

PROJECT MINUTES

Project:	Peebles Elementary School Feasibility Study	Project No.:	15041
Prepared by:	Joel Seeley	Meeting Date:	2/18/2016
Re:	School Building Committee Meeting	Meeting No:	12
Location:	Bourne Veteran's Memorial Community Center	Time:	6:30pm
Distribution:	School Building Committee Members, Attendees (MF)		

Attendees:

PRESENT	NAME	AFFILIATION	VOTING MEMBER
✓	James L. Potter	Chairman, School Building Committee	Voting Member
✓	Peter J. Meier	Board of Selectmen	Voting Member
	Christopher Hyldburg	Chairman, School Committee	Voting Member
✓	Mitch McClain	Member, School Committee	Voting Member
✓	Natasha Scarpato	Member at Large	Voting Member
	Richard A. Lavoie	Finance Committee	Voting Member
✓	William Meier	Building Trade Expert	Voting Member
	Mary Jo Coggeshall	Member at Large	Voting Member
	Frederick H. Howe	Board of Health	Voting Member
✓	Steven M. Lamarche	Superintendent of Schools, BPS	Voting Member
✓	Edward S. Donoghue	Director of Business Services, BPS	Non-Voting Member
	Thomas M. Guerino	Town Administrator	Non-Voting Member
	Jonathan Nelson	Director of Facilities, Town of Bourne	Non-Voting Member
✓	Elizabeth A. Carpenito	Principal, BES	Non-Voting Member
	Kathy Anderson	Elementary/Special Education Secretary	Non-Voting Member
✓	Janey Norton	Principal, PES	
	Kent Kovacs	FAI, Architect	
✓	Betsy Farrell Garcia	FAI, Architect	
✓	Michael Cimorelli	FAI, Architect	
✓	Joel Seeley	SMMA, OPM	

Item #	Action	Discussion
12.1	Record	Call to Order, 6:30 PM, meeting opened.
12.2	Record	A motion was made by S. Lamarche and seconded by P. Meier to approve the 1/7/16 School Building Committee meeting minutes. No discussion, motion passed unanimous by those attending, one abstention.
12.3	Record	A motion was made by M. McClain and seconded by S. Lamarche to approve the 2/4/16 School Building Committee meeting minutes. No discussion, motion passed unanimous by those attending, three abstentions.
12.4	Record	Warrant No. 4 was reviewed. A motion was made by P. Meier and seconded by N. Scarpato to approve Warrant No. 4. No discussion, motion passed unanimous.
12.5	Record	Warrant No. 5 was reviewed. A motion was made by S. Lamarche and seconded by P. Meier to approve Warrant No. 5. No discussion, motion passed unanimous.
12.6	Record	P. Meier indicated the Moderator indicated verbally that for any future at-large vacant Committee seats, the Moderator will make the appointment. The Committee defined that for any future vacant at-large seats, the opening will be posted by the Chairman, applications will be received by the Chairman, and after review by the Committee, the Chairman will make a recommendation to the Moderator for appointment.
12.7	B. Garcia	B. Garcia reviewed the Status Matrix, attached, of the comments and criteria identified during the 1/7/16 and 2/4/16 Committee meetings and Community Forum No. 4, to assist the Committee in deciding on the One Preferred Alternative.
12.8	Record	<p>B. Garcia reviewed the findings of the meeting held on 2/9/16 to discuss the bus travel distances and durations to Peebles and Bournedale, attached.</p> <p>The findings per Options are as follows:</p> <ol style="list-style-type: none"> 1. Option 1A – No Change 2. Option 2A – Requires 15 minute change in start and end times 3. Options 4A/4B – Requires 1-2 new busses to accommodate 5th grade, an increase of approximately \$80,000 - \$90,000 in operating cost <p>Committee Discussion:</p> <ol style="list-style-type: none"> 1. M. McClain asked if there would be savings in Middle School bussing costs under Option 2A? <i>E. Donoghue indicated not likely as the same amount of busses would most likely be needed.</i>
12.9	Record	B. Garcia reviewed the cost to abate and demolish the existing Peebles as approximately \$1.7 million, attached.
12.10	J. Nelson	J. Nelson will review with other Town groups and develop a listing of potential options for Peebles for the next Committee meeting.
12.11	J. Seeley	B. Garcia distributed and reviewed cut sheets for the HVAC equipment, attached. The Energy Recovery Unit has a wheel-type heat exchanger.

Item #	Action	Discussion
		<p>Committee Discussion:</p> <ol style="list-style-type: none"> 1. J. Seeley to send the cut sheets to J. Nelson for review.
12.12	K. Kovacs	<p>K. Kovacs will review if Cape Light Compact will provide incentives for replacing the existing fluorescent interior light fixtures with LED fixtures in Option 2A.</p>
12.13	J. Seeley	<p>J. Seeley indicated he reviewed the preliminary calculation of MSBA reimbursement for Option 2A, which was significantly more than Options 1A, 4A and 4B. MSBA indicated there may be Cost Recovery on the original Bournedale grant for the renovations, since the school is only 10 years old, which would lower the MSBA reimbursement on Option 2A. J. Seeley requested a meeting with MSBA, anticipated for the week of 2/22/16, to review.</p> <p>Committee Discussion:</p> <ol style="list-style-type: none"> 1. S. Lamarche requested that a member of the Committee attend the meeting. <i>J. Seeley will coordinate with the Committee once the MSBA schedules the meeting.</i>
12.14	J. Seeley J. Nelson	<p>J. Seeley indicated he had a preliminary discussion with MSBA relative to the Town performing some of the sitework, similar to the DPW project. The MSBA has several questions and requested a specific work breakdown. Some of the questions are:</p> <ol style="list-style-type: none"> 1. How did the Town address liability between the Town and the contractor? 2. How did the Town address insurances? 3. Who would be responsible if the building settles on sitework performed by the Town? 4. Were there any change orders caused by the Town's work submitted by the contractor? 5. Labor may not be reimbursable if performed by Town employees already on Town payrolls. <p><i>J. Seeley to review the specific scope of potential sitework with J. Nelson.</i></p>
12.15	C. Hyldburg	<p>C. Hyldburg will confirm if the School Committee has a date conflict with Community Forum No. 6, scheduled for 4/6/16.</p>
12.16	B. Garcia	<p>B. Garcia distributed and reviewed the updated plans for Options 1A, 2A, 4A and 4B, attached. Each option is being refined to provide to the Cost Estimator for presentation of PSR costs to the Committee at the next Committee meeting.</p> <p>Committee Discussion:</p> <ol style="list-style-type: none"> 1. P. Meier asked if MSBA would reimburse an auditorium if added to the plans? <i>J. Seeley indicated no, the MSBA would not participate in an auditorium.</i> 2. J. Potter asked if spot grades can be added to the site plans? <i>B. Garcia indicated yes, spot grades will be added.</i> 3. J. Potter asked if the Option 4B parking lot is sloped significantly or is a retaining wall needed? <i>B. Garcia will review if a retaining wall needs to be added.</i>

Item #	Action	Discussion
		<p>4. J. Potter asked if the loading dock, dumpsters and service area will be visible from the entry drive on Options 1A and 4A? <i>B. Garcia indicated there will be screening and that she will review the location.</i></p> <p>5. P. Meier recommended B. Garcia review the Town Bi-laws relative to dumpster enclosure requirements.</p> <p>6. W. Meier asked if the service area for Options 1A and 4A was large enough to allow for deliveries and passing busses/cars? <i>B. Garcia indicated the roadway is 24 feet wide and the truck bay is deep enough so a parked truck does not protrude into the roadway.</i></p> <p>7. S. Lamarche asked if the second floor can be stacked over the first floor on Option 1A to avoid additional roof areas. <i>B. Garcia will review.</i></p> <p>8. S. Lamarche indicated from an educational perspective, all the options layouts were acceptable for this level of development.</p> <p>9. W. Meier indicated in Option 2A, the building addition may be impacting the location of the existing electrical ductbank. <i>B. Garcia will review.</i></p> <p>10. J. Norton expressed concern the building addition in option 2A is very close to the loop roadway. <i>B. Garcia will review.</i></p> <p>11. S. Lamarche asked if the green roof could be over the kindergarten classrooms in Option 4A? <i>B. Garcia indicated yes.</i></p> <p>12. P. Meier asked if there will be photovoltaic panels on the roof? <i>J. Seeley indicated no, the MSBA does not reimburse for panels, but the roof structure will be sized to accommodate for panels in the future.</i></p> <p>13. P. Meier asked if an irrigation well could be included in Option 2A for supply water to the existing playfield irrigation system? <i>B. Garcia will review.</i></p> <p>B. Garcia will finalize refining the plans based on the discussion and provide to the Cost Estimator.</p>
12.17	B. Garcia	<p>B. Garcia distributed and reviewed the draft Flyer for Community Forum No. 5. The Committee approved the flyer. FAI will deliver five poster boards to the School Administration for distribution.</p> <p>B. Garcia led a discussion on potential questions for the SurveyMonkey. The intent would be to let the Community know about the survey at Community Forum No. 5, release it, and then review the results at Community Forum No. 6.</p> <p>The following questions were developed:</p>

Item #	Action	Discussion
		<ol style="list-style-type: none"> 1. Does the Peebles Elementary School building hold sentimental value? 2. Which of the following projects has the most pressing need and for which would you support funding? <ol style="list-style-type: none"> a) School b) Police & Fire c) School, Police, & Fire d) None of the above 3. What is the most important priority? <ol style="list-style-type: none"> a) Cost b) Education c) Location d) 5th Grade: Relocate to Elementary School e) 5th Grade: Leave at Middle School f) None of the above 4. What is the most important aspect of an elementary school? 5. How can the School Building Committee improve communication? <p>B. Garcia will finalize and send to the School Administration for developing the SurveyMonkey.</p>
12.18	J. Seeley	S. Lamarche reviewed the intent of the Data Clerk position for the School Administration. <i>J. Seeley to include in the agenda for the next Committee meeting.</i>
12.19	J. Seeley S. Lamarche	<p>Old or New Business:</p> <ol style="list-style-type: none"> 1. S. Lamarche asked to include a discussion on the history of the 5th grade in the Middle School for the next Committee meeting. <i>J. Seeley to include in the agenda.</i> 2. Regarding whether to relocate the 5th grade, S. Lamarche indicated he believed it is this Committee's responsibility to decide which is the preferred option. J. Potter indicated including the 5th Grade is a policy decision for the School Committee and that the committee cannot decide without having input from the School Committee. S. Lamarche will review with the School Committee their sentiment or preference relative to including the 5th Grade.
12.20	Record	Community Forum No. 5: March 3, 2016 at 6:00 pm at the Peebles Elementary School.
12.21	Record	Next SBC Meeting: March 17, 2016 at 6:30 pm at the Bourne Veteran's Memorial Community Center.
12.22	Record	A Motion was made by P. Meier and seconded by M. McClain to adjourn the meeting. No discussion, voted unanimously.

Attachments: Agenda, cut sheets for the HVAC equipment, Updated plans for Options 1A, 2A, 4A and 4B, Draft Flyer for Community Forum No. 5, Powerpoint

Project: **Peebles Elementary School Feasibility Study**

Meeting Date: **2/18/2016**

Meeting No.: **12**

Page No.: **6**

The information herein reflects the understanding reached. Please contact the author if you have any questions or are not in agreement with these Project Minutes

PROJECT MEETING SIGN-IN SHEET

Project: Peebles Elementary School Feasibility Study Project No.: 15041
 Prepared by: Joel Seeley Meeting Date: 2/18/2016
 Re: School Building Committee Meeting Meeting No: 12
 Location: Bourne Veterans Memorial Community Center, 234 Main Street, Buzzards Bay, Massachusetts Time: 6:30pm
 Distribution: Attendees, (MF)

SIGNATURE	ATTENDEES	EMAIL	AFFILIATION
	James L. Potter	onsetjp@juno.com	Chairman, School Building Committee
	Peter J. Meier	pmeier@townofbourne.com	Bourne Board of Selectmen
	Christopher Hyldborg	chrish@alpha-1.com	Chairman, Bourne School Committee
	Mitch McClain	mitchmccclain@comcast.net	Member, Bourne School Committee
	Natasha Scarpato	scarpato4@comcast.net	Member-At-Large
	Richard A. Lavoie	RichL.Lavoie@gmail.com	Member, Bourne Finance Committee
	William Meier	Dusty22752@aol.com	Building Trade Expert
	Mary Jo Coggeshall	micoggeshall@bourneps.org	At-Large
	Frederick H. Howe	rickhowe9@gmail.com	Board of Health
	Steven M. Lamarche	slamarche@bourneps.org	Superintendent of Schools, BPS
	Edward S. Donoghue	EDonoghue@bourneps.org	Director of Business Services, BPS
	Thomas M. Guerino	tguerino@townofbourne.com	Town Administrator
	Jonathan Nelson	jnelson@townofbourne.com	Director of Facilities, Town of Bourne
	Elizabeth A. Carpenito	ecarpenito@bourneps.org	Principal, BES
	Kathy Anderson	kanderson@bourneps.org	Elementary/Special Education Secretary
	Janey Norton	jnorton@bourneps.org	Principal, PES
	Kent Kovacs	kkovacs@flansburgh.com	Flansburgh Architects
	Betsy Farrell Garcia	bgarcia@flansburgh.com	Flansburgh Architects
	Joel Seeley	jseeley@smma.com	SMMA
	Michael Cimarecci	MCIMARECCI@FLANSBURGH.COM	FLANSBURGH ARCHITECTS
	Jane Norton		

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AGENDA

Project:	Pebbles Elementary School Feasibility Study	Project No.:	15041
Re:	School Building Committee Meeting	Meeting Date:	2/18/2016
Meeting Location:	Bourne Veterans Memorial Community Center	Meeting Time:	6:30 PM
Prepared by:	Joel Seeley	Meeting No.:	12
Distribution:	Committee Members (MF)		

1. Call to Order
2. Approval of Minutes – January 7, 2016 and February 4, 2016
3. Approval of Invoices and Commitments – Warrant Nos. 4 and 5
4. Review Updated Construction Alternatives
5. Prepare for Community Forum No. 5
6. Data Clerk for School Administration
7. Old or New Business
8. Public Comments
9. Next Meeting – March 17, 2016
10. Adjourn

Bourne Elementary Schools Community Workshop

Join us at a community meeting on March 3rd
to share your thoughts on the school project

DISCUSS the selected designs

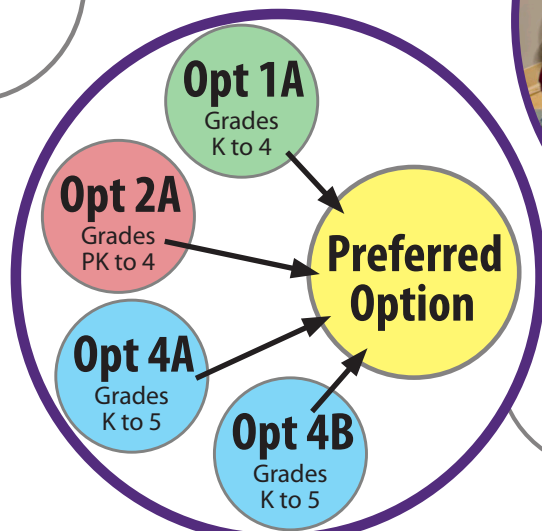
Review refinements to the four design alternatives selected for further study, as well as preliminary cost and schedule.

Learn about a community-wide survey

Contribute to the design evaluation process and provide input on the future of Bourne Elementary Schools.

Share your thoughts

Tell us your thoughts on narrowing the final four design alternatives to one.



Location: Peebles Elementary School Cafeteria, 70 Trowbridge Rd, Bourne

Date/Time: March 3rd, 6:00 - 8:00 PM

Town Website: <http://www.townofbourne.com/school-building-committee> **Project Email:** sbc@townofbourne.com

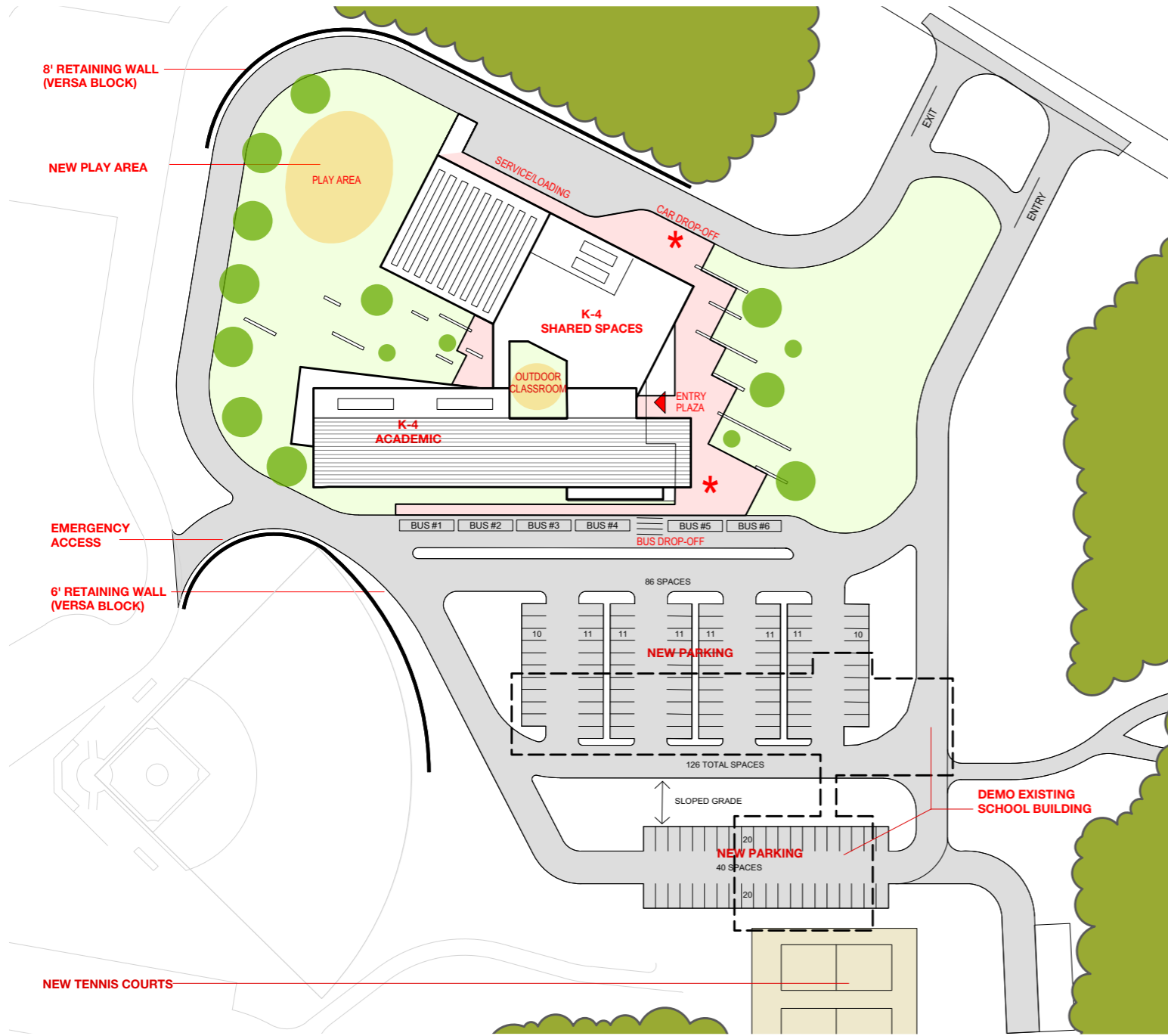
CHILD CARE WILL BE PROVIDED AT THE SCHOOL

Project Management: SMMA

Flansburgh Architects

Sponsored by the School Building Committee

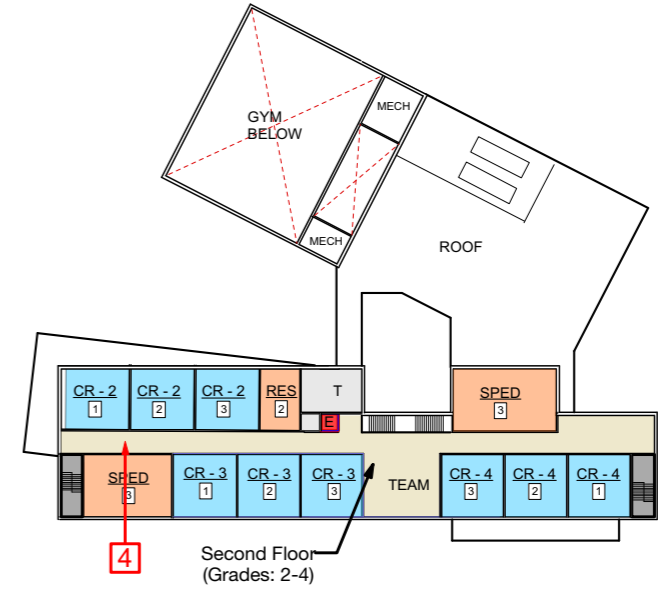
Peebles New Construction Option 1A (250 students)



- KEY**
- | | |
|--|--|
| <p>1. Arts & Innovation Studio:
-Grouped with Arts, Music, Makers Space & Learning Commons to promote collaboration, shared resources</p> <p>2. Outdoor Classroom:
- Limits distraction to academic classrooms
- project area with water, power</p> <p>3. Community:
- Stage open to gym & cafe to support larger venue to support greater community events on this side of the canal</p> | <p>4. Academic:
-Neighborhood collab/display</p> <p>5. Play Area:
-Adjacent to Gymnasium to limit distraction to academic classrooms</p> <p>6. Campus Resource:
- Adjacent to Middle School and High School, Historic Village, Canal</p> <p>7. Entry Plaza connects separate car and bus zones</p> |
|--|--|



FIRST FLOOR PLAN



SECOND FLOOR PLAN



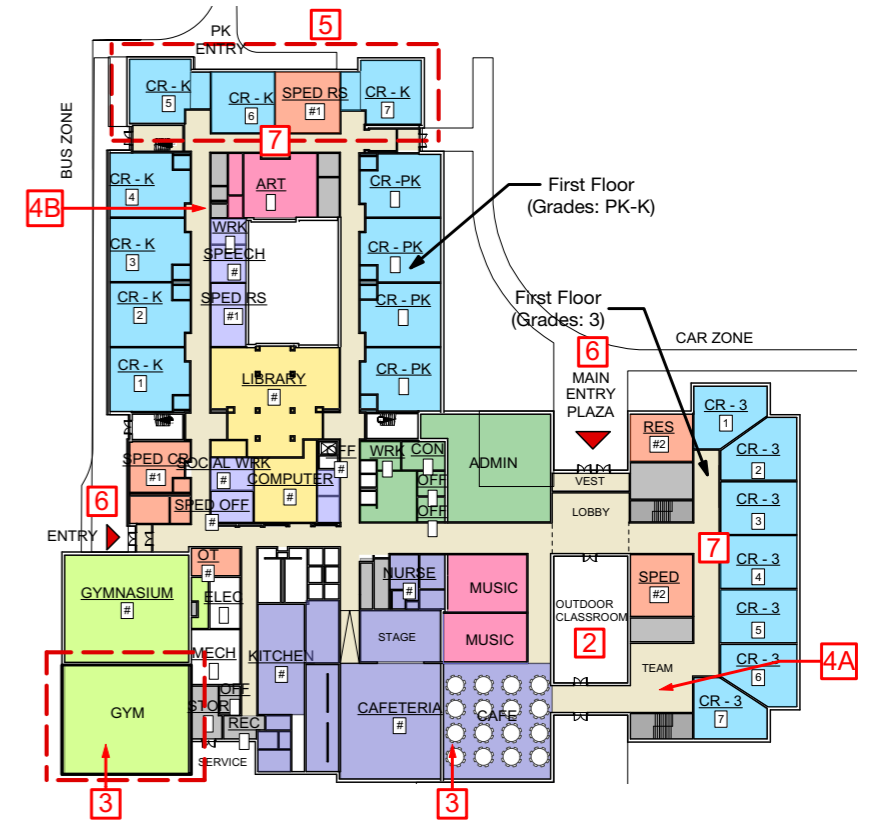
PROJECT MANAGEMENT **SMMA**
Massachusetts School Building Authority

Flansburgh Architects

Bournedale Addition/Renovation Option 2A (725 students)



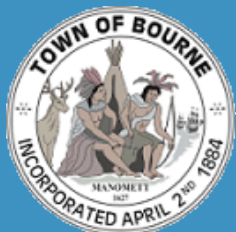
KEY	
1. Arts & Innovation Studio: -Grouped with Arts to promote collaboration, shared resources -Remote from Learning Commons	4A. Academic: Neighborhood collab/display
2. Outdoor Classroom: - Limits distraction to academic classrooms -project area with water, power	4B. Academic: Existing building limits opportunity for Team Areas
3. Community: -Larger venue to support greater community events	5. Play Area: Remote from gymnasium
	6. Separate car and bus drop-off entry locations
	7. Distinct academic neighborhood: Existing Wing: Pk-2, New Addition: 3-4



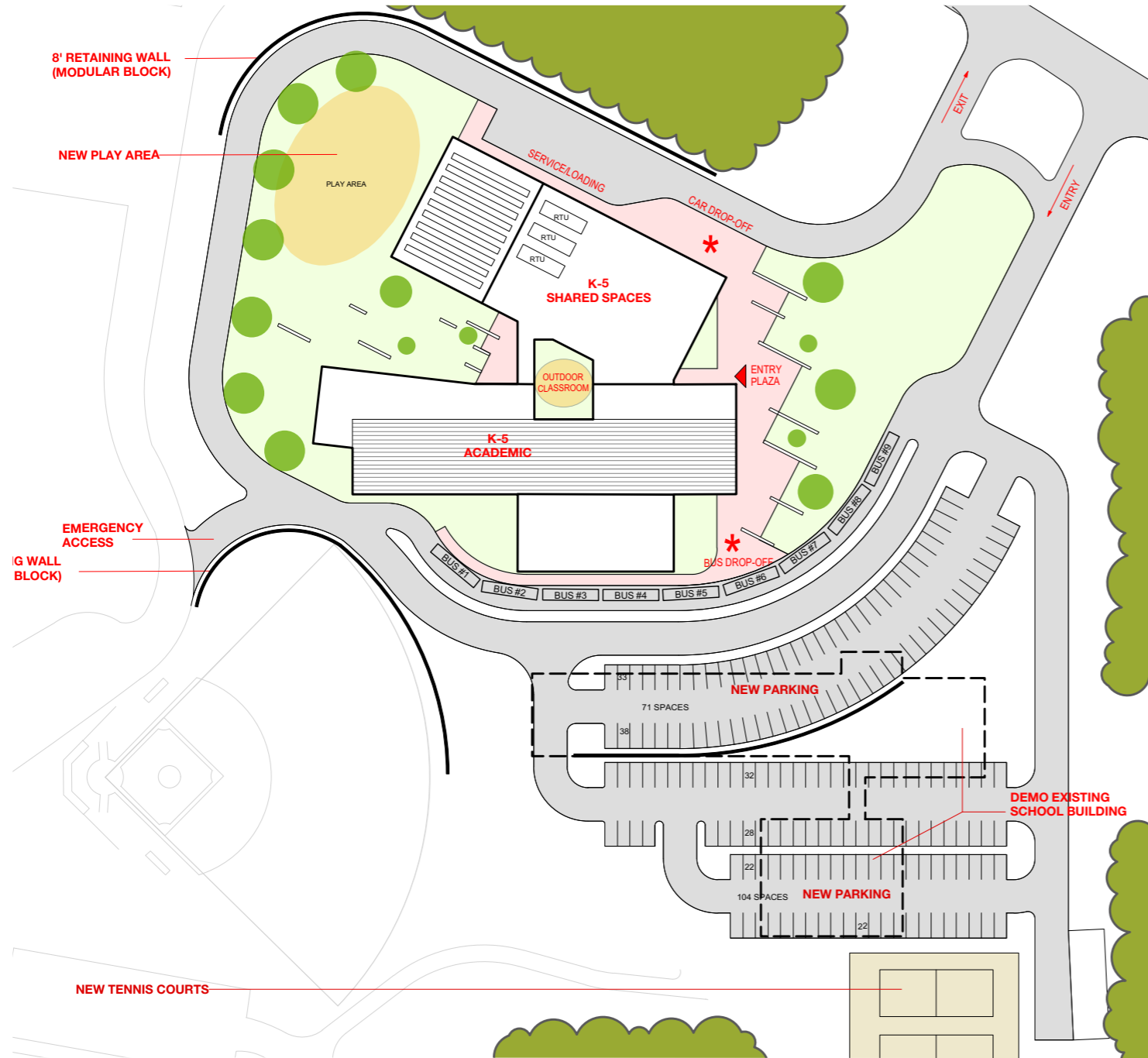
FIRST FLOOR PLAN



SECOND FLOOR PLAN



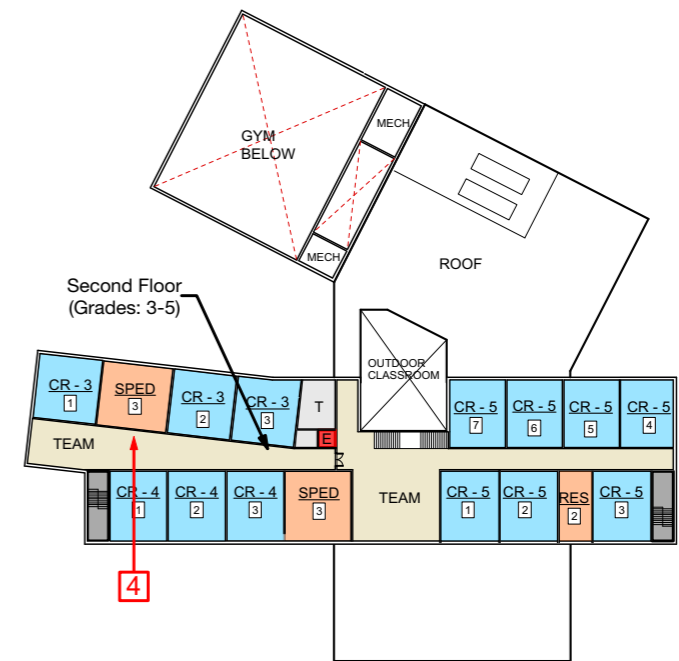
Peebles New Construction Option 4A (410 students)



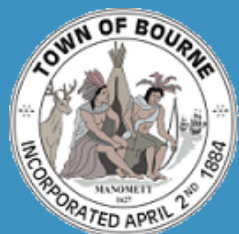
KEY	
1. Arts & Innovation Studio:	4. Academic:
-Grouped with Arts, Music, Makers Space & Learning Commons to promote collaboration, shared resources	-Neighborhood collab/display
2. Outdoor Classroom:	5. Play Area:
- Limits distraction to academic classrooms	-Adjacent to Gymnasium to limit distraction to academic classrooms
-project area with water, power	6. Campus Resource:
3. Community:	- Adjacent to Middle School and High School, Historic Village, Canal
- Stage open to gym & cafe to support larger venue to support greater community events on south side of the canal	7. Entry Plaza connects separate car and bus zones



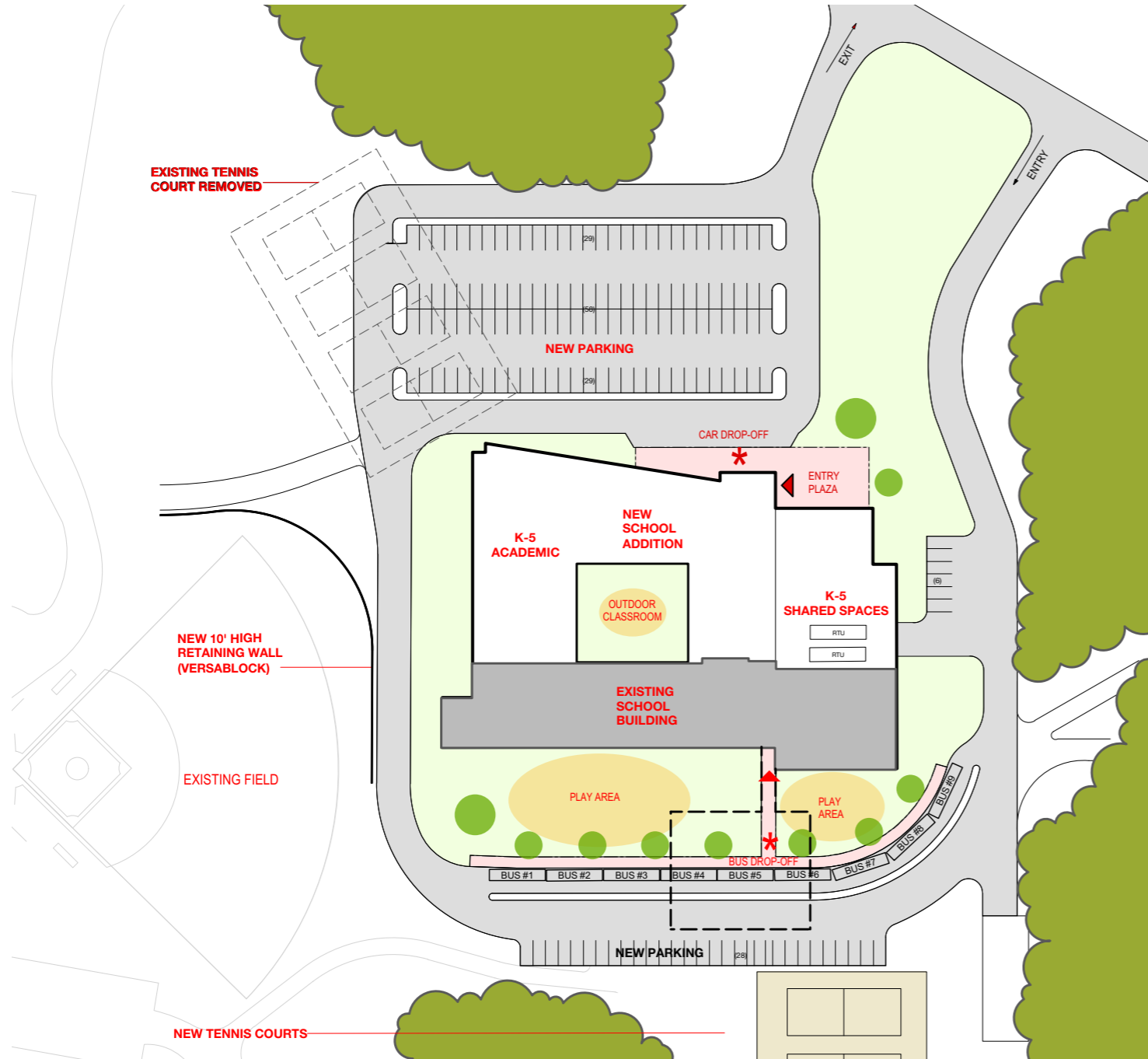
FIRST FLOOR PLAN



SECOND FLOOR PLAN



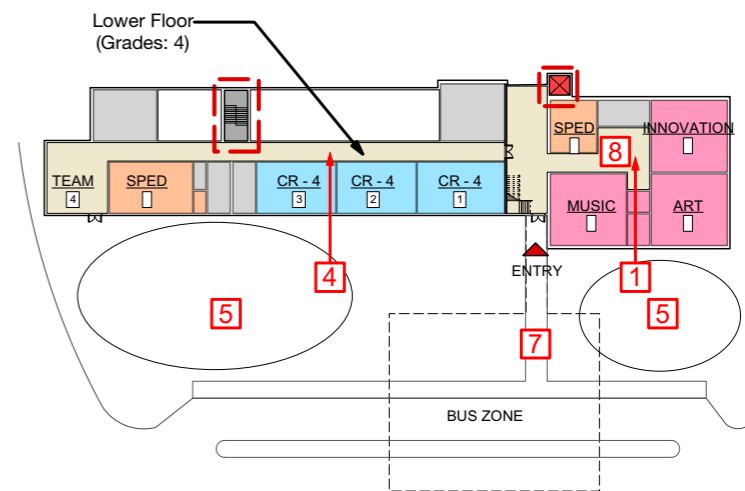
Peebles Addition/Renovation Option 4B (410 students)



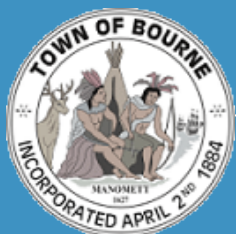
KEY		New Addition: - - - - -
1. Arts & Innovation Studio: -Grouped with Arts, Music, Makers Space & Learning Commons to promote collaboration, shared resources (tucked away on lower level)	4. Academic: Neighborhood collab/display -Existing Bldg. has limited opportunity for larger Team Areas	
2. Outdoor Classroom: - Embedded within classroom wings may disrupt learning	5. Play Area: Remote from gymnasium	
3. Community: - Larger venue to support greater community events on this side of the canal	6. Campus Resource: - Adjacent to Middle School and High School, Historic Village, Canal	
	7. Separate car and bus drop-off entry locations	
	8. Potential noise concerns from proximity of gym to admin & Arts/Innovation area to Cafeteria Above	



FIRST FLOOR PLAN



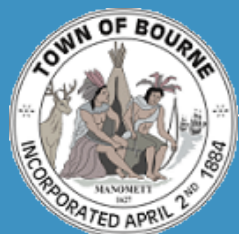
SECOND FLOOR PLAN



School Building Committee Meeting

February 18, 2016

Peebles Elementary School Feasibility Study



PROJECT MANAGEMENT **SMMA**
Massachusetts School Building Authority

Flansburgh Architects

Design Considerations

Date: 2/18/16

Peebles Elementary School Feasibility Study Educational and Working Group Meeting Action Items

Date	Meeting Comment	Party	Resolution
January 7, 2016 School Building Committee Meeting			
1	1/7/16 W. Meier would like to confirm that the Preferred Alternative will alleviate capacity and enrollment pressures for many years to come.	District	
2	1/7/16 S. Lamarche would like to understand the costs incurred by the Town for the Middle School and Bournedale projects in context to today's costs for the Four Alternatives.	SMMA	Escalation of Middle School and Bournedale costs presented at Feb 4 SBC meeting.
3	1/7/16 J. Potter would like to understand if there are any MSBA required spaces in the Four Alternatives that were not required in the Middle School and Bournedale projects.	District	
4	1/7/16 F. Howe would like to understand the transportation and travel impact differences between the Four Alternatives.	FAI	
5	1/7/16 J. Potter indicated the Design Team should factor in any future planned Traffic Improvements by the Cape Cod Commission that may impact the Four Alternatives.	FAI	Nitsch has studied work being completed as part of Cape Cod Commission improvements and determined this work will have no impact on the school project.
6	1/7/16 K. Anderson would like to understand what other similar-sized Communities have elementary schools as large as 725 students.	SMMA	Comparative costs of similar projects presented at Feb 4 SBC meeting.
7	1/7/16 P. Meier would like to understand what other Town-projects may be seeking capital project funding appropriations over the next few years.	Town	
8	1/7/16 S. Lamarche would like to understand the Peebles community's emotional and cultural viewpoint for keeping the existing Peebles school and renovating versus razing and constructing new.	SBC	(To be determined through survey)
9	1/7/16 J. Norton would like to understand the cost and educational impact of doing nothing and maintaining the 62 year old Peebles.	District	
January 21, 2016 Community Forum #4			
1	1/21/16 Scope of Traffic Studies: use of bridges during peak times, for example, Friday afternoons April-Sept	SBC	Further study of traffic impact was not elected to be pursued.
2	1/21/16 Peebles Remediation Costs: Option 2 costs do not include any work at Peebles. Need to determine future use of Peebles building and cost to renovate or income from selling or leasing.	SBC	
3	1/21/16 MSBA reimbursement: Breakdown of cost to community and potential reimbursement would be helpful for consideration.	SMMA	Tentative reimbursement percentages presented at Feb 4 and Feb 18 SBC meetings.
February 4, 2016 School Building Committee Meeting			
1	2/4/16 Bus travel distances for Peebles and Bournedale options should be taken into consideration. K. Kovacs and E. Donoghue to meet week of 2/8.	FAI	Project impacts on bus travel presented at Feb 18 SBC meeting.
2	2/4/16 Inclusion of 5th grade is a policy decision for the School Committee. C. Hyldburg to follow up with School Committee to provide direction to SBC.	SBC	
3	2/4/16 Public survey to garner community input could be helpful. SBC to develop questions for release at next community forum (No.5), with presentation of results at Forum No.6	SBC	

Bus Travel

Current Condition

- Remote Areas experience travel times between 45-60 minutes
- Seasonal traffic begins in April and extends through September
 - › Affects Thursday afternoon and Friday morning and afternoon

Design Options

- Option 1A (grades K-4): No change required
- Option 2A (grades PreK-4 district-wide): Requires 15 minute change in start/end times
 - › Currently 3:00 pm, proposed 3:15 pm
- Option 4A and 4B (grades K-5): Requires one to two new buses to accommodate 5th grade

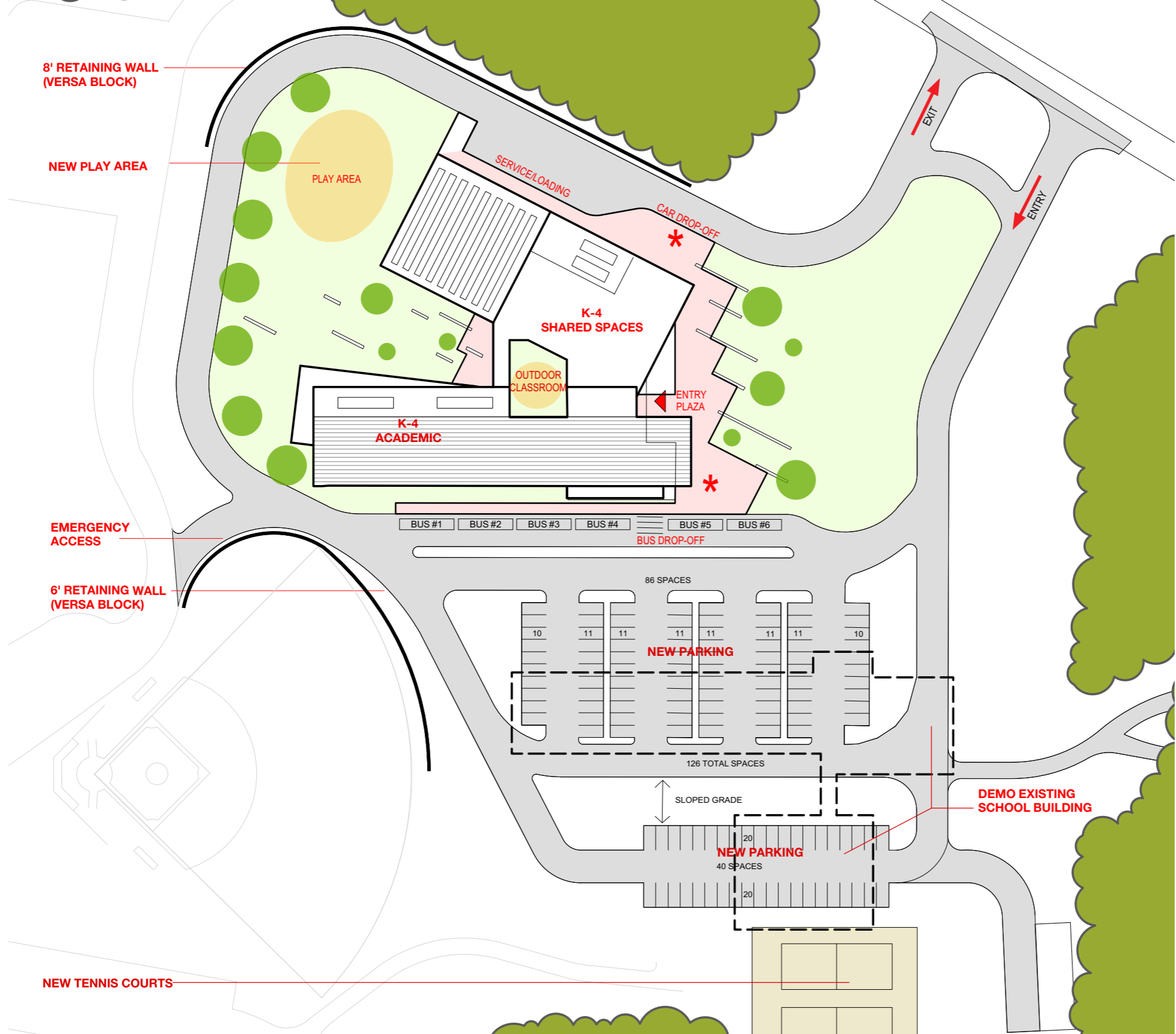
Cost of Design Alternatives

		Option 1 (K-4) 250 students	Option 2 (PK-4) 725 students	Option 4 (K-5) 410 students		Base Repair Only
		1A New	2A Add/Reno	4A New	4B Add/Reno	
Gross SF		57,248 SF	114,593 SF	72,473 SF		55,190 SF
*Construction Cost \$ (Hard Cost)	Building	\$23.25M	\$25.63M	\$26.96M	\$27.46M	\$10.53M
	Hazmat/Demo	\$1.71M	\$0	\$1.7M	\$1.21M	\$1.16M
	Sitework	\$4.05M	\$4.65M	\$4.34M	\$4.29M	\$.38M
	Total	\$29.01M	\$30.28M	\$32.99M	\$32.96M	\$12.07M
Soft Cost \$	Fees & Expenses	\$5.9M	\$5.61M	\$6.5M	\$6.13M	\$2.8M
	FF&E	\$.75M	\$1.02M	\$1.23M	\$1.23M	\$.25M
	Contingencies	\$2.32M	\$2.42M	\$2.64M	\$2.97M	\$1.68M
Other Town Costs		no cost	TBD	no cost	no cost	no cost
TOTAL		\$37.98M	\$39.34M New Addition: 46,493 Extensive Reno: 15,800 Light Reno: 52,300	\$43.36M	\$43.28M New Addition: 34,916 Extensive Reno: 37,557	\$16.8M
Cost per SF		\$663	\$343	\$598	\$597	\$304

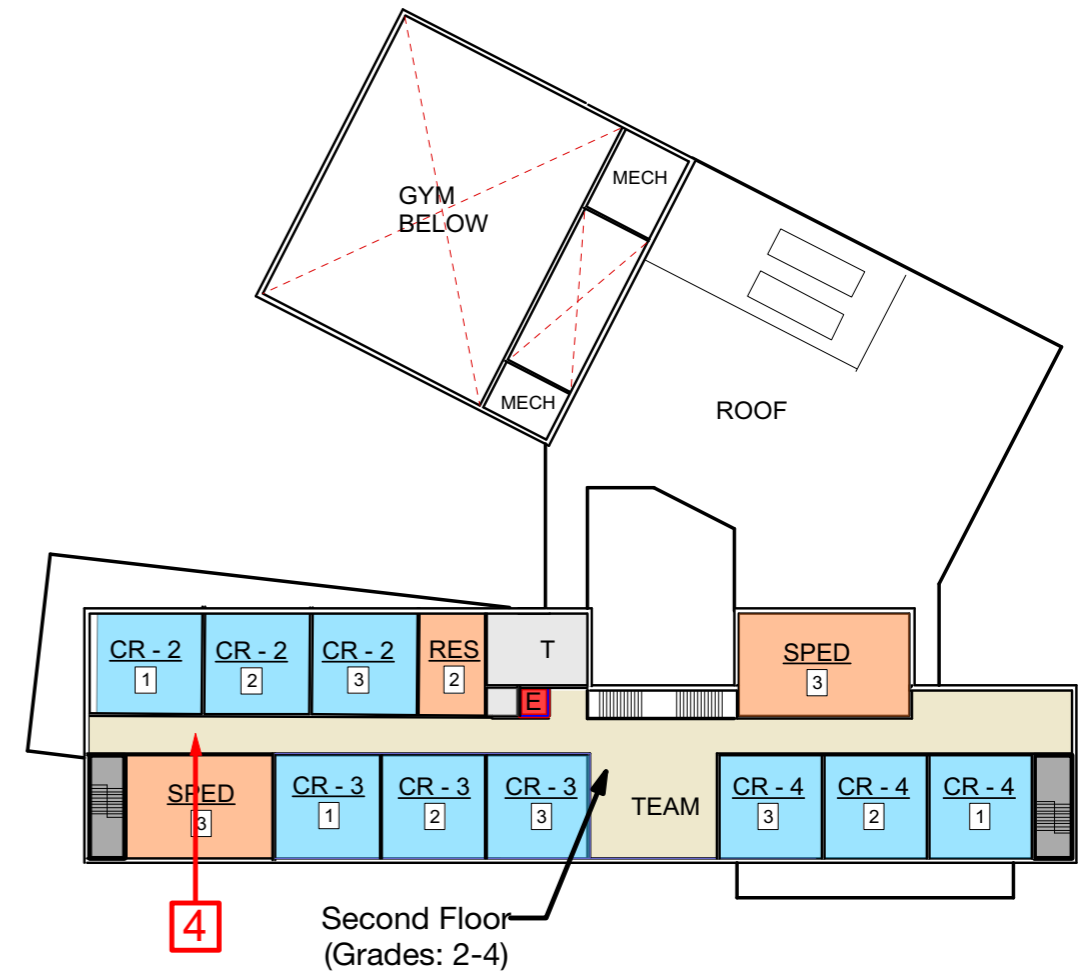
* Estimated Cost subject to change as project is refined

DESIGN ALTERNATIVES

Peebles New Construction Option 1A (250 students)



Peebles New Construction Option 1A (250 students)



FIRST FLOOR PLAN

SECOND FLOOR PLAN

KEY	
1. Arts & Innovation Studio: -Grouped with Arts, Music, Makers Space & Learning Commons to promote collaboration, shared resources	4. Academic: -Neighborhood collab/display
2. Outdoor Classroom: - Limits distraction to academic classrooms -project area with water, power	5. Play Area: -Adjacent to Gymnasium to limit distraction to academic classrooms
3. Community: - Stage open to gym & cafe to support larger venue to support greater community events on this side of the canal	6. Campus Resource: - Adjacent to Middle School and High School, Historic Village, Canal
	7. Entry Plaza connects separate car and bus zones

Bournedale Addition / Renovation Option 2A (725 students)



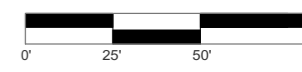
Bournedale Addition / Renovation Option 2A (725 students)



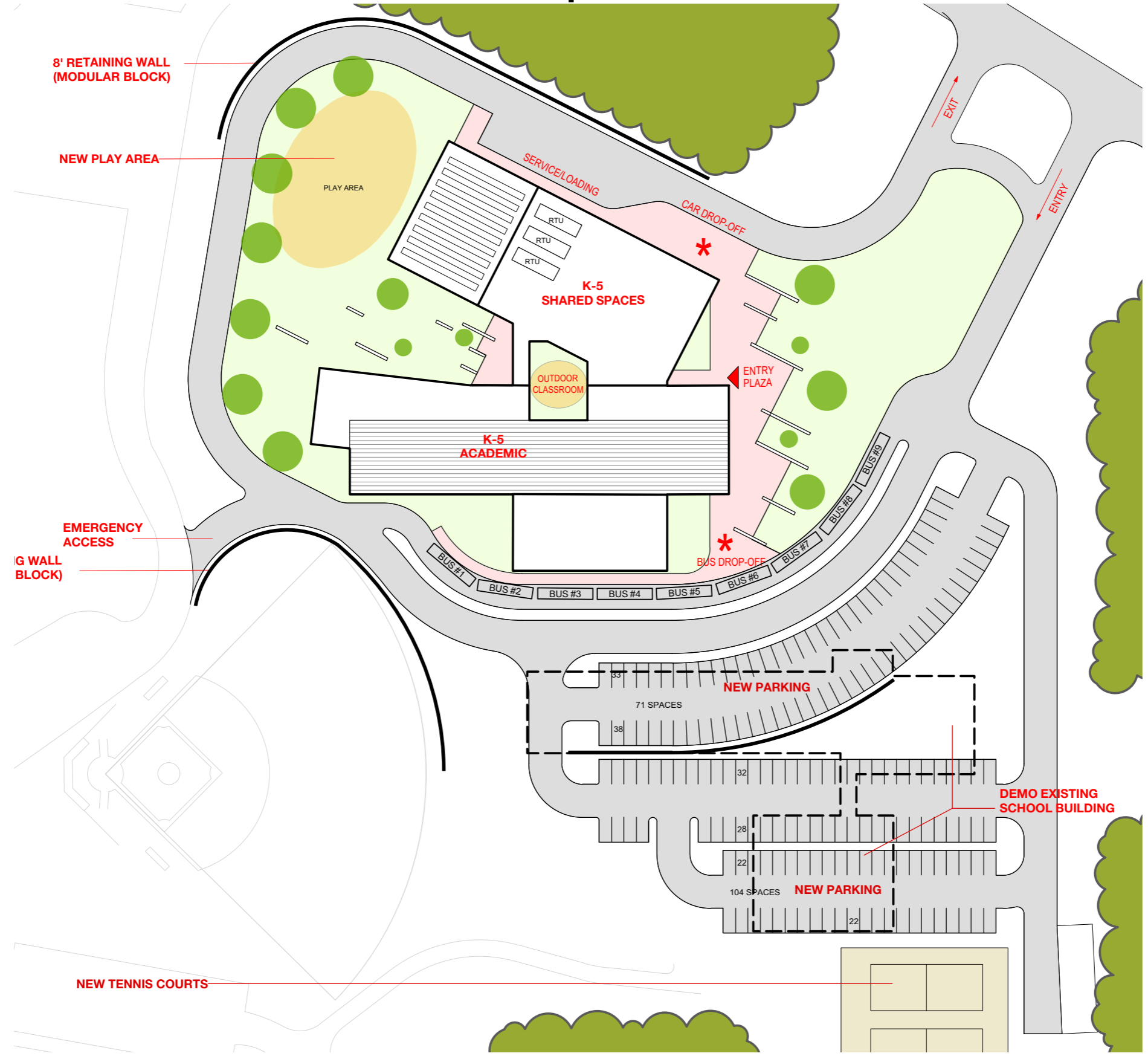
FIRST FLOOR PLAN

SECOND FLOOR PLAN

- KEY**
- 1. Arts & Innovation Studio:
 - Grouped with Arts to promote collaboration, shared resources
 - Remote from Learning Commons
 - 2. Outdoor Classroom:
 - Limits distraction to academic classrooms
 - project area with water, power
 - 3. Community:
 - Larger venue to support greater community events
 - 4A. Academic: Neighborhood collab/display
 - 4B. Academic: Existing building limits opportunity for Team Areas
 - 5. Play Area: Remote from gymnasium
 - 6. Separate car and bus drop-off entry locations
 - 7. Distinct academic neighborhood:
 - Existing Wing: Pk-2, New Addition: 3-4
- New Addition: - - - - -



Peebles New Construction Option 4A (410 students)



Peebles New Construction Option 4A (410 students)

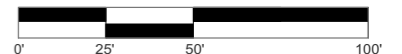


FIRST FLOOR PLAN

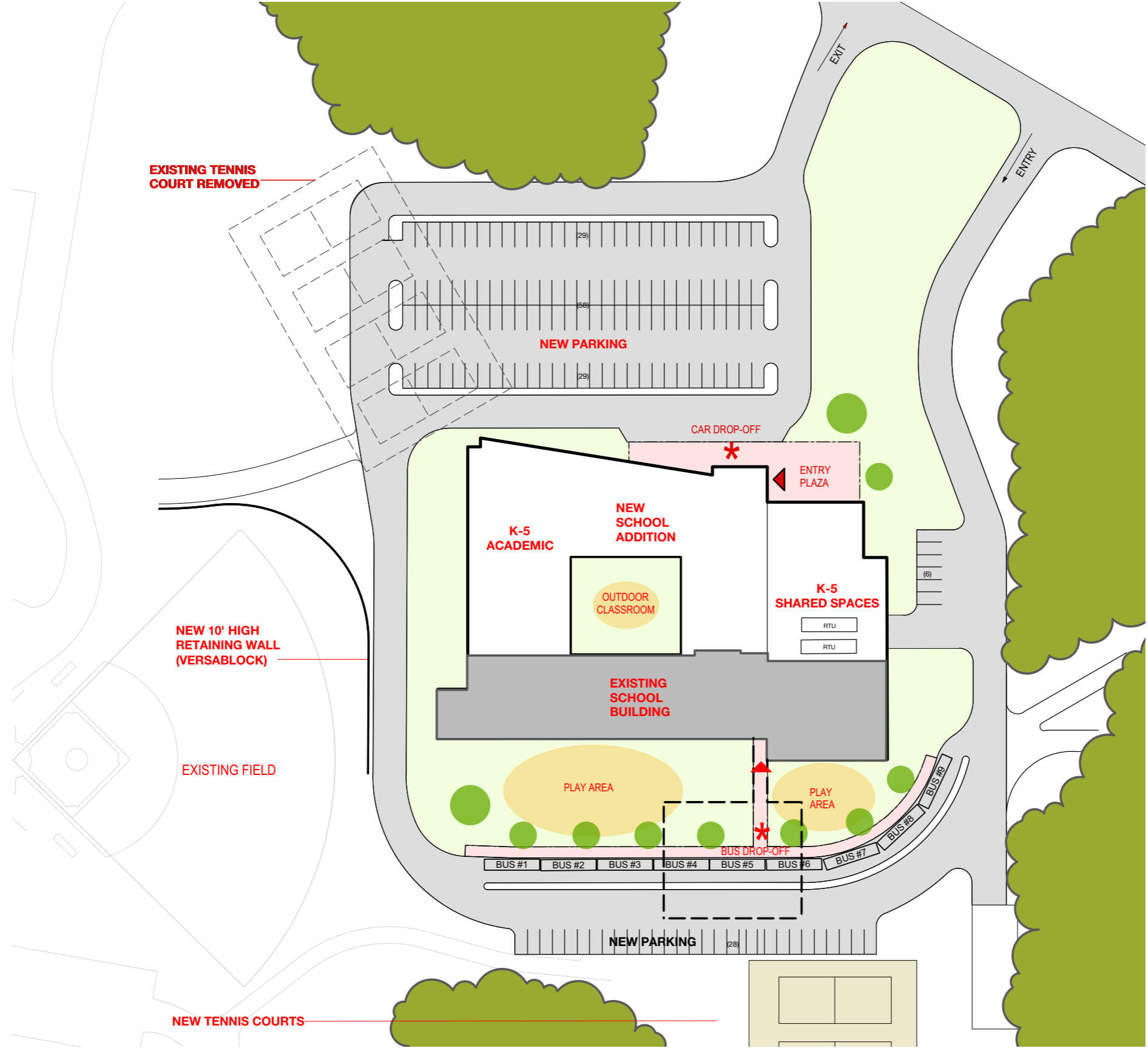


SECOND FLOOR PLAN

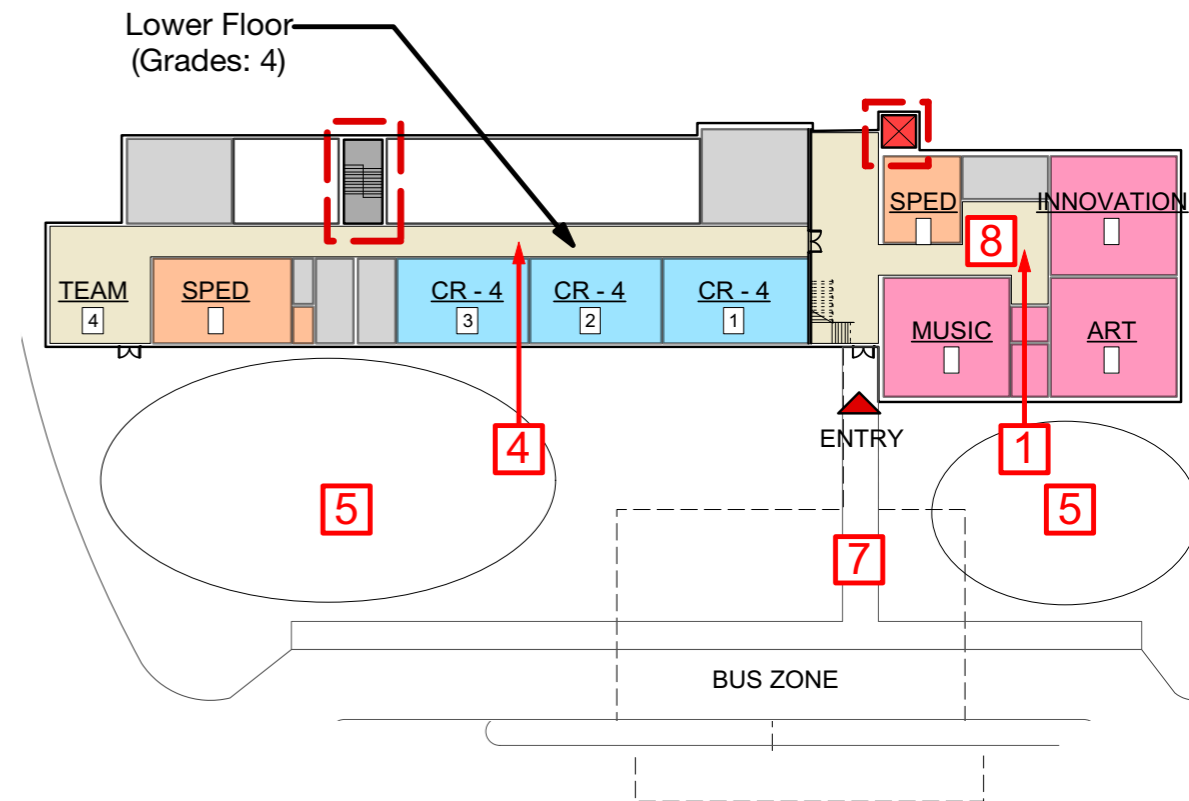
KEY	
1. Arts & Innovation Studio: -Grouped with Arts, Music, Makers Space & Learning Commons to promote collaboration, shared resources	4. Academic: -Neighborhood collab/display
2. Outdoor Classroom: - Limits distraction to academic classrooms -project area with water, power	5. Play Area: -Adjacent to Gymnasium to limit distraction to academic classrooms
3. Community: - Stage open to gym & cafe to support larger venue to support greater community events on south side of the canal	6. Campus Resource: - Adjacent to Middle School and High School, Historic Village, Canal
	7. Entry Plaza connects separate car and bus zones



Peebles Addition / Renovation Option 4B (410 students)



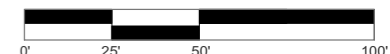
Peebles Addition / Renovation Option 4B (410 students)



FIRST FLOOR PLAN

SECOND FLOOR PLAN

KEY		New Addition: - - - - -
1.	Arts & Innovation Studio: -Grouped with Arts, Music, Makers Space & Learning Commons to promote collaboration, shared resources (tucked away on lower level)	
2.	Outdoor Classroom: - Embedded within classroom wings may disrupt learning	
3.	Community: - Larger venue to support greater community events on this side of the canal	
4.	Academic: Neighborhood collab/display - Existing Bldg. has limited opportunity for larger Team Areas	
5.	Play Area: Remote from gymnasium	
6.	Campus Resource: - Adjacent to Middle School and High School, Historic Village, Canal	
7.	Separate car and bus drop-off entry locations	
8.	Potential noise concerns from proximity of gym to admin & Arts/Innovation area to Cafeteria Above	



PROJECT REIMBURSEMENT

MSBA Reimbursement Process

- MSBA is the state authority that administers and funds a program for grants for Massachusetts school projects.
- MSBA mandates a multi-step rigorous study and approval process.
- MSBA will reimburse all Eligible Costs.
 - Examples of Ineligible Costs are:
 - › Site Costs Over 8%,
 - › Building Costs Over \$299/sf,
 - › Asbestos Flooring Abatement,
 - › FFE/Technology Costs Over \$2,400/Student,
 - › Legal Fees, Moving Expenses, Construction Contingencies over 1% for new construction or 2% for renovations.
 - › Prior Grant Cost Recovery on Previously Reimbursed Projects

Projected Project Reimbursement Rate for Eligible Costs

	Option 1A	Option 2A	Option 4A	Option 4B
Base Reimbursement Rate	43.84	43.84	43.84	43.84
Maintenance	1.00	1.00	1.00	1.00
CM @ Risk	1.00	1.00	1.00	1.00
Renovation	0.00	2.97	0.00	2.59
Green Schools	2.00	2.00	2.00	2.00
Total Reimbursement Rate	47.84	50.81	47.84	50.43

Projected Project Reimbursement Rate for Eligible Costs

	Option 1A	Option 2A	Option 4A	Option 4B
Project Cost	\$37.98 M	\$39.34M	\$43.36M	\$43.28M
Approximate MSBA Grant	\$12.32M	\$17.95M*	\$15.01M	\$15.54M
Approximate Cost to Bourne	\$25.66M	\$21.38M*	\$28.35M	\$27.74M

* Note: Option 2A Cost to Bourne may be increased by Prior Grant Cost Recovery as determined by MSBA

COMMUNITY FORUM NO. 5 PREP

Bourne Elementary Schools Community Workshop

Join us at a community meeting on March 3rd
to share your thoughts on the school project

DISCUSS the selected designs

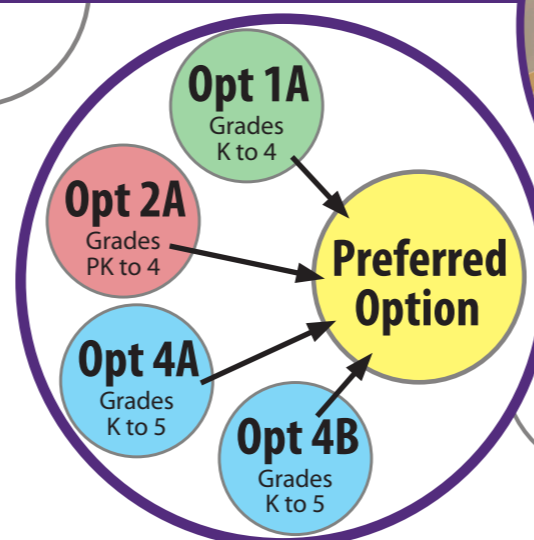
Review refinements to the four design alternatives selected for further study, as well as preliminary cost and schedule.

Learn about a community-wide survey

Contribute to the design evaluation process and provide input on the future of Bourne Elementary Schools.

Share your thoughts

Tell us your thoughts on narrowing the final four design alternatives to one.



Location: Peebles Elementary School Cafeteria, 70 Trowbridge Rd, Bourne

Date/Time: March 3rd, 6:00 - 8:00 PM

Town Website: <http://www.townofbourne.com/school-building-committee> **Project Email:** sbc@townofbourne.com

CHILD CARE WILL BE PROVIDED AT THE SCHOOL

Project Management: SMMA

Flansburgh Architects

Sponsored by the School Building Committee

Community Forum No.4 Recap

One or Two school solution?

- 1A - “Status Quo” with two elementary schools remaining on both sides of the canal
- 2A - A consolidated school on one side of the canal
- 4A&B - Two elementary schools remain on both sides of the canal with a 5th grade solution

5th grade or not?

- Opinion on Option Four voiced by community member: Seems to provide the largest benefit with most space, access to campus resources, and accommodates the 5th grade

What to do with Peebles?

- Option 2 project cost does not include any work at Peebles
- Building could be viewed as liability OR as an asset:
 - › Cost of renovating vs. income from selling or leasing

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Technical Data Sheet for DOAS-1



Job Information		Technical Data Sheet
Job Name	Bourne HVAC	
Date	2/18/2016	
Submitted By	Tim Tashjian	
Software Version	03.90	
Unit Tag	DOAS-1	

Unit Overview				
Model Number	Voltage V/Hz/Phase	Design Cooling Capacity Btu/hr	AHRI 360 Standard Efficiency	ASHRAE 90.1
RPS045D	460/60/3	533482	10.3	2013 Compliant

Unit	
Model Number:	RPS045D
Altitude:	0 ft
Heat Type:	Gas
Hot Gas Reheat:	Factory mounted, Blow thru
Energy Recovery:	Energy Recovery, Economizer, Size 045-079, 047
Condenser Type:	Air-Cooled
Approval	ETL/MEA-USA unit

Physical			
Unit			
Length	Height	Width	Weight
491 in	73.0 in	99.0 in	15127 lb

Electrical			
Voltage	MCA	MROPD	SCCR
460/60/3	114.2 A	125 A	10 kAIC

Energy Recovery				
Design OA Volume	Design Exhaust Volume	Wheel Press Drop	Motor HP	Motor FLA
9000 CFM	9000 CFM	0.71 inH ₂ O	1.00 HP	2.0 A
Number of Wheels		Wheel Depth	Filter (Qty) Size	
1		6 in	(14) 16 in x 20 in x 2 in (42) 6 in x 25 in x 2 in	

Summer Conditions											
Air Temperature								Recovered Capacity		Effectiveness	
Outside		Return		Wheel Leaving		Mixed		Total Btu/hr	Sensible Btu/hr	Total	Sensible
Dry Bulb °F	Wet Bulb °F	Dry Bulb °F	Wet Bulb °F	Dry Bulb °F	Wet Bulb °F	Dry Bulb °F	Wet Bulb °F				
91.0	73.0	78.0	66.5	81.5	68.5	81.5	68.5	155741	92146	71.01	72.92

Winter Conditions											
Temperature								Recovered Capacity		Effectiveness	
Outside		Return		Wheel Leaving		Mixed		Total Btu/hr	Sensible Btu/hr	Total	Sensible
Dry Bulb °F	Wet Bulb °F	Dry Bulb °F	Wet Bulb °F	Dry Bulb °F	Wet Bulb °F	Dry Bulb °F	Wet Bulb °F				
5.0	4.0	70.0	50.0	53.5	40.6	53.5	40.6	544883	471649	73.95	74.65

Defrost Option: Frost Protection

Rpscompstart

Technical Data Sheet for DOAS-1

Return/Outside/Exhaust Air			
Outside Air Option			
Type		Damper Actuator	
Energy Recovery, Economizer		Electric Actuator	
Return Air Option			
Return Air Location:	Bottom		
Return Air Options:	Frost Protection		
Fan			
Type	Fan Diameter	Vibration Isolation	Drive Type
SWSI AF	40 in	Spring Isolation with Seismic Snubbers	150% Service Factor, Fixed Drive
Motor			
Horsepower	Type		Full Load Current
10.0 HP	ODP, Premium Efficiency		12.9 A
Performance			
Air Flow CFM	External Static Pressure inH ₂ O	Fan Speed rpm	Brake Horsepower HP
9000	1.5	682	6.90

Filter Section				
Physical				
Type	(Quantity) Height x Width x Depth	Face Area	Face Velocity	Air Pressure Drop
30% Nominal Efficiency (MERV 8)	(7) 16 in x 20 in x 2 in (21) 16 in x 25 in x 2 in	73.9 ft ²	121.8 ft/min	0.03 inH ₂ O

DX Cooling Coil								
Physical								
Fins per Inch	Rows	Face Area	Face Velocity	Air Pressure drop	Drain Pan Material			
12	6	39.5 ft ²	227.8 ft/min	0.43 inH ₂ O	Stainless Steel			
Cooling Performance								
Capacity		Refrigerant Type	Indoor Air Temperature				Ambient Air Temperature	
Total Btu/hr	Sensible Btu/hr		Entering		Leaving		Dry Bulb °F	Wet Bulb °F
			Dry Bulb °F	Wet Bulb °F	Dry Bulb °F	Wet Bulb °F		
533482	319170	R410A	81.1	68.2	48.6	48.2	95.0	75.0

Hot Gas Reheat Coil Section				
Type	Air Pressure Drop	Total Capacity	Air Temperature Dry Bulb	
			Entering	Leaving
Aluminum Tube Micro-Channel	0.07 inH ₂ O	332549 Btu/hr	48.6 °F	81.7°F
Coil Location:	Mounted to entering air uprights of Discharge section			

Technical Data Sheet for DOAS-1

Fan Section			
Fan			
Type	Fan Wheel Diameter	Fan Isolation	
AF DWDI	30 in	Spring with Seismic Snubbers	
Performance			
Airflow	Total Static Pressure	Fan Speed	Brake Horsepower
9000 CFM	3.49 inH ₂ O	1040 rpm	7.82 HP
Motor			Drive
Type	Horsepower	FLA	Type
ODP, Premium Efficiency	10.0 hp	12.9 A	150% service factor, Fixed drive

Gas Heat Section							
Physical		Performance					
Gas Heat Size	Input Capacity Btu/hr	Output Capacity Btu/hr	Air Temperature Dry Bulb		Air Pressure Drop inH ₂ O	Gas Pressure	
			Entering °F	Leaving °F		Minimum In WC	Maximum psi
400 MBH	500000	400000	53.5	94.5	0.30	4.5	0.5
Heat Exchanger Material:		Type 321 Stainless Steel					
Modulation:		Hi Turndown - 20:1					

Discharge Plenum	
Discharge Location:	Bottom

Condensing Section				
Compressor				
Type	Quantity	Total Power	Capacity Control	Compressor Isolation
Scroll	4	35.3 kW	4 stage	Resilient
Compressor Amps:				
Fixed Speed Compressor 1			17.9 A	
Fixed Speed Compressor 2			17.9 A	
Fixed Speed Compressor 3			17.9 A	
Fixed Speed Compressor 4			17.9 A	
Compressor Options:		Refrigeration Service Valves		
Piping Options:		Hot gas bypass, circuit 1		
Condenser Coil				
Type	Fins per Inch	Fin Material	Refrigerant Charge	
Aluminum tube MicroChannel	18	Aluminum	95.8 lb	
Condenser Coil Options:		Build in Hail Protection		
Condenser Fan Motors				
Number of Motors		Full Load Current (each)		
4		2.1 A		
AHRI 360 Certified Data at AHRI 360 Standard Conditions				
EER	IEER	ASHRAE 90.1		
10.3	14.1	2013 Compliant		

Technical Data Sheet for DOAS-1

Sound								
Sound Power (db)								
Frequency	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Inlet	88	89	82	80	78	73	65	58
Discharge	85	84	75	73	70	64	56	48
Radiated	-	94	91	89	89	86	83	82

Supply Fan Total Pressure Drop Calculation	
External Static Pressure:	1.50 inH ₂ O
Energy Recovery Wheel path:	0.86 inH ₂ O
Filter:	0.03 inH ₂ O
Dirty Filter:	0.30 inH ₂ O
DX Coil:	0.43 inH ₂ O
Hot Gas Reheat:	0.07 inH ₂ O
Gas Heat:	0.30 inH ₂ O
Total Static Pressure:	3.49 inH ₂ O

Return/Exhaust Fan Total Pressure Drop Calculation	
External Static Pressure:	1.50 inH ₂ O
Energy Recovery Path:	0.88 inH ₂ O
Total Static Pressure:	2.38 inH ₂ O

Options	
Unit	
Unit Exterior:	Prepainted Galvanized Steel
Insulation and Liners:	2", 1 1/2# nominal insulation, full solid liners
Underliners:	Sheet Metal Underliner - Recommended for rail mounted units
Fan Section Lights:	Supply And Return Fan Section Light
Belt Guards:	Exhaust Air Fan Belt Guard
Electrical	
Electrical Connection Option:	Single power block
GFI 115v Receptacle:	Field powered
Power Options:	Phase Failure and Groundfault Protection
Controls	
Application:	Variable Volume - Discharge Air Control
Temperature Control:	DAC, BACNet MSTP communication card
Fan Speed Control:	Factory mounted Inverter
Inverter Manufacturer:	ABB
Inverter Location:	Inverter(s) in fan section
Airflow Control:	1 duct sensor, 1 space sensor
Economizer Control:	Comparitive Enthalpy Control
Line Reactors:	Factory mounted Line Reactors
Bypass Contactors:	Factory mounted Bypass Contactors
Low Ambient:	Fantrol, operation to 45 deg F (7.22 deg C)

Warranty	
Parts:	Standard 1 year
Compressor:	Extended 4 year, 5 year total
Gas Heat Exchanger:	One year heat exchanger warranty

Technical Data Sheet for DOAS-1

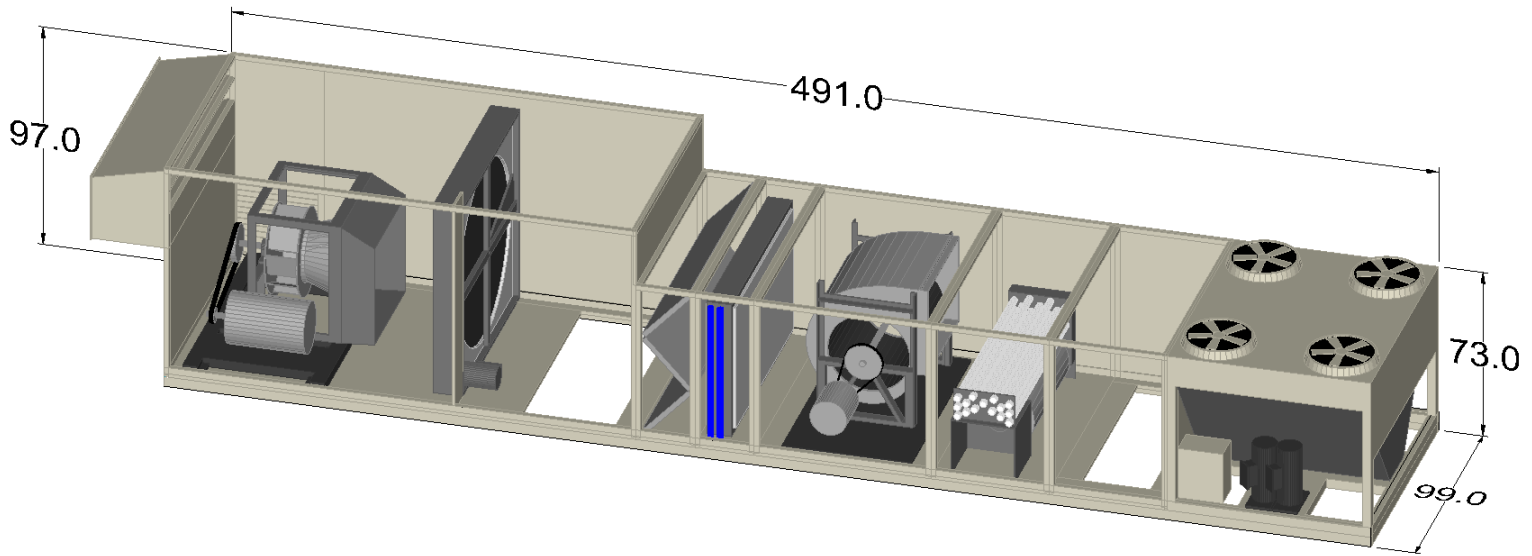
AHRI Certification



All equipment is rated and certified in accordance with AHRI 360.

Notes

As a standalone component, unit meets or exceeds the requirements of ASHRAE 90.1.2010. The approving authority is responsible for compliance of multi-component building systems.




Job Number: TBIBFJ
 Job Name: Bourne HVAC

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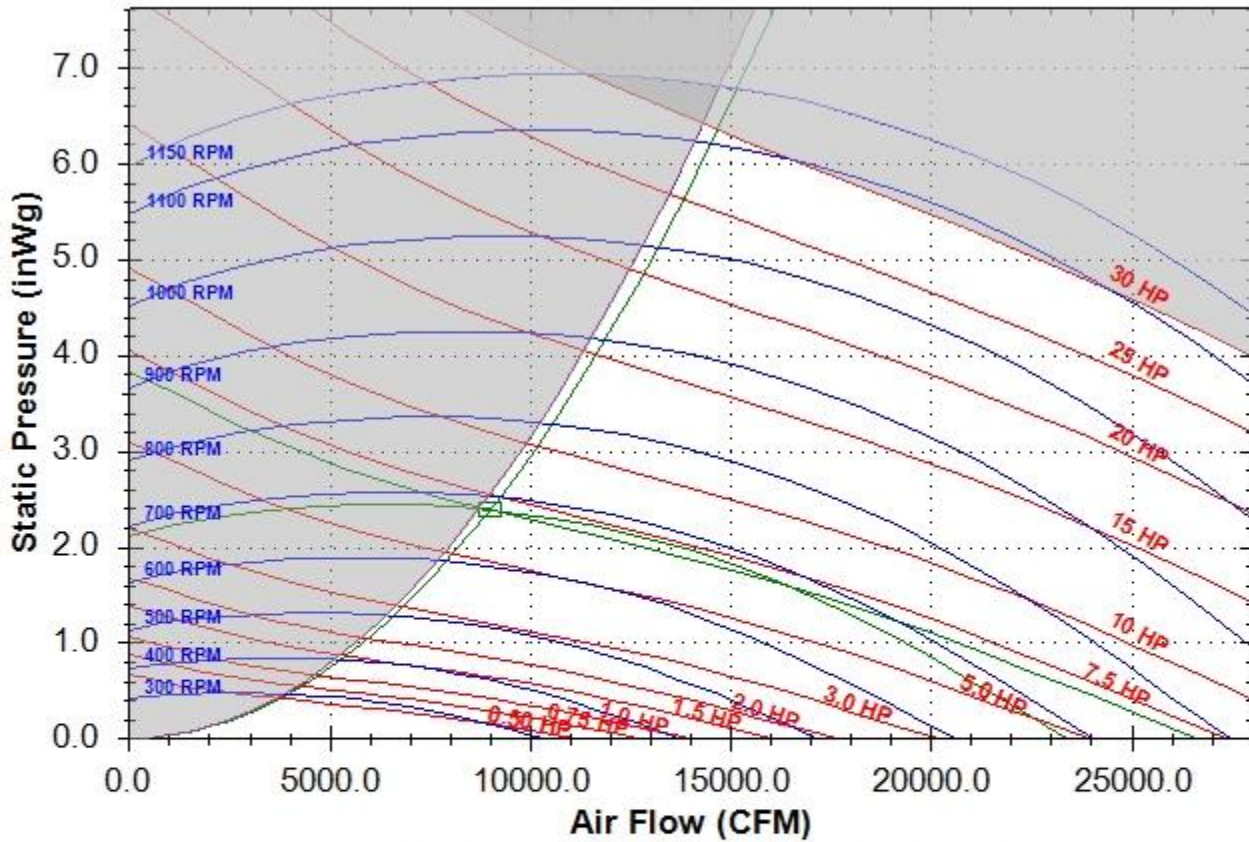
Prepared Date:

2/18/2016
 www.DaikinApplied.com

Product Drawing	Unit Tag: DOAS-1			Sales Office: Stebbins-Duffy, Inc. (Boston)			 13600 Industrial Park Blvd. Minneapolis, MN 55441 www.DaikinApplied.com Software Version: 03.90
Product:	Project Name: Bourne HVAC			Sales Engineer:			
Model: RPS045D	Feb. 18, 2016	Ver/Rev:	Sheet: 1 of 1	Scale: NTS	Tolerance: +/- 0.25"	Dwg Units: in [mm]	
No change to this drawing may be made unless approved in writing by Daikin Applied. Purchaser must determine that the equipment is fit and sufficient for the job specifications.							

Fan Curve - Exhaust for DOAS-1

Daikin Rooftop Packaged Fan Selection

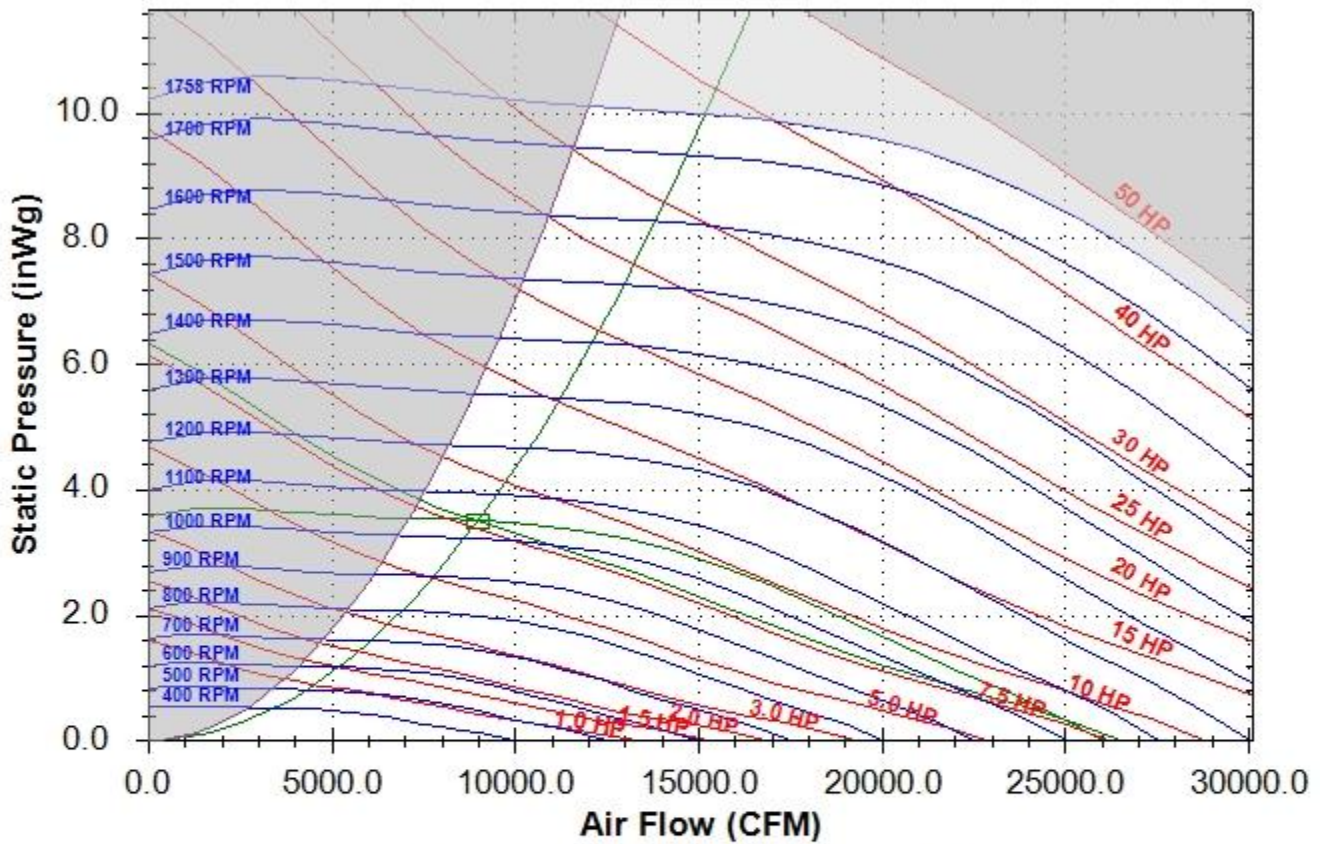


40.0 SWSI - Plenum Exhaust Fan at Standard Conditions								
Base Tag	DOAS-1				Date	Feb-18-2016		
Job Name	Bourne HVAC				Time	1:20 PM		
Air Volume	9000	CFM		Fan Speed	682	RPM		
Total Static	2.38	inWg		Max Speed	1150	RPM		
Brake Horsepower	6.90	HP		Efficiency	49	%		
Unit Sound Power	63hz	125hz	250hz	500hz	1000hz	2000hz	4000hz	8000hz
Inlet Sound Power	87	88	81	79	78	73	65	57
Outlet Sound Power	83	82	73	71	68	62	54	46
Radiated Sound Power	0	94	91	89	89	86	83	82



Fan Curve - Supply for DOAS-1

Daikin Rooftop Packaged Fan Selection



30.0 DWDI - Airfoil Supply Fan at Standard Conditions								
Base Tag	DOAS-1				Date	Feb-18-2016		
Job Name	Bourne HVAC				Time	1:20 PM		
Air Volume	9000	CFM			Fan Speed	1040	RPM	
Total Static	3.49	inWg			Max Speed	1758	RPM	
Brake Horsepower	7.82	HP			Efficiency	63	%	
Unit Sound Power	63hz	125hz	250hz	500hz	1000hz	2000hz	4000hz	8000hz
Inlet Sound Power	88	89	82	80	78	73	65	58
Outlet Sound Power	85	84	75	73	70	64	56	48
Radiated Sound Power	0	94	91	89	89	86	83	82



Technical Data Sheet for DOAS-2



Job Information		Technical Data Sheet	
Job Name	Bourne HVAC		
Date	2/18/2016		
Submitted By	Tim Tashjian		
Software Version	03.90		
Unit Tag	DOAS-2		

Unit Overview				
Model Number	Voltage V/Hz/Phase	Design Cooling Capacity Btu/hr	AHRI 360 Standard Efficiency	ASHRAE 90.1
RPS035D	460/60/3	386827	10.3	2013 Compliant

Unit	
Model Number:	RPS035D
Altitude:	0 ft
Heat Type:	Gas
Hot Gas Reheat:	Factory mounted, Blow thru
Energy Recovery:	Energy Recovery, Economizer, Size 015-042, 800, 802
Condenser Type:	Air-Cooled
Approval	ETL/MEA-USA unit

Physical			
Unit			
Length	Height	Width	Weight
389 in	55.5 in	94.0 in	11725 lb

Electrical			
Voltage	MCA	MROPD	SCCR
460/60/3	96.4 A	110 A	10 kAIC

Energy Recovery				
Design OA Volume	Design Exhaust Volume	Wheel Press Drop	Motor HP	Motor FLA
6500 CFM	6500 CFM	1.04 inH ₂ O	0.75 HP	1.6 A
Number of Wheels		Wheel Depth	Filter (Qty) Size	
1		4 in	(12) 16 in x 20 in x 2 in (12) 6 in x 25 in x 2 in	

Summer Conditions											
Air Temperature								Recovered Capacity		Effectiveness	
Outside		Return		Wheel Leaving		Mixed		Total Btu/hr	Sensible Btu/hr	Total	Sensible
Dry Bulb °F	Wet Bulb °F	Dry Bulb °F	Wet Bulb °F	Dry Bulb °F	Wet Bulb °F	Dry Bulb °F	Wet Bulb °F				
91.0	73.0	78.0	66.5	82.0	68.7	82.0	68.7	106471	63434	67.21	69.51

Winter Conditions											
Temperature								Recovered Capacity		Effectiveness	
Outside		Return		Wheel Leaving		Mixed		Total Btu/hr	Sensible Btu/hr	Total	Sensible
Dry Bulb °F	Wet Bulb °F	Dry Bulb °F	Wet Bulb °F	Dry Bulb °F	Wet Bulb °F	Dry Bulb °F	Wet Bulb °F				
5.0	4.0	70.0	50.0	51.4	39.3	51.4	39.3	375489	325789	70.56	71.40

Defrost Option: Frost Protection

Rpscompstart

Technical Data Sheet for DOAS-2

Return/Outside/Exhaust Air			
Outside Air Option			
Type		Damper Actuator	
Energy Recovery, Economizer		Electric Actuator	
Return Air Option			
Return Air Location:	Bottom		
Return Air Options:	Frost Protection		
Fan			
Type	Fan Diameter	Vibration Isolation	Drive Type
SWSI AF	24 in	Spring Isolation with Seismic Snubbers	150% Service Factor, Fixed Drive
Motor			
Horsepower	Type		Full Load Current
7.5 HP	ODP, Premium Efficiency		10.0 A
Performance			
Air Flow CFM	External Static Pressure inH ₂ O	Fan Speed rpm	Brake Horsepower HP
6500	1.5	1351	4.40

Filter Section				
Physical				
Type	(Quantity) Height x Width x Depth	Face Area	Face Velocity	Air Pressure Drop
30% Nominal Efficiency (MERV 8)	(10) 16 in x 20 in x 2 in	50.0 ft ²	130.0 ft/min	0.04 inH ₂ O
	(10) 16 in x 25 in x 2 in			

DX Cooling Coil								
Physical								
Fins per Inch	Rows	Face Area	Face Velocity	Air Pressure drop	Drain Pan Material			
12	6	27.0 ft ²	240.7 ft/min	0.55 inH ₂ O	Stainless Steel			
Cooling Performance								
Capacity		Refrigerant Type	Indoor Air Temperature				Ambient Air Temperature	
Total Btu/hr	Sensible Btu/hr		Entering		Leaving		Dry Bulb °F	Wet Bulb °F
			Dry Bulb °F	Wet Bulb °F	Dry Bulb °F	Wet Bulb °F		
386827	232012	R410A	82.0	68.7	49.3	48.9	95.0	75.0

Hot Gas Reheat Coil Section				
Type	Air Pressure Drop	Total Capacity	Air Temperature Dry Bulb	
			Entering	Leaving
Aluminum Tube Micro-Channel	0.08 inH ₂ O	243725 Btu/hr	49.3 °F	83.5°F
Coil Location:	Mounted to entering air uprights of Discharge section			

Technical Data Sheet for DOAS-2

Fan Section			
Fan			
Type	Fan Wheel Diameter	Fan Isolation	
AF DWDI	24 in	Spring with Seismic Snubbers	
Performance			
Airflow	Total Static Pressure	Fan Speed	Brake Horsepower
6500 CFM	3.73 inH ₂ O	1306 rpm	5.78 HP
Motor			Drive
Type	Horsepower	FLA	Type
ODP, Premium Efficiency	10.0 hp	12.9 A	150% service factor, Fixed drive

Gas Heat Section							
Physical		Performance					
Gas Heat Size	Input Capacity Btu/hr	Output Capacity Btu/hr	Air Temperature Dry Bulb		Air Pressure Drop inH ₂ O	Gas Pressure	
			Entering °F	Leaving °F		Minimum In WC	Maximum psi
320 MBH	400000	320000	51.4	96.8	0.02	5.0	0.5
Heat Exchanger Material:		Type 321 Stainless Steel					
Modulation:		Hi Turndown - 20:1					

Discharge Plenum	
Discharge Location:	Bottom

Condensing Section				
Compressor				
Type	Quantity	Total Power	Capacity Control	Compressor Isolation
Scroll	4	26.5 kW	4 stage	Resilient
Compressor Amps:				
Fixed Speed Compressor 1			14.5 A	
Fixed Speed Compressor 2			14.5 A	
Fixed Speed Compressor 3			14.5 A	
Fixed Speed Compressor 4			14.5 A	
Compressor Options:		Refrigeration Service Valves		
Piping Options:		Hot gas bypass, circuit 1		
Condenser Coil				
Type	Fins per Inch	Fin Material	Refrigerant Charge	
Aluminum tube MicroChannel	18	Aluminum	83.0 lb	
Condenser Coil Options:		Build in Hail Protection		
Condenser Fan Motors				
Number of Motors		Full Load Current (each)		
4		2.1 A		
AHRI 360 Certified Data at AHRI 360 Standard Conditions				
EER	IEER	ASHRAE 90.1		
10.3	13.4	2013 Compliant		

Technical Data Sheet for DOAS-2

Sound

Sound Power (db)								
Frequency	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Inlet	82	81	80	75	74	69	61	54
Discharge	78	74	70	65	62	56	48	40
Radiated	-	98	93	91	90	86	83	79

Supply Fan Total Pressure Drop Calculation

External Static Pressure:	1.50 inH ₂ O
Energy Recovery Wheel path:	1.23 inH ₂ O
Filter:	0.04 inH ₂ O
Dirty Filter:	0.30 inH ₂ O
DX Coil:	0.55 inH ₂ O
Hot Gas Reheat:	0.08 inH ₂ O
Gas Heat:	0.02 inH ₂ O
Total Static Pressure:	3.73 inH₂O

Return/Exhaust Fan Total Pressure Drop Calculation

External Static Pressure:	1.50 inH ₂ O
Energy Recovery Path:	1.32 inH ₂ O
Total Static Pressure:	2.82 inH₂O

Options

Unit	
Unit Exterior:	Prepainted Galvanized Steel
Insulation and Liners:	2", 1 1/2# nominal insulation, full solid liners
Underliners:	Sheet Metal Underliner - Recommended for rail mounted units
Fan Section Lights:	Supply And Return Fan Section Light
Belt Guards:	Exhaust Air Fan Belt Guard
Electrical	
Electrical Connection Option:	Single power block
GFI 115v Receptacle:	Field powered
Power Options:	Phase Failure and Groundfault Protection
Controls	
Application:	Variable Volume - Discharge Air Control
Temperature Control:	DAC, BACNet MSTP communication card
Fan Speed Control:	Factory mounted Inverter
Inverter Manufacturer:	ABB
Inverter Location:	Inverter(s) in fan section
Airflow Control:	1 duct sensor, 1 space sensor
Economizer Control:	Comparitive Enthalpy Control
Line Reactors:	Factory mounted Line Reactors
Bypass Contactors:	Factory mounted Bypass Contactors
Low Ambient:	Fantrol, operation to 45 deg F (7.22 deg C)

Warranty

Parts:	Standard 1 year
Compressor:	Extended 4 year, 5 year total
Gas Heat Exchanger:	One year heat exchanger warranty

Technical Data Sheet for DOAS-2

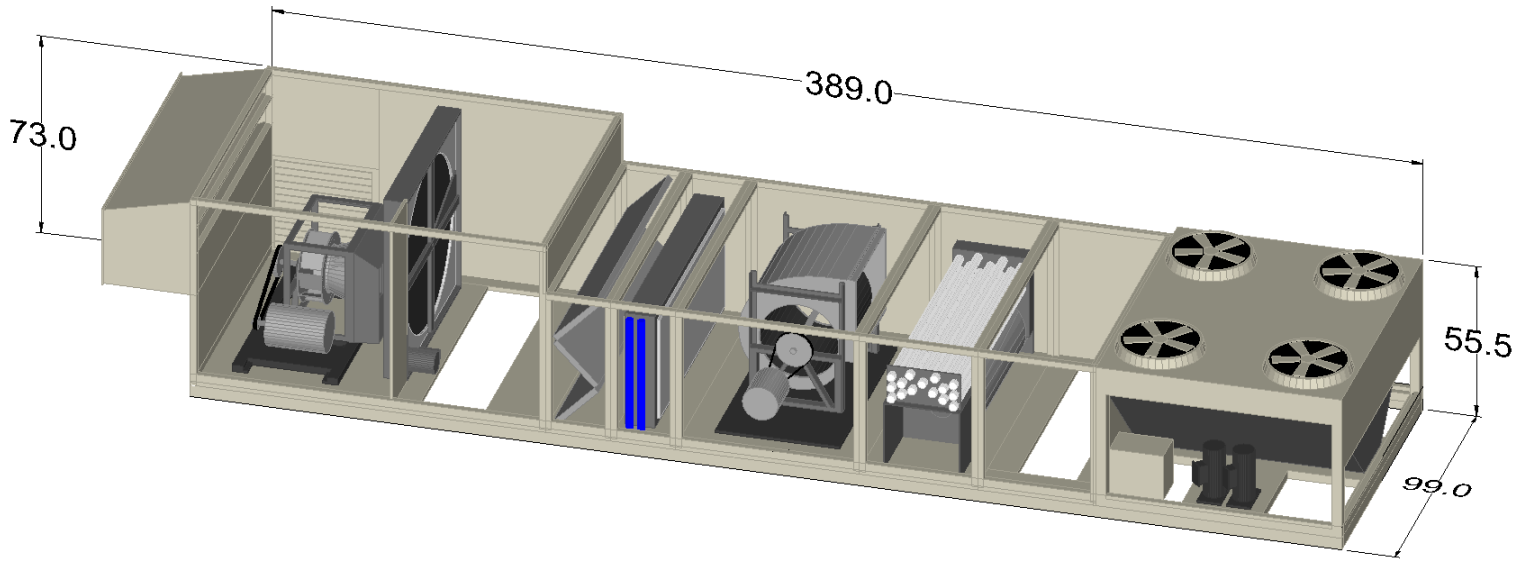
AHRI Certification



All equipment is rated and certified in accordance with AHRI 360.

Notes

As a standalone component, unit meets or exceeds the requirements of ASHRAE 90.1.2010. The approving authority is responsible for compliance of multi-component building systems.




Job Number: TBIBFJ
 Job Name: Bourne HVAC

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Prepared Date:

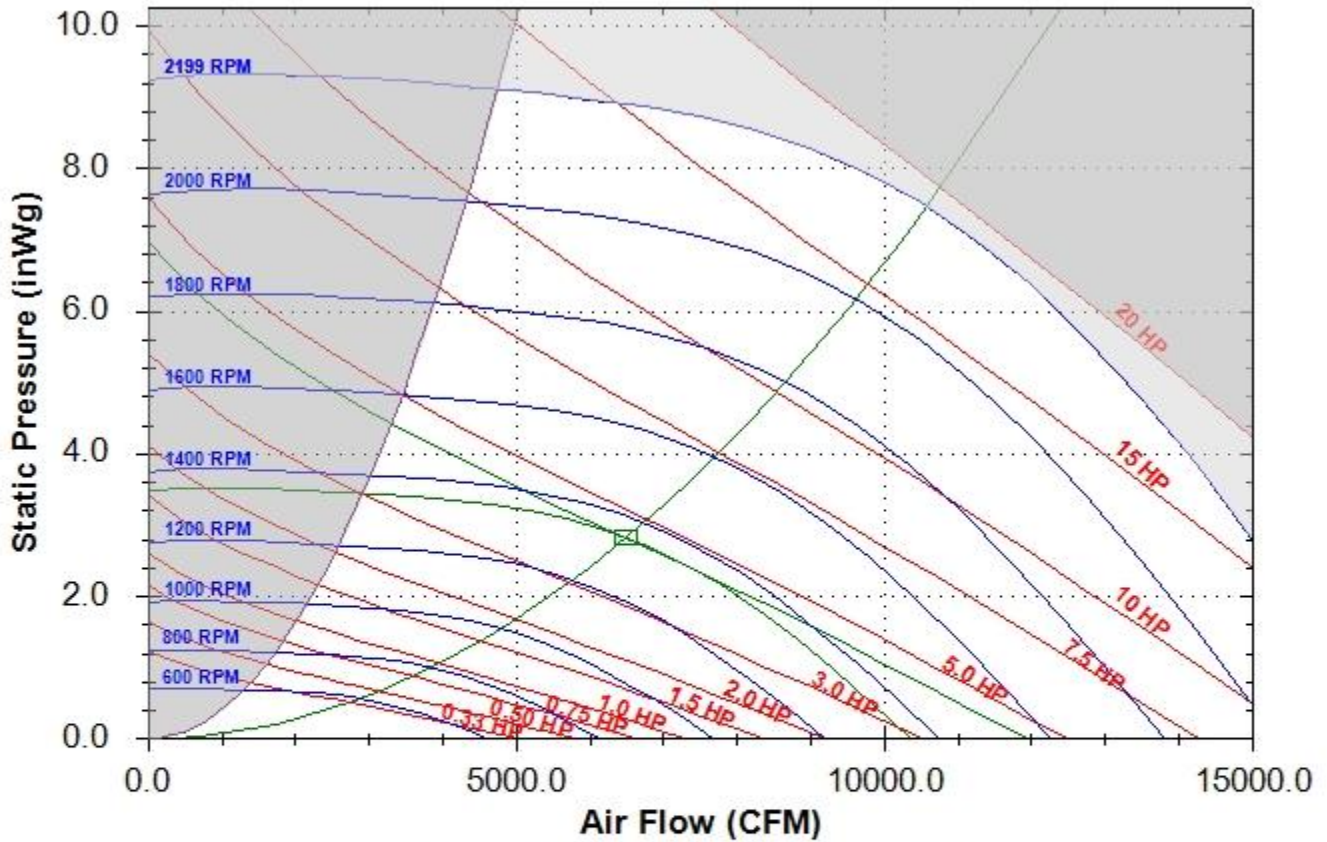
2/18/2016
 www.DaikinApplied.com

Product Drawing	Unit Tag: DOAS-2			Sales Office: Stebbins-Duffy, Inc. (Boston)			 13600 Industrial Park Blvd. Minneapolis, MN 55441 www.DaikinApplied.com Software Version: 03.90
Product:	Project Name: Bourne HVAC			Sales Engineer:			
Model: RPS035D	Feb. 18, 2016	Ver/Rev:	Sheet: 1 of 1	Scale: NTS	Tolerance: +/- 0.25"	Dwg Units: in [mm]	

No change to this drawing may be made unless approved in writing by Daikin Applied. Purchaser must determine that the equipment is fit and sufficient for the job specifications.

Fan Curve - Exhaust for DOAS-2

Daikin Rooftop Packaged Fan Selection

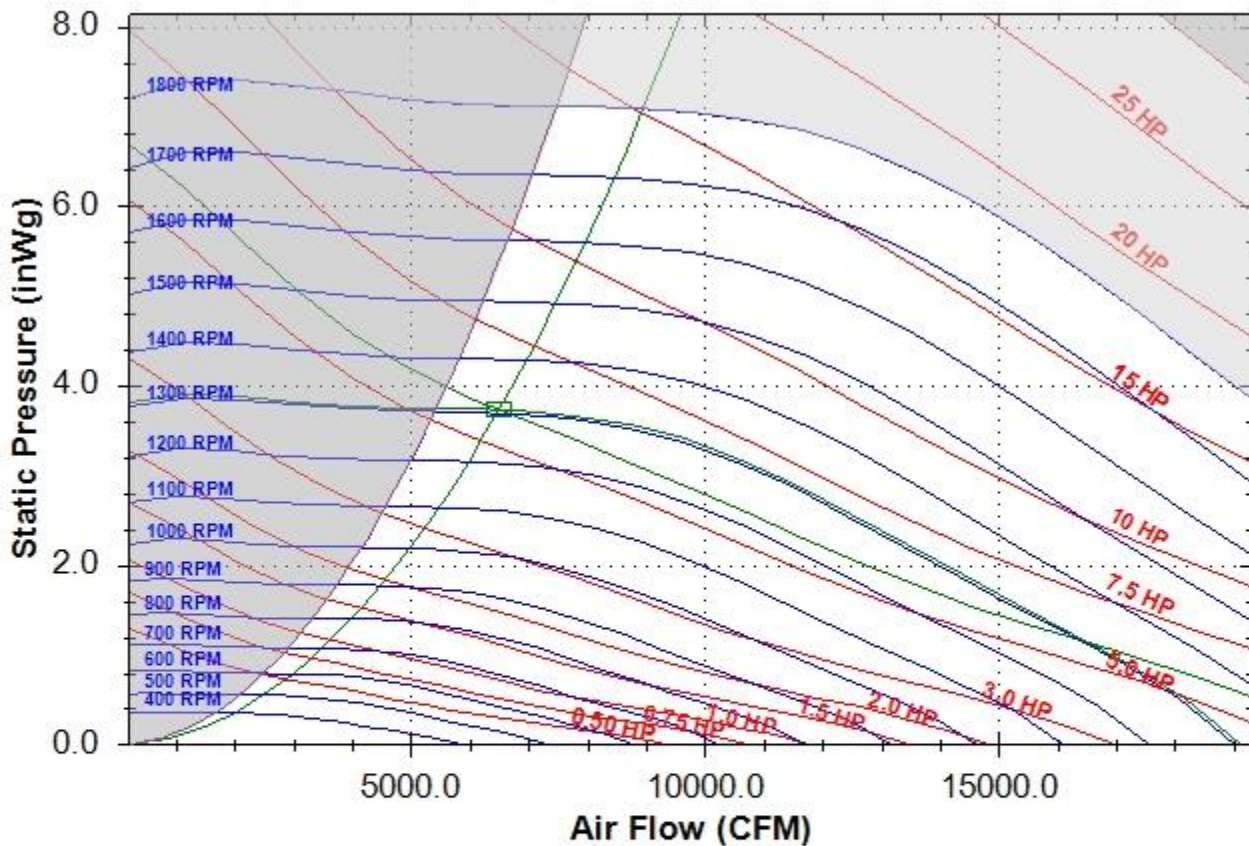


24.0 SWSI - Plenum Exhaust Fan at Standard Conditions								
Base Tag	DOAS-2				Date	Feb-18-2016		
Job Name	Bourne HVAC				Time	1:20 PM		
Air Volume	6500	CFM			Fan Speed	1351	RPM	
Total Static	2.82	inWg			Max Speed	2199	RPM	
Brake Horsepower	4.40	HP			Efficiency	65	%	
Unit Sound Power	63hz	125hz	250hz	500hz	1000hz	2000hz	4000hz	8000hz
Inlet Sound Power	82	81	81	76	74	69	61	54
Outlet Sound Power	78	74	71	66	63	56	48	40
Radiated Sound Power	0	98	93	91	90	86	83	79



Fan Curve - Supply for DOAS-2

Daikin Rooftop Packaged Fan Selection



24.0 DWDI - Airfoil Supply Fan at Standard Conditions								
Base Tag	DOAS-2				Date	Feb-18-2016		
Job Name	Bourne HVAC				Time	1:20 PM		
Air Volume	6500	CFM			Fan Speed	1306	RPM	
Total Static	3.73	inWg			Max Speed	1800	RPM	
Brake Horsepower	5.78	HP			Efficiency	66	%	
Unit Sound Power	63hz	125hz	250hz	500hz	1000hz	2000hz	4000hz	8000hz
Inlet Sound Power	82	81	80	75	74	69	61	54
Outlet Sound Power	78	74	70	65	62	56	48	40
Radiated Sound Power	0	98	93	91	90	86	83	79



Technical Data Sheet for DOAS-3

Job Information		Technical Data Sheet
Job Name	Bourne HVAC	
Date	2/18/2016	
Submitted By	Tim Tashjian	
Software Version	04.30	
Unit Tag	DOAS-3	



Unit Overview					
Model Number	Voltage V/Hz/Phase	Design Cooling Capacity Btu/hr	AHRI360 Standard Efficiency		ASHRAE 90.1
			EER	IEER	
DPS012A	460/60/3	139763	11.4	17.8	ASHRAE 90.1-2013 compliant

Unit	
Model Number:	DPS012A
Model Type:	Cooling
Heat Type:	Gas
Hot Gas Reheat:	Modulating Hot Gas Reheat
Energy Recovery:	7-15 tons (Max CFM: Mixed-2835, 100% OA-5145)
Application:	Variable Volume, Duct SP Control
Outside Air:	0-100% Economizer with Comparative Enthalpy Control
Altitude:	0 ft
Approval	cETLus

Physical				
Dimensions and Weight				
Length	Height	Width	Weight	
111.0 in	55.8 in	96.5 in	2763 lb	
Corner Weights				
L1	L2	L3	L4	
442 lb	455 lb	946 lb	920 lb	
Construction				
Exterior	Insulation and Liners	Air Opening Location		
		Return	Supply	
Painted Galvanized Steel	1" Injected Foam, R-7, Galvanized Steel Liner	Bottom	Bottom	

Electrical		
MCA	MROPD	SCCR
24.8 A	30 A	5 kAIC

Return/Outside/Exhaust Air		
Outside Air Option		
Type	Damper Pressure Drop	Exhaust Air Type
0-100% Econ with Comparative Enthalpy Control	0.05 inH ₂ O	Powered, Modulating with Building Pressure Control

Technical Data Sheet for DOAS-3

Exhaust Fan			
Type	Drive Type		Wheel Diameter
SWSI AF	Direct Drive		14 in
Motor			
(Qty) Horsepower	Type	Efficiency	Full Load Current (Each)
(1) 2.3 HP	ECM	Premium	2.3 A
Performance			
Air Flow CFM	External Static Pressure inH ₂ O	Fan Speed RPM	Brake Horsepower HP
2500	1.50	2578	2.0

Energy Recovery

Design OA Volume	Design Exhaust Volume	Wheel Pressure Drop	Motor HP	Motor FLA
2500 CFM	2500 CFM	1.06 inH ₂ O	0.17 HP	0.4 A

Summer Conditions

Temperature								Recovered Capacity Btu/hr	Effectiveness	
Outside Air		Return Air		Wheel Leaving		Mixed Air			Total	Sensible
Dry Bulb °F	Wet Bulb °F	Dry Bulb °F	Wet Bulb °F	Dry Bulb °F	Wet Bulb °F	Dry Bulb °F	Wet Bulb °F			
91.0	74.0	78.0	66.5	81.3	68.7	81.3	68.7	49091	0.71	0.72

Winter Conditions

Temperature								Recovered Capacity Btu/hr	Effectiveness	
Outside Air		Return Air		Wheel Leaving		Mixed Air			Total	Sensible
Dry Bulb °F	Wet Bulb °F	Dry Bulb °F	Wet Bulb °F	Dry Bulb °F	Wet Bulb °F	Dry Bulb °F	Wet Bulb °F			
5.0	4.0	70.0	50.0	51.7	39.6	51.7	39.6	146360	0.71	0.72

Bypass Damper: Yes

Filter Section

Physical				
Type	Quantity / Size	Face Area	Face Velocity	Air Pressure Drop
Combo 2"/4" rack with 2" MERV 8	6 / 18 in x 24 in x 2 in	18.0 ft ²	138.9 ft/min	0.04

DX Cooling Coil

Physical						
Coil Type	Fins per Inch	Rows	Face Area	Face Velocity	Air Pressure drop	Drain Pan Material
Cu Tube/ Al Fin	15	4	15.4 ft ²	162.0 ft/min	0.14 inH ₂ O	Stainless Steel

Cooling Performance

Capacity		Refrigerant Type	Indoor Air Temperature				Ambient Air Temperature °F
Total Btu/hr	Sensible Btu/hr		Entering		Leaving		
			Dry Bulb °F	Wet Bulb °F	Dry Bulb °F	Wet Bulb °F	
139763	84870	R410A	81.3	68.7	50.3	50.3	95.0

Hot Gas Reheat Coil Section

Type	Face Area	Air Pressure Drop	Total Capacity	Leaving Air Temperature	
				Dry Bulb	Wet Bulb
Aluminum Tube Micro-Channel	14.6 ft ²	0.03 inH ₂ O	53468 Btu/hr	70.0 °F	58.1 °F

Technical Data Sheet for DOAS-3

Fan Section				
Fan				
Type	Fan Wheel Diameter		Fan Isolation	
SWSI AF	22 in		None	
Performance				
Airflow	Total Static Pressure	Fan Speed	Brake Horsepower	Altitude
2500 CFM	3.7 inH ₂ O	1499 rpm	2.78 HP	0 ft
Motor				Drive
Type	Horsepower	Efficiency	FLA	Type
ECM Motor	4.0	Premium	4.0 A	Direct Drive

Gas Heat Section							
Physical		Performance					
Size (Input)	Capacity Btu/hr	Air Temperature Dry Bulb		Air Pressure Drop inH ₂ O	Gas Pressure		Modulation
		Entering °F	Leaving °F		Minimum inH ₂ O	Maximum inH ₂ O	
200 MBH	160000	51.7	110.7	0.10	7	14	Modulating 10:1 Turndown
Heat Exchanger Material:		Stainless Steel					

Condensing Section				
Compressor				
Type	Quantity	Total Power	Capacity Control	Compressor Isolation
Inverter Scroll + Fixed Scroll	2	9.4 kW	Mod Control with Inverter Compressors	Rubber in Shear
Compressor Amps:				
Compressor 1		6.8 A		
Compressor 2		7.9 A		
Compressor Options:		Suction and Discharge Isolation Valves		
Condenser Coil				
Type	Fins per Inch		Fin Material	
Aluminum Microchannel	23		Aluminum	
Condenser Fan Motors				
Number of Motors		Full Load Current (Total)		
2		1.8 A		
AHRI 360 Certified Data at AHRI 360 Standard Conditions				
Net Capacity	EER	IEER	ASHRAE 90.1	
144000 Btu/hr	11.4	17.8	ASHRAE 90.1-2013 compliant	

Internal Pressure Drop Calculation	
External Static Pressure:	1.50 inH ₂ O
Filter:	0.04 inH ₂ O
Dirty Filter:	0.35 inH ₂ O
Outside Air:	0.05 inH ₂ O
Energy Recovery:	1.50 inH ₂ O
DX Coil:	0.14 inH ₂ O
Hot Gas Reheat:	0.03 inH ₂ O
Gas Heat:	0.10 inH ₂ O
Total Static Pressure:	3.70 inH₂O

Technical Data Sheet for DOAS-3

Sound								
Sound Power (db)								
Frequency	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Inlet	87	88	84	85	80	77	71	66
Discharge	87	91	87	90	86	83	79	74
Radiated	85	85	81	78	76	71	64	57

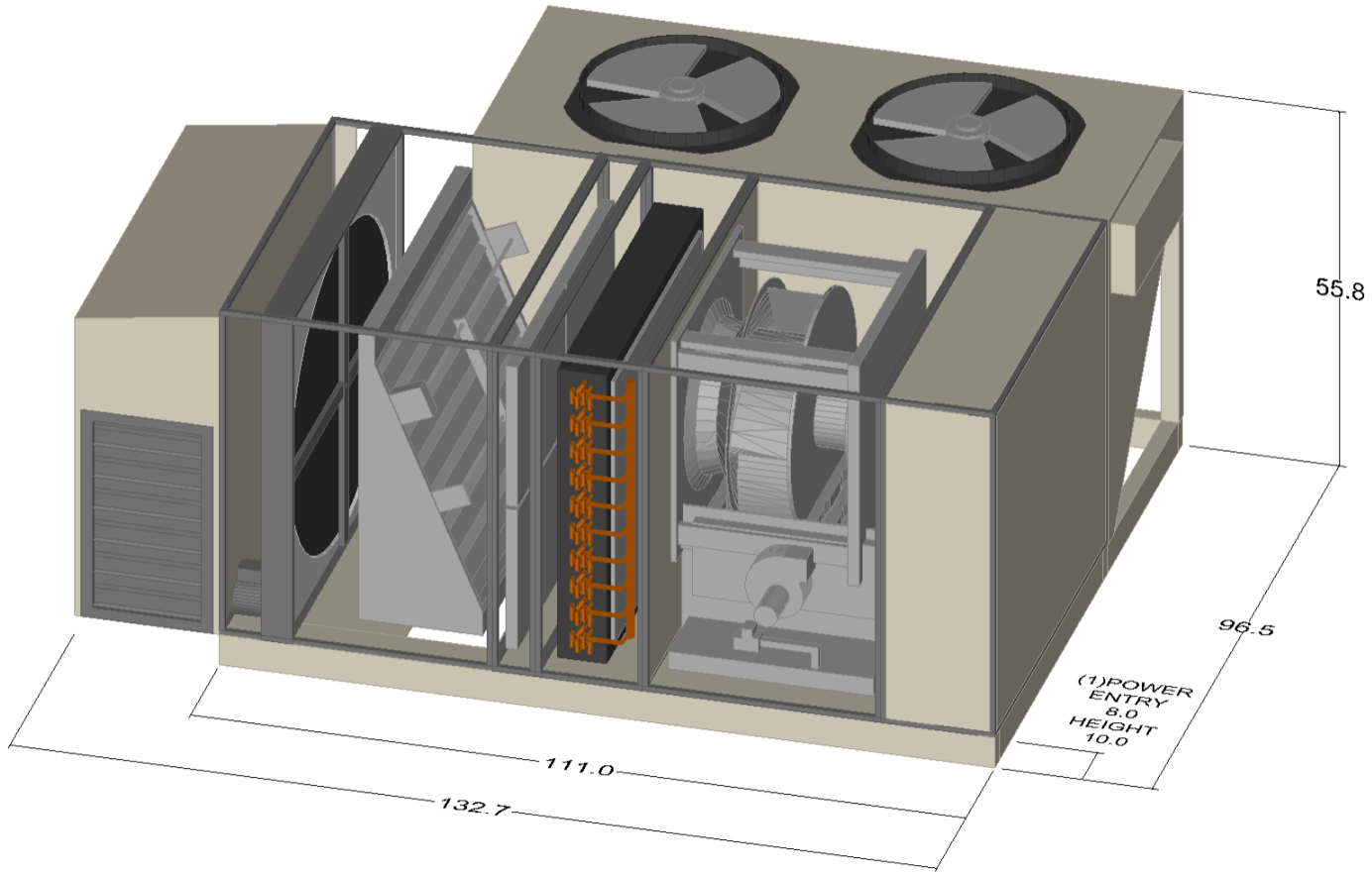
Options	
Electrical	
Field Connection:	Power Block
Powered Receptacle:	Field powered 115V GFI outlet
Power Options:	Phase Failure Monitor
Controls	
Communication Card:	BACnet/MSTP card, Factory installed

Warranty	
Parts:	Standard One Year
Compressor:	Additional Four Year, Five Year Total
Gas Heat Exchanger:	Standard one Year

AHRI Certification	
	All equipment is rated and certified in accordance with AHRI 360.


Notes

Accessories	
Optional	
Part Number	Description
910134603	14" Roof Curb, W/ERW, Size 007-015



Notes:

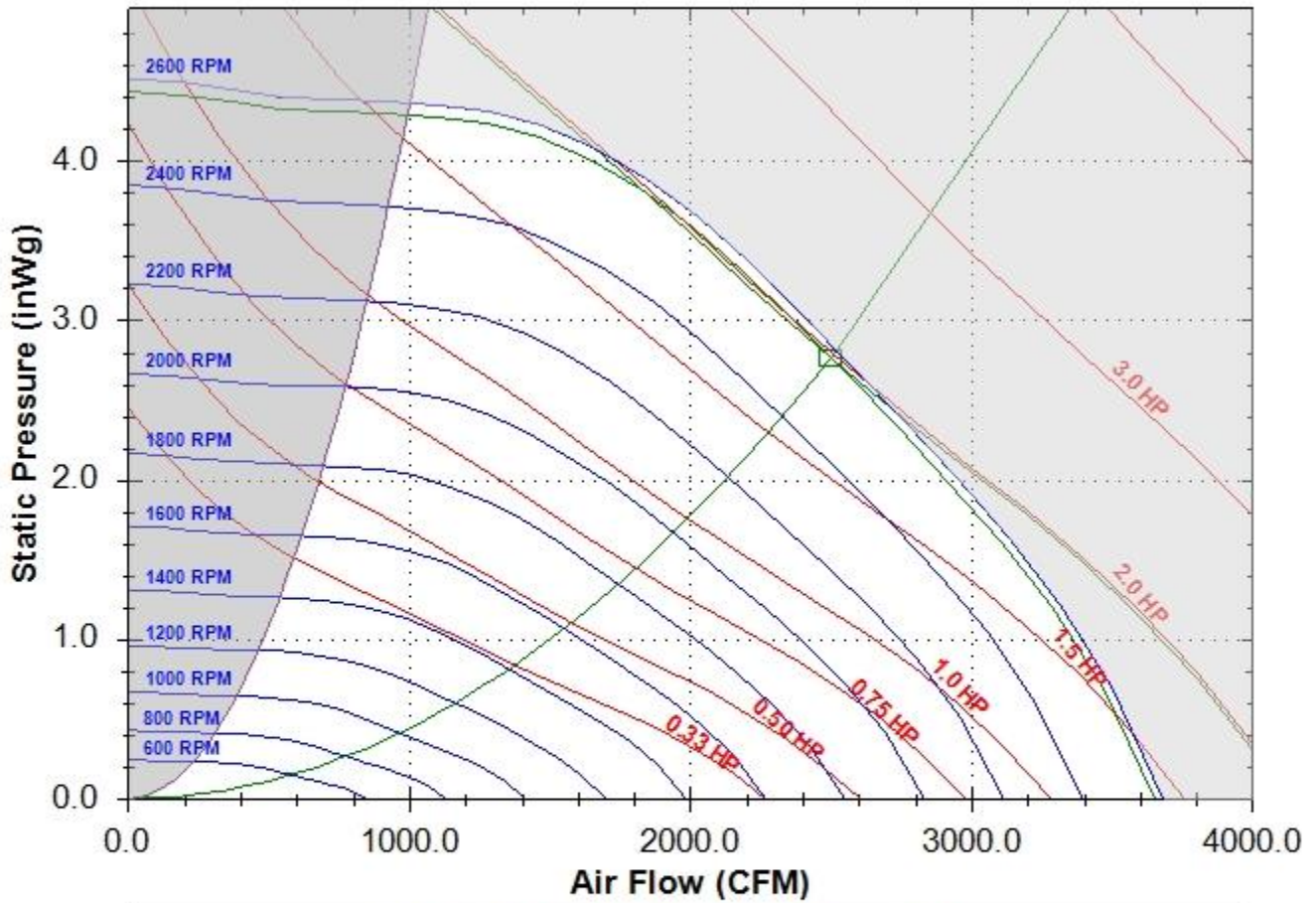
- (1) Recommended location for optional field cut side power connection.
- (2) Horizontal gas connection only. Gas pipe routing within the roofcurb is not available.

Product Drawing	Unit Tag: DOAS-3	Sales Office: Stebbins-Duffy, Inc. (Boston)				 13600 Industrial Park Blvd. Minneapolis, MN 55441 www.DaikinApplied.com Software Version: 04.30
Product:	Project Name: Bourne HVAC	Sales Engineer:				
Model: DPS012A	Feb. 18, 2016	Ver/Rev:	Sheet: 1 of 1	Scale: NTS	Tolerance: +/- 0.25"	

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Fan Curve - Exhaust for DOAS-3

Daikin Rebel Fan Selection

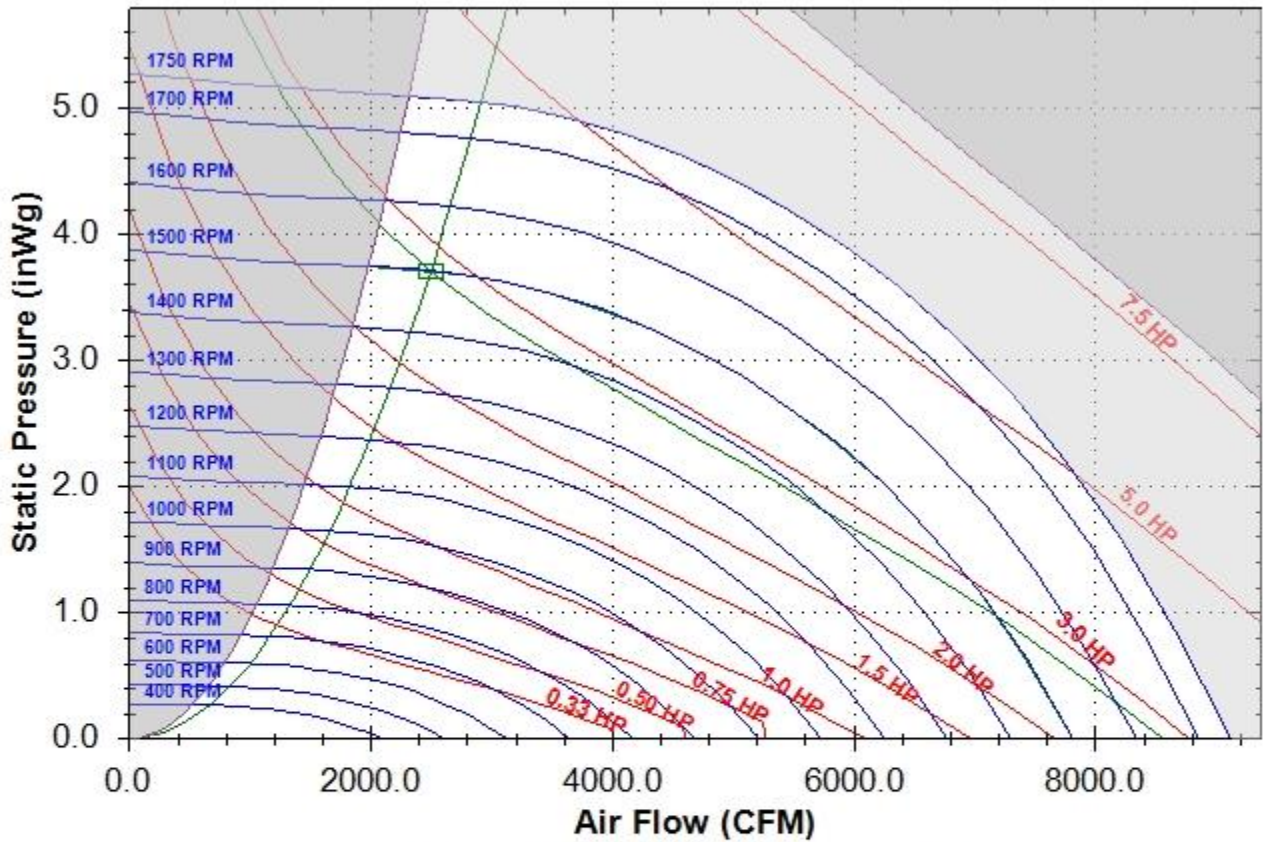


14.0 SWSI - Plenum Exhaust Fan at Standard Conditions			
Base Tag	DOAS-3	Date	Feb-18-2016
Job Name	Bourne HVAC	Time	1:20 PM
Air Volume	2500 CFM	Fan Speed	2578 RPM
Total Static	2.8 inWg	Max Speed	2600 RPM
Brake Horsepower	2.0 HP	Efficiency	55 %



Fan Curve - Supply for DOAS-3

Daikin Rebel Fan Selection



22.0 SWSI - Plenum Supply Fan at Standard Conditions								
Base Tag	DOAS-3				Date	Feb-18-2016		
Job Name	Bourne HVAC				Time	1:20 PM		
Air Volume	2500	CFM		Fan Speed	1499	RPM		
Total Static	3.70	inWg		Max Speed	1750	RPM		
Brake Horsepower	2.78	HP		Efficiency	52	%		
Unit Sound Power	63hz	125hz	250hz	500hz	1000hz	2000hz	4000hz	8000hz
Inlet Sound Power	87	88	84	85	80	77	71	66
Outlet Sound Power	87	91	87	90	86	83	79	74
Radiated Sound Power	85	85	81	78	76	71	64	57





Commercial rooftop unit with Airxchange slide-out cassette for easy access to energy recovery wheel.

AIRXCHANGE WHEELS: THE HEART OF ERV SYSTEMS

Energy Recovery Ventilation (ERV) is the most cost effective means for controlling indoor air quality and energy costs while reducing HVAC equipment size and peak demand. Available in most commercial HVAC platforms, this clean energy technology is endorsed by the Environmental Protection Agency (EPA) and the Department of Energy (DOE). According to the DOE, the expanded use of ERV technology in the latest national building energy standard was a major contributor to achieving ASHRAE's 30% energy reduction goal.

At the heart of most ERV systems is an Energy Recovery Wheel that recycles up to 80% of the energy normally wasted in building exhaust air. Using recycled energy to precondition outdoor air supply for temperature and humidity lowers HVAC operating costs up to 40%. With outdoor air ventilation energy costs and humidity concerns minimized, building owners and occupants enjoy a cleaner and more comfortable indoor environment.

Airxchange is the leading supplier of Energy Recovery Wheels to the HVAC Industry. With over 30 years of experience, Airxchange continues to advance the technology with active leadership in AHRI and ASHRAE, and with innovative, reliable and high performing designs.

**THE AIRXCHANGE ADVANTAGE:
INNOVATION
RELIABILITY
PERFORMANCE**

INNOVATION

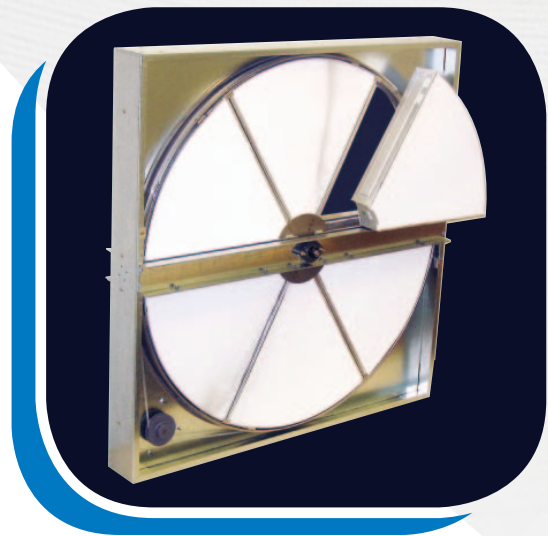
INNOVATIVE MATERIALS AND DESIGNS PROVIDE NUMEROUS ADVANTAGES TO BUILDING OWNERS AND DESIGN ENGINEERS.

ADVANCED POLYMER MATERIAL allows for the most compact wheel design in the industry, reducing unit depth and weight.

SEGMENTED DESIGN allows for easy removal of energy transfer segments without the use of tools for effective cleaning or replacement.

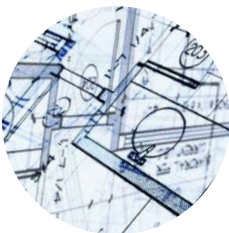
PATENTED WHEEL is structurally independent from energy transfer segments for extended life.

PROPRIETARY COATING PROCESS permanently bonds desiccant to energy transfer surface without adhesives – will not degrade over time or wash off during cleaning.



Segmented design ensures optimal performance for the life of the HVAC system.

GGD CONSULTING ENGINEERS



“PERMANENTLY BONDING DESICCANT TO THE ENERGY TRANSFER SURFACE, AND THE ABILITY TO WASH SEGMENTS WITHOUT COMPROMISING THE DESICCANT COATING IS AN IMPORTANT ADVANTAGE. THE AIRXCHANGE SEGMENTED WHEEL DESIGN MINIMIZES SERVICE ACCESS REQUIREMENTS FOR GREATER DESIGN FLEXIBILITY AND MAKES IT EASY TO MAINTAIN.”

DOMINICK PUNIELLO, PRINCIPAL – MECHANICAL DEPARTMENT HEAD,
GARCIA, GALUSKA AND DESOUSA CONSULTING ENGINEERS

RELIABILITY

TESTED, PROVEN USE OF DURABLE MATERIALS COUPLED WITH CONSERVATIVE DESIGN TRANSLATES INTO ROBUST, LONG LASTING ENERGY RECOVERY WHEELS BACKED BY A 5-YEAR WARRANTY.



Airxchange technology provides a stable, robust product developed from over 30 years of experience and more than 200,000 installations.

100% STAINLESS STEEL WHEEL structure provides superior strength and will not corrode.

DURABLE POLYMER ENERGY TRANSFER MATERIAL withstands harsh coastal or pool environments.

PERMANENTLY LUBRICATED BEARINGS eliminate maintenance to ensure lasting performance – minimum thirty-year L10 life.

CONSTANT TENSION URETHANE BELT is maintenance-free – the most reliable belt drive system currently available.

INSULATED STRUCTURAL G-90 GALVANIZED FRAME prevents condensation and provides exceptional durability. Special coatings are available for extra protection in highly corrosive environments.

OSCEOLA COUNTY COURTHOUSE



“WE REPLACED A FAILED COMPETITOR’S WHEEL WITH AN AIRXCHANGE WHEEL THAT HAS BEEN RUNNING 24 HOURS A DAY, SEVEN DAYS A WEEK, FOR SIX YEARS WITHOUT A SINGLE PROBLEM OR STOPPAGE. THE AIRXCHANGE WHEEL IS CONSIDERABLY LIGHTER, USING A 1/3HP MOTOR INSTEAD OF THE COMPETITOR’S 5HP MOTOR, AND DELIVERS CLEAN AND AFFORDABLE FRESH AIR.”

RENE FRANQUI JR., OSCEOLA COUNTY BUILDING MAINTENANCE ADMINISTRATION,
COURTHOUSE SQUARE FACILITY

PERFORMANCE

AIRXCHANGE ENERGY RECOVERY WHEELS
ARE SUPPORTED BY A STRONG COMMITMENT TO QUALITY,
DESIGN, AND PERFORMANCE FOR THE LIFE OF THE HVAC SYSTEM.

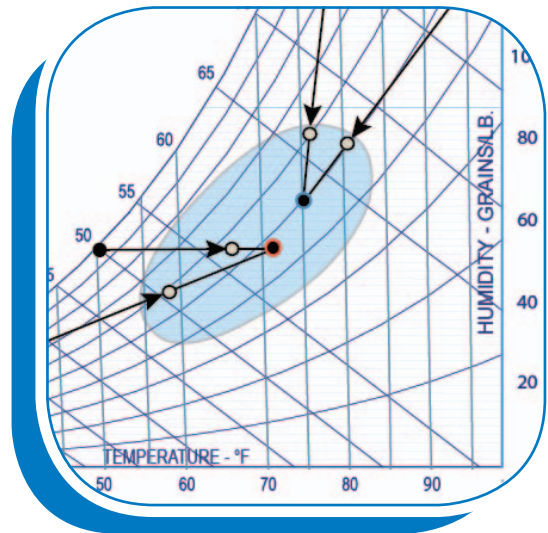
OPTIMIZED DESICCANT for comfort HVAC applications provides maximum moisture exchange in the vapor phase, eliminating the need for condensate drains.

CUSTOMIZED ENERGY TRANSFER DESIGNS offer a wide range of performance options – field replaceable to accommodate change in occupant or building use.

REMOVABLE SEGMENTS effectively ensure performance for the life of the system – protects against surface contamination during construction and simplifies commissioning.

OPTIONAL PURGE SECTION for adjustable control of exhaust air transfer in non-comfort HVAC applications.

Airxchange participates in the Air Conditioning Heating and Refrigeration Institute (AHRI) Standard 1060 certification program which requires annual verification of manufacturers' performance claims.



Airxchange wheels recycle energy to precondition ventilation air and reduce outdoor air loads up to 80%.



PROVIDENCE CAREER & TECHNICAL ACADEMY

“I KEPT WAITING FOR THE BOILERS TO FIRE ON COLD DAYS BUT THE AIRXCHANGE ENERGY RECOVERY WHEELS WERE ABLE TO HEAT THE OUTDOOR AIR ENOUGH TO SIGNIFICANTLY REDUCE BOILER OPERATION. THE WHEELS KEEP THE SUPPLY AIR IN A NICE COMFORTABLE ZONE WHERE FREQUENT ADDITIONAL HEATING IS NOT REQUIRED.”

DAVID GAUDET, ARAMARK – PCTA FACILITY MANAGER