



**MASON ELEMENTARY SCHOOL
MASON SCHOOL DISTRICT SAU #63**

BUILDING NEEDS ASSESSMENT STUDY

DRAFT

7-15-08

Barker Architects PLLC



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PURPOSE AND ASSUMPTIONS

PURPOSE

The charge of this study is to analyze the building and space needs of Mason Elementary School and suggest alternatives with associated costs. The intent is to create a comprehensive, broad picture analysis of the building for use in future planning. Further design and planning will need to be provided for preparation for a bond vote. The report will simply provide the statement of need and basic data for beginning that work.

Final decisions on building options will need to rely heavily on public input to fully understand opportunities and constraints that face this district.

ASSUMPTIONS

Existing Conditions

The buildings were visited at various times throughout the 2007-2008 school year. Original drawings of the existing buildings were gathered.

Actual dimensions were not verified due to the volume of space studied. Inaccuracies were noticed in some drawings, but these issues do not affect the outcome of the study. Verification of existing conditions should be part of any final plan.

Building and Life Safety Codes and Dept. of Education Rules

The work outlined is based on the following codes; The State Fire Code, The State Building Code, The State Energy Code and The State Barrier Free Access Code. Because of the generalized scope of the study, it is not possible to list every possible item that falls within these codes. It is assumed that any areas impacted by proposed changes would have all code issues resolved.

There is often a misconception that code compliance problems are “grandfathered” if they have existed for a long time. The State of NH Department of Education Administrative Rules (ED 306.07) requires all approved schools to meet NFPA 101 Life Safety Code as well as other codes. Other codes such as the State of NH Fire Code and the State of NH Building Code refer to this code as well thus giving local code enforcement officers the authority to require upgrades regardless of how long the situation has existed. However, it happens quite often that review for compliance is not done until a major construction project is proposed.

Chapter 15 of NFPA 101 is specifically designed for existing educational facilities. We suggest that the local authorities as well as the State Fire Marshal’s office be invited to walk through the building and review this study to ensure that the District fully understand what is required.

Enrollment Projections

Understanding anticipated enrollments is the first step in understanding the function of a school facility. As important to the calculations as the total number of students are the individual class sizes. It is possible for a school facility to reach maximum capacity long before the stated capacity if one year’s enrollment is much larger than others. One large cohort of students will put stress on the core facilities as if the entire school were much

larger. It is therefore important to design the core facilities for a larger number of students than simply the anticipated total.

This report includes enrollment projections based on data provided by the District. Actual enrollments can be significantly different and should be monitored each year. The projections are more of a tool for identifying trends than actual anticipated numbers of students.

Program Data

It is important to analyze the building usage in order to determine areas that might require changes to improve the function of the building. The first step in identifying space needs is to develop the program or a list of spaces and their correlating size. To do this, we rely on several sources including; NH Department of Education Standards, Council for Educational Facility Planners Inc., other State Standards, examples of other similar projects and our own experience.

Most importantly we rely on the Owner to supply us information for their programs. This was done by interviewing the Principal and by analyzing how the building is currently used. This data includes; enrollment per course, periods per day, meetings per week and other information. Changes in this data would therefore change the results in this report.

It is also important to note that we did not always use the “minimum” standards when analyzing the data. Class size in particular can greatly affect the space needs of a school. Current trends are to limit class sizes. For this study we used numbers that were neither the absolute maximum nor minimum.

Costs

The costs are all based on this year’s cost. There are sources that we rely on for costs such as RS Means and other projects in the area of similar types. For a report with this broad a scope, however, it is not possible to produce accurate estimates. These costs are based mostly on average cost per square foot. This will give us an “Order of Magnitude” estimate on cost for determining budgets.

Some items may be small enough for the staff to accomplish throughout the year. Many items are merely a place-holder item to be used as a checklist. Often tasks are completed during or soon after the report.

All costs are given in “today’s numbers”. Inflation for building materials is very difficult to forecast. At the time this report is being written, many resources including steel and petroleum products are increasing cost at an extraordinary rate. The costs in this study will need to be verified before proceeding with a construction project.

Expectations

As with any renovation project there are areas that will be left undone. It is not economically feasible to upgrade every aspect of an older building to meet the same criteria of new construction. It is important to set limits on expectations to avoid an endless amount of project growth.

BUILDING NEEDS ANALYSIS

The following section studies the existing facility for deficiencies relating to the building or property. This section does not include space requirements. All items identified are cataloged in the Building Needs Worksheet (*Table A*). Costs are listed by priority. High priority items are those that need to be done within the next two years. They include issues such as code deficiencies or maintenance items that could cause damage if left undone. Medium priority items should be completed within five years. They are important but do not pose an immediate need. Low priority items are worth considering due to cost savings or improved efficiency. They could be done at any time and often can be done more cost effectively if combined within a larger project.

General Observations

The original building that constitutes the Mason School was originally designed as a church. This part now serves as the multi-purpose room. The rest of the school was built in two additions. The building is well designed esthetically but has challenges relating to the building layout. The additions were added on in series creating a long floor plan for the number of rooms. This was done because of limited amounts of space between the original building and the property line. Future additions are limited by those property lines as well as ledge and existing parking areas.

Site

The total size of the site meets state guidelines but the buildable area immediately adjacent to the building is very constricted. Property lines are close to the building on three sides. The fourth side is the existing parking lot and play area. The play area is built on mostly ledge.

The possibility of gaining land on either side of the existing building should be explored to create opportunities to improve the layout of the building. Adding to the building in the same pattern as the last two additions will result in a very linear building which could be problematic for supervision and building efficiency. This would also displace the available parking area.



Envelope

The overall condition of the building is as expected for the age. The roofing is nearing the end of its anticipated life span and needs to be replaced. Some of the exterior trim has been replaced with PVC trim. More of it needs replacing. The exterior doors and windows in the original part of the building are past their life span and need to be replaced.



Building and Life Safety Code

The facility meets code with a few minor infractions. The age of the fire alarm system suggests that it be replaced. It is recommended that the replacement be an addressable system designed for future expansion.

Structure

The structure was not designed and built under today's codes and therefore may not meet current snow and seismic requirements. As long as the anticipated loads on the structure are not changed by more than 10% and as long as the structure shows no signs of stress, there is no requirement to make changes to the building.

Handicap Accessibility

The building was designed to be handicap accessible and it largely still meets code. Some small items such as signage and parking striping should be considered.

Indoor Environmental Quality

The building meets acceptable standards for indoor environmental quality. Part of the ventilation system has been replaced recently but more may be necessary. New computer controls for the heating system would save energy. The lighting has been upgraded recently.

Building Services

Building services and utilities generally are in good condition. Power distribution to classrooms is not adequate for the increasing number of computers in the classroom.

Interior Finishes

The interior is in good condition.

Security

There is no main office, therefore, no person to monitor the flow of people entering or leaving the facility. The school shares the principal with the Greenville School where the main office is located. There are several entrances to the school with the most likely door to be considered the main entrance near the parking lot. Either an office could be located near this door to monitor activity or a camera with a remote electric lock could be installed.

PROGRAM ANALYSIS

Programs have changed over the years and older buildings can become inefficient without modifications. Functional obsolescence occurs when new programs are introduced to a space that was not originally designed for it.

The school building is comprised of three separate vintage buildings with the latest major addition and renovation being 1987. This is relatively modern in design. Spaces that are provided are generally sized and configured as would be expected with today's standards. The school currently houses grades 1-4, but will need to house grades k-5 in September, 2009.

The most significant disadvantage to the layout is that this building was designed for cooperation with the Greenville Elementary School, and therefore does not contain all the necessary spaces. There is no main office or principal's office since the principal resided mostly at the Greenville School.

Small schools are less efficient due to the fact that the need for space resources cannot be shared over a very large population. The minimum size for certain spaces need to be met no matter how many students are enrolled. In larger schools it is easier to distribute students into spaces by averaging the numbers across several classrooms worth of students.

At the Mason Elementary School there are some grades that have as few as 9 students and others that are over 20. The smaller of the two utilize the core facilities (library, gym, art, music, etc.) at the same rate. There is no way to even out the numbers because these classes are in different grades. The core spaces therefore need to be designed for the maximum potential single grade enrollment.

The affect of the inefficiency of small schools is that the number of square feet per student rises as the design enrollments go down. The NH Department of Education recognizes this and uses a modifier on the state aid cap for schools under 250 students. The Mason Elementary School has fewer than 100 students currently enrolled. At this level it is likely that a waiver from the State will be required.

Educational Spaces

The classrooms are adequate in size and configuration. A room capable of handling kindergarten currently exists. There is a need for one more classroom for 5th grade to be added.

There is no art or music classroom. This is currently delivered in the classrooms. This can create scheduling conflicts as the teachers need to move their materials from one class to another. Since the small population of the school does not warrant two separate rooms for art and music, one combined space may suit the school.

One small classroom for special education is currently provided and this appears adequate.

Core Facilities

All the core facilities for the building are undersized. Some are critical to be address while others can be overlooked if a reasonable alternative is provided. The School District will need to coordinate with the NH Department of Education to determine which areas need to meet the State guidelines and which can be granted waivers.

Physical Education is provided in the multi-purpose room which doubles as the cafeteria. This room is too small and does not have enough ceiling height to be considered a gymnasium. There are occasionally scheduling conflicts between P.E. class and lunches. Due to the small enrollments it is recommended to continue using this room without changes. It would be expensive and inefficient use of space to build a new gymnasium for a school of 100 students.

There is currently no library in the school. There is a movement to consider utilizing the Town library instead of adding one to the school. Town buildings are outside the scope of this study and the viability of utilizing buildings off site needs to be addressed with the NH Department of Education. For this study we have assumed that no library will be provided on site.

There is a substantial need for office space. Currently, no main office, principal's office or nurse's office exist. There is a faculty work room that is of adequate size. The main office should be located near the primary entrance to the building, which in turn should be near the parking lot.

The kitchen appears to be undersized for the capacity. Expansion of the kitchen and storage should be considered.

Enrollment Projections

The adequacy of a school to perform for a given community is directly related to anticipate student enrollments. The important information is not only the total numbers of students but identifying peaks and trends within the figures. Enrollment projections included in this report are done through the use of cohort survival ratios. This represents the likelihood of students moving in or out of the district. Numbers are factored based on a 5 year average, a 3 year weighted average, and a simple project with no increase or decrease.

The difficulty in preparing enrollment projections is determining probable future enrollments for kindergarten. Once that is established, tracking the progression of students through the grades is more set. Generally school districts throughout New Hampshire are experiencing a drop in kindergarten enrollments due to birth rates being low. Current demographics show that the current generation of child-bearing age is the smallest group currently alive. This group is between the "Baby Boom" generation and baby boom children or the "Baby Boom Echo". Numbers may increase once the "Echo" generation begins having children but it is unlikely that the numbers will exceed the "Echo" generation for quite some time.

The small size of the school again poses a problem in that even a small fluctuation in numbers can dramatically affect the calculations. Since there is only one classroom per grade in this school there is no way to spread the results. Monitoring the changes year to year is very important in understanding future trends.

The current trend at the Mason Elementary School is for enrollments to stay relatively flat. New enrollments into first grade vary dramatically. With the exception of some recent years, the average enrollments are down from ten years ago. The birth rates in the town of Mason show a potential decline in population. With the exception of a few peak years, births are down by as much as 20% from 5 to 10 years ago. The cohort survival ratios also show an average decline year to year of roughly 5%.

The net effect is that there could be some years of peak enrollments, but in the foreseeable future enrollments could also decline. The peak could be about a 10% increase over the

current enrollments. In the projections there is no year in which more than one classroom per grade is needed. It is recommended that the design capacity be based on one classroom per grade with a maximum capacity per classroom of 25.

CONCLUSIONS

The Mason Elementary School is in reasonably good condition and worth investing in. The site is the single large drawback. The site restricts expansion possibilities. If some adjacent property was to be acquired, it is possible to maintain a K-5 or possibly K-6 on this site.

There are several locations where additions can be attached to the existing facility. These additions total between 4,000 and 6,000 square feet depending on configuration and the ability to add adjacent property. It is likely that two separate additions will be required due to the desired location for program elements and also due to the nature of the existing corridor system. The main office should be located at the end of the building facing the parking lot where the last design designated an addition. Classrooms would be better positioned inside the courtyard. This addition is limited by the property line on that side of the building.

A K-8 facility would not be feasible. The additional program space, core facility space and additional site requirements such as fields and parking would exceed the current facilities ability to support. If a K-8 facility is required a new school would be highly recommended.

End Report

Mason Elementary K-5

Building Needs Assessment

	Upper Floor	Lower Floor	Total
Area	10,739	0	10,739
Perimeter	668		668

Cat	Item	Problem	Corrective Measure	Cost / Priority		
				High	Medium	Low
Site	1 Minimum Size Lot	Complies				
	2 Water and Septic	Septic designed for 120 students, 20 years old				
	3 Bus/Car Separation	Bus turn-around has parking	Separating buses and cars should be considered			
	4 Parking	Limited parking	Additional parking should be considered			\$ 20,000
	5 Grading and Drainage					
	6 Playground/Playfields					
	7 Oil, Propane Tank Age/Condition	New tank complies				
Envelope	8 Roof Condition	Nearing end of life cycle		\$	80,543	
	9 Wall Condition (insulation and moisture protection)	Window trim replace recently, other areas need to be checked for water damage	Repair/replace as required	\$	5,000	
	10 Door Condition (energy efficiency and operation)	Nearing end of life cycle		\$	8,000	
	11 Window Condition (energy efficiency and operation)	Multipurpose room windows are old, Most of rest of building in good shape	Replace older windows with new	\$	20,000	
	12 Foundation Condition (insulation and moisture protection)	Complies				
Life Safety	13 K-2 location based on LED	Complies				
	14 Panic devices	Complies				
	15 Stair Details (Rise/Run, Railings)	Complies				
	16 Areas of Refuge	Complies				
	17 Capacity of Means of Egress	Complies				
	18 Corridor Width	Alcove between 121 and 122 does not comply	Widen corridor or add other exit doors	\$	5,000	
	19 Number of Exits	Complies				
	20 Dead-end Corridors	Complies				
	21 Exits through Intervening Rooms	Complies				
	22 Door Arrangement	Complies				
	23 Travel Distance	Complies				
	24 Means of Escape	Complies				
	25 Protection of Vertical Openings	Complies				
26 Protection of Hazards	No ratings at mechanical and storage	Add layer of drywall and upgrade doors	\$	5,000		
27 Protection of Corridors	No ratings at corridor	Add layer of drywall and upgrade doors	\$	17,000		
28 Smoke Compartments	Complies					
29 Fire Alarm	Outdated system	Replace w/ addressable system		\$	32,217	
30 Furnishings, Decorations and Personal Effects in the Corridor	Complies					
Building Code	31 Height and Area Limitations	Complies		\$	-	
	32 Construction Classification	Complies				
	33 Fire Rated Construction	Upgrades are required			\$	5,000
	34 Interior Finishes	Complies				
	35 Sprinklers	Not Required although recommended and may be required with an addition				\$ 132,217
	36 Fire Protection	Verify quantity and location of portable fire extinguishers				
Structural	37 Snow Load Capacity	Roof not designed to current code. Potential issues in old church section.			\$	10,000
	38 Wall Condition (seismic capacity, cracks or deflection)	Walls not designed to current code. Little to no cracks observed.				
	39 Foundation Condition (cracks or rot)	Walls structural sound.				
Accessibility	40 Parking	Complies				
	41 Building Access	Complies				
	42 Accessible Route	Complies				
	43 Door Clearances	Complies				
	44 Door Hardware	Complies				
	45 Stair Details	Complies				
	46 Toilet Facilities	Complies				
	47 Elevator	Complies				
Environmental Quality	48 Ventilation	Some upgrades required, some UV's replaced recently, others need to be	Upgrade mechanical systems with new UV's as required		\$	10,000
	49 Thermal Control	Some upgrades required	Upgrade controls to new DDC	\$	21,478	
	50 Moisture / Mold	Complies				
	51 Lighting	Upgrade to new T8 recently done, further upgrades worth considering	Install automatic controls, other upgrades			\$ 8,054
Build. Services	52 Sanitation	Complies				
	53 Boiler Condition	Complies				
	54 Plumbing / Fixture Count	Complies				
	55 Main Electrical Service	Complies				
	56 Power Distribution	Lack of outlets for technology	Add outlets, upgrade distribution			\$ 18,793
57 Phone, Intercom, Security	New phones, upgrades to security worth considering	Add security devices			\$ 5,000	
Interior	58 Ceilings	Complies				
	59 Walls	Complies				
	60 Doors	Complies				
	61 Floors	Complies				
	62 Cabinetry	Complies				
	63 Visual Display Boards	Complies				
Security	64 Lock-down of public areas (Gym, Caf, Library)	Multipurpose room cannot be separated from rest of building	Install security doors near side entrance, add sidewalk to entrance from parking			\$ 20,000
	65 Secure Visitor Check-in	Entrance lacks secure vestibule	Install visitor check-in as part of new addition			
	66 Visibility					
Program	67					
	68					
	69					
	70					

\$ 48,478 \$ 170,760 \$ 204,065

\$ 423,302 Total

State Funding Thresholds Minimum Maximum
\$ 410,767 \$ 985,840

Table A

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Mason School

Student Historic Enrollments

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	5 year	3 year Wtd
Births	21	9	11	14	13	13	18	14	13	19	8	3	11	7
K						17	7	9	11	10	10	14	11	12
1				22	18	17	24	17	13	12	11	21	15	16
2				12	18	17	18	20	11	12	11	9	13	10
3				15	11	18	17	17	21	12	11	10	14	11
4				8	13	12	19	16	17	22	11	11	15	13
5				19	7	8	12	14	16	14	16	13	15	14
6				12	20	7	14	9	10	13	14	17	13	15
7				13	13	19	8	12	14	16	10	14	13	13
8				12	17	14	15	9	8	10	11	12	10	11
Tot. Elem				76	67	89	97	93	89	82	70	78		
Tot. Middle				37	50	40	37	30	32	39	35	43		
Total				113	117	129	134	123	121	121	105	121		

Cohort Survival Ratios

	1999	2000	2001	2002	2003	2004	2005	2006	2007	5 year	3 year Wtd	projected
K				0.778	0.818	0.786	0.769	0.769	0.778	0.784027	0.773504	1
1			0.81	2.667	1.545	0.929	0.923	0.846	1.167	1.081985	1.019231	1
2		0.818	0.944	1.059	0.833	0.647	0.923	0.917	0.818	0.827664	0.868493	1
3		0.917	1	1	0.944	1.05	1.091	0.917	0.909	0.982222	0.941919	1
4		0.867	1.091	1.056	0.941	1	1.048	0.917	1	0.981092	0.980159	1
5		0.875	0.615	1	0.737	1	0.824	0.727	1.182	0.893892	0.970588	1
6		1.053	1	1.75	0.75	0.714	0.813	1	1.063	0.867857	1	1
7		1.083	0.95	1.143	0.857	1.556	1.6	0.769	1	1.156386	1.023077	1
8		1.308	1.077	0.789	1.125	0.667	0.714	0.688	1.2	0.87869	0.948214	1
	0.99	0.94	1.25	0.95	0.93	0.97	0.84	1.01		0.93931	0.94724	1

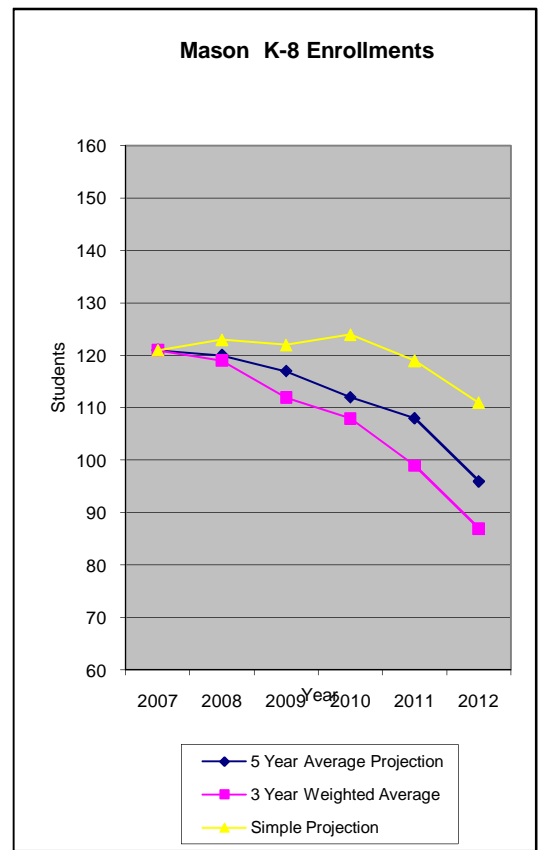
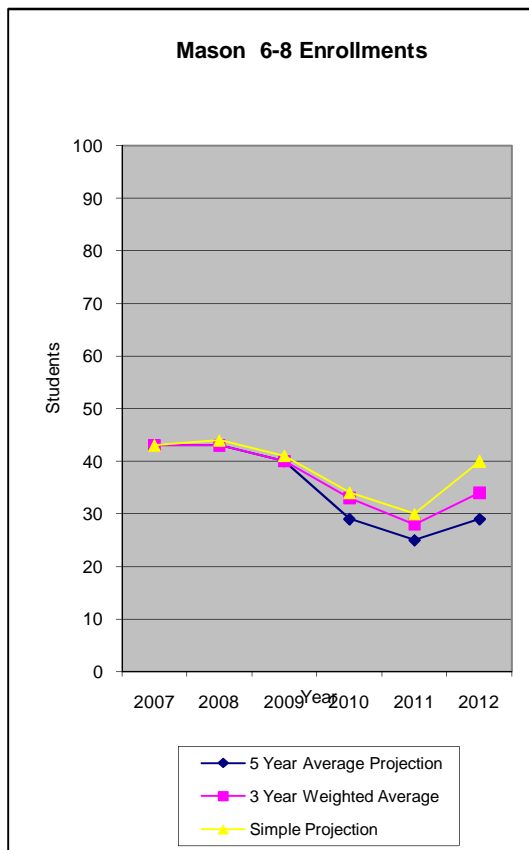
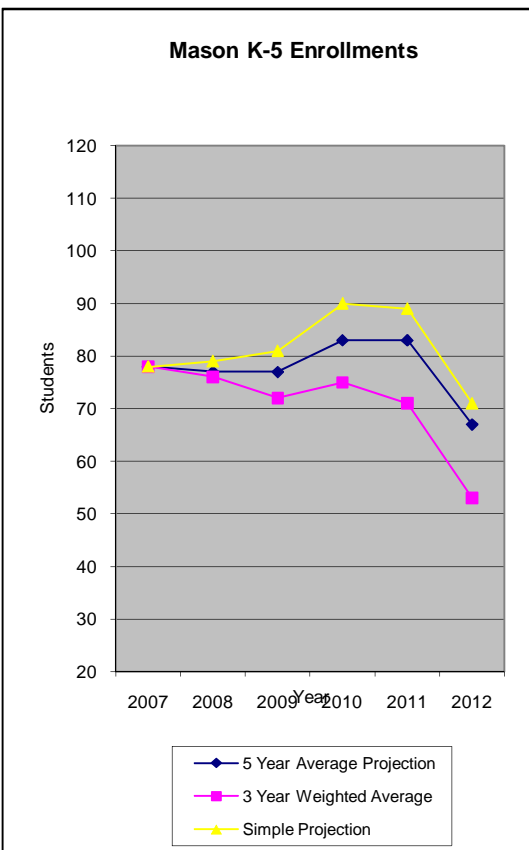


Table B

Mason Elementary School K-5

Capacity Worksheet

Design Capacity	100
Core Capacity (Theoretical Max.)	150
Periods Per Day	6
Number of grades (include K)	6

<u>Subject</u>	Students/grade	Average Size	Max Size	Teaching Stations
Kindergarten (1)	17	17	25	1.0
1 Grade Classroom	17	17	25	1.0
2 Grade Classroom	17	17	25	1.0
3 Grade Classroom	17	17	25	1.0
4 Grade Classroom	17	17	25	1.0
5 Grade Classroom	17	17	25	1.0

Total Regular Classroom 5.0

	% enrolled	Total	Avg. Class	Meetings / Week	Required Stations
Sp. Ed. /Specialists (2)	15%	23	8		3.0
Computer	100%	150	20	1	0.0
Art (3)	100%	150	20	1	1.0
Music (3)	100%	150	20	1	0.0
Phys. Ed.	100%	150	20	1	1.0

- 1 Kindergarten usually has fewer students than 1st grade due to private care givers. Assumes 1/2 day program.
- 2 Actual Special Ed and Specialists required spaces varies considerably from school to school. Above calculation is solely for computing purposes. Required spaces should be base on actual programs.
- 3 Art and Music are combined into one room to utilized the space more efficiently. Storage at either end of the room services each program.

Table C

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Mason Elementary School K-5

Space Needs Worksheet

Design Capacity 100
Core Capacity 150

ELEMENT	DESIGN			EXISTING			COMMENT	
	#	SIZE	TOTAL	#	SIZE	TOTAL		
EDUCATIONAL SPACES	Kindergarten	1	1200	1200	1	1300	1300	
	Classrooms	5	900	4500	4	865	3458	CR's slightly small. Need to add 5th grade.
	Art Music	1	1000	1000	0	0	0	Specials currently delivered in CR's or caf
	Special Ed. /Specialists	3	450	1350	1	639	639	No OT/PT, Lack of testing space, need reading specialist
CORE SPACES	Phys Ed / Multipurpose (1/2 court for K-5) (1) Platform (performances) Storage			1200			1168	MPR not a gym. MPR used for caf and PE. Size, height and safety are issues
	Library (2)			0			0	Will utilize Public Library across street.
	Computer CR						119	No computer room, Technology programs could be combined with library
	Offices Admin./Guid. Faculty / Work Nurse		900 300	1200 300	1	213	213	Some offices including principal are shared with Greenville and not present at this school and need to be added.
	Food Service Cafeteria Kitchen			600			115	MPR used for cafeteria. Kitchen should be expanded.
	Subtotal			11350			7289	
	Misc. -Circ, Mech, Toilets, Janitor Storage			4540			3497	Single loaded corridor inefficient.

Totals

15890

10786

Sq. Ft. / Student (Design Cap.) 159
Sq. Ft. / Student (Core Cap.) 106

State Funding Cap 150 144 21600 s.f.
Students s.f./student

- (1) Non-gym space may need waiver from State
- (2) Assumes utilizing town library. May need waiver from State

Table D

Mason Elementary School K-4

Bond Cost Worksheet

1. Site Development Costs				\$80,000
Playfields		Field		\$0
Paving	5	Spaces		\$10,000
Grading / Ledge Removal				\$50,000
Site Prep & Utilities				\$0
Septic				\$20,000
Well / Water System				\$0
2. General Construction				\$1,363,700
Additions	5104 s.f.	\$ 153 per s.f.		\$717,000
Renovations				\$423,300
Contingency - Additions	5.00%			\$35,900
Contingency - Renovations	15.00%			\$63,500
Construction Manager Fee	5.00%			\$124,000
3. Furniture, Equipment and Services				\$129,600
Loose Equipment	5.00%			\$68,200
Phone Service	1.00%			\$13,600
Computers	2.00%			\$27,300
Utility Charges	1.50%			\$20,500
4. Design Fees				\$110,100
Architectural and Engineering	7.00%			\$110,100
CHPS Certification	0.00%			\$0
5. Administrative Costs				\$58,800
Testing	0.25%			\$4,200
Survey, Borings	0.50%			\$8,400
Clerk of the Works	1.00%			\$16,800
Bonding	1.00%			\$16,800
Legal	0.75%			\$12,600
6. Contingency				\$68,200
	5%	of construction		

Total Project Cost

\$1,810,000

(Note: all numbers rounded to nearest \$100, Total rounded to nearest \$10,000)

Table E

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CODE REVIEW NOTES

PROJECT DESIGNED BASED ON FOLLOWING CODES

NEW HAMPSHIRE FIRE CODE
 2003 NFPA 101 LIFE SAFETY CODE
 (WITH STATE AMENDMENTS PER SAF-C 6008.5)
 NH BARRIER FREE DESIGN CODE - ADAAG
 NH STATE BUILDING CODE (WITH AMENDMENTS)
 2006 INTERNATIONAL BUILDING CODE
 2006 INTERNATIONAL ENERGY CONSERVATION CODE
 2006 INTERNATIONAL MECHANICAL CODE
 2006 INTERNATIONAL PLUMBING CODE
 2005 NATIONAL ELECTRIC CODE

USE AND OCCUPANCY CLASSIFICATION:

LSC = NEW EDUCATIONAL

IBC = E

ANCILLARY USES: MULTI-PURPOSE = ASSEMBLY
 OFFICES = BUSINESS

BUILDING HEIGHT AND AREA:

NUMBER OF STORIES	1
TOTAL BUILDING SIZE	10,739 SQUARE FEET
PERIMETER	663 FEET
SPRINKLERS	NO
OPEN PERIMETER	63%

CONSTRUCTION CLASSIFICATION (IBC 602)

TYPE: 5b COMBUSTIBLE, UNPROTECTED

CALCULATIONS

TABULAR AREA	7200 SQUARE FEET
SPRINKLER MODIFICATION	0 %
OPEN PERIMETER	63 %

7200 + 5471 = 12,671 ALLOWABLE SQUARE FEET

PROTECTION

MASONRY WALLS UP TO (2) HOUR RATED TO BE PER U.L. DESIGN #U905

DRYWALL WALLS UP TO (1) HOUR TO BE PER U.L. DESIGN #U305

FIRE EXTINGUISHERS INDICATED ON PLAN: FE CAB (**FE**)
 INDICATES SEMI-RECESSED CABINET

MEANS OF EGRESS

OCCUPANT LOAD (LSC TABLE 7-3.1.2)

CLASSROOMS = 20 SQ. FT. / PERSON
 ASSEMBLY = 7 SQ. FT. / PERSON
 KITCHEN = 100 SQ. FT. / PERSON
 BUSINESS = 100 SQ. FT. / PERSON
 STORAGE = 300 SQ. FT. / PERSON

EGRESS COMPONENT DESIGN CAPACITY (Based on NFPA 101/7-3.3.1)

LEVEL COMPONENTS AND RAMPS: 0.2 INCHES PER OCCUPANT
 STAIRS: 0.3 INCHES PER OCCUPANT

MINIMUM CORRIDOR WIDTH: 6'-0" (BASED ON NFPA 101/15.2.3.2)

MINIMUM STAIR WIDTH: 3'-0" EXISTING CLASS A STAIRS
 (BASED ON NFPA 101/7.2.2)

MINIMUM NUMBER OF EXITS: EDUCATIONAL = 2 (NFPA 101/15.2.4)
 ASSEMBLY = 2 (NFPA 101/13.2.4)

ARRANGEMENT OF MEANS OF EGRESS:

MAXIMUM DEAD END CORRIDOR - EDUCATIONAL 20'-0"
 (Based on NFPA 101/15.2.5.2)
 ASSEMBLY 20'-0"
 (Based on NFPA 101/13.2.5.6.2)

MAXIMUM TRAVEL DISTANCE:

EDUCATIONAL OCCUPANCY - 150 FEET
 (NFPA 101/15.2.6.2)
 ASSEMBLY OCCUPANCY - 200 FEET
 (NFPA 101/13.2.6)

MAXIMUM COMMON PATH OF TRAVEL: 75 FEET (NFPA 101/15.2.5.3)

EGRESS NOTED ON DRAWING:

BUILDING OCCUPANT LOAD / EGRESS COMPONENT CAPACITY
 288 / 1440

DESIGNATED ON FLOOR PLANS:

ONE HOUR RATED PARTITION
 MECHANICAL, JANITOR CLOSET

ONE HALF HOUR RATED SMOKE PARTITION
 CORRIDORS

NOTE: PENETRATIONS THRU RATED WALLS TO BE COMPATIBLE WITH WALL U.L. DESIGN

PLUMBING REQUIREMENTS

OCCUPANT LOAD

EDUCATIONAL: 288 OCCUPANTS
 ASSEMBLY: 167 OCCUPANTS
 BUSINESS: 15 OCCUPANTS

EDUCATIONAL

WATER CLOSETS: 1 PER 50 OCCUPANTS (6 TOTAL REQUIRED)
 LAVATORIES: 1 PER 50 OCCUPANTS (6 TOTAL REQUIRED)
 DRINKING FOUNTAINS: 1 PER 100 OCCUPANTS (TOTAL 3 REQUIRED)

ASSEMBLY

WATER CLOSETS: 1 PER 125 MALE / 1 PER 65 FEMALE OCCUPANTS
 1 MALE REQUIRED / 2 FEMALE REQUIRED
 LAVATORIES: 1 PER 200 OCCUPANTS (1 TOTAL REQUIRED)
 DRINKING FOUNTAINS: 1 PER 500 OCCUPANTS (1 TOTAL REQUIRED)

BUSINESS

WATER CLOSETS: 1 FOR 25 ~ 1 PER 50 OCCUPANTS (2 REQUIRED)
 LAVATORIES: 1 FOR 40 ~ 1 PER 80 OCCUPANTS (2 REQUIRED)
 DRINKING FOUNTAINS: 1 PER 100 OCCUPANTS (1 REQUIRED)

PROVIDED

WATER CLOSETS: EDUCATIONAL: 2 MALE / 3 FEMALE
 ASSEMBLY: 1 UNISEX
 BUSINESS: 1 UNISEX

LAVATORIES: EDUCATIONAL: 2 MALE / 3 FEMALE
 ASSEMBLY: 1 UNISEX
 BUSINESS: 1 UNISEX

DRINKING FOUNTAINS: EDUCATIONAL: 3
 ASSEMBLY: 1

EDUCATIONAL AND ASSEMBLY OCCUPANCIES NOT SUBJECT TO SIMULTANEOUS EGRESS. PUBLIC TO HAVE LIMITED ACCESS DURING THE DAY. CLASSROOMS NOT FULLY OCCUPIED AT NIGHT.

THE EXISTING CAPACITY OF THE FACILITY IS 288 OCCUPANTS. EGRESS NUMBERS REPRESENT CODE REQUIREMENTS AND NOT ACTUAL ANTICIPATED NORMAL OCCUPANCY.

2 KENNEDY STREET
 CONCORD, NH 03301

P: (603)225-3160
 F: (603)225-3161

BARKER
ARCHITECTS PLLC

MASCENIC REGIONAL SCHOOL DISTRICT
 MASON ELEMENTARY SCHOOL
 FEASIBILITY STUDY
 CODE REVIEW

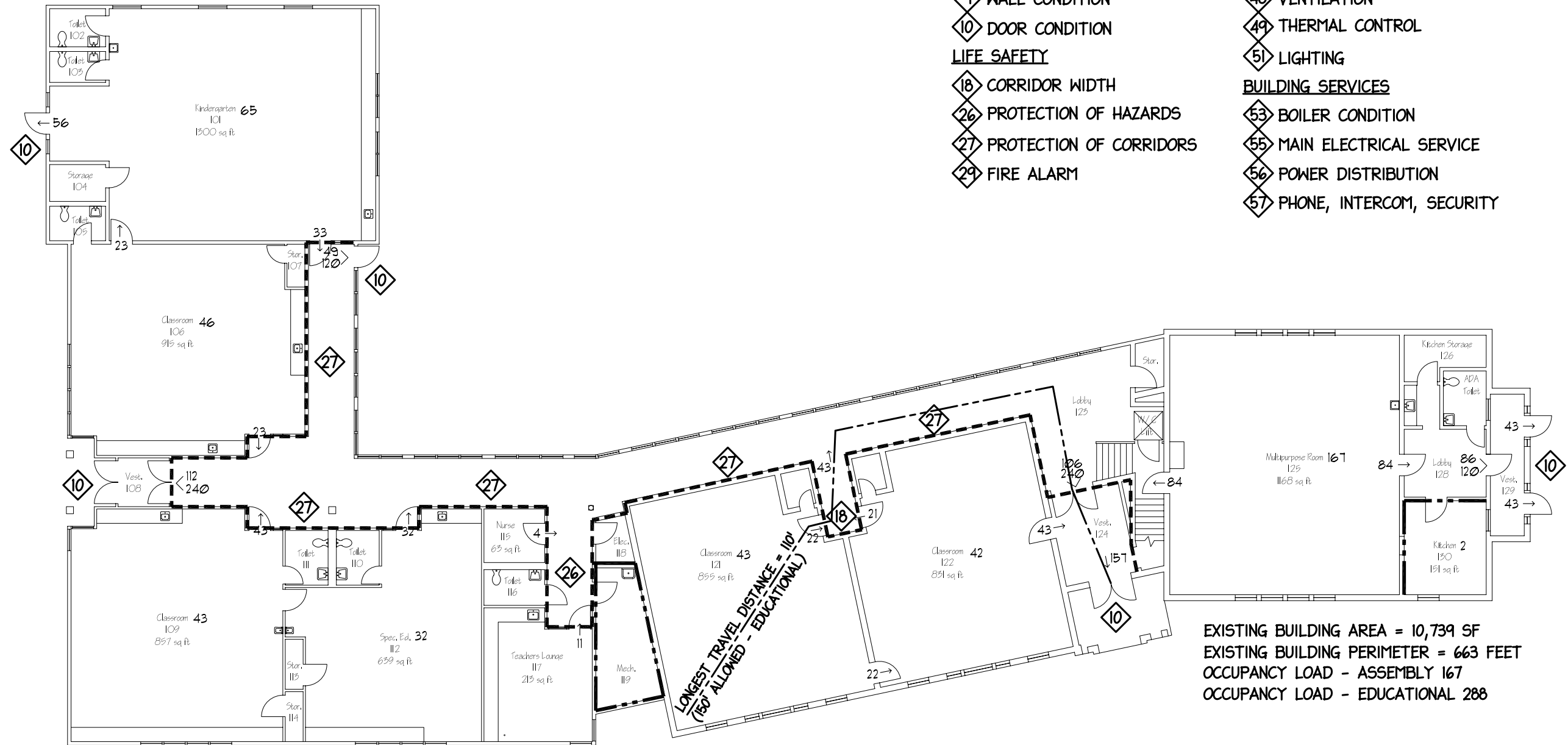
DATE: MAY 20, 08

SCALE: N.T.S.

DRAWING #

1

OF 3



SITE

- 2 WATER & SEPTIC
- 4 PARKING
- 6 PLAYGROUND/PLAYFIELDS

ENVELOPE

- 8 ROOF CONDITION
- 9 WALL CONDITION
- 10 DOOR CONDITION

LIFE SAFETY

- 18 CORRIDOR WIDTH
- 26 PROTECTION OF HAZARDS
- 27 PROTECTION OF CORRIDORS
- 29 FIRE ALARM

BUILDING CODE

- 33 FIRE RATED CONSTRUCTION

STRUCTURAL

- 37 SNOW LOAD CAPACITY
- 38 WALL CONDITION

INDOOR ENVIRONMENTAL QUALITY

- 48 VENTILATION
- 49 THERMAL CONTROL
- 51 LIGHTING

BUILDING SERVICES

- 53 BOILER CONDITION
- 55 MAIN ELECTRICAL SERVICE
- 56 POWER DISTRIBUTION
- 57 PHONE, INTERCOM, SECURITY

EXISTING BUILDING AREA = 10,739 SF
 EXISTING BUILDING PERIMETER = 663 FEET
 OCCUPANCY LOAD - ASSEMBLY 167
 OCCUPANCY LOAD - EDUCATIONAL 288

EXISTING GROUND FLOOR PLAN
 SCALE: N.T.S.

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MASCNIC REGIONAL SCHOOL DISTRICT
 MASON ELEMENTARY SCHOOL
 FEASIBILITY STUDY
 EXISTING FLOOR PLAN

DATE:
 MAY 20, 2008

SCALE:
 N.T.S.

DRAWING #
 2
 OF 3

±5.75 ACRES

STEEP SLOPE

MEETINGHOUSE HILL ROAD

EXISTING SEPTIC SYSTEM

EXISTING BUILDING

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BARKER
ARCHITECTS
PLLC

MASCNIC REGIONAL SCHOOL DISTRICT
MASON ELEMENTARY SCHOOL
FEASIBILITY STUDY

SITE PLAN AND ADDITION LOCATIONS

DATE :
MAY 20, 2008

SCALE :
N.T.S.

DRAWING #
3
OF 3



PARKING

DRIVENWAY

DRIVENWAY

DARLING HILL ROAD

SITE PLAN
SCALE: N.T.S.

- 1 ADDITION FOR ADMIN.
- 2 ALTERNATIVE LOCATION FOR ADMIN.
- 3 ADDITION FOR CLASSROOM ART & MUSIC

GENERAL NOTES:
TOTAL NEW CONSTRUCTION 5,100 SF