

August 2, 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  
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 Durham Fairgrounds facility by installing two (2) additional (Nokia Model 9768) remote radio heads (“RRHs”). Included in Attachment 1 are specifications for the new 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. Colegrove, Durham’s Town Planner; and Durham Agricultural Fair Association, Inc., the owner of the Property and the 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 new RRHs will be attached to the wood pole at a height of 27 feet above grade.

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

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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 facility with the two (2) additional RRHs 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 Celco'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 Celco's proposed facility 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, Celco 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. Colegrove, Durham Town Planner  
Durham Agricultural Fair Association, Inc.  
Tim Parks

# **ATTACHMENT 1**

## Nokia 9768 Compact Metro Radio Outdoor

B2/B25 2x5W

The Nokia 9768 Compact Metro Radio Outdoor B2/B25 2x5W (9768 CMRO B2/B25 2x5W) is a next-generation radio that brings together the latest innovations in amplifiers and transceivers to minimize size and improve performance. Operating in the B2/B25 frequency band, the 9768 CMRO integrates a full sector remote radio head (RRH) into a single compact unit that connects to an external baseband unit (BBU). Its compact design and modular approach bring more flexibility to deployment, accelerating time to market and helping to streamline zoning approval. The 9768 CMRO, in association with the Nokia 9926 BBU, is ideal for covering high-capacity places and events.

The Nokia 9768 Compact Metro Radio Outdoor B2/B25 2x5W is the latest enhancement to the industry leading Nokia end-to-end Small Cell solutions.

The 9768 CMRO connects to an external BBU. The BBU comes in a conventional or clustered configuration and may be located at the same location as the 9768 CMRO or at a different location. The 9768 CMRO supports daisy chaining, thereby enabling multiple 9768 CMROs to connect to the BBU over the same optical cable.

The unit is easily deployed almost anywhere without the complexity or cost associated with traditional macro cell site installation. The 9768 CMRO brings new deployment flexibility with its



small dimensions and volume and its modular approach in RF. It allows a smooth integration in urban furniture such as information panels for a respectful urban environment deployment.

Network deployment and optimization costs of the 9768 CMRO are also significantly reduced with self-organizing network (SON) features, powered by Bell Labs innovations.

SON technology increases operational efficiency and network performance by automating network configuration and optimization.

The 9768 CMRO interoperates with any vendor's macro network, which makes it well adapted for the deployment of heterogeneous networks (HetNets).

## Features

- Small, lightweight unit that is virtually invisible when integrated in urban furniture or mounted on a lamppost, pole, or wall
- Supports up to 20 MHz carrier bandwidth
- Supports external antennas, providing maximum flexibility
- 2x2 multiple-input multiple-output (MIMO) configuration, 2 transmit and 2 receive path diversity for improved signal quality, capacity and range
- Daisy chaining with up to four 9768 CMRO B2/B25 2x5W units
- Supports standard Common Public Radio Interface (CPRI™)
- Compliant with 3GPP Releases 8, 9 and 10
- Macro BBU features enable handovers to and from macro networks, SON capabilities and real-time operational status and service monitoring

## Benefits

- High-capacity solution to cover places where a large number of LTE subscribers congregate
- Deployment flexibility including integration in urban furniture
- More compact footprint than the previous generation of Metro Radio Outdoor products
- Interworking with any other vendor's macro network (multivendor HetNet) to extend macro coverage and capacity to both outdoor and indoor locations with a low total cost of ownership (TCO)
- LTE-Advanced capable and fully compatible with virtual RAN next-generation architectures

## Technical specifications

### Physical dimensions

- Height: 265 mm (10.4 in)
- Width: 180 mm (7.09 in)
- Depth: 130mm (5.1in)
- Volume: <6.2L (without antennas)

### Weight

- Approximately 6.2kg (14lb) (without antennas)

### Mounting options

- Mountable on lamppost, pole or wall
- Vertical orientation
- Strand mount
- Integration in urban furniture

### Power supply

- 110 V AC to 270 V AC or -40 V to -57 V DC
- Consumption: typical 70 W, max 100 W

## Interfaces

- Two SFP connectors for CPRI rate 7
- Two 4.3-10 (Mini-DIN) connectors for external RF antennas
- AC or DC power input connector

## Certifications and standards

- FCC
- Safety: CSA
- IP65 certified

## Environmental parameters

- Temperature range: - 40°C to +50°C (+55°C with solar shield)
- Relative humidity: 5% to 100%

## Radio characteristics

- Operating bands: 3GPP LTE B2/B25
- Maximum transmission power: 2 x 37 dBm (2x5W) at the antenna connectors
- 2 x2 MIMO – 2Rx diversity
- Two LTE carriers of up to 20 MHz channel bandwidth (not supported in first release)
- LTE theoretical user peak rates (20 MHz bandwidth, 100 PRBs):
  - 150.752 Mb/s DL, UE Cat.4
  - 55.056 Mb/s UL, 16 QAM
- Receive sensitivity: -98 dBm at antenna connector

Nokia is a registered trademark of Nokia Corporation. Other product and company names mentioned herein may be trademarks or trade names of their respective owners.

Nokia Oyj  
Karaportti 3  
FI-02610 Espoo  
Finland  
Tel. +358 (0) 10 44 88 000

Product code: PR1601017525EN

# **ATTACHMENT 2**

Site Name: **DURHAM FAIRGROUNDS CT**  
 Cumulative Power Density

Operator	Operating Frequency (MHz)	Number of Trans.	ERP Per Trans. (watts)	Total ERP (watts)	Distance to Target (feet)	Calculated Power Density (mW/cm <sup>2</sup> )	Maximum Permissible Exposure* (mW/cm <sup>2</sup> )	Fraction of MPE (%)
VZW 700	751	1	3.97	3.97	29	0.0017	0.5007	0.34%
VZW Cellular	878.49	0	0	0	29	0.0000	0.5857	0.00%
VZW PCS	1973.75	1	58	58	29	0.0248	1.0000	2.48%
VZW AWS	2120	1	73.00	73.00	29	0.0312	1.0000	3.12%

**Total Percentage of Maximum Permissible Exposure**

5.94%

\*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<sup>2</sup> = milliwatts per square centimeter

ERP = Effective Radiated Power

Absolute worst case maximum values used.



# **ATTACHMENT 3**

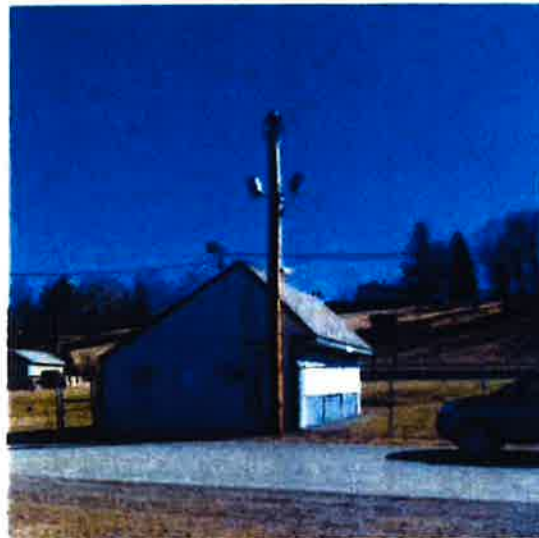
**(REVISED)  
STRUCTURAL ANALYSIS REPORT**

For

**DURHAM FAIRGROUNDS CT**

24 Townhouse Road  
Durham, CT 06422

**Antennas Mounted on Existing Wood Pole**



Prepared for:

**verizon**✓

20 Alexander Drive  
Wallington, CT 06492

Dated: July 23, 2018 (Rev.2)

July 19, 2018 (Rev.1)

April 7, 2017

Prepared by:



**HDXG HUDSON**

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 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 13.87%.

The following documents were used for our reference:

- Structural Analysis prepared by Centek dated November 17, 2014 (Rev. 2).

**APPURTENANCE/EQUIPMENT CONFIGURATION:**

Appurtenances	Elev.	Mount
(2) NH65S-DG-F0M Antennas	29'	Chain mount
(2) CBC61923T-DS-43 Triplexers	28'	Chain mount
(2) V2 B13 2x5 RRH's	27'	Chain mount
(2) V2 B2/B25 2x5 RRH's	27'	Chain Mount
(2) OVP's	26'	Metal Straps
(2) V2 B66 2x5 RRH's	25'	Chain mount

**VERIZON COAX CABLES:**

Coax Cables	Elev.	Mount
(2) Main Lines	30'	On Wood pole
(4) 1x1 Top Jumpers	30'	On Wood pole
(12) 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	13.87 %	0 – 30	PASS

**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
Nominal Ice Thickness:	3/4 inch

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

29'-0" +/-

### **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 the 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 mounts 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. Contractor to perform pre-inspection prior to construction.
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: 7/23/2018

Project Name: Durham Fairgrounds CT (Rev.2)

Designed By: JP Checked By: MSC



**HUDSON**  
Design Group LLC

## **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**

<b><u>Item</u></b>	<b><u>Wt. (lbs.)</u></b>	<b><u>Qty.</u></b>
NH65S-DG-F0M Antenna	17	2
V2 B13 2x5 RRH	23	2
V2 B66 2x5 RRH	15	2
V2 B2/B25 2x5 RRH	14	2
CBC61923T-DS-43 Triplexers	14	2
OVP	32	2
Light Fixture	30	2
Loud Speaker	20	1

### **FEEDER LINES**

<b><u>Item</u></b>	<b><u>Qty.</u></b>
Main Line	2
1x1 Top Jumper	4
1/2" Coax Jumper	12
Hybrid Jumper	4

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Wood Fiber Strength	
Tree Species	Fiber Strength (psi)
Western Larch	8400
Souther Yellow Pine	<b>8000</b>
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= 21378 (ft-lbs)

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

Structure Rating= 13.87%

Height of pole (AGL) = 30 ft  
 Total Pole Length = 40.00 ft

Ultimate Resisting Moment Calculation:

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

$M_r$  = Ultimate Resisting Moment (ft-lbs)

$K_r$  = Constant (0.000264)

0.000264

$F_b$  = Designated Pole Fiber Stress for Wood Species (psi)

8000 (psi)

$C_g$  = Pole Circumference at ground line (in)

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

$C_b$  = Pole Circumference 6' from butt

43.50 (in)

$C_t$  = Circumference at Top of Pole

29.00 (in)

$D_p$  = Distance from butt of Pole to Top of Pole

40.00 (ft)

$D_g$  = Distance from butt of Pole to Ground Line (.10 x  $D_p$  + 2')

10.00 (ft)

$D_b$  = Distance from butt of Pole to classification Point per ANSI O5.1

6 (ft)

$C_g$  = 41.79



Date: 7/23/2018

Project Name: Durham Fairgrounds CT

Designed By: JP      Checked By: MSC

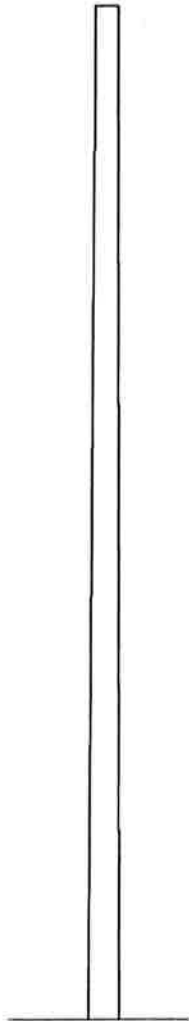


**HUDSON**  
Design Group LLC

**Calculate Moment at the Base of Wood Pole**

<b>Item</b>	<b>Wind Load (lbs.)</b>	<b>Qty.</b>	<b>Total W Load (lbs.)</b>	<b>Distance (ft.)</b>	<b>Moment (lb-ft)</b>
NH65S-DG-F0M Antenna	44	2	88	29.00	2552.00
CBC61923T-DS-43 Triplexers	11	2	22	28.00	616.00
V2 B13 2x5 RRH	24	2	48	27.00	1296.00
V2 B2/B25 2x5 RRH	15	2	30	27.00	810.00
OVP	59	2	118	26.00	3068.00
V2 B66 2x5	14	2	28	25.00	700.00
Light Fixture	62	2	124	24.00	2976.00
Loud Speaker	30	1	30	15.00	450.00
Poles and Lines	594	1	594	15.00	8910.00

<b>Total =</b>	<b>21378.0</b>	<b>lb-ft</b>
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- ← 88 lbs. @ 29 ft.
- ← 22 lbs. @ 28 ft.
- ← 48 lbs. @ 27 ft.
- ← 30 lbs. @ 27 ft.
- ← 118 lbs. @ 26 ft.
- ← 28 lbs. @ 25 ft.
- ← 124 lbs. @ 24 ft.
  
- ← 30 lbs. @ 15 ft.
- ← 594 lbs. @ 15 ft.

Date: 7/23/2018

Project Name: Durham Fairgrounds CT (Rev.2)

Designed By: JP      Checked By: MSC



**2.6.5.2 Velocity Pressure Coeff:**

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

$K_z = 0.694$        $z = 29$  (ft)  
 $z_g = 1200$  (ft)  
 $\alpha = 7.0$

$K_{zmin} \leq K_z \leq 2.01$

**Table 2-4**

Exposure	$Z_g$	$\alpha$	$K_{zmin}$	$K_a$
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

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

$K_h = e^{(fz/H)}$

$K_{zt} = \#DIV/0!$

$K_h = \#DIV/0!$

$K_e = 0$  (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: 7/23/2018

Project Name: Durham Fairgrounds CT (Rev.2)

Designed By: JP Checked By: MSC



**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**

*(Cantillvered tubular or latticed spines, pole, structures on buildings (ht. : width ratio > 5)*

Gh= 1.35

Gh= 1.00

Date: 7/23/2018

Project Name: Durham Fairgrounds CT (Rev.2)

Designed By: JP Checked By: MSC



HUDSON Design Group LLC

**2.6.9.2 Design Wind Force on Appurtenances**

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

$$qz = 0.00256 * Kz * Kzt * Kd * V_{max}^2 * I$$

$$Kz = 0.694$$

$$Kzt = 1.0$$

$$Kd = 0.95$$

$$V_{max} = 120$$

$$I = 1.0$$

**qz = 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

$$C = (I * Kzt * Kz)^{0.5} * V * D$$

D = Outside diameter for rounds:

0.25 feet

**C = 24.99**

**Cf = 1.2**

Date: 7/23/2018

Project Name: Durham Fairgrounds CT (Rev.2)

Designed By: JP Checked By: MSC



**Determine Ca:**

**Table 2-8**

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

<u>Appurtenances</u>	<u>Height</u>	<u>Width</u>	<u>Depth</u>	<u>Flat Area</u>	<u>Aspect Ratio</u>	<u>Ca</u>	<u>Force (lbs)</u>
NH65S-DG-F0M Antenna (Front)	28.7	11.9	7.1	2.37	2.41	1.20	69
NH65S-DG-F0M Antenna (Side)	28.7	7.1	11.9	1.42	4.04	1.27	44

Date: 7/23/2018

Project Name: Durham Fairgrounds CT (Rev.2)

Designed By: JP Checked By: MSC



2.6.5.2 Velocity Pressure Coeff:

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

z = 28 (ft)

z\_g = 1200 (ft)

alpha = 7.0

K\_z = 0.687

K\_zmin ≤ K\_z ≤ 2.01

Table 2-4

Exposure	Z_g	alpha	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

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

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

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 = 28

H = 0 (Ht. of the crest above surrounding terrain)

K\_zt = 1.00

(If Category 1 then K\_zt = 1.0)

Category = 1

Date: 7/23/2018

Project Name: Durham Fairgrounds CT (Rev.2)

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**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.

<u>Appurtenances</u>	<u>Height</u>	<u>Width</u>	<u>Depth</u>	<u>Flat Area</u>	<u>Aspect Ratio</u>	<u>Ca</u>	<u>Force (lbs)</u>
CBC61923T-DS-43 Triplexers	6.9	7.8	14.6	0.37	0.88	1.20	11

Date: 7/23/2018

Project Name: Durham Fairgrounds CT (Rev.2)

Designed By: JP Checked By: MSC



2.6.5.2 Velocity Pressure Coeff:

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

z = 27 (ft)

z\_g = 1200 (ft)

alpha = 7.0

K\_z = 0.680

$K_{zmin} \leq K_z \leq 2.01$

Table 2-4

Exposure	Z_g	alpha	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

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

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

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 = 27

H = 0 (Ht. of the crest above surrounding terrain)

K\_zt = 1.00

(If Category 1 then K\_zt = 1.0)

Category = 1



Date: 7/23/2018

Project Name: Durham Fairgrounds CT (Rev.2)

Designed By: JP Checked By: MSC



**HUDSON**  
Design Group LLC

**Determine Ca:**

**Table 2-8**

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

<u>Appurtenances</u>	<u>Height</u>	<u>Width</u>	<u>Depth</u>	<u>Flat Area</u>	<u>Aspect Ratio</u>	<u>Ca</u>	<u>Force (lbs)</u>
<b>V2 B13 2x5 RRH (Front)</b>	17.9	6.8	7.9	<b>0.85</b>	2.63	1.21	<b>24</b>
<b>V2 B13 2x5 RRH (Side)</b>	17.9	7.9	6.8	<b>0.98</b>	2.27	1.20	<b>28</b>
<b>V2 B2/B25 2x5 RRH (Front)</b>	10.4	7.1	5.3	<b>0.51</b>	1.46	1.20	<b>15</b>
<b>V2 B2/B25 2x5 RRH (Side)</b>	10.4	5.3	7.1	<b>0.38</b>	1.96	1.20	<b>11</b>

Date: 7/23/2018

Project Name: Durham Fairgrounds CT (Rev.2)

Designed By: JP Checked By: MSC



HUDSON Design Group LLC

**2.6.5.2 Velocity Pressure Coeff:**

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

$K_z = 0.673$ 
 $z = 26 \text{ (ft)}$   
 $z_g = 1200 \text{ (ft)}$   
 $\alpha = 7.0$

$K_{zmin} \leq K_z \leq 2.01$

Table 2-4

Exposure	Z <sub>g</sub>	α	K <sub>zmin</sub>	K <sub>e</sub>
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 <sub>t</sub>	f
2	0.43	1.25
3	0.53	2.0
4	0.72	1.5

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

$K_h = e^{(fz/H)}$

$K_{zt} = \text{\#DIV/0!}$

$K_h = \text{\#DIV/0!}$

$K_e = 0$  (from Table 2-4)

$K_t = 0$  (from Table 2-5)

$f = 0$  (from Table 2-5)

$z = 26$

$H = 0$  (Ht. of the crest above surrounding terrain)

$K_{zt} = 1.00$

*(If Category 1 then K<sub>zt</sub>=1.0)*

Category= 1

Date: 7/23/2018

Project Name: Durham Fairgrounds CT (Rev.2)

Designed By: JP      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
	32 ≤ C ≤ 64 (Transitional)	$3.76/(C^{0.485})$	$3.37/(C^{0.415})$
	C > 64 (Supercritical)	0.5	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 and the section length considered to have uniform wind load).

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

<u>Appurtenances</u>	<u>Height</u>	<u>Width</u>	<u>Depth</u>	<u>Flat Area</u>	<u>Aspect Ratio</u>	<u>Ca</u>	<u>Force (lbs)</u>
OVP (Front)	19.2	15.7	10.3	2.09	1.22	1.20	59
OVP (Side)	19.2	10.3	15.7	1.37	1.86	1.20	39

Date: 7/23/2018

Project Name: Durham Fairgrounds CT (Rev.2)

Designed By: JP Checked By: MSC



HUDSON Design Group LLC

**2.6.5.2 Velocity Pressure Coeff:**

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

$z = 25 \text{ (ft)}$   
 $z_g = 1200 \text{ (ft)}$   
 $\alpha = 7.0$

**$K_z = 0.665$**

$K_{zmin} \leq K_z \leq 2.01$

Table 2-4

Exposure	$Z_g$	$\alpha$	$K_{zmin}$	$K_e$
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

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

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

**$K_{zt} = \#DIV/0!$**

$K_h = \#DIV/0!$

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

$K_e = 0$  (from Table 2-4)

$K_t = 0$  (from Table 2-5)

$f = 0$  (from Table 2-5)

$z = 25$

$H = 0$  (Ht. of the crest above surrounding terrain)

$K_{zt} = 1.00$

**Category = 1**

Date: 7/23/2018

Project Name: Durham Fairgrounds CT (Rev.2)

Designed By: JP Checked By: MSC



**HUDSON**  
Design Group LLC

**Determine Ca:**

**Table 2-8**

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

<u>Appurtenances</u>	<u>Height</u>	<u>Width</u>	<u>Depth</u>	<u>Flat Area</u>	<u>Aspect Ratio</u>	<u>Ca</u>	<u>Force (lbs)</u>
<b>V2 B66 2x5 RRH (Front)</b>	10.4	7.1	5.3	<b>0.51</b>	1.46	1.20	<b>14</b>
<b>V2 B66 2x5 RRH (Side)</b>	10.4	5.3	7.1	<b>0.38</b>	1.96	1.20	<b>11</b>

Date: 7/23/2018

Project Name: Durham Fairgrounds CT (Rev.2)

Designed By: JP Checked By: MSC



HUDSON Design Group LLC

**2.6.5.2 Velocity Pressure Coeff:**

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

$z = 24 \text{ (ft)}$   
 $z_g = 1200 \text{ (ft)}$   
 $\alpha = 7.0$   
 **$K_z = 0.657$**

$K_{zmin} \leq K_z \leq 2.01$

Table 2-4

Exposure	Z <sub>g</sub>	α	K <sub>zmin</sub>	K <sub>e</sub>
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 <sub>t</sub>	f
2	0.43	1.25
3	0.53	2.0
4	0.72	1.5

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

$K_h = e^{(fz/H)}$

**$K_{zt} = \text{\#DIV/0!}$**

$K_h = \text{\#DIV/0!}$

$K_e = 0 \text{ (from Table 2-4)}$

$K_t = 0 \text{ (from Table 2-5)}$

$f = 0 \text{ (from Table 2-5)}$

$z = 24$

$H = 0 \text{ (Ht. of the crest above surrounding terrain)}$

$K_{zt} = 1.00$

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

**Category = 1**

Date: 7/23/2018

Project Name: Durham Fairgrounds CT (Rev.2)

Designed By: JP 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 (Transitiona	$3.76/(C^{0.485})$	$3.37/(C^{0.415})$	$38.4/(C^{1.0})$
	C > 64 (Supercritica	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 and the section length considered to have uniform wind load).

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

<u>Appurtenances</u>	<u>Height</u>	<u>Width</u>	<u>Depth</u>	<u>Flat Area</u>	<u>Aspect Ratio</u>	<u>Ca</u>	<u>Force (lbs)</u>
Light Fixture	18.0	18.0	6.0	2.25	1.00	1.20	62

Date: 7/25/2018

Project Name: Durham Fairgrounds CT (Rev.2)

Designed By: JP      Checked By: MSC



**HUDSON**  
Design Group LLC

**2.6.5.2 Velocity Pressure Coeff:**

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

$z = 15 \text{ (ft)}$   
 $z_g = 1200 \text{ (ft)}$   
 $\alpha = 7.0$

**$K_z = 0.575$**

$K_{zmin} \leq K_z \leq 2.01$

**Table 2-4**

Exposure	$Z_g$	$\alpha$	$K_{zmin}$	$K_e$
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

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

$K_h = e^{(fz/H)}$

**$K_{zt} = \text{\#DIV/0!}$**

**$K_h = \text{\#DIV/0!}$**

$K_e = 0$  (from Table 2-4)

$K_t = 0$  (from Table 2-5)

f = 0 (from Table 2-5)

z = 15

H = 0 (Ht. of the crest above surrounding terrain)

$K_{zt} = 1.00$

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

**Category = 1**



Date: 7/25/2018

Project Name: Durham Fairgrounds CT (Rev.2)

Designed By: JP 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 (Transitiona	$3.76/(C^{0.485})$	$3.37/(C^{0.415})$	$38.4/(C^{1.0})$
	C > 64 (Supercritica	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 and the section length considered to have uniform wind load).

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

<u>Appurtenances</u>	<u>Height</u>	<u>Width</u>	<u>Depth</u>	<u>Flat Area</u>	<u>Aspect Ratio</u>	<u>Ca</u>	<u>Force (lbs)</u>
Loud Speaker	10.0	18.0	10.0	1.25	0.56	1.20	30
Pole	360.0	13.9	10.0	34.63	25.99	0.70	488
3" Conduit	360.0	3.0	10.0	7.50	120.00	0.70	106



**HUDSON**  
Design Group LLC

## **Reference Documents**

**Wood Pole Analysis:**

Reactions:

Moment at Ground Line =  $M_g := 51 \text{ kip}\cdot\text{ft}$  (User Input from trnTower)  
 Shear at Ground Line =  $V_g := 2 \text{ kips}$  (User Input from trnTower)

Pole Properties:

Species = Southern Yellow Pine (User Input)  
 Class = H1 (User Input)  
 Fiber Strength =  $F_b := 8000 \text{ psi}$  (User Input North American Wood Pole Coalition)  
 Pole Circumference at Top of Pole =  $C_t := 29 \text{ in}$  (User Input ANSI 05.1)  
 Pole Circumference at 6-ft from Butt =  $C_b := 43.5 \text{ in}$  (User Input ANSI 05.1)  
 Distance from Butt of Pole to Top of Pole =  $D_p := 40 \text{ ft}$  (User Input)  
 Distance from Butt of Pole to Classification Point =  $D_b := 6 \text{ ft}$  (User Input ANSI 05.1)  
 Distance from Butt of Pole to Ground Line =  $D_g := 10 \text{ ft}$  (User Input)  
 Min. Required Pole Embedment =  $\text{Emb}_{\text{MIN}} := D_p \cdot 0.1 + 2 \text{ ft} = 6 \text{ ft}$

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

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

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

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

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

Resisting Moment at Ground Line =  $M_r := M_r \cdot \phi = 131.056 \text{ ft}\cdot\text{kips}$

$$\frac{M_g}{M_r} = 38.9\%$$

Wood Pole =  $\text{Wood Pole} := \text{if} \left( \frac{M_g}{M_r} \leq 1.00, \text{"OK"}, \text{"Overstressed"} \right)$

Wood Pole = "OK"

# **ATTACHMENT 4**



# Durham, CT : Commercial Property Record Card

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## Search For Properties

Parcel ID:  Name:  Street Name:

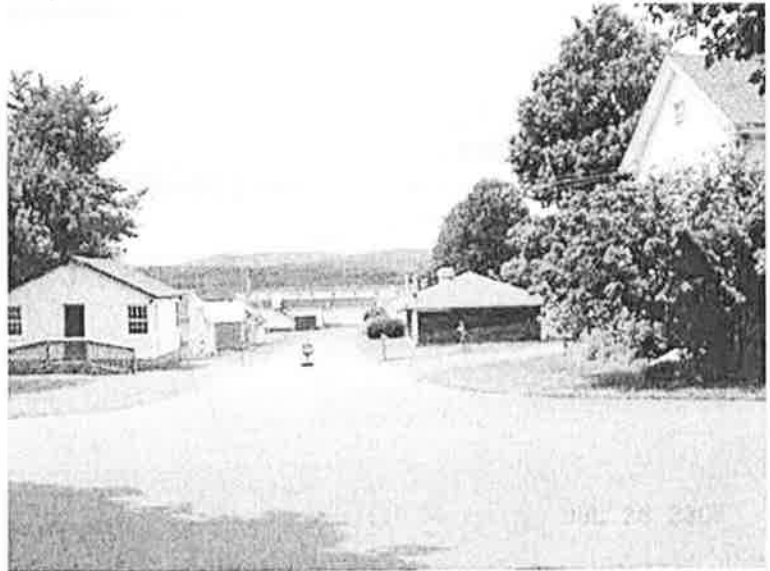
Parcel ID	Card	Routing No	Location	Zoning	State Class	Acres
D0079000	1	48 02+58 13	24 TOWN HOUSE RD	MR/FR	950 - n/a	30.510

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
-----------	------	-------	------	----------

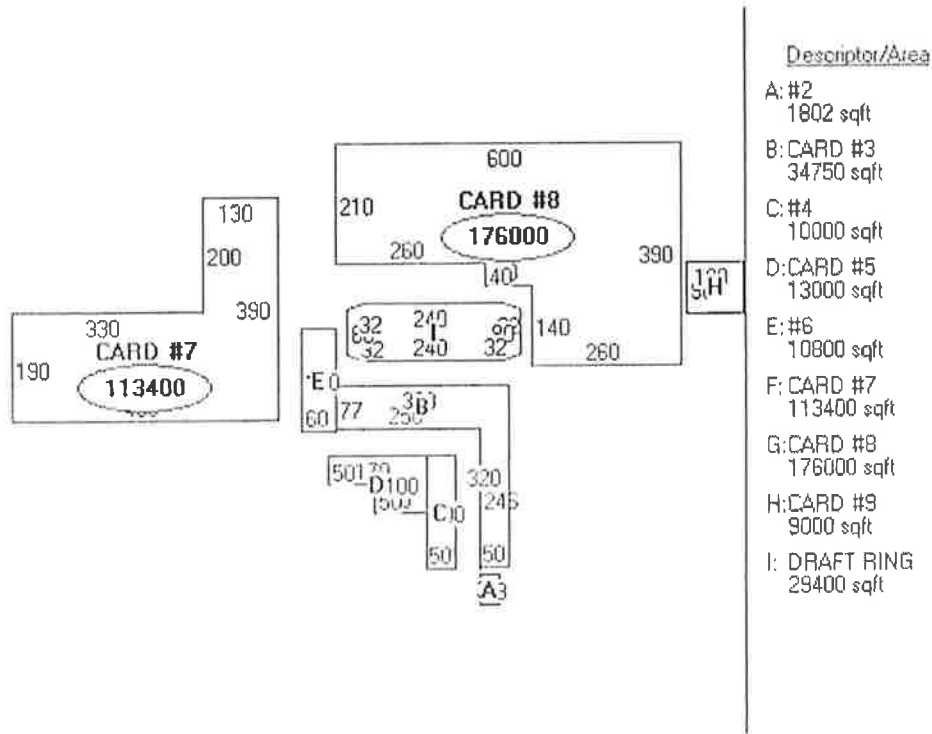
### Out Building Information

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



- Descriptor/Area
- A: #2  
1802 sqft
  - B: CARD #3  
34750 sqft
  - C: #4  
10000 sqft
  - D: CARD #5  
13000 sqft
  - E: #6  
10800 sqft
  - F: CARD #7  
113400 sqft
  - G: CARD #8  
176000 sqft
  - H: CARD #8  
9000 sqft
  - I: DRAFT RING  
29400 sqft

**Notice**

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**Currently All Values Have Not Been Finalized and Are Subject To Change.**

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# Durham, CT : Commercial Property Record Card

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## Search For Properties

Parcel ID:  Name:  Street Name:

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  
 Pox 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

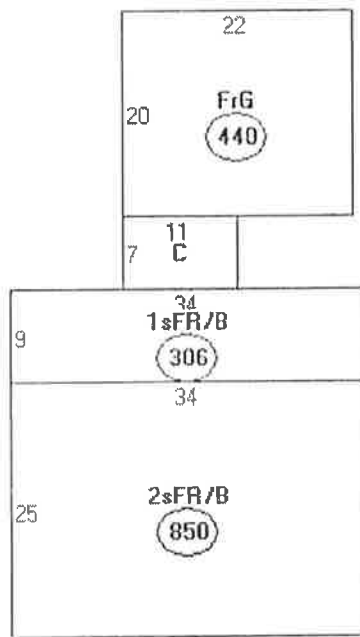
Structure Code	Width	Lgth/SqFt	Year	RCNLD
----------------	-------	-----------	------	-------

### 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





Descriptor/Area

- A: 2sFR/B  
850 sqft
- B: 1sFR/B  
306 sqft
- C: OFP  
77 sqft
- D: FrG  
440 sqft

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## Durham, CT : Commercial Property Record Card

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### Search For Properties

Parcel ID  Name  Street Name

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
-----------	------	-------	------	----------

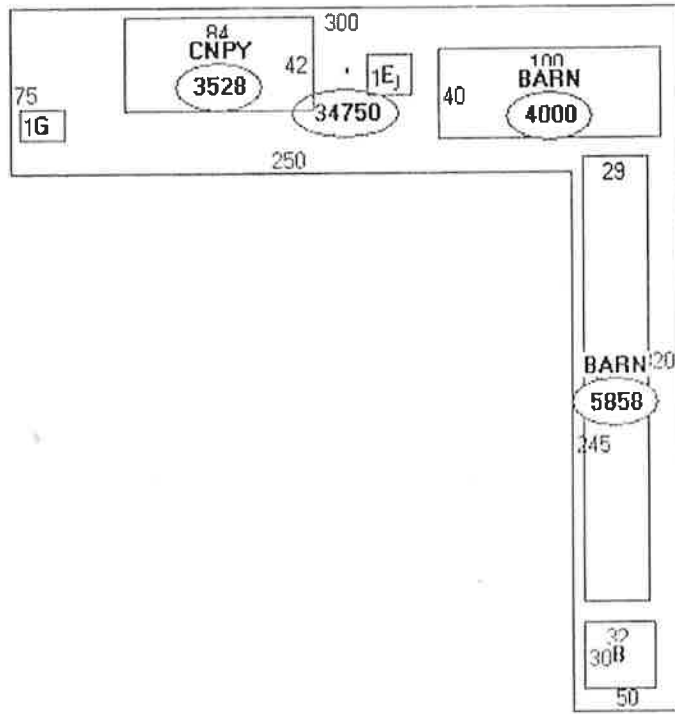
### Out Building Information

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



Descriptor/Area	
A:	34750 sqft
B:	1sFR 960 sqft
C:	BARN 5858 sqft
D:	BARN 4000 sqft
E:	1sFR 360 sqft
F:	CNPY 3528 sqft
G:	1sFR 280 sqft

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# Durham, CT : Commercial Property Record Card

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## Search For Properties

Parcel ID  Name  Street Name

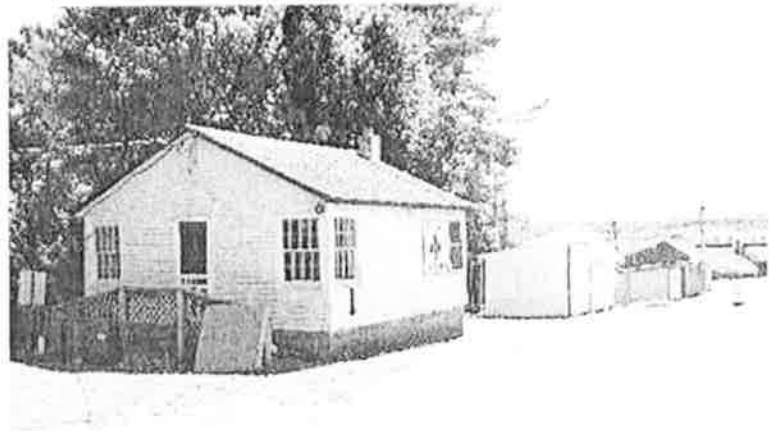
**Parcel ID**      **Card**      **Routing No**      **Location**      **Zoning**      **State Class**      **Acres**  
 D0079000      4      48 02+58 13      24 TOWN HOUSE RD      MR/FR      950 - n/a      30.510

**Living Units**  
1

## Owner Information

Durham Agricultural Fair Assoc  
 Pox 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
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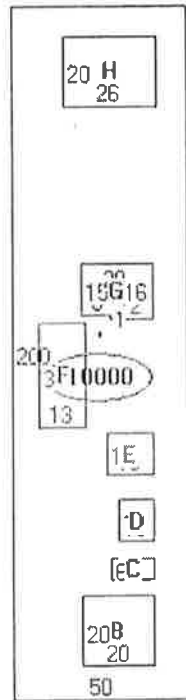
## Out Building Information

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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# Durham, CT : Commercial Property Record Card

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## Search For Properties

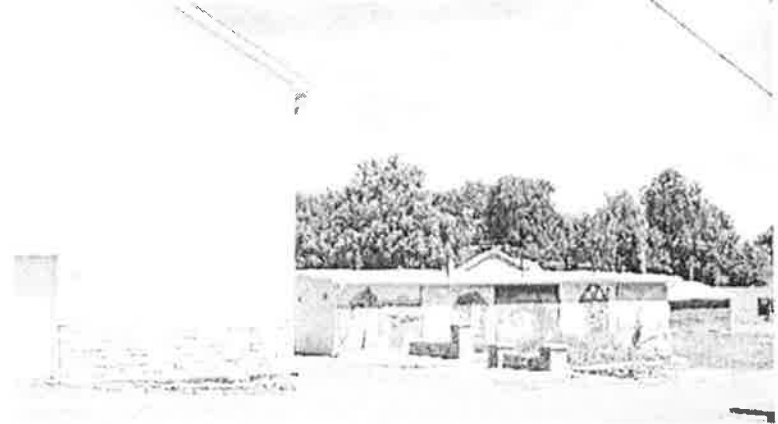
**Parcel ID** 
**Name** 
**Street Name**

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
<b>Living Units</b>						
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
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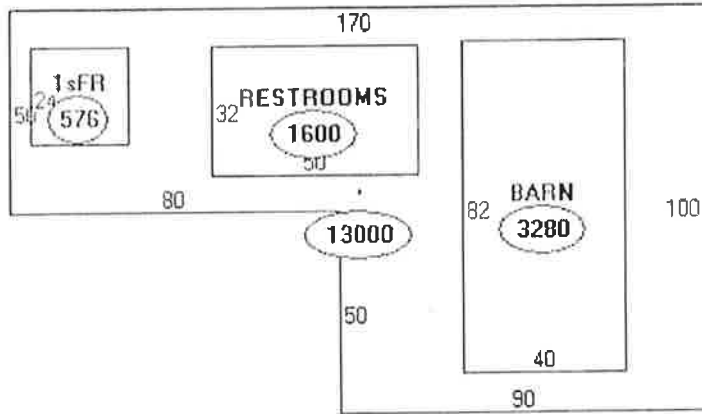
## Out Building Information

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
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## Building Sketch



Descriptor/Area

- A: 13000 sqft
- B: BARN 3280 sqft
- C: RESTROOMS 1600 sqft
- D: 1 sFR 576 sqft

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## Search For Properties

Parcel ID 
 Name 
 Street Name

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

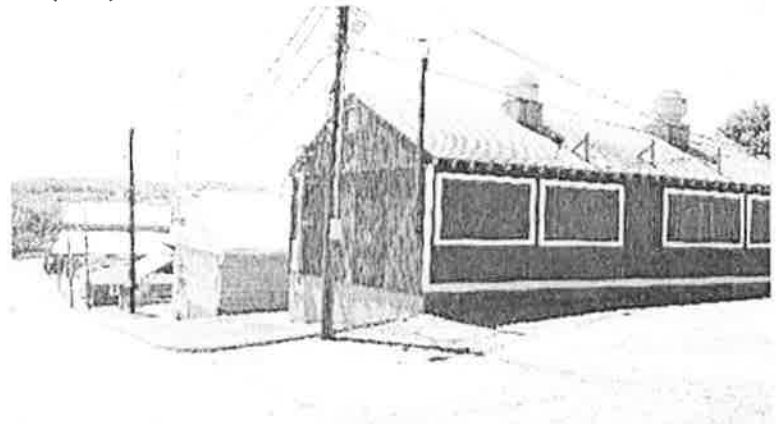
### Living Units

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
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### Out Building Information

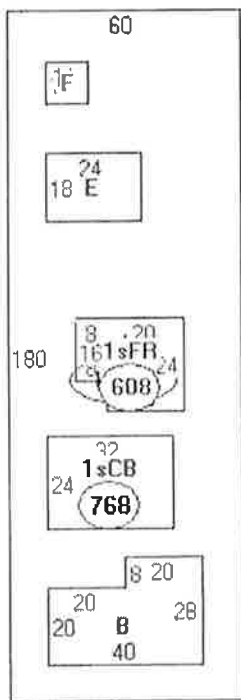
Structure Code	Width	Lgth/SqFt	Year	RCNLD
Utility Frame	1	960	1988	\$6,520
Utility Frame	24	32	1989	\$5,220
Utility Frame	1	608	1930	\$4,130
Utility Frame	24	18	1930	\$2,940
Utility Frame	11	11	1930	\$820

### Exterior/Interior Information

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

### Building Sketch





Descriptor/Area	
A:	10800 sqft
B:	15FR 960 sqft
C:	1 sCB 768 sqft
D:	1 sFR 608 sqft
E:	1 sFR 432 sqft
F:	1 sFR 121 sqft

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# Durham, CT : Commercial Property Record Card

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## Search For Properties

Parcel ID 
 Name 
 Street Name

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  
 Pox 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
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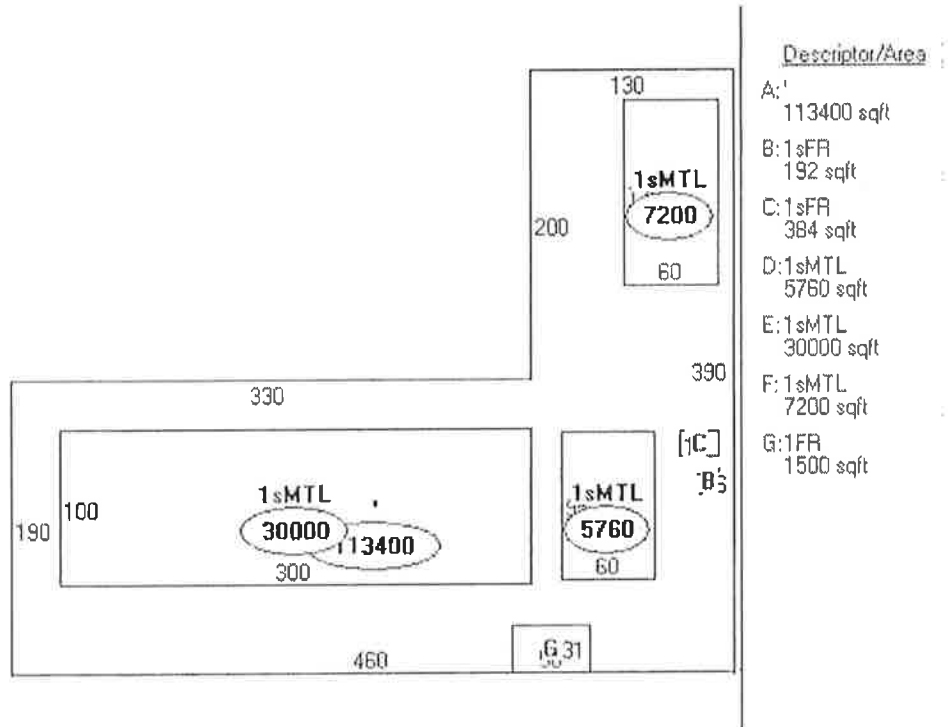
### Out Building Information

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
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### Building Sketch



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# Durham, CT : Commercial Property Record Card

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## Search For Properties

Parcel ID  Name  Street Name

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
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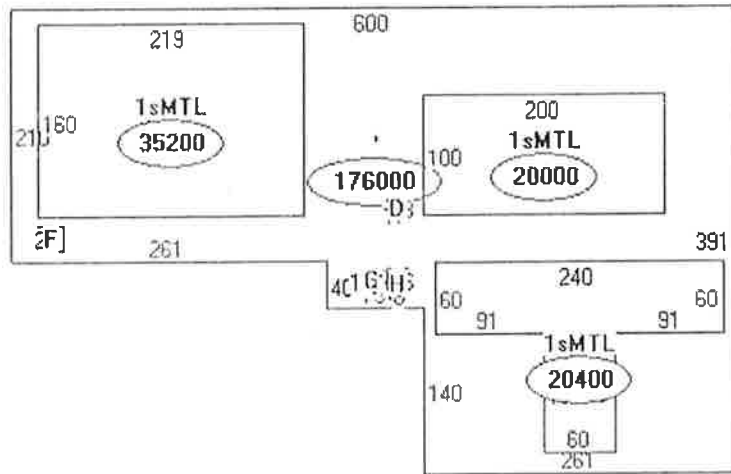
### Out Building Information

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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# Durham, CT : Commercial Property Record Card

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## Search For Properties

Parcel ID  Name  Street Name

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
-----------	------	-------	------	----------

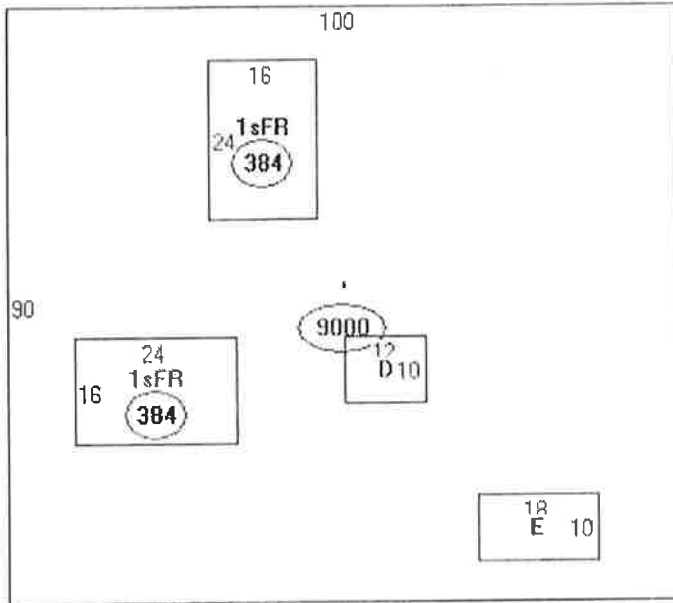
### Out Building Information

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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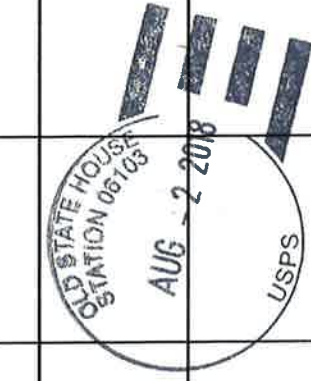
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# **ATTACHMENT 5**





**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.
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Postmaster, per (name of receiving employee) 			
USPS® Tracking Number Firm-specific Identifier	Address (Name, Street, City, State, and ZIP Code™)	Postage	Fee
1.	Laura L. Francois, First Selectwoman Town of Durham 30 Town House Road Durham, CT 06422		
2.	Geoffrey L. Colegrove, 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.			