

TOWN OF BEDFORD PLANNING BOARD MEETING

425 Cherry Street
Bedford Hills, New York 10507
Tuesday
October 27, 2015
8:00 PM

Public Hearings:

- 8:00 PM** Special Use Permit – Creation of a Cottage in an Existing Barn
Section 61.6 Block 1 Lot 10, R-4A Zone
49 Girdle Ridge Road, Katonah
Owners/Applicants: **Alfred and Sandra Luposello**
(Consider Special Use Permit.)
- 8:05 PM** Preliminary Subdivision Approval - Two Lot Subdivision
Section 84.8 Block 1 Lot 31, R-2A Zone
9 Indian Hill Road, Bedford
Owner: **Edward Musal**
Applicant: **Kellard Sessions Consulting, P.C.**
(Consider Preliminary Subdivision Approval.)

Conference:

1. Waiver of Site Plan Approval
Section 72.5 Block 1 Lots 9, 10, RB Zone
527 Bedford Road, Bedford Hills
Owner: **Shullman Family LP**
Applicant: **Russell Speeders of Bedford Hills, LLC**
(Continuation of consideration of Waiver of Site Plan Approval.)

Discussion:

Update on Master Plan Review

Approval of Minutes:

May 26, 2015
June 9, 2015

Supporting documentation for all items on this agenda is available at the Town of Bedford website.

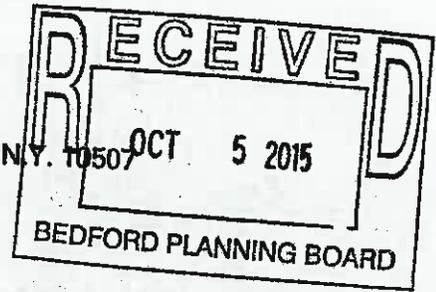
www.bedfordny.gov

Larger documents and plans are available at the office of the Planning Board.
Agenda items subject to change.

PLANNING BOARD
TOWN OF BEDFORD
WESTCHESTER COUNTY, NEW YORK

APPLICATION FOR A SPECIAL USE PERMIT

Submit to: Bedford Planning Board, Town House, Bedford Hills, N.Y. 10507



1. IDENTIFICATION OF OWNER

Name of owner: 3 ANDY + AL LUPOSELLO

Address: 49 GIROLE RIDGE RD, KATONAH, NY 10536 Phone: 914-237-6796

2. IDENTIFICATION OF APPLICANT, IF OTHER THAN OWNER

Name of applicant: SAME

Address: _____ Phone: _____

3. PROFESSIONAL PERSON PREPARING SUBDIVISION PLAT

Name: BARRY G. NADELMAN, P.E.

Address: 1 DEANS BRIDGE RD., SOMERS, N.Y. 10589 Phone: 914-760-6384

4. IDENTIFICATION OF PROPERTY

a. Subdivision name or identifying title: LUPOSELLO RESIDENCE / COTTAGE

b. Roads which property abuts: GIROLE RIDGE ROAD

c. Bedford tax map designation: Section 61.6 Block 1 Lot(s) 10

d. Property lies in a (circle one) 4A 2A 1A 1/2A 1/4A TF VA NB CE PB-R PB-O LI
Zoning District.

e. Total area of property in acres: 4.9807

5. REQUEST

The applicant requests that the Planning Board approve the issuance of a Special Use Permit under the following section of the Code of the Town of Bedford:

Article: 5, Section: 175-79.1

The applicant proposes the following Special Permit Use:

AN 879 S.F. ACCESSORY COTTAGE WITHIN
A PORTION OF AN EXISTING BARN,

6. PUBLIC NOTICE

Notice of the public hearing shall be published at least 10 days prior to the hearing in the Town newspaper and shall be mailed by the applicant at least 10 days prior to the hearing to all owners of property within 500 feet of the perimeter of the subject lot. The expense of publishing and mailing any notice shall be paid by the applicant, who shall file an affidavit mailing with the Board Secretary prior to the hearing

7. SITE PLAN

Attach a Preliminary Site Plan Application Form, fee and eleven (11) copies of a Preliminary Site Plan complying with all requirements of Article IX, Section 125-88 of the Bedford Town Code

8. FEES (make checks payable to the Town of Bedford)

Special Use Permit Application: \$ 200 \$ 200

Preliminary Site Plan:
\$500 plus \$25 per parking space required by the Bedford Town Code: \$ _____

Total: \$ 200

Permission is hereby given to the Town of Bedford, its agents, servants and employees to enter upon the above described property solely for the purposes incidental to the within application at reasonable times upon reasonable notice to the owner or tenant in possession.

All applications shall be signed by the owner of the property affected by this application and by the applicant, if other than the owner.

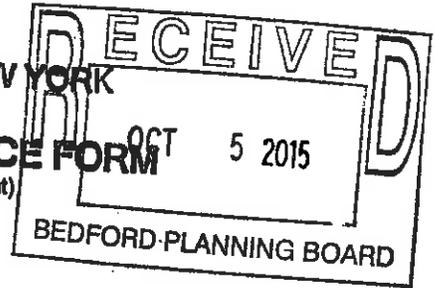
Alfred Luposello
Signature of Owner Date
Sandra Luposello 9/24/15

SAME
Signature of Applicant Date

ALFRED LUPOSELLO 9-24-15 SAME
Name of Owner (Please Print) Date Name of Applicant (Please Print) Date
SANDRA LUPOSELLO 9-24-15

PLANNING BOARD
TOWN OF BEDFORD
WESTCHESTER COUNTY, NEW YORK

ENVIRONMENTAL CLEARANCE FORM
(This Side to be Completed by Applicant)



1. IDENTIFICATION OF OWNER

Name of owner: SANDRA & AL LUPOSELLO
Address: 49 GIROLE RIDGE RD. KATONAH, NY 10536 Phone: 914-237-6796

2. IDENTIFICATION OF APPLICANT, IF OTHER THAN OWNER

Name of applicant: SAME
Address: _____ Phone: _____

3. IDENTIFICATION OF SITE INVOLVED, if any

- a. Name or other identification of site LUPOSELLO RESIDENCE/COITAGE
- b. Roads which site abuts GIROLE RIDGE ROAD
- c. Bedford tax map designation: Section: 666 Block 1 Lot (s) 10
- d. Total site area 4.9807
- e. Does the applicant have a whole or partial interest in lands adjoining this site? NO

4. IDENTIFICATION OF PROPOSED ACTION

- a. Description of Proposed Action PROPOSED COITAGE WITHIN EXISTING BARN
- b. Relationship to other actions: _____

- 1. List any further actions which may be undertaken, of which this proposed action is part or first step, e. g. further subdivision of a large parcel of land: NONE
 - 2. List any related actions which may be undertaken, of which this proposed action, e.g. highway reconstruction to serve increased traffic: NONE
 - 3. List any actions which are dependent upon this proposed action, and therefore should be reviewed as part of this action, e.g. house construction in the case of a residential subdivision: ZBA VARIANCES FOR 879 S.F. AND 44% OF EXISTING RESIDENCE
- All such actions must be reviewed in conjunction with the action proposed.

5. CLASSIFICATION OF PROPOSED ACTION (see lists of Type I, II, Exempt, Excluded Actions)

- Type I. An Environmental Impact Statement is required unless the applicant demonstrates conclusively that one is not needed. Proceed to Environmental Assessment Form.
- Type II or Exempt Action. No Environmental Impact Statement is needed. Submit this form only.
- Unlisted Action. Pending Analysis of further information, an Environmental Impact Statement may be required. Proceed to Environmental Assessment Form.

04/05

Sandra Luposello
Signature of Applicant

9/24/15
Date

**TOWN OF BEDFORD
ENVIRONMENTAL CLEARANCE FORM**
(This side only for Official Use Only)

1. CLASSIFICATION APPROVED; FURTHER ACTION REQUIRED:

- Type I Action.** The proposed action will have a significant effect on the environment. An Environmental Impact Statement is required unless the applicant demonstrates conclusively that one is not needed. Proceed to Environmental Assessment Form.

- Type II or Exempt or Excluded Action.** No Environmental Impact Statement is needed. No further action required.

- Unlisted Action.** The proposed project may have a significant effect on the environment. Pending analysis of further information, an Environmental Impact Statement may be required. Proceed to Environmental Assessment Form.

2. COMMENTS:

Town Agency

Agency Signature

Date



NADERMAN
LAND PLANNING AND ENGINEERING, P.C.

BARRY G. NADERMAN, P.E.

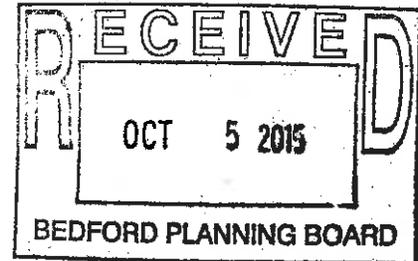
October 2, 2015

VIA HAND DELIVER

Bedford Planning Board
Bedford Town house
425 Cherry Street
Bedford Hills, NY 10507

Att: Dierdre Courtney-Batson - Chair

Re: Proposed Cottage – Special Use Permit
Luposello Residence
49 Girdle Ridge Road
Town of Bedford
Sec. 61.6; Blk 1; Lot; 10



Dear Chair Courtney Batson and Board Members:

Enclosed please find eleven (11) sets of the following for the submission of an application for a Special Use Permit for the above referenced project:

- Completed Application for a Special Use Permit
- Completed Building Permit Application
- Completed Environmental Clearance Form
- Dwg SP-1 "Site Plan – Special Permit" dated 10/2/15
- Exhibit ADJ-1 "Adjoining Properties Exhibit" dated 10/2/15
- Dwg A101 Architectural Plan prepared by Gary Savitzky Architect dated 9/30/15

Also enclosed find a checks in the amount of \$200 for the Special Use Permit Application Fee.

The subject property is a 4.9807 acre parcel in an R4A zoning district located on the south side of Girdle Ridge Road. As shown on the site plan, the property currently consists of a single family residence and barn. At this time the Applicant is seeking the required approvals for the conversion of a portion of the existing barn to an 879sf one bedroom accessory cottage.

The Owner/Applicant does and will continue to reside on the property. The requested cottage will be the only cottage or accessory apartment on the property. The existing Barn was constructed in and around 2002 and is compliant with all required yard setbacks and the building coverage is approx. 3,100sf (1.43%) where 6,508sf (3%) is allowed. There is sufficient parking on the property to accommodate the existing residence and cottage.

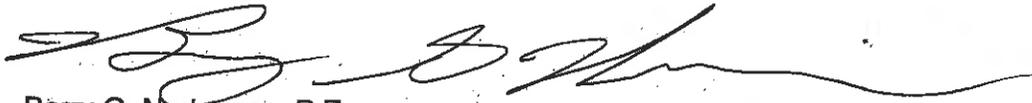
Bedford Planning Board
October 2, 2015
Page 2

It is acknowledged however, that the proposed cottage will exceed the allowable 800sf by 79 sf. As such we are requesting a variance for 879sf where the maximum allowed is 800sf. In addition, the existing residence is limited to 2001 gross square feet and therefore, we are requesting a variance for the proposed 879sf cottage which is 44% of the existing residence where 25% maximum is allowed.

We request we be placed on your October 27th agenda for consideration of the Special Use Permit. At which time we are hopeful the Board will deny the application with a favorable referral to the ZBA.

In the meanwhile, should you have any questions or require any additional information at this time, please feel free to contact me.

Respectfully,



Barry G. Naderman, P.E.
Naderman Land Planning & Engineering, P.C.

Cc: Sandy and Al Luposello w/ enc.
Gary Savitzky, AIA w/ enc.

5874PBsub

LETTER OF PERMIT DENIAL



Town of Bedford
Building Dept.
425 Cherry St.
914-666-8040

Application #:

Date: 10/8/2015

Parcel ID: 61.6-1-10

Owner Information

Luposello, Alfred & Sandra

Applicant Information

Luposello, Alfred & Sandra
49 Girdle Ridge Rd

Katonah NY 10536

Location: 49 Girdle Ridge Rd
Parcel ID: 61.6-1-10
Permit Type: Cottage/Accessory Apartment

Work Description: Conversion of a portion of an existing barn to create a 879 square foot, one bedroom accessory cottage.

Dear Resident,

Regarding the application for a Building Permit on the property referenced above, the following facts are noted. This property is located in R-4A Zoning District. The requirements of the Zoning Ordinance of the Town of Bedford in comparison to your proposal are listed as follows:

The proposal will require a Special Use Permit from the Planning Board in accordance with Article III Section 125-79.1 and will require variances from the Board of Appeals because the cottage will contain 879 square feet of gross floor area where 800 square feet is permitted and is 44% of the total floor area of the principal residence structure where 25% is permitted (Article III Section 125-79.1 (7)). A building permit to construct the barn was issued on 11/20/2003 and Certificate of Compliance 012028A was issued on December 8, 2005.

Because your project does not meet the requirements of the Town of Bedford Zoning Ordinance, your application for a building permit is DENIED. If you wish to proceed with your request, you may, within sixty days of this letter, apply to the of the above provisions

Very truly yours,

Steven Fraietta
Building Inspector



Certificate 012028A

Issued December 08, 2005

TOWN OF BEDFORD
WESTCHESTER COUNTY, NY
CERTIFICATE OF COMPLIANCE

Building Permit No. 20217

This is to certify that *Alfred Luposello*
of *49 Girdle Ridge Road, Katonah, NY 10536*
having filed on *December 08, 2005* Application No. *012028A*
for a Certificate of Occupancy applying to premises located at *49 Girdle Ridge Rd*
Katonah, NY 10536 being Section, Block and Lot *61.6-1-10*,
Town of Bedford Assessment Map in *R-4A* District
as shown on the Town zoning map, and the application having been approved, authority is
hereby given to occupy or use said premises or building or part thereof for the following
purposes:

Barn

Inspected on:

Under the following limitations:

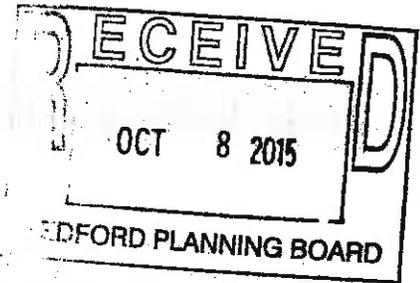
Inspected - March 18, 2004

on and after this date until revoked, and subject to all the provisions of:

THE TOWN ZONING ORDINANCE

Richard Ingra
Building Inspector

PLANNING BOARD
TOWN OF BEDFORD
WESTCHESTER COUNTY, NEW YORK



APPLICATION FOR PRELIMINARY SUBDIVISION APPROVAL

Submit to: Bedford Planning Board, Town House, Bedford Hills, N.Y. 10507

1. IDENTIFICATION OF OWNER

Name of owner: Edward Musal

Address: 8 Hillcrest Avenue, Yonkers, NY 10705 Phone: 914-476-2738

2. IDENTIFICATION OF APPLICANT, IF OTHER THAN OWNER

Name of applicant: Same as above.

Address: _____ Phone: _____

3. PROFESSIONAL PERSON PREPARING SUBDIVISION PLAT

Name: Kellard Sessions Consulting, P.C.

Address 500 Main Street, Armonk, NY 10504 Phone: 914-273-2323

4. IDENTIFICATION OF PROPERTY

- a. Subdivision name or identifying title Edward Musal
- b. Roads which property abuts Pound Ridge Road
- c. Bedford tax map designation: Section 84.8 Block 1 Lot(s) 31
- d. Property lies in a (circle one) 4A 1A 1/2A 1/4A TF VA NB CE PB-R PB-O LI
- e. Total area of property in acres 2 acres

5. REQUIRED INFORMATION

- a. Items required as part of this application are shown on the checklist on the other side of the application. Indicate all items submitted and, if necessary, submit a statement explaining the absence of any items.
- b. Waivers: Attach a list of any waivers of the provisions of the Subdivision of Land Chapter of the Town of Bedford requested and an explanation of the special circumstances therefor
- c. Fees: An application fee of \$500 plus \$150 for each new lot or dwelling unit.
Lots or Units 2. Fee \$ 650.00
- d. Consideration of conservation subdivision of the property (is) (is not) requested. Date of Town Board authorization N/A

Permission is hereby given to the Town of Bedford, its agents, servants and employees to enter upon the above described property solely for the purposes incidental to the within application at reasonable times upon reasonable notice to the owner or tenant in possession.

All applications shall be signed by the owner of the property affected by this application and by the applicant if other than the owner.

Edward Musal October 8, 2015
Signature of Owner Date Signature of Applicant Date

Edward Musal
Name of Owner (please print) Name of Applicant (please print)

ITEMS TO ACCOMPANY APPLICATION

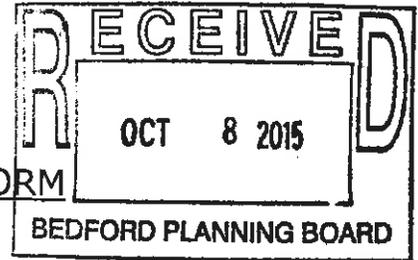
- (1) Eleven (11) copies each of the preliminary subdivision plat____, final construction plans____, topographic map____, and map of contiguous holdings____.
- (2) Copy of deed or deeds to the subject property as well as copies of easement agreements affecting said property_____.
- (3) The engineer's or surveyor's certification of the total area of the subdivision shown on the on the plat____, the length of all proposed roads shown on the plat____, and the staking of the subdivision as required under Section 107-31 of the Town Code.
- (4) Proof of approval by the Wetlands Control Commission of any alterations to existing terrain conditions which are subject to the issuance of a permit by such Commission.
(See Wetlands Chapter of the Town Code)
- (5) Such additional information, maps or studies, including but not limited to soils studies, hydrographic studies, as the Planning Board may deem necessary to study and determine the capacity of the land in relation to the proposed subdivision and any required assessment and/or impact statements.
- (6) Any required assessment and/or impact statements required pursuant to the New York State Environmental Quality Review Act (SEQRA)

CONSERVATION SUBDIVISIONS ONLY

- (7) Approval by resolution of the Town Board authorizing the Planning Board to consider a conservation subdivision of the subject property.
- (8) Statement requesting application of the conservation subdivision procedure, stating the purpose of the plan and listing proposed Town Code modifications_____.
- (9) Four copies each of a sketch layout and preliminary construction plans for a conventional subdivision, in accordance with Section 107-31 of the Town Code.
- (10) Site development plan where authorization to construct attached buildings is requested_____.



**TOWN OF BEDFORD
ENVIRONMENTAL CLEARANCE FORM**
(This Side to be completed by Applicant)



Identification of Applicant

Name Edward Musal Address 8 Hillcrest Avenue, Yonkers, NY 10705
 Phone 914-476-2738

Identification of Property Owner, if Other than Applicant

Name Same as above. Address _____
 Phone _____

Identification of Site Involved, if any

- a) Name or other identification of site 9 Indian Hill Road
- b) Street which site abuts Pound Ridge Road
- c) Tax Map Section 84.8, 1, 31
- d) Total site area 2 acres
- e) Does applicant have a whole or partial interest in lands adjoining this site? _____

Identification of Proposed Action

- a) Description of Proposed Action Proposed 2-lot subdivision
- b) Relationship to other actions:
 - 1. List of further actions which may be undertaken, of which this proposed action is a part or first step, e.g. further subdivision of a large parcel of land: N/A
 - 2. List any related actions which may be undertaken as a result of this proposed action e.g. highway reconstruction to serve increased traffic: N/A
 - 3. List any actions which are dependent upon this proposed action and therefore should be reviewed as a part of this action, e.g. house construction in the case of a residential subdivision: house construction

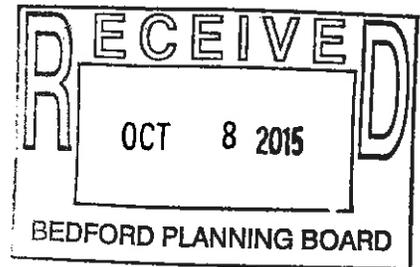
All such actions must be reviewed in conjunction with the action proposed.

Classification of Proposed Action (see lists of Type I, II, Exempt, Excluded Actions)

- Type I. An Environmental Impact Statement is required unless the applicant demonstrates conclusively that one is not needed. Proceed to Environmental Assessment Form.
- Type II or Exempt Action. No Environmental Impact Statement is needed. Submit this form only.
- Unlisted Action. Pending Analysis of further information, an Environmental Impact Statement may be required. Proceed to Environmental Assessment Form.

Signature of Applicant: Date: October 8, 2015
 Edward Musal

**Full Environmental Assessment Form
Part 1 - Project and Setting**



Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the project sponsor to verify that the information contained in Part 1 is accurate and complete.

A. Project and Sponsor Information.

Name of Action or Project: Subdivision for Edward Musal		
Project Location (describe, and attach a general location map): Section 84.8, Block 1, Lot 31 - 9 Indian Hill Road, Town of Bedford, Westchester County, New York		
Brief Description of Proposed Action (include purpose or need): The applicant is proposing to subdivide the existing ±2.0 acre parcel into two (2) building lots consisting of Lot 1 (0.65 acre) and Lot 2 (1.35 acres). Proposed Lot 1 will have a new SSDS and potable well while maintaining the existing house. Proposed Lot 2 will have a new four (4) bedroom home, driveway, SSDS and well. The remains of the chicken house will be removed. In addition, the recently demolished barn foundation and existing garage will be removed from the lot.		
Name of Applicant/Sponsor: Edward Musal	Telephone: 914-476-2738	E-Mail: edmusal@hotmail.com
Address: 8 Hillcrest Avenue		
City/PO: Yonkers	State: New York	Zip Code: 10705
Project Contact (if not same as sponsor; give name and title/role): David Sessions, RLA, AICP, Kellard Sessions Consulting, P.C.	Telephone: 914-273-2323	E-Mail: dsessions@kelses.com
Address: 500 Main Street		
City/PO: Armonk	State: New York	Zip Code: 10504
Property Owner (if not same as sponsor):	Telephone:	E-Mail:
Address:		
City/PO:	State:	Zip Code:

B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)		
Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Council, Town Board, or Village Board of Trustees <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
b. City, Town or Village Planning Board or Commission <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Planning Board (Subdivision)	
c. City Council, Town or Village Zoning Board of Appeals <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
d. Other local agencies <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Building Department (Building Permit)	
e. County agencies <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	WCDH (realty subdivision, septic, well)	
f. Regional agencies <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
g. State agencies <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
h. Federal agencies <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
i. Coastal Resources.		
i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
iii. Is the project site within a Coastal Erosion Hazard Area?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

C. Planning and Zoning

C.1. Planning and zoning actions.	
Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
<ul style="list-style-type: none"> If Yes, complete sections C, F and G. If No, proceed to question C.2 and complete all remaining sections and questions in Part 1 	
C.2. Adopted land use plans.	
a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? <input type="checkbox"/> Yes <input type="checkbox"/> No	
b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
If Yes, identify the plan(s):	

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
If Yes, identify the plan(s):	

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. Yes No
 If Yes, what is the zoning classification(s) including any applicable overlay district?
The subject property is comprised of one (1) tax parcel (Section 84.8-1-31) located within the Town of Bedford's R-2A Zoning District.

b. Is the use permitted or allowed by a special or conditional use permit? Yes No

c. Is a zoning change requested as part of the proposed action? Yes No
 If Yes,
 i. What is the proposed new zoning for the site? _____

C.4. Existing community services.

a. In what school district is the project site located? Bedford Central School District

b. What police or other public protection forces serve the project site?
Pound Ridge Police Department

c. Which fire protection and emergency medical services serve the project site?
Bedford Village Fire District

d. What parks serve the project site?
All Town and county parks located within the project area. Bedford Village Memorial Park is located in close proximity to the subject property.

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)?
Proposed two (2) lot residential subdivision.

b. a. Total acreage of the site of the proposed action? _____ ±2.0 acres
 b. Total acreage to be physically disturbed? _____ 0.9 acres
 c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? _____ ±2.0 acres

c. Is the proposed action an expansion of an existing project or use? Yes No
 i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % _____ Units: _____

d. Is the proposed action a subdivision, or does it include a subdivision? Yes No
 If Yes,
 i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)
Proposed two (2) lot residential subdivision
 ii. Is a cluster/conservation layout proposed? Yes No
 iii. Number of lots proposed? 2
 iv. Minimum and maximum proposed lot sizes? Minimum 0.65 acre Maximum 1.35 acres

e. Will proposed action be constructed in multiple phases? Yes No
 i. If No, anticipated period of construction: _____ 24 months
 ii. If Yes:
 • Total number of phases anticipated _____
 • Anticipated commencement date of phase 1 (including demolition) _____ month _____ year
 • Anticipated completion date of final phase _____ month _____ year
 • Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: _____

f. Does the project include new residential uses? Yes No
 If Yes, show numbers of units proposed.

	<u>One Family</u>	<u>Two Family</u>	<u>Three Family</u>	<u>Multiple Family (four or more)</u>
Initial Phase	<u>2</u>	<u>0</u>	<u>0</u>	<u>0</u>
At completion	<u>2</u>	<u>0</u>	<u>0</u>	<u>0</u>
of all phases	<u>2</u>	<u>0</u>	<u>0</u>	<u>0</u>

g. Does the proposed action include new non-residential construction (including expansions)? Yes No
 If Yes,
 i. Total number of structures _____
 ii. Dimensions (in feet) of largest proposed structure: _____ height; _____ width; and _____ length
 iii. Approximate extent of building space to be heated or cooled: _____ square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? Yes No
 If Yes,
 i. Purpose of the impoundment: _____
 ii. If a water impoundment, the principal source of the water: Ground water Surface water streams Other specify: _____
 iii. If other than water, identify the type of impounded/contained liquids and their source. _____
 iv. Approximate size of the proposed impoundment. Volume: _____ million gallons; surface area: _____ acres
 v. Dimensions of the proposed dam or impounding structure: _____ height; _____ length
 vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete): _____

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? Yes No
 (Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite)
 If Yes:
 i. What is the purpose of the excavation or dredging? _____
 ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?
 • Volume (specify tons or cubic yards): _____
 • Over what duration of time? _____
 iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them. _____
 iv. Will there be onsite dewatering or processing of excavated materials? Yes No
 If yes, describe. _____
 v. What is the total area to be dredged or excavated? _____ acres
 vi. What is the maximum area to be worked at any one time? _____ acres
 vii. What would be the maximum depth of excavation or dredging? _____ feet
 viii. Will the excavation require blasting? Yes No
 ix. Summarize site reclamation goals and plan: _____

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? Yes No
 If Yes:
 i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description): _____

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:

iii. Will proposed action cause or result in disturbance to bottom sediments? Yes No
If Yes, describe: _____

iv. Will proposed action cause or result in the destruction or removal of aquatic vegetation? Yes No
If Yes:

- acres of aquatic vegetation proposed to be removed: _____
- expected acreage of aquatic vegetation remaining after project completion: _____
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access): _____
- proposed method of plant removal: _____
- if chemical/herbicide treatment will be used, specify product(s): _____

v. Describe any proposed reclamation/mitigation following disturbance: _____

c. Will the proposed action use, or create a new demand for water? Yes No

If Yes:

i. Total anticipated water usage/demand per day: _____ 800 gallons/day

ii. Will the proposed action obtain water from an existing public water supply? Yes No

If Yes:

- Name of district or service area: _____
- Does the existing public water supply have capacity to serve the proposal? Yes No
- Is the project site in the existing district? Yes No
- Is expansion of the district needed? Yes No
- Do existing lines serve the project site? Yes No

iii. Will line extension within an existing district be necessary to supply the project? Yes No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____
- Source(s) of supply for the district: _____

iv. Is a new water supply district or service area proposed to be formed to serve the project site? Yes No

If, Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- Proposed source(s) of supply for new district: _____

v. If a public water supply will not be used, describe plans to provide water supply for the project: _____

vi. If water supply will be from wells (public or private), maximum pumping capacity: _____ gallons/minute.

d. Will the proposed action generate liquid wastes? Yes No

If Yes:

i. Total anticipated liquid waste generation per day: _____ 800 gallons/day

ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each): Residential sanitary wastewater to be treated in a subsurface sewage treatment system.

iii. Will the proposed action use any existing public wastewater treatment facilities? Yes No

If Yes:

- Name of wastewater treatment plant to be used: _____
- Name of district: _____
- Does the existing wastewater treatment plant have capacity to serve the project? Yes No
- Is the project site in the existing district? Yes No
- Is expansion of the district needed? Yes No

- Do existing sewer lines serve the project site? Yes No
 - Will line extension within an existing district be necessary to serve the project? Yes No
- If Yes:
- Describe extensions or capacity expansions proposed to serve this project: _____

- iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? Yes No
- If Yes:
- Applicant/sponsor for new district: _____
 - Date application submitted or anticipated: _____
 - What is the receiving water for the wastewater discharge? _____

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge, or describe subsurface disposal plans):
Lots will be serviced by individual sanitary sewage treatment systems. Each SSTS will require approval from the WCDH.

vi. Describe any plans or designs to capture, recycle or reuse liquid waste: _____
None

- e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? Yes No

- If Yes:
- i. How much impervious surface will the project create in relation to total size of project parcel?
 _____ Square feet or _____ acres (impervious surface)
 _____ Square feet or _____ acres (parcel size)
- ii. Describe types of new point sources. _____

- iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

- If to surface waters, identify receiving water bodies or wetlands: _____
 - Will stormwater runoff flow to adjacent properties? Yes No

iv. Does proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? Yes No

- f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? Yes No

- If Yes, identify:
- i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

- ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

- iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? Yes No

- If Yes:
- i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) Yes No
- ii. In addition to emissions as calculated in the application, the project will generate:
- _____ Tons/year (short tons) of Carbon Dioxide (CO₂)
 - _____ Tons/year (short tons) of Nitrous Oxide (N₂O)
 - _____ Tons/year (short tons) of Perfluorocarbons (PFCs)
 - _____ Tons/year (short tons) of Sulfur Hexafluoride (SF₆)
 - _____ Tons/year (short tons) of Carbon Dioxide equivalent of Hydrofluorocarbons (HFCs)
 - _____ Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? Yes No

If Yes:

i. Estimate methane generation in tons/year (metric): _____

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): _____

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? Yes No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust): _____

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? Yes No

If Yes:

i. When is the peak traffic expected (Check all that apply): Morning Evening Weekend
 Randomly between hours of _____ to _____.

ii. For commercial activities only, projected number of semi-trailer truck trips/day: _____

iii. Parking spaces: Existing _____ Proposed _____ Net increase/decrease _____

iv. Does the proposed action include any shared use parking? Yes No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe: _____

vi. Are public/private transportation service(s) or facilities available within 1/2 mile of the proposed site? Yes No

vii. Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? Yes No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? Yes No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? Yes No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action: _____

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other): _____

iii. Will the proposed action require a new, or an upgrade to, an existing substation? Yes No

l. Hours of operation. Answer all items which apply.

i. During Construction:		ii. During Operations:	
• Monday - Friday:	As allowed by code.	• Monday - Friday:	N/A
• Saturday:	As allowed by code.	• Saturday:	N/A
• Sunday:	None	• Sunday:	N/A
• Holidays:	None	• Holidays:	N/A

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? Yes No

If yes:

i. Provide details including sources, time of day and duration:

ii. Will proposed action remove existing natural barriers that could act as a noise barrier or screen? Yes No

Describe: _____

n. Will the proposed action have outdoor lighting? Yes No

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

Limited residential-type lighting.

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? Yes No

Describe: _____

o. Does the proposed action have the potential to produce odors for more than one hour per day? Yes No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures:

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? Yes No

If Yes:

i. Product(s) to be stored _____

ii. Volume(s) _____ per unit time _____ (e.g., month, year)

iii. Generally describe proposed storage facilities: _____

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? Yes No

If Yes:

i. Describe proposed treatment(s):

ii. Will the proposed action use Integrated Pest Management Practices? Yes No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? Yes No

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: _____ tons per _____ (unit of time)
- Operation : _____ tons per _____ (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction: _____
- Operation: _____

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction: _____
- Operation: _____

s. Does the proposed action include construction or modification of a solid waste management facility? Yes No
 If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____

ii. Anticipated rate of disposal/processing:

- _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
- _____ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: _____ years

t. Will proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? Yes No
 If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

ii. Generally describe processes or activities involving hazardous wastes or constituents: _____

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? Yes No
 If Yes: provide name and location of facility: _____

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility: _____

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

Urban Industrial Commercial Residential (suburban) Rural (non-farm)
 Forest Agriculture Aquatic Other (specify): _____

ii. If mix of uses, generally describe: _____

b. Land uses and covertypes on the project site.

Land use or Covertypes	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces	0.26	0.20	-0.06
• Forested	0.36	0.36	0.00
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	1.38	1.44	+0.06
• Agricultural (includes active orchards, field, greenhouse etc.)	0	0	0
• Surface water features (lakes, ponds, streams, rivers, etc.)	0	0	0
• Wetlands (freshwater or tidal)	0	0	0
• Non-vegetated (bare rock, earth or fill)	0	0	0
• Other Describe: _____			

c. Is the project site presently used by members of the community for public recreation? Yes No
i. If Yes: explain: _____

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? Yes No
If Yes,
i. Identify Facilities: _____

e. Does the project site contain an existing dam? Yes No
If Yes:
i. Dimensions of the dam and impoundment:
• Dam height: _____ feet
• Dam length: _____ feet
• Surface area: _____ acres
• Volume impounded: _____ gallons OR acre-feet
ii. Dam's existing hazard classification: _____
iii. Provide date and summarize results of last inspection: _____

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? Yes No
If Yes:
i. Has the facility been formally closed? Yes No
• If yes, cite sources/documentation: _____
ii. Describe the location of the project site relative to the boundaries of the solid waste management facility: _____

iii. Describe any development constraints due to the prior solid waste activities: _____

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? Yes No
If Yes:
i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred: _____

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? Yes No
If Yes:
i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: Yes No
 Yes – Spills Incidents database Provide DEC ID number(s): _____
 Yes – Environmental Site Remediation database Provide DEC ID number(s): _____
 Neither database
ii. If site has been subject of RCRA corrective activities, describe control measures: _____

iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? Yes No
If yes, provide DEC ID number(s): 360006
iv. If yes to (i), (ii) or (iii) above, describe current status of site(s):
Properties in the vicinity of the affected area that continue to utilize private wells are tested periodically for site-related contamination.

v. Is the project site subject to an institutional control limiting property uses? Yes No

- If yes, DEC site ID number: _____
- Describe the type of institutional control (e.g., deed restriction or easement): _____
- Describe any use limitations: _____
- Describe any engineering controls: _____
- Will the project affect the institutional or engineering controls in place? Yes No
- Explain: _____

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? _____ 7 feet

b. Are there bedrock outcroppings on the project site? Yes No
 If Yes, what proportion of the site is comprised of bedrock outcroppings? _____ %

c. Predominant soil type(s) present on project site:

Charlton loam	_____	70 %
Chatfield-Charlton complex	_____	30 %
	_____	%

d. What is the average depth to the water table on the project site? Average: _____ 7 feet

e. Drainage status of project site soils: Well Drained: _____ % of site
 Moderately Well Drained: 100 % of site
 Poorly Drained _____ % of site

f. Approximate proportion of proposed action site with slopes: 0-10%: 84 % of site
 10-15%: 11 % of site
 15% or greater: 5 % of site

g. Are there any unique geologic features on the project site? Yes No
 If Yes, describe: _____

h. Surface water features.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? Yes No

ii. Do any wetlands or other waterbodies adjoin the project site? Yes No

If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? Yes No

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

• Streams:	Name	Un-named off-site stream	Classification	AA-5
• Lakes or Ponds:	Name	_____	Classification	_____
• Wetlands:	Name	_____	Approximate Size	_____
• Wetland No. (if regulated by DEC)	_____			

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? Yes No
 If yes, name of impaired water body/bodies and basis for listing as impaired: _____

i. Is the project site in a designated Floodway? Yes No

j. Is the project site in the 100 year Floodplain? Yes No

k. Is the project site in the 500 year Floodplain? Yes No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? Yes No
 If Yes:
 i. Name of aquifer: _____

m. Identify the predominant wildlife species that occupy or use the project site: _____

n. Does the project site contain a designated significant natural community? Yes No
 If Yes:
 i. Describe the habitat/community (composition, function, and basis for designation): _____

 ii. Source(s) of description or evaluation: _____
 iii. Extent of community/habitat:
 • Currently: _____ acres
 • Following completion of project as proposed: _____ acres
 • Gain or loss (indicate + or -): _____ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? Yes No

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? Yes No

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? Yes No
 If yes, give a brief description of how the proposed action may affect that use: _____

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? Yes No
 If Yes, provide county plus district name/number: _____

b. Are agricultural lands consisting of highly productive soils present? Yes No
 i. If Yes: acreage(s) on project site? _____
 ii. Source(s) of soil rating(s): _____

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? Yes No
 If Yes:
 i. Nature of the natural landmark: Biological Community Geological Feature
 ii. Provide brief description of landmark, including values behind designation and approximate size/extent: _____

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? Yes No
 If Yes:
 i. CEA name: Mianus River, Geographic Area Overlaying Aquifer
 ii. Basis for designation: Exceptional or unique character
 iii. Designating agency and date: Date:1-31-90, Date:11-3-84, Agency:Westchester County, Agency:Bedford, Town of

<p>e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on, or has been nominated by the NYS Board of Historic Preservation for inclusion on, the State or National Register of Historic Places?</p> <p>If Yes:</p> <p>i. Nature of historic/archaeological resource: <input type="checkbox"/> Archaeological Site <input type="checkbox"/> Historic Building or District</p> <p>ii. Name: Bedford Village Historic District</p> <p>iii. Brief description of attributes on which listing is based: _____</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<p>f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory?</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<p>g. Have additional archaeological or historic site(s) or resources been identified on the project site?</p> <p>If Yes:</p> <p>i. Describe possible resource(s): _____</p> <p>ii. Basis for identification: _____</p>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<p>h. Is the project site within five miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource?</p> <p>If Yes:</p> <p>i. Identify resource: _____</p> <p>ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): _____</p> <p>iii. Distance between project and resource: _____ miles.</p>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<p>i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666?</p> <p>If Yes:</p> <p>i. Identify the name of the river and its designation: _____</p> <p>ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666?</p>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No

F. Additional Information

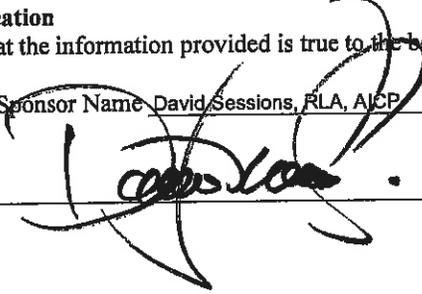
Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

I certify that the information provided is true to the best of my knowledge.

Applicant/Sponsor Name David Sessions, FLA, AICP (SPONSOR) Date October 8, 2015

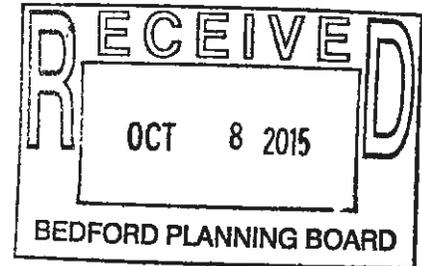
Signature  Title _____

VIA HAND DELIVERED

October 8, 2015

Planning Board
Town of Bedford
425 Cherry Street
Bedford Hills, New York 10507

Attn. Ms. Deirdre Courtney-Batson
Planning Board Chair



**RE: *Preliminary Subdivision Application Submission
Edward Musal
9 Indian Hill Road, Bedford, New York
Section 84.08, Block 1, Lot 31***

Dear Chair Courtney-Batson:

On behalf of our client, Edward Musal, Kellard Sessions Consulting, P.C. is pleased to provide three (3) full sets and five (5) half-size sets of the following plans and eight (8) sets of the following materials in support of a preliminary subdivision review of the referenced project. One (1) full-size plan set, Stormwater Pollution Prevention Plan Report, and one (1) copy of the accompanying materials have been submitted directly to Hahn Engineering. The sketch plan was discussed at the Planning Board's June 23, 2015 meeting. Subsequent to the meeting, a field trip was conducted with the Planning Board on August 21, 2015.

- "Subdivision Plans for Edward Musal," Cover Sheet and Sheets 1/6 - 6/6, prepared by Kellard Sessions Consulting, P.C. dated October 8, 2015
 - Cover Sheet
 - Sheet 1/6 Existing Conditions & Demolition Plan
 - Sheet 2/6 Layout/Subdivision Plan
 - Sheet 3/6 Grading & Utility Plan
 - Sheet 4/6 Sediment & Erosion Control Plan
 - Sheet 5/6 Erosion Control Details & Notes
 - Sheet 6/6 Driveway Profile & Details

Ms. Deirdre Courtney-Batson

October 8, 2015

Page 2

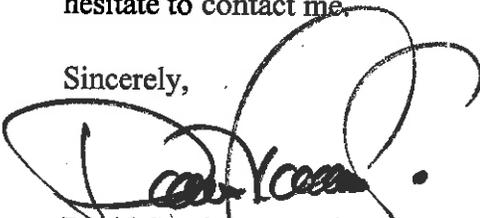
- Fees: Application Fee - \$500.00
\$150.00 x 1 lot = \$150.00
- Application for Preliminary Subdivision Approval
- Town of Bedford Environmental Clearance Form
- Full Environmental Assessment Form
- Deed (previously submitted during sketch plan review)

As illustrated on the enclosed plans, the owner is proposing a two (2) lot subdivision of ± 2.00 acres located within the R-2A residential zoning district. The proposed project will consist of two (2) tax parcels (0.65 acre and 1.35 acres) with access from Indian Hill Road via an existing paved driveway into the site.

By cover of this letter, we are respectfully requesting that we be placed on your Board's October 27, 2015 meeting agenda to discuss the preliminary subdivision application materials.

If you should have any questions or require additional copies of the submitted materials, please do not hesitate to contact me.

Sincerely,



David Sessions, RLA, AICP
Kellard Sessions Consulting, P.C.

DS/pg

Enclosures

cc: Edward Musal w/Enc.
Jeffrey Osterman



**Town of Bedford
Planning Board**

425 Cherry Street • Bedford Hills, New York 10507
Tel: (914) 666-4434 • Fax: (914) 666-2026
E-Mail: Planning@BedfordNY.gov

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William A. Colavito
Diane Lewis
Planning Secretary
Anne Paglia

August 27, 2015

Edward A. Musal
8 Hillcrest Avenue
Yonkers, New York 10705

Re: Sketch Plan Review – Two Lot Subdivision
Section 84.8 Block 1 Lot 31, R-2A Zone
9 Indian Hill Road, Bedford
Owner: Edward Musal
Applicant: Kellard Sessions Consulting, P.C.

Dear Mr. Musal:

The following is a list of notes taken on the August 21, 2015 Field Trip by the Planning Board:

1. The small trees and shrubs at the entrance of the driveway shall be renewed.
2. The driveway should be widened at the garage location.
3. Relocate the drive within the grounds of lot 1.
4. A new driveway easement shall be created for access to lot 2.
5. The proposed new property line should be adjusted to the north, approximately fifteen (15) feet from the center line of the driveway.
6. The trees to remain and to be removed shall be shown on the plan.
7. The applicant shall consider planting some evergreen trees along the right-of way.

In order to proceed with this project, an application for Preliminary Subdivision Approval, application fee (\$800) and eight copies of the revised plan should be submitted to this office.

Very truly yours,


Deirdre Courtney-Batson

cc: David Sessions

FIELD TRIP NOTES

Owner/Applicant EDWARDS MUSAL

Section: 84.8 Block: 1 Lot: 31

Board Member Wm Colavito

Date 8/31/2015

1. Small trees ^{+ shrubs} at entrance of driveway to be removed
2. Widen drive at location of shed/garage
3. Consider relocation of drive ^{with} to be located within bounds of lot #1
4. Create a new driveway easement located within (solely) bounds of lot #1
5. Property line (proposed new line) to be adjusted to the ^{north} approx 15 ft from center line of driveway
6. Trees to stay & to be removed to be shown on plan
7. Goal if possible some evergreens along ROW

(Continued on reverse)

June 18, 2015

Robert A. Spolzino
914.872.7497 (direct)
914.924.2350 (mobile)
Robert.Spolzino@wilsonelser.com

Chairperson Deirdre Courtney-Batson and the
Members of the Planning Board of the Town of Bedford
425 Cherry Street
Bedford Hills, NY 10507

**Re: Application of Shullman Family Limited Partnership
Russell Speeder's Car Wash
527 North Bedford Road**

Dear Chairperson Courtney-Batson and Members of the Planning Board:

On behalf of the Shullman Family Limited Partnership and the Russell Speeder's of Bedford Hills LLC, I am pleased to enclose herewith a supplemental report by our sound consultant, Maria L. Castellucci, with respect to most recent sound testing she has done.

Basically, in order to satisfy the Town's noise standards for nights and Sundays, Russell Speeder's has installed a variable frequency drive, or VFD, which can reduce the speed of the blower in order to reduce the noise it generates. Ms. Castellucci reports that she took sound readings at the property line at 7:30 p.m. on Thursday, May 28, 2015, with the blower on and the VFD set at 50 percent, and was unable to detect any sound from the blower due to the ambient noise.

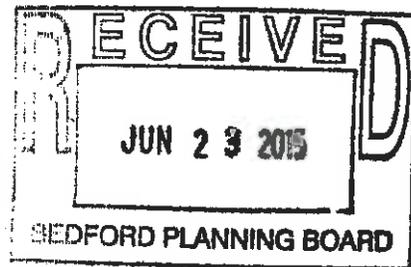
We submit that Ms. Castellucci's report establishes that Russell Speeder's can satisfy the Town's lower noise standards for nights and Sundays by operating the blower with the VFD set at 50 percent. We respectfully request that our application be placed before the Planning Board at its next available meeting and that the Planning Board grant Russell Speeder's application for site plan approval. In the furtherance of that request, also enclosed are copies of the Environmental Clearance Form and the revised EAF.

Thank you for your continuing courtesy in this matter.

Respectfully yours,

Wilson Elser Moskowitz Edelman & Dicker LLP


Robert A. Spolzino



Maria L. Castellucci, Consultant

PO Box 449

Pound Ridge, NY 10576

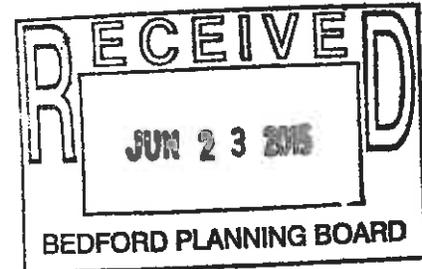
914-763-6852 (voice and fax)

MLCConsultant@yahoo.com

June 11, 2015

Mr. Michael Shullman
Russell Speeders Car Wash
527 Bedford Road
Bedford Hills, NY 10507

Re: Sound Measurements of Blower with VFD



Dear Michael,

As noted in our previous reports, the new blower system installed at the Russell Speeders Car Wash meets the Town of Bedford noise ordinance maximum daytime allowable sound level of 65 dBA at the north property line and is slightly over this maximum level at the east and south property lines, although drastically reduced from the sound level of the previous fan system. In order to further reduce the sound levels at the east and south property lines, a variable frequency drive was added to the car wash blower fan, so that the frequency can be adjusted to a lower level when there may be lower ambient sound after 6pm on weekdays and Sundays.

As requested, we took sound readings of the blower on May 28, 2015 and have the following findings. Readings were attempted around 7:30pm on Thursday, May 28, 2015. This is one of the timeframes where the noise code requires that the sound level be reduced to 45 dBA at all property lines. The goal was to measure sound at the east and south property lines at each of the VFD settings 50%, 45%, 40%, 35%, and 30% fan speed. We began at the 50% setting. The fan was not even audible at the east property line due to the ambient sound caused by traffic on Route 117. Measurements would have to be taken when there was absolutely no traffic on Route 117. However, since this does not occur, there was not a single moment in which the sound could be measured without interference from traffic noise. In fact, since the traffic was somewhat lighter at 7:30pm than it is during earlier hours in the day, the ambient noise level each vehicle produced was actually louder because they were moving faster than they could during the regular business hours.

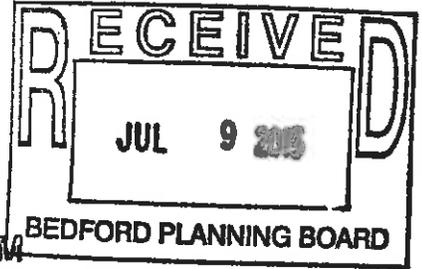
We found that we could obtain no meaningful readings that were unaffected by the ambient traffic noise. There was simply never a time where there was no traffic interfering with the readings. Even when there were no vehicles directly passing by, traffic noise in the distance was still louder than the fan. It is our conclusion, therefore, that if sound from the blower is not audible at the property lines due to the ambient sound level from traffic noise even at this late hour, that the blower frequency can be reduced to 50% for the after 6pm and Sunday timeframes, and not cause any increase in the ambient sound level that already exists.

The above summarizes our conclusions regarding the blower and variable frequency drive provision. Please feel free to contact me if you have any questions or require further clarifications.

Very truly yours,

Maria L. Castellucci,
Consultant in AV and Acoustics

PLANNING BOARD
TOWN OF BEDFORD
WESTCHESTER COUNTY, NEW YORK



ENVIRONMENTAL CLEARANCE FORM
(This Side to be Completed by Applicant)

1. IDENTIFICATION OF OWNER

Name of owner: SHULMAN FAMILY LTD PARTNERSHIP
Address: 40 BOB SHULMAN, 17 ALFRED LANE, GARDEN CITY, NY 11530 Phone: 203 581 8604

2. IDENTIFICATION OF APPLICANT, IF OTHER THAN OWNER

Name of applicant: RUSSELL SPEEDMAN CAR WASH
Address: 40 MIKE SHULMAN, 627 NORTH BEDFORD RD Phone: 203 249 2694

3. IDENTIFICATION OF SITE INVOLVED, If any

- a. Name or other identification of site 627 NORTH BEDFORD ROAD
- b. Roads which site abuts _____
- c. Bedford tax map designation: Section: 72.05 Block 1 Lot(s) 9 & 10
- d. Total site area 0.31 ACRES
- e. Does the applicant have a whole or partial interest in lands adjoining this site? NO

4. IDENTIFICATION OF PROPOSED ACTION

- a. Description of Proposed Action RENOVATE EXISTING CAR WASH
- b. Relationship to other actions:
 - 1. List any further actions which may be undertaken, of which this proposed action is part or first step, e. g. further subdivision of a large parcel of land: NONE
 - 2. List any related actions which may be undertaken, of which this proposed action, e.g. highway reconstruction to serve increased traffic: NONE
 - 3. List any actions which are dependent upon this proposed action, and therefore should be reviewed as part of this action, e.g. house construction in the case of a residential subdivision: NONE

All such actions must be reviewed in conjunction with the action proposed.

5. CLASSIFICATION OF PROPOSED ACTION (see lists of Type I, II, Exempt, Excluded Actions)

- Type I.** An Environmental Impact Statement is required unless the applicant demonstrates conclusively that one is not needed. Proceed to Environmental Assessment Form.
- Type II or Exempt Action.** No Environmental Impact Statement is needed. Submit this form only.
- Unlisted Action.** Pending Analysis of further information, an Environmental Impact Statement may be required. Proceed to Environmental Assessment Form.

04/05

[Signature] _____ Date _____
Signature of Applicant
ATTORNEY FOR APPLICANT

To: J.D. & P.B. 7/10/15

**TOWN OF BEDFORD
ENVIRONMENTAL CLEARANCE FORM**
(This side only for Official Use Only)

1. CLASSIFICATION APPROVED; FURTHER ACTION REQUIRED:

- Type I Action.** The proposed action will have a significant effect on the environment. An Environmental Impact Statement is required unless the applicant demonstrates conclusively that one is not needed. Proceed to Environmental Assessment Form.
- Type II or Exempt or Excluded Action.** No Environmental Impact Statement is needed. No further action required.
- Unlisted Action.** The proposed project may have a significant effect on the environment. Pending analysis of further information, an Environmental Impact Statement may be required. Proceed to Environmental Assessment Form.

2. COMMENTS:

Town Agency

Dennis Country-Baker

Agency Signature

5/12/15

Date

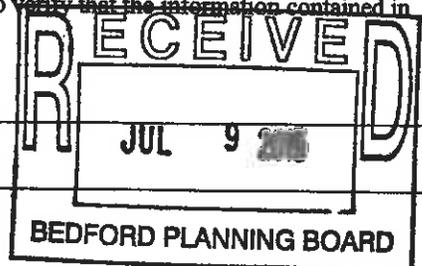
**Full Environmental Assessment Form
Part 1 - Project and Setting**

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the project sponsor to verify that the information contained in Part 1 is accurate and complete.



A. Project and Sponsor Information.

Name of Action or Project: Russell Speeder's Car Wash		
Project Location (describe, and attach a general location map): 527 North Bedford Road, Bedford Hills, NY 10507		
Brief Description of Proposed Action (include purpose or need): Renovation to the existing car wash building and site features to enhance both the visual character and functionality of the campus. Improvements include work to the exterior facade, infrastructure, site, and landscaping to transform the car wash into a first class retail experience for the customers and community.		
Name of Applicant/Sponsor: Russell Speeder's Car Wash	Telephone:	
	E-Mail:	
Address: 527 North Bedford Road		
City/PO: Bedford Hills	State: NY	Zip Code: 10507
Project Contact (if not same as sponsor; give name and title/role): Mike Shullman	Telephone: 914-241-1402	
	E-Mail: mshullman@rscw.net	
Address:		
City/PO:	State:	Zip Code:
Property Owner (if not same as sponsor): Shullman Family Trust, LLP - same as above.	Telephone:	
	E-Mail:	
Address:		
City/PO:	State:	Zip Code:

B. Government Approvals

B. Government Approvals Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)		
Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Council, Town Board, <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No or Village Board of Trustees		
b. City, Town or Village Planning Board or Commission <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Town of Bedford - Planning Board - Site Plan Approval	04/2015
c. City Council, Town or Village Zoning Board of Appeals <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Town of Bedford - Zoning Board of Appeals - Special Permit	04/2015
d. Other local agencies <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
e. County agencies <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
f. Regional agencies <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
g. State agencies <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
h. Federal agencies <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
i. Coastal Resources.		
i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
iii. Is the project site within a Coastal Erosion Hazard Area?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

C. Planning and Zoning

C.1. Planning and zoning actions.	
Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
<ul style="list-style-type: none"> • If Yes, complete sections C, F and G. • If No, proceed to question C.2 and complete all remaining sections and questions in Part 1 	
C.2. Adopted land use plans.	
a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
If Yes, identify the plan(s):	

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
If Yes, identify the plan(s):	

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. Yes No
If Yes, what is the zoning classification(s) including any applicable overlay district?
Central Business- Light Industrial

b. Is the use permitted or allowed by a special or conditional use permit? Yes No

c. Is a zoning change requested as part of the proposed action? Yes No
If Yes,
i. What is the proposed new zoning for the site? _____

C.4. Existing community services.

a. In what school district is the project site located? Bedford Central School District

b. What police or other public protection forces serve the project site?
Town of Bedford Police Department

c. Which fire protection and emergency medical services serve the project site?
Bedford Fire Department

d. What parks serve the project site?
Bedford Hills Memorial Park

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)? Car Wash

b. a. Total acreage of the site of the proposed action? _____ 1.01 acres
b. Total acreage to be physically disturbed? _____ .55 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? _____ 1.01 acres

c. Is the proposed action an expansion of an existing project or use? Yes No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % _____ Units: _____

d. Is the proposed action a subdivision, or does it include a subdivision? Yes No

If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types) _____

ii. Is a cluster/conservation layout proposed? Yes No

iii. Number of lots proposed? _____

iv. Minimum and maximum proposed lot sizes? Minimum _____ Maximum _____

e. Will proposed action be constructed in multiple phases? Yes No

i. If No, anticipated period of construction: _____ 4 months

ii. If Yes:

- Total number of phases anticipated _____
- Anticipated commencement date of phase 1 (including demolition) _____ month _____ year
- Anticipated completion date of final phase _____ month _____ year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: _____

f. Does the project include new residential uses? Yes No

If Yes, show numbers of units proposed.

	<u>One Family</u>	<u>Two Family</u>	<u>Three Family</u>	<u>Multiple Family (four or more)</u>
Initial Phase	_____	_____	_____	_____
At completion	_____	_____	_____	_____
of all phases	_____	_____	_____	_____

g. Does the proposed action include new non-residential construction (including expansions)? Yes No

If Yes,

- i. Total number of structures _____
- ii. Dimensions (in feet) of largest proposed structure: _____ height; _____ width; and _____ length
- iii. Approximate extent of building space to be heated or cooled: _____ square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? Yes No

If Yes,

- i. Purpose of the impoundment: _____
- ii. If a water impoundment, the principal source of the water: Ground water Surface water streams Other specify: _____
- iii. If other than water, identify the type of impounded/contained liquids and their source. _____
- iv. Approximate size of the proposed impoundment. Volume: _____ million gallons; surface area: _____ acres
- v. Dimensions of the proposed dam or impounding structure: _____ height; _____ length
- vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete): _____

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? Yes No
(Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite)

If Yes:

- i. What is the purpose of the excavation or dredging? _____
- ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?
 - Volume (specify tons or cubic yards): _____
 - Over what duration of time? _____
- iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them. _____
- iv. Will there be onsite dewatering or processing of excavated materials? Yes No
If yes, describe. _____
- v. What is the total area to be dredged or excavated? _____ acres
- vi. What is the maximum area to be worked at any one time? _____ acres
- vii. What would be the maximum depth of excavation or dredging? _____ feet
- viii. Will the excavation require blasting? Yes No
- ix. Summarize site reclamation goals and plan: _____

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? Yes No

If Yes:

- i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description): _____

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:

iii. Will proposed action cause or result in disturbance to bottom sediments?

Yes No

If Yes, describe: _____

iv. Will proposed action cause or result in the destruction or removal of aquatic vegetation?

Yes No

If Yes:

• acres of aquatic vegetation proposed to be removed: _____

• expected acreage of aquatic vegetation remaining after project completion: _____

• purpose of proposed removal (e.g. beach clearing, invasive species control, boat access): _____

• proposed method of plant removal: _____

• if chemical/herbicide treatment will be used, specify product(s): _____

v. Describe any proposed reclamation/mitigation following disturbance: _____

c. Will the proposed action use, or create a new demand for water?

Yes No

If Yes:

i. Total anticipated water usage/demand per day: _____ gallons/day

ii. Will the proposed action obtain water from an existing public water supply?

Yes No

If Yes:

• Name of district or service area: _____

• Does the existing public water supply have capacity to serve the proposal? Yes No

• Is the project site in the existing district? Yes No

• Is expansion of the district needed? Yes No

• Do existing lines serve the project site? Yes No

iii. Will line extension within an existing district be necessary to supply the project?

Yes No

If Yes:

• Describe extensions or capacity expansions proposed to serve this project: _____

• Source(s) of supply for the district: _____

iv. Is a new water supply district or service area proposed to be formed to serve the project site?

Yes No

If Yes:

• Applicant/sponsor for new district: _____

• Date application submitted or anticipated: _____

• Proposed source(s) of supply for new district: _____

v. If a public water supply will not be used, describe plans to provide water supply for the project: _____

vi. If water supply will be from wells (public or private), maximum pumping capacity: _____ gallons/minute.

d. Will the proposed action generate liquid wastes?

Yes No

If Yes:

i. Total anticipated liquid waste generation per day: _____ 1200 gallons/day

ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each): _____

The new car wash system reduces waste water significantly from approximately 3,600 gallons/day to 1,200 gallons/day.

iii. Will the proposed action use any existing public wastewater treatment facilities?

Yes No

If Yes:

• Name of wastewater treatment plant to be used: _____

• Name of district: _____

• Does the existing wastewater treatment plant have capacity to serve the project? Yes No

• Is the project site in the existing district? Yes No

• Is expansion of the district needed? Yes No

• Do existing sewer lines serve the project site? Yes No
 • Will line extension within an existing district be necessary to serve the project? Yes No
 If Yes:
 • Describe extensions or capacity expansions proposed to serve this project: _____

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? Yes No
 If Yes:
 • Applicant/sponsor for new district: _____
 • Date application submitted or anticipated: _____
 • What is the receiving water for the wastewater discharge? _____
 v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge, or describe subsurface disposal plans):
The renovated facility will continue to utilize the existing septic field. A future expansion field has been defined if necessary.

 vi. Describe any plans or designs to capture, recycle or reuse liquid waste: _____

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? Yes No
 If Yes:
 i. How much impervious surface will the project create in relation to total size of project parcel?
 _____ Square feet or _____ acres (impervious surface)
 _____ Square feet or _____ acres (parcel size)
 ii. Describe types of new point sources. _____

 iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

 • If to surface waters, identify receiving water bodies or wetlands: _____

 • Will stormwater runoff flow to adjacent properties? Yes No

iv. Does proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? Yes No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? Yes No
 If Yes, identify:
 i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

 ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

 iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? Yes No
 If Yes:
 i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) Yes No
 ii. In addition to emissions as calculated in the application, the project will generate:
 • _____ Tons/year (short tons) of Carbon Dioxide (CO₂)
 • _____ Tons/year (short tons) of Nitrous Oxide (N₂O)
 • _____ Tons/year (short tons) of Perfluorocarbons (PFCs)
 • _____ Tons/year (short tons) of Sulfur Hexafluoride (SF₆)
 • _____ Tons/year (short tons) of Carbon Dioxide equivalent of Hydrofluorocarbons (HFCs)
 • _____ Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? Yes No

If Yes:

i. Estimate methane generation in tons/year (metric): _____

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): _____

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? Yes No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust): _____

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? Yes No

If Yes:

i. When is the peak traffic expected (Check all that apply): Morning Evening Weekend
 Randomly between hours of _____ to _____.

ii. For commercial activities only, projected number of semi-trailer truck trips/day: _____

iii. Parking spaces: Existing _____ Proposed _____ Net increase/decrease _____

iv. Does the proposed action include any shared use parking? Yes No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe: _____

vi. Are public/private transportation service(s) or facilities available within 1/2 mile of the proposed site? Yes No

vii. Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? Yes No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? Yes No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? Yes No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action: _____

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other): _____

iii. Will the proposed action require a new, or an upgrade to, an existing substation? Yes No

l. Hours of operation. Answer all items which apply.

<p>i. During Construction:</p> <ul style="list-style-type: none"> • Monday - Friday: _____ 7-5 • Saturday: _____ 8-5 • Sunday: _____ • Holidays: _____ 	<p>ii. During Operations:</p> <ul style="list-style-type: none"> • Monday - Friday: _____ 8-8 • Saturday: _____ 8-8 • Sunday: _____ 9-5 • Holidays: _____
--	---

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? Yes No

If yes:

i. Provide details including sources, time of day and duration:
 During construction, standard construction noise levels will occasionally be elevated above ambient noise levels. All noise will occur during Town construction times. Per separate report submitted by applicant, and concurred in by Town's consultant, there will be no significant impact from no

ii. Will proposed action remove existing natural barriers that could act as a noise barrier or screen? Yes No
 Describe: _____

n. Will the proposed action have outdoor lighting? Yes No

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:
 Shielded cut off 12-15' pole fixtures are proposed. Light levels will be at 0.0 foot candles at property lines as required by Town ordinance.

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? Yes No
 Describe: _____

o. Does the proposed action have the potential to produce odors for more than one hour per day? Yes No
 If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures: _____

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? Yes No

If Yes:

i. Product(s) to be stored _____

ii. Volume(s) _____ per unit time _____ (e.g., month, year)

iii. Generally describe proposed storage facilities: _____

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? Yes No

If Yes:

i. Describe proposed treatment(s):

ii. Will the proposed action use Integrated Pest Management Practices? Yes No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? Yes No

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: _____ 2-3 tons per _____ month (unit of time)
- Operation : _____ 2-3 tons per _____ year (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction: Construction waste will be separated by type of material for recycling.
- Operation: Paper, plastic and glass will be recycled

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction: Private carting service
- Operation: Private carting service

s. Does the proposed action include construction or modification of a solid waste management facility? Yes No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____

ii. Anticipated rate of disposal/processing:

- _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
- _____ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: _____ years

t. Will proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? Yes No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

ii. Generally describe processes or activities involving hazardous wastes or constituents: _____

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? Yes No

If Yes: provide name and location of facility: _____

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility: _____

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

- Urban Industrial Commercial Residential (suburban) Rural (non-farm)
 Forest Agriculture Aquatic Other (specify): _____

ii. If mix of uses, generally describe: _____

b. Land uses and covertypes on the project site.

Land use or Covertypes	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces	0.51	0.51	
• Forested	0.35	0.35	
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	0.15	0.15	
• Agricultural (includes active orchards, field, greenhouse etc.)			
• Surface water features (lakes, ponds, streams, rivers, etc.)			
• Wetlands (freshwater or tidal)			
• Non-vegetated (bare rock, earth or fill)			
• Other Describe: _____			

c. Is the project site presently used by members of the community for public recreation? Yes No
i. If Yes: explain: _____

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? Yes No
If Yes,
i. Identify Facilities: _____

e. Does the project site contain an existing dam? Yes No
If Yes:
i. Dimensions of the dam and impoundment:
• Dam height: _____ feet
• Dam length: _____ feet
• Surface area: _____ acres
• Volume impounded: _____ gallons OR acre-feet
ii. Dam's existing hazard classification: _____
iii. Provide date and summarize results of last inspection: _____

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? Yes No
If Yes:
i. Has the facility been formally closed? Yes No
• If yes, cite sources/documentation: _____
ii. Describe the location of the project site relative to the boundaries of the solid waste management facility: _____

iii. Describe any development constraints due to the prior solid waste activities: _____

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? Yes No
If Yes:
i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred: _____

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? Yes No
If Yes:
i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: Yes No
 Yes – Spills Incidents database Provide DEC ID number(s): _____
 Yes – Environmental Site Remediation database Provide DEC ID number(s): _____
 Neither database
ii. If site has been subject of RCRA corrective activities, describe control measures: _____

iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? Yes No
If yes, provide DEC ID number(s): _____
iv. If yes to (i), (ii) or (iii) above, describe current status of site(s): _____

v. Is the project site subject to an institutional control limiting property uses? Yes No

- If yes, DEC site ID number: _____
- Describe the type of institutional control (e.g., deed restriction or easement): _____
- Describe any use limitations: _____
- Describe any engineering controls: _____
- Will the project affect the institutional or engineering controls in place? Yes No
- Explain: _____

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? _____ >10 feet

b. Are there bedrock outcroppings on the project site? Yes No
 If Yes, what proportion of the site is comprised of bedrock outcroppings? _____ %

c. Predominant soil type(s) present on project site: Not defined _____ %
 _____ %
 _____ %

d. What is the average depth to the water table on the project site? Average: _____ feet

e. Drainage status of project site soils: Well Drained: _____ 80 % of site
 Moderately Well Drained: _____ 10 % of site
 Poorly Drained _____ % of site

f. Approximate proportion of proposed action site with slopes: 0-10%: _____ 80 % of site
 10-15%: _____ 18 % of site
 15% or greater: _____ 2 % of site

g. Are there any unique geologic features on the project site? Yes No
 If Yes, describe: _____

h. Surface water features.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? Yes No

ii. Do any wetlands or other waterbodies adjoin the project site? Yes No

If Yes to either i or ii, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? Yes No

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name _____ Classification _____
- Lakes or Ponds: Name _____ Classification _____
- Wetlands: Name NYS Regulated _____ Approximate Size > 25 acres _____
- Wetland No. (if regulated by DEC) _____

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? Yes No
 If yes, name of impaired water body/bodies and basis for listing as impaired: _____

i. Is the project site in a designated Floodway? Yes No

j. Is the project site in the 100 year Floodplain? Yes No

k. Is the project site in the 500 year Floodplain? Yes No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? Yes No
 If Yes:
 i. Name of aquifer: _____

m. Identify the predominant wildlife species that occupy or use the project site: _____

n. Does the project site contain a designated significant natural community? Yes No
 If Yes:
 i. Describe the habitat/community (composition, function, and basis for designation): _____
 ii. Source(s) of description or evaluation: _____
 iii. Extent of community/habitat:
 • Currently: _____ acres
 • Following completion of project as proposed: _____ acres
 • Gain or loss (indicate + or -): _____ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? Yes No

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? Yes No

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? Yes No
 If yes, give a brief description of how the proposed action may affect that use: _____

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? Yes No
 If Yes, provide county plus district name/number: _____

b. Are agricultural lands consisting of highly productive soils present? Yes No
 i. If Yes: acreage(s) on project site? _____
 ii. Source(s) of soil rating(s): _____

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? Yes No
 If Yes:
 i. Nature of the natural landmark: Biological Community Geological Feature
 ii. Provide brief description of landmark, including values behind designation and approximate size/extent: _____

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? Yes No
 If Yes:
 i. CEA name: _____
 ii. Basis for designation: _____
 iii. Designating agency and date: _____

Maria L. Castellucci, Consultant

PO Box 449

Pound Ridge, NY 10576

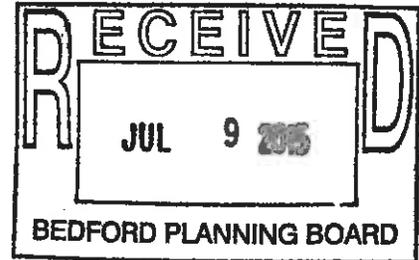
914-763-6852 (voice and fax)

MLCConsultant@yahoo.com

June 11, 2015

Mr. Michael Shullman
Russell Speeders Car Wash
527 Bedford Road
Bedford Hills, NY 10507

Re: Sound Measurements of Blower with VFD



Dear Michael,

As noted in our previous reports, the new blower system installed at the Russell Speeders Car Wash meets the Town of Bedford noise ordinance maximum daytime allowable sound level of 65 dBA at the north property line and is slightly over this maximum level at the east and south property lines, although drastically reduced from the sound level of the previous fan system. In order to further reduce the sound levels at the east and south property lines, a variable frequency drive was added to the car wash blower fan, so that the frequency can be adjusted to a lower level when there may be lower ambient sound after 6pm on weekdays and Sundays.

As requested, we took sound readings of the blower on May 28, 2015 and have the following findings. Readings were attempted around 7:30pm on Thursday, May 28, 2015. This is one of the timeframes where the noise code requires that the sound level be reduced to 45 dBA at all property lines. The goal was to measure sound at the east and south property lines at each of the VFD settings 50%, 45%, 40%, 35%, and 30% fan speed. We began at the 50% setting. The fan was not even audible at the east property line due to the ambient sound caused by traffic on Route 117. Measurements would have to be taken when there was absolutely no traffic on Route 117. However, since this does not occur, there was not a single moment in which the sound could be measured without interference from traffic noise. In fact, since the traffic was somewhat lighter at 7:30pm than it is during earlier hours in the day, the ambient noise level each vehicle produced was actually louder because they were moving faster than they could during the regular business hours.

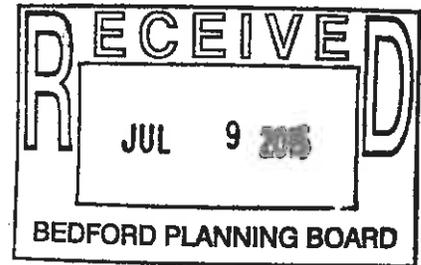
We found that we could obtain no meaningful readings that were unaffected by the ambient traffic noise. There was simply never a time where there was no traffic interfering with the readings. Even when there were no vehicles directly passing by, traffic noise in the distance was still louder than the fan. It is our conclusion, therefore, that if sound from the blower is not audible at the property lines due to the ambient sound level from traffic noise even at this late hour, that the blower frequency can be reduced to 50% for the after 6pm and Sunday timeframes, and not cause any increase in the ambient sound level that already exists.

The above summarizes our conclusions regarding the blower and variable frequency drive provision. Please feel free to contact me if you have any questions or require further clarifications.

Very truly yours,

Maria L. Castellucci,
Consultant in AV and Acoustics

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October 17, 2014

Mr. Michael Shullman
Russell Speeders Car Wash
527 Bedford Road
Bedford Hills, NY 10507

Re: Hard Look Acoustical Report of Sound Levels
Russell Speeders Car Wash – 527 Bedford Road, Bedford Hills, NY

Dear Michael,

The following is a comprehensive acoustical report of findings and recommendations for the Russell Speeders Car Wash at 527 Bedford Road in Bedford Hills, NY. The purpose of this report is to present an analysis of the existing sound levels at the Russell Speeders lot line due to each individual sound source at Russell Speeders individually and combined as well as the ambient noise at this location due to sources beyond the control of Russell Speeders. Where there are sound sources that exceed the Town of Bedford noise ordinances, these are identified and recommendations are given to attenuate the sound sources at the property lines in order to meet the current noise ordinances. As indicated below, sound readings have been taken on various days and at various times to provide as complete a study as is practical.

As requested during the meeting of April 10, 2014, with Jeffery Osterman, Senior Planner for the Town of Bedford and Michael Bontje, President of B. Laing Associates, we have taken multiple sound readings and extended our acoustical analysis of the Russell Speeders Car Wash facility to ensure the "hard look" requirement for the acoustical review has been satisfied in every practical way. The main blowers and all of the known peripheral noise sources have been analyzed. All references have been footnoted and all formulae included in the Appendix for verification. All intended and recommended modifications to the existing conditions have been noted and analyzed in this process as relates to all known noise ordinances for this location. The following report summarizes our requested "hard look" at the acoustical impact of the Russell Speeders Car Wash at 527 North Bedford Road, Bedford Hills, NY.

Introduction

We begin with a brief summary of definitions and fundamental concepts required to be understood in order for laypersons to easily understand this report and to make it as transparent as possible.

Definitions:

The following are definitions taken from Noise Control by Charles E. Wilson, Harper & Row Publishers, New York, c. 1989 (unless otherwise noted) that will assist the reader in understanding the formulae, statements, and conclusions contained herein:

Acoustics – (1) The science of sound, including the generation, transmission, and effects of sound waves, both audible and inaudible. (2) The physical qualities of a room or other enclosure (such as size, shape, amount of noise) that determine the audibility and perception of speech and music.

Sound – In the case of this report, sound is defined as audible pressure fluctuations in air. When a body moves through a medium or vibrates, some energy is transferred to that surrounding medium in the form of sound waves. Sound is also produced by turbulence in air and other fluids,

and by fluids moving past stationary bodies. Intentionally generated acoustic signals including speech and music are usually referred to as sound.

Noise – A term used to identify unwanted sound, including random sound, and sound generated as a byproduct of other activities, including transportation and industrial operations. Intrusive sound, including speech and music unwelcome to the hearer, are also considered noise.

Frequency – The frequency of a periodic phenomenon such as a sound wave is the number of times in one second (i.e., the number of cycles per second) that this phenomenon repeats itself. Frequency usually is designated by a number, followed by the unit hertz (unit symbol: Hz). For example, in the case of a vibrating tuning fork, the tines of the tuning fork undergo 440 complete oscillations in one second. Therefore its frequency of vibration is 440 Hz.¹ In layperson's terms, it is the pitch of a sound. For instance, using musical instruments as a reference, a sound high in frequency would be a piccolo, while a sound low in frequency would be the tuba. A normal young adult human can hear from 20 Hz to 20,000 Hz.

Hertz – Unit of measurement of frequency, numerically equal to cycles per second.

Decibel - The decibel (abbreviated "dB") is a measure, on a logarithmic scale, of the magnitude of a particular quantity (such as sound pressure level or sound power level) with respect to a standard reference value.

Sound Power – The total amount of energy radiated into the atmospheric air per unit time by a source of sound. The higher the sound power level, the louder the sound.

Sound Power Level - The level of sound power expressed in terms of dB re: 10^{-12} W. The way the human ear hears is a logarithmic function of sound power. If the power level increases by a factor of 10, the ear perceives it to be doubled in loudness, and if it decreases by a factor of 10, the ear perceives the loudness to be halved. In the logarithmic scale, the power level may have increased 10 times, but the human ear perceives it to only have doubled in loudness.

Sound Pressure – (1) The minute fluctuations in atmospheric pressure that accompany the passage of a sound wave; the pressure fluctuations on the tympanic membrane are transmitted to the inner ear and give rise to the sensation of audible sound. (2) For a steady sound, the value of the sound pressure averaged over a period of time. Sound pressure is usually measured in Newtons per square meter (N/m^2) where $1 N/m^2 = 1 Pa$.

Sound Pressure Level –(SPL or L_p) The root-mean-square value of the pressure fluctuations above and below atmospheric pressure due to a sound wave; expressed in decibels re: a reference pressure (2×10^{-5} Pa). The sound pressure level changes by approximately -6 dB per doubling of distance as long as the receiver is greater than one or two wavelengths away, is outside one characteristic source dimension, is away from reflective surfaces, and is not in a significantly high background noise environment.

Octave – An octave is the interval between two sounds having a basic frequency ratio of two. For example, 707 Hz to 1414 Hz is one octave.

Octave Band – All of the components, in a sound spectrum, whose frequencies are between two sine wave components separated by an octave.

¹ Handbook of Acoustical Measurements and Noise Control, Third Edition, Cyril M. Harris, Ph.D, Editor in Chief, Acoustical Society of America, Woodbury, NY, c. 1998, p. 1.3.

Band Center Frequency – The designated (geometric) mean frequency of a band of noise or other signal. For example, 1000 Hz is the band center frequency for the octave band that extends from 707 Hz to 1414 Hz.

Octave Band Sound Pressure Level - The integrated sound pressure level of only those sine wave components in a specified octave band, for a noise or sound having a wide spectrum.

Directivity Index – In a given direction from a sound source, the difference in decibels between (a) the sound pressure level produced by the source in that direction, and (b) the space-average sound pressure level of that source, measured at the same distance.

A-weighted sound level – The human ear does not respond equally to all frequencies, but is less sensitive at low and high frequencies than it is at medium or speech range frequencies. Thus, to obtain a single number representing the sound level of a noise containing a wide range of frequencies in a manner representative of the ear's response, it is necessary to reduce the effects of the low and high frequencies with respect to the medium frequencies. The resultant sound level is said to be A-weighted, and the units are dBA. The A-weighted sound level is also called the noise level.

Equivalent Sound Level (Leq) - The energy average sound level over a period of time.

Ambient Noise – The all-encompassing noise associated with a given environment at a specified time, being usually a composite of sound from many sources at many directions, near and far, no particular sound is dominant.²

Room Constant – The room constant is equal to (a) the product of the average absorption coefficient of the room and the total internal area of the room, divided by (b) the quantity 1 minus the average absorption coefficient.³

Town of Bedford, NY Noise Code Requirements

The following summarizes the two noise codes in effect for the Town of Bedford, the town in which the Russell Speeders Car Wash facility is located and operating. It is our understanding that Russell Speeders Car Wash needs to be in compliance with both of these codes, although they are different and somewhat conflicting. The code requirements are as follows:

Chapter 83 of the Bedford Town Code Article I. *Noise Control section 83-5 Specific limits; responsibility of owner or lessee* Part A states that "Noise produced by any act or activities, including the use of off-road motor vehicles, on properties within any residential or nonresidential zoning district shall not exceed sixty-five (65) dB(A) during the hours of 8:00 a.m. to 6:00 p.m. or forty-five (45) dB(A) during the hours of 6:00 p.m. to 8:00 a.m. and all day Sunday on any such property within any zoning district." The adoption of this article took place by the Town Board of the Town of Bedford on June 5, 1990. This code requirement does not indicate octave band maximum sound levels, but only overall dBA level maximum requirements.

The earlier noise regulations documented in Chapter 125-32 Noise were adopted on January 18, 1983 and state maximum permitted sound pressure levels in octave bands as shown in Table 1. The levels shown in each separate octave band in the first row of Table 1 are dB levels as indicated in the noise code without the dBA weighting, and the bottom row of Table 1 shows the calculated A-weighted sound levels in each octave band as well as the overall dBA level for all

² Handbook of Acoustical Measurements and Noise Control, Third Edition, Cyril M. Harris, Ph.D, Editor in Chief, Acoustical Society of America, Woodbury, NY, c. 1998, p. 2.2.

³ Noise Control – Measurement, Analysis, and Control of Sound and Vibration, Charles E. Wilson, New Jersey Institute of Technology, Harper & Row, Publishers, New York, c.1989, p.546.

bands combined. Most of the car wash equipment manufacturers only supply data in overall dBA levels, so converting the noise code to an overall dBA number assists in the comparison of manufacturers' sound data to the noise ordinance requirements. The overall dBA level also allows the disparate code requirements to be compared using the same units of dBA. Using an overall dBA level substitution for the code octave band maximum levels does not, however, ensure compliance with the octave band portion of the code (Chapter 125-32).

	Daytime Limit (8:00am – 6:00pm)	Nighttime Limit (6:00pm – 8:00am)	Sunday Limit (All Hours)
Maximum permitted SPL (dBA) at the lot line for residential and commercial zones	65 dBA	45 dBA	45 dBA

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Maximum permitted SPL (dB re: 20µPa) at the lot line for lots within 200 feet of a Residential district and for sound emitted between 9:00pm and 7:00am and on Sundays	59	61	60	53	46	40	31	20	11	
A-weighting⁴	-39.4	-26.2	-16.1	-8.6	-3.2	-0.0	+1.2	+1.0	-1.1	
Sound Pressure Levels (dBA)	19.6	34.8	43.9	44.4	42.8	40.0	32.2	21.0	9.9	49 dBA
Maximum permitted SPL (dB re: 20µPa) at the lot line for Commercial Receptors	65	67	66	59	52	46	37	26	17	
A-weighting	-39.4	-26.2	-16.1	-8.6	-3.2	-0.0	+1.2	+1.0	-1.1	
Sound Pressure Levels (dBA)	25.6	40.8	49.9	50.4	48.8	46.0	38.2	27.0	15.9	55 dBA

⁴ Many sources can verify the A-weighting frequency response calculation, one of which is the Handbook of Acoustical Measurements and Noise Control, Third Edition, Cyril M. Harris, Ph.D, Editor in Chief, Acoustical Society of America, Woodbury, NY, c. 1998, p. 1.17 Table 1.2.

Our understanding is that the Chapter 83 Code is a regulatory code which must be met and the Chapter 125-32 Noise section is a zoning law which is not regulatory and we could apply for a variance with respect to this law. However, during the meeting mentioned above with Jeffery Osterman and Michael Bontje, we were informed that both code requirements need to be met. All recommendations are given with the goal of satisfying both requirements at the Russell Speeders facility.

The hours of operation for Russell Speeders Car Wash are Monday through Saturday 8am – 8pm and Sunday 9am-5pm and the facility is located within 200 feet of a residential district. In order to meet both noise ordinances, it is necessary for the car wash to be at or below 45 dBA at the lot line for the 6:00pm – 8:00 pm timeframe Monday through Saturday and all day Sunday and be at or below the octave band maximum sound levels in Table 2 at all times. We say this, because it is theoretically possible to achieve the 45 dBA requirement and be above the Table 2 requirements in certain single frequency bands. Therefore, we have prepared our analysis for each noise source with respect to both code requirements and applicable time frames described therein.

New York State Department of Environmental Conservation (NYSDEC)

The NYSDEC has issued a document entitled "Assessing and Mitigating Noise Impacts" (DEP-00-1 Rev.2/2/01). Page 14 of this document establishes that "in non-industrial settings, the SPL" (sound pressure level) "should probably not exceed ambient noise by more than 6 dB(A) at the receptor." Also, "the addition of any noise source, in a non-industrial setting, should not raise the ambient noise level above a maximum of 65 dBA. This would be considered the 'upper end' limit since 65 dB(A) allows for undisturbed speech at a distance of approximately three feet." The next paragraph states that "Ambient noise SPLs in industrial or commercial areas may exceed 65 dB(A) with a high end of approximately 79 dB(A) (EPA 550/9-79-100, November 1979)." "The goal in an industrial/commercial area, where ambient SPLs are already at a high level, should be not to exceed the ambient SPL."

Russell Speeders is located in a commercial zone, but is within 200 feet of a residence only when one measures from the northernmost lot line. The building itself is greater than 200 feet from the nearest residential property line. The ambient noise is controlled by the traffic noise along Route 117 which is normally much higher than even the 65 dBA proposed by the NYSDEC. A discussion of the sound levels at the closest residential property line is given later on in this report as it relates to these NYSDEC recommendations. However, the most stringent noise restrictions placed upon Russell Speeders are the Town of Bedford noise ordinances. By implementing noise control measures to meet these codes, the NYSDEC maximum levels will automatically be met since they are much less stringent. We are therefore providing recommendations to achieve the goal of meeting code sound requirements which are so much lower than the ambient sound at the Russell Speeders site that they could not be measured apart from the ambient noise during the hours of operation.

Summary of Existing Conditions and Acoustical Measurements

The Russell Speeders Car Wash facility is located adjacent to Adzam Auto Sales, Inc. to the north and an empty lot to the immediate south which is the site of another commercial property to be constructed. The west property line borders on the Metro North train track right-of-way area and the east property line abuts Route 117, which is a heavily traveled two lane road with a center turning lane and is traversed by heavy commercial vehicles, trucks, and passenger cars. Attached to this report is Drawing D-1, a satellite view of the Russell Speeders Car Wash facility as well as the surrounding properties to show the measurement receptor locations and existing sound source locations.

An acoustical survey was conducted on Friday, January 17, 2014 from approximately 11:44am to 12:40pm and was confirmed and augmented during subsequent surveys on Thursday, March 20, 2014 from approximately 9:43 to 10:36am, Sunday, April 6, 2014 at various times from 8:14am to 7:31pm and Tuesday, April 8, 2014 from 11:16 to 12:57pm. The dryer noise, ambient noise, and peripheral equipment noise was measured to determine sound levels at each property line for the existing equipment and to provide analyses of sound attenuation measures where required.

Summary of Ambient Noise Levels

During all of the surveys, traffic was the major contributor to the ambient sound levels measured. During the January sound survey, there was constant vehicular traffic measuring an average L_{EQ} of 73 dBA at the east property line (receptor R-1) with no car wash equipment running. Ambient sound levels were also measured on Sunday morning April 6, 2014 to simulate the quietest time of operation. At each test location and time of day, the measured ambient sound levels without any equipment running at the car wash facility far exceeded the Town of Bedford Noise Code requirement of 45 dBA for properties within 200 feet of a residential district. The following table shows a summary of the ambient L_{EQ} sound levels measured at various receptor locations which are shown on Drawing D-1.

**Table 3 – Ambient Sound Levels L_{eq} at Russell Speeders Lot Lines
No Equipment at Russell Speeders Running**

Description of Measurement	L_{eq} Duration of Run	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Receptor R-1 Fri 1/17/14 12:35pm	30 sec	78.5	73	71.2	70.7	68.6	67	65.2	64.4	63.7	73
Receptor R-1 Fri 1/17/14 11:46 am	40 sec	75.2	77.9	72.4	73.2	68.4	68.3	65.1	64.1	60.9	73.4
Receptor R-7 Thur 3/20/14 10:36 am	17 sec	66.3	66.9	62.4	58.8	57	57.8	51.5	43	35	60.8
Receptor R-1 Sun 4/6/14 8:02 am	8min 15 sec	62	65	65	63	63	66	61	51	43	68
Receptor R-9 Sun 4/6/14 8:11am	2 min 34 sec	60	63	62	62	63	67	62	51	42	69
Receptor R-7 Sun 4/6/14 8:15am	2 min 33 sec	59	64	58	53	55	55	48	48	42	58
Receptor R-6 Sun 4/6/14 8:23am	3 min 44 sec	69	62	59	54	52	52	48	42	34	56
Receptor R-3 Sun 4/6/14 8:36am	1 min 51 sec	60	64	65	55	53	52	48	48	36	57

Receptor R-9 Sun 4/6/14 8:48am	2 min 33 sec	63	64	64	63	65	69	63	53	43	71
Receptor R-9 Sun 4/6/14 7:28pm	2 min 33 sec	64	65	63	64	64	67	62	51	42	69
Receptor R-1 Sun 4/6/14 7:31pm	2 min 33 sec	65	68	63	64	65	68	63	52	42	70
Receptor R-9 Tues 4/8/14 12:31pm	34 sec	68	67	66	65	64	67	62	52	43	69
Receptor R-10 Tues 4/8/14 12:49pm	14 sec	65	63	60	56	54	56	52	47	43	59
Receptor R-7 Tues 4/8/14 12:52pm	16 sec	79	72	67	64	65	62	57	51	43	66
Receptor R-10 Tues 4/8/14 12:54pm	25 sec	67	63	57	53	53	54	49	42	36	57
Receptor R-4 Tues 4/8/14 12:55pm	37 sec	65	61	55	51	50	53	50	52	52	58
Receptor R-5 Tues 4/8/14 12:57pm	29 sec	66	64	58	54	52	54	50	53	35	59

It is apparent from the above ambient readings, that even for those readings which were taken during the absolute quietest time on Sunday morning, the ambient sound levels are more than 10 dBA above the noise code of 45 dBA at the lot line without any Russell Speeders equipment running. We must make the observation that bringing the Russell Speeders equipment to a level of 45 dBA at each lot line is a bit of an overkill given the ambient noise levels experienced at this location. In order to meet the code maximum sound level requirements, all equipment sound levels must be calculated to the property lines, since sound levels cannot be measured for most of the equipment independent of the ambient noise if they are creating levels below or near ambient sound levels at the property lines. This report will discuss the analysis for the blowers, which are the highest sound level producer at Russell Speeders, and the rest of the peripheral equipment which has to be measured very close to the equipment to obtain the sound level reading and is then calculated over distance to obtain the sound levels this equipment theoretically produces at the lot lines.

Existing Dryer Measurements

Measurements of the existing dryers were taken at the property lines as well as at a distance of 5' from the tunnel exit where the dryers are most audible. This is at a location approximately 20' from the location of the dryers currently within the tunnel.

Several different dryer conditions were tested as listed below to determine the change in sound level with varying motor frequency. The intent is to replace the existing dryers with newer more efficient dryers that also comply with the applicable noise ordinances. There are three older dryers and two newer dryers for a total of five dryers currently at the facility. Of the two newer dryers, one had a sound attenuation duct applied to the intake side of the fan and the other did

not. The fan without the attenuator had its intake facing away from the street and the fan with the attenuator had its intake facing the street. Measurements were taken of the three existing dryers alone, of the newer dryer with the sound attenuation duct, and of the newer dryer without the duct measured with the variable speed fan running at various frequencies to document the resulting reduction in sound. Results are listed in Table 4 below:

Description of Dryer	A-weighted Leq measured 5' from dryer tunnel opening (approx. 20' from dryer)
New Existing Blower at 60 Hz (100%)	78 dBA
New Existing Blower at 50 Hz (80%)	76 dBA
New Existing Blower at 40 Hz (50%)	76 dBA
New Existing Blower at 30 Hz (13%)	63 dBA
New Existing Blower with sound attenuating duct attached full speed 60 Hz	74 dBA
Three existing old Blowers alone	84 dBA
Ambient Sound – all blowers off	73 dBA

Appreciable reductions in sound were not observed until the fans were reduced in frequency to 30Hz, which would put them at only 13% operation.

Please note that due to the high level of traffic noise, the measurements do not effectively differentiate between the noise from the dryers and the noise from the traffic even when standing 5 feet from the tunnel opening since the traffic noise was constant. However, from the above readings, one can calculate the resulting sound levels that would occur using the levels measured if the three old blowers were replaced with six new blowers like the new type measured. These calculations are itemized below for the north, south and east property lines. Sound levels due to the blowers at the west Metro North property line are considered to be negligible. The property line to the east is the worst case scenario since it is in direct line of sight to the blower fan noise. However, the south property line is the closest to the dryer tunnel exit opening. Please see Appendix B and Appendix C for all calculation formulae.

Table 5 – Existing AVW Blowers at South Property Line at 90° from Tunnel Exit Opening

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
New Blower without attenuation duct Sound Pressure Level at 20' measured on-axis (0°) 1/17/14	72	78	75	75	77	73	70	67	66	78 dBA
Addition for 6 blowers ⁵	+8	+8	+8	+8	+8	+8	+8	+8	+8	
Attenuation over 10' distance to property line on south side (20log20'/30') ⁶	-4	-4	-4	-4	-4	-4	-4	-4	-4	
Off-axis 90 degree attenuation for 10' x 12' opening ⁷	-6	-10	-14	-15	-16	-17	-18	-19	-19	
Total Sound Pressure Level Calculated Due to new blowers at PL on south side 90° off-axis	70	72	65	64	65	60	56	52	51	
Measured Average Ambient Noise Level (Leq) at south property line at location R-1	65	68	63	64	65	68	63	52	42	
Overall Combined Level (dB)	71	74	67	67	68	69	64	55	52	
A-weighting ⁸	-39	-26	-16	-9	-3	0	+1	+1	-1	
Combined Sound Pressure Level off-axis 90 degree from tunnel exit	32	48	51	58	65	69	65	56	51	72 dBA

Table 6 - Existing Blowers at South Property Line at 90° from Tunnel Exit Opening

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Existing 5 Blowers Sound Pressure Level Leq measured on 4/8/14 at 90° off-axis at south property line	74	78	73	69	69	65	60	53	47	
Addition of one more blower to make a total of 6. ⁹	+1	+1	+1	+1	+1	+1	+1	+1	+1	
A-weighting	-39	-26	-16	-9	-3	0	+1	+1	-1	
Total A-weighted SPL measured due to existing blowers at south PL 90° off-axis	36	53	58	61	67	66	62	55	47	71 ¹⁰ dBA

⁵ See Appendix for formula for adding multiple source sound levels

⁶ See Appendix for formula for attenuation of sound pressure level over distance

⁷ Koppers Aircoostat Directivity Attenuation Table, 1975 interpolated for opening size at Russell Speeders.

⁸ See Appendix for A-weighting calculation

⁹ See Appendix for formula for adding multiple source sound levels

¹⁰ Difference between measured and calculated levels is due to the effect of ambient noise on the sound measured on site as shown in table 5.

Table 7 - New Existing Blowers at South Property Line at 45' from Tunnel Exit Opening

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
New Existing Blower without attenuation duct Sound Pressure Level at 20' measured on-axis 1/17/14	72	78	75	75	77	73	70	67	66	78 dBA
Addition for 6 blowers ¹¹	+8	+8	+8	+8	+8	+8	+8	+8	+8	
Attenuation over 16' distance to property line on south side (20 log20'/36') ¹²	-5	-5	-5	-5	-5	-5	-5	-5	-5	
Off-axis 45 degree attenuation for 10' x 12' opening ¹³	-2	-3	-4	-3	-1	0	0	0	0	
Total Sound Pressure Level Calculated Due to new blowers at PL on south side	73	78	74	75	79	76	73	70	69	
Measured Average Ambient Noise Level (Leq) at south property line at location R-1	65	68	63	64	65	68	63	52	42	
Overall Combined Level (dB)	74	78	74	75	79	77	73	70	69	
A-weighting ¹⁴	-39	-26	-16	-9	-3	0	+1	+1	-1	
Combined Sound Pressure Level Calculated off-axis 45 degree from tunnel exit due to new blowers at PL on south side	35	52	58	66	76	77	74	71	68	81 ¹⁶ dBA

Table 8 - Existing Blowers at South Property Line at 45' from Tunnel Exit Opening

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Existing Blowers Leq measured on 4/8/14 at 45' off-axis at south property line	74	81	77	75	75	73	67	63	58	
Addition of one more blower to make a total of 6. ¹⁵	+1	+1	+1	+1	+1	+1	+1	+1	+1	
A-weighting	-39	-26	-16	-9	-3	0	+1	+1	-1	
Total A-weighted Sound Pressure Level Due to existing blowers and traffic noise at PL on south side 45' off-axis	36	56	62	67	73	74	69	65	58	78 dBA

¹¹ See Appendix for formula for adding multiple source sound levels

¹² See Appendix for formula for attenuation of sound pressure level over distance

¹³ Koppers Aircoustat Directivity Attenuation Table, 1975 interpolated for opening size at Russell Speeders.

¹⁴ See Appendix for A-weighting calculation

¹⁵ See Appendix for A-weighting calculation

¹⁶ See Appendix for formula for adding multiple source sound levels

Table 9 - New Existing Blowers Calculated at North Property Line at 45° From Tunnel Opening

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
New Existing Blower without attenuation duct Sound Pressure Level measured at 20' on-axis 0°	72	78	75	75	77	73	70	67	66	78 dBA
6 blowers	+8	+8	+8	+8	+8	+8	+8	+8	+8	
Attenuation over 100 foot distance to property line on north side (20log20'/120')	-16	-16	-16	-16	-16	-16	-16	-16	-16	
Off-axis 45 degree attenuation for 10'x12' opening	-2	-3	-4	-4	-2	0	0	0	0	
Total Sound Pressure Level Due to new blowers at PL on north side	62	67	63	63	67	65	62	59	58	
Measured Average Ambient Noise Level (Leq) at north property line at location R-9	68	67	66	65	64	67	62	52	43	69
Overall Combined Level (dB)	69	70	68	67	69	69	65	60	58	
A-weighting	-39	-26	-16	-9	-3	0	+1	+1	-1	
Total A-weighted Sound Pressure Level Calculated Due to new blowers at PL on north side	30	44	52	58	66	69	66	61	57	72 dBA

Table 10 - Existing Blowers at North Property Line at 45° from Tunnel Exit Opening

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Existing Blowers Sound Pressure Level Leq measured on 4/8/14 at 45° off-axis at north property line with ambient traffic noise	72	77	71	69	69	70	65	56	48	
Addition of one more blower to make a total of 6.¹⁷	+1	+1	+1	+1	+1	+1	+1	+1	+1	
A-weighting	-39	-26	-16	-9	-3	0	+1	+1	-1	
Total A-weighted Sound Pressure Level Due to existing blowers and traffic noise at PL on north side 45° off-axis near road	64	52	56	61	67	71	67	58	48	74 dBA

¹⁷ See Appendix for formula for adding multiple source sound levels

Table 11 – New Existing Blowers Calculated On-axis to East Property Line

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
New Existing Blower without attenuation duct Sound Pressure Level at 20' on axis (0°)	72	78	75	75	77	73	70	67	66	78 dBA
6 blowers	+8	+8	+8	+8	+8	+8	+8	+8	+8	
Attenuation over distance to property line at sidewalk lot line 34' from Initial measurement location (20log20'/54')	-9	-9	-9	-9	-9	-9	-9	-9	-9	
On-axis attenuation	0	0	0	0	0	0	0	0	0	
Total Sound Pressure Level Due to new blowers at East sidewalk PL	71	77	74	74	76	72	69	66	65	
Measured Average Ambient Noise Level (Leq) at east property line at location R-1	65	68	63	64	65	68	63	52	42	
Overall Combined Level (dB)	72	78	74	74	76	74	70	66	65	
A-weighting	-39	-26	-16	-9	-3	0	+1	+1	-1	
Total A-weighted Sound Pressure Level Calculated Due to new blowers at east sidewalk PL	33	52	58	65	73	74	71	67	64	78 dBA

Table 12 New Existing Blowers at East Property Line with Only Inlet Attenuation Ducts	
Description	A-weighted Sound Level Calculated at East Property Line
New Existing Blower with inlet attenuation duct at 60 Hz (100%) 20 feet from blower and 5' from tunnel exit opening	74 dBA
Increase due to quantity of six blowers	+8 dBA
Reduction due to distance from measurement location to East sidewalk PL (20 log 20'/54')	-9 dBA
Total Sound Level due to 6 new blowers at East PL	73 dBA
Total Sound Level at East PL	73 dBA
Ambient sound Level at East PL location R-1	68 – 73.4 dBA

The above study indicates that the new blowers even with the inlet attenuation ducts, which were measured at Russell Speeders to test their suitability to replace the existing older blowers, will not meet the Town of Bedford Noise Code requirements as stated above (49 dBA during the hours of 8:00 a.m. to 6:00 p.m. or 45 dBA during the hours of 6:00 p.m. to 8:00 a.m. and all day Sunday).

We have therefore done extensive research to locate car wash blowers that are quieter and have performed an analysis of their expected sound levels at the property lines. It should be noted that there is no octave band test data from the manufacturer for the proposed blowers. The data provided is a single overall 71 dBA level at a distance of 20 feet. The 71 dBA level is projected

by the manufacturer if the blower is supplied with the manufacturer's sound attenuation package. Since the manufacturer does not have any spectral data for the blowers, an estimated octave band noise spectrum has been calculated to use in the following analysis. The following describes this analysis and shows calculations for the analysis.

Recommended New Blowers and Sound Attenuation Measures for Blowers

This section of our report shows estimated sound levels in octave bands to represent the Proto-Vest Windshear blower system with the attenuator package to allow a comparison of resulting octave bands levels to the older noise code from 1983 which is given in octave bands. The newer code can be easily compared using the overall dBA level which is shown at the far right side of the chart in all the calculation tables provided with this report.

Proto-Vest Inc. Model Windshear

Proto-Vest Inc. manufactures a complete dryer system, model Windshear, which can be obtained with a silencer package that further reduces the dryer sound level. The manufacturer has provided sound levels of 70.9 dBA at 20 feet for the dryer system when outfitted with the silencer package. This is the quietest system we found that meets with the drying capacity requirements for Russell Speeders Car Wash at Bedford Hills. Although this dryer system has a lower sound level output with the attenuation package, this unit will still not meet the noise ordinances without additional sound attenuation measures. It should be noted that this sound level given by the manufacturer is a calculated level based upon a measurement of 83 dBA at a distance of 5 feet from the blower with the sound attenuation package (91 dBA at a distance of 5 feet without the attenuation package.) Cut sheets are attached showing the blower configuration and sound data. We suggest locating the blower at least 20 feet inside the tunnel exit to give the exiting car space to wait for the overhead door to open after the blower is finished and this will also add to the sound attenuation capability of the tunnel itself.

The calculations shown in Appendix C include levels for the blowers projected to each of the affected property lines including varying conditions such as noise levels with the blower on and the bay door open with and without the recommended sound barrier walls, levels projected with the blowers off and the bay door open, and for the bay door closed when the blower is on. Since the older noise ordinance lists the maximum sound requirements in octave bands, we have created an estimated octave band sound spectrum for the fans based upon the readings measured for the existing fans and the expected attenuation using the Proto-Vest Windshear dryer system with the sound attenuator package. These calculations are shown in Appendix C for your reference.

Overhead Door Construction

We recommend all the bay doors including the detailing bays be constructed using the 6mm Macrolux C solid polycarbonate system having a minimum weight of 7.2 kg/m² and full perimeter seals as provided by Airlift Doors, Inc. This will be required to meet the strictest code requirements. Cut sheets are attached in Appendix A. The overhead doors will need to be used at the tunnel exit for Sundays and after 6pm on all other days whenever the blower is in operation. A bay door protocol will be implemented that includes automated bay doors which will be electronically signaled to lift when the blower is finished with the car and has shut down. The overhead door would then close before the blower dries the next car in the tunnel.

In addition, the bay doors will always be down when there is detailing work in the detail bays. If only the vacuums are being used, they can be left open, but whenever the louder equipment is being used, the doors will be closed.

All calculations have been based upon a maximum overhead door height of 84". This is recommended so that the sound barriers can provide essential line-of-sight blocking which will not happen if the bay and tunnel doors are too high. Refer to the barrier wall calculations for further reference.

Tunnel and Detail Bay Ceiling Treatment

We also recommend that the ceiling of the tunnel and the detailing bays be treated with acoustically absorptive material that can withstand water and humidity, such as a water resistant acoustical ceiling tile suspended from a grid such as MBI San Pan PVF Panels series 600P-2060-E in the 1" thickness having a 1.5 mil PVC encapsulated water resistant surface finish with a 1" thick 6-7# fiberglass core. This material has a manufacturer's acoustical performance rating of NRC 0.80. Cut sheets are included in Appendix A. The inside walls will have white vinyl ribbed exterior siding on furring strips to provide some diffusion of sound within the tunnel.

Sound Barrier Walls

The easiest way to reduce the sound level at the property lines is to construct solid barrier walls to block sound from getting to the property lines. We have calculated the barrier wall attenuation that would result from several barrier wall heights. Scale drawings are included in Appendix C including the calculations to achieve the sound attenuation values shown in the tables. The Town of Bedford requires that all barrier walls be 6 feet high or lower, so we first tried this height to see whether it satisfied the code requirements and found that it did not. Additional attenuation is necessary, and we have therefore performed calculations using higher barrier heights and have lowered the tunnel opening heights to the lowest possible opening of 84" which has been used for the opening height in the barrier calculations. In addition, the receptor is 5 feet tall and has been placed two feet on the other side of the barrier wall.

Sound barrier walls will be required in several locations as shown on the attached drawing D-2. The barriers need to be 8 feet in height with the exception of the north property line which needs to be 10 feet in height due to the raised elevation of the neighboring property which diminishes the barrier effect until it blocks the line of sight to the receptors. The barriers shall consist of a continuous double faced stockade fence construction that extends to the ground with no gaps or openings of any type that could allow sound to pass through. The barriers are required due to the fact that there is still noise emitting from the tunnel and detail bays when the doors are opened even if the blowers are turned off and this noise will exceed the code requirements if left unattenuated due to the close proximity of the property lines as shown in the attached calculations.

Summary of Blower Noise Attenuation

Our conclusion is that the current dryers need to be replaced with the Proto-Vest Windshear blower system with the silencer package and that the overhead door system should be provided for all bays as described above in conjunction with the ceiling acoustical treatment and barrier walls which will all work together so that the car wash facility is in compliance with the Town of Bedford Noise Ordinances at all times of use.

Peripheral Noise Sources

Measurements were taken of the vacuum systems, rooftop unit, and tunnel entrance at the north and south property lines. However, since the ambient noise level in the area was much higher than these sources, sound readings had to be taken quite near to the sources (3 to 5 feet) and the sound levels had to be calculated from these near-field readings to the property lines to get a true reading on their contribution to the sound level at the property lines. There were simply too many ambient noise sources to get an accurate reading on the contribution of the Russell Speeders equipment to the overall sound level at the property lines.

Please note that there is an existing building at the north property line with little potential for people to be directly impacted at the property line by the sound from Russell Speeders detailing area. In fact, this building has a very loud air release hose that cycles on every few minutes that makes conversation in the Russell Speeders property impossible while it is active. In addition, there is currently a deep hole in the ground at the south property line, so no one will be standing within earshot of the vacuums at that property line either. Additionally, the ambient sound level at both of these locations is affected by traffic noise on Route 117, the nearly constant equipment backup beepers from across the road at the equipment rental store, an air release valve from the building next door, sirens, trains and train horns, all of which are very frequent and subjectively more disturbing to the human ear than the noise coming from the vacuum system located at Russell Speeders. With all this in mind, we present the following findings and recommendations for the peripheral equipment at Russell Speeders.

Vacuum and Compressor at Rear of Property

Measurements were taken on April 8, 2014 of the vacuum noise from the rear property detailing area at the nearest north and south property lines. The existing temporary outdoor air compressor will be located inside the building when the approval is obtained to upgrade the property, and will therefore not be contributing to the noise level. In the updated facility, the vacuums will be used in the detailing bays and will not exceed the noise code at the nearest property lines. The overhead doors will be down to prevent noise from being excessive at the nearest north property line. In addition to the vacuums, there are air hoses and floor mat cleaning tools that make significant sound levels. These will also be located in the detail bays and will only be used when the bay doors are down.

Vacuum System at Free Vacuum Area on North Side of Building

The sound level was measured at the north property line directly in line with the vacuum unit at the north side of the Russell Speeders building and it was the same with and without the vacuum system running, 60.8 dBA, meaning that it does not increase the ambient level at all. In addition, readings were taken 3 feet from the vacuum unit at the north side of the building and it measured 64.9 dBA. When calculated to the property line the level would be 39 dBA if it were possible to hear it above the ambient sound level, which it was not at the time of our readings. Please note that the free vacuum area will not exist in the altered facility.

Rooftop Heating Unit

Measurements were taken at the north and south property lines with the rooftop heating unit on and off. There was no change in the ambient sound level at any property line when the unit was turned on and off, and it was completely inaudible. There are therefore no sound attenuation measures required for this unit. A calculation is shown in Appendix C for this unit to the closest property line.

Residential Properties

There are two residences within 200 feet of the Russell Speeders property. These are both to the north and are shown on the attached detail D-1. In both cases, there are building structures that block the direct line of sight to the residential buildings from the car wash exit tunnel. The only equipment that would be in direct line of sight to the residences would be the north detailing areas. Since these will be enclosed in the alterations, there will be no appreciable effect on these properties, since the sound level will be inaudible as shown in the calculations in Appendix C. Also shown are calculations to the residences of blower noise since it is not currently audible above the ambient noise of the traffic at these residences.

Maria L. Castellucci, Consultant

With the planned enclosures for the detail bays to be located at the north side of the building, there will be Big Ass Fans mounted in the ceilings to provide air circulation for workers inside these buildings. These fans do not have sound level data, but according to Travis Simpson, the Vertical Market Specialist for Big Ass Fans, there are several of these fans in all sizes in his office within 30 feet of his desk and they are "inaudible". They do not produce noise even loud enough to measure inside his office. We therefore, conclude that these will not produce measurable noise at the property line which will be 50' away from the one story high detailing bay ceiling, let alone a residence that is 245' away in the case of the closest residence on the north side of the Adzam property. There will be no other heating, ventilating or cooling mechanical equipment added to the site to our knowledge.

Amplified Music

At the existing facility, there are two exterior speakers mounted on the northeast corner of the building facing the car owner waiting area. Measurements were taken of these speakers at 3 feet and then calculated to the nearest north property line. They will not exceed code as currently adjusted.

In addition, on all four sound level measurement days, there were no instances of car speakers being played for the workers. There are no "boomboxes" or music players in the facility for the workers and this policy will continue in the altered facility.

The above summarizes our findings and recommendations regarding the equipment at Russell Speeders. Please feel free to contact me if you have any questions or comments.

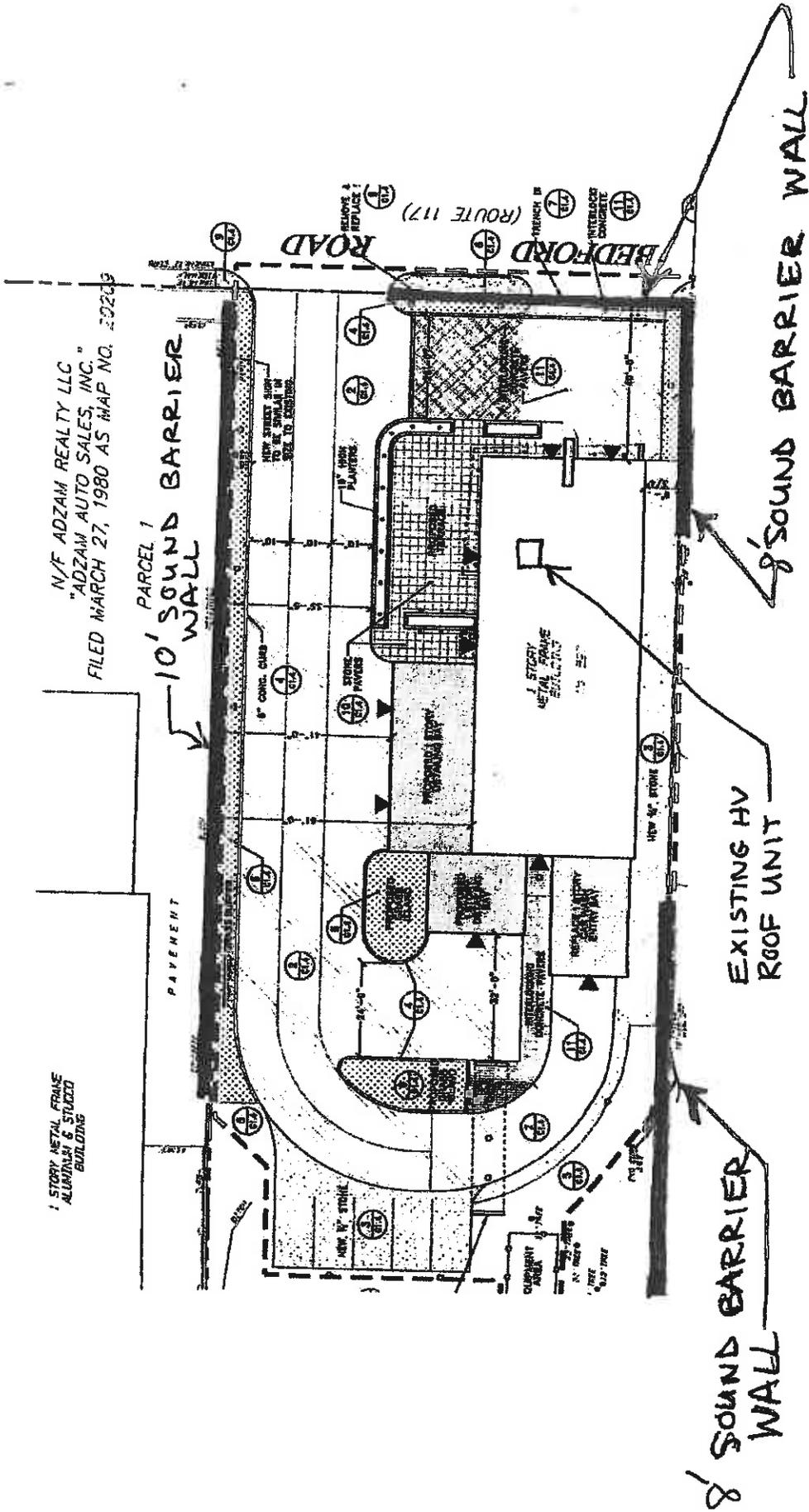
Very truly yours,



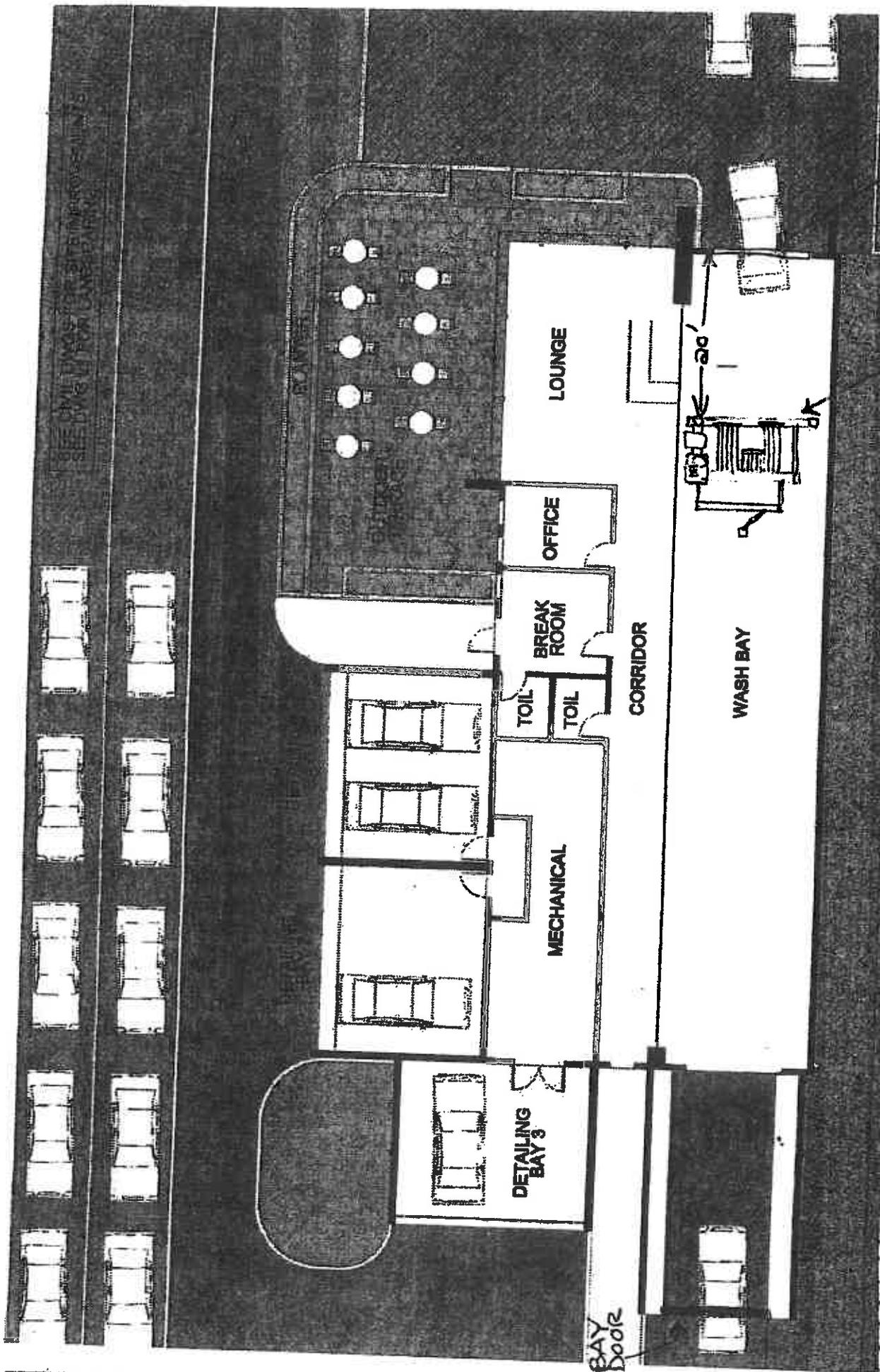
Maria L. Castellucci,
Consultant in AV and Acoustics

Maria L. Castellucci, Consultant

Appendix A



D-2
 SOUND BARRIER
 WALL LOCATIONS



FLOOR PLAN

3

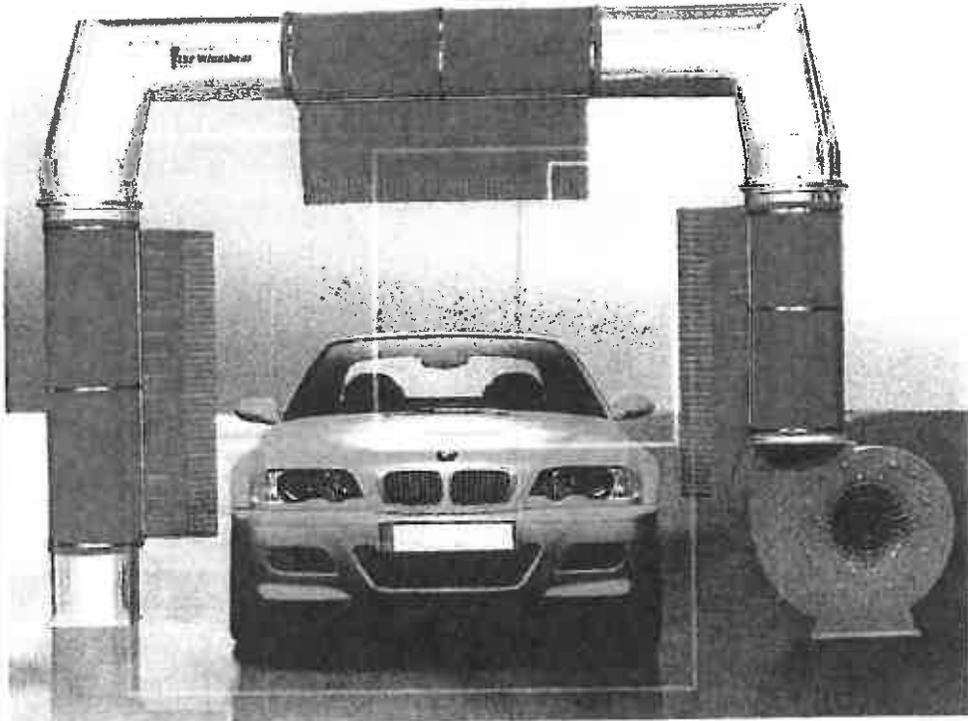
SCALE: 1/8" = 1'-0"

8' H BARRIER WALL

8' BARRIER WALL
BAY DOOR
BLOWER

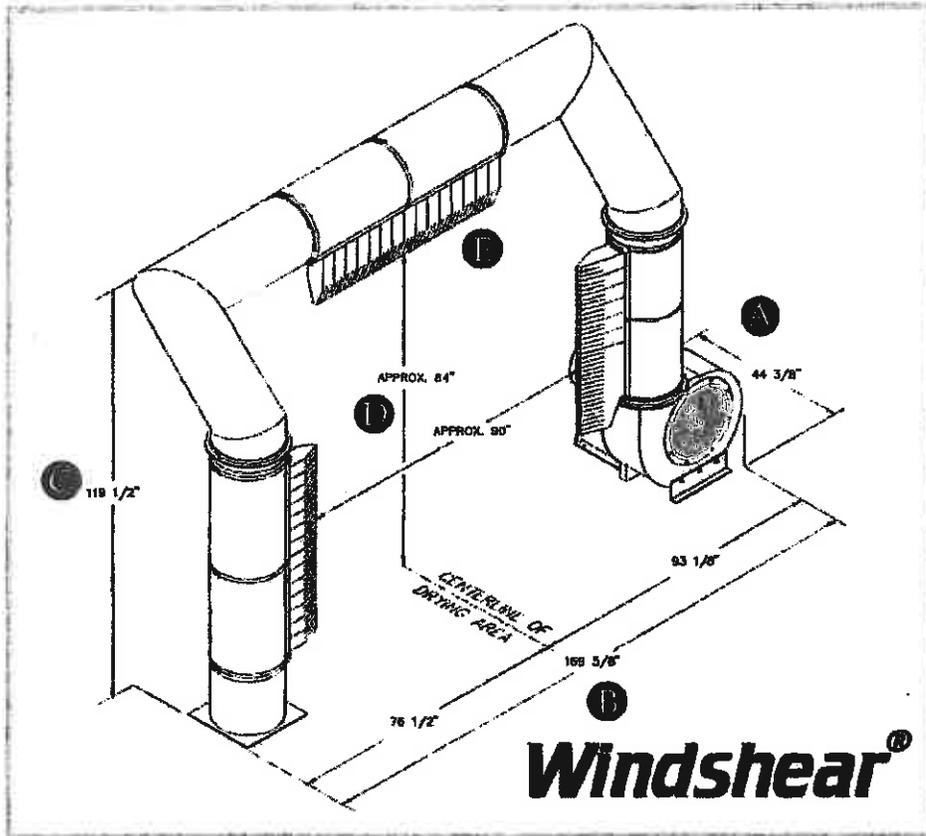
D-3 FLOOR PLAN

The WindShear



- 7' x 11' x 8' Foot
- 1000 CFM Air Flow
- Modular or Stand Alone Design
- Compact Design
- 20hp Blower

FLUID-VEST, INC.



DESIGN CONSIDERATIONS

The Proto-Vest "Windshear"™ is designed as a stand alone drying system that is ideal for tunnels with a variety of line speeds. This patented system utilizes one (1) 30 hp Magnum blower, plenum and three (3) Proto-Duck™ air delivery bags designed to direct air around the vehicle as it passes under the equipment arch. Proto-Vest's blower/motor assemblies are engineered for both maximum efficiency and cost effectiveness allowing the system to operate with only one 30hp Magnum blower. With the improved performance of the Magnum blower assembly the Windshear's drying quality far surpasses any comparable horsepower dryer in its class.

Proto-Vest's stringent standards in material selection for dryers result in extended equipment life and reduced maintenance. The blower assembly is manufactured from steel that is powder coated while the impeller is electroplated. The blower is AMCA Class IV certified. The plenum is made from 5052-H32 aluminum, while the bags are produced from Proto-Duck™ materials. These materials resist corrosion and tearing.

DESIGN FEATURES

Patented Touchless Design:

Pressurized air flows through three (3) patented bags which direct the air to the vehicle's horizontal and vertical surfaces. It dries the hood, roof, deck, windows, and sides of the vehicle without touching.

Low Maintenance: Other than the blower / impeller assemblies, there are no moving parts to wear-out or break down. (Please note that Proto-Vest recommends routine maintenance in order to maximize product life.)

Line Speed Efficiency: As a stand alone unit the "Windshear" will provide an effectively dried car at a wide variety of line speeds.

Compact / Modular design: Designed to fit into limited space as a stand alone or supplemental dryer.

FEATURES

- OVERALL LENGTH
44 3/8 in.
- OVERALL WIDTH
169 5/8 in.
- OVERALL HEIGHT
119 1/2 in.
- BAG HEIGHT
84 in.
- VERTICAL OPENING
60 in.

Machine Operating Requirements*

- 30 hp, 3600 RPM
- 208-230/460 volts
- 1.15 service factor
- Frame: 286TS
- 3 Phase
- Totally enclosed, fan cooled (TEFC)

NOTE: Wiring and controls to be provided by the purchaser. Additional motor specifications available upon request. Additional voltages available on special order.

OPTIONAL EQUIPMENT

- Green, Red, Blue, Black or Custom Bag Colors
 - The Silencer Package
 - Vehicle Recognition System (VRS)
- Weight: 1250 lbs. (approximate)

DECIBEL READINGS

With Silencer / Without Silencer
(WS) (WOS)

Windshear® - (1) 30hp dryer:

WS: 10 ft=76.9 dBA;	WOS: 10 ft=91 dBA
WS: 20 ft=70.9 dBA;	WOS: 20 ft=84.9 dBA
WS: 30 ft=67.4 dBA;	WOS: 30 ft=81.4 dBA
WS: 40 ft=64.9 dBA;	WOS: 40 ft=78.9 dBA
WS: 50 ft=63 dBA;	WOS: 50 ft=77 dBA

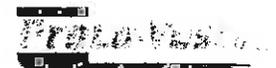
(The above decibel readings are interpolated.)

SERVICE SUPPORT

Proto-Vest recognizes that support after the sale of equipment is critical to the success of our customers. Our company offers its customers access to a wide range of services including: field service technicians, factory direct aftermarket parts, and an engineering staff for custom designed applications.

Proto-Vest Patents:

U.S.: 3,942,430; 4,161,801; 4,409,035; 4,418,442; 4,433,450; 4,445,251; 4,446,592; 4,589,160; 4,700,426; 5,027,714; 5,184,369; 5,187,881; 5,195,207; 5,280,665; 5,421,102; 5,553,946; 5,886,648; 5,901,461; 5,950,326; 5,960,564; 6,038,781; 6,176,034; 6,519,872; others pending.
Canada: 1,021,994; 1,111,328; 1,190,453; 1,201,040; 1,197,439; 1,219,195; 1,219,192; 1,219,194; 1,258,026; 1,219,193; 2,019,749; 2,071,568; 2,071,239; 2,071,368; others pending.



*Specifications subject to change without notice.

***If starting motor over 10-12 times an hour it may be more efficient to leave blower on.

Proto-Vest, Inc., • 7400 N. Glen Harbor Blvd., Glendale, AZ 85307 • 800-521-8218 • 623-872-8300 • Fax 623-872-6150

www.protovest.com

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Silencer Package

GENERAL DESCRIPTION

The Proto-Vest "Silencer Package" was developed to enable our dryers to meet OSHA, federal, state and local noise reduction standards. The OSHA permissible noise exposure is 85 dB for an 8-hour shift. By reducing noise levels into the 70 dB to 80 dB range, you can be assured of a pleasant environment for both your employees and customers. The Silencing Package is a standard feature on all Untouchable dryers, while the Stripper and Windshear drying systems can be equipped with the Silencing Package as an option. Using state-of-the-art materials, which require virtually no maintenance, Proto-Vest has designed three components to comprise the Silencer Package.

- **Blower Inlet:** reduces the noise generated by rapidly moving air being drawn into the blower assembly.
- **Blower-motor Cover:** houses the blower and motor completely to absorb noise emitted from the motor and impeller while providing the assembly additional protection.
- **Riser Can:** absorbs the noise created by the blower, impeller and the movement of the air as it leaves the blower by advancing through the dryer's plenum.

The Silencer Package reduces decibel levels on Proto-Vest dryers on an average of 10 decibels making them approximately 10 times quieter than the un-silenced models!

DECIBEL LEVEL READINGS

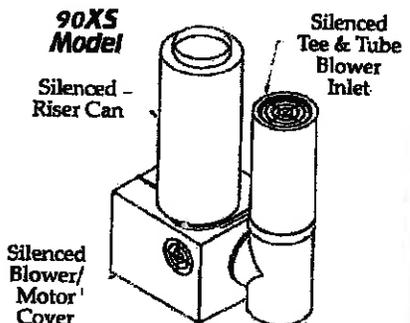
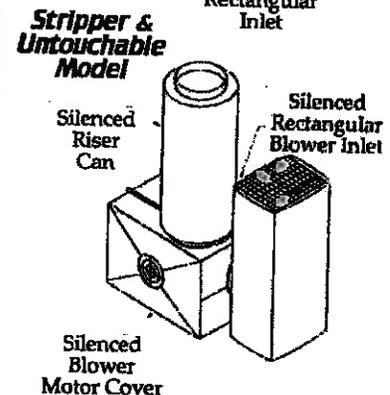
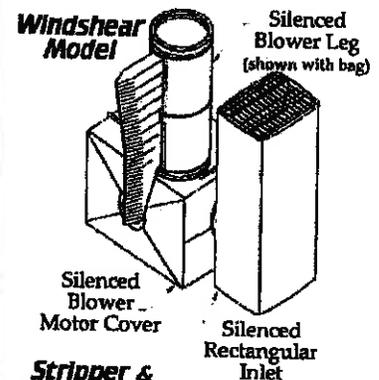
With Silencer (WS)	Without Silencer (WOS)	
SideShot - 15hp Dryer:		
WS: 10 ft=88 dBa;	WOS: 10 ft=94 dBa	WS: 10 ft=74.5 dBa; WOS: 10 ft=82.9 dBa
WS: 20 ft=82 dBa;	WOS: 20 ft=88 dBa	WS: 20 ft=68.5 dBa; WOS: 20 ft=76.9 dBa
WS: 30 ft=78.4 dBa;	WOS: 30 ft=84.5 dBa	WS: 30 ft=64.9 dBa; WOS: 30 ft=73.4 dBa
WS: 40 ft=76 dBa;	WOS: 40 ft=82 dBa	WS: 40 ft=62.4 dBa; WOS: 40 ft=70.9 dBa
WS: 50 ft=74 dBa;	WOS: 50 ft=80 dBa	WS: 50 ft=60.5 dBa; WOS: 50 ft=69 dBa
WS: 60 ft=72.4 dBa;	WOS: 60 ft=78.4 dBa	
SideShot II - 30hp Dryer:		
WS: 10 ft=76.9 dBa;	WOS: 10 ft=91 dBa	WS: 10 ft=76.9 dBa; WOS: 10 ft=91 dBa
WS: 20 ft=70.9 dBa;	WOS: 20 ft=84.9 dBa	WS: 20 ft=70.9 dBa; WOS: 20 ft=84.9 dBa
WS: 30 ft=67.4 dBa;	WOS: 30 ft=81.4 dBa	WS: 30 ft=67.4 dBa; WOS: 30 ft=81.4 dBa
WS: 40 ft=64.9 dBa;	WOS: 40 ft=78.9 dBa	WS: 40 ft=64.9 dBa; WOS: 40 ft=78.9 dBa
WS: 50 ft=63 dBa;	WOS: 50 ft=77 dBa	WS: 50 ft=63 dBa; WOS: 50 ft=77 dBa
90N/90XS - 15hp Dryers:		
WS: 10 ft=88 dBa;	WOS: 10 ft=99 dBa	WS: 10 ft=74.5 dBa; WOS: 10 ft=82.9 dBa
WS: 20 ft=81.9 dBa;	WOS: 20 ft=92.9 dBa	WS: 20 ft=68.5 dBa; WOS: 20 ft=76.9 dBa
WS: 30 ft=78.4 dBa;	WOS: 30 ft=89.4 dBa	WS: 30 ft=64.9 dBa; WOS: 30 ft=73.4 dBa
WS: 40 ft=75.4 dBa;	WOS: 40 ft=86.9 dBa	WS: 40 ft=62.4 dBa; WOS: 40 ft=70.9 dBa
WS: 50 ft=74 dBa;	WOS: 50 ft=85 dBa	WS: 50 ft=60.5 dBa; WOS: 50 ft=69 dBa
IP330 - 30hp Dryers:		
WS: 10 ft=88 dBa;	WOS: 10 ft=99 dBa	WS: 10 ft=76.9 dBa; WOS: 10 ft=91 dBa
WS: 20 ft=81.9 dBa;	WOS: 20 ft=92.9 dBa	WS: 20 ft=70.9 dBa; WOS: 20 ft=84.9 dBa
WS: 30 ft=78.4 dBa;	WOS: 30 ft=89.4 dBa	WS: 30 ft=67.4 dBa; WOS: 30 ft=81.4 dBa
WS: 40 ft=75.4 dBa;	WOS: 40 ft=86.9 dBa	WS: 40 ft=64.9 dBa; WOS: 40 ft=78.9 dBa
WS: 50 ft=74 dBa;	WOS: 50 ft=85 dBa	WS: 50 ft=63 dBa; WOS: 50 ft=77 dBa
IP345 - 45hp Dryers:		
WS: 10 ft=88 dBa;	WOS: 10 ft=99 dBa	WS: 10 ft=76.9 dBa; WOS: 10 ft=91 dBa
WS: 20 ft=81.9 dBa;	WOS: 20 ft=92.9 dBa	WS: 20 ft=70.9 dBa; WOS: 20 ft=84.9 dBa
WS: 30 ft=78.4 dBa;	WOS: 30 ft=89.4 dBa	WS: 30 ft=67.4 dBa; WOS: 30 ft=81.4 dBa
WS: 40 ft=75.9 dBa;	WOS: 40 ft=86.9 dBa	WS: 40 ft=64.9 dBa; WOS: 40 ft=78.9 dBa
WS: 50 ft=74 dBa;	WOS: 50 ft=85 dBa	WS: 50 ft=63 dBa; WOS: 50 ft=77 dBa
<i>(Proto-Vest's Silencing Package is standard on all of the Untouchable series.)</i>		
TopShot - 30hp Dryer:		
WS: 10 ft=88 dBa;	WOS: 10 ft=99 dBa	WS: 10 ft=76.9 dBa; WOS: 10 ft=91 dBa
WS: 20 ft=81.9 dBa;	WOS: 20 ft=92.9 dBa	WS: 20 ft=70.9 dBa; WOS: 20 ft=84.9 dBa
WS: 30 ft=78.4 dBa;	WOS: 30 ft=89.4 dBa	WS: 30 ft=67.4 dBa; WOS: 30 ft=81.4 dBa
WS: 40 ft=75.4 dBa;	WOS: 40 ft=86.9 dBa	WS: 40 ft=64.9 dBa; WOS: 40 ft=78.9 dBa
WS: 50 ft=74 dBa;	WOS: 50 ft=85 dBa	WS: 50 ft=63 dBa; WOS: 50 ft=77 dBa
<i>(Proto-Vest's Silencing Package is standard on all of the Untouchable series.)</i>		
TopShot II - (2) 30hp Dryer:		
WS: 10 ft=88 dBa;	WOS: 10 ft=99 dBa	WS: 10 ft=76.9 dBa; WOS: 10 ft=91 dBa
WS: 20 ft=81.9 dBa;	WOS: 20 ft=92.9 dBa	WS: 20 ft=70.9 dBa; WOS: 20 ft=84.9 dBa
WS: 30 ft=78.4 dBa;	WOS: 30 ft=89.4 dBa	WS: 30 ft=67.4 dBa; WOS: 30 ft=81.4 dBa
WS: 40 ft=75.9 dBa;	WOS: 40 ft=86.9 dBa	WS: 40 ft=64.9 dBa; WOS: 40 ft=78.9 dBa
WS: 50 ft=74 dBa;	WOS: 50 ft=85 dBa	WS: 50 ft=63 dBa; WOS: 50 ft=77 dBa
<i>(Proto-Vest's Silencing Package is standard on all of the Untouchable series.)</i>		
TailWind - (1) 25hp Dryer:		
WS: 10 ft=85 dBa;	WOS: 10 ft=91 dBa	WS: 10 ft=85 dBa; WOS: 10 ft=91 dBa
WS: 20 ft=79 dBa;	WOS: 20 ft=85 dBa	WS: 20 ft=79 dBa; WOS: 20 ft=85 dBa
WS: 30 ft=75.5 dBa;	WOS: 30 ft=83.5 dBa	WS: 30 ft=75.5 dBa; WOS: 30 ft=83.5 dBa
WS: 40 ft=73 dBa;	WOS: 40 ft=79 dBa	WS: 40 ft=73 dBa; WOS: 40 ft=79 dBa
WS: 50 ft=71 dBa;	WOS: 50 ft=77 dBa	WS: 50 ft=71 dBa; WOS: 50 ft=77 dBa

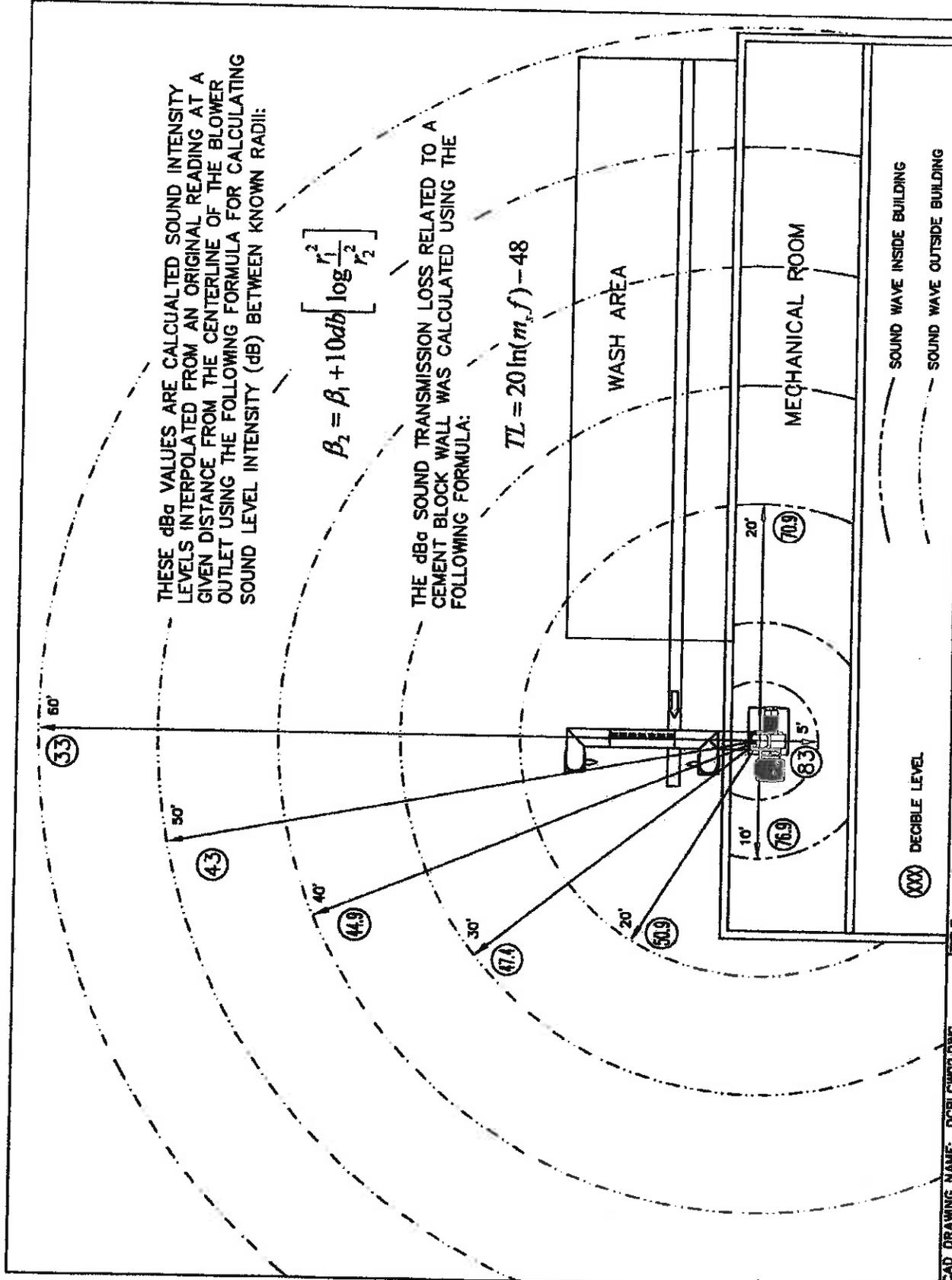
*Specifications subject to change without notice.
NOTE: Proto-Vest dryer's dimensions will vary with the Silencer Package.

Proto-Vest, Inc., 7400 N. Glen Harbor Blvd., Glendale, AZ 85307
800-521-8218 • 623-872-8300

Fax 623-872-6150
www.protovest.com

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THESE dB_a VALUES ARE CALCULATED SOUND INTENSITY LEVELS INTERPOLATED FROM AN ORIGINAL READING AT A GIVEN DISTANCE FROM THE CENTERLINE OF THE BLOWER OUTLET USING THE FOLLOWING FORMULA FOR CALCULATING SOUND LEVEL INTENSITY (dB) BETWEEN KNOWN RADII:

$$\beta_2 = \beta_1 + 10db \left[\log \frac{r_1^2}{r_2^2} \right]$$

THE dB_a SOUND TRANSMISSION LOSS RELATED TO A CEMENT BLOCK WALL WAS CALCULATED USING THE FOLLOWING FORMULA:

$$TL = 20 \ln(m_r f) - 48$$

--- SOUND WAVE INSIDE BUILDING
 --- SOUND WAVE OUTSIDE BUILDING

(XXX) DECIBEL LEVEL

CAD DRAWING NAME: DCBLCW02LOWG	TITLE: CUSTOM WINDSHEAR AT PLAN VIEW
LAST DATE EDITED: 9/5/07	BY: SM
DRAWN BY: K. KNORP	SCALE: NONE
DATE CREATED: 3/8/02	SHEET: 1 OF 1

Proto-Vest Inc.

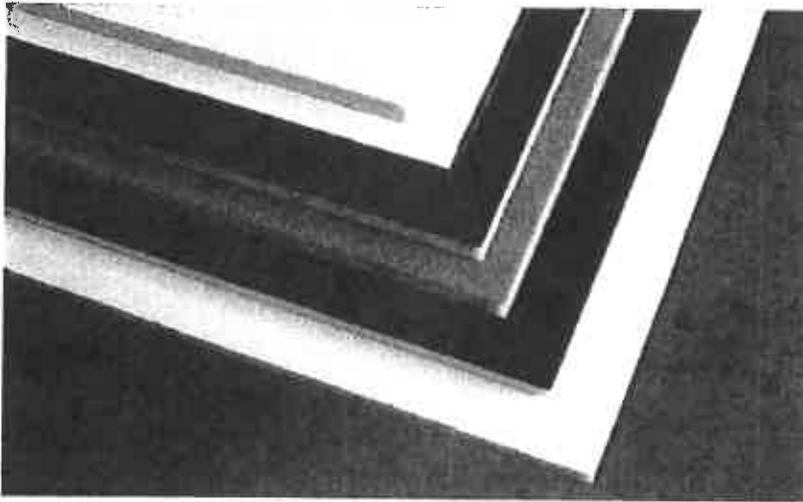
CEILING TILES



Custom High Performance Ceiling Tiles

The entire line of MBI ceiling tile products is dimensionally stable, market friendly, and designed to last a lifetime. They offer excellent acoustics at economical prices.

PRODUCT DESCRIPTION



MBI Nubby Ceiling Tiles are a traditional classic, used for decades in the ceiling industry. Offered in small-run quantities and custom sizes.

MBI PVC Ceiling Tiles are a cost-effective solution when color is essential to your project. The PVC facing comes in 10 colors to suit your design needs.

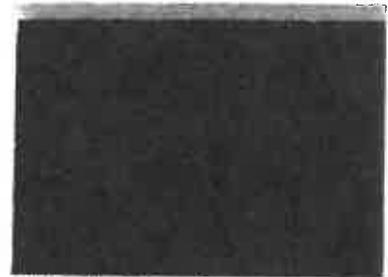
MBI PVC Encapsulated Ceiling Tiles are ideal for all of your clean and high humidity environments. Also see our San Pan® line.

MBI Blackout Tiles are ideal for any ceiling where you need maximum sound absorption at a cost-effective price. The matte black finish has very little sheen, making the ceiling disappear. Perfect for home theaters and cinemas.

acoustics with an environmentally sustainable design. Get your green points here.

MBI Fabric Ceiling Tiles offer a full palette of patterns and colors with an Eco friendly core. The fabric finish is 100% recycled polyester, further enhancing its green qualities.

MBI Whiteout Tiles are an eco-friendly, pure white ceiling tile offering good



MBI PVC Ceiling Tile, 6000P

ACOUSTICAL PERFORMANCE

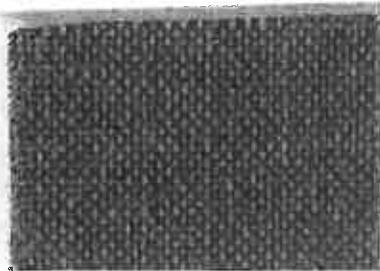
PRODUCT MODEL	ABSORPTION COEFFICIENT						
	125	250	500	1000	2000	4000	NRC
6000B-1060-N (4" x 6-7/8" Core, Blackout Faced)	0.78	1.07	0.87	1.04	1.12	1.15	1.05
6000G-1060-N (Green Line) (4" x 6-7/8" Core, Whiteout Faced)	0.74	0.63	0.60	0.75	0.82	0.77	0.70
6000N-1060-N (4" x 6-7/8" Core, Nubby Faced)	0.75	0.91	0.70	0.93	0.98	1.03	0.90
600P-1060-N (San-Pan) (4" x 6-7/8" Core, PVC Encapsulated)	0.75	0.76	0.72	1.03	0.76	0.38	0.80

CODES & CERTIFICATES

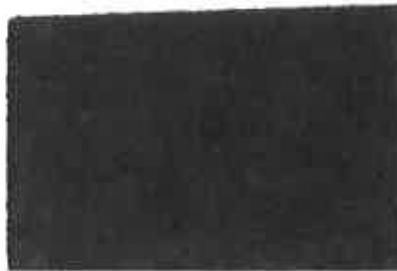
★ Class A per ASTM E84 25/0/50

FOR MORE INFORMATION ON THESE PRODUCTS GO TO WWW.MBIPRODUCTS.COM

MBI Ceiling Tiles



MBI Fabric Ceiling Tile, 6000F



MBI Blackout Ceiling Tile, 6000B



MBI Nubby Ceiling Tile, 6000N

TECHNICAL SUPPORT

- **Weight:** 0.7# - 1.5# per square foot
- **Density:** 6-7#
- **Shape:** Square, Rectangular
- **Fire Rating:** MBI Ceiling Tiles meet Class A per ASTM E84 25/0/50
- **Dimensional Stability:** Ceiling Tiles are dimensionally stable
- **Maintenance:** Materials selected to provide easy maintenance, durability and abuse resistance.

SIZES AVAILABLE

- Thickness of 1"-2"
- Custom Thicknesses available
- 16 square foot maximum
- Custom sizes available upon request

FINISHES AVAILABLE

- Black Matte Scrim
- Polyester Fabric. Other fabrics, subject to approval
- Sustainable Eco-Fabric
- Nubby Fabric
- 2.5 mil PVC Film

SUSPENSION PROVISIONS

- Grid by others
- Custom suspension available upon request

GENERAL NOTES

- Store products in a cool, dry, and temperature controlled interior location not less than 40°F prior to, during, and after installation.
- Store products out of direct UV sunlight.
- Store and protect products from the elements and from damage.
- Suspension hardware is not to be pre-installed.
- Do not subject acoustical products to critical edge lighting without first consulting manufacturer.
- MBI Ceiling Tiles are custom made. Sizes and quantities need to be determined by field verifying existing job-site conditions. Installer/Contractor is responsible for verifying and providing accurate field dimensions.
- MBI Ceiling Tiles must be kept in temperature-controlled environments.
- High humidity could cause panel fabric to wrinkle and/or de-laminate from fiberglass board.

MBI Penetration Panels are available to make field cuts around existing elements such as sprinkler heads, duct work, vents, lighting, etc.

SOUND | experience

PIONEERS IN THE DESIGN AND MANUFACTURING OF ACOUSTICAL PRODUCTS FOR OVER 45 YEARS

In a commercial facility where proper sound management is of critical importance, MBI has been at the forefront of acoustical innovation for over 45 years. In fact, we've designed and manufactured many of the products used today, from Classroom Acoustical Tiles to Legendary Panels.

MBI acoustical products provide a great sound experience within all types of buildings, including such large facilities as Arenas and Convention Centers to smaller facilities such as Schools, Churches, and of course Studios and Restaurants.



Since 1965

INNOVATION FOR THE SOUND EXPERIENCE

WWW.MBIPRODUCTS.COM

307 Bond Street
Elyria, Ohio 44025-1177
T: 440.322.6600
F: 440.322.1900

Experience Matters:

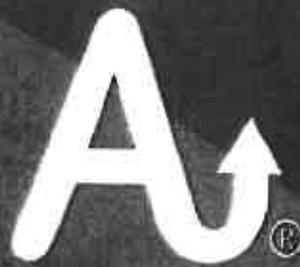
Airlift Doors, Inc. has been a leader in the commercial door business for over 30 years.

We have been manufacturing air powered openers since 1979 and polycarbonate doors since 1991. We are proud to offer a wide variety of products to meet our customer's needs.

We specialize in car care applications such as car washes, service bays, car dealerships, oil change bays, salt storage sheds, and vehicle showrooms.

We have a strong distributor network set up across the United States and Canada with a presence worldwide.

Call one of our experienced sales staff today and see how Airlift Doors, Inc. can help you find the right products and services today!



AIRLIFT DOORS, INC.

Our Mission:

We take pride in the quality of our products and guarantee that no other manufacturer stands behind their products and warranties like we do. With the most options available in the industry, we are sure to help you find the right door and opener for your wash or bay.

Our Promise:

All standard size doors and openers are guaranteed in stock with the shortest lead times in the industry.

Our customers are important to us and we are there to assist them in every way with technical support available 24 hours a day, 7 days a week.

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4.4 Sound insulation

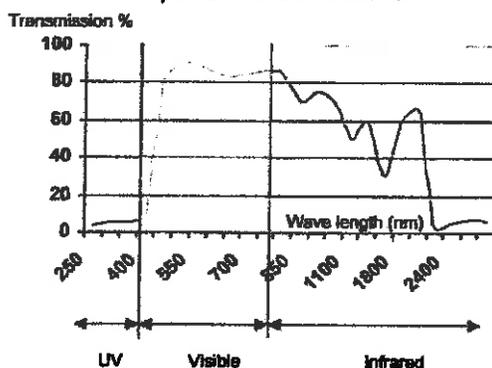
MACROLUX® C and MACROLUX® C XL sheets sound-insulation values (reduction of noise) are the following:

Thickness	Weight (kg/m ²)	Reduction Rw
4	4.8	27 dB
5	6.0	28 dB
6	7.2	29 dB
8	9.6	31 dB
10	12.0	32 dB
12	14.4	34 dB

4.5 MACROLUX® C XL (EXTRA LIFE) U.V. protection

In order to prevent a premature aging due to the ultraviolet sun radiation, MACROLUX® C XL sheets are protected on both sides by means of a UV Absorber layer.

The co-extrusion method allows to realize an homogenous layer that strain and stop the ultraviolet component of sun beams.



The response to the solar radiation spectrum evidences how a UV-protected polycarbonate sheet can screen almost completely the ultraviolet component (on average only 4% of the radiation included in the range between 250-380 nanometres can pass through the sheet), while it remains totally transparent as regards to the visible component.

The outstanding characteristics of polycarbonate sheets remains unchanged in the time.

All MACROLUX® C XL sheets are constantly controlled with simulated aging tests (test made with QUV/SE Q-Panel) assuring the UV protection and granting MACROLUX® C XL sheets against loss of brightness, yellowing and breakage due to hail.

Verification test: ASTM D 1925

We ask you to contact our offices to have a copy of our warranty and of its extension.

Appendix B

Please note that all equations used in the calculations in Appendix C are in parentheses to reference the following equation numbers.

1. Attenuation of sound pressure level over distance in a free field¹⁸:

$$L_{p2} = L_{p1} + 20 \log_{10} (r_2/r_1)$$

L_{p1} = sound pressure level from source at location 1, dB

L_{p2} = sound pressure level from source at location 2, dB

r_1 = distance from source to location 1, ft or m

r_2 = distance from source to location 2, ft or m

2. Calculation for adding multiple identical sound sources¹⁹:

$$L_p(\text{total}) = L_p(\text{single source}) + 10 \log_{10} N$$

$L_p(\text{single source})$ = the sound pressure level for one of the identical sound sources

$L_p(\text{total})$ = the total sum sound pressure level for all identical sources

N = the number of sources

3. Calculation for adding multiple sound sources which may not be identical²⁰:

Addition of Sound Levels	
Difference between the two levels, dB	Add to the higher level, dB
0	3
1	2.5
2	2
3	2
4	1.5
5	1
6	1
7	1
8	0.5
9	0.5
10	0

¹⁸ Handbook of HVAC Design, Editors Nils R. Grimm, PE and Robert C. Rosaler, PE, McGraw-Hill Publishing Company, c. 1990, p. 49.14.

¹⁹ Ibid, p. 49.11.

²⁰ Ibid, p. 49.12, Table 49.5 *Addition of Sound Levels*.

4. A-weighting calculation for octave band spectrum²¹

Octave Band Center Frequency, Hz	31.5	63	125	250	500	1000	2000	4000	8000
A-weighting, dB	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	+1.2	+1.0	-1.1

5. Estimating Sound Power Level from sound pressure level at given distance from source:

$$L_w = L_p - 10 \log_{10} (D / (4\pi r^2)) - 10.5$$

Where:

- D = Directivity of 2
- R = distance from source
- L_w = Sound Power Level
- L_p = Sound Pressure Level

6. Room Constant: Assumes tunnel dimensions of 17'W x 99'L x 23'H for main tunnel and 17'W x 30'L x 13'H for entrance tunnel attached to main tunnel:

$$RC = A / (1 - \alpha_{avg})$$

Where:

A = Total Room Absorption in ft² Sabin = $\sum S_i \alpha_i$ where S_i is the individual surface area in the room (ft²) and α_i is the absorption coefficient for the individual surface in the room (Sabin)

α_{avg} = Average Absorption Coefficient = A/S where A is the absorption of the room (ft² Sabin) and S is the total surface area in the room (ft²)

7. Propagation of Sound Indoors in Reverberant Space (within tunnel)²²

For a continuing sound source in a room, the sound level is the sum of the direct and reverberant sound. The sound pressure for a receiver at a specific distance from the source in a room is expressed as follows:

$$L_p = L_w + 10 \log_{10} (D / (4\pi r^2)) + 4 / RC + 10.5$$

Where:

- L_p = received sound pressure level at location specified distance from source
- L_w = Sound power level from the source
- D = directivity coefficient = 2

²¹ Handbook of Acoustical Measurements and Noise Control, Third Edition, Cyril M. Harris, Ph.D, Editor in Chief, Acoustical Society of America, Woodbury, NY, c. 1998, p. 1.17 Table 1.2 and p. 1.22 Table 1.4 (derived from the American National Specification for Sound Level Meters, ANSI S1.4-1985, Acoustical Society of America, New York, NY 10017-3483, c.1985.)

²² 2003 ASHRAE Applications Handbook, Chapter 47 Sound and Vibration Control, p. 47.26.

RC = room constant (ft² Sabin)
 $\pi = 3.14$
 r = distance from source

8. Transmission Loss Calculation

$$L_{p2} = L_{p1} - TL$$

Where:

TL = transmission loss of specific material
 L_{p1} = sound pressure level on source side of material
 L_{p2} = sound pressure level on receiver side of material through which sound is traveling

9. Sound Power Level Calculation for Radiating Surface

$$L_w = L_{p2} + 10 \log_{10} (A_{wall}) - 10.5$$

Where:

L_w = sound power level
 L_{p2} = sound pressure level
 A_{wall} = Radiating Surface Area

10. Sound Pressure Calculation Outside the Tunnel Door

$$L_p = L_w + 10 \log_{10} (D / (4\pi r^2)) + 10.5$$

Where:

L_p = received sound pressure level at location specified distance from source
 L_w = Sound power level
 D = directivity coefficient = 2
 $\pi = 3.14$
 r = distance from source

11. Off-Axis Attenuation for a Long Tunnel or Duct with a 12'W x 7'H opening in free space were estimated as follows with 0° as the reference point directly on axis to the tunnel opening and 90° representing the angle perpendicular to the tunnel opening²³:

Off-Axis Angle	Octave Band Center Frequency (Hz)								
	31.5	.63	125	250	500	1k	2k	4k	8k
0°	0	0	0	0	0	0	0	0	0
45°	3	3	4	3	1	0	0	0	0
60°	3	5	8	10	10	10	10	10	10
90°	7	10	14	15	16	17	18	19	19
135°-180°	7	10	15	18	20	22	24	25	25

²³ Koppers Aircoustat Directivity Attenuation Table, 1975 interpolated for opening size at Russell Speeders.

12. Sound Barrier Wall Calculation for Thin Barriers²⁴

$$IL_{\text{barrier}} = 10 \log [3 + 10/NK] - A_{\text{ground}} \text{ dB}$$

Where:

K is a correction factor for atmospheric effects. For distances between the source and receiver less than 100m, K=1, signifying that atmospheric effects may be neglected.

Negative values of insertion loss from this equation are set to zero.

A_{ground} is the attenuation provided by the ground before the barrier is installed. The first term is the attenuation provided by the barrier plus any attenuation still effective in the propagation path resulting from the ground and atmospheric effects after the installation of the barrier.

$$N = (2/\lambda) [d_1 + d_2 - d]$$

λ = wavelength

N = the Fresnel number (dimensionless)

d_1 , d_2 , and d = the distances shown in the figure below.

When the tip of the barrier just touches the line of sight between the source and receiver, or is below it, the value of N is zero.

²⁴ Ibid, pp. 3.18-3.19

Appendix C

Table 1 - Estimated Octave Band Noise Levels with Blower On and Bay Door Open – No Barrier Walls

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Location R-1	62	64	60	59	60	55	51	44	37	60
Location R-2	61	60	52	50	50	44	39	31	24	50
Location R-6	49	46	36	34	34	27	23	18	11	34
Location R-8	50	49	41	39	39	33	28	20	13	39
Location R-9	53	53	46	43	44	39	35	28	21	44
Location R-10	65	62	52	50	50	43	39	34	27	50
Octave Band Noise Code Limit (Residential)	59	61	60	53	46	40	31	20	11	49 dBA
Octave Band Noise Code Limit (Commercial)	65	67	66	59	52	46	37	26	17	55 dBA

Table 2 - Estimated Octave Band Noise Levels with Blower On and Bay Door Open – With Barrier Walls

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Location R-1 (8' high barrier)	56.1	57.2	51.9	49.0	47.7	40.1	33.3	23.4	13.4	47
Location R-2 (6' high barrier)	56.1	55.1	46.9	44.6	44.0	37.1	30.6	20.7	11.3	43
Location R-10 (6' high barrier)	60	57	47	44	44	36	30	23	13	43
Location R-10 (8' high barrier)	59	55	44	40	38	28	21	14	4	38
Location R-11 (6' high barrier)	59.1	61	55.8	55.3	57.6	52.4	46.7	37.5	28	57
Location R-11 (8' high barrier)	58	59	53	51	52	46	36	23	10	51
Location R-12 (8' high barrier)	58	57	49	47	48	41	32	22	9	48
Octave Band Noise Code Limit (Residential)	59	61	60	53	46	40	31	20	11	49 dBA
Octave Band Noise Code Limit (Commercial)	65	67	66	59	52	46	37	26	17	55 dBA

Table 3 - Estimated Octave Band Noise Levels with Blower Off and Bay Door Open

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Location R-1	44	51	51	49	44	43	39	32	23	47
Location R-2	49	53	49	46	40	38	33	25	16	43
Location R-6	33	37	33	30	24	22	17	9	-	27
Location R-8	32	36	32	29	23	21	16	8	-	26
Location R-9	41	46	43	39	34	33	29	22	11	37
Location R-10	46	50	46	43	37	35	30	22	13	40
Location R-11 (6' high barrier)	41.1	48	46.8	45.3	41.6	40.4	34.7	25.5	14	44
Location R-12 (8' high barrier)	43	49	47	44	39	37	27	14	-	41
Octave Band Noise Code Limit (Residential)	59	61	60	53	46	40	31	20	11	49 dBA
Octave Band Noise Code Limit (Commercial)	65	67	66	59	52	46	37	26	17	55 dBA

Table 4 - Estimated Octave Band Noise Levels with Blower On and Bay Door Closed

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Location R-1	58	52	41	37	31	24	18	14	10	33
Location R-2	63	54	39	34	27	19	12	7	3	32
Location R-8	45	36	20	15	8	-	-	-	-	14
Location R-8	44	35	20	15	8	0	-	-	-	14
Location R-9	48	40	26	20	14	7	1	-	-	19
Location R-10	61	52	36	31	24	16	9	5	0	30
Location R-11 (6' barrier wall)	58.1	52	39.8	36.3	31.6	24.4	16.7	10.5	4	33
Location R-12 (6' barrier wall)	54	57	33	28	23	14	2	-	-	31
Octave Band Noise Code Limit (Residential)	59	61	60	53	46	40	31	20	11	49 dBA
Octave Band Noise Code Limit (Commercial)	65	67	66	59	52	46	37	26	17	55 dBA

Table 5 - New Proto-Vest Blower System at Location R-1 with Blower On and Bay Door Open – No Barrier Wall

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Windshear estimated sound levels with attenuator package - Sound Pressure Level at 20'	72	74	70	69	70	65	61	54	47	71 dBA
Attenuation over distance to R-1 at 64 feet from source 20 log 20'/64'	-10	-10	-10	-10	-10	-10	-10	-10	-10	
On-axis attenuation (12' x 7' opening)	0	0	0	0	0	0	0	0	0	
Total Sound Pressure Level Due to new blower at R-1	62	64	60	59	60	55	51	44	37	
A-weighting	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated Due to new blower system at R-1	22.6	37.8	43.9	50.4	57	55	52	45	36	60 dBA

Table 6 - New Proto-Vest Blower System at Location R-1 with Blower On and Bay Door Open – With 6' High Barrier Wall

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Windshear estimated sound levels with attenuator package - Sound Pressure Level at 20'	72	74	70	69	70	65	61	54	47	71 dBA
Attenuation over distance to R-1 at 64 feet from source 20 log 20'/64'	-10	-10	-10	-10	-10	-10	-10	-10	-10	
On-axis attenuation (12' x 7' opening)	0	0	0	0	0	0	0	0	0	
Insertion Loss of 6' High Barrier Wall (12')	-4.9	-5.1	-5.4	-5.9	-6.8	-8.2	-10.1	-12.4	-15.0	
Total Sound Pressure Level Due to new blower at R-1	57.1	58.9	54.6	53.1	53.2	46.8	40.9	31.6	22	
A-weighting	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL	17.7	32.7	38.5	44.5	50.0	46.8	39.7	32.6	20.9	53 dBA

Table 7 - New Proto-Vest Blower System at Location R-1 with Blower On and Bay Door Open – With 8' High Barrier Wall

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Windshear estimated sound levels with attenuator package - Sound Pressure Level at 20'	72	74	70	69	70	65	61	54	47	71 dBA
Attenuation over distance to R-1 at 64 feet from source 20 log 20'/64'	-10	-10	-10	-10	-10	-10	-10	-10	-10	
On-axis attenuation (12' x 7' opening)	0	0	0	0	0	0	0	0	0	
Insertion Loss of 8' High Barrier Wall (12)	-5.9	-6.8	-8.1	-10.0	-12.3	-14.9	-17.7	-20.6	-23.6	
Total Sound Pressure Level Due to new blower at R-1	58.1	57.2	51.9	49.0	47.7	40.1	33.3	23.4	13.4	
A-weighting	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated Due to new blower system at R-1	16.7	31.0	35.8	40.4	44.5	40.1	32.1	22.4	12.3	47 dBA

Table 8 - New Proto-Vest Blower System at Location R-1 with Blower Off and Bay Door Open

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Estimated sound levels in tunnel with blower off	60	67	67	65	60	59	55	48	39	64 dBA
Attenuation over distance to R-1 at 64 feet from source 20 log 10'/64'	-16	-16	-16	-16	-16	-16	-16	-16	-16	
On-axis attenuation (12' x 7' opening)	0	0	0	0	0	0	0	0	0	
Total Sound Pressure Level with new blower off at R-1	44	51	51	49	44	43	39	32	23	
A-weighting	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated with new blower off at R-1	5.6	24.8	34.9	40.4	40.8	43	40.2	33.0	21.9	47 dBA

Table 9 - New Proto-Vest Blower System at Location R-1 with Blower On and Bay Door Closed

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Estimated sound power levels in tunnel with blower on (5)	96	98	94	93	94	89	85	78	71	
Room Constant (6)	986	1580	2187	2278	2153	3124	2302	1217	1028	
SPL inside door at 20' (7)	83	83	78	77	78	72	69	64	58	
Estimated Transmission Loss of 6mm Macrolux C Polycarbonate Overhead Door	-4	-10	-16	-19	-26	-27	-30	-29	-27	
SPL outside door (8)	79	73	62	58	52	45	39	35	31	
PWL Radiated by Door (9)	88	82	71	67	61	54	48	44	40	
SPL at 40' from door to location R-1 (10)	58	52	41	37	31	24	18	14	10	
On-axis attenuation due to tunnel @ 0' (12' x 7' opening)(11)	0	0	0	0	0	0	0	0	0	
Total Sound Pressure Level Due to new blower at R-1	68	52	41	37	31	24	18	14	10	
A-weighting (4)	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated Due to new blower system at R-1	18.6	25.8	24.9	28.4	27.8	24	19.2	15	8.9	33 dBA

Table 10 - New Proto-Vest Blower System at Location R-2 with Blower On and Bay Door Open

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Windshear estimated sound levels with attenuator package - Sound Pressure Level at 20'	72	74	70	69	70	65	61	54	47	71 dBA
Attenuation over distance to R-2 at 31 feet from source 20 log 20'/31' (1)	-4	-4	-4	-4	-4	-4	-4	-4	-4	
Off-axis attenuation (12' x 7' opening) 90' from tunnel opening (11)	-7	-10	-14	-15	-16	-17	-18	-19	-19	
Total Sound Pressure Level Due to new blower at R-2	61	60	52	50	50	44	39	31	24	
A-weighting	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated Due to new blower system at R-2	21.6	33.8	37.9	41.4	46.8	44	40.2	32	22.9	50 dBA

Table 11 - New Proto-Vest Blower System at Location R-2 with Blower On and Bay Door Open -- With 6' High Barrier Wall

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Windshear estimated sound levels with attenuator package - Sound Pressure Level at 20'	72	74	70	69	70	65	61	54	47	71 dBA
Attenuation over distance to R-2 at 31 feet from source 20 log 20'/31' (1)	-4	-4	-4	-4	-4	-4	-4	-4	-4	
Off-axis attenuation (12' x 7' opening) 90° from tunnel opening (11)	-7	-10	-14	-15	-16	-17	-18	-19	-19	
Insertion Loss of 6' High Barrier Wall (12)	-4.9	-4.9	-5.1	-5.4	-6.0	-6.9	-8.4	-10.3	-12.7	
Total Sound Pressure Level Due to new blower at R-2	56.1	55.1	46.9	44.6	44.0	37.1	30.6	20.7	11.3	
A-weighting	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated Due to new blower system at R-1	16.7	28.9	30.8	36.0	40.8	37.1	31.8	21.7	10.2	43 dBA

Table 12 - New Proto-Vest Blower System at Location R-2 with Blower Off and Bay Door Open

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Estimated sound levels in tunnel with blower off	60	67	67	65	60	59	55	48	39	64 dBA
Attenuation over distance to R-2 at 31 feet from source 20 log 10'/31'	-4	-4	-4	-4	-4	-4	-4	-4	-4	
Off-axis attenuation (12' x 7' opening) 90° from tunnel opening (11)	-7	-10	-14	-15	-16	-17	-18	-19	-19	
Total Sound Pressure Level with new blower off at R-2	49	53	49	46	40	38	33	25	16	
A-weighting	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated with new blower off at R-2	9.6	26.8	32.9	37.4	36.8	38	34.2	26	14.9	43 dBA

Table 13 - New Proto-Vest Blower System at Location R-2 with Blower On and Bay Door Closed

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Estimated sound power levels in tunnel with blower on (5)	96	98	94	93	94	89	85	78	71	
Room Constant (6)	986	1580	2187	2278	2153	3124	2302	1217	1028	
SPL inside door at 20' (7)	83	83	78	77	78	72	69	64	58	
Estimated Transmission Loss of 6mm Macrolux C Polycarbonate Overhead Door	-4	-10	-16	-19	-26	-27	-30	-29	-27	
SPL outside door (8)	79	73	62	58	52	45	39	35	31	
PWL Radiated by Door (9)	88	82	71	67	61	54	48	44	40	
SPL at 11' from door to location R-2 (10)	70	64	53	49	43	36	30	26	22	
Off-axis attenuation (12' x 7' opening) 90° from tunnel opening (11)	-7	-10	-14	-15	-16	-17	-18	-19	-19	
Total Sound Pressure Level Due to new blower at R-2	63	54	39	34	27	19	12	7	3	
A-weighting (4)	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated Due to new blower system at R-2	23.6	27.8	22.9	25.4	23.8	19	13.2	8	1.9	32 dBA

Table 14 - New Proto-Vest Blower System at Location R-6 with Blower On and Bay Door Open

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Estimated sound power levels in tunnel with blower on (5)	96	98	94	93	94	89	85	78	71	
Room Constant (6)	986	1580	2187	2278	2153	3124	2302	1217	1028	
SPL inside door at 110' (7)	83	83	77	76	77	71	68	64	57	
SPL outside door (8)	83	83	77	76	77	71	68	64	57	
PWL Radiated by Opening (9)	92	92	86	85	86	80	77	73	66	
SPL at 89' from door to location R-6 (10)	56	56	50	49	50	44	41	37	30	
Off-axis attenuation (12' x 7' opening) 90° from tunnel opening (11)	-7	-10	-14	-15	-16	-17	-18	-19	-19	
Total Sound Pressure Level Due to new blower at R-6	49	46	36	34	34	27	23	18	11	
A-weighting (4)	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated Due to new blower system at R-6	9.6	19.8	19.9	25.4	30.8	27	24.2	19	9.9	34 dBA

Table 15 - New Proto-Vest Blower System at Location R-6 with Blower Off and Bay Door Open

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Estimated sound levels in tunnel with blower off	60	67	67	65	60	59	55	48	39	64 dBA
Attenuation over distance to R-6 at feet from source 20 log 10'/99' (1)	-20	-20	-20	-20	-20	-20	-20	-20	-20	
Off-axis attenuation (12' x 7' opening) 90' from tunnel opening (11)	-7	-10	-14	-15	-16	-17	-18	-19	-19	
Total Sound Pressure Level with new blower off at R-6	33	37	33	30	24	22	17	9	-	
A-weighting	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated with new blower off at R-6	-	10.8	16.9	21.4	20.8	22	18.2	10	-	27 dBA

Table 16 - New Proto-Vest Blower System at Location R-6 with Blower On and Bay Door Closed

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Estimated sound power levels in tunnel with blower on (5)	96	98	94	93	94	89	85	78	71	
Room Constant (6)	986	1580	2187	2278	2153	3124	2302	1217	1028	
SPL inside door at 110' (7)	83	83	77	76	77	71	68	64	57	
Estimated Transmission Loss of 6mm Macrolux C Polycarbonate Overhead Door	-4	-10	-16	-19	-26	-27	-30	-29	-27	
SPL outside door (8)	79	73	61	57	51	44	38	35	30	
PWL Radiated by Door (9)	88	82	70	66	60	53	47	44	39	
SPL at 89' from door to location R-6 (10)	52	46	34	30	24	17	11	8	3	
Off-axis attenuation (12' x 7' opening) 90' from tunnel opening (11)	-7	-10	-14	-15	-16	-17	-18	-19	-19	
Total Sound Pressure Level Due to new blower at R-6	45	36	20	15	8	-	-	-	-	
A-weighting (4)	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated Due to new blower system at R-6	5.6	9.8	3.9	6.4	4.8	-	-	-	-	14 dBA

Table 17 - New Proto-Vest Blower System at Location R-8 with Blower On and Bay Door Open

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Windshear estimated sound levels with attenuator package - Sound Pressure Level at 20'	72	74	70	69	70	65	61	54	47	71 dBA
Attenuation over distance to R-8 at 110 feet from source $20 \log 20'/110'$ (1)	-15	-15	-15	-15	-15	-15	-15	-15	-15	
Off-axis attenuation (12' x 7' opening) 90° from tunnel opening (11)	-7	-10	-14	-15	-16	-17	-18	-19	-19	
Total Sound Pressure Level Due to new blower at R-8	50	49	41	39	39	33	28	20	13	
A-weighting	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated Due to new blower system at R-8	10.6	22.8	24.9	30.4	35.8	33	29.2	21.0	11.9	39 dBA

Table 18 - New Proto-Vest Blower System at Location R-8 with Blower Off and Bay Door Open

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Estimated sound levels in tunnel with blower off	60	67	67	65	60	59	55	48	39	64 dBA
Attenuation over distance to R-8 at 110 feet from source $20 \log 20'/110'$ (1)	-15	-15	-15	-15	-15	-15	-15	-15	-15	
Off-axis attenuation (12' x 7' opening) 90° from tunnel opening (11)	-7	-10	-14	-15	-16	-17	-18	-19	-19	
Total Sound Pressure Level with new blower off at R-8	38	42	38	35	29	27	22	14	5	
A-weighting	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated with new blower off at R-8	-	15.8	21.9	26.4	25.8	27	23.2	15.0	3.9	32 dBA

Table 19 - New Proto-Vest Blower System at Location R-8 with Blower On and Bay Door Closed

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Estimated sound power levels in tunnel with blower on (5)	96	98	94	93	94	89	85	78	71	
Room Constant (6)	986	1580	2187	2278	2153	3124	2302	1217	1028	
SPL inside door at 20' (7)	83	83	78	77	78	72	69	64	58	
Estimated Transmission Loss of 6mm Macrolux C Polycarbonate Overhead Door	-4	-10	-16	-19	-26	-27	-30	-29	-27	
SPL outside door (8)	79	73	62	58	52	45	39	35	31	
PWL Radiated by Door (9)	88	82	71	67	61	54	48	44	40	
SPL at 90' from door to location R-8 (10)	51	45	34	30	24	17	11	7	3	
Off-axis attenuation (12' x 7' opening) 90' from tunnel opening (11)	-7	-10	-14	-15	-16	-17	-18	-19	-19	
Total Sound Pressure Level Due to new blower at R-8	44	35	20	15	8	0	-	-	-	
A-weighting (4)	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated Due to new blower system at R-8	4.6	8.8	3.9	6.4	4.8	0	-	-	-	14 dBA

Table 20 - New Proto-Vest Blower System at Location R-9 with Blower On and Bay Door Open

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Windshear estimated sound levels with attenuator package - Sound Pressure Level at 20'	72	74	70	69	70	65	61	54	47	71 dBA
Attenuation over distance to R-9 at 120 feet from source 20 log 20'/120' (1)	-16	-16	-16	-16	-16	-16	-16	-16	-16	
Off-axis attenuation (12' x 7' opening) 60' from tunnel opening (11)	-3	-5	-8	-10	-10	-10	-10	-10	-10	
Total Sound Pressure Level Due to new blower at R-9	53	53	46	43	44	39	35	28	21	
A-weighting	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated Due to new blower system at R-11	13.6	26.8	29.9	34.7	40.8	39	36.2	29	19.9	44 dBA

Table 21 - New Proto-Vest Blower System at Location R-9 with Blower Off and Bay Door Open

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Estimated sound levels in tunnel with blower off	60	67	67	65	60	59	55	48	39	64 dBA
Attenuation over distance to R-9 at 120 feet from source 20 log 10 ³ /120'	-16	-16	-16	-16	-16	-16	-16	-16	-16	
Off-axis attenuation (12' x 7' opening) 60' from tunnel opening (11)	-3	-5	-8	-10	-10	-10	-10	-10	-10	
Total Sound Pressure Level with new blower off at R-9	41	46	43	39	34	33	29	22	11	
A-weighting	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated with new blower off at R-9	1.6	19.8	26.9	30.4	30.8	33	30.2	23	9.9	37 dBA

Table 22 - New Proto-Vest Blower System at Location R-9 with Blower On and Bay Door Closed

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Estimated sound power levels in tunnel with blower on (5)	96	98	94	93	94	89	85	78	71	
Room Constant (6)	986	1580	2187	2278	2153	3124	2302	1217	1028	
SPL inside door at 20' (7)	83	83	78	77	78	72	69	64	58	
Estimated Transmission Loss of 6mm Macrolux C Polycarbonate Overhead Door	-4	-10	-16	-19	-26	-27	-30	-29	-27	
SPL outside door (8)	79	73	62	58	52	45	39	35	31	
PWL Radiated by Door (9)	88	82	71	67	61	54	48	44	40	
SPL at 100' from door to location R-9 (10)	51	45	34	30	24	17	11	7	3	
Off-axis attenuation (12' x 7' opening) 60' from tunnel opening (11)	-3	-5	-8	-10	-10	-10	-10	-10	-10	
Total Sound Pressure Level Due to new blower at R-9	48	40	26	20	14	7	1	-	-	
A-weighting (4)	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated Due to new blower system at R-9	8.6	13.8	9.9	11.4	10.8	7	2.2	-	-	19 dBA

Table 23 - New Proto-Vest Blower System at Location R-10 with Blower On and Bay Door Open

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Estimated sound power levels in tunnel with blower on (5)	96	98	94	93	94	89	85	78	71	
Room Constant (6)	986	1580	2187	2278	2153	3124	2302	1217	1028	
SPL inside door at 110' (7)	83	83	77	76	77	71	68	64	57	
SPL outside door (8)	83	83	77	76	77	71	68	64	57	
PWL Radiated by Opening (9)	92	92	86	85	86	80	77	73	66	
SPL at 13' from door to location R-10 (10)	72	72	66	65	66	60	57	53	46	
Off-axis attenuation (12' x 7' opening) 90° from tunnel opening (11)	-7	-10	-14	-15	-16	-17	-18	-19	-19	
Total Sound Pressure Level Due to new blower at R-10	65	62	52	50	50	43	39	34	27	
A-weighting (4)	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated Due to new blower system at R-8	25.6	35.8	35.9	41.4	46.8	43	40.2	35	25.9	50 dBA

Table 24 - New Proto-Vest Blower System at Location R-10 with Blower On and Bay Door Open with 6' Barrier Wall

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Estimated sound power levels in tunnel with blower on (5)	96	98	94	93	94	89	85	78	71	
Room Constant (8)	986	1580	2187	2278	2153	3124	2302	1217	1028	
SPL inside door at 110' (7)	83	83	77	76	77	71	68	64	57	
SPL outside door (8)	83	83	77	76	77	71	68	64	57	
PWL Radiated by Opening (9)	82	82	86	85	86	80	77	73	66	
SPL at 13' from door to location R-10 (10)	72	72	66	65	66	60	57	53	46	
Off-axis attenuation (12' x 7' opening) 90° from tunnel opening (11)	-7	-10	-14	-15	-16	-17	-18	-19	-19	
Insertion Loss of 6' barrier	-5	-5	-5	-6	-6	-7	-9	-11	-14	
Total Sound Pressure Level Due to new blower at R-10	60	57	47	44	44	36	30	23	13	
A-weighting (4)	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated Due to new blower system at R-8	20.6	30.8	30.9	35.4	40.8	36	31.2	24	11.9	43 dBA

Table 25 - New Proto-Vest Blower System at Location R-10 with Blower On and Bay Door Open with 8' Barrier Wall

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Estimated sound power levels in tunnel with blower on (5)	96	98	94	93	94	89	85	78	71	
Room Constant (6)	986	1580	2187	2278	2153	3124	2302	1217	1028	
SPL inside door at 110' (7)	83	83	77	76	77	71	68	64	57	
SPL outside door (8)	83	83	77	76	77	71	68	64	57	
PWL Radiated by Opening (9)	92	92	86	85	86	80	77	73	66	
SPL at 13' from door to location R-10 (10)	72	72	66	65	66	60	57	53	46	
Off-axis attenuation (12' x 7' opening) 90° from tunnel opening (11)	-7	-10	-14	-15	-16	-17	-18	-19	-19	
Insertion Loss of 8' barrier	-6	-7	-8	-10	-12	-15	-18	-20	-23	
Total Sound Pressure Level Due to new blower at R-10	59	55	44	40	38	28	21	14	4	
A-weighting (4)	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated Due to new blower system at R-8	19.6	28.8	27.9	31.4	34.8	28	22.2	15	2.9	38 dBA

Table 26 - New Proto-Vest Blower System at Location R-10 with Blower Off and Bay Door Open

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Estimated sound levels in tunnel with blower off	80	87	67	65	60	69	55	48	39	64 dBA
Attenuation over distance to R-10 at 13 feet from source $20 \log 10(1/23)$ (1)	-7	-7	-7	-7	-7	-7	-7	-7	-7	
Off-axis attenuation (12' x 7' opening) 90° from tunnel opening (11)	-7	-10	-14	-15	-16	-17	-18	-19	-19	
Total Sound Pressure Level with new blower off at R-10	46	50	46	43	37	35	30	22	13	
A-weighting	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated with new blower off at R-8	6.6	23.8	29.9	34.4	33.8	35	31.2	23	11.9	40 dBA

Table 27 - New Proto-Vest Blower System at Location R-10 with Blower On and Bay Door Closed

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Estimated sound power levels in tunnel with blower on (5)	96	98	94	93	94	89	85	78	71	
Room Constant (6)	986	1580	2187	2278	2153	3124	2302	1217	1028	
SPL inside door at 110' (7)	83	83	77	76	77	71	68	64	57	
Estimated Transmission Loss of 6mm Macrolux C Polycarbonate Overhead Door	-4	-10	-16	-19	-26	-27	-30	-29	-27	
SPL outside door (8)	79	73	61	57	51	44	38	35	30	
PWL Radiated by Door (9)	88	82	70	66	60	53	47	44	39	
SPL at 13' from door to location R-10 (10)	68	62	50	46	40	33	27	24	19	
Off-axis attenuation (12' x 7' opening) 90° from tunnel opening (11)	-7	-10	-14	-15	-16	-17	-18	-19	-19	
Total Sound Pressure Level Due to new blower at R-8	61	62	36	31	24	16	9	5	0	
A-weighting (4)	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated Due to new blower system at R-8	21.6	25.8	19.9	22.4	20.8	16	7.8	6.0	-	30 dBA

Table 28 - New Proto-Vest Blower System at Location R-11 with Blower On and Bay Door Open - With 6' High Barrier Wall

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Windshear estimated sound levels with attenuator package - Sound Pressure Level at 20'	72	74	70	69	70	65	61	54	47	71 dBA
Attenuation over distance to R-11 at 36 feet from source 20 leg 20'/36' (1)	-5	-5	-5	-5	-5	-5	-5	-5	-5	
Off-axis attenuation (12' x 7' opening) 45° from tunnel opening (11)	-3	-3	-4	-3	-1	0	0	0	0	
Insertion Loss of 6' High Barrier Wall (12)	-4.9	-5.0	-5.2	-5.7	-6.4	-7.6	-9.3	-11.5	-14.0	
Total Sound Pressure Level Due to new blower at R-11	59.1	61	55.8	55.3	57.6	52.4	46.7	37.5	28	
A-weighting	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated Due to new blower system at R-11	19.7	34.8	39.7	46.7	54.4	52.4	47.9	38.5	26.9	57 dBA

Table 29 - New Proto-Vest Blower System at Location R-11 with Blower On and Bay Door Open – With 8' High Barrier Wall

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Windshear estimated sound levels with attenuator package - Sound Pressure Level at 20'	72	74	70	69	70	65	61	54	47	71 dBA
Attenuation over distance to R-11 at 36 feet from source $20 \log 20'/36'$ (1)	-5	-5	-5	-5	-5	-5	-5	-5	-5	
Off-axis attenuation (12' x 7' opening) 45' from tunnel opening (11)	-3	-3	-4	-3	-1	0	0	0	0	
Insertion Loss of 8' High Barrier Wall (12)	-6	-7	-8	-10	-12	-14	-20	-28	-32	
Total Sound Pressure Level Due to new blower at R-11	58	59	53	51	52	46	36	23	10	
A-weighting	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated Due to new blower system at R-11	18.6	32.8	36.9	42.4	48.8	46	37.2	24	8.9	51 dBA

Table 30 - New Proto-Vest Blower System at Location R-11 with Blower Off and Bay Door Open

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Estimated sound levels in tunnel with blower off	60	67	67	65	60	59	55	48	39	64 dBA
Attenuation over distance to R-11 at 36 feet from source $20 \log 10'/36'$	-11	-11	-11	-11	-11	-11	-11	-11	-11	
Off-axis attenuation (12' x 7' opening) 45' from tunnel opening (11)	-3	-3	-4	-3	-1	0	0	0	0	
Insertion Loss for 6' barrier wall (12)	-4.9	-5.0	-5.2	-5.7	-6.4	-7.6	-9.3	-11.6	-14.0	
Total Sound Pressure Level with new blower off at R-11	41.1	48	46.8	45.3	41.6	40.4	34.7	25.5	14	
A-weighting	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated with new blower off at R-2	1.7	21.8	30.7	36.7	38.4	40.4	35.9	28.5	12.9	44 dBA

Table 31 - New Proto-Vest Blower System at Location R-11 with Blower On and Bay Door Closed

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Estimated sound power levels in tunnel with blower on (5)	96	98	94	93	94	89	85	78	71	
Room Constant (6)	986	1580	2187	2278	2153	3124	2302	1217	1028	
SPL inside door at 20' (7)	83	83	78	77	78	72	69	64	58	
Estimated Transmission Loss of 6mm Macrolux C Polycarbonate Overhead Door	-4	-10	-16	-19	-26	-27	-30	-29	-27	
SPL outside door (8)	79	73	62	58	52	45	39	35	31	
PWL Radiated by Door (9)	88	82	71	67	61	54	48	44	40	
SPL at 16' from door to location R-11 (10)	66	60	49	45	39	32	26	22	18	
Off-axis attenuation (12' x 7' opening) 45' from tunnel opening (11)	-3	-3	-4	-3	-1	0	0	0	0	
Insertion Loss for 6' Barrier Wall	-4.9	-5.0	-5.2	-5.7	-6.4	-7.8	-9.3	-11.5	-14.0	
Total Sound Pressure Level Due to new blower at R-11	58.1	52	39.8	36.3	31.6	24.4	16.7	10.5	4	
A-weighting (4)	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated Due to new blower system at R-11	18.7	25.8	23.7	27.7	28.4	24.4	17.9	11.5	2.9	33 dBA

Table 32 - New Proto-Vest Blower System at Location R-12 with Blower On and Bay Door Open with 8' Barrier Wall

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Estimated sound power levels in tunnel with blower on (5)	96	98	94	93	94	89	85	78	71	
Room Constant (6)	986	1580	2187	2278	2153	3124	2302	1217	1028	
SPL inside door at 110' (7)	83	83	77	76	77	71	68	64	57	
SPL outside door (8)	83	83	77	76	77	71	68	64	57	
PWL Radiated by Opening (9)	92	92	86	85	88	80	77	73	66	
SPL at 25' from door to location R-12 (10)	67	67	61	60	61	56	52	48	41	
Off-axis attenuation (12' x 7' opening) 45' from tunnel opening (11)	-3	-3	-4	-3	-1	0	0	0	0	
Insertion Loss of 8' barrier	-6	-7	-8	-10	-12	-14	-20	-26	-32	
Total Sound Pressure Level Due to new blower at R-12	58	57	49	47	48	41	32	22	9	
A-weighting (4)	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated Due to new blower system at R-12	18.6	30.8	32.9	38.4	44.8	42	33.2	23.0	8.9	48 dBA

Table 33 - New Proto-Vest Blower System at Location R-12 with Blower Off and Bay Door Open

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Estimated sound levels in tunnel with blower off	60	67	67	65	60	59	55	48	39	64 dBA
Attenuation over distance to R-3 at 25 feet from source 20 log 10'/25' (1)	-8	-8	-8	-8	-8	-8	-8	-8	-8	
Off-axis attenuation (12' x 7' opening) 45' from tunnel opening (11)	-3	-3	-4	-3	-1	0	0	0	0	
Insertion Loss of 8' barrier	-6	-7	-8	-10	-12	-14	-20	-26	-32	
Total Sound Pressure Level with new blower off at R-12	43	49	47	44	39	37	27	14	-	
A-weighting	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated with new blower off at R-12	3.6	22.8	30.9	35.4	35.8	37	28.2	15	-	41 dBA

Table 34 - New Proto-Vest Blower System at Location R-12 with Blower On and Bay Door Closed

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Estimated sound power levels in tunnel with blower on (5)	96	98	94	93	94	89	85	78	71	
Room Constant (6)	986	1580	2187	2278	2153	3124	2302	1217	1028	
SPL inside door at 110' (7)	83	83	77	76	77	71	68	64	57	
Estimated Transmission Loss of 6mm Macrolux C Polycarbonate Overhead Door	-4	-10	-16	-19	-26	-27	-30	-29	-27	
SPL outside door (8)	79	73	61	57	51	44	38	35	30	
PWL Radiated by Door (9)	88	82	70	66	60	53	47	44	39	
SPL at 25' from door to location R-12 (10)	63	67	45	41	35	28	22	19	14	
Off-axis attenuation (12' x 7' opening) 45' from tunnel opening (11)	-3	-3	-4	-3	-1	0	0	0	0	
Insertion Loss of 8' barrier	-6	-7	-8	-10	-12	-14	-20	-26	-32	
Total Sound Pressure Level Due to new blower at R-12	54	57	33	28	23	14	2	-	-	
A-weighting (4)	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated Due to new blower system at R-12	14.6	30.6	16.9	19.4	19.8	14	3.2	-	-	31 dBA

Peripheral Sound Sources Measured on Property:

Table 35 - Existing HV Rooftop Unit Calculated to Location R-8 with Other Equipment Off

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Sound level measured on roof at 3 feet from unit	62	66	63	55	56	55	52	47	40	60 dBA
Attenuation over distance to R-8 at 75 feet from source 20 log 3'/75' (1)	-28	-28	-28	-28	-28	-28	-28	-28	-28	
Parapet 3' high barrier effect	-4.9	-4.9	-5.1	-5.4	-6.0	-7.0	-8.5	-10.4	-12.8	
Total Sound Pressure Level for Rooftop HV unit at R-8 with new blower off	29.1	33.1	29.9	21.6	22	20	15.5	8.6	-	
A-weighting	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated with new blower off at R-8	-	6.9	13.8	13	18.8	20	16.7	9.6	-	24 dBA

Table 36 - Existing Audio Speakers on Building Calculated to Location R-8 with Other Equipment Off

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Sound level measured near audio speakers mounted on building at 3 feet from unit	68	68	71	65	62	65	63	59	50	69 dBA
Attenuation over distance to R-8 at 62 feet from source 20 log 3'/62' (1)	-26	-26	-26	-26	-26	-26	-26	-26	-26	
Total Sound Pressure Level for audio speakers at R-8 with new blower off	42	42	45	39	36	39	37	33	24	
A-weighting	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated with new blower off at R-8	2.6	15.8	28.9	30.4	32.8	39	38.2	34.0	22.9	43 dBA

Table 37 - Detailing Bay Calculated to Location R-7 with Bay Door Closed

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Estimated sound power levels in detailing bay with air hose and floor mat cleaner on (5)	101	100	95	92	91	97	107	102	102	
Room Constant (6)	361	678	974	993	927	1499	1014	461	365	
SPL inside door at 10' (7)	92.5	89.2	83.5	80	79.2	73.3	84.9	82.6	93.5	
Estimated Transmission Loss of 6mm Macrolux C Polycarbonate Overhead Door	-4	-10	-16	-19	-26	-27	-30	-29	-27	
SPL outside door (8)	88.5	79.2	67.5	61	53.2	46.3	64.9	63.6	66.5	
PWL Radiated by Door (9)	102.5	93.2	81.5	75	67.2	60.3	78.9	77.8	80.5	
SPL at 45' from door to location R-7 (10)	72	62.7	51	44.5	36.7	29.8	48.4	47.1	50	
Insertion Loss of 10' barrier	-6	-6	-7	-9	-11	-13	-16	-18	-21	
Total Sound Pressure Level Due to detail bay at R-7	66	58.7	44	35.5	25.7	16.8	32.4	29.1	29	
A-weighting (4)	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated	26.6	30.5	27.9	26.9	22.5	16.8	33.6	30.1	27.9	37 dBA

Table 38 - Detailing Bay Calculated to Residential Receptor R-1 with Bay Door Closed

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Estimated sound power levels in detailing bay with air hose and floor mat cleaner on (5)	101	100	95	92	91	97	107	102	102	
Room Constant (6)	361	678	974	993	927	1499	1014	461	365	
SPL inside door at 10' (7)	92.5	89.2	83.5	80	79.2	73.3	84.9	82.6	93.5	
Estimated Transmission Loss of 6mm Macrolux C Polycarbonate Overhead Door	-4	-10	-16	-19	-26	-27	-30	-29	-27	
SPL outside door (8)	88.5	79.2	67.5	61	53.2	46.3	64.9	63.6	66.5	
PWL Radiated by Door (9)	102.5	93.2	81.5	75	67.2	60.3	78.9	77.8	80.5	
SPL at 245' from door to Residential receptor 1 (10)	57.5	48.2	36.5	30	22.2	15.3	33.9	32.6	35.5	
Insertion Loss of 10' barrier	-6	-6	-7	-9	-11	-13	-16	-18	-21	
Total Sound Pressure Level Due to detail bay at Residential receptor 1	51.5	42.2	29.5	21	11.2	2.3	17.9	14.6	14.5	
A-weighting (4)	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL	12.1	16	13.4	12.4	8	2.3	19.1	15.6	13.4	23 dBA

Table 39 - Detailing Bay Calculated to Residential Receptor R-2 with Bay Door Closed

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Estimated sound power levels in detailing bay with air hose and floor mat cleaner on (5)	101	100	95	92	91	97	107	102	102	
Room Constant (6)	361	678	974	993	927	1499	1014	461	365	
SPL inside door at 10' (7)	92.5	89.2	83.5	80	79.2	73.3	94.9	92.6	93.5	
Estimated Transmission Loss of 6mm Macrolux C Polycarbonate Overhead Door	-4	-10	-16	-19	-26	-27	-30	-29	-27	
SPL outside door (8)	88.5	79.2	67.5	61	53.2	46.3	64.9	63.6	66.5	
PWL Radiated by Door (9)	102.5	93.2	81.5	75	67.2	60.3	78.9	77.6	80.5	
SPL at 245' from door to Residential receptor 2 (10)	57.5	48.2	36.5	30	22.2	15.3	33.9	32.6	35.5	
Off-axis attenuation (12' x 7' opening) 45' from detail bay opening (11)	-3	-3	-4	-3	-1	0	0	0	0	
Insertion Loss of 10' barrier	-6	-6	-7	-9	-11	-13	-16	-18	-21	
Total Sound Pressure Level Due to detail bay at Residential receptor 1	48.5	39.2	25.5	18	10.2	2.3	17.9	14.6	14.5	
A-weighting (4)	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL	9.1	13	9.4	9.4	7	2.3	19.1	15.6	13.4	23 dBA

Table 40 - New Proto-Vest Blower System Calculated to Residential Receptor 1 with Blower On and Bay Door Open (worst case)

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Windshear estimated sound levels with attenuator package - Sound Pressure Level at 20'	72	74	70	69	70	65	61	54	47	71 dBA
Attenuation over distance to Residential Receptor 1 at 245 feet from source 20 log 20'/285' (1)	-22	-22	-22	-22	-22	-22	-22	-22	-22	
Off-axis attenuation (12' x 7' opening) 90' from tunnel opening (11)	-7	-10	-14	-15	-16	-17	-18	-19	-19	
Total Sound Pressure Level Due to new blower at Residential receptor 1	43	42	34	32	32	26	21	13	6	
A-weighting	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated Due to new blower system at R-8	3.6	15.8	17.9	23.4	28.8	26	22.2	14	4.9	32 dBA

Table 41 - New Proto-Vest Blower System Calculated to Residential Receptor 2 with Blower On and Bay Door Open (worst case)

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Windshear estimated sound levels with attenuator package - Sound Pressure Level at 20'	72	74	70	69	70	65	61	54	47	71 dBA
Attenuation over distance to Residential Receptor 2 at 245 feet from source 20 log 20'/265' (1)	-22	-22	-22	-22	-22	-22	-22	-22	-22	
Off-axis attenuation (12' x 7' opening) 60' from tunnel opening (11)	-3	-5	-8	-10	-10	-10	-10	-10	-10	
Total Sound Pressure Level Due to new blower at Residential Receptor 2	47	47	40	37	38	33	29	22	15	
A-weighting	-39.4	-26.2	-16.1	-8.6	-3.2	0	+1.2	+1.0	-1.1	
Total A-weighted SPL estimated Due to new blower system at R-11	7.6	20.8	23.9	28.4	34.8	33	30.2	23.0	13.9	38 dBA

R-1

$IL_{Barrier} = 10 \log [3 + 10 NK] - A_{Ground}$

$A_{Ground} = 0$

$K = 1$

$N = (\frac{2}{K})^8$

$d_2 = 40.0125'$

$d = 42.0476$

$d_1 = 2.236'$

84" H
TUNNEL
OPENING
EXIT
SIDE

6' H BARRIER

40'

EAST
LOT
LINE
R1

ELEVATION FACING NORTH

$d_1 + d_2 - d = 8$

$2.236' + 40.0125' - 42.0476' = 0.201'$

H _e	31.5	62	125	250	500	1K	2K	4K	8K
λ	35.77'	17.89'	9.02'	4.51'	2.25'	1.13'	0.56'	0.28'	0.14'
N	0.0112	0.0025	0.0445	0.0891	0.1787	0.3558	0.7119	1.4357	2.8714

$IL_{Barrier} = 49$ 5.1 5.4 5.9 6.8 8.2 10.1 12.4 15.0

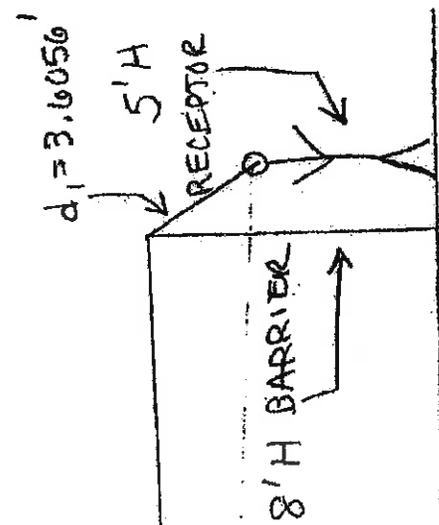


(A.B.)

R-1

$IL_{\text{barrier}} = 10 \log [3 + 10 NK] - A_{\text{ground}}$
 $A_{\text{ground}} = 0, K = 1$
 $N = \left(\frac{d}{\lambda}\right)^2$

$d_e = 40.0125'$
 $d = 42.0476'$



EAST LOT LINE
R-1

40'

ELEVATION FACING NORTH

$d_1 + d_2 - d = 8$

$3.6056' + 40.0125' - 42.0476' = 1.5705'$

<u>Az</u>	31.5	12.2	12.5	25.0	50.0	1K	2K	4K	8K
<u>λ</u>	35.77'	17.88'	9.02'	4.51'	2.25'	1.13'	0.56'	0.28'	0.14'
<u>N</u>	0.0878	0.1756	0.3482	0.6965	1.396	2.7796	5.6089	11.2179	22.4357
<u>IL_{barrier} (dB)</u>	5.9	6.8	8.1	10.0	12.3	14.9	17.7	20.6	23.6

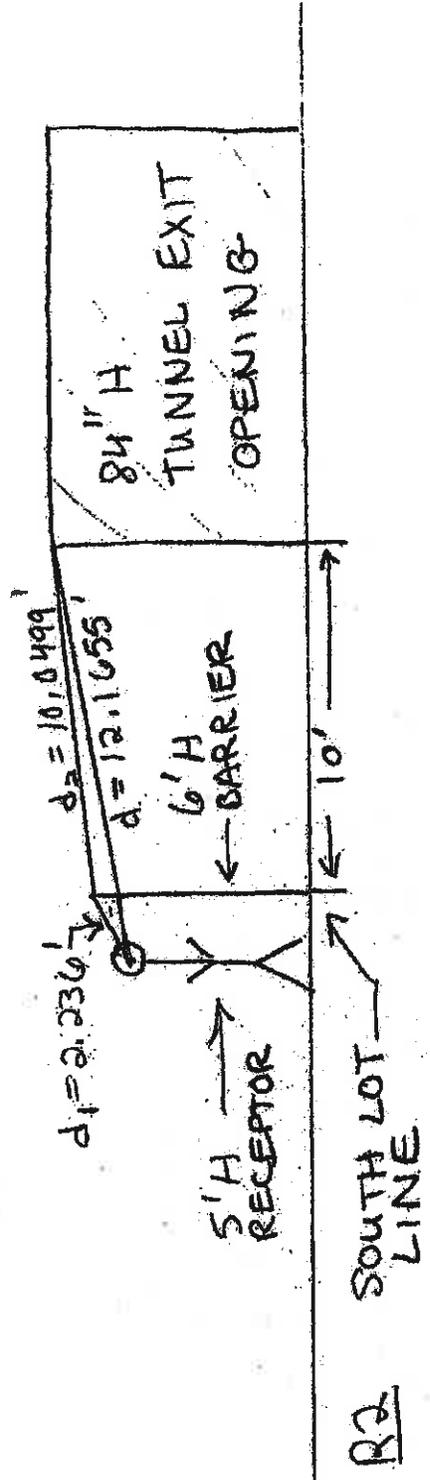


R2

$A_{\text{ground}} = 0$
 $K = 1$

$IL_{\text{Barrier}} = 10 \log [3 + 10 NK] - A_{\text{ground}}$

$N = \left(\frac{2}{\lambda}\right) \delta$



R2

ELEVATION FACING WEST

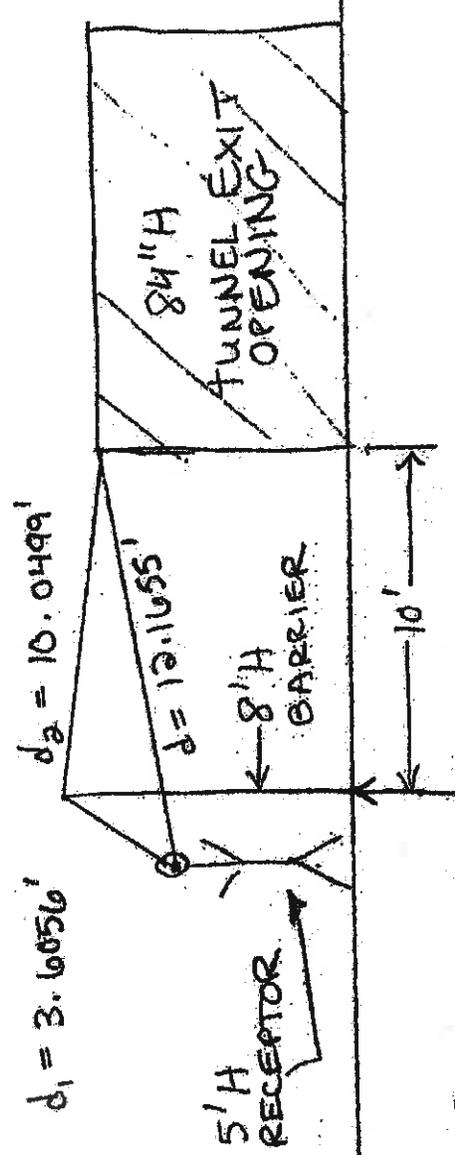
$d_1 + d_2 - d = \delta$

$2.236' + 10.0499' - 12.1655' = 0.1204' = \delta$

H _T	λ	N	IL _{Barrier} (dB)
31.5	63	125	250
35.77'	17.89'	9.02'	4.51'
0.00673	0.0135	0.0267	0.0534
4.9	5.0	5.1	5.5
		6.1	7.1
		8.6	10.6
		13.1	



R2



R2 SOUTH LOT LINE

ELEVATION FACING WEST

$d_1 + d_2 - d = f = 3.6056' + 10.0499' - 12.1155' = 1.49' = f$

H	31.5	6.3	12.5	2.50	5.00	1.0	2.0	4.0	8.0	16.0	32.0	64.0	128.0	256.0	512.0	1024.0	2048.0	4096.0	8192.0	16384.0	32768.0	65536.0	131072.0	262144.0	524288.0	1048576.0	2097152.0	4194304.0	8388608.0	16777216.0	33554432.0	67108864.0	134217728.0	268435456.0	536870912.0	1073741824.0	2147483648.0	4294967296.0	8589934592.0	17179869184.0	34359738368.0	68719476736.0	137438953472.0	274877906944.0	549755813888.0	1099511627776.0	2199023255552.0	4398046511104.0	8796093022208.0	17592186044416.0	35184372088832.0	70368744177664.0	140737488355328.0	281474976710656.0	562949953421312.0	1125899906842624.0	2251799813685248.0	4503599627370496.0	9007199254740992.0	18014398509481984.0	36028797018963968.0	72057594037927936.0	144115188075855872.0	288230376151711744.0	576460752303423488.0	1152921504606846976.0	2305843009213693952.0	4611686018427387904.0	9223372036854775808.0	18446744073709551616.0	36893488147419103232.0	73786976294838206464.0	147573952589676412928.0	295147905179352825856.0	590295810358705651712.0	1180591620717411303424.0	2361183241434822606848.0	4722366482869645213696.0	9444732965739290427392.0	18889465931478580854784.0	37778931862957161709568.0	75557863725914323419136.0	151115727451828646838272.0	302231454903657293676544.0	604462909807314587353088.0	1208925819614629174706176.0	2417851639229258349412352.0	4835703278458516698824704.0	9671406556917033397649408.0	19342813113834066795298816.0	38685626227668133590597632.0	77371252455336267181195264.0	154742504910672534362390528.0	309485009821345068724781056.0	618970019642690137449562112.0	1237940039285380274899124224.0	2475880078570760549798248448.0	4951760157141521099596496896.0	9903520314283042199192993792.0	19807040628566084398385987584.0	39614081257132168796771975168.0	79228162514264337593543950336.0	158456325028528675187087900672.0	316912650057057350374175801344.0	633825300114114700748351602688.0	1267650600228229401496703205376.0	2535301200456458802993406410752.0	5070602400912917605986812821504.0	10141204801825835211973625643008.0	20282409603651670423947251286016.0	40564819207303340847894502572032.0	81129638414606681695789005144064.0	162259276829213363391578010288128.0	324518553658426726783156020576256.0	649037107316853453566312041152512.0	1298074214633706907132624082305024.0	2596148429267413814265248164610048.0	5192296858534827628530496329220096.0	10384593717069655257060992658440192.0	20769187434139310514121985316880384.0	41538374868278621028243970633760768.0	83076749736557242056487941267521536.0	166153499473114484112975882535042672.0	332306998946228968225951765070085344.0	664613997892457936451903530140170688.0	132922799578491587290380706028041376.0	265845599156983174580761412056082752.0	531691198313966349161522824112165504.0	1063382396627932698323045648224331008.0	2126764793255865396646091296448662016.0	4253529586511730793292182592897324032.0	8507059173023461586584365185794648064.0	17014118346046923173168730371589296128.0	34028236692093846346337460743178592512.0	68056473384187692692674921486357180224.0	136112946768375385385349842972714364448.0	27222589353675077077069968594542728896.0	5444517870735015415413993718908545779328.0	108890357414700308308279874378170915596544.0	217780714829400616616559748756341831193088.0	435561429658801233233119497512683662396176.0	871122859317602466466238995025367324792352.0	174224571863520493293247799005074648478464.0	348449143727040986586495598010149296956928.0	696898287454081973172991196020298593913856.0	1393796574908163946345982392040591187827136.0	2787593149816327892691964784081182375654272.0	5575186299632655785383929568162364751308544.0	1115037259926531157076785913624728502617888.0	2230074519853062314153571827248457005235776.0	4460149039706124628307143654496914010471552.0	8920298079412249256614287308993828020943104.0	1784059615882449851322857461798765604188608.0	3568119231764899702645714923597531208377216.0	7136238463529799405291429847195062416754432.0	1427247692705959881058285969439012483508864.0	2854495385411919762116571938878024967017728.0	5708990770823839524233143877756049734335552.0	1141798154164767904846628775551209946871104.0	2283596308329535809693257551102419973342208.0	4567192616659071619386515102204839546684416.0	9134385233318143238773030204409679093368832.0	18268770466636286477546060408819358186737664.0	36537540933272572955092120817638716373475328.0	7307508186654514591018424163527743274695056.0	14615016373309029182036848327055486549390112.0	29230032746618058364073696654110973098780224.0	58460065493236116728147393308221947177560448.0	11692013098647223345629478661644389435512096.0	23384026197294446691258957323288778871024192.0	46768052394588893382517914646577557742048384.0	93536104789177786765035829293155114840896672.0	18707220957835557353007165858631022968179344.0	3741444191567111470601433171726204593635888.0	7482888383134222941202866343452409187271776.0	1496577676626844588240573268690481834435552.0	2993155353253689176481146537380963668871104.0	5986310706507378352962293074761927337742208.0	1197262141301475670592458614952365467548448.0	239452428260295134118491722990473093508896.0	478904856520590268236983445980946187017792.0	957809713041180536473966891961893740035584.0	1915619426082361072947933839923787400071168.0	3831238852164722145895867679847574800142336.0	7662477704329444291791735359695149600284704.0	15324955408658888583583470719390299200568896.0	30649910817317777167166941438780594001137728.0	61299821634635554334333882877561180022755552.0	1225996432692711086686677675551236045045104.0	245199286538542217337335535110247200901008.0	490398573077084434674671070220484001802016.0	98079714615416886934934214044096800360432.0	196159429228833773869868428088193600720864.0	39231885845766754773973685617638720144128.0	7846377169153350954794737123527744028256.0	15692754338306701909589474247055488056512.0	31385508676613403819178948494110971321124.0	6277101735322680763835789698822184264248.0	1255420347064536152767157939764436844896.0	2510840694129072305534315879528876889984.0	5021681388258144611068631759057757779968.0	1004336277651628922213726311811515559936.0	20086725553032578444274526236230311199872.0	4017345110606515688854905247246062239944.0	80346902212130313777108104944921279888.0	160693804424260627544216209889842559776.0	3213876088485212550884324197796851195552.0	642775217697042510176864839559370239104.0	1285550435394085020353729679118740478208.0	2571100870788170040707459358237480956416.0	5142201741576340081414918716474961912332.0	10284403483152680162829837432949923824664.0	20568806966305360325659674865899466492928.0	4113761393261072065131934973179893329856.0	8227522786522144130263869946359786597712.0	16455045573044288260527739892719573195424.0	3291009114608857652105547978543914390848.0	6582018229217715304211095957087828781696.0	13164036458435430608422191914175657563392.0	26328072916870861216844383828351315126784.0	52656145833741722433688767656702630253568.0	105312291667435444867377535313405260507136.0	210624583334870889734755070626810521014272.0	421249166669741779469510141253621042028444.0	84249833333948355893902028250724204448888.0	168499666677896711787804056501448408977776.0	336999333355793423575608113002887717755552.0	6739986667115868471512162260057543551104.0	13479973334231736943024324520115107100208.0	2695994666846347388604864904023021400416.0	5391989333692694777209729808046042800832.0	10783978667385389544419459616092085601664.0	2156795733477077908883891923218417123328.0	4313591466954155817767783846436834246656.0	8627182933908311635535567692873668493312.0	17254365867816623271071133785747336886224.0	34508731735633246542142267571466773774448.0	69017463471266493084284535142934467548896.0	13803492694253298616856907028586935097792.0	27606985388506597233713814057173870195584.0	55213970777013194467427628114367403911168.0	110427941554026388934855256228734807822336.0	220855883108052777869710512457469615644672.0	441711766216105555739421025114939231289344.0	883423532432211111478842050229878462578688.0	1766847064864422222957684100459757125157376.0	3533694129728844445915368200919144250314752.0	7067388259457688891830736401838288500629504.0	14134776518915377783661472803676577001259008.0	28269553037830755567322945607353154002518112.0	56539106075661511134645891214706308005036224.0	113078212151323022269291782429412616010072448.0	22615642430264604453858356485882523202014496.0	45231284860529208907716712971765046404028992.0	90462569721058417815433425943530092808057984.0	180925139442116835630866851887060185616115968.0	361850278884233671261733703774120371232319936.0	72370055776846734252346740754824074246463984.0	1447401115536934685046934815084814848917968.0	2894802231073869370093869630168929779359376.0	5789604462147738740187739260337859558718752.0	1157920892429547748037547842075719111755504.0	2315841784859095496075095684151438233011008.0	4631683569718190992150191368230866466022016.0	926336713943638198430038273646173293204432.0	1852673427887276396860076473292346586408864.0	3705346855774552793720152946584693172817728.0	7410693711549105587440305893169386345635552.0	14821387423098211174880611786338772691371104.0	296427748461964223497612235726775438224208.0	592855496923928446995224471453548876444416.0	118571099384785689399044894290709752888832.0	237142198769571378798089788581419505777664.0	474284397539142757596179577162839011555328.0	948568795078285515192359154325678023110656.0	189713759015657103038471830865135646222112.0	37942751803131420607694366173227128444224.0	7588550360626284121538873234645425688848.0	15177100721252568243077746469290913777796.0	3035420144250513648615548893858183555552.0	6070840288501027297231097787716371111104.0	121416805770020545944621955754327422208.0	242833611540041091889243911508448444416.0	48566722308008218377848782301168888932.0	97133444616016436755697564602337777664.0	19426688923003287351139513200467555328.0	38853377846006574702279026400935110656.0	77706755692013149404558052801870221312.0	15541351138402629800911610560374044224.0	3108270227680525960182322112074808448.0	621654045536105192036464422404961696.0	124330809107221038407292884800993392.0	248661618214442076814577777601987784.0	49732323642888415362915555520397568.0	99464647285776830725831111040791376.0	198929294571553661451662222081582752.0	397858589143107322903324444161165504.0	795717178286214645806648888322331008.0	1591434356572429291613297776644662016.0	318286871314485858322659555328932432.0	63657374262897171664531911065786464.0	127314748525794343329063822131572896.0	25462949
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RG

$IL_{\text{barrier}} = 10 \log [3 + 10NK] - A_{\text{ground}}$ $A_{\text{ground}} = 0$
 $N = \left(\frac{2}{\lambda}\right) d$ 0.318 $K = 1$

$d_2 = 88.55'$

$d = 90.528'$

10' HIGH BARRIER WALL TO BLOCK LINE OF SIGHT TO RECEPTOR

5' H RETAINING WALL

84" H TUNNEL ENTRANCE OPENING

885' to NORTH LOT LINE
90° FROM TUNNEL ENTRANCE

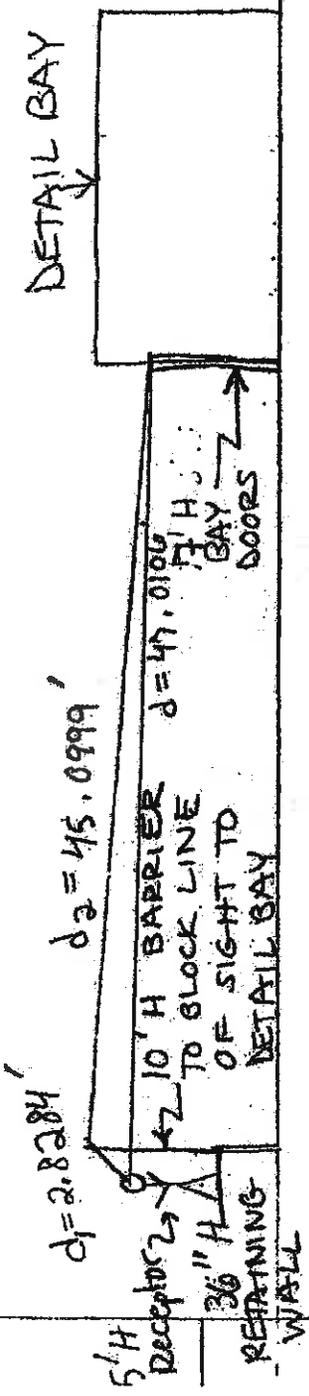
RG NORTH LOT LINE

ELEVATION FACING EAST

$d_1 + d_2 - d = d = 2.136' + 88.55' - 90.528' = 0.159'$

H_e	31.5	63	125	250	500	1K	2K	4K	8K
λ	35.97'	17.89'	9.02'	4.51'	2.25'	1.13'	0.56'	0.28'	0.14'
N	0.008881	0.01778	0.03525	0.07051	0.1413	0.2814	0.5679	1.136	2.271
IL_{barrier} (dB)	4.9	5.0	5.3	5.7	6.4	7.6	9.4	11.6	14.1

R-7

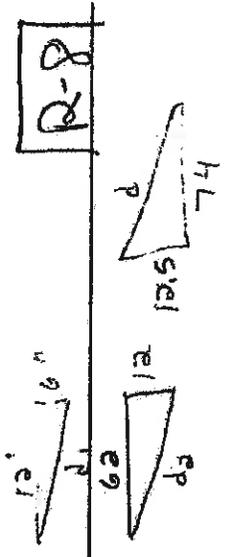


R-7

ELEVATION FACING EAST

$$d_1 + d_2 - d = s = 2.8284 + 45.0999 - 47.0106 = 0.9177'$$

htc	31.5	63	125	250	500	1k	2k	4k	8k
λ	35.777'	17.89'	9.02'	4.51'	2.25'	1.13'	0.56'	0.28'	0.14'
N	0.05131	0.1026	0.2035	0.4070	0.8157	1.6242	3.2478	6.555	13.11
$H_{Barrier}$ (dB)	-5.5	-6.0	-7.0	-8.5	-10.5	-12.8	-15.5	-18.4	-21.3



36" H. PARAPET

42" H
HV Unit

$d_1 = 12.01041'$

$d_2 = 63.1506'$

$d = 75.04832'$

MAIN BUILDING - RUSSELL SPEENERS

NORTH
PL
R-8

$12.01041' + 63.1506' - 75.04832' = 0.11269'$

HZ	21.5	16.3	12.5	8.5	5.0	1.6	2.6	4.6	8.6
λ	35.77'	17.89'	10.0'	4.51'	2.25'	1.13'	0.56'	0.28'	0.14'
N	.006301	0.01260	.02499	.04997	0.1002	0.1995	0.4025	0.8049	1.6099
PL ^{banner} (dB)	-4.9	-4.9	-5.1	-5.4	-6.0	-7.0	-8.5	-10.4	-12.8

EXISTING ROOFTOP HV UNIT



R-10

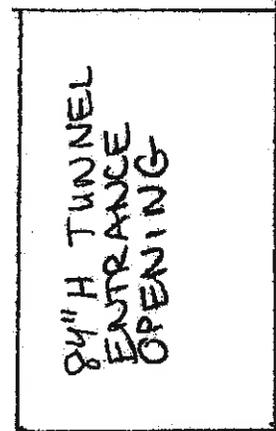
$IL_{Barrier} = 10 \log [3 + 10 NK] - A_{Ground}$ $A_{Ground} = 0$

$N = \left(\frac{2}{\lambda}\right) \delta$

3.622

$K = 1$

$d_1 = 3.606'$ $d_2 = 13.038'$



R-10 SOUTH LOT LINE TO TUNNEL ENTRANCE

SECTION FACING WEST

$d_1 + d_2 - d = \delta = 3.606' + 13.038' - 15.133' = \delta = 1.511'$

H_z	37.5	63	125	250	500	1K	2K	4K	8K
λ	35.77'	17.89'	9.03'	4.51'	2.25'	1.13'	0.56'	0.28'	0.14'
N	0.08448	0.1689	0.3350	0.6701	1.343	2.674	5.396	10.79	21.59
$IL_{Barrier}$ (dB)	5.8	6.7	8.0	9.9	12.2	14.7	17.6	20.4	23.4



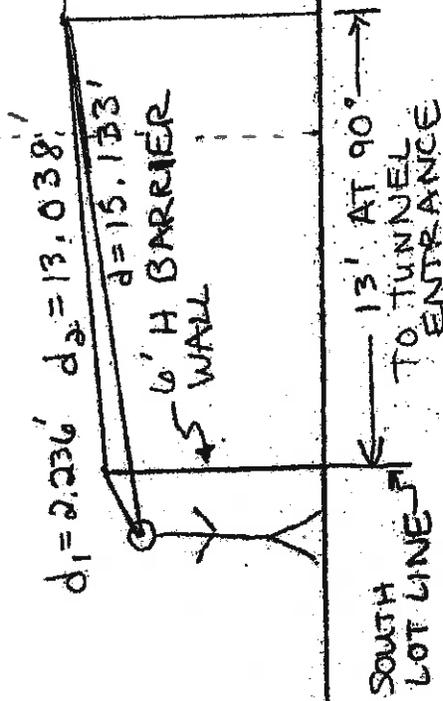
R-10

$IL_{\text{BARRIER}} = 10 \log [3 + 10NK] - A_{\text{Ground}}$

$A_{\text{Ground}} = 0$

$R = 1$
 $N = \left(\frac{2}{\lambda}\right) \delta$

0.282



SECTION FACING WEST

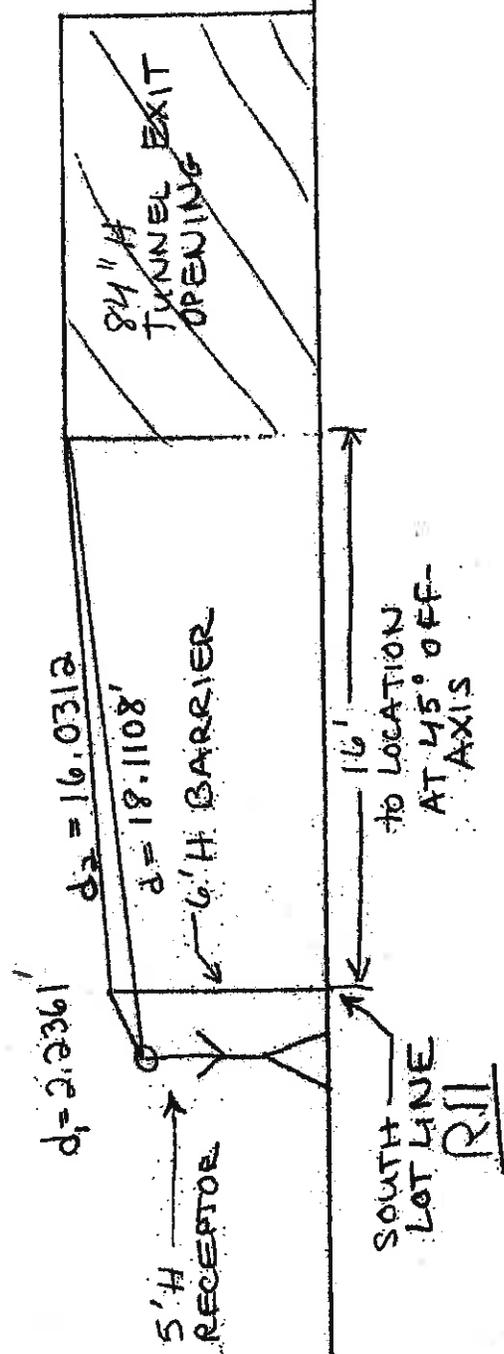
$d_1 + d_2 - d = \delta = 2.236' + 13.038' - 15.133' = 0.141' = \delta$

λ	31.5	63	125	250	500	1K	2K	4K	8K
N	35.77'	17.89'	9.02'	4.51'	2.25'	1.13'	0.56'	0.28'	0.14'
$IL_{\text{Barrier (dB)}}$	4.9	5.0	5.2	5.6	6.3	7.4	9.1	11.2	13.6
	0.007884	0.01576	0.03126	0.06253	0.1253	0.2496	0.5036	1.007	2.014

R11

$IL_{\text{Barrier}} = 10 \log [3 + 10 NK] - A_{\text{Ground}}$
 $A_{\text{Ground}} = 0$
 $K = 1$

$N = \left(\frac{2}{\lambda}\right) \delta$



$d_1 + d_2 - d = \delta = 2.2361' + 16.0312' - 18.1108' = 0.1565'$

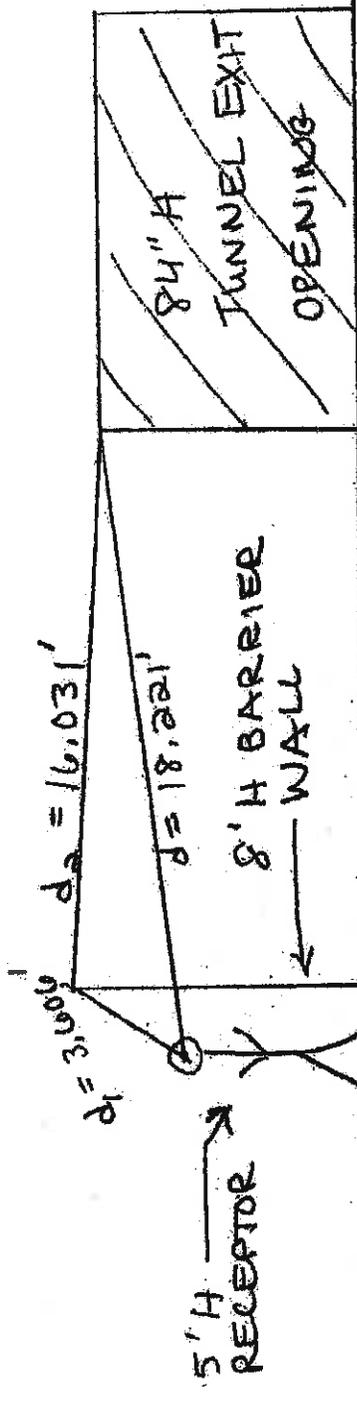
HE	31.5	43	125	250	500	1K	2K	4K	8K
λ	35.17'	17.89'	9.02'	4.51'	2.25'	1.13'	0.56'	0.28'	0.14'
N	.008750	0.01750	0.03470	0.06940	0.1391	0.2770	0.5589	1.118	2.236
IL_{Barrier} (dB)	4.9	5.0	5.2	5.7	6.4	7.6	9.3	11.5	14.0

RII

$A_{\text{Ground}} = 0$
 $K = 1$

$IL_{\text{Barrier}} = 10 \log [3 + 10 NK] - A_{\text{ground}}$

$N = \left(\frac{2}{\lambda}\right) \delta$

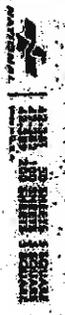


SOUTH LOT LINE RII
 TO LOCATION AT 45° OFF-AXIS
 16'

$d_1 + d_2 - d = \delta = 3.606' + 16.031' - 18.221' = 1.416 = \delta$

λ	31.5	63	125	250	500	1K	2K	4K	8K
N	35.77	17.89	9.02	4.51	2.25	1.13	0.56	0.28	0.14
$IL_{\text{Barrier}} (dB)$	6	7	8	10	12	14	20	26	32

2832



Strategic Partnership Questions and Answers

The Northern Westchester Hospital Board of Trustees has unanimously approved our joining the North Shore-LIJ Health System. We are extremely pleased to report that this agreement meets all of the objectives set out by our Board, acting on behalf of our community.

North Shore-LIJ is taking a patient-centered approach to expanding its health system to this region so that our patients can continue to receive the same high-quality healthcare that they have grown to expect from Northern Westchester Hospital. This focus on local care will be supported by a commitment to maintain and enhance the key services that serve our community today.

As a member of the NS-LIJ Health System, Northern Westchester Hospital and its leadership team will have an important role in developing expansion plans for the North Shore-LIJ Health System in the greater Hudson Valley.

About Joining the North Shore-LIJ Health System

Q: What does joining the North Shore-LIJ Health System mean?

A: By joining the North Shore-LIJ Health System (North Shore-LIJ), we are becoming an important part of one of the most successful hospital systems in the U.S. North Shore-LIJ has 17 hospitals in their system, employs 48,000 people, and in 2013 saw revenues of \$7 billion and a net income of \$285 million. The system also includes a rapidly emerging medical school and the Feinstein Institute for Medical Research.

North Shore-LIJ is well ahead of other area health systems in Population Health Management, which will benefit our community by coordinating care across providers and reducing healthcare costs. They have launched a care management company and a health insurance product called CareConnect that are the foundations of a regional health plan. North Shore-LIJ already has agreements with Montefiore, Yale-New Haven, Saint Barnabas (NJ) and Maimonides to be included in the CareConnect network. Area medical groups also have agreements with CareConnect, guaranteeing that our patients can continue seeing their current physicians and receiving high-quality care at NWH.

Q: Who will be in charge of NWH when we become part of the NS-LIJ system?

A: One of the key partnership criteria used by the NWH Board of Trustees was a commitment to our leadership team and local oversight. This will enable our staff to continue providing our community with high-quality medical care at a local level. The North Shore-LIJ team recognizes that NWH is a high quality and financially strong hospital .

An important part of this agreement enables the NWH Board of Trustees to continue having a crucial role in the governance of NWH. The NWH Board will eventually include members appointed by North Shore-LIJ, who will be knowledgeable about the healthcare needs of our community.

Members of the NWH Board will join the North Shore-LIJ Board and its committees, which will enable us to provide a Westchester voice on all health system initiatives. In addition, one member of the NWH Board will be appointed to the North Shore-LIJ Executive Committee.

Q: Is this a permanent decision?

A: The selection of North Shore-LIJ is the result of a comprehensive evaluation that included all of the major health systems in our region, as well as some located outside of the area. This decision truly represents a commitment by both parties, and while there are details in our agreement that make it possible to change, the NWH Board of Trustees and Senior Management team are confident that North Shore-LIJ is the right long-term partner for our community.

Q: How will NWH maintain its identity as part of a larger system?

A: North Shore-LIJ recognizes the successes achieved by the staff of Northern Westchester Hospital and plans to build upon these, including our culture of patient safety, our Magnet and Planetree Designations, and our numerous processes for providing high-quality care. As with other North Shore-LIJ hospitals, we will also maintain our name.

Q: What are the benefits to joining a larger system?

A: Joining a well-developed regional system will provide us with greater access to highly-specialized clinical expertise, and additional resources to advance our sophisticated clinical programs and technologies. Importantly, joining this system will also enable us to achieve the scale necessary to participate in population health management on a regional basis.

North Shore-LIJ will also be making a financial investment in NWH, and in health care services for our community. This investment will help to accelerate our facility modernization plans, while supporting greater ambulatory care (out-of-hospital) capabilities, and advancing our surgical and technological sophistication.

Q: Will the NWH name change?

A: The Northern Westchester Hospital name will remain with an added reference to North Shore-LIJ. In addition, North Shore-LIJ is currently investigating a new "brand identity" to better represent its role as a leading national healthcare system.

Q: Will NWH remain as a Planetree hospital as part of a new system? Will NWH still be a Magnet Designated hospital?

A: Yes. There is a strong commitment from the NWH Board and from North Shore-LIJ to maintaining our Planetree and Magnet designations.

Q: Phelps has also joined North Shore-LIJ—Will there be consolidation?

A: Phelps serves a large community and North Shore-LIJ will support their efforts to meet the healthcare needs of that community. However, over time, we would expect to create efficiencies across our two hospitals, and with the larger system as well. Interestingly, the two hospitals have many strengths that are complementary. For instance, Phelps has strong programs in behavioral health services and inpatient rehabilitation, while NWH has strengths in robot-assisted surgery, stereotactic radiosurgery, and advanced breast cancer care. We expect the two hospitals will work closely together to find efficiencies and improve access to care.

Q: How will fundraising work? Will my donations go directly to NWH?

A: The financial investment from North Shore-LIJ will be extremely helpful, but insufficient to carry out the modernization of NWH without the ongoing support of our community. The NWH Foundation will continue overseeing all fundraising activities at NWH, and all funds raised through the NWH Foundation will remain in our community and continue to support NWH.

Q: When will NWH officially become part of North Shore-LIJ?

A: Our agreement with North Shore-LIJ must be reviewed and approved by State and Federal agencies. We expect to receive their final approval and be able to finalize our agreement during the first quarter of 2015.

Access to my physician

Q: How does this impact our relationship with area medical groups?

A: NWH employs very few physicians and instead partners with our area physicians and medical groups. We will always have strong relationships with area physicians to ensure our patients have access to high-quality medical care.

As necessary, agreements will be established across healthcare networks to enable patients to access seamless care among their providers. We see this already happening. By remaining a high-quality, lower-cost provider, NWH will continue to be sought out as a facility of choice by our medical groups and by all health plans.

f/qa-joining

Town of Bedford Planning Board

2nd Floor Conference Room
425 Cherry Street
Bedford Hills, New York 10507

Tuesday, May 26, 2015

Minutes

A meeting of the Planning Board was held on May 26, 2015, starting at 8:00 P.M., at 425 Cherry Street, Bedford Hills, New York. Present were Chairman Deirdre Courtney-Batson, Vice Chairman John Sullivan, Board Members: William Colavito and Diane Lewis, Planning Director Jeff Osterman, Town Counsel Joel Sachs and Secretary Anne Paglia. Absent was Felix Cacciato. *[All Planning Board meetings are recorded. A CD copy of this recording may be obtained from the Planning Board Office.]*

Conference:

Waiver of Site Plan Approval – “Gluten-Free Bakery”
Section 60.14 Block 1 Lot 5, CB Zone
299 Bedford Road, Bedford Hills
Owner/Applicant: **Old Stone Hill**
(Review latest submission.)

Present:

Jennifer Goodhue, Applicant
(Owner: Well-N-Good Coffee & Juice Bar)

Mrs. Courtney-Batson stated that there was a request in the Waiver of Site Plan Approval for a “Gluten-free Bakery.”

Ms. Goodhue, who is the prospective tenant of 299 Bedford Road, described her original concept of a gluten-free bakery. She stated that her vision has changed and she will now be focused on a coffee and juice bar. She stated that she has submitted her application to the Department of Environmental Protection (the “DEP”) for a coffee and juice bar and would like the documentation from the Town of Bedford to reflect the same verbiage. She would like the Waiver of Site Plan Approval to be amended to reflect the “true nature” of her business, which is a coffee and juice bar.

Mrs. Courtney-Batson asked how the menu will change from that originally presented to the Planning Board. Ms. Goodhue stated that she will be decreasing the amount of baked goods being offered and increasing the coffee, tea and juices being offered. She stated that only one quarter of her menu pertains to baked goods. Ms. Goodhue stated that everything on the plan would stay the same.

Mrs. Courtney-Batson stated that approval of this amendment to the Waiver of Site Plan Approval would require all of the conditions of the original approval as well as the additional condition of the number of baked goods on the menu shall not be more than twenty-five (25) per-cent of the menu.

Ms. Goodhue questioned the wording in the original approval stating “the approval shall expire unless a building permit is applied for within a period of eighteen (18) months from the date of the signing of the final site plan by the Planning Board.” Mr. Osterman stated that the amendment would re-set the date.

Mrs. Courtney-Batson stated that there was no reason why the Planning Board approval should not state the same description as on the application to the DEP.

Motion: A motion was made by Ms. Lewis to approve the amendment to the final site plan with the conditions stated by Mrs. Courtney-Batson.

Motion seconded by Mr. Colavito.

Vote: Ayes: Courtney-Batson, Sullivan, Colavito, Lewis

Nays: None

Conference:

Proposed 10-Lot Subdivision

Section 62.9 Block 1 Lot 13, R-4A Zone

Upper Hook Road, Katonah

Section 62.13 Block 1 Lot 1, R-4A Zone

131 Upper Hook Road, Katonah

Owner: **New York Bedford Castle Co.**

Applicant: **America Capital Energy Corporation**

(Completeness Review of DEIS: Sections III and V.)

Present:

Charles V. Martabano, Attorney at Law

David Sessions, RLA, AICP, Kellard Sessions Consulting, P.C.

Stephen W. Coleman, Environmental Consulting, L.L.C.

Mrs. Courtney-Batson stated there were some issues left from the review of the sections done last time [April 14, 2015]. First was the issue of the Historic Building Preservation Commission under the human environment part of the document. The Historic Building Preservation Commission had not had an opportunity to go through the property. One of the issues in the scope was that the applicant was to check with this Commission. The Planning Board has a report from the Historic Building Preservation Commission. The report does find that the caretaker’s house is not merit local preservation, the feeling of the Commission is that the barn on the property does. The opinion of the Historic Building Preservation Commission will need to be included in the DEIS scope and the barn will need to be discussed. Mr. Stockbridge, Chairman, Historic Building Preservation Commission commented that the barn dates back to the early 19th century.

He also stated that the Commission did not see the Indian artifact site [lot 3] and would like another opportunity for the Commission to do a site walk of that area.

Mrs. Courtney-Batson said that in the previous review, there was a discussion of the Affordable Housing issue. She stated that the Planning Board had asked the applicant to provide in the scope an alternative or alternatives that meet the Town's interpretation of the Affordable Housing Statute. At this point, Mr. Sessions said that Mr. Martabano would be here shortly and asked if the Planning board could come back to this issue. The Planning board agreed.

Mr. Stockbridge requested the applicant protect the building [barn] to avoid further deterioration. Mrs. Courtney-Batson agreed that it would be in the best interests of the applicant.

Mrs. Courtney-Batson then suggested that the Planning Board begin the review of Section III. She stated that she would be referring to the report to the Planning Board from the Conservation Board as it applies to each item. She also stated that, if necessary, she would ask Mr. Skolnik, Chairman of the Conservation Board [who was in the audience] to clarify where necessary.

[Mrs. Courtney Batson proceeded to go through Section III of the document, page by page, asking for comments as she proceeded.]

[At the point in the document where Wetlands was discussed, Mrs. Courtney-Batson invited the Wetlands Commission to join the Planning Board. Andrew Messinger, Chairman of the Bedford Wetlands Control Commission stated that they would remain where they were, seated in the audience. The other members of the Wetlands Commission present were Carol Parker, Fiona Mitchell and John Stockbridge.]

Mr. Messinger stated that they had one preliminary question about the homeowners' association. Because this is an environmentally sensitive and unique project, he suggested there be a monitor on behalf of the Town and the homeowners' association to ensure that the stipulations that may be made are adhered to. Mr. Martabano said that when a previous subdivision was done, they did a very extensive homeowners' association document which the Town reviewed and enforcement rights were given to the town of Bedford. Mr. Martabano said that they could address the concerns about this subdivision in a similar manner. Mrs. Courtney-Batson agreed that this has to be addressed. Mr. Colavito asked if it would be a good idea to have the wetlands delineated by monuments. Mr. Messinger said it would be a good idea and that the Wetlands Commission already had a protocol [and monuments] for this, which he described. Mr. Osterman stated that this could be a condition of final subdivision approval.

[Mrs. Courtney Batson proceeded to go through Section III of the document, page by page, asking for comments as she proceeded.]

During this part of the meeting it was decided that when the issue of the homeowners' association is discussed, it should include maintenance of the stormwater system.

Mrs. Courtney-Batson moved back to the Affordable Housing issue because Mr. Sachs, the Town Attorney, was now present. She stated that the Planning Board had made it quite clear in the SCOPE that the board realizes there is a difference of opinion between the applicant and the board over the interpretation of the Town Code. The board agreed that this issue could be decided later on the process, but that the town's interpretation of the code should be included in the DEIS, so that it could be part of the discussion all along. Currently, the DEIS has the applicant's interpretation and nothing else. The board had requested alternatives that meet the board's interpretation of the code. The board would like to see an alternative with the idea of providing an affordable unit on this property at the applicant's expense, which is the main thrust, as the board sees it, of the town's Affordable Housing Legislation. Mr. Martabano responded by saying he thought they could examine some other alternatives. Mr. Sachs said that the board may choose one of those alternatives. Mr. Sachs also said that Mr. Martabano's client will not agree that the alternatives are legal. What the alternative has to accomplish to meet our requirements one of the town's requirements is that there be an affordable housing unit on this property at the applicant's expense. Mrs. Courtney-Batson stated that one possibility would be to provide an accessory cottage on one of the lots, but one that would be subject to the Affordable Housing Legislation. Another possibility, which would have to be discussed with the Historic Building Preservation Commission is perhaps, if the barn were to be preserved, it could be re-purposed as a residence. This may not be feasible from an historic point of view. Mr. Osterman also suggested the possibility of using the existing farmhouse. Mr. Sachs stated that it will be up to the Planning Board to decide if the discussion of the alternative is adequate.

Mrs. Courtney-Batson stated that because this is the first application since the new legislation was passed, it is important because it will be setting precedent.

[Mrs. Courtney Batson proceeded to go through Section III of the document, page by page, asking for comments as she proceeded.]

In the interests of saving time, Mrs. Courtney-Batson asked Mr. Martabano if he could address the issues raised by the Conservation Board. Mr. Martabano agreed.

[At the point where page 38 had been discussed and they were up to section D, , the Planning Board and the applicant decided that, because of the lateness of the hour, the Completeness Review should be continued at the Planning Board's next meeting, June 9, 2015, starting at 6:00 PM.,]

Discussion:

Proposed Amendments to Special Permit Uses

Mrs. Courtney-Batson suggested that the following go from the Planning Board to the Zoning Board of Appeals:

Customary Home Occupations
Accessory Apartments in Existing Single-Family Residences
Cottages
Boarding of Ten or More Horses
Accessory Structures Exceeding 25 Feet in Height
Riding Rings
Buildings Over 2500 Square Feet

Mrs. Courtney-Batson suggested that the following go from the Zoning Board of Appeals to the Planning Board:

Automotive Service Stations and Public Garages
Private Clubs
Hotels and Motels
Landscape Nurseries
Private Schools
Cemeteries
Churches or Other Places of Worship

Motion:

Mr. Sullivan moved to write a memo to the Town board recommending these changes to the Town Code. Mrs. Lewis seconded the motion.

Vote: Ayes: Courtney-Batson, Sullivan, Colavito, Lewis

Nays: None

The next meeting will be on June 9, 2015. It will start at 6:

Motion:

Mr. Colavito moved to close the meeting; Mrs. Lewis seconded the motion.

Vote: Ayes: Courtney-Batson, Sullivan, Colavito, Lewis

Nays: None

The meeting was adjourned at 10:45 PM.

Date these minutes were approved by the Planning Board: _____

Respectfully submitted,

Anne Paglia, Secretary
Town of Bedford Planning Board

Date

Town of Bedford Planning Board

**2nd Floor Conference Room
425 Cherry Street
Bedford Hills, New York 10507**

Tuesday, June 9, 2015

Minutes

A meeting of the Planning Board was held on June 9, 2015, starting at 6:00 P.M., at 425 Cherry Street, Bedford Hills, New York. Present were Chairman Deirdre Courtney-Batson, Vice Chairman John Sullivan, Board Members: William Colavito and Diane Lewis, Planning Director Jeff Osterman, and Secretary Anne Paglia. Absent was Felix Cacciato. *[All Planning Board meetings are recorded. A CD copy of this recording may be obtained from the Planning Board Office.]*

Conference:

Proposed 10-Lot Subdivision
Section 62.9 Block 1 Lot 13, R-4A Zone
Upper Hook Road, Katonah
Section 62.13 Block 1 Lot 1, R-4A Zone
131 Upper Hook Road, Katonah
Owner: **New York Bedford Castle Co.**
Applicant: **America Capital Energy Corporation**
(Continuation of Completeness Review of DEIS: Sections III and V.)

Present:

Richard Williams, Executive Vice President, America Capital Energy Corporation
Charles V. Martabano, Attorney at Law
Stephen W. Coleman, Environmental Consulting, L.L.C.

[Members of the Wetlands Commission present were Andrew Messinger, Chairman, Carol Parker and John Stockbridge. Also present were Beth Evans, Town Environmental Consultant and Simon Skolnik, Chairman, Conservation Board.]

Mrs. Courtney-Batson stated that the Planning Board would now continue the Completeness Review at Section III-D of the document.

Mrs. Courtney-Batson continued going through Section III of the document [which was started at the May 26, 2015 meeting], page by page, asking for comments as she proceeded.]

At the end of Section III, Mrs. Courtney-Batson proceeded to Section V [Section IV had already been completed].

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At the end of Section V, Mrs. Courtney-Batson asked if there were any other issues to be raised.

Discussion:

Mrs. Courtney-Batson then brought up the issue of signs. Drew Gamils, Town of Bedford Law Intern, then explained the list of proposed changes to the sign ordinance. Mrs. Courtney-Batson asked if they were only considering changing the sign ordinance in the hamlet districts. Mr. Osterman said that it was specifically the CB (Central Business) District, which would be Katonah and Bedford Hills. The Historic District Commission in Bedford Village has jurisdiction over signs and would not be included in this revision. Mr. Sullivan said that it would be very helpful to see some comparisons, since this is a very visual issue, and request it they show everything including free-standing, lit, window signs and awning signs. The Planning Board discussed the internally illuminated box signs. The possibility of giving the Planning Board the responsibility of regulating these signs was also discussed. Mrs. Meredith Black *[member of the Zoning Board of Appeals, who is the next applicant]* suggested the Planning Board study the regulations of Greenwich, Connecticut.

Public Hearing:

Special Use Permit – Accessory Apartment
Section 49.16 Block 2 Lot 26, R-1A Zone
157 Jay Street, Katonah
Owners: **Jason and Meredith Black**
Applicants: **Alexander and Shana Outman**
(Consider Special Use Permit.)

Present:

Meredith Black, Owner

Mrs. Courtney-Batson pointed out that this is actually a renewal of a special use permit that was granted several years ago. She explained that when an accessory apartment changes hands a new special permit needs to be issued.

Mrs. Black said that she was representing the contract vendees, Alexander and Shana Outman and then described the accessory apartment and stated that nothing in the apartment has changed since she purchased the house.

Mrs. Courtney-Batson asked if there were any members of the public who wished to be heard. *[No one responded.]*

Mrs. Courtney-Batson stated that this is, technically, a renewal. She stated that the original approval in 2008 was for 600 square feet. Mr. Osterman stated that this was a mistake because the original drawings show that the apartment is 712 square feet. Mrs. Courtney-Batson stated that if this is renewed, the Planning Board will limit the square footage of the apartment to 712 square feet.

Mrs. Courtney-Batson stated that with the revised square footage of the accessory apartment, the percent of coverage of gross floor area would be 27 per cent. She wanted to make not of the fact

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that the Planning Board is waiving the requirement of 25 per cent, which the Planning Board is permitted to do. Mr. Sullivan stated that this is also in consideration of an existing use.

Mr. Sullivan made a motion to close the public hearing. Mrs. Lewis seconded the motion.

Vote: Ayes: Courtney-Batson, Sullivan, Colavito, Lewis

Nays: None

Motion: A motion was made by Mr. Sullivan to approve this application for a special use permit subject with the conditions of the previous approval with the exception that the size of the cottage be changed from 600 square feet to 712 square feet.

Motion seconded by Mrs. Lewis.

Vote: Ayes: Courtney-Batson, Sullivan, Colavito, Lewis

Nays: None

Public Hearing:

Special Use Permit – Tennis Court

Section 83.13 Block 1 Lot 7, R-4A Zone

326 South Bedford Road, Bedford Corners

Owner: **326 South Bedford Road, LLC**

Applicant: **Carol Kurth Architecture, P.C.**

(Consider Special Use Permit.)

Present:

Carol J.W. Kurth, FAIA, Carol Kurth Architecture, P.C.

Barry G. Naderman, P.E., Naderman Land Planning & Engineering, P.C.

Ms. Kurth described the project to the Planning Board. Mr. Naderman discussed the drainage issues when Mr. Colavito brought the subject up. Mrs. Courtney-Batson stated that there would be no approval until the Town Engineer approved the drainage plans.

The Planning Board also discussed the possibility of relocating the tennis court with Ms. Kurth and Mr. Naderman.

Mrs. Courtney-Batson asked if there were any members of the public who wished to be heard.

[No one responded.]

Mr. Sullivan made a motion to close the public hearing. Mrs. Lewis seconded the motion.

Vote: Ayes: Courtney-Batson, Sullivan, Colavito, Lewis

Nays: None

It was agreed that the Planning Board would do a site visit during their next field trip; the date of the field trip to be determined later in the meeting.

Motion: A motion was made by Mr. Colavito to deny this application for a special use permit for a tennis court.

Motion seconded by Mrs. Lewis.

Vote: Ayes: Courtney-Batson, Sullivan, Colavito, Lewis

Nays: None

Public Hearing:

Special Use Permit – Accessory Apartment
Section 84.17 Block 1 Lot 10, R-1A Zone
17 Gordon Avenue, Bedford
Owners/Applicants: **Nicholas and Denise Delfico**
(Consider Special Use Permit.)

Present:

Nicholas and Denise Delfico, Owners
Jeffrey Kane, Attorney

Mrs. Courtney-Batson acknowledged that Mr. Kane has been, at times, her personal attorney. She stated that she did not believe that this creates a conflict of interest.

Mrs. Delfico described the accessory apartment to the Planning Board. Mrs. Courtney-Batson noted that the apartment is currently in a separate building and Mr. Kane stated that it will be connected to the residence by a breezeway.

It was agreed that the Planning Board would do a site visit during their next field trip; the date of the field trip to be determined later in the meeting.

Mrs. Lewis made a motion to close the public hearing. Mr. Colavito seconded the motion.

Vote: Ayes: Courtney-Batson, Sullivan, Colavito, Lewis
Nays: None

Conference:

Special Use Permit – Accessory Structure Over 20 Feet in Height
Section 49.19 Block 1 Lot 47, R-¼A Zone
71 The Terrace, Katonah
Owner/Applicant: **Mario Genovesi, Jr.**
(Consider application for Special Use Permit.)

Present:

Martin Kravitt, R.A., Architects & Planners

Mr. Kravitt stated that the owner has already been before the Zoning Board of Appeals for this and the following agenda item. He stated that there would be an office and a half bath for Mr. and Mrs. Genovesi's own use. The variance was granted by the Zoning Board of Appeals.

Motion: A motion was made by Mr. Sullivan to approve this application for a special use permit for the height of twenty feet and four inches with the conditions specified by the Zoning Board of Appeals.

Motion seconded by Mr. Colavito.

The Board reviewed the Environmental Clearance Form and unanimously determined that this proposal is a "Type II or Exempt Action" under SEQR.

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Mr. Colavito endorsed the Board's determination on the ECF. Mr. Sullivan seconded.

Vote: Ayes: Courtney-Batson, Sullivan, Colavito, Lewis
Nays: None

Vote: Ayes: Courtney-Batson, Sullivan, Colavito, Lewis
Nays: None

Conference:

Special Use Permit – Home Occupation
Section 49.19 Block 1 Lot 47, R-¼A Zone
71 The Terrace, Katonah
Owner/Applicant: **Mario Genovesi, Jr.**
(Consider application for Special Use Permit.)

Present:

Martin Kravitt, R.A., Architects & Planners

Motion: A motion was made by Mr. Sullivan to approve this application for a special use permit for the home occupation with the conditions specified by the Zoning Board of Appeals.

Motion seconded by Mrs. Lewis.

The Board reviewed the Environmental Clearance Form and unanimously determined that this proposal is a "Type II or Exempt Action" under SEQR.

Mr. Colavito endorsed the Board's determination on the ECF. Mrs. Lewis seconded.

Vote: Ayes: Courtney-Batson, Sullivan, Colavito, Lewis
Nays: None

Vote: Ayes: Courtney-Batson, Sullivan, Colavito, Lewis
Nays: None

Conference:

Preliminary Subdivision Approval – Two Lot Subdivision
Section 94.9 Block 1 Lot 7, R-4A Zone
385 Byram Lake Road, Bedford Corners
Owners/Applicants: **Timothy and Lisa Ghriskey**
(Consider Subdivision Approval.)

Present:

Timothy and Lisa Ghriskey, Owners
Peter Gregory, P.E., Keane Coppelman Gregory Engineers, P.C.

Mr. Gregory described the project to the Planning Board. He stated that the application to the Health Department has been done.

Mr. Colavito asked if there was an open mortgage on the property and if the lender has any prohibition against subdivision. Mr. Ghriskey said he would find out.

Mr. Sullivan asked why the subdivision line was drawn the way it was. Mr. Ghriskey said it was drawn with the topography in mind.

DRAFT – DRAFT – DRAFT – DRAFT – DRAFT – DRAFT – DRAFT - DRAFT

Mrs. Courtney-Batson suggested that the Planning Board do a site visit and the board agreed.

It was agreed that the Planning Board would do a site visit during their next field trip; the date of the field trip to be determined later in the meeting.

Conference:

Waiver of Subdivision Approval – Lot Line Change (Two Lots)

Section 73.10 Block 1 Lot 15.1, R-4A Zone

116 Hook Road, Bedford

Section 73.10 Block 1 Lot 16, R-2A Zone

52 Hook Road, Bedford

Owner/Applicant: **Coleman P. Burke**

(Consider Waiver of Subdivision Approval.)

Present:

P. Daniel Hollis, III, Attorney at Law, Shamburg Marwell Hollis Andreycak & Laidlaw, P.C.

Mr. Hollis described the proposed change in the lot line and the resulting acreage of each lot. Lot 15.1 currently has 7.108 acres and if the lot line change is approved, it will have 5.629 acres. Lot 16 currently has 2.733 acres and if the lot line change is approved, it will have 4.212 acres. He described the change as having the lot line more closely follow the Beaver Dam River contours.

Mrs. Courtney-Batson proposed the conditions of approval be:

1. An accurate presentation of the zoning line shall be submitted to the Planning Board.
2. There shall be no further subdivision of either lot.

Motion: A motion was made by Mr. Colavito to approve this application for a waiver of site plan approval subject to the conditions stated.

Motion seconded by Mrs. Lewis.

The Board reviewed the Environmental Clearance Form and unanimously determined that this proposal is a “Type II or Exempt Action” under SEQR.

Mr. Sullivan endorsed the Board’s determination on the ECF. Mr. Colavito seconded.

Vote: Ayes: Courtney-Batson, Sullivan, Colavito, Lewis

Nays: None

Vote: Ayes: Courtney-Batson, Sullivan, Colavito, Lewis

Nays: None

Conference:

Waiver of Site Plan Approval –

Renovation and Modification of Existing Automotive Service Station
for Use as Gas Station and Convenience Store

Section 60.13 Block 1 Lot 20, CB Zone

9 Haines Road, Bedford Hills

Owner: **Robert Lee/Apache Oil Company**

Applicant: **Lewis Roane**

(Review Field Trip notes.)

(Consider amendment to approved final site plan.)

Present:

Lewis Roane, Applicant

Mr. Colavito read the May 29, 2015 Field Trip Notes:

1. The trees behind the wall should be trimmed back.
2. The propane tank is to be located behind the trees on the wall.
3. The paperwork from the Westchester County Department of Health shall be submitted to the Planning Board regarding the Dunkin Donut bakery activities.
4. Consideration should be given to planting native plants around the building.
5. The screening trees on the wall shall be maintained.
6. The planting in the front of the property should be discussed further.

Mr. Roane discussed the latest plan (dated 4/14/15, last revised 5/29/15) with the Planning Board which included a discussion of the planting plan. It was also stated, for the record, that the Planning Board is not requiring that the applicant install the plants at this time.

Mrs. Courtney-Batson proposed the following conditions of approval.

1. There shall be no baking on the premises; the oven shall only be for the reheating and preparation of already baked goods.
2. The paperwork from the Westchester County Department of Health shall be submitted to the Planning Board regarding the Dunkin Donut bakery activities.
3. Three (3) ink berries with a minimum height of 36 inches shall be planted on the side. Native pollinators shall be planted along the wall and in the two planters in front.
4. It is suggested by the Planning Board, but not required, that plaques no larger than 6 by 8 inches may be installed on the back wall and/or in front of the store to label the plants.
5. The trees behind the wall shall be trimmed back.
6. The propane tank is to be located behind the trees on the wall.
7. Consideration shall be given to planting native plants around the building.
8. The screening trees on the wall shall be maintained.

Motion: A motion was made by Mr. Colavito to approve this application for an amendment to the Waiver of Site Plan Approval subject to the conditions stated.

Motion seconded by Mrs. Lewis.

Vote: Ayes: Courtney-Batson, Sullivan, Colavito, Lewis

Nays: None

Approval of Minutes:

Mr. Colavito made a motion to approve the November 25, 2014 minutes. The motion was seconded by Mr. Sullivan.

Vote: Ayes: Courtney-Batson, Sullivan, Colavito, Lewis

Nays: None

The Planning Board agreed to do the site walk at 9:00 AM on Thursday, June 25, 2015.

The next meeting will be on Tuesday, June 23, 2015.

Mr. Colavito moved to close the meeting. Mr. Sullivan seconded the motion.

Vote: Ayes: Courtney-Batson, Sullivan, Colavito, Lewis

Nays: None

The meeting was adjourned at 9:40 PM.

Date these minutes were approved by the Planning Board: _____

Respectfully submitted,

Anne Paglia, Secretary

Date