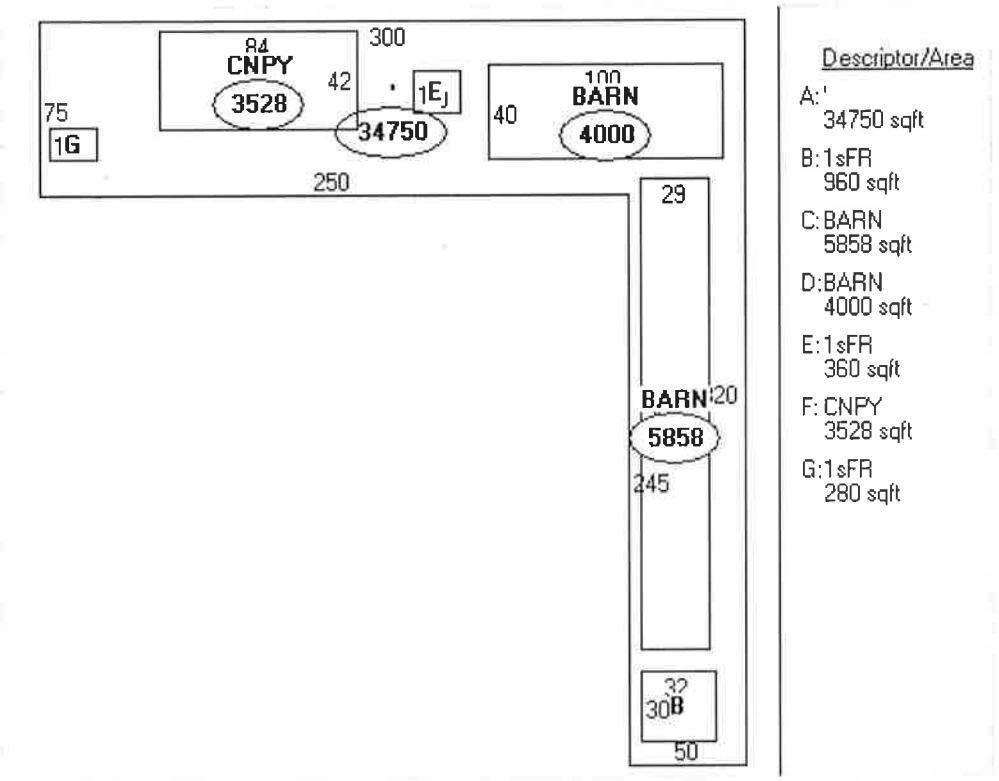
Out Building Information

Structure Code	Width	Lgth/SqFt	Year	RCNLD
Utility Frame	30	32	1996	$6,650
Shed Frame	29	209	1930	$53,840
Shed Frame	40	100	1930	$44,420
Utility Frame	18	20	1930	$2,450
Canopy Only	42	84	1980	$10,640
Utility Frame	14	20	1930	$1,900

Exterior/Interior Information

Levels	Size	Use Type	Ext. Walls	Const. Type	Partitions	Heating	A/C	Plumbing	Condition	Func.	Utility	Unadj. RCNLD

Building Sketch



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Search For Properties

Parcel ID | **Name** | **Street Name**

TOWN HOUSE RD

Search | Reset

Parcel ID	Card	Routing No	Location	Zoning	State Class	Acres
D0079000	4	48 02+58 13	24 TOWN HOUSE RD	MR/FR	950 - n/a	30.510

Living Units
1

Owner Information

Durham Agricultural Fair Assoc
Pob 225
Durham CT 06422-0225

Property Picture

Deed Information

Book/Page: 69/431
Deed Date: 1965/12/09

Building Information

Building No: 2
Year Built: 1930
No of Units: 1
Structure Type: Food Stand
Grade: D
Identical Units: 1

Valuation

Land:	$1,918,000
Building:	$2,460,600
Total:	$4,378,600
Net Assessment:	$3,065,020

Sales History

Book/Page	Date	Price	Type	Validity

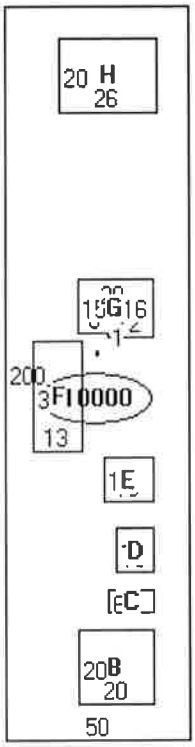
Out Building Information

Structure Code	Width	Lgth/SqFt	Year	RCNLD
Utility Frame	6	12	1990	$490
Utility Frame	10	12	1930	$820
Utility Frame	12	13	1930	$1,060
Utility Frame	10	12	2002	$990
Utility Frame	1	390	1930	$1,990
Utility Frame	20	26	1930	$3,530

Exterior/Interior Information

Levels	Size	Use Type	Ext. Walls	Const. Type	Partitions	Heating	A/C	Plumbing	Condition	Func. Utility	Unadj. RCNLD
01-01	1x400	Multi-Use Sales	Frame	Wood Joist	None	None	None	None	Fair	Fair	6710

Building Sketch



Descriptor/Area
A: 10000 sqft
B: FIRST AID 400 sqft
C: 1sFR 72 sqft
D: 1sFR 120 sqft
E: 1sFR 156 sqft
F: 1sFR 390 sqft
G: 1sFR 312 sqft
H: 1sFR 520 sqft

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Search For Properties

Parcel ID | **Name** | **Street Name** (TOWN HOUSE RD) | Search | Reset

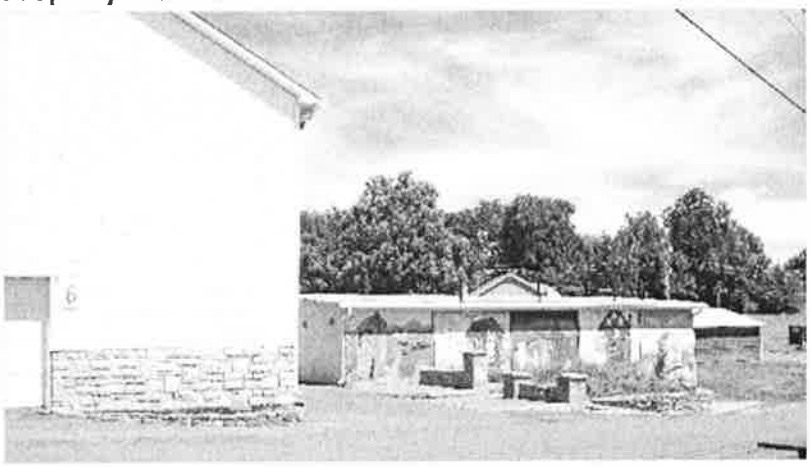
Parcel ID	Card	Routing No	Location	Zoning	State Class	Acres
D0079000	5	48 02+58 13	24 TOWN HOUSE RD	MR/FR	950 - n/a	30.510

Living Units
1

Owner Information

Durham Agricultural Fair Assoc
Pob 225
Durham CT 06422-0225

Property Picture



Deed Information

Book/Page: 69/431
Deed Date: 1965/12/09

Building Information

Building No: 0
Year Built: 0
No of Units: 0
Structure Type:
Grade:
Identical Units: 0

Valuation

Land:	$1,918,000
Building:	$2,460,600
Total:	$4,378,600
Net Assessment:	$3,065,020

Sales History

Book/Page	Date	Price	Type	Validity

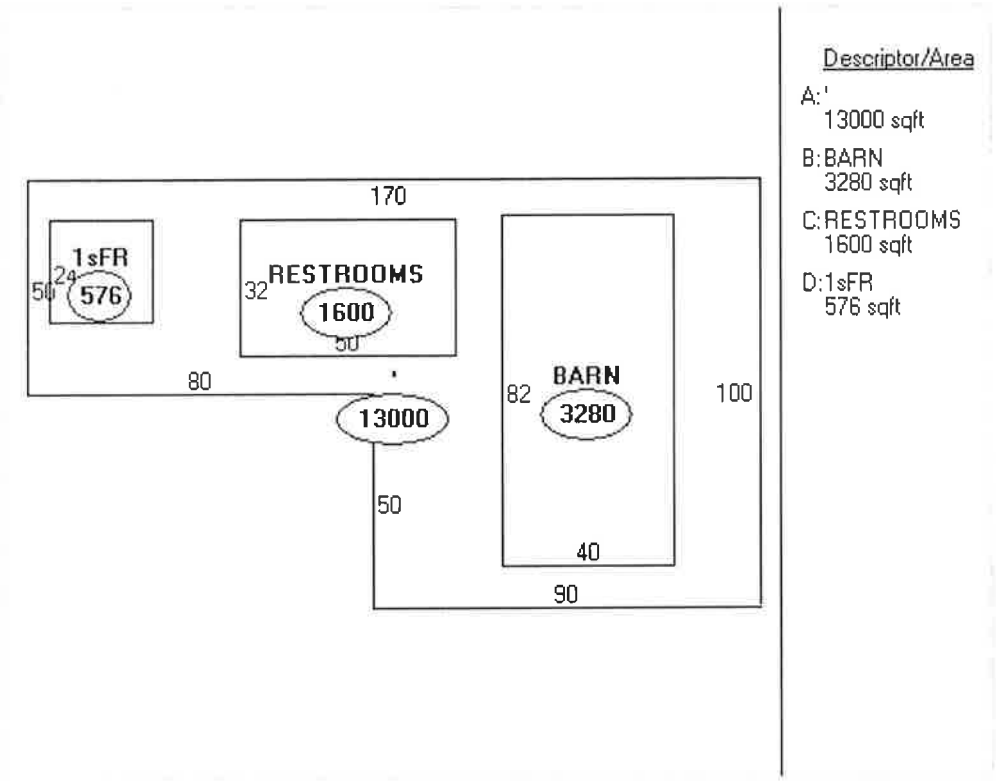
Out Building Information

Structure Code	Width	Lgth/SqFt	Year	RCNLD
Shed Frame	40	82	1930	$26,010
Restroom-Fr/Cb	32	50	1930	$32,980
Utility Frame	24	24	1930	$3,910

Exterior/Interior Information

Levels	Size	Use Type	Ext. Walls	Const. Type	Partitions	Heating	A/C	Plumbing	Condition	Func. Utility	Unadj. RCNLD

Building Sketch



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Durham, CT : Commercial Property Record Card

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Search For Properties

Parcel ID **Name** **Street Name**

TOWN HOUSE RD

Search Reset

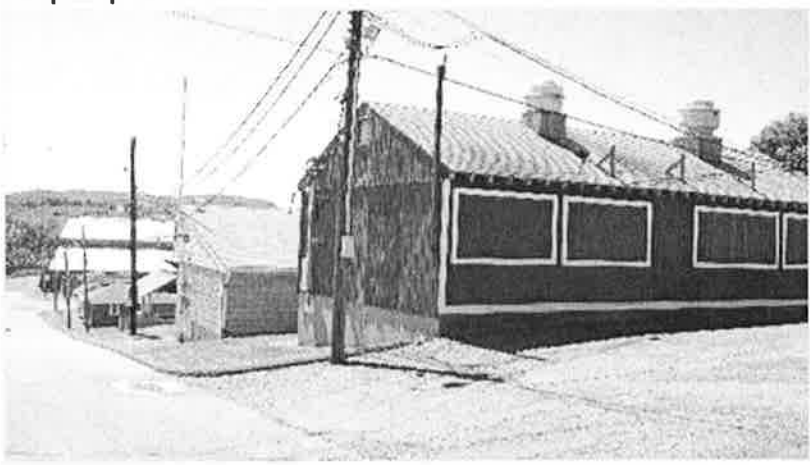
Parcel ID	Card	Routing No	Location	Zoning	State Class	Acres
D0079000	6	48 02+58 13	24 TOWN HOUSE RD	MR/FR	950 - n/a	30.510

Living Units
1

Owner Information

Durham Agricultural Fair Assoc
Pob 225
Durham CT 06422-0225

Property Picture



Deed Information

Book/Page: 69/431
Deed Date: 1965/12/09

Building Information

Building No: 0
Year Built: 0
No of Units: 0
Structure Type:
Grade:
Identical Units: 0

Valuation

Land: $1,918,000
Building: $2,460,600
Total: $4,378,600
Net Assessment: $3,065,020

Sales History

Book/Page	Date	Price	Type	Validity

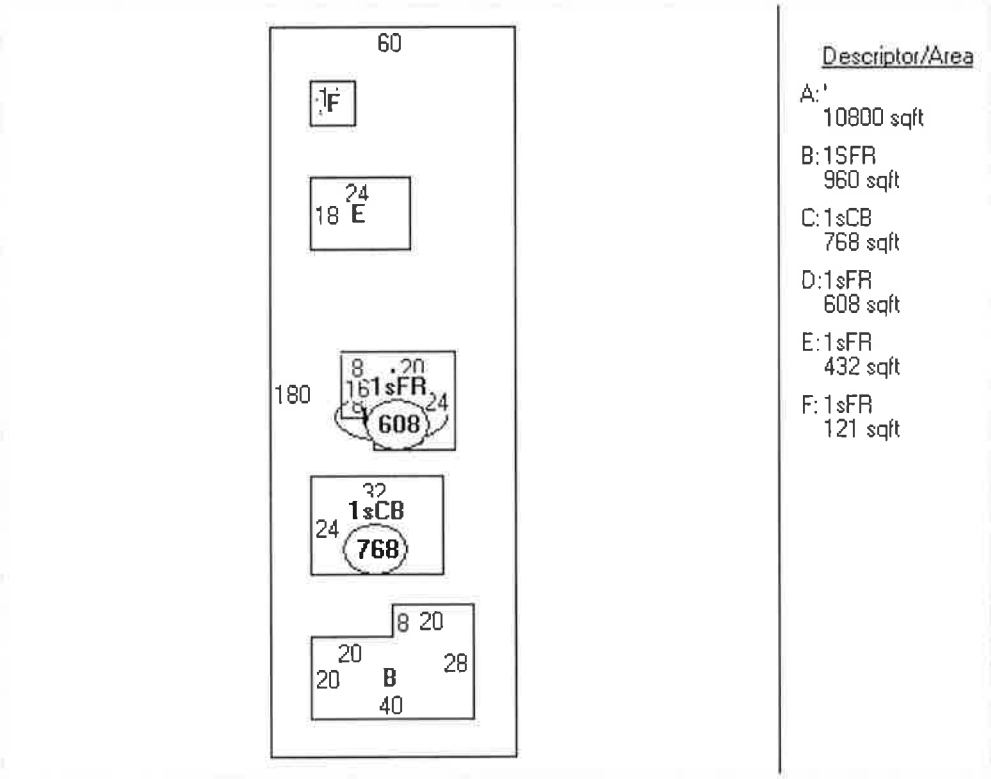
Out Building Information

Structure Code	Width	Lgth/SqFt	Year	RCNLD
Utility Frame	1	960	1988	$6,520
Utility Frame	24	32	1989	$5,220
Utility Frame	1	608	1930	$4,130
Utility Frame	24	18	1930	$2,940
Utility Frame	11	11	1930	$820

Exterior/Interior Information

Levels	Size	Use Type	Ext. Walls	Const. Type	Partitions	Heating	A/C	Plumbing	Condition	Func. Utility	Unadj. RCNLD

Building Sketch



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Comments regarding this service should be directed to: jphilip@townofdurhamct.org

Durham, CT : Commercial Property Record Card

[Back to Search Results] [Start a New Search][Help with Printing]

Search For Properties

Parcel ID **Name** **Street Name**

TOWN HOUSE RD

Search Reset

Parcel ID	Card	Routing No	Location	Zoning	State Class	Acres
D0079000	7	48 02+58 13	24 TOWN HOUSE RD	MR/FR	950 - n/a	30.510

Living Units
1

Owner Information

Durham Agricultural Fair Assoc
Pob 225
Durham CT 06422-0225

Property Picture

Deed Information

Book/Page: 69/431
Deed Date: 1965/12/09

Building Information

Building No: 0
Year Built: 0
No of Units: 0
Structure Type:
Grade:
Identical Units: 0

Valuation

Land:	$1,918,000
Building:	$2,460,600
Total:	$4,378,600
Net Assessment:	$3,065,020

Sales History

Book/Page	Date	Price	Type	Validity

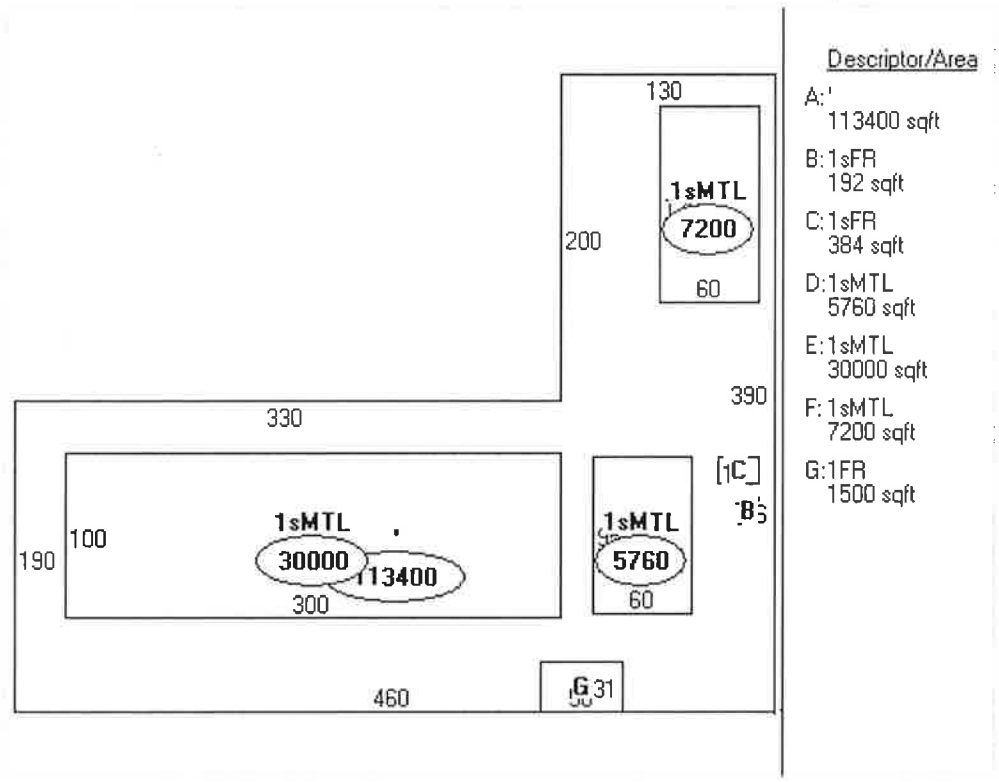
Out Building Information

Structure Code	Width	Lgth/SqFt	Year	RCNLD
Utility Frame	12	16	1930	$1,300
Utility Frame	16	24	1930	$2,610
Shed Metal	60	96	1930	$64,020
Shed Metal	100	300	2000	$446,820
Shed Metal	160	220	1996	$477,320

Exterior/Interior Information

Levels	Size	Use Type	Ext. Walls	Const. Type	Partitions	Heating	A/C	Plumbing	Condition	Func. Utility	Unadj. RCNLD

Building Sketch



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Durham, CT : Commercial Property Record Card

[Back to Search Results] [Start a New Search][Help with Printing]

Search For Properties

Parcel ID | Name | Street Name: TOWN HOUSE RD | Search | Reset

Parcel ID	Card	Routing No	Location	Zoning	State Class	Acres
D0079000	8	48 02+58 13	24 TOWN HOUSE RD	MR/FR	950 - n/a	30.510

Living Units
1

Owner Information

Durham Agricultural Fair Assoc
Pob 225
Durham CT 06422-0225

Property Picture

Deed Information

Book/Page: 69/431
Deed Date: 1965/12/09

Building Information

Building No: 0
Year Built: 0
No of Units: 0
Structure Type:
Grade:
Identical Units: 0

Valuation

Land:	$1,918,000
Building:	$2,460,600
Total:	$4,378,600
Net Assessment:	$3,065,020

Sales History

Book/Page	Date	Price	Type	Validity

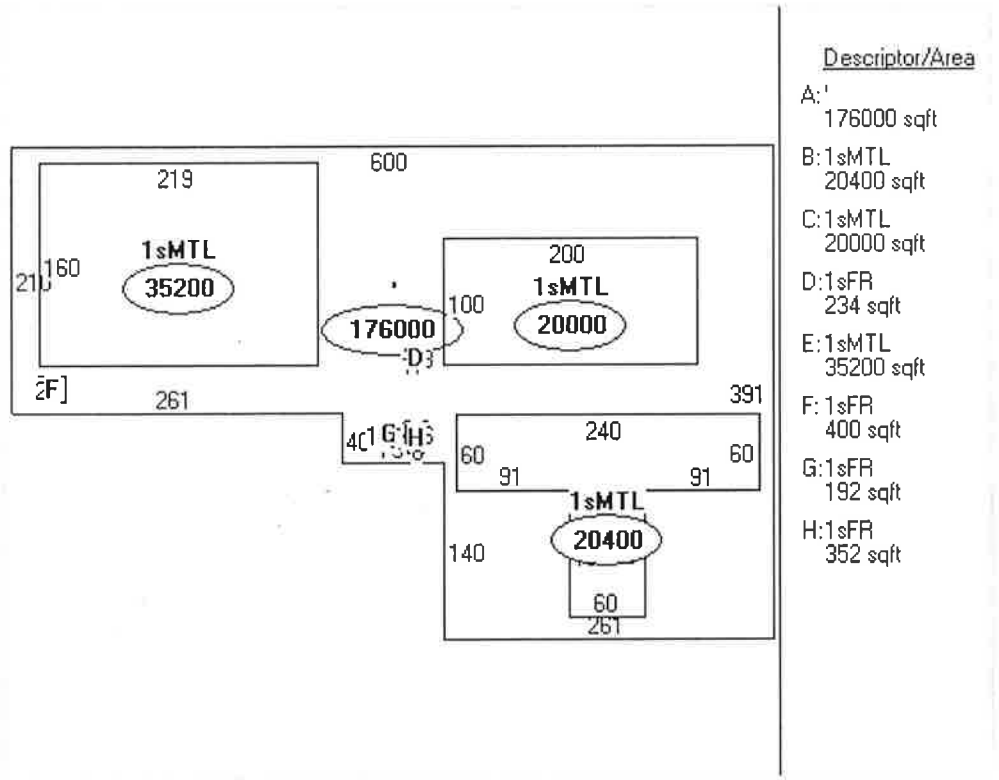
Out Building Information

Structure Code	Width	Lgth/SqFt	Year	RCNLD
Shed Metal	1	20400	1999	$294,770
Shed Metal	100	200	2000	$297,880
Utility Frame	13	18	1930	$2,780
Shed Metal	160	220	1999	$508,620
Utility Frame	20	25	1999	$3,810
Utility Frame	12	16	1988	$1,300

Exterior/Interior Information

Levels	Size	Use Type	Ext. Walls	Const. Type	Partitions	Heating	A/C	Plumbing	Condition	Func. Utility	Unadj. RCNLD

Building Sketch



Descriptor/Area

A: 176000 sqft

B: 1sMTL 20400 sqft

C: 1sMTL 20000 sqft

D: 1sFR 234 sqft

E: 1sMTL 35200 sqft

F: 1sFR 400 sqft

G: 1sFR 192 sqft

H: 1sFR 352 sqft

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[Back to Search Results]
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Search For Properties

Parcel ID | **Name** | **Street Name** TOWN HOUSE RD | Search | Reset

Parcel ID	Card	Routing No	Location	Zoning	State Class	Acres
D0079000	9	48 02+58 13	24 TOWN HOUSE RD	MR/FR	950 - n/a	30.510

Living Units
1

Owner Information
Durham Agricultural Fair Assoc
Pob 225
Durham CT 06422-0225

Property Picture

Deed Information
Book/Page: 69/431
Deed Date: 1965/12/09

Building Information
Building No: 0
Year Built: 0
No of Units: 0
Structure Type:
Grade:
Identical Units: 0

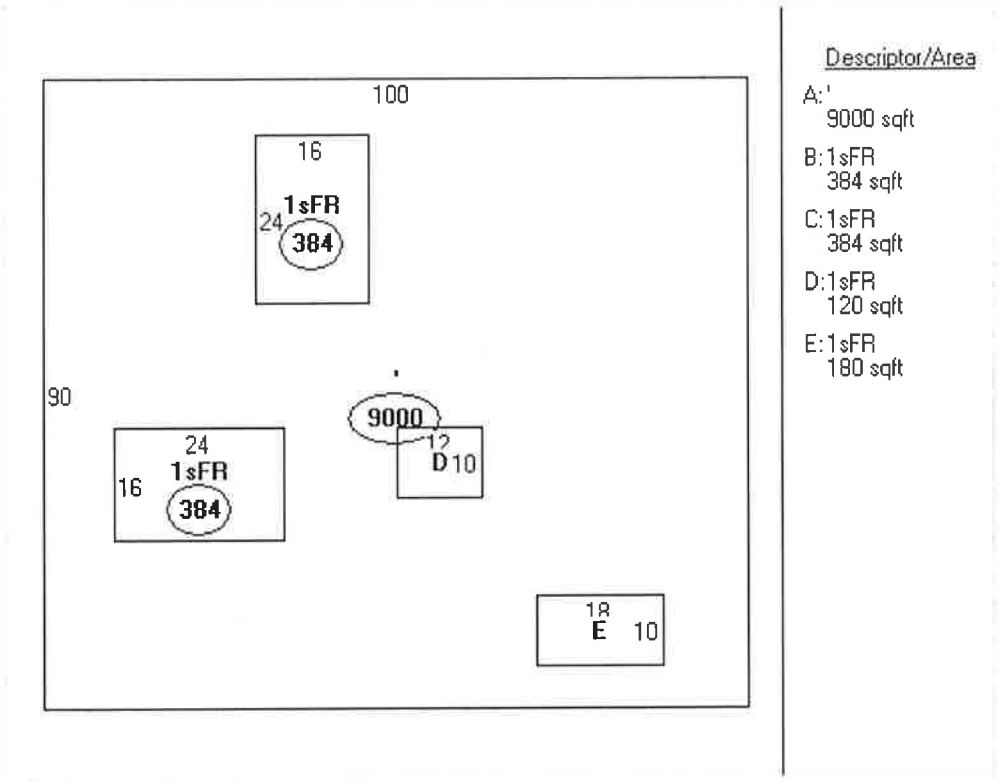
Valuation
Land:	$1,918,000
Building:	$2,460,600
Total:	$4,378,600
Net Assessment:	$3,065,020

Sales History
Book/Page	Date	Price	Type	Validity

Out Building Information
Structure Code	Width	Lgth/SqFt	Year	RCNLD
Utility Frame	16	24	1998	$11,270
Utility Frame	16	24	1980	$2,610
Utility Frame	10	12	1970	$820
Utility Frame	10	18	1970	$1,220

Exterior/Interior Information
Levels	Size	Use Type	Ext. Walls	Const. Type	Partitions	Heating	A/C	Plumbing	Condition	Func. Utility	Unadj. RCNLD

Building Sketch



Descriptor/Area

A:'
9000 sqft

B:1sFR
384 sqft

C:1sFR
384 sqft

D:1sFR
120 sqft

E:1sFR
180 sqft

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ATTACHMENT 5

UNITED STATES POSTAL SERVICE®

Certificate of Mailing — Firm

Name and Address of Sender	TOTAL NO. of Pieces Listed by Sender	TOTAL NO. of Pieces Received at Post Office™	Affix Stamp Here ***Postmark with Date of Receipt.***
Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103	3	3	neopost 07/26/2017 US POSTAGE $002.38⁰ ZIP 06103 041L12203360
	Postmaster, per *(name of receiving employee)*		

USPS® Tracking Number / Firm-specific Identifier	Address (Name, Street, City, State, and ZIP Code™)	Postage	Fee	Special Handling	Parcel Airlift
1.	Laura L. Francis, First Selectwoman Town of Durham 30 Town House Road Durham, CT 06422				
2.	Geoffrey L. Cosgrove, Town Planner Town of Durham 30 Town House Road Durham, CT 06422				
3.	Durham Agricultural Fair Association, Inc. 24 Town House Road Durham, CT 06422				
4.					
5.					
6.					

OLD STATE HOUSE STA 06103 JUL 26 2017 USPS