

Schematic Design Report
MEMORIAL ELEMENTARY SCHOOL
Manchester-Essex Regional School District
Manchester-by-the-Sea, MA

Submitted July 18, 2018

JCJARCHITECTURE
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MANAGEMENT
PARTNERS, LLC

July 11, 2018

Fenton Bradley
MSBA Project Manager

Massachusetts School Building Authority
40 Broad Street, Suite 500
Boston, MA 02109

RE: Manchester Memorial Elementary School Project – Schematic Design Submission

Dear Fenton,

Please accept the Module 4 Schematic Design Submission for the Manchester Memorial Elementary School Project. As OPM, we have reviewed the package to assure that it is complete and meets the requirements set forth by the MSBA.

The District has approved the materials included in this submission, and agreed that the proposed project is within the District's budget, as documented within the Schematic Design.

We look forward to your feedback and working with you to proceed to the next phase in this project.

Sincerely,

Dore & Whittier Management Partners



Mike Burton
Owner's Project Manager

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DEPARTMENT OF ELEMENTARY AND SECONDARY EDUCAITON SUBMISSION

SECTION 4.1.1

July 11, 2018

Ms. Mary Pichetti
Director of Capital Planning
Massachusetts School Building Authority
40 Broad Street, Suite 500
Boston, MA 02109

Dear Ms. Pichetti,

The Manchester Essex Regional School District is pursuing execution of a Project Scope and Budget Agreement for the MSBA approved schematic design of the Manchester Memorial Elementary School in Manchester, MA. The District's 2017-18 enrollment is 351. The design enrollment for the proposed school project is 365. The existing high school currently serves grades Prek-5.

In accordance with G.L. c. 70 B, MSBA staff has assembled the documents required for the review of the special education program at the Manchester Memorial Elementary School. The following are attached per the 'Submittal Requirements':

1. A letter from Superintendent Pam Beaudoin describing the District's special education program.
2. Proposed space summary that includes the existing facility, proposed spaces, and MSBA guidelines based on the agreed upon design enrollment. The first page of this summary indicates a total of 6,540 square feet of space dedicated to the delivery of special education.
3. The floor plans for new construction for the proposed 77,796 square foot elementary school.
4. A completed Special Education adjacency Table

I have reviewed the attached documents and confirm that the District's School Building Committee has officially approved the attached submittal on July 9, 2018 and verify that the Space Summary matches the floor plan and is complete and conforms to the MSBA requirements as described in Module 4 – Schematic Design Guidelines.

Sincerely,

DORE & WHITTIER MANAGEMENT PARTNERS
Architects ● Project Managers

Steven W. Brown
Owner's Project Manager

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PAMELA BEAUDOIN
SUPERINTENDENT OF SCHOOLS

June 28, 2018

Matthew Deninger
Planning and Implementation Coordinator
Department of Elementary and Secondary Education
75 Pleasant St.
Malden, MA 02148-4906

Dear Mr. Deninger,

Attached please find an outline the Manchester Essex Regional School District Special Education Program. We are very proud of our Special Education Services and we look forward to having a modern facility in which to implement our programing. As requested, we have provided and overview and descriptions of our specialized programs. Should you have any questions after reviewing our documentation please do not hesitate to contact us.

Thank you.

Sincerely,

Pamela Beaudoin
Superintendent

The Manchester Essex Regional School District does not discriminate in its programs, activities or employment practices based on race, color, age, national origin, religion, gender, sexual orientation or disability.

MERSD Student Services

Current Program:

The Manchester-Essex Regional School District (MERSD) is committed to providing an inclusive and supportive environment for students with disabilities. Our mission is to ensure a high quality continuum of programming and services that remediate academic challenges, teach compensatory strategies, foster self-awareness, and promote independent learning skills that prepare students for success in inclusion settings.

Two hundred and eighteen students (218) currently receive special education services from MERSD. A total of twenty (20) students are enrolled in out of district programs, including private Chapter 766 schools and collaboratives. Two (2) of these students are associated with MERSD through school choice and receive funding from their sending communities. Four (4) of the outplaced students moved in during the 2017-2018 school year.

Manchester Memorial School serves students in grade PK-5 and houses three specialized programs: MERSD Integrated Preschool, the Social and Academic Integrated Learning (SAIL) Program, and the Intensive Reading and Written Language (IRWL) Program. These districtwide programs serve students from both Manchester and Essex. In total, sixty-five (65) special education students attend Manchester Memorial School. Seven (7) of these students are enrolled in the preschool, twelve (12) in SAIL, and eight (8) in IRWL. Each of these programs is projected to be at enrollment capacity for FY19. The IRWL program intends to expand grade levels served from 4/5 to grades 2-5 in FY19, increasing enrollment to sixteen (16) students. Descriptions for IRWL and SAIL programs are enclosed.

Memorial school moderate special education services range from inclusion support to specially designed small group instruction in reading, written language, and mathematics. The Memorial School special education staff comprises a Team Chairperson, 1.0 occupational therapist, 1.0 speech and language pathologists, .2 physical therapist, 2.6 contracted reading tutors, 2.0 moderate special education teachers, 2.0 IRWL teachers, 2.0 IRWL reading specialists, 2.0 SAIL teachers, 7.0 SAIL teaching assistants, and 1.0 moderate needs teaching assistant.

In addition to special education services, the Memorial School has a robust RTI program that employs two reading specialists and a math/general education curriculum specialist. Students receive additional supports within and outside the classroom. English Language Learner services are typically provided at Essex Elementary; Memorial School currently lacks space for English Language Learner tutorials.

Deficiencies in program based on program reviews/state oversight:

MERSD completed a DESE self-study process in 2017-2018; the next Coordinated Program Review is scheduled for 2018-2019. In the 2012-2013 review, the District received three partially implemented findings related to procedural documentation, which have been remedied.

Although the prior CPR and self-study yielded minimal evidence of deficiencies related to physical space, an OCR complaint in 2016-2017 focused on handicap access and raised the following concerns related to the Memorial building:

- Handicap access to building and preschool
- Accessibility throughout building, including bathrooms
- Accessibility of school playground structures.

Proposed program (insert text sent by Pam) 4B 2.3 and 2.2

4B.2.2 Proposed Program & 4B.2.3 Specialized Programs

IRWL: The Intensive Reading and Written Language (IRWL) program for students with dyslexia will add a self-contained grade 2/3 cohort next year. For the past five years, the program has enrolled grades 4 and 5 as a self-contained cohort; the district piloted a grade 3 classroom this year. Cohorts comprise up to eight (8) students with two teachers. The program currently has a dedicated classroom with a teacher, reading specialist, and tutor for the 4/5 program. Individual reading tutorials are delivered within the program and there are typically up to four divided spaces within a larger classroom.

Effective in FY19, there will be a need for dedicated 2/3 and 4/5 classroom spaces with flexibility for division into smaller cohorts as well as 2 dedicated quiet spaces per classroom for individual reading tutorials. These IRWL rooms utilize technology routinely, including multiple active boards for use when the cohort is divided into small groups. Ideally, these rooms will be located in close proximity to each other and well as their grade level classroom neighborhoods.

SAIL: The Social and Academic Integrated Learning (SAIL) program provides inclusion support, wraparound services, and individual and small group instruction for students with autism spectrum disorders and social emotional disabilities. SAIL serves students in grades K-5. The current location is in the grade 1 and 2 wing. One room is currently shared by all students in the program. Students in the SAIL program present with sensory and behavioral needs. There is currently no space nearby to take a sensory break or utilize de-escalation strategies.

In planning for the SAIL program, two classrooms are recommended in order to split the cohort in compliance with DESE guidelines (forty-eight (48) month age range limit per educational grouping) and locate student cohorts closer to their grade level classroom neighborhoods. These rooms need space for small group and individual instruction. In addition, each SAIL classroom needs an additional smaller room as a sensory break and de-escalation space for students.

In addition to the aforementioned needs, the Memorial School has historically served students with hearing impairments and requires ongoing use of sound panels in targeted classrooms as well as school-wide use of amplification devices. These needs are currently being addressed and the new building must continue to support students in this manner. The building currently has stairs that cannot be navigated by students with mobility challenges and this issue must be addressed in the building project.

Pre-Kindergarten: The MERSD currently offers a district-wide integrated preschool program housed at Memorial School in Manchester. The preschool typically serves a total of 20-30 students through a two day program for three year olds and a three day program for four year olds.

The student cohort comprises tuition paying peer pals and students with disabilities. The program runs from 8:30am-12:30pm e to space constraints, the current program is limited in size. It is part of the district's vision to provide greater access to Pre-School by expanding the program to all residents with young children ages 3-4. An assessment of demographic data, leads us to conclude that we should anticipate enrollment to average between 45 to 65 students. The District maintains a 50/50 ratio of peer pals to special education students per DESE guidelines.

The preschool curriculum is delivered in whole group and center based learning (6 centers), including play centers with a mid-room divider, a low sink designed for children's access, lunch/snack area, cubbies for student clothing and lunchboxes, and an outdoor playground. The current location has abundant natural lighting. The preschool is outfitted with sound panels and an amplification system for students with hearing impairments. There is a student bathroom with low toilets and room for portable potty seats. A storage space with a window is used for multiple purposes, including small group and individual speech and language therapy. This space is alternately used for changing students who wear diapers.

Students in the preschool receive speech and language, occupational therapy, and physical therapy services. These services are delivered in whole class, small group, and individual sessions. For other individual therapies, students receive services in a separate space within the room or transition to another location.

Over the next three to five years, the preschool hours will expand to full day in an effort to better serve the needs of working parents. The addition of day care during after school hours is under consideration. Creation of two preschool classroom spaces will allow for further expansion of enrollment. Within each space, there will need to be space for six (6) small group centers, circle time, meals, therapy groups, and a diaper changing area, a bathroom, and classroom sink use. Space for individual therapies is needed unless these rooms are in close proximity to the preschool within the new building. The classroom requires a tiled area for

meals/snacks and art projects. Play and circle time areas must be carpeted. One of the six center spaces will be designated as a quiet area for reading. A large storage closet and ample shelving in the classroom are critical for reducing visual clutter and maintaining classroom supplies. Access to a separate, quiet room for sensory needs and/or de-escalation is recommended.

The use of sound panels, amplification system, and carpeting will need to continue in the new space to accommodate hearing impaired children. Wheelchair access and ramps between the preschool and other locations within the elementary school are necessary to address ADA compliance. Playground equipment must be handicapped accessible.

Collaborative Programs: The District does not currently house collaborative programs. The local collaborative, North Shore Education Consortium, does not currently locate any programs in public schools. MERSD has chosen to develop districtwide programs that minimize the need for out of district programs, including collaborative programs, due to the cost savings involved. MERSD specialized programs are well regarded and parents routinely transfer students within the district to access these programs. A severe needs program is housed at Essex Elementary; IRWL, SAIL, and the preschool are located at Memorial. When resident needs are met and space remains in these programs, the District accepts tuition students.

Alternative Education Programs: The MERSD does not offer alternative education programs. The five (5) year graduation rate for MERSD is 98%; approximately 90% of graduates attend college after graduation.

Local review process:

Special education staff actively participated in the envisioning and design process for the Memorial School building project. Several special education teachers participated in two (2) full day envisioning workshops. In addition, individual recommendations were sought from specialized program teachers and the Team Chair regarding space and environmental needs. The Director of Student Services and Team chair reviewed design plans with the Principal and Superintendent and provided information about the number, size, type, and location of spaces required to support both inclusion, pull out instruction, and sub-separate programs. Shared space for tutors, specialists, and part-time staff was considered in an effort to maximize space utilization within the new building design.

Manchester-Essex Regional School District
Intensive Reading and Written Language Program

Mission: The Manchester-Essex Regional School District (MERSD) is committed to providing an inclusive and supportive environment for students who require intensive remediation due to significant reading disabilities. Our mission is to ensure a high quality continuum of programming and services that remediate challenges in reading and writing, teach compensatory strategies, foster self-awareness, and promote independent learning skills that prepare students for success in inclusion settings.

Program Description
The Intensive Reading and Written Language (IRWL) program at Manchester Memorial Elementary School provides 4th and 5th grade students who have diagnosed reading and language based learning disabilities with specialized instruction in Language Arts, Oral Communication, Reading, Mathematics, Science, and Social Studies. Instruction is thematically based and parallels content in the mainstream 4th and 5th grade classrooms. The Intensive Reading and Written Language Program incorporates speech and language support as well as daily reading tutorials tailored to individual student needs. Assistive technology designed to support reading and written language development is integrated throughout the program. A general education in each grade collaborates with the IRWL program in supporting students in sustaining connections with peers through grade level and co-curricular activities.

Program Core Values and Strategies: The Intensive Reading and Written Language program offers developmentally appropriate curriculum and instruction designed to support student strengths and address vulnerabilities through the following strategies:

- Emphasize skills acquisition in reading and writing;
- Incorporate a clear, sequential, and multi-sensory approach to learning, including ongoing use of visual reinforcements and opportunities for kinesthetic learning;
- Preview and review vocabulary relating to each lesson;
- Employ multi-modal assessment to maximize students' ability to demonstrate learning;
- Utilize micro-uniting (also known as "chunking") and structuring of tasks;
- Automatize concepts and strategies through frequent opportunities for practice and review;
- Provide grade level content aligned with the Massachusetts curriculum frameworks;
- Conduct frequent progress monitoring and use results to inform instruction;
- Integrate assistive technologies that support students' independent access to the curriculum;
- Offer opportunities for increased independence, preparing students to transition to mainstream programming once skills are strengthened and compensatory strategies developed.

Specialized Instruction and Methodologies: The Intensive Reading and Written Language Program utilizes specialized decoding and reading comprehension programs and incorporates language based instruction across the curriculum using the following specialized curricula and methodologies:

- Highly structured, systematic, research-based reading programs matched to student needs (LIPS, Wilson, Orton Gillingham, Lively Letters, Seeing Stars)
- Landmark Writing Method
- Framing Your Thoughts
- Brain Frames
- Mindwing Story Grammar Marker
- Keys to Literacy
- Read Naturally Reading Fluency Program
- Assistive Technologies (Kurzweil, IXL)

Student Profile and Admission Criteria:
The admission process for the Intensive Reading and Written Language Program begins with a referral by the special education team based on the criteria listed below.

- A primary diagnosis of reading (dyslexia) or language based learning disability;
- Average to above average cognitive and receptive language ability based on standardized measures;
- Scores more than a year below grade level on multiple measures of reading ability;
- Documented difficulties in accessing an inclusion curriculum in multiple content areas;
- The need for a specialized curriculum that builds reading and written language competencies across content areas;
- No history of significant behavioral or emotional issues.

The program admissions committee will conduct an observation of the student, review the student record, grades, recent evaluation, and consider recommendations of classroom teachers prior to making a decision.

Exit Criteria:
The mission of the Intensive Reading and Written Language Program includes a commitment to educating students in the least restrictive environment. Students receive intensive, highly structured, small group and individualized instruction with the goal of returning to the inclusion classroom. When students have attained the following skills, the Special Education Team will reconvene to develop a Transition Plan:

- The student demonstrates the ability to access grade level text through improved reading skills and compensatory strategies;
- The student produces grade level written language with or without the use of assistive technology;
- The student displays an increased level of independence as a learner;
- The student has a developmentally appropriate understanding of his/her strengths and disability-related needs.

Social and Academic Integrated Learning (SAIL) Program
at Manchester Memorial Elementary School

Mission: The Manchester-Essex Regional School District is committed to providing an inclusive and supportive environment for students with autism spectrum disorders and social emotional disabilities who require academic, emotional, and social pragmatic supports throughout the school day. The mission of the SAIL Program is to provide high quality services that address students' social-emotional, behavioral, and academic challenges, maximize independent learning skills, and prepare students for a successful transition to middle school. This approach includes education of students and parents about the impact of the disability, development of targeted and measurable goals, and implementation of interdisciplinary team supports and services.

Program Description: The SAIL Program provides a comprehensive social support model for students who require specialized assistance and ongoing case management. A maximum of twelve students in grades K-5 comprise the SAIL Program cohort. Program staffing consists of an interdisciplinary team that includes two certified special education teachers, teaching assistants, occupational therapist, speech and language pathologist, and school psychologist. Students accessing the SAIL Program participate in mainstream classes throughout the school day in addition to therapies, social skills groups, academic and executive functioning support, and specialized case management. In addition, students often receive additional supervision and support during unstructured times when social challenges are greatest, including lunch, recess, and transition times.

Specialized Program Components:

- Tracking of personal and social goals developed in collaboration with teachers and counselors;
- Individual coaching and group counseling to build social pragmatic skills;
- Intensive case management by the SAIL Program liaison;
- Explicit instruction in positive pro-social behaviors and self-advocacy;
- Specialized instruction in time management and study skills;
- Home-school communication, which will include the establishment of partnerships between parents and program staff.

Specialized Instruction and Methodologies: The SAIL Program teaches study skills and strategies for implementation across the curriculum and assists students in building social skills, resilience, and independence through the following methodologies:

- Positive Behavior Intervention Supports
- Social Thinking Groups
- Thinking Maps
- Structured Study Skills Development
- Anxiety/Stress Management Strategies

Student Profile and Admission Criteria:
Students selected to participate in the SAIL Program present with social-emotional disabilities and/or high functioning (level 1) autism, and require intensive supports to manage transitions, problem solve social situations, and build self-regulation and classroom functioning skills. The following criteria must be met prior to recommendation for this specialized service:

- Diagnosis of an autism spectrum disorder (level 1), or social-emotional disability
- Continued and significant challenges in social skills, self-advocacy, problem-solving, and independent learning *despite multiple interventions*;
- Cognitive ability in the average range based on standardized measures;
- Documented difficulty in successfully accessing unstructured activities without significant structures and supports;
- Sensory processing deficits more than one standard deviation below the mean in two or more areas;
- Need for specialized programming that builds social pragmatic skills, peer relationships, study and organizational strategies, self-regulation, self-advocacy, and independent living and learning skills.

The admission process for SAIL Program consists of a review of student records, observation, and student interview. Referrals are made through each student's Special Education Team. Decisions will be made by a committee that includes the Director of Student Services, MMES Principal, and Untitled Program professional staff.

Student Transitions:
The SAIL Program assists students in increasing social skills, self-advocacy, and independent functioning with progress benchmarks established for each year of elementary school. Transitions will receive special attention and planning for these students. Regular education partners will be selected and trained to support students in the SAIL Program as they progress to the next grade level each year. Students will also receive early transition planning and supports in preparation for the grade five to six transition.

Manchester Memorial Elementary School
Proposed Space Summary

Architect Certification

I hereby certify that all of the information provided in this "Proposed Space Summary" is true, complete and accurate and, except as agreed to in writing by the Massachusetts School Building Authority, in accordance with the guidelines, rules, regulations and policies of the Massachusetts School Building Authority to the best of my knowledge and belief. A true statement, made under the penalties of perjury.

Name of Architect Firm: JCJ Architecture

Name of Principal Architect: James E. LaPosta Jr. FAIA, LEED AP

Signature of Principal Architect:

Date: July 23, 2018

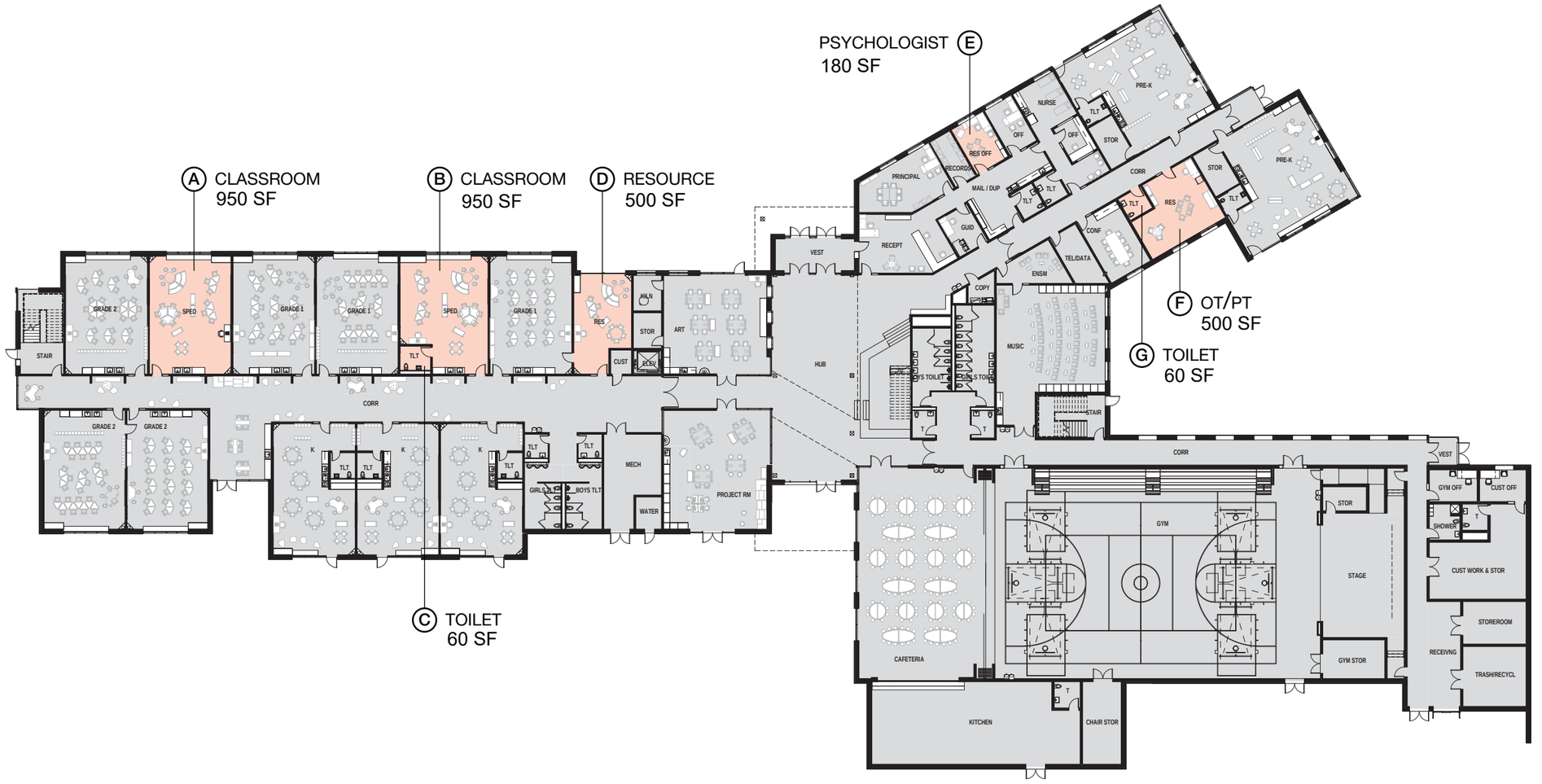
Date: 7/18/2018 **Schematic Design Submittal**

Manchester Memorial Elementary School	Existing Conditions			PROPOSED									MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)			
				Existing to Remain/Renovated			New			Total						
ROOM TYPE	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	Comments
CORE ACADEMIC SPACES			**17,517**			**0**			**22,500**			**22,500**		**15**	**15,000**	
Kindergarten w/ toilet	930	2	1,860	0	0	-	1,200	3	3,600	1,200	3	3,600	1,200	3	3,600	1,100 SF min - 1,300 SF max
General Classrooms - Grade 1-5	850 & 930	16	14,000	0	0	-	950	15	14,250	950	15	14,250	950	12	11,400	900 SF min - 1,000 SF max
Pre-Kindergarten w/ Toilet	829	2	1,657	0	0	-	1,200	2	2,400	1,200	2	2,400	0	0	-	1,100 SF min - 1,300 SF max
Pre-Kindergarten Storage	0	0	-	0	0	-	250	1	250	250	1	250	0	0	-	
Project Room w/ Storage				0	0	-	1,000	2	2,000	1,000	2	2,000				
SPECIAL EDUCATION			**3,529**			**0**			**6,480**			**6,480**			**4,530**	
Self-Contained SPED	932	3	2,796	0	0	-	950	4	3,800	950	4	3,800	950	3	2,850	Currently SAIL, Literacy & Speech in full CR's
Self-Contained SPED - toilet	0	0	-	0	0	-	60	3	180	60	3	180	60	3	180	
Resource Rooms	536	1	536	0	0	-	500	4	2,000	500	4	2,000	500	2	1,000	Current OTPT Only
Small Group Room / Reading	197	1	197	0	0	-	500	1	500	500	1	500	500	1	500	1/2 size Genl. Clrm.
ART & MUSIC			**2,096**			**0**			**2,550**			**2,550**			**2,500**	
Art Classroom - 25 seats	935	1	935	0	0	-	1,000	1	1,000	1,000	1	1,000	1,000	1	1,000	assumed schedule 2 times / week / student
Art Workroom w/ Storage & kiln	226	1	226	0	0	-	150	1	150	150	1	150	150	1	150	
Music Classroom / Large Group - 25-50 seats	935	1	935	0	0	-	1,200	1	1,200	1,200	1	1,200	1,200	1	1,200	assumed schedule 2 times / week / student
Music Practice / Ensemble	0	0	-	0	0	-	200	1	200	200	1	200	75	2	150	
HEALTH & PHYSICAL EDUCATION			**5,598**			**0**			**7,150**			**7,150**			**6,300**	
Gymnasium	5,359	1	5,359	0	0	-	6,850	1	6,850	6,850	1	6,850	6,000	1	6,000	6000 SF Min. Size
Gym Storeroom	180	1	180	0	0	-	150	1	150	150	1	150	150	1	150	
Health Instructor's Office w/ Shower & Toilet	59	1	59	0	0	-	150	1	150	150	1	150	150	1	150	
MEDIA CENTER			**1,220**			**0**			**2,478**			**2,478**			**2,178**	
Media Center / Reading Room	1,020	1	1,020	0	0	-	2,178	1	2,178	2,178	1	2,178	2,178	1	2,178	
Book Storage (Leveled Library)	200	1	200	0	0	-	300	1	300	300	1	300	0	1	-	
DINING & FOOD SERVICE			**4,585**			**0**			**5,660**			**5,660**			**5,659**	
Cafeteria / Dining	2,344	1	2,344	0	0	-	2,513	1	2,513	2,513	1	2,513	2,513	1	2,513	2 seatings - 15SF per seat
Stage	1,216	1	1,216	0	0	-	1,000	1	1,000	1,000	1	1,000	1,000	1	1,000	
Chair / Table / Equipment Storage	0	0	-	0	0	-	312	1	312	312	1	312	312	1	312	
Kitchen	1,025	1	1,025	0	0	-	1,635	1	1,635	1,635	1	1,635	1,635	1	1,635	1600 SF for first 300 + 1 SF/student Add'l
Staff Lunch Room	0	0	-	0	0	-	200	1	200	200	1	200	200	1	200	20 SF/Occupant
MEDICAL			**465**			**0**			**510**			**510**			**510**	
Medical Suite Toilet	23	1	23	0	0	-	60	1	60	60	1	60	60	1	60	
Nurses' Office / Waiting Room	442	1	442	0	0	-	250	1	250	250	1	250	250	1	250	
Examination Room / Resting	0	0	-	0	0	-	100	2	200	100	2	200	100	2	200	
ADMINISTRATION & GUIDANCE			**1,944**			**0**			**2,101**			**2,101**			**2,051**	
General Office / Waiting Room / Toilet	314	1	314	0	0	-	318	1	318	318	1	318	318	1	318	
Teachers' Mail and Time Room	0	0	-	0	0	-	100	1	100	100	1	100	100	1	100	
Duplicating Room	385	1	385	0	0	-	150	1	150	150	1	150	150	1	150	
Records Room	42	1	42	0	0	-	110	1	110	110	1	110	110	1	110	
Principal's Office w/ Conference Area	150	1	150	0	0	-	375	1	375	375	1	375	375	1	375	
Principal's Secretary / Waiting	0	1	-	0	0	-	125	1	125	125	1	125	125	1	125	
Assistant Principal's Office	158	1	158	0	0	-	0	0	-	0	0	-	120	0	-	
Supervisory / Spare Office	95	1	95	0	0	-	120	1	120	120	1	120	120	1	120	
Guidance Office	184	1	184	0	0	-	150	1	150	150	1	150	150	1	150	
Guidance Storeroom	0	0	-	0	0	-	35	1	35	35	1	35	35	1	35	
Teachers' Work Room	253	1	253	0	0	-	318	1	318	318	1	318	318	1	318	With Staff LunchRoom
Parent/Teacher Conference Room	363	1	363	0	0	-	300	1	300	300	1	300	250	1	250	
CUSTODIAL & MAINTENANCE			**1,084**			**0**			**1,935**			**1,935**			**1,935**	
Custodian's Office	0	0	-	0	0	-	150	1	150	150	1	150	150	1	150	
Custodian's Workshop	0	0	-	0	0	-	375	1	375	375	1	375	375	1	375	
Custodian's Storage	0	0	-	0	0	-	375	1	375	375	1	375	375	1	375	
Recycling Room / Trash	0	0	-	0	0	-	400	1	400	400	1	400	400	1	400	
Receiving and General Supply	0	0	-	0	0	-	212	1	212	212	1	212	212	1	212	
Storeroom	1,000	1	1,000	0	0	-	223	1	223	223	1	223	223	1	223	
Network / Telecom Room	84	1	84	0	0	-	200	1	200	200	1	200	200	1	200	
OTHER			**0**			**0**			**0**			**0**			**0**	
N/A																
Total Building Net Floor Area (NFA)			**38,038**			**0**			**51,364**			**51,364**			**40,663**	
Proposed Student Capacity / Enrollment			361												**335**	
NON-PROGRAMMED SPACES					% of GFA	**0**		% of GFA	**25,738**		% of GFA	**25,738**				
Unoccupied MEP/FP Spaces					0%			2%	1,174		2%	1,174				
Unoccupied Closets, Supply Rooms & Storage Rooms					0%			1%	744		1%	744				
Toilet Rooms					0%			3%	2,124		3%	2,124				
Circulation (corridors, stairs, ramps & elevators)					0%			17%	13,322		17%	13,322				
Remaining[3]					0%	**0**		11%	**8,374**		11%	**8,374**				
Total Building Gross Floor Area (GFA)[2]			**66,573**			**0**			**77,102**			**77,102**			**58,932**	
Grossing factor (GFA/NFA)			**1.75**			**0.00**			**1.50**			**1.50**			**1.45**	

1 **Individual Room Net Floor Area (NFA)** Includes the net square footage measured from the inside face of the perimeter walls and includes all specific spaces assigned to a particular program area including such spaces as non-communal toilets and storage rooms.

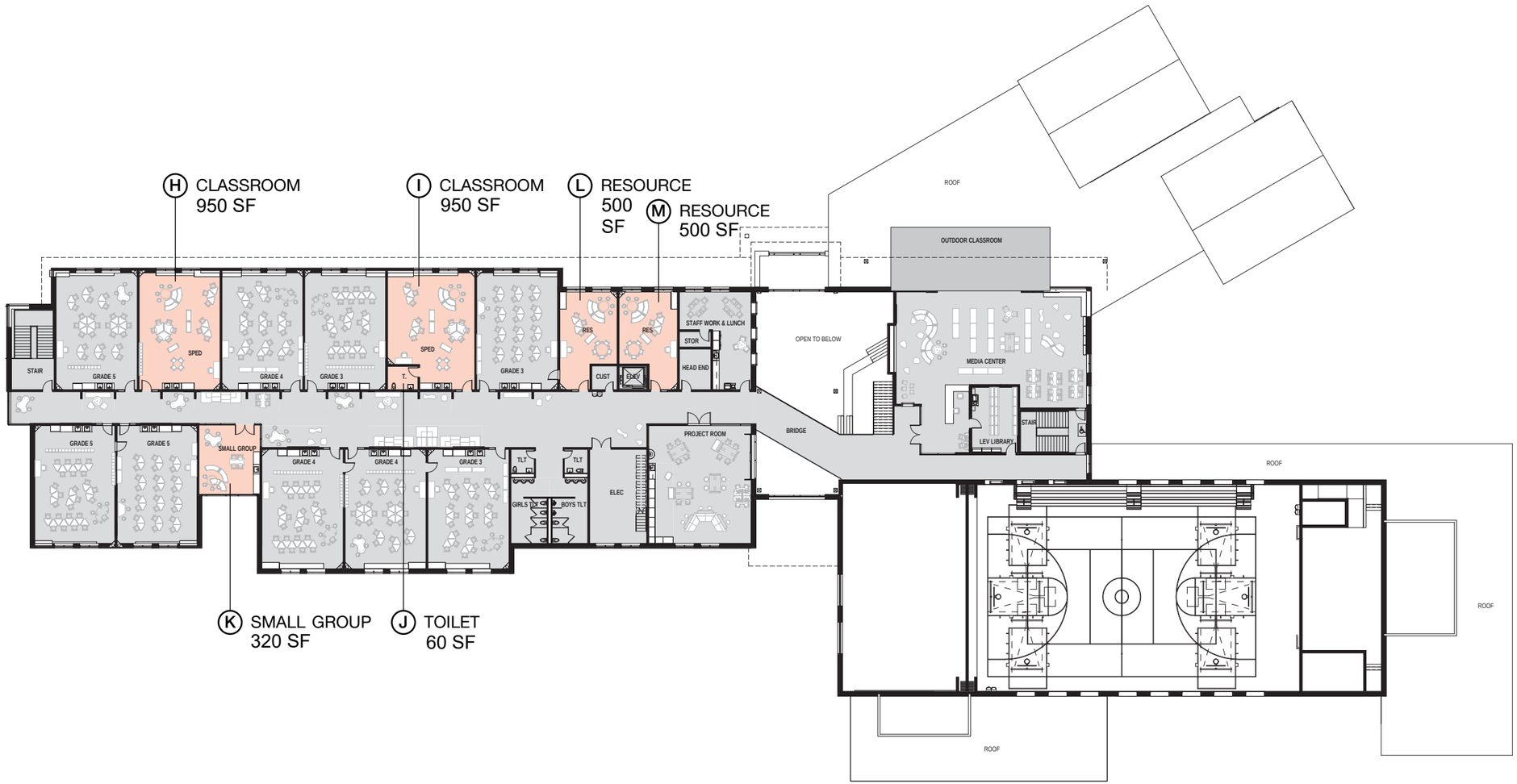
2 **Total Building Gross Floor Area (GFA)** Includes the entire building gross square footage measured from the outside face of exterior walls

3 **Remaining** Includes exterior walls, interior partitions, chases, and other areas not listed above. Do not calculate this area, it is assumed to equal the difference between the Total Building Gross Floor Area and area not accounted for above.



Manchester Memorial Elementary School
Main Level Plan

JCJARCHITECTURE



Manchester Memorial Elementary School
Upper Level Plan

JCJARCHITECTURE

Manchester Memorial Elementary School Proposed Special Education Program
New Construction

Manchester Essex Regional School District 18-Jul-18

MSBA Guidelines Space	MSBA Guidelines SF	Proposed Room Name	Floor Plan Designation (A-Z)	Proposed SF	Proposed Space Description and Reasoning for Adjacencies
Floor 1					
Self-Contained Sped	950	Self-Contained Sped	A	950	Associated with 1st and 2nd Grade Classrooms
Self-Contained Sped	950	Self-Contained Sped	B	950	Associated with Kindergatren Classrooms
Self-Contained Sped - Toilet	60	Self-Contained Sped - Toilet	C	60	Adjacent to Sped Classroom
Resource Room	500	Resource Room	D	500	Associated with Kindergatren, 1st and 2nd Grade Classrooms
*Unique to District	Select SF	Psychologist	E	180	Associated with Principal's Office
Resource Room	500	OT / PT	F	500	Adjacent to Pre-K Classrooms
Self-Contained Sped - Toilet	60	Self-Contained Sped - Toilet	G	60	Adjacent to OT/PT
Floor 2					
Self-Contained Sped	950	Self-Contained Sped	H	950	Associated with 3rd, 4th and 5th Grade Classrooms
Self-Contained Sped	950	Self-Contained Sped	I	950	Associated with 3rd, 4th and 5th Grade Classrooms
Self-Contained Sped - Toilet	60	Self-Contained Sped - Toilet	J	60	Adjacent to Sped Classroom
Small Group Room/ Reading	500	Small Group Room/ Reading	K	320	Associated with 3rd, 4th and 5th Grade Classrooms
Resource Room	500	Resource Room	L	500	Associated with 3rd, 4th and 5th Grade Classrooms
Resource Room	500	Resource Room	M	500	Associated with 3rd, 4th and 5th Grade Classrooms
			TOTAL	**6,480**	

Square Footage Summary:

The proposed overall gross square footage of the new building is 77,102; Average square feet of General Classrooms is 950 nsf.
MSBA guidelines include 4,530 net square feet of dedicated special education space. The proposed program is 1,950 nsf in excess of the guidelines.
***Indicates that space is unique to District's program and does not appear in MSBA space guidelines.**

SCHMATIC DESIGN BINDER

SECTION 4.1.2

4.1.2.1 – INTRODUCTION

The District and project team have implemented an extremely open, transparent and comprehensive review process before submitting the Schematic Design submission to the MSBA. In addition to the open, public meetings detailed in the Local Actions and Approvals, a web-site hosted by the District, which includes all public presentations and agendas and meeting minutes from each public meeting. The District also has established an email address for the project where public comments could be offered and questions submitted to the District are answered. Further, three (3) School Building Committee community meetings were held during this phase in which building and site plans were presented and discussed. A smaller community meeting dedicated to future parents, with children not-yet in the Public School system, was also provided.

4.1.2.1.1 - Summary of Preferred Solution

4.1.2.1.2 - Process Overview

4.1.2.1.3 - District's Total Project Budget

4.1.2.1.4 - Project Description with Construction Delivery Methodology

4.1.2.1.5 - MSBA Preferred Schematic Report Review and District's Response

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4.1.2.1.1 – SUMMARY OF PREFERRED SOLUTION

After considerable study and evaluation of the proposed design schemes, estimated costs, constructions schedules and evaluation of swing space options, the School Building Committee decided their Preferred Solution was Option N-3; a new building located on the existing Memorial School site with a phased construction schedule.

This option assumes that the new school would be a two story, 77,102 gsf building with a footprint of approximately 52,964 with the remainder of the square footage comprising the second floor area. This option would allow both the pedestrian and vehicular circulation to be improved on site and all of the play areas to be updated.

The new building will house 335 students (grades K-5) with anticipated additional 30 Pre-Kindergarten (PK) students. Within the building a central "Hub" space will act as an important gathering space for the students. This area will be activated by the program elements that will adjoin the space. These adjacent program elements will include; the Media Center, Cafeteria/ Gymnasium, Project Rooms, Administration, and the Art Room. The Music Room will also be in close proximity. Because of their central location, the design intends to support collaborative teaching and some shared efficiencies.

This option allows the Memorial students to remain in the existing building through the duration of the first phase of construction then to move into the completed classroom portion of the new building. Students will continue to utilize the existing Gymnasium, Cafeteria and Auditorium while their replacements are constructed during the second phase of construction. The full building would be occupied upon the completion of Phase II work. Final site work and new hardscape areas will be completed upon the final demolition of the existing structure.

The site will accommodate a dedicated parent drop-off/ pick-up loop to the north side of the building, a dedicated bus loop will continue to function in its current configuration along the eastern side of the proposed building. Three (3) areas with playscapes have been identified; a Pre-K playground on the east side, just south of the Pre-K wing, a Kindergarten/ 1st grade playground just outside the Kindergarten classrooms exterior doors on the South side of the building, and a more expansive play area and basketball court to the North of the proposed building. A combination of hard surface play areas and grassy play areas will offer simultaneous play options to the school.

The preferred solution supports the goals identified in the visioning sessions and the educational program.

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4.1.2.1.2 - PROCESS OVERVIEW/ COMMUNITY OUTREACH OVERVIEW

The Preferred Schematic Report was submitted to the MSBA on February 21, 2018. Review comments from the MSBA were received by the Manchester-Essex Regional School District on March 21, 2018 and the responses to those comments are included later in this section.

The project team met with the School Building Committee on a regular basis over the duration of this phase of the project and the meeting minutes from all of those meetings can be found in the "Local Actions and Approval" section of this report. The Manchester Memorial Elementary School Building Committee (SBC) met bi-weekly during both feasibility study and schematic design phase. These meetings were well attended by the SBC as well as on occasion by members of the public. The meetings followed a consistent agenda, with updates from the school administration, owner's project manager, the architect. Minutes were taken and approved at the subsequent meeting. All minutes and any material distributed were posted to the districts website upon acceptance by the SBC.

A series of programming meetings were held with smaller working groups from the SBC and the school staff. These meetings allowed the staff and various town agencies an opportunity to provide input into the planning of systems for the school and to also gain knowledge and insight to the overall project. No votes were taken at these meetings, but information collected was organized into categories and considered when suggesting recommendations for the building.

The project team held two community meetings at the Manchester Memorial Elementary School inviting both Manchester and Essex community members. An additional community meeting was held at Essex Elementary School. The community meetings were informational and provided in depth project details. During the meetings the Owner and team noted that local funding and approvals would be targeted for Fall 2018.

All project information including presentations, meeting minutes, agendas, and community updates are on the districts website. The website is regularly maintained and often visited by members of the public with questions. The SBC meetings were taped by Cape Ann TV the local access cable channel and the recordings of the meetings can also be found on Cape Ann TV's website.

There have been informational articles throughout the process in both on-line and print media.

The design team met with municipal leaders of Manchester-by-the-Sea including the Town's Police and Fire chief, the Conservation Agent, Town Planner, and Department of Public Works Director to introduce them to the project and to discuss their ideas to be incorporated into the design. The design Team also engaged both members of the MEP Sub-Committee and the wider Building Committee to discuss design options related to the project's Sustainability approach.

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4.1.2.1.3 – DISTRICT'S TOTAL PROJECT BUDGET/ SECURING FUNDING

The project budget for the proposed Manchester Memorial Elementary School (MMES) new construction project is $52,232,925, as detailed in the 3011 Project Budget Form included in Section 4.1.2.15.2 of this report.

The construction budget is $41,142,104, as detailed in the construction estimates completed by JCJ Architects and construction manager, WT Rich. These estimates can be found in Sections 4.1.2.15 of this report. Construction budget estimates of the two firms were reconciled against one another following an extensive Value Engineering (VE) process run through MERSD's School Building Committee (SBC). Throughout the VE process, MERSD's SBC worked to maintain a balance between the needs of MMES' educational program and development of a project budget that could be supported by MERSD's member towns, Manchester-by-the-Sea (MBTS) and Essex (TOE). This resulted in a $3.3 million reduction of the total project budget from the Preferred Schematic Report (PSR) submitted to MSBA. All VE decisions were also vetted by the full MERSD School Committee to ensure that the school's and district's programmatic needs have been addressed by the final schematic design proposal.

MERSD has been working closely with the communities of MBTS and TOE for the past several years to ensure that they are fully informed about all aspects of the project. During the Feasibility and Schematic Design phases, MERSD has held collaborative update meetings every 1-2 months with representatives from each town's Boards of Selectmen and Finance Committees, and the Town Administrators. In these meetings, MERSD has provided regular updates about MSBA's process and timeline, the iterative design process, and ongoing refinement of project budget estimates. These meetings were also used to set agenda for forums with full Boards and Finance Committees of both towns and the public regarding the project's educational objectives, cost implications and timeline. In addition to these public forums, MERSD has hosted four community meetings in the past year to share similar information with town residents and school parents and provide a window into the design process for the proposed new school. Public input has also been an important part of the thirty SBC meetings held during the Feasibility and Schematic Design phases.

Should MSBA's Board vote to approve the MMES schematic design and budget, the MERSD School Committee will vote on September 4, 2018 to appropriate the total project cost and authorize borrowing up to the same amount, in accordance with MSBA's "Form of Vote" requirements. The project will then come before special fall town meetings in MBTS and TOE on October 15th and 16th, 2018, respectively, to authorize borrowing of the same amount. These would be followed by debt exclusion approval votes in both towns scheduled for Election Day,

November 6th, 2018. To support this important phase of community decision-making, MERSD will work with its OPM, architect and construction manager to develop a detailed and widely disseminated summary of the project, its proposed design, budget estimates and estimated impact to the average taxpayer. This summary will supplement the complete set of detailed project documentation (e.g., meeting minutes, presentations, MSBA submissions, and answers to Frequent Asked Questions) that are already available currently on MERSD's SBC website.

4.1.2.1.4 - PROJECT DESCRIPTION WITH CONSTRUCTION DELIVERY METHODOLOGY

The Manchester-Essex Regional School District identified the need to renovate or replace an aging facility as a key priority in the Statement of Interest associated with the new Memorial Elementary School. An initial project schedule was developed to accommodate opening the facility to students at the start of the 2021 academic year. Phase 1 of construction will focus on the erection of the new classroom wing on the western side of the property. The majority of the existing elementary school will remain operational during Phase I of construction. The classroom wings of the existing elementary school will be demolished during Phase II of construction, allowing for the second wing to be completed. At the end of Phase II, the new building will become fully occupied and the remaining elements if the existing structure be demolished. Final site work will occur after demolition. The building's final configuration will support the agreed to enrollment of 335 K-5 students with an additional 30 students anticipated in the Pre-K program.

Along with the Building Committee, the OPM and the Designer evaluated using both the Design-Bid-Build (DBB) and Construction Manager At Risk (CMR) delivery methods. The CMR delivery method was determined to be most advantageous for this particular project by the Memorial School Building Committee at their March 27, 2018 meeting. The 100% Construction Documents are scheduled to be completed in September of 2019.

The sequential nature of the DBB delivery method cannot support the project schedule. The advantages of using CMR for this project include turning the project over for occupancy at the earliest possible time and avoiding additional escalation of a much later completion date under the DBB delivery method. In addition, the Project Team recommended that the Construction Manager be brought on as early as possible and in time to prepare one of the independent schematic design estimates and participate in developing the overall project budget and schedule, as well as, the additional MSBA reimbursement point awarded for utilizing the Construction Manager at Risk delivery method.

On March 6, 2018 the Application to Proceed with Construction Management at Risk was submitted to the Massachusetts Office of the Inspector General. On April 4, 2018 the Office of the Inspector General issued its letter approving use of the Construction Manager at Risk delivery method for the new Memorial Elementary School project.

The Project Team followed the highly prescriptive process for selecting a Construction Manager. The process culminated with the selection of W.T. Rich as the Construction Manager at Risk for the new Memorial Elementary School project. The Project Team confirms the cost estimates, proposed project schedule, estimated reimbursement rate, and Total Project Budget Spreadsheet reflects the selected construction delivery method.

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4.1.2.1.5 - MSBA PREFERRED SCHEMATIC REPORT REVIEW AND DISTRICT'S RESPONSE

The District's Response to the MSBA's Comments in the letter dated March 21, 2018 can be found in **Appendix 2** of this Report.

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4.1.2.2 – FINAL DESIGN PROGRAM

4.1.2.2.1 – Architectural Characteristics

4.1.2.2.2 – Educational Space Summary

4.1.2.2.3 – Narrative of Differences from PSR Space Summary

4.1.2.2.4 – Narrative of Design Supports District's Educational Program

4.1.2.2.5 – Critical Adjacencies and Functional Relationships

4.1.2.2.6 – Security and Visual Access Requirements

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4.1.2.2.1 – ARCHITECTURAL CHARACTERISTICS

The proposed project is a new grade K-5 (335 student) building located on the existing Memorial School site. This design assumes that the new school is a two story, 77,102 gsf building with a footprint of approximately 52,964 gsf (the remainder of the square footage would be second floor classroom space). This design allows both the pedestrian and vehicular circulation to be improved on site and all of the play areas to be updated. This Option allows the Memorial School students to remain on site through the duration of the first phase of construction then to move into the new portion of the building as the second wing is constructed. The Preferred Solution supports the goals identified in the Visioning Sessions and the Educational Program. In working with the District through numerous workshops and design reviews, the site and building were developed to address all of the identified goals of the project. The important issues included six Guiding principles – they are:

1. Flexible and Adaptable
2. Whole Child Focus
3. Neighborhood School
4. Cooperative & Collaborative
5. Outdoor Space and Sustainability
6. Classic, Not Trendy

These Guiding principles have been incorporated into the Schematic Design and embody and reinforce the Priority Design patterns that were discussed at the various workshops. The Hub and the various small group work areas are organized to reinforce the collaboration concepts identified in the educational visioning sessions. The centralized location of the Community oriented spaces provide easy controlled access for the public.

The variety of spaces and the distribution of the various room types support the idea of collaborative learning environments from the standpoints of both students and staff. This organizational framework has been structured to build upon in the subsequent upcoming phases and as the District considers the design further, the Design Team will clearly look to continue to incorporate all of the Guiding Principles as details within the building design.

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4.1.2.2.2 – EDUCATIONAL SPACE SUMMARY

The Schematic Design Space Summary can found on the following page.

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Manchester Memorial Elementary School
Proposed Space Summary

Architect Certification

I hereby certify that all of the information provided in this "Proposed Space Summary" is true, complete and accurate and, except as agreed to in writing by the Massachusetts School Building Authority, in accordance with the guidelines, rules, regulations and policies of the Massachusetts School Building Authority to the best of my knowledge and belief. A true statement, made under the penalties of perjury.

Name of Architect Firm: JCJ Architecture

Name of Principal Architect: James E. LaPosta Jr. FAIA, LEED AP

Signature of Principal Architect:

Date: July 23, 2018

Date: 7/18/2018 **Schematic Design Submittal**

Manchester Memorial Elementary School	Existing Conditions			PROPOSED									MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)			
				Existing to Remain/Renovated			New			Total						
ROOM TYPE	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	Comments
CORE ACADEMIC SPACES			**17,517**			**0**			**22,500**			**22,500**		**15**	**15,000**	
Kindergarten w/ toilet	930	2	1,860	0	0	-	1,200	3	3,600	1,200	3	3,600	1,200	3	3,600	1,100 SF min - 1,300 SF max
General Classrooms - Grade 1-5	850 & 930	16	14,000	0	0	-	950	15	14,250	950	15	14,250	950	12	11,400	900 SF min - 1,000 SF max
Pre-Kindergarten w/ Toilet	829	2	1,657	0	0	-	1,200	2	2,400	1,200	2	2,400	0	0	-	1,100 SF min - 1,300 SF max
Pre-Kindergarten Storage	0	0	-	0	0	-	250	1	250	250	1	250	0	0	-	
Project Room w/ Storage				0	0	-	1,000	2	2,000	1,000	2	2,000				
SPECIAL EDUCATION			**3,529**			**0**			**6,480**			**6,480**			**4,530**	
Self-Contained SPED	932	3	2,796	0	0	-	950	4	3,800	950	4	3,800	950	3	2,850	Currently SAIL, Literacy & Speech in full CR's
Self-Contained SPED - toilet	0	0	-	0	0	-	60	3	180	60	3	180	60	3	180	
Resource Rooms	536	1	536	0	0	-	500	4	2,000	500	4	2,000	500	2	1,000	Current OTPT Only
Small Group Room / Reading	197	1	197	0	0	-	500	1	500	500	1	500	500	1	500	1/2 size Genl. Clrm.
ART & MUSIC			**2,096**			**0**			**2,550**			**2,550**			**2,500**	
Art Classroom - 25 seats	935	1	935	0	0	-	1,000	1	1,000	1,000	1	1,000	1,000	1	1,000	assumed schedule 2 times / week / student
Art Workroom w/ Storage & kiln	226	1	226	0	0	-	150	1	150	150	1	150	150	1	150	
Music Classroom / Large Group - 25-50 seats	935	1	935	0	0	-	1,200	1	1,200	1,200	1	1,200	1,200	1	1,200	assumed schedule 2 times / week / student
Music Practice / Ensemble	0	0	-	0	0	-	200	1	200	200	1	200	75	2	150	
HEALTH & PHYSICAL EDUCATION			**5,598**			**0**			**7,150**			**7,150**			**6,300**	
Gymnasium	5,359	1	5,359	0	0	-	6,850	1	6,850	6,850	1	6,850	6,000	1	6,000	6000 SF Min. Size
Gym Storeroom	180	1	180	0	0	-	150	1	150	150	1	150	150	1	150	
Health Instructor's Office w/ Shower & Toilet	59	1	59	0	0	-	150	1	150	150	1	150	150	1	150	
MEDIA CENTER			**1,220**			**0**			**2,478**			**2,478**			**2,178**	
Media Center / Reading Room	1,020	1	1,020	0	0	-	2,178	1	2,178	2,178	1	2,178	2,178	1	2,178	
Book Storage (Leveled Library)	200	1	200	0	0	-	300	1	300	300	1	300	0	1	-	
DINING & FOOD SERVICE			**4,585**			**0**			**5,660**			**5,660**			**5,659**	
Cafeteria / Dining	2,344	1	2,344	0	0	-	2,513	1	2,513	2,513	1	2,513	2,513	1	2,513	2 seatings - 15SF per seat
Stage	1,216	1	1,216	0	0	-	1,000	1	1,000	1,000	1	1,000	1,000	1	1,000	
Chair / Table / Equipment Storage	0	0	-	0	0	-	312	1	312	312	1	312	312	1	312	
Kitchen	1,025	1	1,025	0	0	-	1,635	1	1,635	1,635	1	1,635	1,635	1	1,635	1600 SF for first 300 + 1 SF/student Add'l
Staff Lunch Room	0	0	-	0	0	-	200	1	200	200	1	200	200	1	200	20 SF/Occupant
MEDICAL			**465**			**0**			**510**			**510**			**510**	
Medical Suite Toilet	23	1	23	0	0	-	60	1	60	60	1	60	60	1	60	
Nurses' Office / Waiting Room	442	1	442	0	0	-	250	1	250	250	1	250	250	1	250	
Examination Room / Resting	0	0	-	0	0	-	100	2	200	100	2	200	100	2	200	
ADMINISTRATION & GUIDANCE			**1,944**			**0**			**2,101**			**2,101**			**2,051**	
General Office / Waiting Room / Toilet	314	1	314	0	0	-	318	1	318	318	1	318	318	1	318	
Teachers' Mail and Time Room	0	0	-	0	0	-	100	1	100	100	1	100	100	1	100	
Duplicating Room	385	1	385	0	0	-	150	1	150	150	1	150	150	1	150	
Records Room	42	1	42	0	0	-	110	1	110	110	1	110	110	1	110	
Principal's Office w/ Conference Area	150	1	150	0	0	-	375	1	375	375	1	375	375	1	375	
Principal's Secretary / Waiting	0	1	-	0	0	-	125	1	125	125	1	125	125	1	125	
Assistant Principal's Office	158	1	158	0	0	-	0	0	-	0	0	-	120	0	-	
Supervisory / Spare Office	95	1	95	0	0	-	120	1	120	120	1	120	120	1	120	
Guidance Office	184	1	184	0	0	-	150	1	150	150	1	150	150	1	150	
Guidance Storeroom	0	0	-	0	0	-	35	1	35	35	1	35	35	1	35	
Teachers' Work Room	253	1	253	0	0	-	318	1	318	318	1	318	318	1	318	With Staff LunchRoom
Parent/Teacher Conference Room	363	1	363	0	0	-	300	1	300	300	1	300	250	1	250	
CUSTODIAL & MAINTENANCE			**1,084**			**0**			**1,935**			**1,935**			**1,935**	
Custodian's Office	0	0	-	0	0	-	150	1	150	150	1	150	150	1	150	
Custodian's Workshop	0	0	-	0	0	-	375	1	375	375	1	375	375	1	375	
Custodian's Storage	0	0	-	0	0	-	375	1	375	375	1	375	375	1	375	
Recycling Room / Trash	0	0	-	0	0	-	400	1	400	400	1	400	400	1	400	
Receiving and General Supply	0	0	-	0	0	-	212	1	212	212	1	212	212	1	212	
Storeroom	1,000	1	1,000	0	0	-	223	1	223	223	1	223	223	1	223	
Network / Telecom Room	84	1	84	0	0	-	200	1	200	200	1	200	200	1	200	
OTHER			**0**			**0**			**0**			**0**			**0**	
N/A																
Total Building Net Floor Area (NFA)			**38,038**			**0**			**51,364**			**51,364**			**40,663**	
Proposed Student Capacity / Enrollment			361												**335**	
NON-PROGRAMMED SPACES					% of GFA	**0**		% of GFA	**25,738**		% of GFA	**25,738**				
Unoccupied MEP/FP Spaces					0%			2%	1,174		2%	1,174				
Unoccupied Closets, Supply Rooms & Storage Rooms					0%			1%	744		1%	744				
Toilet Rooms					0%			3%	2,124		3%	2,124				
Circulation (corridors, stairs, ramps & elevators)					0%			17%	13,322		17%	13,322				
Remaining[3]					0%	**0**		11%	**8,374**		11%	**8,374**				
Total Building Gross Floor Area (GFA)[2]			**66,573**			**0**			**77,102**			**77,102**			**58,932**	
Grossing factor (GFA/NFA)			**1.75**			**0.00**			**1.50**			**1.50**			**1.45**	

1 **Individual Room Net Floor Area (NFA)** Includes the net square footage measured from the inside face of the perimeter walls and includes all specific spaces assigned to a particular program area including such spaces as non-communal toilets and storage rooms.

2 **Total Building Gross Floor Area (GFA)** Includes the entire building gross square footage measured from the outside face of exterior walls

3 **Remaining** Includes exterior walls, interior partitions, chases, and other areas not listed above. Do not calculate this area, it is assumed to equal the difference between the Total Building Gross Floor Area and area not accounted for above.

4.1.2.2.3 NARRATIVE OF DIFFERENCES FROM PSR SPACE SUMMARY

There were several categories in the Space Summary that were adjusted to reflect design developments, direct comments from the MSBA on the Preliminary Space Summary (that was originally submitted as part of the PSR), and new discussions by the Committee relative to the modification, reduction or elimination of program within the proposed building. These changes are highlighted as follows:

Core Academic Spaces

The PSR showed 15 Classrooms at 14,250 NSF, 3 Kindergarten Classrooms at 3,600 NSF, 2 STEM (Project) Classrooms at 2,400 NSF and 4 Pre-K Classrooms at 4,800 NSF excluding storage.

The SD Report shows 15 Classrooms at 14,250 NSF, 3 Kindergarten Classrooms at 3,600 NSF, 2 STEM (Project) Classrooms at 2,000 NSF and 2 Pre-K Classrooms at .2,400 NSF excluding storage.

*The overall area of this Category has decreased by 3,000 NSF to 22,500 NSF

*The overall area of this Category exceeds the MSBA Guidelines by 7,500 NSF

Special Education

The PSR showed 4 Self-Contained SPED Rooms including 4 toilets at 4,040 NSF, 4 Resource Rooms at 2,000 NSF and 1 Small Group/ Reading Room at 500 NSF

The SD Report shows 4 Self-Contained SPED Rooms including 2 toilets at 3,920 NSF, 4 Resource Rooms at 2,000 and 1 small Group/ Reading Rooms at 500 NSF.

*The overall area has decreased by 120 NSF to 6,420 NSF

*The overall area of this Category exceeds the MSBA Guidelines by 4,530 NSF

Art and Music

No changes to this category. It remains 50 NSF over the MSBA Guidelines of 2,500.

Health and Physical Education

The PSR showed one Gymnasium at 7,600 NSF

The SD Report shows one gymnasium at 6,850 NSF

*The overall area has decreased by 750 NSF to 7,150 NSF

*The overall area of this Category exceeds the MSBA Guidelines by 850 NSF

Media Center

The PSR included the Book Storage Room (Level Library) within the Administration Category

The SD Report moves the Book Storage/ Level Library Room at 300 NSF to the Media Center Category

*The overall area of this category has increased by 300 NSF to 2,478 NSF

*The overall area of this Category remains within the MSBA Guidelines

Medical

No changes to this category since PSR. It meets the MSBA Guidelines.

Administration and Guidance

The PSR included the Book Storage Room (Level Library) within the Administration Category.

The SD Report moves the Book Storage/ Level Library Room at 300 NSF to the Media Center Category

*The overall area has decreased by 300 NSF to 2,101 NSF

*The overall area of this Category remains 51 NSF over the MSBA Guidelines

Custodial and Maintenance

No changes to this category since PSR. It remains within MSBA Guidelines.

Other

The PSR included a space for the Parks & Rec Afterschool program at 1,800 NSF.

The SD Report eliminates this program element.

*The overall area has decreased by 1,800 NSF to 0 NSF

*The overall area of this Category now meets MSBA Guidelines at 0 NSF

Total Building Net Floor Area – has decreased notably (from PSR to SD) by 5,670 NSF to 51,304 NSF

Total Building Gross Floor Area has decreased as well (from PSR to SD) by 4,960 NSF to 77,102 GSF.

4.1.2.2.3 NARRATIVE OF DIFFERENCES FROM PSR SPACE SUMMARY

The greatest factor accounting for the notable reduction in the proposed square footage since the PSR phase is the Building Committee has eliminated the following program elements:

- Parks & Recreation (1,800 nsf)
- Two (2) Pre—Kindergarten classrooms (2,700 nsf)

Additionally, a notable amount of gross square footage was removed in various areas of the building.

4.1.2.2.4 - NARRATIVE OF DESIGN SUPPORT OF DISTRICT'S EDUCATIONAL PROGRAM

The development of the site plan and building plan has reflected the District's Educational Program throughout the design process by continuously acting as a check-and-balance to the design discussions. The Educational Plan that was submitted with the PSR defined the 6 Guiding Principles and those principles have been incorporated into the development of the design in support of each component of the District's plan.

4.1.2.2.5 - CRITICAL ADJACENCIES AND FUNCTIONAL RELATIONSHIPS

With the development of the building through Schematic Design, there were numerous programming meetings that the Design Team held with various stakeholders in which specific spaces were discussed in detail and the critical adjacencies and functional relationships were identified and documented on the conceptual plans. The result of the exercise was a building plan that allowed for small-group cross-collaboration spaces. To achieve this, various "portals" were created along the classroom corridors, just outside the classrooms, to accommodate these spaces.

The other meaningful adjacencies were for those program elements which activated the "Hub" space while providing strong physical and visual connections between groups of rooms. These included the Cafeteria, Project Rooms, Music Room (nearby), Administration, Media Center, and the Art Room.

4.1.2.2.6 - SECURITY AND VISUAL ACCESS REQUIREMENTS

As part of the Designer's process, security has been an integral part of the design of the new Memorial Elementary School. The District is well aware of the heightened attention that school security is receiving and has engaged in some very meaningful discussions. The District's emergency procedures and response protocol have been reviewed with the

Designer and are being implemented in the overall planning of the new building. All involved parties recognize the importance of the proper planning guidelines and the value that the opportunities in the planning process afford in order to keep the students and staff safe in this new learning environment. A meeting with the District leadership gave the various agency representatives an opportunity to weigh in on the proposed design and discuss the security philosophy for the new building. There will also be several more opportunities in future phases for the first responders to review and comment on the details of the project.

For this project, a full security system is anticipated and is included in the scope and budget of the project. This system will include: cameras, motion detection, card swipe devices at exterior doors and appropriate door hardware. Most importantly, this project includes inherent "best-practice" planning in the physical layout of the building. There are a very limited number of exterior access points and there are clear sightlines for the administrators that are located remotely throughout the building to increase the "eyes on the street" presence of responsible adults inside the building.

The Main Entry is designed to meet the District's standards and has been refined to ensure that access protocols are met for anyone that enters the building. During a normal school day, all visitors must enter through the Main Entry by being buzzed into the vestibule from the Main Office, and then being buzzed into the Main Office to be greeted and directed to wherever they may need to go in the building. The doors at the major assembly spaces, the Cafeteria and the Gym, will be egress only and will have no hardware on the exterior side of the exterior doors - thus allowing no entry to the building at any time in these areas.

The proposed Classroom locksets are typical of the District's protocols related to their current lockdown policy. Sidelights at all teaching spaces are being provided per the District's request and will be furnished with roller shades on the classroom side in order to meet the District's current lockdown protocols.

Alternative entry locations have been identified, although they are very limited for access-control purposes. On the site, there is only one main ingress access point – the visibility and access control devices are clearly defined and thoughtfully support the District's security protocols. The building has two primary access points and two secondary access points that first responders will be able to access depending on the portion of the building they need to respond to. There will be a Knox box with building plans at the Main Entry in close proximity to the main fire control panel as well as the security system monitoring panel.

4.1.2.3 – TRAFFIC ANALYSIS

Bryant Associates, Inc. prepared a traffic impact analysis of the existing and proposed traffic conditions associated with the proposed new Memorial Elementary School project. The report was dated February 2018 and was included with the Preferred Schematic Report submission.

Bryant Associates' findings and recommendations included the following:

- The proposed options have traffic patterns similar to the existing Manchester Memorial Elementary School.
- The unsignalized intersection capacity analysis shows that there will be no change in the levels of service at the intersections.
- Trim the low hanging branches to the north of the southerly exit-only driveway to improve sight distance.
- Provide more space on site to stack vehicles during the afternoon dismissal.

In addition, Bryant Associates, Inc. reviewed the proposed on-site pedestrian and vehicle circulation patterns providing recommendations for the District's and Designer's considerations. The circulation recommendations will be reevaluated prior to incorporation into subsequent submissions.

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4.1.2.4 - ENVIRONMENTAL AND EXISTING BUILDING ASSESSMENT

The Phase I Environmental Site Assessment was completed by CDW Associates and submitted to the Design Team in October, 2017. The full report was included in the Preliminary Design Program Report submitted to the MSBA on November 22, 2017.

The assessment included site reconnaissance investigations, documentation of available information and records on file with the Town, interviews with staff and historical research.

The investigation, conducted by CDW personnel, included a review of available federal, state, and local environmental agency records to identify the presence or likely presence of Recognized Environmental Conditions (RECs), Historical Recognized Environmental Condition (HRECs) and Controlled Recognized Environmental Condition (CRECs).

No CRECs were identified during the assessment. RECs and HRECs were identified during the assessment. They were:

- Potential contamination from the two 10,000-gallon fuel oil underground storage tanks removed in 1991. This represents a HREC.
- Potential Contamination from the old transformer removed from the electric room in the basement. It is unknown if polychlorinated biphenyls (PCBs) were in the transformer fluids. This represents a HREC.
- Potential contamination from the exterior pad mounted transformer. It is unknown if PCBs are in the transformer fluids.
- Potential dumping of ash from incinerator.
- Potential asbestos debris within the dirt floor portion of the crawlspace.

Due to the dates of construction, asbestos containing materials (ACM) may be located on the property. Suspect ACM observed within the building included flooring, mastics, interior window glazing, pipe insulation, door caulk and window caulk. It is recommended that an ACM sampling and abatement plan be implemented prior to demolition, renovation or construction activities at the subject property

The estimated costs to abate or remediate the aforementioned have been included in the proposed project budget.

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4.1.2.5 - GEOTECHNICAL ANALYSIS

The Geotechnical Study was completed by Lahlaf Geotechnical Consulting, Inc. (LGCI) and submitted to the Design Team on October 24, 2017. The report was included in the Existing Conditions Section of the Preliminary Design Program Report submitted to the MSBA on November 22, 2017.

The Geotechnical Engineer's report included site information, surficial geology information, boring information, subsurface conditions, groundwater conditions, a preliminary evaluation and recommendations. The SD effort included the identified construction considerations and the subsequent estimating efforts also accounted for the report's recommendations. Further explorations, as recommended by and outlined within the Geotechnical Engineer's Report, have been identified to be scheduled and executed immediately after the local funding is approved and the MSBA has confirmed the Total Facilities Grant.

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4.1.2.6 – CODE ANALYSIS

The following is a list of potential permits that may be required by federal, state and local agencies. In several cases, further research will be required during Phase 2.

FEDERAL AGENCIES

U.S. EPA CONSTRUCTION GENERAL PERMIT (CGP) NOTICE OF INTENT (NOI)

If the final project design includes the disturbance of more than one acre of land, then the project will require a Construction General Permit as part of the construction phase. A SWPPP must be developed and a NOI should be submitted to the EPA and MassDEP 14 days prior to land disturbance.

U.S. EPA CONSTRUCTION DEWATERING PERMIT NOTICE OF INTENT (NOI)

A Construction Dewatering Permit may be required as part of the construction phase if less than one acre of land will be disturbed and dewatering is required. A NOI should be submitted to the EPA and MassDEP at least 21 days prior to the commencement of discharge.

U.S. EPA REMEDIATION GENERAL PERMIT (RGP) NOTICE OF INTENT (NOI)

The Remediation General Permit authorizes the discharge of treated water from site remediation activities, contaminated construction site dewatering and miscellaneous contaminated discharges. When soil excavation occurs on the Site and if contaminated groundwater is encountered, then a RGP NOI would need to be filed for the treatment and discharge of groundwater.

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

This Project is State-funded and there are no other federal activities that would dictate a NEPA filing; therefore, no NEPA filings are required under this Act.

U.S. FISH AND WILDLIFE SERVICE ENDANGERED SPECIES ACT

No federally-listed threatened or endangered species are identified to impact the project area.

HISTORIC PRESERVATION ACT SECTION 106 REVIEW

The Project Site is not on the National Register

STATE AGENCIES

MASSACHUSETTS ENVIRONMENTAL POLICY ACT (MEPA)

At this time, Samiotes has not conducted a conclusive review of MEPA thresholds for this Project as it relates to the following categories: Land; State Listed Species; Wetlands, Waterways and Tidelands; Transportation; Areas of Critical Environmental Concern; and Historical and Archaeological Resources. If the Project Site design exceeds the Land related MEPA Review Thresholds, then a filing of an Environmental Notification Form will be required.

MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION (MASSDEP)

The following MassDEP bureaus may have jurisdictional authority over the Project.

BUREAU OF RESOURCE PROTECTION – WETLANDS PROTECTION (310 CMR 10.00)

This program protects the Commonwealth's wetland resources through the MassDEP Wetlands Protection regulations. For both options, the subject Project is more than 100 feet from a regulated wetland resource, therefore it is likely that the project will not require a Notice of Intent (NOI).

BUREAU OF WASTE PREVENTION –AIR QUALITY PROGRAM (310 CMR 7.09)

This program protects the Commonwealth's public health and the environment by preventing the release of dust or other potentially hazardous air pollutants to the ambient air. The proposed Project includes earth moving, clearing and grading associated with the construction of a new building, which may release air contaminants to the atmosphere. Dust impacts must be mitigated during construction with the use of suppressants such as water. The Project is required to submit a notification to the MassDEP 10 working days prior to the construction of the building.

BUREAU OF WASTE SITE CLEAN UP – MASSACHUSETTS CONTINGENCY PLAN (MCP)

The construction of the Project is not subject to the regulations promulgated under 310 CMR 40.000 (Massachusetts Contingency Plan). However, excavation may result in the discovery of soil contamination that is subject to reporting and mitigation under the MCP.

MASSACHUSETTS DIVISION OF FISHERIES AND WILDLIFE (MASSWILDLIFE)

Samiotes has reviewed the MassGIS repository and has concluded that there are no Priority Habitats, Certified or Proposed Vernal Pools, and no Areas of Critical Environmental Concern located within the Project area.

OTHER STATE AGENCIES

MASSACHUSETTS HISTORICAL COMMISSION (MHC)

This Project is State-funded; therefore, a Project Notification to the MHC is required under this regulation.

MASSACHUSETTS DEPARTMENT OF PUBLIC SAFETY BUILDING PERMIT

New construction, renovation, or demolition of existing structures, and changes of use or occupancy of an existing building must conform to the provisions of the Massachusetts State Building Code (M.G.L. c. 143, §§ 93-100: Inspection and Regulation of, and Licenses for, Buildings, Elevators and Cinematographs; 780 CMR: Massachusetts State Building Code).

This Project must submit a Building Permit Application for a State Owned Building through the Department of Public Safety, which is consistent with the permit requirements of the MA State Building Code. The State Building Inspector has 30-days to review the application.

MASSACHUSETTS SCHOOL BUILDING AUTHORITY (MSBA)

All projects funded by the MSBA must conform to the provisions of the 963 CMR: Massachusetts School Building Authority.

LOCAL AGENCIES

TOWN OF MANCHESTER-BY-THE SEA

- Conservation Commission acts as a regulatory body that enforces the Wetlands Protection Act, Massachusetts General Laws Ch. 131.sec. 40 and Regulations thereunder, 310 CMR 10.00. In addition, the Conservation Commission enforces local by-laws. The Project Sites are located less than 100 feet from a regulated wetland resource, therefore the project will require a Notice of Intent (NOI) and an Order of Conditions.
- Site Plan Approval-Submittal to Building Department with distribution to individual departments for compliance with their respective rules and regulations
- Zoning Board of Appeals (if any special permit, exemption, or zoning variances such as setback distances become necessary)

ADA / MAAB COMPLIANCE

The proposed facility including the FF&E will be fully compliant with ADA and MAAB requirements.

CODE ANALYSIS

The project has been developed in accordance with the building code requirements of the Massachusetts State Building Code, 9th edition which is based on the 2015 International Building Code. In addition, the project has been designed to be a fully accessible facility based on the requirements of the Massachusetts Architectural Access Regulation, CMR 521. A summary of the code data for the proposed facility is as follows:

USE GROUP CLASSIFICATION

Mixed Occupancy with Non-Separated Uses;

- Assembly Group A-2 Cafeteria
- Assembly Group A-3 Gymnasium
- Business Group B
- Education Group E
- Storage Group S-2

CONSTRUCTION TYPE

- Type IIB Construction

BUILDING HEIGHT

Maximum Allowable Height (Tables 504.3, 504.4):	2 Stories / 55 feet
Automatic Sprinkler Increase:	1 story / 20 feet
Maximum Allowable Height with Increase:	3 Stories / 75 feet
Actual Height:	2 Stories / 36 feet

FIRE RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS

(Table 601)

Construction Type	IIB
Structural Frame	0 hour
Exterior Bearing Walls	0 hour
Interior Bearing Walls	0 hour
Interior Nonbearing Walls	0 hour
Floor Construction	0 hour
Roof Construction	0 hour

FIRE RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS

(Table 705.8)

- The building shall be equipped with an approved automatic sprinkler system.
- The building shall be equipped with an approved fire alarm and detection system.
- Exit access travel distance shall be 250 feet with sprinkler system for Use Groups A3 and E.
- Exit access travel distance shall be 300 feet with sprinkler system Use Group B.

ADDITIONAL CODE ITEMS

Occupancy separation:

- Use Group Assembly A-3 shall have a 0-hour fire separation from Use Group Education E per IBC Table 508.4.
- Stairway shafts shall have a 1-hour fire separation.
- Elevator shaft and elevator machine room shaft shall have a 2-hour fire separation.

Occupant Loads:

Assembly – Concentrated	7 net / occupant
Assembly – Unconcentrated	15 net / occupant
Business Areas	100 gross / occupant
Educational – Classroom	20 net / occupant
Library – Reading Rooms	50 net / occupant
Library – Stack Area	100 gross / occupant
Stages and Platforms	15 net / occupant
Mechanical Equipment Room	300 gross / occupant

Egress:

- Required exits shall be balanced.
- Exit stairway egress width shall be 0.2 inches/occupant.
- Other egress component egress width shall be 0.15 inches/occupant.
- Exit stairways shall include areas of refuge.

Plumbing Fixtures (Total Building):	Required
Women's Toilets	12
Men's Toilets	6
Men's Urinals	7
Women's Lavatories	9
Men's Lavatories	9
Drinking Fountains	8
Service Sinks	2

ZONING:

The Memorial Site is presently zoned G – General District. In this zone, educational facilities are allowed by use and the current school building is an approved entity. The zoning setbacks and limitations are as follows:

- Minimum Frontage – 60 feet
- Minimum Lot Width – 50 feet
- Front Yard Setback – 5 feet
- Side Yard Setback – 10 feet
- Rear Yard Setback – 10 feet
- Maximum Building Coverage – 40%
- Maximum Lot Coverage – 70%
- Maximum Floors – 2-1/2
- Maximum Height – 35 feet
- Minimum Lot Area – 6000 square feet

4.1.2.7 – SOILS AND UTILITIES ANALYSIS

The extent of and capacity of the existing utilities are summarized by in the following narrative.

Site Conditions:

The Memorial Elementary School is located on the south and west sides of Lincoln Street, and north of Summer Street (State Route 127), in the Town of Manchester-by-the-Sea, MA (Parcel ID # 47-0-6). The site is currently developed as an elementary school with associated building, bituminous concrete parking, playground equipment and grass areas.

Water Supply:

The water Service for the Elementary school is a 6-inch water line that is routed north-south east of the existing building with two (2) shut off valves located at each end. The waterline connects to the 8-inch water main in Lincoln Street and a 12-inch main in Summer Street. There are two (2) fire hydrants located on the site. The first is located at the northeast corner of the building (near the tennis courts) closer to Lincoln Street. The second is located at the southeast corner of the site serviced by the 12-inch water main in Summer Street.

Sewer System:

There is a 10-foot wide sewer easement running east to west north of the existing building parallel to the brook, with an 8-inch sewer line and several manholes. The sewer easement crosses the golf course (parallel to Summer Street) and crosses Lincoln Street. There are 6-inch sewer mains within Summer Street and Norwood Ave; Brook and Vine Street both contain 8-inch sewer mains. There is no continuous sewer main within Lincoln Street, however there is a small 6-inch section that ties into the 8-inch line within the sewer easement

Drainage System:

The surrounding streets of the Manchester Memorial Elementary School (Lincoln Street, Vine Street, Brook Street & Summer Street) do not have dedicated municipal drain lines that run the lengths of the street. There are small runs of drain lines in the surrounding streets; generally several catch basins in the road, that outlet to the surrounding wetlands or streams.

On the site, there are several catch basins located within the landscaped courtyard (see image 1) that are completely silted up. It appeared from the site walk that the catch basins are daisy-chained together and outlet to the wetlands located south of the site. As part of the Manchester Essex Middle High School Tennis Court project, located off of Lincoln Street next to the Manchester Memorial Elementary School, a Bioretention area that outlets to a small depression/ detention basin was constructed for stormwater management. The outlet control structure (image 4 & 5) has not been properly maintained. During the site visit, it appeared that the structure was clogged with debris and someone attempted to unclog it with a large stick.

Natural Gas Services:

The existing elementary school building is serviced by natural gas from National Grid. The existing gas meter is located at the northeast corner of the building on the east wall. The gas service is fed from Lincoln Street, with the shutoff valve in Lincoln Street, near the southeast corner of the tennis courts. The gas line is routed southwest of the tennis courts to the building.

Underground Fuel Tanks:

The building heating system is currently supplied by natural gas. Two (2) 10,000-gallon fuel storage tanks were removed from the property in 1991.

The existing building is not served by emergency generator.

The Soils Analysis is summarized by in the following narrative.

Soil Conditions & Testing:

Detailed soil testing is anticipated to be executed at the start of the Design Development stage of the project.

Inner/ Outer Riparian (100' & 200' Riverfront Buffer):

The Riverfront Area is the area of land between a river's mean annual high-water line measured horizontally outward from the river and a parallel line located 200 feet away.

Where a proposed activity involves work within the Riverfront Area, the issuing authority shall presume that the area is significant to protect the private or public water supply; to protect the groundwater; to provide flood control; to prevent storm damage; to prevent pollution; to; to protect wildlife habitat; and to protect fisheries. The presumption is rebuttable and may be overcome by a clear showing that the Riverfront Area does not play a role in the protection of one or more of these interests.

Redevelopment within Previously Developed Riverfront Areas; Restoration and Mitigation. The issuing authority may allow work to redevelop a previously developed Riverfront Area, provided the proposed work improves existing conditions. Redevelopment means replacement, rehabilitation or expansion of existing structures, improvement of existing roads, or reuse of degraded or previously developed areas. A previously developed Riverfront Area contains areas degraded prior to August 7, 1996 by impervious surfaces from existing structures or pavement, absence of topsoil, junkyards, or abandoned dumping grounds. Work to redevelop previously developed Riverfront Areas shall conform to the following criteria:

(a) At a minimum, proposed work shall result in an improvement over existing conditions of the capacity of the Riverfront Area to protect the interests identified in M.G.L. c. 131 § 40. When a lot is previously developed but no portion of the Riverfront Area is degraded, the requirements of 310 CMR 10.58(4) shall be met.

(b) Stormwater management is provided according to standards established by the Department

(c) Within 200 foot Riverfront Areas, proposed work shall not be located closer to the river than existing conditions or 100 feet, whichever is less, or not closer than existing conditions within 25 foot Riverfront Areas,

(d) Proposed work, including expansion of existing structures, shall be located outside the Riverfront Area or toward the Riverfront Area boundary and away from the river,

(e) The area of proposed work shall not exceed the amount of degraded area, provided that the proposed work may alter up to 10% if the degraded area is less than 10% of the Riverfront Area,

Vegetative Non-Disturbance Buffer Zone:

Resource Area Buffer Zones are essential for protection of Resource Areas. In order to protect the Buffer Zone and its adjacent Resource Area(s), a 30 (thirty) foot No Disturb Zone and a 50 (fifty) foot No Build Zone have been established to limit the types of activities that are permitted in the first 50 feet of the Buffer Zone.

No Build Zone.

When an activity involving construction or installation of Structures is proposed in the No Build Zone (within 50' from wetland), the Commission shall presume that such activity will have a Significant Immediate or Cumulative Adverse Effect on the Resource Area protected by the By-Law. The Commission's presumption is rebuttable, and may be overcome: upon the Applicant's demonstration, by a Preponderance of Credible Evidence as set forth in an Alternatives Analysis, that there is no Practicable Alternative to the proposed activity which would have a materially less Significant Immediate or Cumulative Adverse Impact to the Resource Area

No Disturb Zone.

When a proposed activity involves an Alteration in the No Disturb Zone (within 30' from wetland), the Commission shall presume that such activity will have a Significant Immediate or Cumulative Adverse Effect on the Resource Area. The Commission's presumption is rebuttable, and may be overcome: 10.1.2.1 upon the Applicant's demonstration, by Clear and Convincing Evidence as set forth in an Alternatives Analysis, that there is no Practicable Alternative to the proposed activity which would have a materially less Significant Immediate or Cumulative Adverse Impact to the Resource Area.

Flood Plain

The FEMA Flood Insurance Rate Map (Figure 6) depicts the 100-year flood plain on either side of Causeway Brook and Sawmill Brook. Based on the figure, it appears majority of the site is outside of the

flood plain. However, it does appear that the outer portions the property, parallel to the brooks, may be within the flood plain. A base flood elevation was not provided with the firmette, but will be determined, and depicted on the existing conditions survey either from a Flood Insurance Study Elevation or graphically per the FIRMETTE

Zone I

Definition: Zone I means the protective radius required around a public water supply well or wellfield. For public water system wells with approved yields of 100,000 gpd or greater, the protective radius is 400 feet. In no case shall the Zone I radius be less than 100 feet.

Zone II

Definition: That area of an aquifer which contributes water to a well under the most severe pumping and recharge conditions that can be realistically anticipated (180 days of pumping at safe yield, with no recharge from precipitation). It is bounded by the groundwater divides which result from pumping the well and by the contact of the aquifer with less permeable materials such as till or bedrock. In some cases, streams or lakes may act as recharge boundaries.

Some Wellhead Restrictions for site:

- Stockpiling and disposal of snow or ice removed from highways and streets located outside of Zone II that contains sodium chloride, chemically treated abrasives or other chemicals used for snow and ice removal;
- Petroleum, fuel oil and heating oil bulk stations and terminals
- Storage of sodium chloride, chemically treated abrasives or other chemicals used for the removal of ice and snow on roads.
- The removal of soil, loam, sand, gravel or any other mineral substances within four feet of the historical high groundwater table elevation, unless the substances removed are redeposited within 45 days of removal on site to achieve a final grading greater than four feet above the historical high water mark, and except for excavations for the construction of building foundations or the installation of utility works, or wetland restoration work
- Lland uses that result in the rendering impervious of more than 15% or 2500 square feet of any lot or parcel, whichever is greater, unless a system for artificial recharge of precipitation is provided that will not result in the degradation of groundwater quality.

4.1.2.8 – MASSING STUDY

The massing for the new Memorial Elementary School, part of the Manchester-Essex Regional School District, has been intentionally developed to best address a number of site constraints. These include wetland and riparian setbacks, a mandate to preserve the existing main school drive and tennis courts, the falling topography across the site, the close proximity to residential abutters, solar orientation, and negotiating the imposing expanse of the existing single-story building.

Pursuing a two-story building was directly influenced by the need to improve the efficiency of the site and to move the District's asset out of vulnerable areas. None of the studied building options allowed for a single story building to be built while having students on-site during construction.

The favored building form is based on creating a central "Hub" space that would act to be an important mixing space, activated by the program elements that adjoin the space. These spaces include Administration, the Media Center, the Art Room, Project Rooms, and the Cafeteria / Gymnasium. The importance of this building element is reflected in the building massing, the Hub element acts to acknowledge the primary building entry point, the roof line is raised and given a gabled roof – in contrast to the low-slope roofs adjacent.

Off the central Hub element, three wings extend away to form a "Y" shaped plan. The two wings to the east include a single-story Pre-K on the north leg and the Cafeteria/ Gymnasium/ Stage forms the south leg. The gymnasium wing was intentionally moved to the south to help mitigate any concerns related to the height and imposing mass of the gym at the front of the building. One of the mandates from the District was to consider a design that reinforced a sense of "cozy." Adding gabled roofs to the Pre-K wing was intended to further that sense of "cozy" and to directly respond to scale of the close residential structures on abutting properties.

The classroom wing, the stem of the "Y" form maintains a single roof datum line that is emphasized by a small overhang around the perimeter of the wing. This overhang continues on to the other side of the Hub and unifies the Media Center element back to the main classroom wing mass.

The images on following pages demonstrate the building's massing.

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Overall View of Proposed Building (From the North)



View from Entry Drive Approach (From Lincoln Street)

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Approach View (From Existing Pedestrian Bridge)



View of Pre-K Courtyard and Gymnasium Wing Entry

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View from Summer Street (Looking from the South)

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4.1.2.9 - BUILDING SYSTEMS NARRATIVES

4.1.2.9.1 – Structural System

4.1.2.9.2 – Fire Protection Systems

4.1.2.9.3 – Plumbing Systems

4.1.2.9.4 – HVAC Systems

4.1.2.9.5 – Electrical Systems

4.1.2.9.6 – Technology Systems

4.1.2.9.7 – Food Service Systems

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MANCHESTER MEMORIAL ELEMENTARY SCHOOL

Preferred Schematic Design Narrative

May 10, 2018

PREFERRED SCHEMATIC DESIGN

The scheme calls for phased demolition of the existing building, construction of modular structures and construction of the new school structure. The single story Academic Wing will be designed to receive a future one story vertical addition.

SUBSTRUCTURE

Foundations

Based on the foundations of the existing structure, the columns of the proposed structure would bear on reinforced concrete spread footings and the perimeter foundation walls would bear on continuous reinforced concrete strip footings extending at least 4 ft.-0 in. below grade. With the assumed bearing capacity of the soil of 2 tons/sf, a typical interior footing would be 8 ft. – 0 in. x 8 ft. - 0 in. x 24 in. deep and the typical exterior footings would be 7 ft. x 7 ft. x 24 in. deep in the one and two story areas. Typical interior footings at the interface with the Gymnasium and other interior spaces would be 9 ft. x 9 ft. x 24 in. deep. Typical exterior footings for the Gymnasium would be 7 ft. – 0 in. x 7 ft. – 0 in. x 24 in. deep. The single story structure will be designed to receive a future one story vertical addition. The exterior foundation walls would be 14 in. to 16 in. thick, reinforced cast-in-place concrete walls on 24 to 36 in. wide continuous reinforced concrete strip footings around the perimeter of the building extending a minimum of 4 ft. – 0 in. below finished grade.

Slabs-on-Grade

Based on the existing school construction, the lowest level of the proposed structure would be a 5 in. thick concrete slab-on-grade reinforced with welded wire fabric over a vapor barrier on 2 in. thick rigid insulation on 8 in. of compacted granular structural fill and a base course of 8 in. of compacted gravel.

SUPERSTRUCTURE

Floor Construction

Typical Floor Construction

A 5 ¼ in. light weight concrete composite metal deck slab reinforced with welded wire fabric on wide flange steel beams spanning between steel girders and columns. The weight of the structural steel is estimated to be 13 psf for the typical framing.

Roof Construction

Typical Roof Construction

The roof construction would be galvanized, corrugated 1 ½ in. deep, Type 'B' metal roof deck spanning between wide flange steel beams and girders. At locations of roof supported mechanical equipment, a concrete slab will be provided similar to the typical supported slab. The weight of the structural steel is estimated to be 13 psf.

Typical Single Story Roof Construction

The roof construction of this portion of the structure would be the typical floor construction as it would be designed to receive a future one story vertical addition.

Low Roof Structure

The roof would be a continuation of the adjacent floor and would be similar to the typical floor construction of 5 ¼ in. light weight concrete composite metal deck slab reinforced with welded wire fabric on wide flange steel beams spanning between steel girders and columns. This roof will be supporting the mechanical units. The units would be screened by a screen comprised of structural steel posts and beams. The weight of the structural steel is estimated to be 15 psf.

Gymnasium Roof Framing

The roof construction would be acoustic, galvanized, corrugated 3 in. deep, Type 'NA' metal roof deck spanning between long span steel joists. The weight of the steel joists and structural steel framing is estimated to be 13 psf.

VERTICAL FRAMING ELEMENTS

Columns

Columns will be hollow structural steel columns. Typical columns would be HSS 8 x 8 columns and the columns at the double story spaces at the Gymnasium and Cafeteria would be HSS 12 x 12.

Lateral Load-Resisting System

The typical lateral load resisting system for the structure would be ordinary concentric braced frames comprised of HSS structural steel members.

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FIRE PROTECTION SYSTEMS

NARRATIVE REPORT
NEW CONSTRUCTION N-3

The following is the Fire Protection system narrative, which defines the scope of work and capacities of the Fire Protection system, as well as, the Basis of Design.

1. CODES

   A. All work installed under Section 210000 shall comply with the MA Building Code and all state, county, and federal codes, laws, statutes, and authorities having jurisdiction.

2. DESIGN INTENT

   A. All work is new and consists of furnishing all materials, equipment, labor, transportation, facilities, and all operations and adjustments required for the complete and operating installation of the Fire Protection work and all items incidental thereto, including commissioning and testing.

3. GENERAL

   A. In accordance with the provisions of the Massachusetts Building Code, a school building of greater than 12,000s.f. must be protected with an automatic sprinkler system.

4. DESCRIPTION

   A. The new building will be served by a new 6-inch fire service, double check valve assembly, wet alarm valve complete with electric bell, and fire department connection meeting local thread standards.

   B. System will be an automatic sprinkler system with control valve assemblies to limit the sprinkler area controlled to less than 52,000 s.f. as required by NFPA 13-2013. Control valve assemblies shall consist of a supervised shutoff valve, check valve, flow switch and test connection with drain. A total five (5) sprinkler zones will be provided.

   C. All areas of the building, including all finished and unfinished spaces, combustible concealed spaces, all electrical rooms and closets will be sprinklered.

   D. All sprinkler heads will be quick response, pendent in hung ceiling areas and upright in unfinished areas.

5. BASIS OF DESIGN

   A. The mechanical rooms, kitchen, and storage rooms are considered Ordinary Hazard Group 1. All other areas are considered light hazard.

   B. Required Design Densities:

Light Hazard Areas	0.10 GPM over 1,500 s.f.
Ordinary Hazard Group 1	0.15 GPM over 1,500 s.f.

C. Sprinkler spacing (max.):

Light Hazard Areas:	225 s.f.
Ordinary Hazard Areas:	130 s.f.

D. A flow test must be performed to confirm Municipal water system capacity.

6. PIPING

A. Sprinkler piping 1-1/2 in. and smaller shall be ASTM A-53, Schedule 40 black steel pipe. Sprinkler/standpipe piping 2 in. and larger shall be ASTM A-135, Schedule 10 black steel pipe.

7. FITTINGS

A. Fittings on fire service piping, 2 in. and larger, shall be Victaulic Fire Lock Ductile Iron Fittings conforming to ASTM A-536 with integral grooved shoulder and back stop lugs and grooved ends for use with Style 009-EZ or Style 005 couplings. Branch line fittings shall be welded or shall be Victaulic 920/920N Mechanical Tees. Schedule 10 pipe shall be roll grooved. Schedule 40 pipe, where used with mechanical couplings, shall be roll grooved and shall be threaded where used with screwed fittings. Fittings for threaded piping shall be malleable iron screwed sprinkler fittings.

8. JOINTS

A. Threaded pipe joints shall have an approved thread compound applied on male threads only. Teflon tape shall be used for threads on sprinkler heads. Joints on piping, 2 in. and larger, shall be made up with Victaulic, or equal, Fire Lock Style 005, rigid coupling of ductile iron and pressure responsive gasket system for wet sprinkler system as recommended by manufacturer.

9. DOUBLE CHECK VALVE ASSEMBLY

A. Double check valve assembly shall be MA State approved, U.L./F.M. approved, with iron body bronze mounted construction complete with supervised OS & Y gate valves and test cocks. Furnish two spare sets of gaskets and repair kits.

B. Double check valve detector assembly shall be of one of the following:

1. Watts Series 757-OSY
2. Wilkins 350A-OSY
3. Conbraco Series 4S-100
4. Or equal

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PLUMBING SYSTEMS

NARRATIVE REPORT
NEW CONSTRUCTION N-3

The following is the Plumbing system narrative, which defines the scope of work and capacities of the Plumbing system as well as the Basis of Design. The Plumbing Systems shall be designed and constructed for ***LEED for Schools*** where indicated on this narrative.

1. CODES

   A. All work installed under Section 220000 shall comply with the MA Building Code, MA Plumbing Code and all state, county, and federal codes, laws, statutes, and authorities having jurisdiction.

2. DESIGN INTENT

   A. All work is new and consists of furnishing all materials, equipment, labor, transportation, facilities, and all operations and adjustments required for the complete and operating installation of the Plumbing work and all items incidental thereto, including commissioning and testing.

3. GENERAL

   A. The Plumbing Systems that will serve the project are cold water, hot water, sanitary waste and vent system, grease waste system, storm drain system, and natural gas.

   B. The Building will be serviced by Municipal water and Municipal sewer system.

   C. All Plumbing in the building will conform to Accessibility Codes and to Water Conserving sections of the Plumbing Code.

4. DRAINAGE SYSTEM

   A. Soil, Waste, and Vent piping system is provided to connect to all fixtures and equipment. System runs from 10 feet outside building and terminates with stack vents through the roof.

   B. A separate Grease Waste System starting with connection to an exterior concrete grease interceptor running thru the kitchen and servery area fixtures and terminating with a vent terminal through the roof. Point of use grease interceptors are to be provided at designated kitchen fixtures. The grease interceptor is provided under Division 33 scope.

   C. Storm Drainage system is provided to drain all roofs with roof drains piped through the building to a point of 10 feet outside the building.

   D. Drainage system piping will be service weight cast iron piping; hub and spigot with gaskets for below grade; no hub with gaskets, bands and clamps for above grade 2 in. and larger. Waste and vent piping 1-1/2 in. and smaller will be type ‘L’ copper.

5. WATER SYSTEM

A. New 4-inch domestic water service from the municipal water system will be provided. A meter and backflow preventer will be provided.

B. Cold water distribution main is provided. Non-freeze wall hydrants with integral back flow preventers are provided along the exterior of the building.

C. Domestic hot water heating will be provided with a combination of gas fired, high efficiency, condensing water heater (400,000 BTUH input), with separate storage tank (250 gallon). System is to be equipped with thermostatically controlled mixing devices to control water temperature to the fixtures.

D. A pump will re-circulate hot water from the piping system. Water temperature will be 120 deg. to serve general use fixtures. A 140 deg. F hot water will be supplied to the kitchen dishwasher.

E. Water piping will be type 'L' copper with wrot copper sweat fittings, silver solder or press-fit system. All piping will be insulated with 1 in. thick high-density fiberglass.

6. GAS SYSTEM

A. Natural gas service will be provided for the building and will serve the boilers, domestic water heaters, kitchen cooking equipment, roof top equipment and generator.

B. Gas piping will be Schedule 40 black steel pipe with threaded gas pattern malleable fittings for 2 in. and under and butt-welded fittings for 2-1/2 in. and larger.

7. FIXTURES ***LEED for Schools Credit WEp1 & WEc3***

A. Furnish and install all fixtures, including supports, connections, fittings, and any incidentals to make a complete installation.

B. Fixtures shall be the manufacturer's guaranteed label trademark indicating first quality. All acid resisting enameled ware shall bear the manufacturer's symbol signifying acid resisting material.

C. Vitreous china and acid resisting enameled fixtures, including stops, supplies and traps shall be of one manufacturer by Kohler, American Standard, or Eljer, or equal. Supports shall be Zurn, Smith, Josam, or equal. All fixtures shall be white. Faucets shall be Speakman, Chicago, or equal.

D. Fixtures shall be as scheduled on drawings.

1. Water Closet: High efficiency toilet, 1.28 gallon per flush, wall hung, vitreous china, siphon jet. Electrically hard-wired, sensor operated 1.28 gallon per flush-flush valve.

2. Urinal: High efficiency 0.13 gallon per flush urinal, wall hung, vitreous china. Electrically hard-wired, sensor operated 0.13 gallon per flush-flush valve.

3. Lavatory: Wall hung/countertop ADA lavatory with 0.35 GPM metering mixing faucet. Electrically hard-wired, sensor faucet.

4. Sink: MAAB/ADA stainless steel countertop sink with gooseneck faucet and 0.5 GPM aerator.

5. Drinking Fountain: Barrier free hi-low wall mounted electric water cooler, stainless steel basin with bottle filling station.

6. Janitor Sink: 24 x 24 x 10 Terrazo mop receptor Stern-Williams or equal.

8. DRAINS

A. Drains are cast iron, caulked outlets, nickaloy strainers, and in waterproofed areas and roofs shall have galvanized iron clamping rings with 6 lb. lead flashings to bond 9 in. in all directions. Drains shall be Smith, Zurn, Josam, or equal.

9. VALVES

A. Locate all valves to isolate all parts of the system. Shutoff valves 3 in. and smaller shall be ball valves, solder end or screwed, Apollo, or equal.

10. INSULATION

A. All water piping shall be insulated with snap-on fiberglass insulation Type ASJ-SSL, equal to Johns Manville Micro-Lok HP.

11. CLEANOUTS

A. Cleanouts shall be full size up to 4 in. threaded bronze plugs located as indicated on the drawings and/or where required in soil and waste pipes.

12. ACCESS DOORS

A. Furnish access doors for access to all concealed parts of the plumbing system that require accessibility. Coordinate types and locations with the Architect.

13. WATER HEATER

A. Gas fired, high efficiency, condensing water heater (400,000 BTUH input), with separate storage tank (250 gallon).

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HVAC SYSTEMS

NARRATIVE REPORT
NEW CONSTRUCTION N-3

The following is the HVAC system narrative, which defines the scope of work and capacities of the HVAC system as well as the Basis of Design. The HVAC systems shall be designed and constructed for ***LEED for Schools v4*** where indicated on this narrative.

1. CODES

   All work installed under Division 230000 shall comply with the State of Massachusetts Building Code and all local, IBC and IMC 2015, IECC 2015 Energy Code, county, and federal codes, laws, statutes, and authorities having jurisdiction.

2. DESIGN INTENT

   The work of Division 230000 is described within the narrative report. The HVAC project scope of work shall consist of providing new HVAC equipment and systems as described here within. All new work shall consist of furnishing all materials, equipment, labor, transportation, facilities, and all operations and adjustments required for the complete and operating installation of the Heating, Ventilating and Air Conditioning work and all items incidental thereto, including commissioning and testing.

3. BASIS OF DESIGN: (MASS CODE)

   Project weather and Code temperature values are listed herein based on weather data values as determined from ASHRAE weather data tables and the International Energy Conservation Code.

   Outside: Winter 7 deg. F, Summer 88 deg. F DB 74 deg. F WB

   Inside: 70 deg. F +/- 2 deg F for heating, 75 deg. F +/- 2 deg F (55% RH) for cooling for areas with air conditioning, 78 deg. F +/- 2 deg. F (<60% RH) for areas with displacement/dehumidification* (see note below). Unoccupied temperature setback will be provided (60 deg F heating (adj.), 85 deg F cooling/dehumidification (adj.).

   Ventilation air: In all cases ASHRAE guide 62.1-2010 and the International Mechanical Code will be met as a minimum for outdoor airflow and ventilation. All occupied areas will be designed to maintain 800 PPM carbon dioxide maximum.

4. SYSTEM DESCRIPTION

A. Central Heating Plant: ***LEED for Schools v4 Credit EA Minimum Energy Performance and Optimize Energy Performance***

Heating for the entire building will be through the use of a high efficiency natural gas fired condensing boiler plant.

The new Boiler Plant shall be provided with (3) 2,000 MBH output boilers and (2) end suction base mounted pumps with a capacity of 400 gpm each and will be located in the Mechanical room. In addition to new boilers and pumps, new hot water accessories including air separators and expansion tanks shall be provided. Boilers will each have a capacity of approximately 50% of the total hot water heating load.

The Boiler Plant will supply heating hot water to heating equipment and systems located throughout the building through a two-pipe fiberglass insulated schedule 40 black steel piping system. The Boiler Plant shall supply a maximum hot water temperature of 160 deg F on a design heating day and the hot water supply water temperature will be adjusted downward based on an outside temperature reset schedule to improve the overall operating efficiency of the Power Plant. Primary and standby end suction base mounted pumps will be provided with variable frequency drives for variable volume flow through the water distribution system for improved energy efficiency.

The hot water system will consist of a 35% propylene glycol solution. A glycol make-up feed unit system shall be provided.

Combustion air for each boiler will be directly ducted to each boiler through a galvanized ductwork distribution system. Venting from each boiler shall be through a separate double wall aluminized stainless steel (AL29-4C) vent system and shall discharge approximately 12 feet above the roof level. Final venting height will depend on the location of building intake air locations and adjacent roofs.

B. Central Cooling Plant: ***LEED for Schools v4 Credit EA Minimum Energy Performance, Optimize Energy Performance, & Fundamental Refrigerant Management***

A High Efficiency Central Chilled Water Cooling Plant consisting of a roof or grade mounted, outdoor, high-efficiency, air cooled chiller and primary and standby chilled water pumps with VFDs, accessories, controls, and steel and copper piping distribution system shall be provided to serve chilled water cooling HVAC equipment located throughout the building.

The High Efficiency Central Chilled Water Cooling Plant shall consist of a roof mounted, 20 ton outdoor, high-efficiency, air cooled chiller, primary and standby chilled water pumps with VFDs, each with a capacity of 55 gpm, accessories, controls, and steel and copper piping distribution system shall be provided to serve chilled water cooling HVAC equipment located throughout the building.

C. Classroom Heating, Ventilation, and Air-Conditioning (General Classrooms, Art & Music, Team Commons, SPED): ***LEED for Schools v4 Credit EA Minimum Energy Performance, Optimize Energy Performance, & Fundamental Refrigerant Management; IEQ Minimum IAQ Performance, Minimum Acoustical Performance, Enhanced IAQ Strategies, Construction IAQ Management Plan, IAQ Assessment, & Thermal Comfort***

It is proposed that a new dehumdification displacement ventilation system shall be provided to provide spatial tempering and ventilation to the Classroom areas.

New rooftop air handling units with 100% outside air economizer, supply and return air fans with VFDs, energy recovery wheels, hot water heating coils with modulating control valves, DX cooling and hot gas reheat system, and MERV 13 filtration will be provided to serve a new dehumidification displacement ventilation system. Each classroom shall be provided with a variable volume (VAV) terminal box with combination temperature, humidity, and CO2 sensor controls. The controls will reduce outside air as allowed maintaining a maximum of 800 PPM while providing sufficient ventilation to meet the required heating or cooling load of the classroom. As VAV boxes modulate, the supply and return air fans associated Variable Frequency Drives (VFD) of the rooftop units will adjust the fan speed based on system static pressure, reducing the energy consumed by the fans.

Each classroom will be provided with two individual wall mounted displacement diffusing units between 200 and 300 CFM each (depending on room size). Return air will be drawn back to the units by ceiling return air registers located within the classroom and will be routed back to the rooftop unit by a galvanized sheet metal return air ductwork distribution system. Supplemental hot water ceiling mounted radiant heating panels will be provided along exterior walls.

It is estimated that the following Rooftop air handling equipment will be required to serve the Classroom areas:

- RTU-1 with a capacity of 11,000 CFM (37 Tons Cooling, 425 MBH Heating) serving the South Side General Classrooms, SPED, and Support areas.
- RTU-2 with a capacity of 10,000 CFM (34 Tons Cooling, 385 MBH Heating) serving the North Side General Classrooms, SPED, and Support areas.
- RTU-3 with a capacity of 6,000 CFM (20 Tons Cooling, 230 MBH Heating) serving the East Side Pre-K Classrooms, SPED, and Support areas.

Displacement Ventilation:

The displacement ventilation system for the classroom wings are intended to provide a maximum cooling temperature during peak cooling periods of approximately 78°F, however, the ventilation air provided will be extremely dry which will be the result of utilizing cooling equipment to reduce vapor pressure to an extremely low condition of approximately 50 grains of moisture per pound of air and reheating the air to a supply temperature of approximately 68°F which will be distributed to each space. The extremely dry condition of the supply air provides the perception of a condition that is cooler than is actually occurring due to the evaporation of moisture to the adjacent air from the occupants of the space.

Considering maximum cooling requirements occur primarily during the months of July and August when the majority of the academic areas are not in use, it would suggest maintaining slightly higher temperatures may not present a discomfit, however, will relate to a substantial operating cost savings and a reduced installation cost.

An additional major benefit of utilizing dry air within the building will be the overall reduction of vapor pressure typically present in outside ventilation air during summer months. This reduction in vapor pressure will dramatically reduce the amount of moisture entering the building and the potential of condensation resulting in moisture, and a direct relationship with the formation of mold.

Classrooms Requiring Full Air Conditioning:

Classrooms that require full air conditioning will be provided with supplemental high-efficiency ductless AC cooling units.

D. Gymnasium & Stage: ***LEED for Schools v4 Credit EA Minimum Energy Performance, Optimize Energy Performance, & Fundamental Refrigerant Management; IEQ Minimum IAQ Performance, Minimum Acoustical Performance, Enhanced IAQ Strategies, Construction IAQ Management Plan, IAQ Assessment, & Thermal Comfort***

The Gymnasium, Stage, and Physical Education areas will be served by (1) one rooftop air handling unit of the recirculation design with 100% outside air economizer providing air conditioning via displacement ventilation. The unit will be approximately 8,500 CFM and will include supply and return fans with VFDs, 330 MBH output hot water heating coil with modulating control valve, 28 ton DX cooling with hot-gas reheat, MERV 13 filtration, energy recovery wheel, and carbon dioxide controls which will reduce outside air as allowed maintaining a maximum of 800 PPM. Supply air ventilation will be provided to the space through an exposed galvanized steel supply duct system dropping to wall mounted displacement diffusing units throughout the space. As levels of carbon dioxide drop, generally relating to a reduction in population, a variable frequency drive located in the rooftop unit will modulate to reduce airflow and ventilation while always maintaining a maximum of 800 ppm.

Return air will be drawn back to the air handling unit by ceiling level return air registers. Hot water radiant heating panels will be provided along exterior walls.

E. Administration, Nurse, Guidance Areas, and Media Center: ***LEED for Schools v4 Credit EA Minimum Energy Performance, Optimize Energy Performance, & Fundamental Refrigerant Management; IEQ Minimum IAQ Performance, Minimum Acoustical Performance, Enhanced IAQ Strategies, Construction IAQ Management Plan, IAQ Assessment, & Thermal Comfort***

Spatial heating and air-conditioning for the Administration areas will be served by horizontal ceiling concealed type ducted 4-pipe heating and cooling active chilled beam induction units with hot water and chilled water for the induction unit system provided by the individual hot water and chilled water central recirculation piping system communicating with the Boiler and Chilled Water Power Plants.

The air handling unit will be approximately 4,500 CFM and will include supply and return fan with VFDs, 175 MBH hot water coil heating section with modulating capacity control, MERV 13 filtration, 15 ton DX cooling with hot-gas reheat, and exhaust air energy recovery wheel. Supply air ventilation will be provided to each space that will satisfy building code requirements based on population.

F. Cafeteria, Teachers Dining, Kitchen, and Custodial Support Areas: ***LEED for Schools v4 Credit EA Minimum Energy Performance, Optimize Energy Performance, & Fundamental Refrigerant Management; IEQ Minimum IAQ Performance, Minimum Acoustical Performance, Enhanced IAQ Strategies, Construction IAQ Management Plan, IAQ Assessment, & Thermal Comfort***

Spatial heating and air conditioning for the Cafeteria and Teacher's Dining Room will be served by (1) one rooftop air handling unit of the recirculation design with 100% outside air economizer providing air conditioning via displacement ventilation. The unit will be approximately 5,200 CFM and will include supply and return fans with VFDs, 200 MBH output hot water heating coil with modulating control valve, 18 ton DX cooling with hot-gas reheat, MERV 13 filtration, energy recovery wheel, and carbon dioxide controls which will reduce outside air as allowed maintaining a maximum of 800 PPM. Supply air ventilation will be provided to the space through an exposed galvanized steel supply duct system dropping to wall mounted displacement diffusing units throughout the space.

As levels of carbon dioxide drop, generally relating to a reduction in population, a variable frequency drive located in the rooftop unit will modulate to reduce airflow and ventilation while always maintaining a maximum of 800 ppm. Return air will be drawn back to the air handling unit by a ceiling level return air registers. Hot water ceiling mounted radiant heating panels will be provided along exterior walls.

Storage areas will be heated by radiation heating equipment. Horizontal type unit heaters will heat areas adjacent to the Loading Dock. All Custodial closets will be exhausted by exhaust air fan systems.

G. Parks and Recreation: ***LEED for Schools v4 Credit EA Minimum Energy Performance, Optimize Energy Performance, & Fundamental Refrigerant Management; IEQ Minimum IAQ Performance, Minimum Acoustical Performance, Enhanced IAQ Strategies, Construction IAQ Management Plan, IAQ Assessment, & Thermal Comfort***

Spatial heating and air conditioning for the Parks and Recreation area will be served by (1) one rooftop air handling unit of the recirculation design with 100% outside air economizer providing overhead mixed-air heating, air conditioning, and ventilation. The unit will be approximately 2,000 CFM and will include supply and return fans with VFDs, 80 MBH output hot water heating coil with modulating control valve, 8 ton DX cooling with hot-gas reheat, MERV 13 filtration, energy recovery wheel, and carbon dioxide controls which will reduce outside air as allowed maintaining a maximum of 800 PPM. Supply air ventilation will be provided to the space through an overhead fiberglass insulated supply and return air ductwork distribution system with ceiling mounted registers and diffusers.

As levels of carbon dioxide drop, generally relating to a reduction in population, a variable frequency drive located in the rooftop unit will modulate to reduce airflow and ventilation while always maintaining a maximum of 800 ppm. Return air will be drawn back to the air handling unit by a ceiling level return air registers. Hot water ceiling mounted radiant heating panels will be provided along exterior walls.

H. Kitchen (Make-Up Air): ***LEED for Schools v4 Credit EA Minimum Energy Performance, Optimize Energy Performance, & Fundamental Refrigerant Management; IEQ Minimum IAQ Performance, Minimum Acoustical Performance, Enhanced IAQ Strategies, Construction IAQ Management Plan, IAQ Assessment, & Thermal Comfort***

The Kitchen areas shall be provided with new kitchen exhaust air fan and make-up air rooftop unit. The Kitchen will be heated by a roof mounted air handling unit with 370 MBH output hot water heating coil with modulating control valve and MERV 13 filtration with approximately 4,500 CFM capacity.

A variable volume kitchen exhaust hood control system consisting of kitchen exhaust stack temperature and smoke density sensors, supply and exhaust fan variable speed drives and associated controller will be provided by the kitchen equipment vendor. This system installation shall be field installed and coordinated with the ATC and Electrical Contractors.

I. Lobby, Corridor, and Entry Way Heating:

New hot water convectors, cabinet unit heaters, and fin tube radiation heating equipment shall be installed to provide heating to building entry way and stairwell areas. Corridors shall be ventilated from adjacent air handling unit systems. Main

Corridor and Lobby areas shall be heated and dehumidified by the displacement ventilation systems.

J. Utility Areas:

Utility areas will be provided with exhaust air fan systems for ventilation, and will typically be heated with horizontal type ceiling suspended unit heaters.

The Main Electric Rooms, IDF rooms and Elevator Machine Rooms will be air conditioned by high efficiency ductless AC cooling units.

K. Testing, Adjusting, Balancing & Commissioning:

All new HVAC systems shall be tested, adjusted, balanced and commissioned as part of the project scope.

L. Automatic Temperature Controls – Building Energy Management System:

A new DDC (direct digital control) Automatic Temperature Control and Building Energy Management System shall be installed to control and monitor building HVAC systems. Energy metering shall be installed to monitor the energy usage of building HVAC systems and utilities (fuel, gas, water).

5. TESTING REQUIREMENTS

A. The Mechanical Contractor shall provide testing of the following systems with the Owner and Owner's Representative present:

- Boiler plant system
- Chilled water plant system
- Air handling unit systems including all rooftop units, indoor air handling systems and exhaust air systems
- Terminal heating and cooling devices
- Automatic temperature control and building energy management system

B. Testing reports shall be submitted to the Engineer for review and approval before providing to the Owner.

6. OPERATION MANUALS AND MAINTENANCE MANUALS

When the project is completed, the Mechanical Contractor shall provide operation and maintenance manuals to the owner.

7. RECORD DRAWINGS AND CONTROL DOCUMENTS

When the project is completed, an as-built set of drawings, showing all mechanical system requirements from contract and addendum items will be provided to the owner.

8. COMMISSIONING

The building project shall include commissioning of all HVAC equipment & Automatic Temperature Control Systems; commissioning specifications will be prepared by the Commissioning Agent once that entity has been hired by MSBA.

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ELECTRICAL SYSTEMS

NARRATIVE REPORT
NEW CONSTRUCTION N-3

The following is the Electrical Systems narrative, which defines the scope of work and capacities of the Power and Lighting System, as well as, the Basis of Design. The Electrical Systems shall be designed and constructed for ***LEED v4 for BD+C Schools*** where indicated on this narrative.

1. CODES

All work installed under Section 260000 shall comply with the Massachusetts State Building Code and all local, county, and federal codes, laws, statutes, and authorities having jurisdiction.

2. DESIGN INTENT

The work of Section 260000 is as described in this Narrative. All work is new and consists of furnishing all materials, equipment, labor, transportation, facilities, and all operations and adjustments required for the complete and operating installation of the Electrical work and all items incidental thereto, including commissioning and testing.

3. DESIGN PARAMETERS

High Voltage:	277/480 Volt
Low Voltage:	120/208 Volt
Phase:	3 Phase
Amperage:	1,200 Amps
KW:	671

4. SEQUENCE OF OPERATIONS AND INTERACTIONS

A. Classroom and Corridor lighting will be controlled via “addressable relays”, which is achieved through programming networked controls. The control of the relays will be by automatic means, such as an occupancy sensor in each classroom. The system will have a BacNet gateway and will be interfaced with the DDC control system for scheduled functions. The controllability shall be in conformance with credit ***Interior Lighting Option 1 Lighting Control.***

B. Exterior lighting will be controlled by photocell “ON” and “scheduled” for “OFF” operation. The parking area lighting will be controlled by “zones” with dimmable capability.

C. Emergency and Exit lighting will be run through life safety panels to be “ON” during normal power conditions, as well as, power outage conditions. The emergency lighting system will have time control so that lights are “ON” only when building is occupied.

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5. DESCRIPTION OF THE SYSTEMS

A. Electrical Distribution System:

1. Service ratings are designed for a connected load of 10 watts/s.f. The service capacity will be sized for 1,200 amperes at 277/480 volt, 3∅, 4wire with 80% rated main breaker. The switchboard bus will be rated for 1,600 amperes to allow for future photovoltaics. A new pad mounted transformer will be provided with new primary and secondary services. New lighting and power panels will be provided to accommodate respective loads. The equipment will be located in dedicated rooms or closets.

2. Conductors 100Amperes and higher may be Aluminum, unless specifically noted otherwise on the drawings. All conductor and conduit sizing shown on the drawings is done using copper conductors, where the electrical contractor utilizes Aluminum conductors for feeders 100Amperes or higher it is the responsibility of the electrical contractor to convert the feeder size and conduit size to comply with NEC aluminum conductor ampacity based on NEC 310.15(B)(16). Utilize conduit fill tables in the NEC to size conduit for aluminum conductors.

3. The building connected electrical load estimate is based on the preliminary building systems design:

Load Type	**KVA**
Site lighting	4 KVA
HVAC Loads (including chiller and pumps, RTUs, MAUs, exhaust fans, etc.)	250 KVA
Boilers and Pumps	22 KVA
Interior Lighting Load	80 KVA
Classrooms, Labs, Office Power	170 KVA
Kitchen (full-service)	50 KVA
Miscellaneous Power	35 KVA
Elevator	30 KVA
Auditorium Lighting	30 KVA
Total Connected Load	**671 KVA**

B. Interior Lighting System:

1. Interior lighting illumination levels will meet the IES recommended values for applicable activity type, be in compliance with the IECC 2012 energy allowances and LEED v4 BD+C for Schools control requirements.

PROPOSED ILLUMINATION LEVELS

Location	Average Illumination Levels
Classrooms	30-35 FC
Offices, Conference Rooms, Library	30-35 FC
Kitchen	40-50 FC
Gymnasium	50 FC
Cafeteria	30-35 FC

Corridors	20-25 FC
Utility and Storage Rooms	20-25 FC

2. Classroom lighting fixtures will consist of a combination of recessed and pendant mounted direct /indirect luminaries with LED lamps and electronic dimmable drivers. The fixtures will be pre-wired for continuous dimming control where natural daylight is available and also for multi-level switching/dimming. Occupancy and daylight harvesting sensors will be provided in each classroom.

3. Office lighting fixtures will consist of recessed mounted direct LED luminaries and electronic drivers for dimming/switching. Offices on the perimeter with windows will have daylight harvesting controls similar to classrooms.

   In general, lighting power density will be 30-40% less than IECC 2015. The power density reduction relates to ***LEED credit Optimized Energy Performance.***

4. Lighting levels will be approximately 30-foot candles in classrooms and offices. The daylight harvesting will be provided within all spaces with exterior windows.

5. Gymnasium lighting will be comprised of direct fixtures with LED lamps and electronic drivers. The fixtures will be provided with clear lens and protective wire guards. The light level will be designed for approximately 50-foot candles. Multi-level switching and occupancy sensors will be provided.

   Daylight dimming will be provided within 15 feet of skylights or glazing. Daylight dimming controls will be similar in operation to classrooms.

6. Corridor lighting will be comprised of recessed acrylic fixtures with LED lamps and electronic drivers. The Corridor light level will be designed for approximately 20-foot candles. Corridor lighting will be controlled via occupancy sensors.

7. Cafeteria lighting will be pendant direct/indirect fixtures with LED lamps and electronic drivers. The light levels will be designed for approximately 30-foot candles. Daylighting controls will be provided on perimeter light fixtures with 15 feet of glazing

8. Gymnatorium performance lights with connector strips and a dimming system will be provided for performances. House lighting in Gymnatorium will be dimmable LED and controlled by the theatrical dimming system.

9. Kitchen and Servery lighting will consist of recessed 2'x4' acrylic lensed gasketed troffers with aluminum frame doors with LED lamps and electronic drivers. Light levels will be approximately 50-foot candles.

10. Media Center lighting will consist of recessed direct fixtures with LED lamps and electronic drivers. Light levels will be approximately 30-foot candles.

11. Each area will be locally switched and designed for multi-level controls. Each Classroom, Office space, and Toilet room will have occupancy sensors to turn lights off when unoccupied.

12. Daylight dimming sensors will be installed in each room where natural light is available for continuous dimming of light fixtures.

13. The entire school will be controlled with an automatic lighting control system for programming of interior and exterior lights “on and off”. Lighting control system will be interfaced with DDC system.

C. Emergency Lighting System:

1. An exterior 100 kW, 125 KVA, 277/480 Volt, 3 phase, 4 Wire diesel fired exterior emergency generator with sound attenuated enclosure will be provided. Light fixtures and LED Exit signs will be installed to serve all egress areas such as Corridors, Intervening Spaces, Toilets, Stairs, and Exit discharge exterior doors. The Administration area lighting will be connected to the emergency generator.

2. The generator will include fire safety systems, boilers and circulating pumps, elevator, kitchen refrigeration, and communications and security systems.

D. Site Lighting System: ***LEED Credit Light Pollution Reduction***

1. Fixtures for area lighting will be pole mounted cut-off ‘LED’ luminaries in the parking area and roadways. Pole heights will be 20 feet. The exterior lighting will be connected to the automatic lighting control system for photocell “ON” and timed “OFF” operation. The site lighting fixtures will be dark sky compliant. The illumination level will be 0.5fc for parking areas in accordance with Illuminating Engineering Society.

2. Building perimeter will be ‘LED’ wall mounted cut-off fixtures over exterior doors for Exit discharge.

E. Wiring Devices:

1. Each classroom will have a minimum of (2) duplex receptacles per teaching wall and (2) double duplex receptacles on dedicated circuits at classroom computer workstations. The teacher’s workstation will have a double duplex receptacle also on a dedicated circuit.

2. Office areas will generally have (1) duplex outlet per wall. At each workstation a double duplex receptacle will be provided.

3. Corridors will have a cleaning receptacle at approximately 25-40-foot intervals.

4. Exterior weatherproof receptacles with lockable enclosures will be installed at exterior doors.

5. A system of computer grade panelboards with double neutrals and surge protective devices will be provided for receptacle circuits.

6. Surface mounted raceways will be provided within renovated areas where raceways cannot be concealed.

F. Fire Alarm System:

1. A fire alarm and detection system will be provided with battery back-up. The system will be of the addressable type where each device will be identified at the control panel and remote annunciator by device type and location to facilitate search for origin of alarms.

2. Smoke detectors will be provided in open areas, corridors, stairwells and other egress ways.

3. The sprinkler system will be supervised for water flow and tampering with valves.

4. Speaker/strobes will be provided in egress ways, classrooms, assembly spaces, open areas, and other large spaces. Strobe only units will be provided in single toilets and conference rooms.

5. Manual pull stations will be provided at Exit discharge doors and at each egress stairwell not located at grade level.

6. The system will be remotely connected to automatically report alarms to fire department via an approved method by the fire department.

7. The generator status panel shall be located at the fire command center.

G. Uninterruptible Power Supply (UPS):

1. An 18 kW, three (3) phase centralized UPS system will be provided with seven minutes of battery back-up.

2. The system will provide conditioned power to sensitive electronic loads, telecommunication systems, bridge over power interruptions of short duration and allow an orderly shutdown of servers and communication systems during a prolonged power outage.

3. The UPS system will also be connected to the stand-by generator.

H. Lightning Preventer System:

1. Lightning preventer devices will be provided to provide coverage for the entire building.

2. The lightning preventer equipment will include lightning preventers, conductors, conduits, fasteners, connectors, ground rods, etc.

I. Renewable Energy System:

1. Provisions will be provided for future roof-mounted Photovoltaic System.

J. Two-Way Communications System:

1. A Two-Way Communications System will be provided at the elevator lobbies that do not have grade access.

K. Distribution Antennae System (DAS):

1. A public safety radio distributed antenna system (DAS) which consists of bi-directional amplifiers (BDA), donor antennas, coverage antennas, coax cable, coax connectors, splitters, combiners and couplers. These devices will be used as part of a system for in-building public safety 2-way radio system communication for first responders.

6. SITE UTILITIES

The incoming services including electric, fire alarm, telephone, cable TV, and fiber will be underground. An exterior pad mounted transformer will be provided by the utility company.

7. CCTV

A Closed-Circuit TV system will consist of computer servers with image software, computer monitors and IP based closed circuit TV cameras. The head end server will be located in the head end (MDF) room and will be rack mounted. The system can be accessed from any PC within the facility or externally via an IP address. Each camera can be viewed independently. The network video recorders (SAN) will record all cameras and store this information for 45 days at 30 images per second (virtual real time).

The location of the cameras is generally on exterior building perimeter. The exterior cameras are fixed type.

The system will fully integrate with the access control system to allow viewing of events from a single alarm viewer. Camera images and recorded video will be linked to the access system to allow retrieval of video that is associated with an event.

8. INTRUSION SYSTEM

An intrusion system will consist of security panel, keypads, motion detectors and door contacts. The system is addressable which means that each device will be identified when an alarm occurs. The system is designed so that each perimeter classroom with grade access will have dual tech sensors along the exterior wall and corridors, door contacts at each exterior door.

The system will include a digital transmitter to summons the central station in the event of an alarm condition.

The intrusion system will be connected to the automated lighting control system to automatically turn on lighting upon an alarm.

9. CARD ACCESS (PROPRIETARY)

A card access system includes a card access controller, door controllers and proximity readers/keypads. Proximity readers will be located at various locations. Each proximity reader will have a distinctive code to identify the user and a log will be kept in memory. The log within the panel can be accessed through a computer. The existing S2 System will be utilized. Expansion of this system will be proprietary.

The alarm condition will also initiate real time recording on the integrated CCTV System. The system may be programmed with graphic maps allowing the end-user to quickly identify alarm conditions and lock/unlock doors.

The system is modular and may be easily expanded to accommodate any additional devices.

10. TESTING REQUIREMENTS

A. The Electrical Contractor shall provide testing of the following systems with the Owner and Owner's Representative present:

- Lighting and Power Panels for correct phase balance.
- Emergency Generator.
- Lighting Control System (Interior and Exterior).
- Fire Alarm System.
- Uninterruptible Power System, UPS.
- Lightning Protection System.
- Security system

B. Testing reports shall be submitted to the Engineer for review and approval before providing to the Owner.

11. OPERATION MANUALS AND MAINTENANCE MANUALS

When the project is completed, the Electrical Contractor shall provide Operation and Maintenance Manuals to the Owner.

12. RECORD DRAWINGS AND CONTROL DOCUMENTS

When the project is completed, an As-Built set of drawings, showing all lighting and power requirements from contract and addendum items, will be provided to the Owner.

13. COMMISSIONING

The project shall be commissioned per Commissioning Section of the specifications.

14. PHASING

The Work will be constructed in phases to provide the least possible interference to the activities of the existing School.

Manchester Memorial Elementary School
Manchester, MA
J#745 004 00.00
L#59483/Page 1/June 26, 2018

TECHNOLOGY SYSTEMS

NARRATIVE REPORT
NEW CONSTRUCTION N-3

The following is the Technology System narrative, which defines the scope of work and capacities of the Communications system infrastructure, as well as, the Basis of Design.

1. CODES

   A. All work installed under Section 270000 shall comply with the Massachusetts Building Code, IBC 2009 Appendix 115AA - Stretch Energy Code, and all local, county, and federal codes, laws, statues, and authorities having jurisdiction.

2. DESIGN INTENT

   A. All work is new and consists of furnishing all materials, equipment, labor, transportation, facilities, and all operations and adjustments required for the complete and operating installation of the Technology and Security work and all items incidental thereto, including commissioning and testing.

3. TECHNOLOGY

   A. The data system infrastructure will consist of fiber optic backbone cabling horizontal wiring will consist of Category 6A UTP Plenum rated cabling for both data and telephone systems for gigabit connectivity. The telephone infrastructure will accommodate PBX, or VOIP based voice systems. The existing NEC SV8100 VOIP phone system can be utilized and expanded on for the new building.

   B. Each classroom will have four data outlets for student computers. Two data, one voice with video, and audio connections to a wall mounted projector will be provided at the teacher's station with interconnectivity to a interactive whiteboard. A wall phone outlet with 2-way ceiling speaker will be provided for communications with administration. Wireless access points will be provided in all classrooms and other spaces in addition to (2) CAT6A cables to access points multimode fiber will also be provided.

   C. A Central Paging System will be provided and integrated with the Telephone System.

   D. A wireless GPS/LAN based master clock system will be provided with 120V wireless remote clocks that act as transceivers.

   E. The Main Distribution Frame (MDF) will contain all core network switching and IP voice switch. Intermediate Distribution Frames (IDFs) will serve each floor/wing of the school. A fiber optic backbone will be provided from each IDF to MDF. The backbone will be designed for 10 Gbps Ethernet.

4. TESTING REQUIREMENTS

A. The Technology and Security Contractors shall provide testing of the following systems with the Owner and Owner's representative present:

- Telephone and Data cabling
- Fiber optic backbone cabling
- Paging System
- Wireless Clock System

Testing reports shall be submitted to the Engineer for review and approval before providing to the Owner.

5. OPERATION MANUALS AND MAINTENANCE MANUALS:

A. When the project is completed, the Technology Contractor shall provide Operation and Maintenance Manuals to the Owner.

6. RECORD DRAWINGS AND CONTROL DOCUMENTS:

A. When the project is completed, an As-Built set of drawings, showing all lighting and power requirements from contract and addendum items, will be provided to the Owner.

7. COMMISSIONING

A. The project shall be commissioned per Commissioning Section of the specifications.

8. PHASING

A. The work will be constructed in phases to provide the least possible interference to the activities of the school. Modular Classrooms will be utilized and will require interconnection to the existing intercom system and data network so that the Modular Classrooms function as an extension of the school.

FOODSERVICE EQUIPMENT NARRATIVE

Foodservice Equipment

The foodservice program will consist of a full-service kitchen and serving area sized to accommodate approximately 380 students and staff. The current lunch waves cycles consist of six serving peroids with one grade per cycle.

Kitchen and Food Preparation Area

The facility shall include all the necessary components of a functional kitchen to include a receiving area to be used as a staging point for the breakdown and distribution of delivered goods. Refrigerated rooms for the bulk storage of refrigerated and frozen products are to be offered and sized to accommodate the needs of the facility. Dry goods storage shall also be made available for the keeping of canned, boxed, and other non-refrigerated food items. Food grade storage shelving and dunnage platforms shall be provided for dry goods storage. Depending on various plan options an additional bulk paper goods storage room may be made available for storage of disposable items like plastic utensils, compostable serving trays, and other paper goods related items.

Food preparation shall take place on stainless steel tables of various sizes and configurations. Tables may be fashioned with sinks, drawers, shelves, and overhead pot storage hooks. Motorized food preparation equipment such as a food slicer, food cutter, and mixer shall be provided. Sizing of this equipment will be based on the scope of food preparation as many purveyors now sell pre-prepared ingredients that are pre-washed and sliced.

Cooking shall take place in a central location adjacent to both food storage and preparation. equipment shall consist of standard pieces such as convection ovens, boiling kettles, braising pans, steamers, and open burner range tops. Adjustments shall be made to cooking equipment to suite the specific menu.

Other support facilities located in the kitchen will include a staff toilet and a dedicated kitchen slop sink with enough space for the storage of mops, buckets, and detergents. A clothes washer and dryer will be provided for the washing of mop heads, aprons, and kitchen hand towels. Typically grouped with this equipment are employee locker accommodations for the storage of personal items like coats, handbags, or shoes.

Equipment that is required includes:

- Automatic food slicer, and a food processor.
- The kitchen must be provided with a mechanical means to wash ware and to sanitize area with a 180-degree rinse process.
- Walk in cooler and freezer, storage shelves, and mechanical refrigeration system.
- Dry storage shelving can storage racks, and transport work carts.
- Prep tables with sinks, over shelves, and utility connection points.

- Mobile worktables, speed rack for sheet pans, and dunnage platforms for storage.

- Cooking equipment will consist of combination oven/steamers, range top, steamer, braising pan, and kettle.

- Serving equipment will consist of counters, sneeze guard, cold pans, hot pans, display shelves, and milk coolers.

- Miscellaneous kitchen equipment will consist of reach in refrigerators, hot food holding cabinets, electrical drop cords, and utility carts.

Pot & Pan Washing

The equipment needed to manually hand wash pots and pans is a code minimum requirement. It will be supplemented by a mechanical ware washer. A three-compartment washing sink shall be provided so that the washing, rinsing, and sanitization of ware can be performed by staff. However, a mechanical ware washing machine will perform the same function and significantly reduce labor requirements for the washing operation and will much more effectively maintain a consistent level of proper sanitization. The mechanical washer will utilize a ventless, door type ware washing machine with an integral heat recovery system, over the alternative: manual hand washing and sanitization.

A high efficiency heat recovery ware washer consumes significantly less energy than the standard vented hot water sanitizing type unit. Water heating is all self-contained, without requiring a pre-heated incoming water supply. An electrically heated integral booster brings rinse water to up to the required 180 degrees for proper sanitization, and heated vapor, normally exhausted, is recaptured and transferred back to the booster to reduce energy input required for heating subsequent wash cycles. The ware washer is capable of cleaning all kitchen ware, pots, and pans up to a full-size sheet pan.

Hand washing in a three-compartment sink requires an estimated 90 gallons per hour of pre-heated water, compared to the 31 gallons per hour maximum cold-water consumption of the ware washer. In addition to the detergent and rinse agent required in both scenarios, hand washing requires a chemical sanitizing agent to properly sanitize; whereas the ware washer sanitizes with 180-degree rinse water, eliminating the additional chemical agent in the drain water. Should there be a power outage, or the ware washer is not operational for any reason, the three-compartment sink will act as the backup so serving can be maintained.

Serving Area & Cafeteria

When students approach the serving area it has been requested that they check in first at the register as is done in the existing configuration. Once checked in they then proceed to the serving line. The serving area will be a modern serving counter traditionally found in this grade level. In general, the serving will take place on various counters organized into hot and cold food serving stations. Hot food will be dished and served to students. Cold food will be placed into a self-serve refrigerated display where each student can choose the side vegetable or fruit they prefer. It is expected that this station will be lower than the adjacent counter to make it easier for students to see and reach the offerings. Milk is the last offering in the serving line before students

exit the serving area to find a seat. Two mobile condiment stands will be supplied. The stand will be equipped with a secure storage cabinet below and a flat counter top for laying out utensils, napkins, and condiments.

During the meal period student are also allowed to return to the cold food vegetable bar for seconds if they so choose.

Food will be served on disposable compostable trays consistent with the current serving method. The question to go to a reusable plastic trays has been mentioned but requires further analysis. Below is a quick analysis.

Plastic Trays	
Pros	**Cons**
Better option as compared to foam tray	Higher labor costs. Adds to the normal pot and pan washing labor.
Reduced volume of waste leads to lower trash disposal costs	Higher upfront cost of dishwasher and associated equipment
Solid dishware for students. May help with handling	Higher electricity and water bills. Water must be boosted to 190 degrees for washing and sanitizing.
Pot & pan washing can be combined with the tray washing area	The effect of 190 degree water rinse on plastic trays has not been studied with regard to leeching.
	Detergents and rise aids are pumped into these machines for washing and drying. These chemicals end up in the waste stream.
	A small portion of trays need to be replenished annually due to breakage and wear.
	The tray wash return will need to be placed near seating area taking up a prominent location up front. Noise associated with tray and pan washing will migrate into the seating area.

Compostable Disposable Trays	
Pros	**Cons**
Lower labor costs	Higher volume of waste
As part of a composting program is a viable long term option and teaching tool	Compostable trays cost more than the traditional foam tray. (foam is becoming obsolete as more communities ban the use of polystyrene)
Offers more long term options as disposable trays become more mainstream	There is a carbon footprint during manufacturing. Not clear if it is higher or lower than manufacturing the plastic reusable tray.
Pot & pan washing can be located to the rear of the kitchen reducing noise creep into the seating area.	The storage of disposable trays will take up more space in the storage room.
Heating water to 180 degrees is not needed. Detergents and other chemicals will not be placed into the environment.	
Lower upfront cost. Pot and pan washing equipment can become much smaller and more efficient.	

Waste and recycling stations shall be provided in the seating are for the purposes of sorting waste for recycling. Waste once sorted will be placed in the custodial trash room for proper disposal where appropriate.

4.1.2.10 - SUSTAINABLE DESIGN

4.1.2.10.1 – Sustainable Design Elements Narrative

4.1.2.10.2 – Designer's Sustainability Statement

4.1.2.10.3 – Proposed LEED Scorecard Summary

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4.1.2.10.1 - SUSTAINABLE DESIGN ELEMENTS

LEED-S SCORECARD

MSBA project no. 201506980010, Memorial Elementary School, will pursue LEED for Schools Version 4 New Construction and Major Renovations certification. The Design team will attempt to obtain certification at silver level. The strategies and assumptions presented in the attached project scorecard will allow the project to attempt 50+ points, as required for the LEED-S v4 Silver level.

LEED-S v4 certification is divided into 8 major categories: Location and Transportation, Sustainable Sites, Water Efficiency, Energy and Atmosphere, Materials and Resources, Indoor Environmental Quality, Innovation in Design and Regional Priority.

The initial LEED-S Scorecard has been completed and is included in this section. The summary of the effort can be found below. The District intends to pursue the Certification that would achieve a 2% MSBA reimbursement. The detail of the checklist has been provided on the following pages.

SUSTAINABLE SITES

The project undertook a number of sustainability strategies in compliance with the LEED for Schools rating system. Many of them will not only enhance the sustainability of the project but also provide quality outdoor spaces/features for the children as well as reduce the impact on the local infrastructure.

The site design maximizes the open space and vegetated areas in order to improve the children's experience as well as protect the natural habitat. Site employed strategies include stormwater runoff reduction, light colored hardscape (heat island effect prevention) as well as avoidance of light pollution by propose lighting design. The site lighting will be reduced, and will include full cut-off pole lighting, reduced lighting at site perimeter, interior lighting will be automatically shut down after hours.

Public transportation arriving in close proximity to the project site is limited. However, the project is in a close proximity to a single and multifamily residential neighborhood. As such, many students arrive to the site on foot, or by bicycle. Some students do arrive and depart by automobile and the District does provide school bus transportation however, there is only the demand for two (2) buses to serve this population.

The project will further try to maximize alternative transport opportunities within the site, by providing preferred parking spaces for low emitting vehicles and drop off area for carpools. Bicycle racks shall be provided for students and staff. The project will promote walking and biking to school among students. The School District intends to share facilities with the public for complimentary uses to increase the sustainability of the new project.

WATER EFFICIENCY

The designed vegetation will complement the existing one on site, the selected species will be native or adapted, low maintenance and drought tolerant. This will minimize the need to use harmful chemicals, expenses associated with maintenance as well as unnecessary potable water use for irrigation purposes. The project does not intend to install permanent irrigation system.

Indoor plumbing fixtures will be low flow, including ultra-low flow faucets, low flow showers, low flow kitchen sinks, pint urinals, dual flush toilets and low flow single flush toilets, depending on the location – to be discussed with the school. Children will be educated about the reduced water use practices through signage.

ENERGY AND ATMOSPHERE

The building intends to reduce energy usage and associated carbon emissions through architectural and systems design. The compact structure will be optimally sited to take advantage of passive design opportunities. It will include advanced building envelope, highly efficient mechanical systems, daylight harvesting opportunities, significantly reduced lighting power density and lighting controls.

The project team will prepare tools that can be used by school during operations phase for analyzing and optimizing energy usage. The integrative design process implemented by the project team will maximize opportunities and synergies between building elements as well as allow for optimizing design and provide operational savings.

The building will be fully commissioned and it is recommended to purchase renewable energy credits to offset its energy usage by renewable sources. It is recommended to prepare a feasibility analysis for the installation of renewable energy on the project site.

MATERIALS AND RESOURCES

The project will be designed and constructed to minimize its impact on the environment. The construction waste will be diverted from landfill. Selected building materials will come from renewable sources, will be regionally sourced to promote local economy and limit CO2 emissions associated with transport, will contain recycled components. The project team will prepare recommendations for recycling opportunities during operational phase.

INDOOR ENVIRONMENTAL QUALITY

The main goal of the project team is to design and construct a healthy and comfortable building which will maximize learning opportunities for the children. Required analysis will be performed to ensure selection of best available solutions for the intent of the building.

All building materials and products will be low emitting and tested in accordance with the LEED recommended standards. Lighting and HVAC will be optimized to enhance the occupant comfort.

Spaces will be daylit and children will be provided with views of the surrounding nature. Implemented construction practices will improve indoor air quality.

INNOVATION IN DESIGN

The project will utilize a number of innovative solutions including low mercury lighting, educational displays and signage, green cleaning, design for health, improved physical activity and learning opportunities for the children. The team will also propose strategies to be implemented in the operations phase that will increase sustainability of the project, like green cleaning, green building tours, organic landscaping or growing food on- site.

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4.1.2.10.2 – DESIGNER'S SUSTAINABILITY STATEMENT

The Designer's Sustainability Statement can be found on the following page.

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JCJARCHITECTURE

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AN EMPLOYEE OWNED COMPANY

July 18, 2018

Ms. Brittany Kenny Gomes
Project Coordinator
Massachusetts School Building Authority
40 Broad Street, Suite 500
Boston, MA 02109

Re: Manchester-Essex Regional School District
Memorial Elementary School
Manchester-by-the-Sea, Massachusetts
Designer Sustainability Statement
JCJ Project No. B17046.00

Dear Ms. Gomes:

This is an acknowledgement that Manchester-Essex Regional School District has identified a goal of 2% additional reimbursement from the MSBA High Efficiency Green School Program. As their Designer, I have submitted a completed LEED-S version 4 scorecard showing all prerequisites and 51 attempted points, which will meet that goal. Fifteen (15) additional points are presently considered to be strongly possible to achieve. We will target for those as well.

The scope of work for this project will include the construction elements and performance tasks to achieve this goal, an all subsequent documents, including but not limited to, specifications, drawings, and cost estimates will match the scope of work indicated in the submitted scorecard.

Please contact our office with any questions.

Very truly yours,

James E. LaPosta, Jr., FAIA, LEED AP, MCPPO
Chief Architectural Officer / Principal

C: Caroline Weld, Co-Chair, Memorial School Building Committee
Ann Cameron, Chair, Manchester-Essex Regional School Committee
Pam Beaudoin, Superintendent, Manchester-Essex Regional Schools
Jay Pagliarulo, Director of Facilities and Maintenance, Manchester-Essex Regional Schools
Steve Brown, Owner's Project Manager, Dore & Whittier Management Partners
Daniel Ruiz,, MCPPO, Project Manager, JCJ Architecture
Lauren Braren, AIA, LEED AP, Designer, JCJ Architecture
File B17046.00 / 26

4.1.2.10.3 – SUSTAINABLE DESIGN SCORECARD

The Summary Scorecard can be found on the following page. The detailed LEED Scorecard backup can be found in Appendix 1 of this report

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SUMMARY LEED SCORECARD

Yes	?+	?-	No	Credit	Description	
1				Credit	Integrative Process	1
4	2	0	9	Location and Transportation		15
				Credit	LEED for Neighborhood Development Location	15
1				Credit	Sensitive Land Protection	1
			2	Credit	High Priority Site	2
1	1		3	Credit	Surrounding Density and Diverse Uses	5
			4	Credit	Access to Quality Transit	4
1				Credit	Bicycle Facilities	1
	1			Credit	Reduced Parking Footprint	1
1				Credit	Green Vehicles	1
6	4	1	1	**Sustainable Sites**		**12**
Y				Prereq	Construction Activity Pollution Prevention	Required
Y				Prereq	Environmental Site Assessment	Required
1				Credit	Site Assessment	1
	2			Credit	Site Development - Protect or Restore Habitat	2
1				Credit	Open Space	1
	2	1		Credit	Rainwater Management	3
2				Credit	Heat Island Reduction	2
1				Credit	Light Pollution Reduction	1
			1	Credit	Site Master Plan	1
1				Credit	Joint Use of Facilities	1
6	1	1	4	**Water Efficiency**		**12**
Y				Prereq	Outdoor Water Use Reduction	Required
Y				Prereq	Indoor Water Use Reduction	Required
Y				Prereq	Building-Level Water Metering	Required
2				Credit	Outdoor Water Use Reduction	2
3	1	1	2	Credit	Indoor Water Use Reduction	7
			2	Credit	Cooling Tower Water Use	2
1				Credit	Water Metering	1
14	3	4	10	**Energy and Atmosphere**		**31**
Y				Prereq	Fundamental Commissioning and Verification	Required
Y				Prereq	Minimum Energy Performance	Required
Y				Prereq	Building-Level Energy Metering	Required
Y				Prereq	Fundamental Refrigerant Management	Required
	3	3		Credit	Enhanced Commissioning	6
11			5	Credit	Optimize Energy Performance	16
1				Credit	Advanced Energy Metering	1
			2	Credit	Demand Response	2
			3	Credit	Renewable Energy Production	3
		1		Credit	Enhanced Refrigerant Management	1
2				Credit	Green Power and Carbon Offsets	2
5	0	2	6	**Materials and Resources**		**13**
Y				Prereq	Storage and Collection of Recyclables	Required
Y				Prereq	Construction and Demolition Waste Management Planning	Required
			5	Credit	Building Life-Cycle Impact Reduction	5
1			1	Credit	Building Product Disclosure and Optimization - Environmental Product	2
1		1		Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
1		1		Credit	Building Product Disclosure and Optimization - Material Ingredients	2
2				Credit	Construction and Demolition Waste Management	2

9	4	3	0	**Indoor Environmental Quality**		**16**
Y				Prereq	Minimum Indoor Air Quality Performance	Required
Y				Prereq	Environmental Tobacco Smoke Control	Required
Y				Prereq	Minimum Acoustic Performance	Required
2				Credit	Enhanced Indoor Air Quality Strategies	2
3				Credit	Low-Emitting Materials	3
1				Credit	Construction Indoor Air Quality Management Plan	1
1		1		Credit	Indoor Air Quality Assessment	2
		1		Credit	Thermal Comfort	1
1	1			Credit	Interior Lighting	2
	2	1		Credit	Daylight	3
1				Credit	Quality Views	1
	1			Credit	Acoustic Performance	1

4	0	2	0	**Innovation**		**6**
3		2		Credit	Innovation	5
1				Credit	LEED Accredited Professional	1

2	1	0	1	**Regional Priority**		**4**
1				Credit	Regional Priority: Optimize Energy Performance, 8 points min.	1
	1			Credit	Regional Priority: Site development - protect or restore habitat, 2 points min.	1
1				Credit	Regional Priority: Outdoor water use reduction, 2 points min.	1
			1	Credit	Regional Priority: Specific Credit	1

51	15	13	31	**TOTALS**	Possible Points:	**110**

Certified: 40 to 49 points, Silver: 50 to 59 points, Gold: 60 to 79 points, Platinum: 80 to 110

4.1.2.11 – ADA AND MAAB COMPLIANCE ANALYSIS

The proposed facility, including the FF&E, will be fully compliant with ADA and MAAB requirements. 521 CMR – the Massachusetts Accessibility Regulations covers all accessibility issues in all publicly funded school projects. The regulations include 521 CMR section 30 relative to public toilet rooms and age-specific mounting heights for accessories. 521 CMR section 36 relates to drinking fountains. 521 CMR section 65 covers all assembly spaces and 521 CMR section 24 identifies ramp regulations.

At each submission stage of the project, the drawings and details are reviewed with these current regulations and additional details are added to ensure compliance with the construction documents.

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4.1.2.12 – ROOM DATA SHEETS

Room Data Sheets have been developed for each room in the proposed school.

Per the MSBA Guidelines in Module 4, the information documented in each room data sheet includes specific water, power, lighting and data requirements. They also identify acoustical considerations, security measures, hardware requirements, room darkening/shading devices, and typical items such as white boards, tack space and classroom accessories. The room finishes for walls, floors and ceilings are clearly identified and are coordinated with the estimating efforts that are required as part of the Submission.

Environmental requirements such as special ventilation/exhaust, natural lighting, special heating, and heat control are listed for each room and Audio-visual, television access, and public address requirements as well as required computer equipment are identified. In each room that equipment, furnishings, and casework is anticipated, it is clearly identified and shown on the graphic floor plan.

The Room Data Sheets can be found starting on the next page.

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Manchester Memorial Elementary School

MANCHESTER-BY-THE-SEA, MA

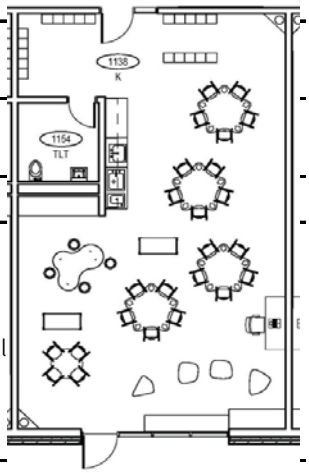
July 18, 2018

SCHEMATIC DESIGN

PROGRAM DATA SHEET

Kindergarten w/ Toilet

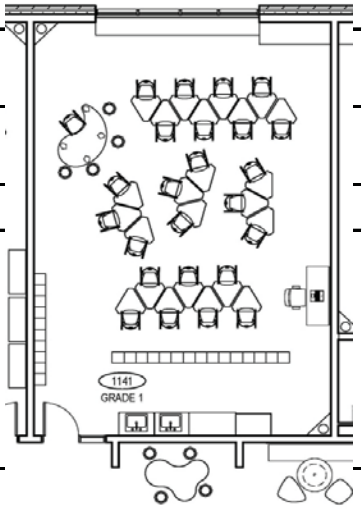
Core Academic Space



Quantity / Floor Area:	3 @ 1,200 sf
Function / Activities:	Kindergarten Classroom Instruction, Individual & Group Activity
Adjacencies:	Academic Wing 1st and 2nd Grade Classroom, Sped
Ceiling Height:	9'-4"
Finishes: Flooring	30% LVT Resilient Tile, 70% Carpet Tile
Base	Poured Epoxy Resin at Toilet
Walls	Rubber Cove, 4" (Poured Epoxy Resin at Toilet)
Ceiling	Paint, Dry Erase Paint where noted (Ceramic Tile to 6'H at Toilet Wet Wall
Doors	2'x2' Suspended Acoustical Ceiling Tile
Frames	Solid Core Wood
	Hollow Metal Frame, Sidelight, Transom, 10' Clerestory
Door Hardware:	Classroom Function Lockset (keyed from both sides)
Lighting:	Direct/Indirect LED Linear Pendant Fixtures Motion Sensors, Dimmable, Daylight Sensors
Mobile Equipment/ Furnishings:	Teacher Desk & Task Chair, Mobile File Cabinet Mobile Teacher Sit Stand Unit Student Tables Student Stack Chairs Small Group Tables Mobile Storage Cabinets/Bookcases Soft Seating Mobile Coat Cubby Storage
Fixed Equipment / Millwork:	33 lin.ft. Total Millwork: 4 lin.ft Closed Base Cabinets, 11 lin.ft Upper Cabinets, 7 lin.ft Sink Cabinets, 14 lin. Ft. Tall Storage/Wardrobe Cabinets, 8 lin.ft. built-in bookcase at Window wall Main Teaching Wall: 14 lin.ft Dry Erase Surface w/ Magnetic Backer (floor to 7'), 2" Tackstrip Above, (2) 4'-0"W x 6'-10"H Tackboard, Rear Wall: 6 lin.ft Dry Erase Surface w/ Magnetic Backer (floor to 7'), 2" Tackstrip Above, (2) 4'-0"W x 6'-10"H Tackboard
Plumbing Requirements:	Adult Height ADA Sink, Child Height ADA Sink & Bubbler (H&C Water) Toilet Room: Floor Mounted Child WC & Lavatory, Wall-mounted Mirror, SS Accessories
Windows:	Operable Windows w/Screens & Roller Shades
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	(1) Wall Mtd Touch Screen Monitor, Telephone, Intercom, PA, Fire Alarm, Clock & Bell (2) Teacher Computer Workstation Location for flexibility (1) Mobile Tablet Cart Wireless Capability
Special Features / Remarks:	Direct Exterior Access to Outdoor Learning/Play Space

General Classrooms - Grades 1-5

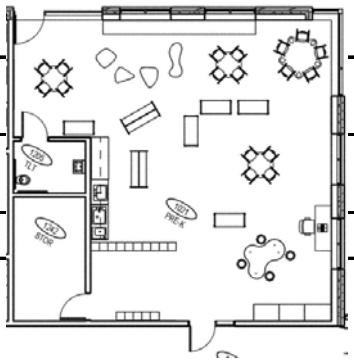
Core Academic Space



Quantity / Floor Area:	15 @ 950 sf
Function / Activities:	Grades 1-5 Classroom Instruction, Individual and Group Activity
Adjacencies:	Academic Wing Shared Resource Rooms
Ceiling Height:	9'-4"
Finishes: Flooring	30% LVT Resilient Tile, 70% Carpet Tile
Base	Rubber Cove, 4"
Walls	Paint, Dry Erase Paint where noted
Ceiling	2'x2' Suspended Acoustical Ceiling Tile
Doors	Solid Core Wood
Frames	Hollow Metal Frame, Sidelight, Transom, 10' Clerestory
Door Hardware:	Classroom Function Lockset (keyed from both sides)
Lighting:	Direct/Indirect LED Linear Pendant Fixtures Motion Sensors, Dimmable, Daylight Sensors
Mobile Equipment/ Furnishings:	Teacher Desk & Task Chair, Mobile File Cabinet Mobile Teacher Sit Stand Unit Student Desks Student Stack Chairs Small Group Table Mobile Storage Cabinets/Bookcases Mobile Coat Cubby Storage
Fixed Equipment / Millwork:	26 lin.ft. Total Millwork: 4 lin.ft Closed Base Cabinets, 6 lin.ft Sink Cabinets, 9 lin. Ft. Tall Storage/Wardrobe Cabinets, 14 lin.ft. built-in bookcase at Window wall Main Teaching Wall: 14 lin.ft Dry Erase Surface w/ Magnetic Backer (floor to 7'), 2" Tackstrip Above, (2) 4'-0"W x 6'-10"H Tackboard, Rear Wall: 6 lin.ft Dry Erase Surface w/ Magnetic Backer (floor to 7'), 2" Tackstrip Above, (2) 4'-0"W x 6'-10"H Tackboard
Plumbing Requirements:	Adult Height ADA Sink, Child Height ADA Sink (H&C Water)
Windows:	Operable Windows w/Screens & Roller Shades
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	(1) Wall Screen Monitor, Telephone, Intercom, PA, Fire Alarm, Clock & Bell (2) Teacher Computer Workstation Location for flexibility Voice Amplification System, (1) Mobile Tablet Cart Wireless Capability
Special Features / Remarks:	Interior Connecting Classroom Doors

Pre-Kindergarten w/ Toilet

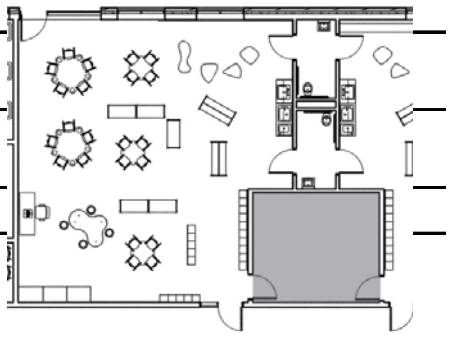
Core Academic Space



Quantity / Floor Area:	2 @ 1,200 sf
Function / Activities:	Pre-K Classroom Instruction, Individual and Group Activity
Adjacencies:	Designated Entrance Near Parking/ Drop-Off
Ceiling Height:	9'-4"
Finishes: Flooring	30% LVT Resilient Tile, 70% Carpet Tile
Base	Poured Epoxy Resin at Toilet Rubber Cove, 4" (Ceramic Tile at Toilet)
Walls	Paint, Dry Erase Paint where noted (Ceramic Tile to 6'H at Toilet Wet Walls)
Ceiling	2'x2' Suspended Acoustical Ceiling Tile
Doors	Solid Core Wood
Frames	Hollow Metal Frame, Sidelight, Transom, 10' Clerestory
Door Hardware:	Classroom Function Lockset (keyed from both sides)
Lighting:	Direct/Indirect LED Linear Pendant Fixtures Motion Sensors, Dimmable, Daylight Sensors
Mobile Equipment/ Furnishings:	Teacher Desk & Task Chair, Mobile File Cabinet Student Tables Student Stack Chairs Small Group Tables Mobile Storage Cabinets/Bookcases Play Furniture: Block Center, Art Center, Dramatic Play, Sand/Water, Science, Reading, Science Mobile Coat Cubby Storage
Fixed Equipment / Millwork:	33 lin.ft. Total Millwork: 12 lin.ft Upper Cabinets, 5 lin. ft Base Cabinets, 7 lin.ft Sink Cabinets, 9 lin. Ft. Tall Storage/Wardrobe Cabinets, 18 lin.ft. built-in bookcase at Window wall Main Teaching Wall: 10 lin.ft Dry Erase Surface w/ Magnetic Backer (floor to 7'), 2" Tackstrip Above, (2) 4'-0"W x 6'-10"H Tackboard, (1) 10'-0"W Tackboard, (1) 6'-0"W Tackboard
Plumbing Requirements:	Adult Height ADA Sink, Child Height ADA Sink & Bubbler (H&C Water) Toilet Room: Floor Mounted Child WC & Lavatory, Wall-mounted Mirror, SS Accessories
Windows:	Operable Windows w/Screens & Roller Shades
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	(1) Wall Screen Monitor, Telephone, Intercom, PA, Fire Alarm, Clock & Bell (2) Teacher Computer Workstation Location for flexibility Wireless Capability
Special Features / Remarks:	Direct Exterior Access to Outdoor Learning Space

Pre-Kindergarten Storage

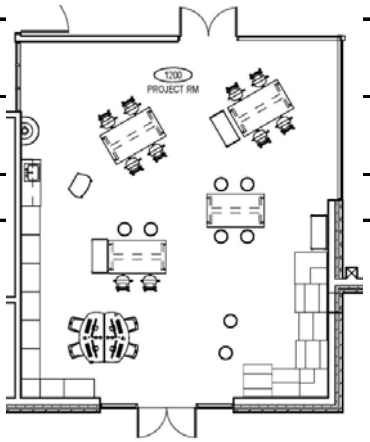
Core Academic Space



Quantity / Floor Area:	1 @ 250 sf
Function / Activities:	Pre-K Storage
Adjacencies:	Pre-K Classrooms
Ceiling Height:	9'-0"
Finishes: Flooring	LVT Resilient Tile
Base	Rubber Cove, 4"
Walls	Paint
Ceiling	2'x2' Suspended Acoustical Ceiling Tile
Doors	Solid Core Wood
Frames	Hollow Metal Frame
Door Hardware:	Storage Function Lockset
Lighting:	2'x4' Recessed LED Luminaire Fixtures Motion Sensors
Mobile Equipment/ Furnishings:	Open Metal Shelving Cots and Cot Carts
Fixed Equipment / Millwork:	
Plumbing Requirements:	
Windows:	
HVAC Requirements:	Central Heating, Ventilation
Electrical/ Technology Requirements:	PA, Fire Alarm Wireless Capability
Special Features / Remarks:	

Project Rooms

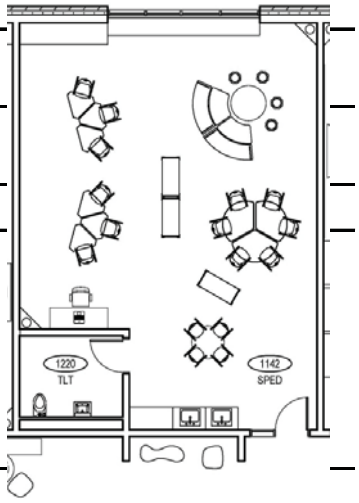
Core Academic Space



Quantity / Floor Area:	2 @ 1,000 sf
Function / Activities:	Individual and Group Project Work Space, STEAM Projects: Lego , Robotics, Art etc.
Adjacencies:	Main Lobby, Art Classroom, Grade Level Classrooms, Media Center, Centrally Located
Ceiling Height:	NA/ 10'-0" at Wood Ceiling
Finishes: Flooring	Sealed Concrete - Local Shells and Seaglass incorporated into concrete mix
Base	Rubber Cove, 4"
Walls	Paint, Dry Erase Paint where noted, Wood Slat Wall
Ceiling	2'x2' Suspended Acoustical Ceiling Tile / Wood Plank Style Ceiling
Doors	Aluminum w/ Vision Panel
Frames	Aluminum Storefront w/ Glass Transom
Door Hardware:	Classroom Function Lockset (keyed from both sides)
Lighting:	Direct/Indirect LED Pendant and Recessed Linear Fixtures Motion Sensors, Dimmable, Daylight Sensors
Mobile Equipment/ Furnishings:	Teacher Desk & Task Chair, Mobile File Cabinet Mobile Teacher Sit Stand Unit Mobile Student Tables Student Chair/Stools Mobile Storage Cabinets/Bookcases/Totes Mobile Demonstration Station/Work Table Tiered Lounge Seating
Fixed Equipment / Millwork:	29 lin.ft. Total Millwork: 5 lin.ft Upper Cabinets, 5 lin.ft Sink Cabinet, 24 lin. Ft. Tall Storage Cabinets; Solid Surface Countertops Main Teaching Wall: 8 lin.ft Dry Erase Surface w/ Magnetic Backer (floor to 7'), 2" Tackstrip Above, (1) 6'-0"W x 6'-10"H Tackboard
Plumbing Requirements:	(1) Adult Height ADA Sink (H&C Water) (1) 3-Station Wash fountain, Junior Size
Windows:	Operable Windows w/Screens & Roller Shades
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	(1) Wall Screen Monitor, Telephone, Intercom, PA, Fire Alarm, Clock & Bell (1) Teacher Computer Workstation Location, Voice Amplification System Ceiling Mounted Retractable Electrical Cord Reels Wireless Capability
Special Features / Remarks:	Glass/ Vision Storefront to Lobby/Corridors Painted "Green Screen" Wall at 2nd Floor Project Room

Self- Contained SPED Classroom

Special Education

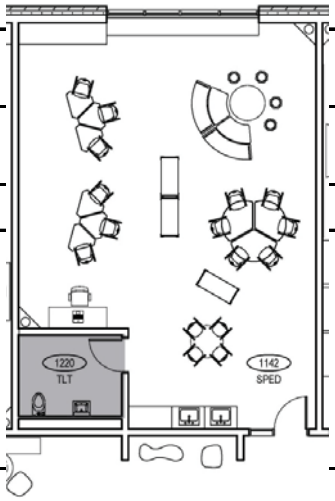


Quantity / Floor Area:	4 @ 950 sf
Function / Activities:	Academic Instruction, Individual and Group Work, Quiet Area
Adjacencies:	Grade Level Classrooms Centrally Located
Ceiling Height:	9'-4"
Finishes: Flooring	30% LVT Resilient Tile, 70% Carpet Tile
Base	Rubber Cove, 4"
Walls	Paint, Dry Erase Paint where noted
Ceiling	2'x2' Suspended Acoustical Ceiling Tile
Doors	Solid Core Wood w/ Vision Panel
Frames	Hollow Metal Frame, Sidelight, Transom, 10' Clerestory
Door Hardware:	Classroom Function Lockset (keyed from both sides)
Lighting:	Direct/Indirect LED Linear Pendant Fixtures Motion Sensors, Dimmable, Daylight Sensors
Mobile Equipment/ Furnishings:	Teacher Desk & Task Chair, Mobile File Cabinet Mobile Teacher Sit Stand Unit Student Desks/Tables Student Stack Chairs Small Group Table Mobile Storage Cabinets/Bookcases Modular Lounge Seats
Fixed Equipment / Millwork:	26 lin.ft. Total Millwork: 4 lin.ft Closed Base Cabinets, 6 lin.ft Sink Cabinets, 9 lin. Ft. Tall Storage/Wardrobe Cabinets, 14 lin.ft. built-in bookcase at Window wall Main Teaching Wall: 14 lin.ft Dry Erase Surface w/ Magnetic Backer (floor to 7'), 2" Tackstrip Above, (2) 4'-0"W x 6'-10"H Tackboard, Rear Wall: 6 lin.ft Dry Erase Surface w/ Magnetic Backer (floor to 7'), 2" Tackstrip Above, (2) 4'-0"W x 6'-10"H Tackboard
Plumbing Requirements:	Adult Height ADA Sink, Child Height ADA Sink (H&C Water)
Windows:	Operable Windows w/Screens & Roller Shades
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	(1) Wall Screen Monitor, Telephone, Intercom, PA, Fire Alarm, Clock & Bell (1) Teacher Computer Workstation Location Voice Amplification System, (1) Mobile Tablet Cart Wireless Capability
Special Features / Remarks:	Interior Connecting Classroom Doors

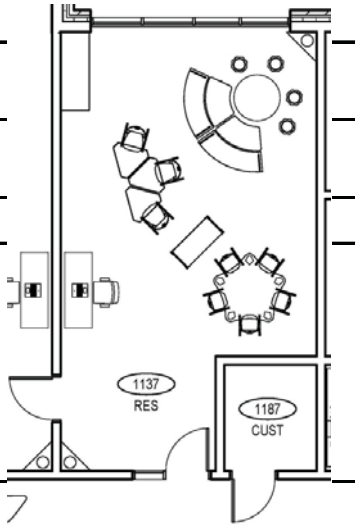
Self-Contained SPED - Toilet

Special Education

Quantity / Floor Area:	3 @ 60 sf
Function / Activities:	Individual Facilities for Students
Adjacencies:	Self Contained Sped Rooms
Ceiling Height:	8'-0"
Finishes: Flooring	Poured Epoxy Resin
Base	Ceramic Tile
Walls	Ceramic Tile to 6'H @ Wet Walls, Epoxy Paint
Ceiling	2'x2' Suspended Acoustical Ceiling Tile
Doors	Solid Core Wood
Frames	Hollow Metal Frame
Door Hardware:	Privacy Function Lockset w/ Occupancy Indicator
Lighting:	Linear Wall Slot LED Fixture, Motion Sensors
Mobile Equipment/ Furnishings:	
Fixed Equipment / Millwork:	Stainless Steel Wall-mounted, Semi-recessed Accessories Wall Mounted Mirror Grab Bars
Plumbing Requirements:	Wall Mounted Toilet and Lavatory
Windows:	
HVAC Requirements:	Central Heating, Ventilation
Electrical/ Technology Requirements:	PA, Fire Alarm
Special Features / Remarks:	Floor Drains



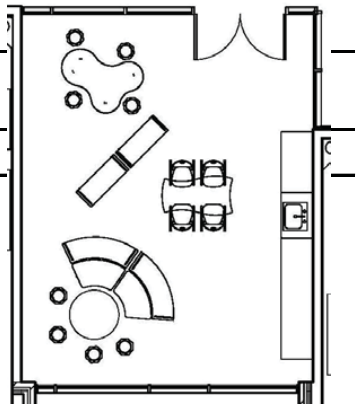
Resource Room
Special Education



Quantity / Floor Area:	4 @ 475 sf
Function / Activities:	Individual and Small Group Learning, Language and Reading Development
Adjacencies:	Academic Wings
Ceiling Height:	9'-4"
Finishes: Flooring	30% LVT Resilient Tile, 70% Carpet Tile
Base	Rubber Cove, 4"
Walls	Paint, Dry Erase Paint where noted
Ceiling	2'x2' Suspended Acoustical Ceiling Tile
Doors	Solid Core Wood
Frames	Hollow Metal Frame, Sidelight, Transom, 10' Clerestory
Door Hardware:	Classroom Function Lockset (keyed from both sides)
Lighting:	Direct/Indirect LED Linear Pendant Fixtures Motion Sensors, Dimmable, Daylight Sensors
Mobile Equipment/ Furnishings:	Teacher Desk & Task Chair, Mobile File Cabinet Mobile Teacher Sit Stand Unit Student Desks/Tables Student Stack Chairs Small Group Table Mobile Storage Cabinets/Bookcases Modular Lounge Seats
Fixed Equipment / Millwork:	6 lin.ft. Total Millwork: 6 lin. Ft. Tall Storage/Wardrobe Cabinets Main Teaching Wall: 10 lin.ft Dry Erase Surface w/ Magnetic Backer (floor to 7'), 2" Tackstrip Above, (1) 6'-0"W x 6'-10"H Tackboard, Rear Wall: 6 lin.ft Dry Erase Surface w/ Magnetic Backer (floor to 7'), 2" Tackstrip Above, 6'-0"W x 6'-10"H Tackboard
Plumbing Requirements:	
Windows:	Operable Windows w/Screens & Roller Shades
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	(1) Wall Screen Monitor, Telephone, Intercom, PA, Fire Alarm, Clock & Bell (1) Teacher Computer Workstation Location Wireless Capability
Special Features / Remarks:	

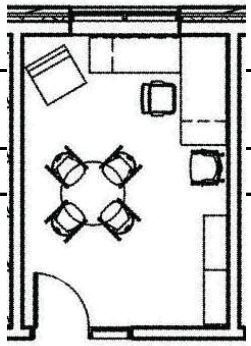
Small Group Room / Reading
Special Education

Quantity / Floor Area:	1 @ 475 sf
Function / Activities:	Individual and Small Group Learning Language and Reading Development
Adjacencies:	Academic Wings
Ceiling Height:	9'-4"
Finishes: Flooring	30% LVT Resilient Tile, 70% Carpet Tile
Base	Rubber Cove, 4"
Walls	Paint, Dry Erase Paint where noted
Ceiling	2'x2' Suspended Acoustical Ceiling Tile
Doors	Solid Core Wood
Frames	Hollow Metal Frame, Sidelight, Transom
Door Hardware:	Classroom Function Lockset (keyed from both sides)
Lighting:	Direct/Indirect LED Linear Pendant Fixtures Motion Sensors, Dimmable, Daylight Sensors
Mobile Equipment/ Furnishings:	Teacher Desk & Task Chair, Mobile File Cabinet Mobile Teacher Sit Stand Unit Student Desks/Tables Student Stack Chairs Small Group Table Mobile Storage Cabinets/Bookcases Modular Lounge Seats
Fixed Equipment / Millwork:	15 lin.ft. Total Millwork: 12 lin.ft Closed Base & 3 lin.ft Sink Cabinets Main Teaching Wall: 12 lin.ft Dry Erase Surface w/ Magnetic Backer (floor to 7'), 2" Tackstrip Above, (1) 8'-0"W x 6'-10"H Tackboard, Rear Wall: 6 lin.ft Dry Erase Surface w/ Magnetic Backer (floor to 7'), 2" Tackstrip Above, 8'-0"W x 6'-10"H Tackboard
Plumbing Requirements:	(1) Child Height ADA Sink (H&C Water)
Windows:	Operable Windows w/Screens & Roller Shades
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	(1) Wall Screen Monitor, Telephone, Intercom, PA, Fire Alarm, Clock & Bell (1) Teacher Computer Workstation Location Wireless Capability
Special Features / Remarks:	



Resource Office
Special Education

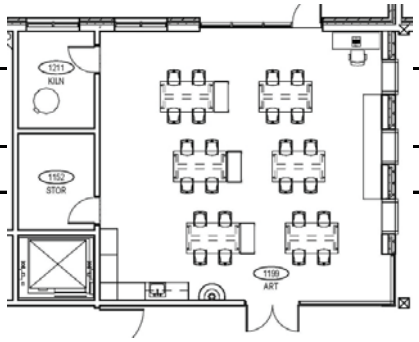
Quantity / Floor Area:	1 @ 125 sf
Function / Activities:	Admin Individual Work Area
Adjacencies:	General Office, Resource Rooms
Ceiling Height:	9'-0"
Finishes: Flooring	Carpet Tile
Base	Rubber Cove, 4"
Walls	Paint
Ceiling	2'x2' Suspended Acoustical Ceiling Tile
Doors	Solid Core Wood w/ Vision Panel
Frames	Hollow Metal Frame
Door Hardware:	Passage Function Lockset
Lighting:	2'x2' Recessed LED Luminaire Fixtures Motion Sensors, Dimmable, Daylight Sensors
Mobile Equipment/ Furnishings:	L-Shaped Admin Desk & Task Chair Guest Chairs Conference Table File Cabinets Bookcase Lounge Chair
Fixed Equipment / Millwork:	(1) 4'-0" Whiteboard, (1) 4'-0" Tackboard
Plumbing Requirements:	
Windows:	Operable Windows w/Screens & Roller Shades
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	Telephone, Intercom, PA, Fire Alarm (1) Admin Computer Workstation w/ Printer Wireless Capability
Special Features / Remarks:	



Art Classroom

Art & Music

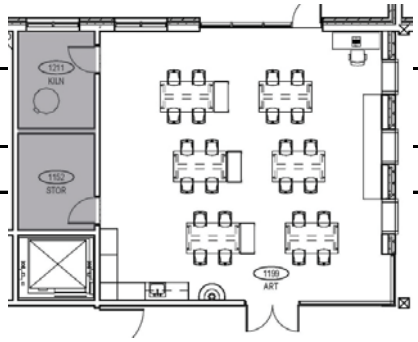
Quantity / Floor Area:	1 @ 1,000 sf
Function / Activities:	2-D and 3-D Art Instruction, Hands on Drawing, Painting, Clay Work
Adjacencies:	Centrally Located, Project Rooms Art Storage, Kiln Room
Ceiling Height:	NA/ 10'-0" at ACT Clouds
Finishes: Flooring	Sealed Concrete - Local Shells and Seaglass to be incorporated into concrete mix
Base	Rubber Cove, 4"
Walls	Paint, Dry Erase Paint where noted
Ceiling	PTD Exposed Structure / 2'x2' Suspended ACT Clouds
Doors	Aluminum w/ Vision Panel
Frames	Aluminum Storefront w/ Glass Transom
Door Hardware:	Classroom Function Lockset (keyed from both sides)
Lighting:	Direct/Indirect LED Pendant and Recessed Linear Fixtures Motion Sensors, Dimmable, Daylight Sensors
Mobile Equipment/ Furnishings:	Teacher Desk & Task Chair, Mobile File Cabinet Mobile Teacher Sit Stand Unit Mobile Art Tables Student Chairs Art Carts Drying Racks Mobile Storage Cabinets/Bookcases
Fixed Equipment / Millwork:	26 lin.ft. Total Millwork: 12 lin.ft Closed Base Cabinets, 5 lin.ft Upper Cabinets, 5 lin.ft Sink Cabinet, 9 lin. Ft. Tall Storage/Wardrobe Cabinets; Solid Surface Countertop Main Teaching Wall: 12 lin.ft Dry Erase Surface w/ Magnetic Backer (floor to 7'), 2" Tackstrip Above, (1) 8'-0"W x 6'-10"H Tackboard, (2) 3'-0"W x 6'-10"H Tackboards
Plumbing Requirements:	(1) Adult Height ADA Sink (H&C Water) (1) 3-Station Wash fountain, Junior Size, Clay traps at all sinks
Windows:	Operable Windows w/Screens & Roller Shades
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	(1) Wall Screen Monitor, Telephone, Intercom, PA, Fire Alarm, Clock & Bell (2) Teacher Computer Workstation Location for flexibility Voice Amplification System Wireless Capability
Special Features / Remarks:	Glass/ Vision to Lobby/Corridors Direct Exterior Access to Outdoor Learning Area



Art Workroom w/Storage & Kiln

Art & Music

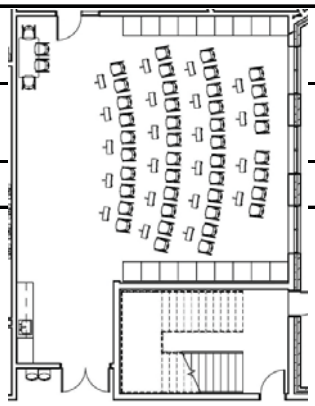
Quantity / Floor Area:	1 @ 150 sf (split as two rooms)
Function / Activities:	Paper and Art Equipment Storage. Kiln Use, Clay, Pottery, Drying.
Adjacencies:	Art Classroom
Ceiling Height:	NA
Finishes: Flooring	Sealed Concrete
Base	Rubber Cove, 4"
Walls	Paint
Ceiling	Painted Exposed Structure
Doors	Solid Core Wood
Frames	Hollow Metal Frame
Door Hardware:	Storage Function Lockset
Lighting:	Suspended Direct Utility LED Motion Sensors
Mobile Equipment/ Furnishings:	Open Metal Shelving Dampware Cabinets, Drying Cabinets Flammable Storage Cabinet
Fixed Equipment / Millwork:	Electric Top Loading Kiln w/ Venting (One required for school)
Plumbing Requirements:	
Windows:	
HVAC Requirements:	Central Heating, Ventilation Direct Exterior Ventilation for Kiln
Electrical/ Technology Requirements:	Fire Alarm
Special Features / Remarks:	Heat Sensors



Music Classroom

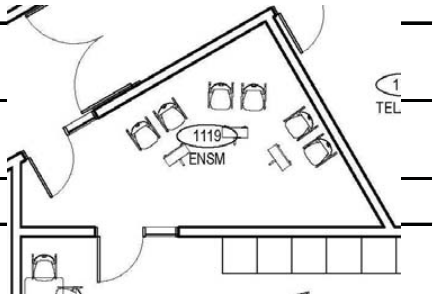
Art & Music

Quantity / Floor Area:	1 @ 1,200 sf
Function / Activities:	Choral, Instrumental and Orchestra Instruction
Adjacencies:	Ensemble, Stage Centrally Located
Ceiling Height:	11'-0"
Finishes: Flooring	Carpet Tile
Base	Rubber Cove, 4"
Walls	Paint, Wall Diffusers, Acoustical Panels
Ceiling	2'x2' Suspended Acoustically Absorptive Ceiling Tile Clouds
Doors	Solid Core Acoustic Sealed Door
Frames	Hollow Metal Frame w/ Sidelight
Door Hardware:	Classroom Function Lockset (keyed from both sides)
Lighting:	Direct/Indirect LED Linear Pendant Fixtures, Motion Sensors, Dimmable, Daylight Sensors
Mobile Equipment/ Furnishings:	Teacher Desk & Task Chair, Mobile File Cabinet Teacher's Music Podium and Stand System Student Posture Chairs and Music Stands Instrument Storage Cabinets Mobile Work Table and Chairs FlipForms Risers Digital piano Upright Piano, Mobile
Fixed Equipment / Millwork:	11 lin.ft. Millwork: 5 lin.ft Closed Base Cabinets, 8 lin.ft Upper Cabinets, 3 lin.ft Sink Cabinet, 3 lin.ft. Tall Storage Cabinet/Wardrobe; Main Teaching Wall: 14 lin.ft Dry Erase Surface w/ Magnetic Backer (floor to 7'), 2" Tackstrip Above, (1)6'-0"W x 6'-10"H Tackboard; (2) 6' Tackboards 22 lin. ft. Instrument Storage Cabinets; (2) 6-shelf Sheet Music Storage Units
Plumbing Requirements:	ADA Sink (H&C Water), Drinking Fountain w/ Bottle Filler
Windows:	Operable Windows w/Screens & Roller Shades
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	(1) Wall Screen Monitor, Telephone, Intercom, PA, Fire Alarm, Clock & Bell (1) Teacher Computer Workstation Location, Voice Amplification System Wireless Capability
Special Features / Remarks:	Acoustically Isolate Walls between Rooms & Floors Sound Absorptive and Reflective Wall and Ceiling Panels



Music Ensemble / Lessons

Art & Music

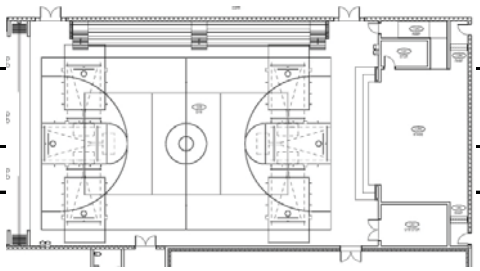


Quantity / Floor Area:	1 @ 200 sf
Function / Activities:	Instrumental Instruction/ Practice
Adjacencies:	Music Classroom Centrally Located
Ceiling Height:	9'-4"
Finishes: Flooring	Carpet Tile
Base	Rubber Cove, 4"
Walls	Paint, Wall Diffusers, Acoustical Panels
Ceiling	2'x2' Suspended Acoustically Absorptive Ceiling Tile
Doors	Solid Core Acoustic Sealed Door
Frames	Hollow Metal Frame w/ Sidelight
Door Hardware:	Classroom Function Lockset (keyed from both sides)
Lighting:	Direct/Indirect LED Linear Pendant Fixtures, Motion Sensors, Dimmable, Daylight Sensors
Mobile Equipment/ Furnishings:	Student Posture Chairs Music Stands
Fixed Equipment / Millwork:	(1) 6'-0" Whiteboard
Plumbing Requirements:	
Windows:	
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	Intercom, PA, Fire Alarm, Clock & Bell
	Wireless Capability
Special Features / Remarks:	Acoustically Isolate Walls between Rooms & Floors Sound Absorptive and Reflective Wall and Ceiling Panels

Gymnasium

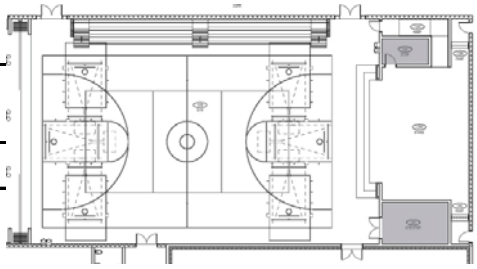
Health & Physical Education

Quantity / Floor Area:	1 @ 6,850 sf
Function / Activities:	Physical Education Instruction & Indoor Intramural Sports, i.e.. Basketball, Assembly
Adjacencies:	Centrally Located, Cafeteria, Stage Main Entry
Ceiling Height:	24'-0"
Finishes: Flooring	Wood, Painted Basketball & Volleyball Lines
Base	Vented Rubber, 4"
Walls	Paint / 6' h Wall Padding / Acoustical Wall Panels
Ceiling	Exp. Structure, Painted / Acoustical Deck
Doors	Solid Core Wood w/ Vision Panel
Frames	Hollow Metal Frame
Door Hardware:	Passage, Panic Hardware
Lighting:	Suspended Direct Utility LED
Mobile Equipment/ Furnishings:	Mats, PE and Team Sport Equipment Scorer's Table
Fixed Equipment / Millwork:	(6) Basketball Backstops & Hoops, Motorized and Adjustable Height - Glass Backboards at (2) Main Court, Wood Backboards at (4) Side Court Volleyball Sleeves and Stanchions/Net, Climbing Ropes (1) Scoreboard, (1) Divider Curtain- (2 stations); Bleachers- (4) Rows with ADA spaces - 1 Side Operable/ Acoustical Partition between Cafeteria and Gymnasium (motorized)
Plumbing Requirements:	Drinking Fountain w/ Bottle Filler
Windows:	Windows w/ Motorized Roller Shades & Blackout Shades
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	PA, Fire Alarm, Clock & Bell Sound System & Speakers- zoned with Stage Electrical Floor Boxes at Scorer's Table Location Wireless Capability
Special Features / Remarks:	Sound Absorptive Wall Panels



Gym Storeroom

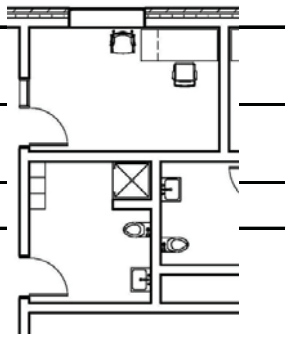
Health & Physical Education



Quantity / Floor Area:	1 @150 sf
Function / Activities:	PE Equipment Storage
Adjacencies:	Gymnasium
Ceiling Height:	NA
Finishes: Flooring	Sealed Concrete
Base	Rubber Cove, 4"
Walls	Paint
Ceiling	Exposed Structure, Painted
Doors	Solid Core Wood
Frames	Hollow Metal Frame
Door Hardware:	Storage Function Lockset
Lighting:	Suspended Direct LED Pendant
Mobile Equipment/ Furnishings:	Open Metal Shelving PE Storage Carts PE Equipment
Fixed Equipment / Millwork:	
Plumbing Requirements:	
Windows:	
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	Fire Alarm Wireless Capability
Special Features / Remarks:	

Health Instructor's Office w/Shower & Toilet

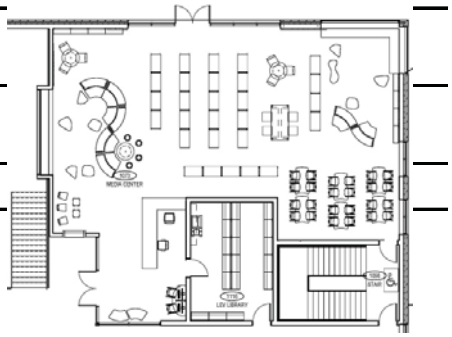
Health & Physical Education



Quantity / Floor Area:	1 @ 150 sf
Function / Activities:	Health Instructor's Individual Work, Shower & Toilet Facilities
Adjacencies:	Gymnasium, Locker Rooms
Ceiling Height:	9'-0"
Finishes: Flooring	LVT Resilient Tile Poured Epoxy Resin at Toilet
Base	Rubber Cove, 4" (Poured Epoxy Resin at Toilet)
Walls	Paint (Ceramic Tile to 6'H at Toilet Wet Walls)
Ceiling	2'x2' Suspended Acoustical Ceiling Tile (GWB @ Toilets)
Doors	Solid Core Wood
Frames	Hollow Metal Frame w/sidelight
Door Hardware:	Office Function Lockset
Lighting:	2'x4' Recessed LED Luminaire Fixtures Motion Sensors
Mobile Equipment/ Furnishings:	Teacher Desk & Task Chair File Cabinets Bookcase
Fixed Equipment / Millwork:	(1) 4'-0" Tackable Panel
Plumbing Requirements:	Toilet Room: Wall Mounted Adult WC & Lavatory, Wall Mounted Mirror, Stainless Steel Accessories
Windows:	
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	Telephone, Intercom, PA, Fire Alarm, Clock & Bell (1) Admin Computer Workstation Location Wireless Capability
Special Features / Remarks:	

Media Center/ Reading Room

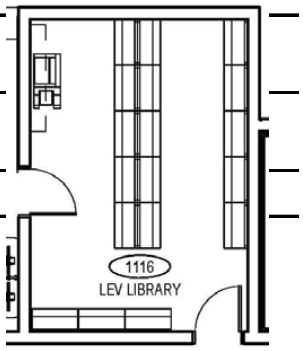
Media Center



Quantity / Floor Area:	1 @ 2,178 sf
Function / Activities:	Individual and Group Research/Study Group Instruction, Computer Resource
Adjacencies:	Main Lobby, Project Room Level Library
Ceiling Height:	Varies: 11'-0"/9'-0"
Finishes: Flooring	Carpet Tile
Base	Rubber Cove, 4"
Walls	Paint, Dry Erase Paint where noted, Wood Wall Panel
Ceiling	Ptd Exp. Structure / Wood Plank Style Ceiling/ 2'x2' ACT Clouds /GWB soffits
Doors	Aluminum w/ Vision Panel, Glass Overhead Door
Frames	Aluminum Storefront w/ Sidelight
Door Hardware:	Passage Function Lockset
Lighting:	Recessed Linear LED Fixtures, 2'x2' Recessed LED Fixtures, Decorative Pendants. Dimmable, Motion Sensors, Daylight Sensors
Mobile Equipment/ Furnishings:	Single Sided Book Stacks - 72"H Mobile Double Sided Book Stacks - 42"H Big Book Storage Book Display Units Movable Student Tables and Chairs Computer Tables and Look-Up Stations Soft Seating Book Carts
Fixed Equipment / Millwork:	Circulation Desk with Drawers/Cabinets, Chase for Wire Management, Book Drop; Stone top (1) 12 lin.ft & (1) 6 lin.ft. Dry Erase Surface w/ Magnetic Backer (floor to 7'), 2" Tackstrip Above, (1) 4'-0"W x 6'-10"H Tackboard; (1) 10'-0"W x 6'-10"H Tackboard 26 lin.ft. Built-In Bookcase with open bookshelf below;
Plumbing Requirements:	
Windows:	Operable Windows w/Screens & Roller Shades
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	(1) Wall Screen Monitor, Telephone, Intercom, PA, Fire Alarm, Clock & Bell (2) Admin Computer Workstation w/ Printer, (2) Mobile Tablet Carts Wireless Capability
Special Features / Remarks:	Direct Exterior Access to Outdoor Rooftop Learning Area Acoustical Wall Panels

Book Storage (Leveled Library)

Media Center

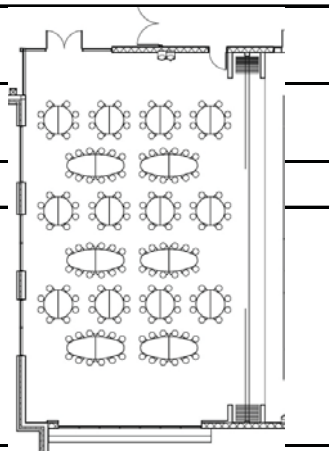


Quantity / Floor Area:	1 @ 300 sf
Function / Activities:	Storage for Books
Adjacencies:	General Office
Ceiling Height:	9'-0"
Finishes: Flooring	LVT Resilient Tile
Base	Rubber Cove, 4"
Walls	Paint
Ceiling	2'x2' Suspended Acoustical Ceiling Tile
Doors	Solid Core Wood
Frames	Hollow Metal Frame
Door Hardware:	Secure Lockset
Lighting:	2'x2' Recessed LED Luminaire Fixtures Motion Sensors
Mobile Equipment/ Furnishings:	Open Metal Shelving Large Network Copier
Fixed Equipment / Millwork:	
Plumbing Requirements:	
Windows:	
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	PA, Fire Alarm Voice/ Data Connections for Network Copier Wireless Capability
Special Features / Remarks:	

Cafeteria/ Dining

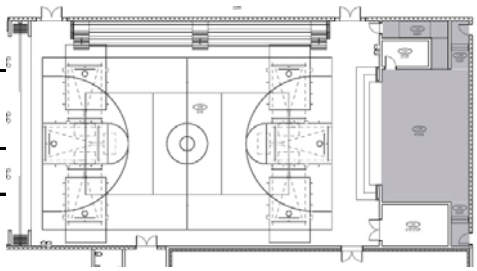
Dining & Food Services

Quantity / Floor Area:	1 @ 2,513 sf
Function / Activities:	Student Dining Room, Large Assembly Space
Adjacencies:	Kitchen, Main Entry, Gymnasium Centrally Located
Ceiling Height:	11'-0
Finishes: Flooring	Porcelain Tile (12 x 24)
Base	Porcelain Tile
Walls	Paint, Wood Plank Wall System at Servery
Ceiling	Ptd. Exp. Structure, Acoustic Deck, Wood Plank Style Clouds
Doors	Aluminum w/ Vision Panel
Frames	Aluminum Storefront w/ Glass Transom
Door Hardware:	Passage, Panic Hardware
Lighting:	Decorative LED Pendants, Linear LED Recessed Fixtures Motion Sensors, Dimmable, Daylight Sensors
Mobile Equipment/ Furnishings:	Student Folding Tables w/ attached stools Trash and Recycling Receptacles Condiment Stations
Fixed Equipment / Millwork:	Operable/ Acoustical Partition between Cafeteria and Gymnasium (motorized) (2) 12'-0" Tackboards
Plumbing Requirements:	
Windows:	Operable Windows w/Screens & Motorized Roller Shades, Blackout Shades
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Perimeter Hot Water coil Heating
Electrical/ Technology Requirements:	PA, Fire Alarm, Clock & Bell, Sound System w/ Controls & Speakers Digital Menu/Display Boards Voice Amplification System Wireless Capability
Special Features / Remarks:	Sound Absorptive Wall Panels



Stage

Dining & Food Services



Quantity / Floor Area:	1 @ 1,000 sf
Function / Activities:	Student Performances, Theater, School Assemblies & Presentations
Adjacencies:	Dining, Gymnasium, Band / Music Rooms
Ceiling Height:	16'-0"
Finishes: Flooring	Wood Apron & Steps / Linoleum Sheet Goods
Base	Rubber Cove, 4"
Walls	Paint
Ceiling	Exposed Structure, Painted / Acoustical Deck
Doors	Solid Core Wood
Frames	Hollow Metal Frame
Door Hardware:	Passage Function Lockset
Lighting:	Suspended Direct Utility LED, Stage Lighting - (1) light bar facing stage, (2) light bars on stage
Mobile Equipment/ Furnishings:	Lectern Flag Set and Pole Stand Choral Risers Student Music Posture Chairs & Carts
Fixed Equipment / Millwork:	Stage Curtains - Main Valance, Main Curtain, Side and Rear Travelers Motorized Large Format Rear Projection Screen
Plumbing Requirements:	
Windows:	
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	PA, Fire Alarm Sound System & Speakers- drop down microphones for performances Rear Projector Wireless Capability
Special Features / Remarks:	ADA Accessible Ramp w/ Rubber Flooring

Chair / Table / Equipment Storage

Dining & Food Services

Quantity / Floor Area:	1 @ 312 sf
Function / Activities:	Storage for Folding Chairs and Various Equipment
Adjacencies:	Gymnasium, Cafeteria
Ceiling Height:	NA
Finishes: Flooring	Sealed Concrete
Base	Rubber Cove, 4"
Walls	Paint
Ceiling	Exposed Structure, Painted
Doors	Solid Core Wood
Frames	Hollow Metal Frame
Door Hardware:	Storage Function Lockset
Lighting:	Suspended Direct Utility
Mobile Equipment/ Furnishings:	Open Metal Shelving Folding Chairs and Carts
Fixed Equipment / Millwork:	
Plumbing Requirements:	
Windows:	
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	Fire Alarm
Special Features / Remarks:	

Kitchen

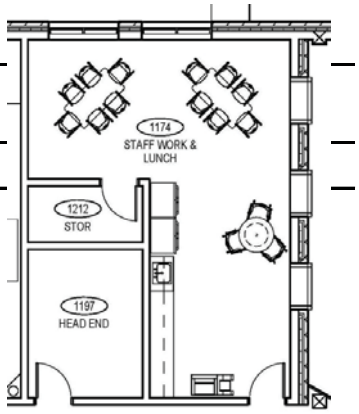
Dining & Food Services

Quantity / Floor Area:	1 @ 1,635 sf
Function / Activities:	Food Preparation/Servery for student meals
Adjacencies:	Cafeteria / Dining, Loading & Receiving
Ceiling Height:	9'-0"
Finishes: Flooring	Poured Epoxy Resin
Base	Poured Epoxy Resin
Walls	Epoxy Paint, FRP Panels
Ceiling	2'x4' Vinyl Faced Acoustical Ceiling Tile, GWB Soffit
Doors	Solid Core Wood
Frames	Hollow Metal Frame
Door Hardware:	Passage Function Lockset
Lighting:	2'x4' Recessed Luminaire Fixtures, Recessed LED Downlights, Motion Sensors
Mobile Equipment/ Furnishings:	Hot and Cold Serving Counters, POS Stations Miscellaneous Kitchen Smallwares Dry Storage Room Equipment Racks & (2) FIFO Racks Washer/Dryer Office: Admin Desk and Task chair, File Cabinet
Fixed Equipment / Millwork:	Prep Tables, Ranges, Ovens, Mixers, Slicers, Kettles Walk-In Refrigerators & Freezers; Dishwashing Equipment
	(10) Single Tier Staff Lockers- 12"D x 12"W x 72"H
Plumbing Requirements:	Hand, Prep and Washing Sinks. (H&C Water)
Windows:	
HVAC Requirements:	Displacement Air Humidification System (DX Cooling); Radiant Panel Heating Exhaust for Dryer
Electrical/ Technology Requirements:	Telephone, Intercom, PA, Fire Alarm Elec/Data locations for POS Stations
	Wireless Capability
Special Features / Remarks:	Ansul and Gas Shut-off as Required

Staff Lunch Room/ Teacher's Work Room

Dining & Food Services

Quantity / Floor Area:	1 @ 518 sf
Function / Activities:	Staff Dining Room and Teacher Collaborative Work Space
Adjacencies:	Academic Wings
Ceiling Height:	9'-0"
Finishes: Flooring	LVT Resilient Tile
Base	Rubber Cove, 4"
Walls	Paint
Ceiling	2'x2' Suspended Acoustical Ceiling Tile
Doors	Solid Core Wood
Frames	Hollow Metal Frame w/Sidelight
Door Hardware:	Passage Function Lockset
Lighting:	2'x2' Recessed LED Luminaire Motion Sensors, Dimmable, Daylight Sensors
Mobile Equipment/ Furnishings:	Dining Tables Stack Chairs (2) Full Size Refrigerator w/ Ice Dispenser Microwave Network Copier
Fixed Equipment / Millwork:	12 lin.ft. Casework w/ Closed Base Cabinets, and Upper Cabinets (1) 6'-0" Whiteboard, (1) 6'-0" Tackboards
Plumbing Requirements:	Adult Height ADA Sink (H& C Water)
Windows:	Operable Windows w/Screens & Roller Shades
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	Telephone, Intercom, PA, Fire Alarm Voice/Data Connections for Network Copier Wireless Capability
Special Features / Remarks:	



Medical Suite Toilet

Medical

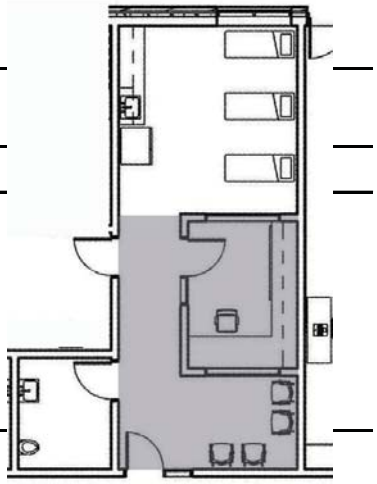
Quantity / Floor Area:	1 @ 60 sf
Function / Activities:	Toilet Facilities for Students
Adjacencies:	Nurse's Office / Waiting Room Resting Area
Ceiling Height:	9'-0"
Finishes: Flooring	Poured Epoxy Resin
Base	Poured Epoxy Resin
Walls	Paint (Ceramic Tile to 6'H at Toilet Wet Walls/ Epoxy Paint)
Ceiling	2'x2' Suspended Acoustical Ceiling Tile
Doors	Solid Core Wood
Frames	Hollow Metal Frame
Door Hardware:	Privacy Function Lockset w/ Occupancy Indicator
Lighting:	2'x2' Recessed LED Luminaire Fixtures Motion Sensors
Mobile Equipment/ Furnishings:	
Fixed Equipment / Millwork:	Stainless Steel Wall-mounted, Semi-recessed Accessories Wall Mounted Mirrors
Plumbing Requirements:	Wall Mounted Toilet and Counter Mounted Lavatory
Windows:	
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	Fire Alarm, PA
Special Features / Remarks:	Floor Drains



Nurse's Office / Waiting Room

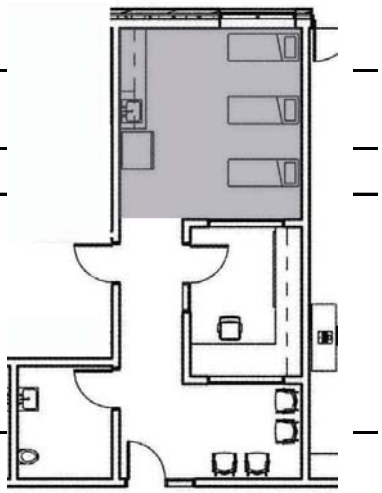
Medical

Quantity / Floor Area:	1 @ 250 sf
Function / Activities:	Nurse Triage, Treatment, Waiting
Adjacencies:	Main Office
Ceiling Height:	9'-0"
Finishes: Flooring	LVT Resilient Tile
Base	Rubber Cove, 4"
Walls	Paint
Ceiling	2'x2' Suspended Acoustical Ceiling Tile
Doors	Solid Core Wood w/ Vision Panel
Frames	Hollow Metal Frame w/Sidelight
Door Hardware:	Passage Function Lockset
Lighting:	2'x2' Recessed LED Luminaire Fixtures Motion Sensors, Dimmable
Mobile Equipment/ Furnishings:	Admin Task Chair Waiting Chairs File Cabinets Wardrobe / Storage Cabinet
Fixed Equipment / Millwork:	(1) 6'-0" Tackboard Double Locking Medicine Cabinet 18 Lin Ft Counter & 12 Lin Ft. Upper Cabinets
Plumbing Requirements:	
Windows:	Roller Shades at Interior Windows
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	Telephone, Intercom, PA, Fire Alarm (1) Admin Computer Workstation w/ Printer, Fax Machine Wireless Capability
Special Features / Remarks:	Glass / Vision to Waiting and Rest Area Acoustically Treated



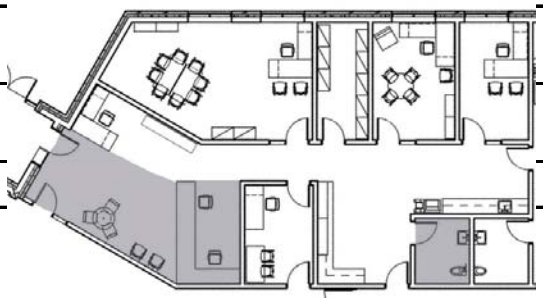
Examination Room / Resting
Medical

Quantity / Floor Area:	2 @ 100 sf
Function / Activities:	Exam, Treatment and Rest Area
Adjacencies:	Nurse's Office / Waiting Room
Ceiling Height:	9'-0"
Finishes: Flooring	LVT Resilient Tile
Base	Rubber Cove, 4"
Walls	Paint
Ceiling	2'x2' Suspended Acoustical Ceiling Tile
Doors	NA
Frames	NA
Door Hardware:	NA
Lighting:	2'x2' Recessed LED Luminaire Fixtures Motion Sensors, Dimmable, Daylight Sensors
Mobile Equipment/ Furnishings:	Recovery Cots Mobile Carts Adjustable Stool Miscellaneous Nurse's Equipment Wheelchairs Full Size Refrigerator w/ Ice Dispenser
Fixed Equipment / Millwork:	6 lin.ft. Casework w/ Closed Base Cabinets, and Upper Cabinets, 3 lin.ft Sink Cabinet Adult Height ADA Sink Cubicle/Privacy Curtains on Ceiling Track
Plumbing Requirements:	ADA Sink (H& C Water)
Windows:	Operable Windows w/Screens & Roller Shades
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	PA, Fire Alarm Wireless Capability
Special Features / Remarks:	



General Office / Waiting / Toilet

Administration & Guidance

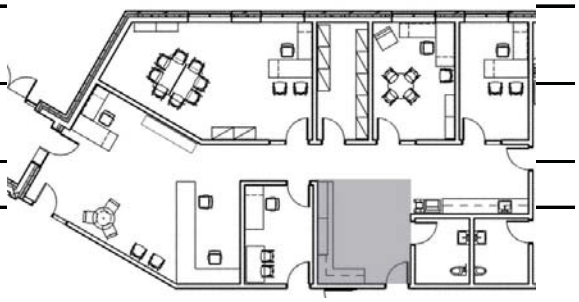


Quantity / Floor Area:	1 @318 sf
Function / Activities:	Admin Staff Work Area, Guest Waiting Area, Reception, Toilet Facilities for Staff & Visitors
Adjacencies:	Main Entrance, Principal's Office, Conference Room
Ceiling Height:	9'-0"
Finishes: Flooring	Carpet Tile (Poured Epoxy Resin @ Toilet)
Base	Rubber Cove (Ceramic Tile @ Toilet)
Walls	Paint (Ceramic Tile @ Toilet)
Ceiling	2'x2' Suspended Acoustical Ceiling Tile/ GWB Soffit
Doors	Aluminum w/ Vision Panel
Frames	Aluminum Storefront w/ Glass Transom
Door Hardware:	Passage Function Lockset
Lighting:	2'x2' Recessed LED Luminaire Fixtures Motion Sensors, Dimmable, Daylight Sensors
Mobile Equipment/ Furnishings:	Task Chairs Guest Chairs File Cabinets Café Table w/ Stools Sit to Stand Desk Top Units
Fixed Equipment / Millwork:	20 lin.ft. Reception Desk with Drawers/Cabinets, Chase for Wire Management-Desk to Motorized Adjustable Height capability (1) 6'-0" Fabric Wrapped Tackboard
Plumbing Requirements:	Toilet Room: Floor Mounted Toilet & Lavatory, Wall-mounted Mirror Stainless Steel Wall-mounted, Semi-recessed Accessories.
Windows:	Operable Windows w/Screens & Roller Shades
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	Digital Display Board, Telephone, Intercom, PA Control, Fire Alarm, Clock & Bell (2) Admin Computer Workstation w/ Printer Security Monitors & Controls, Telephone Master Station, Fire Alarm Control Panel Wireless Capability
Special Features / Remarks:	Glass Vision to Corridor, Vestibule, Lobby

Teacher's Mail and Time Room

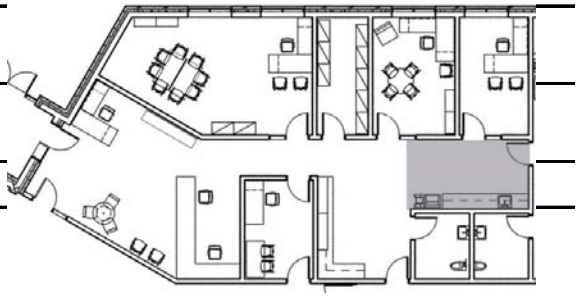
Administration & Guidance

Quantity / Floor Area:	1 @100 sf
Function / Activities:	Mail Distribution to Staff and Teachers
Adjacencies:	General Office Access from Corridor
Ceiling Height:	9'-0"
Finishes: Flooring	Carpet Tile
Base	Rubber Cove, 4"
Walls	Paint
Ceiling	2'x2' Suspended Acoustical Ceiling Tile
Doors	Solid Core Wood w/ Vision Panel
Frames	Hollow Metal Frame
Door Hardware:	Passage Function Lockset
Lighting:	2'x2' Recessed LED Luminaire Fixtures Motion Sensors
Mobile Equipment/ Furnishings:	Specialized US Mail Equipment
Fixed Equipment / Millwork:	20 lin.ft. Casework, Closed and Open Base Cabinets, Open Mail Slots above for Staff
Plumbing Requirements:	
Windows:	
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	PA, Fire Alarm Data for Mail Equipment Wireless Capability
Special Features / Remarks:	



Duplicating Room

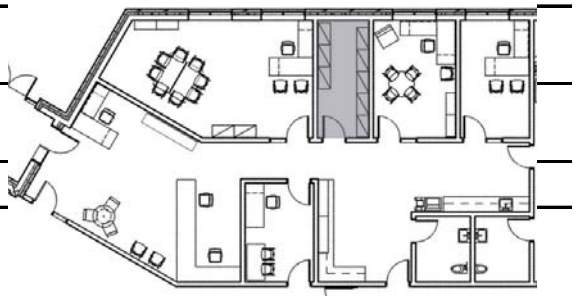
Administration & Guidance



Quantity / Floor Area:	1 @150 sf
Function / Activities:	Production Copy & Work Area
Adjacencies:	General Office, Teacher's Mail
Ceiling Height:	9'-0"
Finishes: Flooring	Carpet Tile
Base	Rubber Cove, 4"
Walls	Paint
Ceiling	2'x2' Suspended Acoustical Ceiling Tile
Doors	NA
Frames	NA
Door Hardware:	NA
Lighting:	2'x2' Recessed LED Luminaire Fixtures Motion Sensors
Mobile Equipment/ Furnishings:	Large Network Copier Laminator Undercounter Refrigerator Microwave
Fixed Equipment / Millwork:	12 lin.ft. Casework, Closed Base & Upper Cabinets, Sink Cabinet (1) 4'-0" Tackboard
Plumbing Requirements:	ADA Sink (H& C Water)
Windows:	
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	PA, Fire Alarm Voice/Data Connections for Network Copier Wireless Capability
Special Features / Remarks:	

Records Room

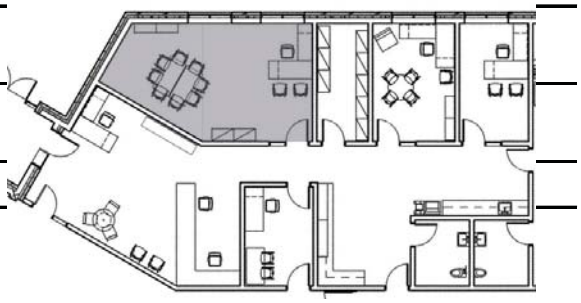
Administration & Guidance



Quantity / Floor Area:	1 @ 110 sf
Function / Activities:	Storage for Student Files
Adjacencies:	General Office
Ceiling Height:	9'-0"
Finishes: Flooring	Carpet Tile
Base	Rubber Cove, 4"
Walls	Paint
Ceiling	2'x2' Suspended Acoustical Ceiling Tile
Doors	Solid Core Wood
Frames	Hollow Metal Frame
Door Hardware:	Secure Lockset
Lighting:	2'x2' Recessed LED Luminaire Fixtures Motion Sensors
Mobile Equipment/ Furnishings:	File Cabinets
Fixed Equipment / Millwork:	
Plumbing Requirements:	
Windows:	
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	PA, Fire Alarm Wireless Capability
Special Features / Remarks:	

Principal's Office w/ Conference Area

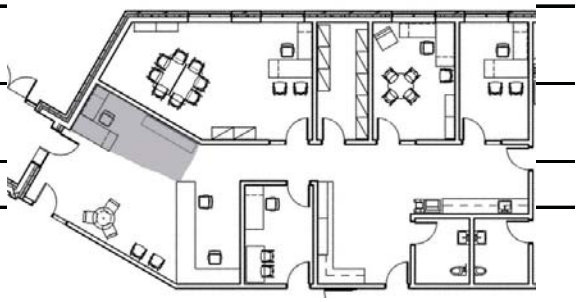
Administration & Guidance



Quantity / Floor Area:	1 @ 375 sf
Function / Activities:	Principal Work and Private Meeting Area
Adjacencies:	General Office, Principal's Secretary/ Waiting
Ceiling Height:	9'-0"
Finishes: Flooring	Carpet Tile
Base	Rubber Cove, 4"
Walls	Paint
Ceiling	2'x2' Suspended Acoustical Ceiling Tile
Doors	Solid Core Wood w/ Vision Panel
Frames	Hollow Metal Frame w/ Sidelight
Door Hardware:	Office Function Lockset
Lighting:	2'x2' Recessed LED Luminaire Fixtures Motion Sensors, Dimmable, Daylight Sensors
Mobile Equipment/ Furnishings:	Desk w/ Return, Credenza & Hutch Task Chair Guest Chairs Conference Table File Cabinets Wardrobe/Storage Cabinet Bookcases
Fixed Equipment / Millwork:	(1) 4'-0" Whiteboard, (1) 4'-0" Tackboard
Plumbing Requirements:	
Windows:	Operable Windows w/Screens & Roller Shades
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	Telephone, Intercom, PA, Fire Alarm (1) Admin Computer Workstation w/ Printer Wireless Capability
Special Features / Remarks:	

Principal's Secretary / Waiting

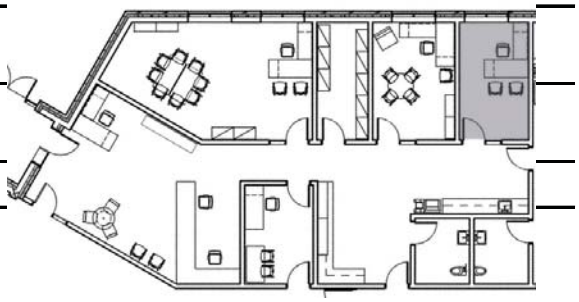
Administration & Guidance



Quantity / Floor Area:	1 @ 125 sf
Function / Activities:	Admin Individual Work Area, Guest Waiting
Adjacencies:	Principal's Office, General Office
Ceiling Height:	9'-0"
Finishes: Flooring	Carpet Tile
Base	Rubber Cove, 4"
Walls	Paint
Ceiling	2'x2' Suspended Acoustical Ceiling Tile
Doors	NA
Frames	NA
Door Hardware:	NA
Lighting:	2'x2' Recessed LED Luminaire Fixtures Motion Sensors, Dimmable, Daylight Sensors
Mobile Equipment/ Furnishings:	L-Shaped Admin Desk & Task Chair Bench File Cabinets
Fixed Equipment / Millwork:	
Plumbing Requirements:	
Windows:	Operable Windows w/Screens & Roller Shades
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	Telephone, Intercom, PA, Fire Alarm (1) Admin Computer Workstation w/ Printer Wireless Capability
Special Features / Remarks:	

Supervisory/ Spare Office

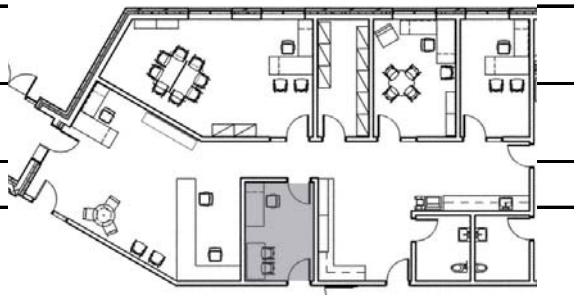
Administration & Guidance



Quantity / Floor Area:	1 @ 120 sf
Function / Activities:	Admin Individual Work Area
Adjacencies:	General Office
Ceiling Height:	9'-0"
Finishes: Flooring	Carpet Tile
Base	Rubber Cove, 4"
Walls	Paint
Ceiling	2'x2' Suspended Acoustical Ceiling Tile
Doors	Solid Core Wood w/ Vision Panel
Frames	Hollow Metal Frame
Door Hardware:	Office Function Lockset
Lighting:	2'x2' Recessed LED Luminaire Fixtures Motion Sensors, Dimmable, Daylight Sensors
Mobile Equipment/ Furnishings:	L-Shaped Admin Desk & Task Chair Guest Chairs Bookcase File Cabinets
Fixed Equipment / Millwork:	(1) 4'-0" Whiteboard, (1) 4'-0" Tackboard
Plumbing Requirements:	
Windows:	Operable Windows w/Screens & Roller Shades
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	Telephone, Intercom, PA, Fire Alarm (1) Admin Computer Workstation w/ Printer Wireless Capability
Special Features / Remarks:	

Guidance Office

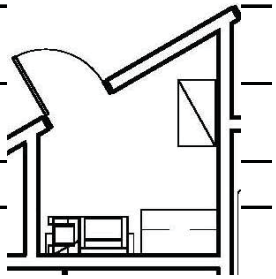
Administration & Guidance



Quantity / Floor Area:	1 @ 150 sf
Function / Activities:	Guidance Individual Work and Meeting Area
Adjacencies:	General Office, Resource Rooms
Ceiling Height:	9'-0"
Finishes: Flooring	Carpet Tile
Base	Rubber Cove, 4"
Walls	Paint
Ceiling	2'x2' Suspended Acoustical Ceiling Tile
Doors	Solid Core Wood w/ Vision Panel
Frames	Hollow Metal Frame w/ Sidelight
Door Hardware:	Office Function Lockset
Lighting:	2'x2' Recessed LED Luminaire Fixtures Motion Sensors, Dimmable
Mobile Equipment/ Furnishings:	Admin Desk & Task Chair Guest Chairs Bookcase Conference Table
Fixed Equipment / Millwork:	(1) 4'-0" Tackboard
Plumbing Requirements:	
Windows:	
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	Telephone, Intercom, PA, Fire Alarm (1) Admin Computer Workstation w/ Printer Wireless Capability
Special Features / Remarks:	

Guidance Storeroom

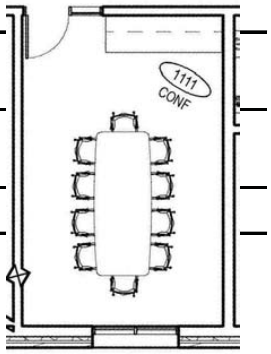
Administration & Guidance



Quantity / Floor Area:	1 @ 35 sf
Function / Activities:	Guidance Storage and Copy
Adjacencies:	General Office, Guidance Office
Ceiling Height:	9'-0"
Finishes: Flooring	Carpet Tile
Base	Rubber Cove, 4"
Walls	Paint
Ceiling	2'x2' Suspended Acoustical Ceiling Tile
Doors	Solid Core Wood
Frames	Hollow Metal Frame
Door Hardware:	Storage Function Lockset
Lighting:	2'x2' Recessed LED Luminaire Fixtures Motion Sensors, Dimmable
Mobile Equipment/ Furnishings:	File Cabinets Large Network Copier
Fixed Equipment / Millwork:	4 Lin.ft Closed Base & Upper Cabinets 4 lin.ft. Shelves on standards
Plumbing Requirements:	
Windows:	
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	PA, Fire Alarm Voice/Data Connections for Network Copier Wireless Capability
Special Features / Remarks:	

Parent/ Teacher Conference Room

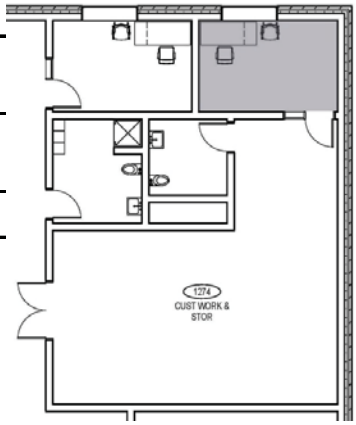
Administration & Guidance



Quantity / Floor Area:	1 @ 300 sf
Function / Activities:	Admin, Parent, Teacher & Staff Meetings and Presentations
Adjacencies:	General Office, Principal's Office Centrally Located
Ceiling Height:	9'-0"
Finishes: Flooring	Carpet Tile
Base	Rubber Cove, 4"
Walls	Paint, Dry Erase Paint where noted
Ceiling	2'x2' Suspended Acoustical Ceiling Tile
Doors	Solid Core Wood
Frames	Hollow Metal Frame w/ Sidelight
Door Hardware:	Passage Function Lockset
Lighting:	Direct/Indirect LED Linear Pendant Fixture, Recessed LED Downlights, Motion Sensors
Mobile Equipment/ Furnishings:	Boat Shaped Conference Table (10) Conference Chairs Bookcases
Fixed Equipment / Millwork:	8 Lin.ft Closed Base & Upper Cabinets 8 lin.ft Dry Erase Surface, 2" Tackstrip (1) 8'-0" Fabric Wrapped Tackable Panel
Plumbing Requirements:	
Windows:	Operable Windows w/Screens & Roller Shades
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	(1) Wall Screen Monitor, Telephone, Intercom, PA, Fire Alarm, Clock & Bell Voice/Data Connections in floor box under Conference Table Wireless Capability
Special Features / Remarks:	

Custodian's Office

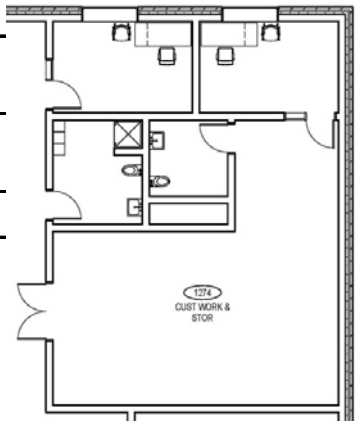
Custodial & Maintenance



Quantity / Floor Area:	1 @ 150 sf
Function / Activities:	Custodial Individual Work Area
Adjacencies:	Custodian's Workshop Back of House
Ceiling Height:	9'-0"
Finishes: Flooring	LVT Resilient Tile
Base	Rubber Cove, 4"
Walls	Paint
Ceiling	2'x4' Suspended Acoustical Ceiling Tile
Doors	Solid Core Wood w/ Vision Panel
Frames	Hollow Metal Frame w/ Sidelight
Door Hardware:	Office Function Lockset
Lighting:	2'x2' Recessed LED Luminaire Fixtures Motion Sensors
Mobile Equipment/ Furnishings:	L-Shaped Admin Desk & Task Chair Guest Chairs File Cabinets Bookcase
Fixed Equipment / Millwork:	(1) 4'-0" Tackboard
Plumbing Requirements:	
Windows:	Operable Windows w/Screens & Roller Shades
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	Telephone, Intercom, PA, Fire Alarm (1) Admin Computer Workstation w/ Printer Wireless Capability
Special Features / Remarks:	

Custodian's Workshop & Storage

Custodial & Maintenance



Quantity / Floor Area:	1 @ 750 sf
Function / Activities:	Custodial Maintenance Work Area & Store Room
Adjacencies:	Custodian's Office/ Receiving
Ceiling Height:	NA
Finishes: Flooring	Sealed Concrete
Base	Rubber Cove, 4"
Walls	Paint
Ceiling	Exposed Structure, Painted
Doors	Solid Core Wood
Frames	Hollow Metal Frame
Door Hardware:	Passage Function Lockset
Lighting:	Suspended Direct LED Utility
Mobile Equipment/ Furnishings:	Shop Work Bench Stools Open Metal Shelving Miscellaneous Maintenance Equipment
Fixed Equipment / Millwork:	15 lin.ft. Casework, Closed Base & Upper Cabinets, 3 lin.ft Sink Cabinet
Plumbing Requirements:	Adult Height ADA Sink
Windows:	
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	PA, Fire Alarm Wireless Capability
Special Features / Remarks:	

Recycling Room/ Trash
Custodial & Maintenance

Quantity / Floor Area:	1 @400 sf
Function / Activities:	General Delivery Receiving and Storage, Recycling & Trash Collection Room
Adjacencies:	Custodian's Office & Storage
Ceiling Height:	NA
Finishes: Flooring	Sealed Concrete
Base	Rubber Cove, 4"
Walls	Paint
Ceiling	Exposed Structure, Painted
Doors	Hollow Metal Door
Frames	Hollow Metal Frame
Door Hardware:	Storage Function Lockset
Lighting:	Suspended Direct LED Utility
Mobile Equipment/ Furnishings:	Open Metal Shelving Large Trash and Recycle Collection Bins
Fixed Equipment / Millwork:	
Plumbing Requirements:	
Windows:	
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	PA, Fire Alarm
	Wireless Capability
Special Features / Remarks:	

Receiving and General Supply
Custodial & Maintenance

Quantity / Floor Area:	1 @ 212 sf
Function / Activities:	General Delivery Receiving and Storage
Adjacencies:	Custodian's Office, Kitchen
Ceiling Height:	NA
Finishes: Flooring	Sealed Concrete
Base	Rubber Cove, 4"
Walls	Paint
Ceiling	Exposed Structure, Painted
Doors	Hollow Metal Door, Overhead Door to Exterior
Frames	Hollow Metal Frame
Door Hardware:	Storage Function Lockset
Lighting:	Suspended Direct Utility
Mobile Equipment/ Furnishings:	Open Metal Shelving Hand Trucks, Carts
Fixed Equipment / Millwork:	
Plumbing Requirements:	
Windows:	
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	PA, Fire Alarm Wireless Capability
Special Features / Remarks:	

Storeroom

Custodial & Maintenance

Quantity / Floor Area:	1 @ 223sf
Function / Activities:	Storage for Building Materials and Products
Adjacencies:	Receiving & General Supply
Ceiling Height:	NA
Finishes: Flooring	Sealed Concrete
Base	Rubber Cove, 4"
Walls	Paint
Ceiling	Exposed Structure, Painted
Doors	Hollow Metal Door
Frames	Hollow Metal Frame
Door Hardware:	Storage Function Lockset
Lighting:	Suspended Direct Utility
Mobile Equipment/ Furnishings:	Open Metal Shelving Scissor Lift
Fixed Equipment / Millwork:	
Plumbing Requirements:	
Windows:	
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	Fire Alarm
Special Features / Remarks:	

Network / Telecom Room

Custodial & Maintenance

Quantity / Floor Area:	1 @ 200 sf
Function / Activities:	Data Distribution Location, Office Area
Adjacencies:	
Ceiling Height:	NA
Finishes: Flooring	Sealed Concrete
Base	Rubber Cove, 4"
Walls	Paint
Ceiling	Exposed Structure, Painted
Doors	Solid Core Wood
Frames	Hollow Metal Frame
Door Hardware:	Storage Function Lockset
Lighting:	Suspended Direct Utility LED
Mobile Equipment/ Furnishings:	Admin Desk & Task Chair
Fixed Equipment / Millwork:	
Plumbing Requirements:	
Windows:	
HVAC Requirements:	Displacement Air Humidification System (DX Cooling), Radiant Panel Heating Additional Cooling for Equipment
Electrical/ Technology Requirements:	Telephone, PA, Fire Alarm (1) Admin Computer Workstation Wireless Capability
Special Features / Remarks:	

Main Lobby/ Hub

Circulation

Quantity / Floor Area:	
Function / Activities:	Main Entry, Gathering Space
Adjacencies:	Main Office, Cafeteria, Gymnasium Art Classroom, Project Room
Ceiling Height:	NA
Finishes: Flooring	Porcelain Tile (12 x 24) w/ Mosaic Tile Accent
Base	Porcelain Tile
Walls	Paint/ Vinyl Wallcovering (Custom Digitally Printed Mural)
Ceiling	Acoustic Linear Wood Plank
Doors	Aluminum w/ Vision Panels
Frames	Aluminum Storefront w/ Glass Sidelights
Door Hardware:	Electric Lock, Pull Handles, Panic Hardware Power Assist
Lighting:	Linear Recessed LED Luminaire Fixtures, Decorative Pendant LED Motion Sensors, Dimmable, Daylight Sensors
Mobile Equipment/ Furnishings:	Lounge Seating Benches
Fixed Equipment / Millwork:	Bench Display Cases Tackable Surfaces
Plumbing Requirements:	
Windows:	CurtainWall System
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	Digital Display Boards, Projection PA, Fire Alarm Wireless Capability
Special Features / Remarks:	

Main Stair

Circulation

Quantity / Floor Area:	
Function / Activities:	Vertical Circulation
Adjacencies:	Centrally Located
Ceiling Height:	NA
Finishes: Flooring	Rubber Treads/ Painted Risers/ Hardwood at Stadium Steps
Base	Painted Stringers
Walls	Paint/ Vinyl Wallcovering (Custom Digitally Printed Mural)
Ceiling	Acoustic Linear Wood Plank
Doors	NA
Frames	NA
Door Hardware:	NA
Lighting:	Linear Recessed LED Luminaire Fixtures, Decorative Pendant LED Motion Sensors, Dimmable, Daylight Sensors
Mobile Equipment/ Furnishings:	
Fixed Equipment / Millwork:	Hardwood Railings and Hand Rails Painted Metal Guardrails
Plumbing Requirements:	
Windows:	
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	PA, Fire Alarm Wireless Capability
Special Features / Remarks:	

General Corridors
Circulation

Quantity / Floor Area:	
Function / Activities:	Horizontal Circulation
Adjacencies:	Distributed Throughout School
Ceiling Height:	10'-0" / 8'-0"
Finishes: Flooring	LVT Resilient Tile
Base	Rubber Cove, 4"
Walls	Paint, Dry Erase Paint where noted
Ceiling	2'x2' Suspended ACT / Ceramic Tile Wainscot/ Painted GWB
Doors	See Individual Rooms/Spaces
Frames	See Individual Rooms/Spaces
Door Hardware:	See Individual Rooms/Spaces
Lighting:	2'x2' Recessed LED Luminaire Fixtures Recessed LED Downlight Fixtures, Motion Sensors
Mobile Equipment/ Furnishings:	Soft Seating Tables and chairs Stools
Fixed Equipment / Millwork:	Display Cases Tackbable Surface
Plumbing Requirements:	Drinking Fountain w/ Bottle Filler (Ceramic Wall Tile Behind)
Windows:	
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	PA, Fire Alarm Wireless Capability
Special Features / Remarks:	Acoustical Wall Panels

Egress Stairs

Circulation

Quantity / Floor Area:	
Function / Activities:	Vertical Circulation
Adjacencies:	Distributed Throughout School
Ceiling Height:	9'-4" min. (at highest level landing)
Finishes: Flooring	Rubber Treads, Risers, and Flooring
Base	Rubber & Painted Steel Stringer
Walls	Paint
Ceiling	2'x2' Suspended ACT/ GWB
Doors	Solid Core Wood w/ Vision Panel
Frames	Hollow Metal Frame
Door Hardware:	Passage / Panic Hardware
Lighting:	2'x2' Recessed LED Luminaire Fixtures Wall Mounted LED Fixtures, Motion Sensors
Mobile Equipment/ Furnishings:	
Fixed Equipment / Millwork:	Epoxy Painted Metal Guard Rails and Hand Rails
Plumbing Requirements:	
Windows:	
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	PA, Fire Alarm, Call for Aid
	Wireless Capability
Special Features / Remarks:	Area of Refuge

Boys/Mens Toilet
Building Support

Quantity / Floor Area:	
Function / Activities:	Facilities for Students
Adjacencies:	Distributed Throughout School
Ceiling Height:	9'-0"
Finishes: Flooring	Poured Epoxy Resin
Base	Poured Epoxy Resin
Walls	Ceramic Tile 6'H at Wet Walls / Epoxy Paint
Ceiling	Gypsum Board, Painted
Doors	Solid Core Wood (Where Shawn)
Frames	Hollow Metal Frame (Where Shawn)
Door Hardware:	Passage Function Lockset
Lighting:	Linear Wall Slot LED Fixture, Recessed LED Downlights, Motion Sensors
Mobile Equipment/ Furnishings:	
Fixed Equipment / Millwork:	Stainless Steel Wall-mounted, Semi-recessed Accessories Wall Mounted Mirrors Phenolic Floor-mounted & Overhead Braced Partitions
Plumbing Requirements:	Wall Mounted Toilets, Lavatories and Urinals
Windows:	
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	Fire Alarm
Special Features / Remarks:	Floor Drains Airport Style Entries (Where Shawn)

Girls/Womens Toilet

Building Support

Quantity / Floor Area:	
Function / Activities:	Facilities for Students
Adjacencies:	Distributed Throughout School
Ceiling Height:	9'-0"
Finishes: Flooring	Poured Epoxy Resin
Base	Poured Epoxy Resin
Walls	Ceramic Tile 6'H at Wet Walls / Epoxy Paint
Ceiling	Gypsum Board, Painted
Doors	Solid Core Wood (Where Shawn)
Frames	Hollow Metal Frame (Where Shawn)
Door Hardware:	Passage Function Lockset
Lighting:	Linear Wall Slot LED Fixture, Recessed LED Downlights, Motion Sensors
Mobile Equipment/ Furnishings:	
Fixed Equipment / Millwork:	Stainless Steel Wall-mounted, Semi-recessed Accessories Wall Mounted Mirrors Phenolic Floor-mounted & Overhead Braced Partitions
Plumbing Requirements:	Wall Mounted Toilets, Lavatories and Urinals
Windows:	
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	Fire Alarm
Special Features / Remarks:	Floor Drains Airport Style Entries (Where Shawn)

Faculty Toilet
Building Support

Quantity / Floor Area:	
Function / Activities:	Individual Facilities for Teachers & Staff
Adjacencies:	Distributed Throughout School Teacher Workrooms
Ceiling Height:	9'-0"
Finishes: Flooring	Poured Epoxy Resin
Base	Poured Epoxy Resin
Walls	Ceramic Tile 6'H at Wet Walls / Epoxy Paint
Ceiling	Gypsum Board, Painted
Doors	Solid Core Wood
Frames	Hollow Metal Frame
Door Hardware:	Privacy Function Lockset w/ Occupancy Indicator
Lighting:	Linear Wall Slot LED Fixture, Motion Sensors
Mobile Equipment/ Furnishings:	
Fixed Equipment / Millwork:	Stainless Steel Wall-mounted, Semi-recessed Accessories Wall Mounted Mirror Grab Bars 3'-0" ADA Sink Counter (Solid Surface)
Plumbing Requirements:	Wall Mounted Toilet and Counter Mounted Lavatory
Windows:	
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	PA, Fire Alarm Emergency Call for Aid
Special Features / Remarks:	Floor Drains

Data/Electrical Closets

Building Support

Quantity / Floor Area:	
Function / Activities:	Room for Data/Electrical Panels & Equipment
Adjacencies:	Distributed Throughout Building
Ceiling Height:	NA
Finishes: Flooring	Sealed Concrete
Base	Rubber Cove, 4"
Walls	Paint
Ceiling	Exposed Structure, Painted
Doors	Solid Core Wood
Frames	Hollow Metal Frame
Door Hardware:	Passage Function Lockset
Lighting:	Suspended Direct Utility LED
Mobile Equipment/ Furnishings:	
Fixed Equipment / Millwork:	
Plumbing Requirements:	
Windows:	
HVAC Requirements:	Displacement Air Humidification System (DX Cooling) Radiant Panel Heating
Electrical/ Technology Requirements:	Fire Alarm Wireless Capability
Special Features / Remarks:	

4.1.2.13 – PROPOSED CONSTRUCTION METHODOLOGY

The Manchester-Essex Regional School District identified the need to eliminate an aging facility as a key priority in the Statement of Interest associated with the Memorial Elementary School. Through the course of the Feasibility and Schematic Design Phases, the Memorial School Building Committee selected to create a new school on the existing Memorial School property. This will require a multi-phased project on an occupied site. The existing elementary school will remain operational during construction of Phase I, the main classroom wing of the future building. Upon completion in the Summer of 2020 students will then occupy the new classroom wing and core section (Gym/ Cafeteria/ Auditorium) of the existing complex. At this point, the remaining existing classroom wing will be demolished and the second phase of new construction will begin. The second phase of new construction will include the new Gymnasium, Stage, Cafeteria, Kitchen/ Servery, Administrative Suite, and the Pre-K classrooms. The second phase of construction will be completed in the Summer of 2021, the remaining existing elementary school will be demolished and final site work installed and completed by November of 2021.

With the assistance of the OPM and the Designer, the Building Committee evaluated using both the Design-Bid-Build (DBB) and Construction Manager At Risk (CMR) delivery methods. The CMR delivery method was determined to be most advantageous for this particular project by the School Building Committee at their March 27, 2018 meeting. The 100% Construction Documents are scheduled to be completed in the Fall of 2019. The of the DBB delivery method cannot support the project schedule. The advantages of using CMR for this project include addressing the complexity of the site logistics as well as addressing the turning the project over for occupancy at the earliest possible time and avoiding additional escalation of a much later completion date under the DBB delivery method. In addition, the Project Team recommended that the Construction Manager be brought on as early as possible and in time to prepare one of the independent schematic design estimates and participate in developing the overall project budget and schedule, as well as, the additional MSBA reimbursement point awarded for utilizing the Construction Manager at Risk delivery method.

On March 6, 2018 the Application to Proceed with Construction Management at Risk was submitted to the Massachusetts Office of the Inspector General. On April 4, 2018 the Office of the Inspector General issued its letter approving use of the Construction Manager at Risk delivery method for the new Memorial Elementary School project.

The Project Team followed the highly prescriptive process for selecting a Construction Manager. The process culminated with the selection of W. T. Rich Construction as the Construction Manager at Risk for the new Memorial Elementary School project. The Project Team confirms the cost estimates, proposed project schedule, estimated reimbursement rate, and Total Project Budget Spreadsheet reflects the selected construction delivery method.

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4.1.2.14 – DISTRICT'S ANTICIPATED REIMBURSEMENT RATE

The reimbursement rate for this project is summarized within the chart below. The Chart highlights the District's anticipated reimbursement plus the anticipated incentives. It does not effectively anticipate any non-reimbursable items included in the project.

The District's anticipated reimbursement rate is calculated as follows:

Category	**Reimbursement Points**
Reimbursement Rate before Incentives	31%
Maintenance	1.93%
CM @ Risk	1.00%
LEED Incentive	2.00%
Total Incentive Points	4.93%
Anticipated MSBA Reimbursement Rate with Incentives	35.93%

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4.1.2.15 - Total Project Budget Spreadsheet

4.1.2.15.1 – Total Project Budget Summary

4.1.2.15.2 – Designer's Construction Cost Estimate (See Appendix 3)

4.1.2.15.3 – OPM Construction Cost Estimate (See Appendix 3)

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4.1.2.15.1 – TOTAL PROJECT BUDGET SPREADSHEET

The Total Project Budget is as follows:

Estimated Construction Cost	$41,142,104
Estimated Soft Costs	$9,033,716
Estimated Total Project Budget	$52,232,925

Estimated Funding Capacity

The Towns of Essex and Manchester-by-the-Sea have the capacity to borrow the proposed debt for the project, pending a debt exclusion vote as described below.

Local Approval Process

Both Towns expect to place the debt exclusion vote on the November 6th 2018 ballot. This will be preceded with Town Meetings, Manchester on October 15th and Essex on October 16th of 2018. Authorization to proceed on the project is anticipated to be scheduled directly following the November ballot.

Estimated Impact to Local Property Tax

It is estimated that the project cost will have an average annual tax impact on the average home of each Town as follows:

Town of Essex
$556

Town of Manchester-by-the-Sea
$538

4.1.2.15.2 – ESTIMATING AND VALUE ENGINEERING

Towards the end of the Schematic Design Phase, the design documents, systems narratives and outline specifications were published and shared with the Design's estimator, VJ Associates and the Owner's Construction Manager, W.T Rich Construction. The estimating efforts were then reconciled between

each other a meeting with the project team. The two draft estimates were reviewed and reconciled. After then, some Value Engineering effort was employed to bring the reconciled number to match the Project Budget at the end of the PSR phase at $45.6 Million.

Once presented with the updated scope to match the PSR Budget Estimate the Building Committee elected to conduct an additional round of value engineering in an attempt to bring the Total Project Budget to, or close to, $50 Million Dollars. T this point some significant program decisions were made towards the goal. This included finding greater efficiency by looking for ways to reduce the overall gross area, it also included making some reduction and elimination of some of the project scope.

The following changes have been made to the building in an effort to reduce square footage and improve the Gross Up Factor:

- Overall
    - Reallocate approx. 20SF per classroom to the Corridor break out spaces (and continue to count area as teaching space in corridor) in order to improve Gross Up Factor to 1.50
    - Reduce width of corridors where possible to improve Gross Up Factor to 1.50 max
    - Reduce length of Hub at South façade
- Lower Level
    - Remove Parks and Recreation space and associated Gross Up
    - Remove 2 Pre-K classrooms and 2 associated toilets
    - Reduce Pre-K Storage SF
    - Reconfigure Music/Ensemble/Conference/Resource Rooms to accommodate Media Center change above
    - Resize Gym to 6800 SF, remove bleachers from one side
    - Reconfigure Custodial areas and delete corridor linking Custodial to Kitchen
    - Remove 1 SPED Toilet
- Upper Level
    - Reconfigure Media Center to eliminate corridor to roof at Upper Level
    - Reduce Bridge SF
    - Remove 1 Sped toilet

4.1.2.15.3 – DESIGNER'S CONSTRUCTION COST ESTIMATE (SEE APPENDIX 3)

4.1.2.15.4 – OPM CONSTRUCTION COST ESTIMATE (SEE APPENDIX 3)

4.1.2.15.5 – CONSTRUCTION MANAGER'S VE SUMMARY MATRIX (SEE APPENDIX 3)

Manchester Essex Regional School District
Total Project Budget for
Manchester Memorial Elementary School

School Building Committee Reviewed on: 7/9/2018

	Total Project Budget: All costs associated with the project are subject to 963 CMR 2.16(5)	Estimated Budget	Scope Items Excluded from the Estimated Basis of Maximum Facilities Grant or Otherwise Ineligible	Estimated Basis of Maximum Total Facilities Grant[1]	Estimated Maximum Total Facilities Grant[1]
1	**Feasibility Study Agreement**				
2	*OPM Feasibility Study*	$162,040	$0	$162,040	
3	*A&E Feasibility Study*	$350,000	$0	$350,000	
4	*Environmental & Site*	$100,000	$0	$100,000	
5	*Other*	$37,960	$0	$37,960	
6	**Feasibility Study Agreement Subtotal**	**$650,000**	**$0**	**$650,000**	**$233,545**
7	**Administration**				
8	**Legal Fees**	$70,000	$70,000	$0	**$0**
9	**Owner's Project Manager**				
10	*Design Development*	$102,361	$0	$102,361	
11	*Construction Contract Documents*	$87,864	$0	$87,864	
12	*Bidding*	$58,576	$0	$58,576	
13	*Construction Contract Administration*	$1,567,114	$640,342	$926,772	
14	*Closeout*	$102,361	$0	$102,361	
15	*Extra Services*	$0	$0	$0	
16	*Reimbursable & Other Services*	$0	$0	$0	
17	*Cost Estimates*	$0	$0	$0	
18	*Advertising*	$0	$0	$0	
19	*Permitting*	$0	$0	$0	
20	*Owner's Insurance*	$0	$0	$0	
21	*Other Administrative Costs*	$0	$0	$0	
22	**Administration Subtotal**	**$1,988,276**	**$710,342**	**$1,277,934**	**$459,162**
23	**Architecture and Engineering**				
24	**Basic Services**				
25	*Design Development*	$1,165,500	$0	$1,165,500	
26	*Construction Contract Documents*	$1,750,000	$0	$1,750,000	
27	*Bidding*	$170,000	$0	$170,000	
28	*Construction Contract Administration*	$1,345,000	$858,290	$486,710	
29	*Closeout*	$192,000	$0	$192,000	
30	*Other Basic Services*	$0	$0	$0	
31	**Basic Services Subtotal**	**$4,622,500**	**$858,290**	**$3,764,210**	
32	**Reimbursable Services**				
33	*Construction Testing*		$0	$0	
34	*Printing (over minimum)*		$0	$0	
35	*Other Reimbursable Costs*	$20,240	$0	$20,240	
36	*Hazardous Materials*	$84,700	$0	$84,700	
37	*Geotech & Geo-Env.*	$96,000	$0	$96,000	
38	*Site Survey*	$0	$0	$0	
39	*Wetlands*	$0	$0	$0	
40	*Traffic Studies*		$0	$0	
41	**Architectural/Engineering Subtotal**	**$4,823,440**	**$858,290**	**$3,965,150**	**$1,424,678**
42	**CM & Risk Preconstruction Services**				
43	Pre-Construction Services	$146,000	**$0**	$146,000	**$52,458**
44	**Site Acquisition**				
45	Land / Building Purchase	$0	$0	$0	
46	Appraisal Fees	$0	$0	$0	
47	Recording fees	$0	$0	$0	
48	**Site Acquisition Subtotal**	**$0**	**$0**	**$0**	**$0**

	ProRated 20% Exclusion	
	$0	-Administration
	$0	-A/E Services
	$0	-Miscellaneous Proj Costs
Soft Cost Reimbursement	$5,993,084	Sum of Three Soft Costs

Estimated Budget	Excluded	Eligible Soft Costs	Category
$2,188,276	$710,342	$1,477,934	-Administration
$5,273,440	$858,290	$4,415,150	-A/E Services
	Ineligible therefore not included in calculation		-Site Acquisition
$550,000	$450,000	$100,000	-Miscellaneous Proj Costs
$876,000	$72,000	$804,000	FFE
		Not included in this calculation	Owners Contingency
		$6,797,084	Total Eligible Soft Costs

Construction Costs associated with Soft Cost Cap Calculation

Estimated Budget	Construction Costs	Category
$146,000	$146,000	-CM Preconstruction services
$41,142,104	$41,142,104	-Construction Cost
	Not included in this calculation	-Construction Contingency
	$41,288,104	Total Construction Cost
	20%	Soft Cost Allowance
	$8,257,621	Reimbursable Soft Cost
	-$1,460,537	Eligible minus Reimbursable

-If Eligible minus Reimbursable is negative OK.
-If Eligible minus Reimbursable is positive enter value into Soft Costs that exceed 20% of Construction Cost below in the Ineligible column.

Construction Budget $41,142,104

				OPM Value @ 3.50%	Value > 3.5%
OPM Services		Eligible Fees	% of Total Construction		
Basic Services	$2,080,316	$1,439,974	5.06%	$1,439,974	$0
Extra Services	$0		0.00%		
				Designer Value @ 10.00%	Value > 10%
Designer Services					
Basic Services	$4,972,500	$4,114,210	12.09%	$4,114,210	$0
Extra Services	$300,940		0.73%		

Manchester Essex Regional School District
Total Project Budget for
Manchester Memorial Elementary School

School Building Committee Reviewed on: 7/9/2018

	Total Project Budget: All costs associated with the project are subject to 963 CMR 2.16(5)	Estimated Budget	Scope Items Excluded from the Estimated Basis of Maximum Facilities Grant or Otherwise Ineligible	Estimated Basis of Maximum Total Facilities Grant[1]	Estimated Maximum Total Facilities Grant[1]
49	**Construction Costs**				
50	SUBSTRUCTURE				
51	Foundations	$2,243,302	$0		
52	Basement Construction	$0	$0		
53	SHELL				
54	SuperStructure	$3,176,554	$0		
55	Exterior Closure		$0		
56	Exterior Walls	$2,254,320	$0		
57	Exterior Windows	$1,136,531	$0		
58	Exterior Doors	$163,704	$0		
59	Roofing	$1,814,071	$0		
60	INTERIORS				
61	Interior Construction	$2,572,952	$0		
62	Staircases	$266,304	$0		
63	Interior Finishes	$2,075,603	$0		
64	SERVICES				
65	Conveying Systems	$124,000	$0		
66	Plumbing	$893,867	$0		
67	HVAC	$3,410,209	$0		
68	Fire Protection	$333,686	$0		
69	Electrical	$2,319,921	$0		
70	EQUIPMENT & FURNISHINGS				
71	Equipment	$436,925	$0		
72	Furnishings	$747,950	$0		
73	SPECIAL CONSTRUCTION & DEMOLITION				
74	Special Construction	$0	$0		
75	Existing Building Demolition	$809,973	$0		
76	In-Bldg. Hazardous Material Abatement	$756,550	$0		
77	Asbestos Cont'g Floor Mat'l Abatement	$155,728	$155,728		
78	Other Hazardous Material Abatement		$0		
79	BUILDING SITEWORK				
80	Site Preparation	$1,391,110	$0		
81	Site Improvements	$1,410,760	$0		
82	Site Civil / Mechanical Utilities	$989,290	$0		
83	Site Electrical Utilities	$237,400	$0		
84	Other Site Construction		$0		
85	Scope Excluded Site Cost		$2,110,968		
86	**Construction Trades Subtotal**	**$29,720,710**	**$2,266,696**		
87	Contingencies (Design and Pricing)	$3,661,591	$279,257		
88	D/B/B Sub-Contractor Bonds		$0		
89	**BONDS**	$278,875	$21,269		
90	D/B/B General Conditions	$4,118,165	$314,078		
91	D/B/B Overhead & Profit	$0	$0		
92	GMP Insurance	$0	$0		
93	GMP Fee	$890,000	$67,877		
94	GMP Contingency	$689,520	$52,587		
95	Escalation to Mid-Point of Construction	$1,783,243	$136,002		
96	Overall Excluded Construction Cost		$10,700,563		
97	**Construction Budget**	**$41,142,104**	**$13,838,329**	**$27,303,775**	**$9,810,246**

Site Cost Reimbursement = 8.0%

Direct Site Cost	Excluded	Eligible Site Costs	
$4,028,560	$0	$4,028,560	Eligible Site Costs
Direct Building Cost			
$23,969,899		$1,917,592	Reimbursable Site Cost
	Scope Excluded Site Cost	**$2,110,968**	Eligible minus Reimbursable

If Eligible minus Reimbursable is negative OK. No ineligible needed
If Eligible minus Reimbursable is positive enter value into Scope Excluded Site Cost

Construction Cost Reimbursement

$809,973	Eligible Demo			
$756,550	Eligible Abatement			
$1,566,523	Total Eligible Demo & Abatement			
$192,996	D&P	12.32%	% of Trades	$534 Total $/sf
$0	Bonds	0.00%	% of Trades	$ 358.07 Eligible $/sf
$14,699	Insurance	0.94%	% of Trades	
$217,061	Gen Cond	13.86%	% of Trades	
$0	O&P	0.00%	% of Trades	
$0	GMP Ins	0.00%	% of Trades	
$46,910	GMP Fee	2.99%	% of Trades	
$36,343	GMP cont	2.32%	% of Trades	
$93,991	Escalation	4.72%	% of Cumulative sum of Trades and Markups	
$2,168,523	Marked Up Demo & Abatement			
$27,303,775	**Eligible Construction Cost**			

Manchester Essex Regional School District
Total Project Budget for
Manchester Memorial Elementary School

School Building Committee Reviewed on: 7/9/2018

	Total Project Budget: All costs associated with the project are subject to 963 CMR 2.16(5)	Estimated Budget	Scope Items Excluded from the Estimated Basis of Maximum Facilities Grant or Otherwise Ineligible	Estimated Basis of Maximum Total Facilities Grant[1]	Estimated Maximum Total Facilities Grant[1]
98	**Alternates**				
99	Ineligible Work Included in the Base Project	$0	$0	$0	
100	Alternates Included in the Total Project Budget	$0	$0	$0	
101	Alternates Excluded from the Total Project Budget	$0		$0	
102	**Subtotal to be Included in Total Project Budget**	**$0**	**$0**	**$0**	**$0**
103	**Miscellaneous Project Costs**				
104	*Utility Company Fees*	$100,000	$100,000	$0	
105	*Testing Services*	$100,000	$0	$100,000	
106	*Swing Space / Modulars*	$200,000	$200,000	$0	
107	*Other Project Costs (Mailing & Moving)*	$150,000	$150,000	$0	
108	**Misc. Project Costs Subtotal**	**$550,000**	**$450,000**	**$100,000**	**$35,930**
109	**Furnishings and Equipment**				
110	*Furniture, Fixtures and Equipment*	$438,000	$36,000	$402,000	
111	*Technology*	$438,000	$36,000	$402,000	
112	**FF&E Subtotal**	**$876,000**	**$72,000**	**$804,000**	**$288,877**
113					
114	Soft Costs that exceed 20% of Construction Cost		$0		
115	**Project Budget**	**$50,175,820**	**$15,928,961**	**$34,246,859**	**$ 12,304,896.38**

76,252		**Proposed GSF; Manually enter eligible area if less than total area**
$ 326		Reimbursable Construction Cost **for New Construction** $/sf (subject to change)
$ 24,858,152		Reimbursable Construction Cost
$2,168,523		Marked Demo & Abatement
$ 27,026,675		**Reimbursable Construction Cost**

$277,100 **Eligible Minus Reimbursable**

If Eligible minus Reimbursable is negative OK. No ineligible entry needed
If Eligible minus Reimbursable is positive enter value into Overall Excluded Construction Cost

FFE Reimbursement

Funding Limits	Enrollment	Reimbursable Amount	Est'd Budget	Ineligible*
$1,200 /student	335	$402,000	$438,000	-$36,000
$1,200 /student	335	$402,000	$438,000	-$36,000

*If Ineligible is $0 or negative OK.
*If Ineligible Amount is positive enter value for each into Scope Excluded Cost.

116	**Board Authorization**	
117	Design Enrollment	335
118	Total Building Gross Floor Area (GSF)	77,102
119	Total Project Budget (excluding Contingencies)	$50,175,820
120	Scope Items Excluded or Otherwise Ineligible	$15,928,961
121	Third Party Funding (Ineligible)	$0
122	Estimated Basis of Maximum Total Facilities Grant[1]	$34,246,859
123	Reimbursement Rate	35.93%
124	Est. Max. Total Facilities Grant (before recovery)[1]	$12,304,896
125	Cost Recovery[2]	$0
126	Estimated Maximum Total Facilities Grant[1]	$12,304,896

127	Construction Contingency[3]	$1,645,684
128	Ineligible Construction Contingency[3]	$1,234,263
129	"Potentially Eligible" Construction Contingency[3]	$411,421
130	Owner's Contingency[3]	$411,421
131	Ineligible Owner's Contingency[3]	$0
132	"Potentially Eligible" Owner's Contingency[3]	$411,421
133	Total Potentially Eligible Contingency[3]	$822,842
134	Reimbursement Rate	35.93%
135	Potential Additional Contingency Grant Funds[3]	$295,647
136	Maximum Total Facilities Grant	$12,600,544
137	Total Project Budget	$52,232,925

31.00	Reimbursement Rate Before Incentive Points
4.93	Total Incentive Points
35.93%	MSBA Reimbursement Rate

NOTES
This template was prepared by the MSBA as a tool to assist Districts and consultants in understanding MSBA policies and practices regarding potential impact on the MSBA's calculation of a potential Basis of Total Facilities Grant and potential Total Maximum Facilities Grant. This template does not contain a final, exhaustive list of all evaluations which the MSBA may use in determining whether items are eligible for reimbursement by the MSBA. The MSBA will perform an independent analysis based on a review of information and estimates provided by the District for the proposed school project that may or may not agree with the estimates generated by the District using this template.

1. Does not include any potentially eligible contingency funds and is subject to review and audit by the MSBA.

2. The proposed demolition of the _____ School is expected to result in the MSBA recovering a portion of state funds previously paid to the District for the ____ project at the existing facilities completed in ___. The MSBA will perform an independent analysis based on a review of information and estimates provided by the District for the proposed school project that may or may not agree with the estimated cost recovery generated by the District and its consultants using this template.

3. Pursuant to Section 3.20 of the Project Funding Agreement and the applicable policies and guidelines of the Authority, any project costs associated with the reallocation or transfer of funds from either the Owner's contingency or the Construction contingency to other budget line items shall be subject to review by the Authority to determine whether any such costs are eligible for reimbursement by the Authority. All costs are subject to review and audit by the MSBA.

1.93	(0-2) Maintenance
1.00	(0-1) CM @ Risk
0.00	(0-6) Newly Formed Regional School District
0.00	(0-5) Major Reconstruction or Reno/Reuse type in rounded to 2 decimal places
#VALUE!	0 gsf Renovated or Existing to Remain
	1 gsf Total at Conclusion of Project
0.00	(0-1) Overly Zoning 40R and 40S
0.00	(0-0.5) Overlay Zoning 100 units or 50% of units 1,2, or 3 family structures
2.00	(0-2) Energy Efficiency - "Green Schools"
0.00	(5) Model Schools
4.93	**Total Incentive Points**

4.1.2.16 - UPDATED PROJECT WORK PLAN

4.1.2.16.1 – Project Directory

4.1.2.16.2 – Roles and Responsibilities Matrix

4.1.2.16.3 - Communication and Document Control Protocol

4.1.2.16.4 - Designer's Work Plan

4.1.2.16.5 - Project Schedule

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4.1.2.16.1 – PROJECT DIRECTORY

A copy of the approved document follows on the next page.

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Manchester Memorial Elementary School
School Building Committee

Member name	Town/Affliation	email contact	Phone Number
**Caroline Weld	SBC Co-Chair/Manchester	weldc1@mersd.org	617.875.8705
** Ann Cameron	SBC Co-Chair/Essex	acameron@mersd.org	978.471.9870
Alva Ingaharro	School Comm. Member/Essex	alvai@comcast.net	978.930.4717
Pam Beaudoin	Superintendent of Schools	beaudoinp@mersd.org	978.526.4919
Avi Urbas	Dir. Of Finance & Operations	urbasa@mersd.org	978.526.4919
John Willis	Principal MMES	willisj@mersd.org	978.526.4919
Jay Pagliarulo	Facilities Director	pagliaruloj@mersd.org	978.526.4919
Andy Oldeman	Machester Finance Comm	oldemana@mersd.org	617.520.9282
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Christina Shefferman	DWMP-Assistant Project Manager	cshefferman@doreandwhittier.com	978.778.5353
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Lauren Braren	JCJ Architects	lbraren@jcj.com	860.240.9309
Emily Czarnecki	JCJ Architects	eczarnecki@jcj.com	860.240.9342
Jon Rich	WT Rich	jonrich@wtrich.com	617.293.6823

** Building Committee Co-Chair

4.1.2.16.2 – ROLES AND RESPONSIBILITIES

Roles and responsibilities for the project were reviewed with the Memorial School Building Committee Leadership groups along with the OPM, Dore & Whittier MP and JCJ Architecture.

A copy of the document follows on the next page.

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Manchester Memorial Elementary
School Project
Module 5 and 6 Responsibility Matrix
7-11-18

			OWNER	OPM	DESIGNER	CMAR	MSBA
5.0	**FUNDING THE PROJECT (MODULE 5)**						
5.0	**Requirements**						
	A.	Total Project Budget		✓			
	B.	Detailed Project Scope Description			✓		
	C.	Signed Reimbursement Rate Certification	✓	✓			
	D.	Updated Project Schedule		✓		✓	
	E.	Project Cash Flow		✓		✓	
	F.	Project Site Information		✓	✓	✓	
	G.	Furnishings, Fixtures & Equipment List			✓		
	H.	(2) Original Certifications for Project Scope & Budget	✓				
	I.	Copy of District Authorization Vote	✓				
	J.	(3) Signed Project Scope and Budget Agreements	✓				
	K.	(2) Certifications by Legal Counsel for PFA	✓				
	L.	Copy of District Vote for PFA	✓				
	M.	Certified Copies of all Local Funding Votes	✓				
	N.	No-Action Letters (If applicable)	✓				
6.0	**DETAILED DESIGN (MODULE 6)**						
		OPM Contract for Detailed Design	✓	✓			
		Designer Contract for Detailed Design	✓	✓	✓		
		CM contract for Construction Services	✓	✓	✓	✓	
6.0	**Design Development**						
	A.	Kick-Off Meeting	✓	✓	✓	✓	
	B.	Preparation of Design Documents			✓		
	C.	Commissioning Agent Kick-Off Meeting	✓	✓	✓	✓	
	D.	Regulatory Meetings	✓	✓	✓	✓	
	E.	Submission of NOI to Conservation Commission	✓		✓		
	F.	Submission to Planning Board	✓		✓		
	G.	Cost Estimate			✓	✓	
	H.	Value Engineering	✓	✓	✓	✓	
	I.	Submission to MSBA		✓	✓		
MSBA Review	J.	MSBA Review & Comment					✓
	K.	Designer's Response to MSBA Comments		✓	✓		
		Construction Documents					
	A.	Preparation of Design Documents			✓		
	B.	Regulatory Meetings	✓	✓	✓	✓	
	C.	Develop Final Site Phasing & Logistics Plans	✓	✓	✓	✓	
	D.	Develop Early Bid Packages (Site, Steel & Conrete)		✓	✓	✓	
	E.	Develop Front End Procurement Language	✓	✓	✓	✓	
	F.	Constructability Review		✓		✓	
	G.	Cost Estimate - 60%			✓	✓	
	H.	Value Engineering	✓	✓	✓	✓	
	I.	Submission to MSBA		✓	✓		

Manchester Memorial Elementary
School Project
Module 5 and 6 Responsibility Matrix
7-11-18

MSBA Review	J.	MSBA Review & Comment					✓
	K.	Designer's Response to MSBA Comments			✓		
	L.	Structural and MEP Peer Review		✓	✓		
	M.	Cost Estimate - 90%			✓	✓	
	N.	Value Engineering	✓	✓	✓	✓	
	O.	Submission to MSBA		✓	✓		
MSBA Review	P.	MSBA Review & Comment					✓
	Q.	Designer's Response to MSBA Comments		✓	✓		
	R.	Complete Bid Sets			✓		
	S.	Addenda			✓		
	T.	Bid Trade Contractors	✓	✓	✓	✓	
	U.	Bid and De-Scope Subcontractors			✓	✓	
	V.	GMP	✓	✓	✓	✓	

4.1.2.16.3 - COMMUNICATION AND DOCUMENT CONTROL PROTOCOL

The Communication and Document Control Protocol was reviewed with the Memorial School Building Committee at the inception of the project and was formally approved by the building committee.

A copy of the approved document follows on the next page.

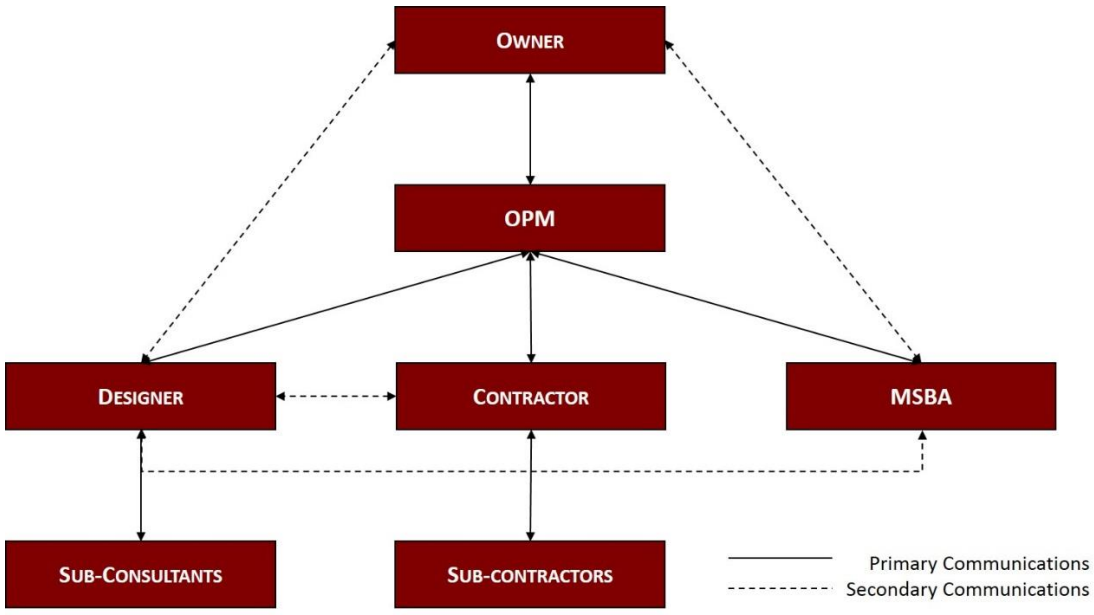
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COMMUNICATIONS AND DOCUMENT CONTROL PROCEDURES

Effective communication between the various participants on a project is inherent to the success of the planning, design and implementation phases of a project. The lines of communication are numerous and must be clearly defined so that necessary information is identified, distributed, recorded and appropriate action is taken. The OPM acts as the primary coordinator of a project and as such is the point of contact for most communications. In this capacity, it is the OPM's responsibility to ensure that information is forwarded to the appropriate parties and any required follow up action is overseen as needed.

A valuable resource for any project is a project directory, which can be created and distributed as appropriate. All participating entities will provide the OPM with their representative's name, title and contact information which will be consolidated into the directory. If changes to this information are necessary, the updated information is provided to the OPM by the applicable party so that the project directory is kept current at all times.

So that communications are facilitated and their efficacy maximized amongst the various project participants, a protocol of basic rules needs to be established, defined and maintained. This protocol will enable a clear understanding and mutual agreement of the communication flow pertaining to the project. Outlined below is a diagram illustrating the appropriate and accepted communication flow between the primary parties involved in a particular project:



Two different types of communication are reflected in the above chart: "Primary" and "Secondary". Primary communications are defined as information provided and exchanged that is requisite to the contractual responsibilities of the project participants. Secondary communications are informal, and focus on a specific topic that is most effectively communicated between the affected parties only. However, the Secondary communications shall be provided to other project participants as deemed appropriate or necessary.

In general, the protocol for the communication dynamic between various primary project participants should be as follows:

- **MSBA & OWNER:** All communications occur between the MSBA and Owner during the "Module 1: Eligibility Period" as no other project participants have been identified, including an OPM. Once an OPM has been selected for a project, the OPM acts as the primary conduit of communication between the MSBA and Owner. The OPM will assist the Owner with all project related issues throughout the project's duration.
- **MSBA & OPM:** The OPM is the initial contact for project related communications being directed to the MSBA. In order that the MSBA's requirements and guidelines for a specific project are met and communication flow is maintained, the OPM and MSBA will communicate as required. The OPM will review all reports and requests directed to the MSBA prior to forwarding them. There are certain circumstances that will necessitate direct communication between the MSBA and the owner. These might include legal procedures such as, but not limited to, all agreements, funding certifications and formal review comments and/or concerns. However, the OPM will be copied on all such communications.
- **MSBA & Designer:** Once the Designer is chosen by the MSBA Designer Selection Panel, communications from the MSBA to the Designer, and conversely from the Designer to the MSBA, shall be directed through the OPM.
- **Owner & OPM:** The OPM acts as the primary agent for the project and all project related issues. As such, the OPM provides the required technical and procedural advice with respect to coordinating the different aspects of the project. Therefore, it is imperative that all communications both to and from the Owner be directed through the OPM. In the event that independent secondary communication between personnel from the School District and other parties assigned to the project bypasses the OPM, such communications shall be recorded and provided to the OPM for record and any requisite follow up.
- **Owner & Designer:** All contractual and service related issues pertaining to the Designer shall be communicated through the OPM. However, in the event where secondary communications are necessary without requiring the OPM's presence or involvement, then such communications shall be recorded by the Designer and provided to the OPM.
- **OPM & Designer:** Formal communications from the Designer to the Owner and/or MSBA shall be directed through the OPM. If it is determined that the OPM's direct involvement is not necessary to any informal or other working communications with other parties, the Designer shall provide to the OPM record and informational copy of any such communication.
- **OPM & Contractor:** A contractor's request for Owner approvals and other coordination issues will be communicated to the Owner via the OPM, acting as the Owner's representative.
- **Designer & Design Sub-Consultants:** All communications with Design Sub-Consultants, working under the Designer's contractual obligations, will only be through the Designer.
- **Designer & Contractor:** The OPM is the contact for all contractual communications between the Designer and Contractor. Detailed communications may be exchanged directly through the Designer and Contractor without the OPM's intervention but all such communications will be recorded and forwarded to the OPM.
- **Contractor & Construction Sub-Contractors:** All communications with the Construction Contractor's Sub-Contractors will only be through the Contractor and do not require the OPM's involvement.

Supplementing the above communication protocol is the aforementioned "project directory". As defined, the project directory will include the parties listed above by organization, firm or institution and the specific individuals representing them on the indicated project.

Document Control Protocols

A large volume of documentation is necessarily generated by a project. Each party participating in a project contributes to the creation, maintenance and distribution of documentation relative to their involvement. The matrix on the following pages identifies the key documentations, roles and responsibilities of the primary project participants. The roles and responsibilities specific to the OPM, Designer, Contractor, Owner and MSBA are listed by project phase as defined in the MSBA sequence procedures.

The function of the matrix is to both provide clarification and to avoid confusion as to the roles and responsibilities of those involved in a particular task or generation of the associated documentation respective to a particular sequence or phase of a project.

4.1.16.4 - DESIGNER'S WORK PLAN

The designer's work plan can be found starting on the next page of this report. This document was reviewed by the Memorial School Building Committee at their April 28, 2018 meeting.

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MSBA REVIEW

Teacher and Staff Interviews — **3/21/18**

Designer Documentation to Present/Review:	Owner Information/Decisions
☐ Review Critical Adjacencies and Functional Relationships	
☐ Identify Program Requirements By Room	
☐ Review Site Requirements	

SBC MEETING #21 - MSBA REVIEW — **3/27/18**

Designer Documentation to Present/Review:	Owner Information/Decisions
☐ Project Update (FAS Meeting)	☐ TBD (DWMP)
☐ DWMP: Construction Manager Discussion	

DESIGN

SBC MEETING #22 - Begin Schematic Design — **4/10/18**

Designer Documentation to Present/Review:	Owner Information/Decisions
☐ Project Update	☐ Provide Comments/ Direction (As Appropriate)
Teacher & Staff Conferences	
☐ Precedent Study & Imagery	
☐ Design Update	
Updated Floor Plans	
Building Character/Massing	

Design Sub-Committee Meeting — **10:00AM** — **4/24/18**

Designer Documentation to Present/Review:	Owner Information/ Decisions
☐ Review Design Progress	☐ Provide Comments (As Appropriate)

Food Service Meeting — **11:00AM** — **4/26/18**

Designer Documentation to Present/Review:	Owner Information/ Decisions
☐ Review Food Service Program Goals w/ District	☐ Provide Food Service Goals

Teacher/ Staff Interviews (Final Groups) — **1:00PM** — **4/26/18**

Designer Documentation to Present/Review:	Owner Information/ Decisions
☐ Review Adjacencies/Functional Relationships	☐ Provide Comments (As Appropriate)
☐ Identify Program Requirements By Room	
☐ Review Site Requirements	

Traffic Control Discussion — **TBD** — **4/27/18**

Designer Documentation to Present/Review:	Owner Information/ Decisions
☐ Review Traffic Control Protocols w/ District	☐ Provide Comments (As Appropriate)

Technology Program Discussion — **2:00PM** — **4/27/2018 or 4/30/18**

Designer Documentation to Present/ Review:	Owner Information/ Decisions
☐ Review Technology Goals for the District	☐ Outline a Technolgy Infrastructure Stratagy

SBC MEETING #23	**7:00pm**	**4/26/18**

Designer Documentation to Present/Review:

- ☐ Project Update
  - *Report Out of Sub-Group Meetings*
- ☐ Design Update
  - *Site Plan*
  - *Floor Plans*
  - *Massing*
  - *Exterior Elevations*

Owner Information/ Decisions

- ☐ Provide Comments (As Appropriate)

Design Sub-Committee Meeting	**10:00am**	**5/1/18**

Designer Documentation to Present/ Review:

- ☐ Review Design Progress

Owner Information/ Decisions

- ☐ Provide Comments (As Appropriate)

Initial Sustainability Goals Meeting	**4:00pm**	**5/1/18**

Designer Documentation to Present/ Review:

- ☐ Review Sustainability Goals for Project
- ☐ Prepapre for Green Charette

Owner Information/ Decisions

- ☐ Agree on Initial Goals & Green Charette Date
- ☐ Agree on Green Charette Attendees

MEP Sub-Committee Meeting	**4:15pm**	**5/1/18**

Designer Documentation to Present/Review:

- ☐ Review Proposed Systems Approach
- ☐ Review LCC Data
- ☐ Review Decision Points

Owner Information/ Decisions

- ☐ Agree on Recommendations to Full Committee

Safety & Security Discussion	**TBD**	**5/3/18**

Designer Documentation to Present/ Review:

- ☐ Review Safety and Security Goals w/ District

Owner Information/ Decisions

- ☐ Provide Operational Goals

Interior Design Update	**10:30am**	**5/3/18**

Designer Documentation to Present/ Review:

- ☐ Present Interior Design Approach to Leadership
- ☐ Review Initial FF&E Scope

Owner Information/ Decisions

- ☐ Provide Comments/ Direction (As Appropriate)
- ☐ Agree on Approach (As Appropriate)

Landscape	**1:00pm**	**5/4/18**

Designer Documentation to Present/ Review:

- ☐ Initial Landscape Discussion with District

Owner Information/ Decisions

- ☐ Provide Comments (As Appropriate)

SBC MEETING #24 — 7:00pm — 5/8/18

Designer Documentation to Present/Review:

- ☐ Project Update
- ☐ Design Update
  - *Site Plan (Updated):*
  - *Floor Plans (Updated)*
  - *Massing (Updated)*
  - *Exterior Elevations (Updated)*
  - *Interior Finishes/ Room Data Sheets*
  - *Furniture, Furnishings & Equipment (FF&E)*
- ☐ Sustainability
- ☐ Building Systems (w/ GGD)
  - *Review Decision Points*

Owner Information/Decisions

- ☐ Provide Comments (As Appropriate)
- ☐ Determine Systems Decision Points

Design Sub-Committee Meeting — 10:00am — 5/15/18

Designer Documentation to Present/Review:

- ☐ Review Design Progress

Owner Information/Decisions

- ☐ Provide Comments (As Appropriate)

Safety & Security Meeting — TBD — 5/15/18 or 5/16/18

Designer Documentation to Present/Review:

- ☐ Introduce Project to Town Security Partners

Owner Information/Decisions

- ☐ Provide Comments and Input (As Appropriate)

Landscape Sub-Committee Meeting — TBD — 5/17/18

Designer Documentation to Present/ Review:

- ☐ Review Progress Lanscape Design

Owner Information/Decisions

- ☐ Provide Comments (As Appropriate)

Sustainability "Green Charette" — TBD — TBD

Designer Documentation to Present/ Review:

- ☐ Review Susutainability Goals

Owner Information/Decisions

- ☐ Provide Comments & Direction (As Appropriate)

SBC MEETING #25 — 7:00pm — 5/22/18

Designer Documentation to Present/Review:

- ☐ Project Update
- ☐ Review Community Meeting #4
- ☐ Building Systems (Follow Up)
  - *Finalize Decision Points for Estimating*
  - *Finalize Sustainability Goals for Estimating*
- ☐ Landscape Program & Design
- ☐ Design Update
  - *Site Plan (Updated):*
  - *Floor Plans (Updated)*
  - *Massing Study (Updated)*
  - *Exterior Elevations (Updated)*
  - *Interior Finishes/ Room Data Sheets (Updated)*

Owner Information/Decisions

- ☐ Approve Scope & Approach for Estimating

DESIGN

Send Package For Estimating *(JCJ)* **5/23/18**

Community Meeting #4 **9:00am and 7:00pm** **5/30/18**

- ☐ Project Update
- ☐ SD Design Progress

Reconciliation Meeting *(JCJ/ DWMP/ CM)* **6/8/18**

SBC MEETING #26 **7:00pm** **6/12/18**

Designer Documentation to Present/Review:

- ☐ Project Update
- ☐ Design Update

Review Revisions Based on SBC Comments

Owner Information/Decisions

- ☐ Provide Comments/ Approvals (As Appropriate)

SBC MEETING #27 **7:00pm** **6/26/18**

Designer Documentation to Present/Review:

- ☐ Review Cost Estimates
- ☐ Initial Review of SD Package

Owner Information/Decisions

- ☐ Approve Estimate Costs/ Review Potential VE
- ☐ Initial Approval of SD Package

SBC MEETING #28 ***(Schematic Design Approval)*** **7:00pm** **7/9/18**

Designer Documentation to Present/Review:

- ☐ Final Review and Approval of SD Package

Owner Information/Decisions

- ☐ Final Approval to Submit SD to MSBA

COST REVIEW & APPROVAL

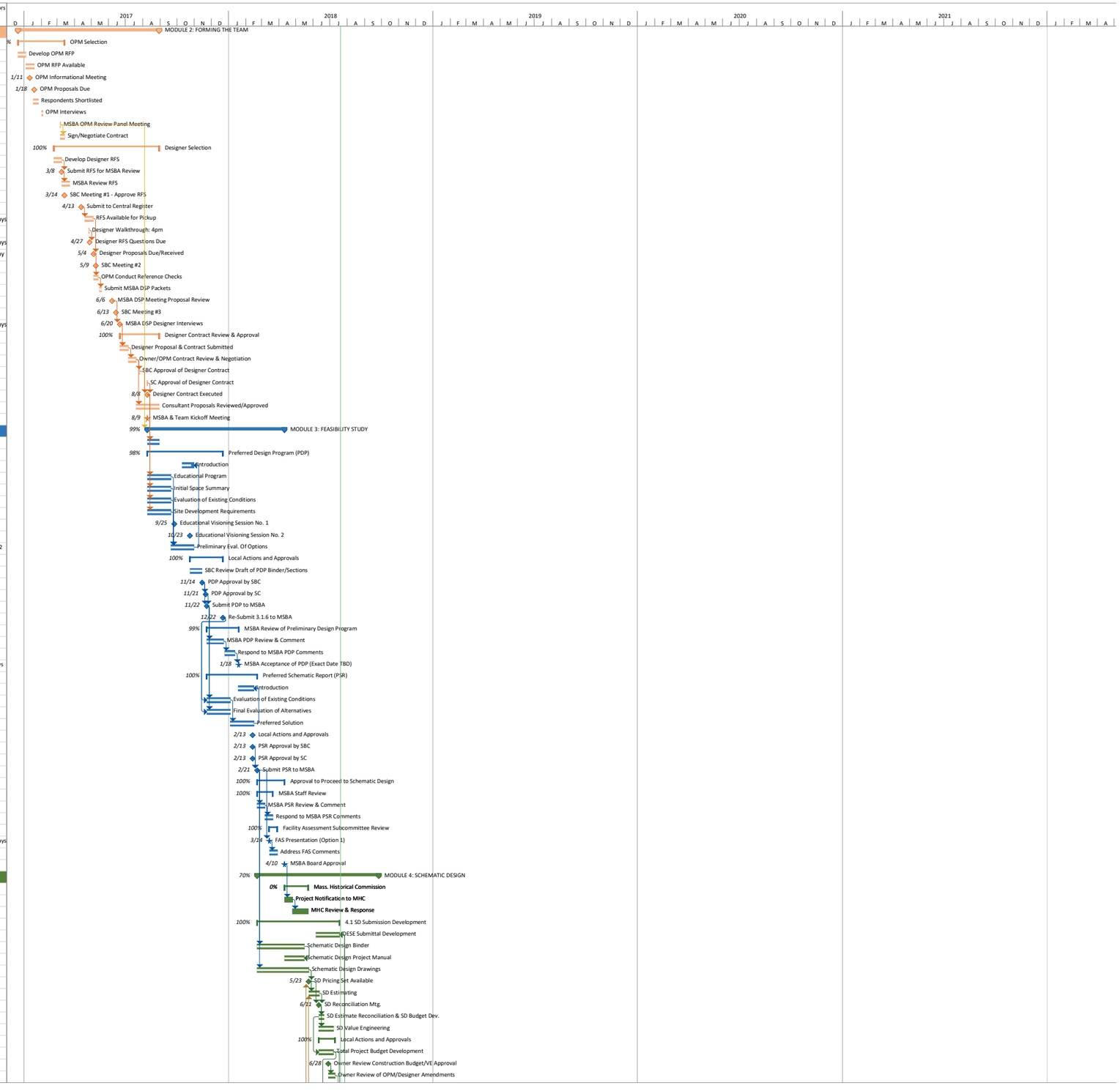
4.1.2. 16.5 - PROJECT SCHEDULE

The Project Schedule as provided by the OPM, Dore & Whittier Management Partners can be found starting on the next page of this report.

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MANCHESTER ESSEX REGIONAL SCHOOL DISTRICT
- MEMORIAL ELEMENTARY SCHOOL PROJECT -
Schematic Design Report
Total Project Schedule

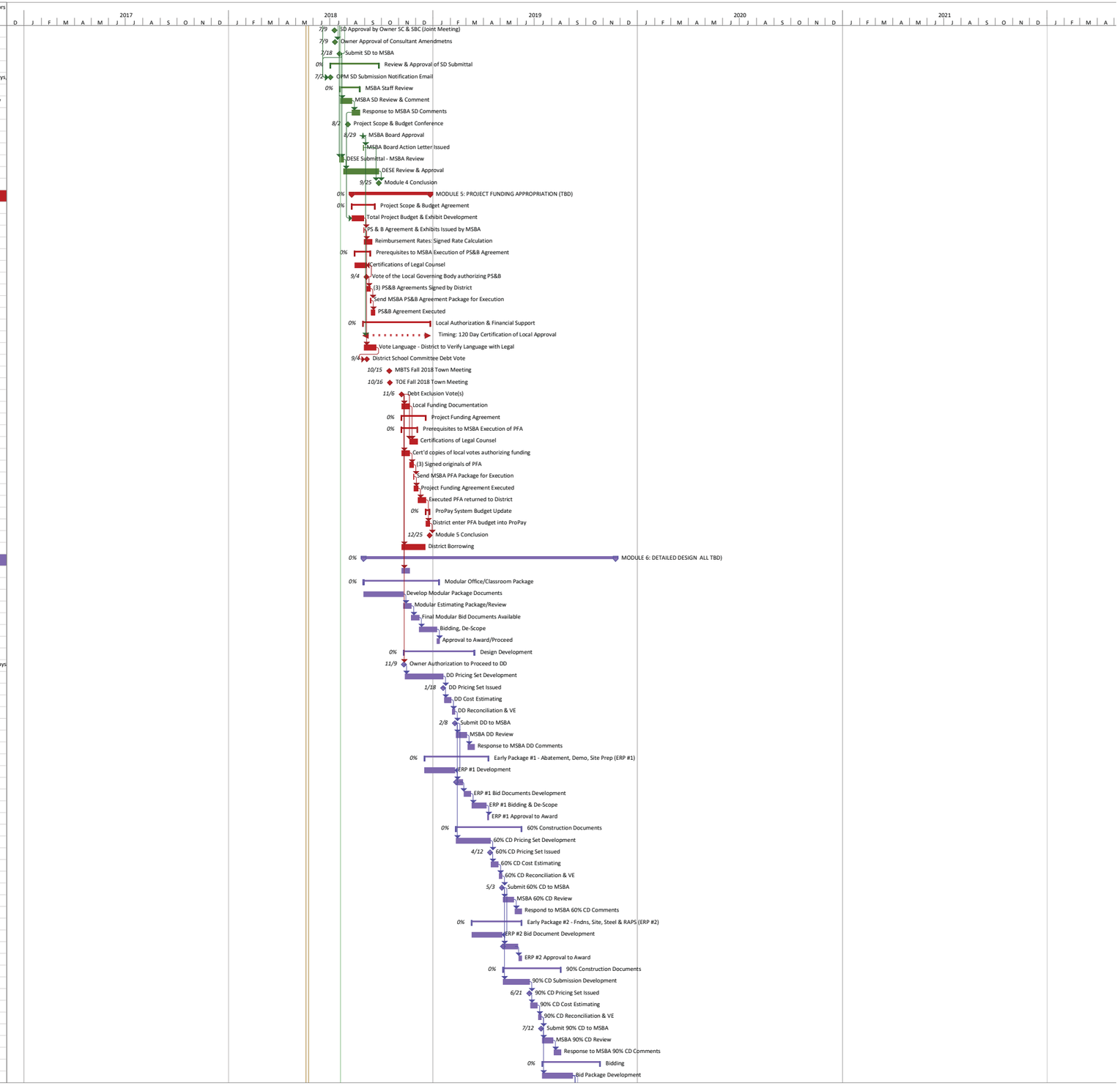
ID	% Compl	WBS	Task Name	Duration	Start	Finish	Predecessors
1	10...	2	**MODULE 2: FORMING THE TEAM**	179 days?	Wed 12/21/16	Tue 8/29/17	
2	10...	2.1	**OPM Selection**	59 days?	Wed 12/21/16	Mon 3/13/17	
3	100%		Develop OPM RFP	10 days	Wed 12/21/16	Tue 1/3/17	
4	100%		OPM RFP Available	11 days?	Wed 1/4/17	Wed 1/18/17	
5	100%		OPM Informational Meeting	0 days	Wed 1/11/17	Wed 1/11/17	
6	100%		OPM Proposals Due	1 day	Wed 1/18/17	Wed 1/18/17	
7	100%		Respondents Shortlisted	7 days	Tue 1/17/17	Wed 1/25/17	
8	100%		OPM Interviews	2 days	Wed 2/1/17	Thu 2/2/17	
9	100%		MSBA OPM Review Panel Meeting	1 day	Mon 3/6/17	Mon 3/6/17	
10	100%		Sign/Negotiate Contract	5 days	Tue 3/7/17	Mon 3/13/17	9
11	10...	2.2	**Designer Selection**	133 days	Thu 2/23/17	Tue 8/29/17	
12	100%		Develop Designer RFS	10 days	Thu 2/23/17	Wed 3/8/17	
13	100%		Submit RFS for MSBA Review	0 days	Wed 3/8/17	Wed 3/8/17	12
14	100%		MSBA Review RFS	10 days	Thu 3/9/17	Wed 3/22/17	13
15	100%		SBC Meeting #1 - Approve RFS	0 days	Tue 3/14/17	Tue 3/14/17	
16	100%		Submit to Central Register	0 days	Thu 4/13/17	Thu 4/13/17	
17	100%		RFS Available for Pickup	11 days	Wed 4/19/17	Wed 5/3/17	16FS+4 days
18	100%		Designer Walkthrough: 4pm	1 day	Tue 4/25/17	Wed 4/26/17	
19	100%		Designer RFS Questions Due	0 days	Thu 4/27/17	Thu 4/27/17	18FS+2 days
20	100%		Designer Proposals Due/Received	0 days	Thu 5/4/17	Thu 5/4/17	17FS+1 day
21	100%		SBC Meeting #2	0 days	Tue 5/9/17	Tue 5/9/17	
22	100%		OPM Conduct Reference Checks	6 days	Fri 5/5/17	Fri 5/12/17	20
23	100%		Submit MSBA DSP Packets	4 days	Mon 5/15/17	Thu 5/18/17	22
24	100%		MSBA DSP Meeting Proposal Review	0 days	Tue 6/6/17	Tue 6/6/17	
25	100%		SBC Meeting #3	0 days	Tue 6/13/17	Tue 6/13/17	
26	100%		MSBA DSP Designer Interviews	1 day	Tue 6/20/17	Tue 6/20/17	24FS+9 days
27	100%		Designer Contract Review & Approval	49 days	Wed 6/21/17	Tue 8/29/17	
28	100%		Designer Proposal & Contract Submitted	10 days	Wed 6/21/17	Wed 7/5/17	26
29	100%		Owner/OPM Contract Review & Negotiation	10 days	Thu 7/6/17	Wed 7/19/17	28
30	100%		SBC Approval of Designer Contract	1 day	Tue 7/25/17	Tue 7/25/17	29
31	100%		SC Approval of Designer Contract	1 day	Tue 8/8/17	Tue 8/8/17	
32	100%		Designer Contract Executed	0 days	Tue 8/8/17	Tue 8/8/17	31,30
33	100%		Consultant Proposals Reviewed/Approved	29 days	Thu 7/20/17	Tue 8/29/17	29
34	100%		MSBA & Team Kickoff Meeting	0 days	Wed 8/9/17	Wed 8/9/17	
35	99%	3	**MODULE 3: FEASIBILITY STUDY**	175 days	Wed 8/9/17	Tue 4/10/18	9
36	100%		OPM Work Plan	15 days	Wed 8/9/17	Tue 8/29/17	32
37	98%	3.1	**Preferred Design Program (PDP)**	97 days	Wed 8/9/17	Fri 12/22/17	
38	75%	3.1.1	Introduction	15 days	Tue 10/10/17	Mon 10/30/17	45FF
39	100%	3.1.2	Educational Program	30 days	Wed 8/9/17	Tue 9/19/17	32
40	100%	3.1.3	Initial Space Summary	30 days	Wed 8/9/17	Tue 9/19/17	32
41	100%	3.1.4	Evaluation of Existing Conditions	30 days	Wed 8/9/17	Tue 9/19/17	32
42	100%	3.1.5	Site Development Requirements	30 days	Wed 8/9/17	Tue 9/19/17	32
43	100%		Educational Visioning Session No. 1	1 day	Mon 9/25/17	Mon 9/25/17	
44	100%		Educational Visioning Session No. 2	1 day	Mon 10/23/17	Mon 10/23/17	
45	100%	3.1.6	Preliminary Eval. Of Options	29 days	Wed 9/20/17	Mon 10/30/17	39,40,41,42
46	100%	3.1.7	Local Actions and Approvals	43 days	Tue 10/24/17	Fri 12/22/17	
47	100%		SBC Review Draft of PDP Binder/Sections	15 days	Tue 10/24/17	Mon 11/13/17	
48	100%		PDP Approval by SBC	0 days	Tue 11/14/17	Tue 11/14/17	
49	100%		PDP Approval by SC	0 days	Tue 11/21/17	Tue 11/21/17	48
50	100%		Submit PDP to MSBA	1 day	Wed 11/22/17	Wed 11/22/17	48,49
51	100%		Re-Submit 3.1.6 to MSBA	0 days	Fri 12/22/17	Fri 12/22/17	
52	99%	3.2	**MSBA Review of Preliminary Design Program**	41 days	Thu 11/23/17	Thu 1/18/18	
53	100%		MSBA PDP Review & Comment	22 days	Thu 11/23/17	Fri 12/22/17	50
54	100%		Respond to MSBA PDP Comments	14 days	Mon 12/25/17	Thu 1/11/18	53
55	0%		MSBA Acceptance of PDP (Exact Date TBD)	0 days	Thu 1/18/18	Thu 1/18/18	54FS+5 days
56	100%	3.3	**Preferred Schematic Report (PSR)**	64 days	Thu 11/23/17	Wed 2/21/18	
57	100%	3.3.1	Introduction	20 days	Thu 1/18/18	Wed 2/14/18	60FF
58	100%	3.3.2	Evaluation of Existing Conditions	30 days	Thu 11/23/17	Wed 1/3/18	51,50
59	100%	3.3.3	Final Evaluation of Alternatives	30 days	Thu 11/23/17	Wed 1/3/18	51,50
60	100%	3.3.4	Preferred Solution	30 days	Thu 1/4/18	Wed 2/14/18	58
61	100%	3.3.5	Local Actions and Approvals	0 days	Tue 2/13/18	Tue 2/13/18	
62	100%		PSR Approval by SBC	0 days	Tue 2/13/18	Tue 2/13/18	
63	100%		PSR Approval by SC	0 days	Tue 2/13/18	Tue 2/13/18	
64	100%		Submit PSR to MSBA	0 days	Wed 2/21/18	Wed 2/21/18	62,63
65	100%	3.4	**Approval to Proceed to Schematic Design**	35 days	Wed 2/21/18	Tue 4/10/18	
66	100%	3.4.1	MSBA Staff Review	20 days	Wed 2/21/18	Tue 3/20/18	
67	100%		MSBA PSR Review & Comment	10 days	Wed 2/21/18	Tue 3/6/18	64
68	100%		Respond to MSBA PSR Comments	10 days	Wed 3/7/18	Tue 3/20/18	67
69	100%	3.4.2	Facility Assessment Subcommittee Review	11 days	Wed 3/14/18	Wed 3/28/18	
70	100%		FAS Presentation (Option 1)	1 day	Wed 3/14/18	Wed 3/14/18	64FS+15 days
71	100%		Address FAS Comments	10 days	Thu 3/15/18	Wed 3/28/18	70
72	100%	3.4.3	MSBA Board Approval	1 day	Tue 4/10/18	Tue 4/10/18	
73	70%	4	**MODULE 4: SCHEMATIC DESIGN**	155 days	Wed 2/21/18	Tue 9/25/18	
74	0%		**Mass. Historical Commission**	30 days	Wed 4/11/18	Tue 5/22/18	
75	0%		Project Notification to MHC	10 days	Wed 4/11/18	Tue 4/24/18	72
76	0%		MHC Review & Response	20 days	Wed 4/25/18	Tue 5/22/18	75
77	100%	4.1	**4.1 SD Submission Development**	105 days	Wed 2/21/18	Wed 7/18/18	
78	100%	4.1.1	DESE Submittal Development	30 days	Wed 6/6/18	Wed 7/18/18	88FF,93FF
79	100%	4.1.2	Schematic Design Binder	60 days	Wed 2/21/18	Tue 5/15/18	64
80	100%	4.1.3	Schematic Design Project Manual	25 days	Wed 4/11/18	Tue 5/15/18	79FF
81	100%	4.1.4	Schematic Design Drawings	66 days	Wed 2/21/18	Wed 5/23/18	64
82	100%		SD Pricing Set Available	0 days	Wed 5/23/18	Wed 5/23/18	81,250
83	100%		SD Estimating	13 days	Thu 5/24/18	Mon 6/11/18	81,250
84	100%		SD Reconciliation Mtg.	0 days	Mon 6/11/18	Mon 6/11/18	83,82
85	100%		SD Estimate Reconciliation & SD Budget Dev.	7 days	Mon 6/11/18	Tue 6/19/18	84
86	100%		SD Value Engineering	20 days	Mon 6/11/18	Fri 7/6/18	84
87	100%		Local Actions and Approvals	21 days	Mon 6/11/18	Mon 7/9/18	
88	100%		Total Project Budget Development	20 days	Mon 6/11/18	Fri 7/6/18	85SS
89	100%		Owner Review Construction Budget/VE Approval	0 days	Thu 6/28/18	Thu 6/28/18	
90	100%		Owner Review of OPM/Designer Amendments	8 days	Thu 6/28/18	Mon 7/9/18	89



Prepared By:
Dore and Whittier Management Partners, LLC

MANCHESTER ESSEX REGIONAL SCHOOL DISTRICT
- MEMORIAL ELEMENTARY SCHOOL PROJECT -
Schematic Design Report
Total Project Schedule

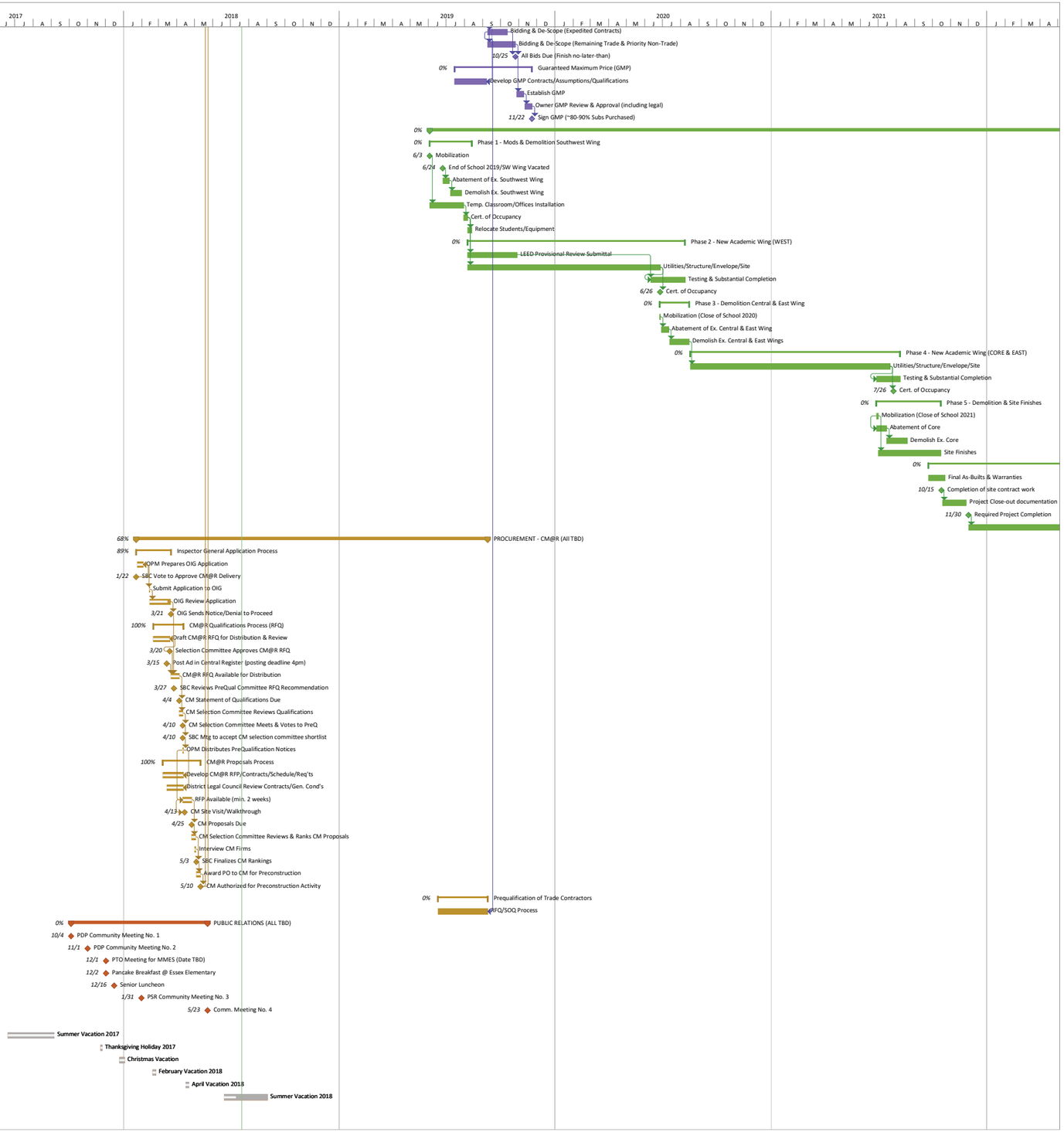
ID	% Compl	WBS	Task Name	Duration	Start	Finish	Predecessors
91	100%		SD Approval by Owner SC & SBC (Joint Meeting)	0 days	Mon 7/9/18	Mon 7/9/18	
92	100%		Owner Approval of Consultant Amendmetns	0 days	Mon 7/9/18	Mon 7/9/18	90
93	100%		Submit SD to MSBA	0 days	Wed 7/18/18	Wed 7/18/18	
94	**0%**	**4.2**	**Review & Approval of SD Submittal**	**62 days**	**Mon 7/2/18**	**Tue 9/25/18**	
95	100%		OPM SD Submission Notification Email	0 days	Mon 7/2/18	Mon 7/2/18	88FS-12 days,
96	0%	4.2.1	MSBA Staff Review	25 days	Thu 7/19/18	Wed 8/22/18	
97	0%		MSBA SD Review & Comment	15 days	Thu 7/19/18	Wed 8/8/18	93FS+1 day
98	0%		Response to MSBA SD Comments	10 days	Thu 8/9/18	Wed 8/22/18	97
99	0%	4.2.3	Project Scope & Budget Conference	0 days	Thu 8/2/18	Thu 8/2/18	
100	0%	4.2.4	MSBA Board Approval	0 days	Wed 8/29/18	Wed 8/29/18	
101	0%		MSBA Board Action Letter Issued	1 day	Wed 8/29/18	Wed 8/29/18	100
102	0%		DESE Submittal - MSBA Review	5 days	Wed 7/18/18	Tue 7/24/18	88,93
103	0%		DESE Review & Approval	9 wks	Wed 7/25/18	Tue 9/25/18	102
104	**0%**	**4.3**	**Module 4 Conclusion**	**0 days**	**Tue 9/25/18**	**Tue 9/25/18**	**101,103**
105	**0%**	**5**	**MODULE 5: PROJECT FUNDING APPROPRIATION (TBD)**	**100 days?**	**Thu 8/9/18**	**Wed 12/26/1**	
106	**0%**	**5.1**	**Project Scope & Budget Agreement**	**29 days?**	**Thu 8/9/18**	**Tue 9/18/18**	
107	0%	5.1.1	Total Project Budget & Exhibit Development	15 days	Thu 8/9/18	Wed 8/29/18	98SS
108	0%		PS & B Agreement & Exhibits Issued by MSBA	1 day?	Thu 8/30/18	Thu 8/30/18	107
109	0%	5.1.2	Reimbursement Rates: Signed Rate Calculation	10 days	Fri 8/31/18	Thu 9/13/18	108
110	0%	5.1.10	Prerequisites to MSBA Execution of PS&B Agreement	20 days	Tue 8/14/18	Mon 9/10/18	
111	0%		Certifications of Legal Counsel	15 days	Tue 8/14/18	Tue 9/4/18	112FF
112	0%		Vote of the Local Governing Body authorizing PS&B	0 days	Tue 9/4/18	Tue 9/4/18	
113	0%		(3) PS&B Agreements Signed by District	5 days	Tue 9/4/18	Mon 9/10/18	112
114	0%		Send MSBA PS&B Agreement Package for Execution	1 day	Tue 9/11/18	Tue 9/11/18	113
115	0%		PS&B Agreement Executed	5 days	Wed 9/12/18	Tue 9/18/18	114
116	**0%**	**5.2**	**Local Authorization & Financial Support**	**86 days?**	**Wed 8/29/18**	**Wed 12/26/18**	
117	0%	5.2.2	Timing: 120 Day Certification of Local Approval	120 days	Wed 8/29/18	Wed 12/26/18	100
118	0%	5.2.3	Vote Language - District to Verify Language with Legal	15 days	Fri 8/31/18	Thu 9/20/18	108
119	0%		District School Committee Debt Vote	1 day?	Tue 9/4/18	Tue 9/4/18	118
120	0%		MBTS Fall 2018 Town Meeting	0 days	Mon 10/15/18	Mon 10/15/18	
121	0%		TOE Fall 2018 Town Meeting	0 days	Tue 10/16/18	Tue 10/16/18	
122	0%		Debt Exclusion Vote(s)	0 days	Tue 11/6/18	Tue 11/6/18	
123	0%		Local Funding Documentation	10 days	Tue 11/6/18	Mon 11/19/18	122
124	**0%**	**5.3**	**Project Funding Agreement**	**31 days**	**Tue 11/6/18**	**Tue 12/18/18**	
125	0%	5.3.1	Prerequisites to MSBA Execution of PFA	20 days	Tue 11/6/18	Mon 12/3/18	
126	0%		Certifications of Legal Counsel	10 days	Tue 11/20/18	Mon 12/3/18	123,122
127	0%		Cert'd copies of local votes authorizing funding	10 days	Tue 11/6/18	Mon 11/19/18	122
128	0%		(3) Signed originals of PFA	5 days	Tue 11/20/18	Mon 11/26/18	127
129	0%		Send MSBA PFA Package for Execution	1 day	Tue 11/27/18	Tue 11/27/18	128
130	0%		Project Funding Agreement Executed	5 days	Wed 11/28/18	Tue 12/4/18	129
131	0%		Executed PFA returned to District	10 days	Wed 12/5/18	Tue 12/18/18	130
132	**0%**	**5.4**	**ProPay System Budget Update**	**5 days**	**Wed 12/19/18**	**Tue 12/25/18**	
133	0%		District enter PFA budget into ProPay	5 days	Wed 12/19/18	Tue 12/25/18	131
134	**0%**	**5.5**	**Module 5 Conclusion**	**0 days**	**Tue 12/25/18**	**Tue 12/25/18**	**133**
135	**0%**	**5.6**	**District Borrowing**	**6 wks**	**Tue 11/6/18**	**Mon 12/17/18**	**122**
136	**0%**	**6**	**MODULE 6: DETAILED DESIGN ALL TBD)**	**322 days**	**Thu 8/30/18**	**Fri 11/22/19**	
137	0%		LEED Project Registration	2 wks	Tue 11/6/18	Mon 11/19/18	122
138	**0%**	**6.1**	**Modular Office/Classroom Package**	**97 days**	**Thu 8/30/18**	**Fri 1/11/19**	
139	0%		Develop Modular Package Documents	51 days	Thu 8/30/18	Thu 11/8/18	
140	0%		Modular Estimating Package/Review	2 wks	Fri 11/9/18	Thu 11/22/18	139
141	0%		Final Modular Bid Documents Available	2 wks	Fri 11/23/18	Thu 12/6/18	140
142	0%		Bidding, De-Scope	22 days	Fri 12/7/18	Mon 1/7/19	141
143	0%		Approval to Award/Proceed	4 days	Tue 1/8/19	Fri 1/11/19	142
144	**0%**	**6.2**	**Design Development**	**90 days**	**Fri 11/9/18**	**Fri 3/15/19**	
145	0%		Owner Authorization to Proceed to DD	0 days	Fri 11/9/18	Fri 11/9/18	122FS+4 days
146	0%		DD Pricing Set Development	50 days	Mon 11/12/18	Fri 1/18/19	145
147	0%		DD Pricing Set Issued	0 days	Fri 1/18/19	Fri 1/18/19	146
148	0%		DD Cost Estimating	2 wks	Mon 1/21/19	Fri 2/1/19	147
149	0%		DD Reconciliation & VE	1 wk	Mon 2/4/19	Fri 2/8/19	148
150	0%		Submit DD to MSBA	0 days	Fri 2/8/19	Fri 2/8/19	149
151	0%		MSBA DD Review	3 wks	Mon 2/11/19	Fri 3/1/19	150
152	0%		Response to MSBA DD Comments	2 wks	Mon 3/4/19	Fri 3/15/19	151
153	**0%**	**6.3**	**Early Package #1 - Abatement, Demo, Site Prep (ERP #1)**	**82 days**	**Mon 12/17/18**	**Tue 4/9/19**	
154	0%		ERP #1 Development	2 mons	Mon 12/17/18	Fri 2/8/19	150FF
155	0%		ERP #1 CM@R & OPM Review Comments	2 wks	Mon 2/11/19	Fri 2/22/19	154
156	0%		ERP #1 Bid Documents Development	2 wks	Mon 2/25/19	Fri 3/8/19	155
157	0%		ERP #1 Bidding & De-Scope	4 wks	Mon 3/11/19	Fri 4/5/19	156
158	0%		ERP #1 Approval to Award	2 days	Mon 4/8/19	Tue 4/9/19	157
159	**0%**	**6.4**	**60% Construction Documents**	**85 days**	**Mon 2/11/19**	**Fri 6/7/19**	
160	0%		60% CD Pricing Set Development	9 wks	Mon 2/11/19	Fri 4/12/19	150
161	0%		60% CD Pricing Set Issued	0 days	Fri 4/12/19	Fri 4/12/19	160
162	0%		60% CD Cost Estimating	2 wks	Mon 4/15/19	Fri 4/26/19	161
163	0%		60% CD Reconciliation & VE	1 wk	Mon 4/29/19	Fri 5/3/19	162
164	0%		Submit 60% CD to MSBA	0 days	Fri 5/3/19	Fri 5/3/19	163
165	0%		MSBA 60% CD Review	3 wks	Mon 5/6/19	Fri 5/24/19	164
166	0%		Respond to MSBA 60% CD Comments	2 wks	Mon 5/27/19	Fri 6/7/19	165
167	**0%**	**6.5**	**Early Package #2 - Fndns, Site, Steel & RAPS (ERP #2)**	**65 days**	**Mon 3/11/19**	**Fri 6/7/19**	
168	0%		ERP #2 Bid Document Development	2 mons	Mon 3/11/19	Fri 5/3/19	164FF
169	0%		ERP #2 Bidding & De-Scope	4 wks	Mon 5/6/19	Fri 5/31/19	168
170	0%		ERP #2 Approval to Award	1 wk	Mon 6/3/19	Fri 6/7/19	169
171	**0%**	**6.6**	**90% Construction Documents**	**75 days**	**Mon 5/6/19**	**Fri 8/16/19**	
172	0%		90% CD Submission Development	7 wks	Mon 5/6/19	Fri 6/21/19	164
173	0%		90% CD Pricing Set Issued	0 days	Fri 6/21/19	Fri 6/21/19	172
174	0%		90% CD Cost Estimating	2 wks	Mon 6/24/19	Fri 7/5/19	173
175	0%		90% CD Reconciliation & VE	1 wk	Mon 7/8/19	Fri 7/12/19	174
176	0%		Submit 90% CD to MSBA	0 days	Fri 7/12/19	Fri 7/12/19	175
177	0%		MSBA 90% CD Review	3 wks	Mon 7/15/19	Fri 8/2/19	175
178	0%		Response to MSBA 90% CD Comments	2 wks	Mon 8/5/19	Fri 8/16/19	177
179	**0%**	**6.7**	**Bidding**	**75 days**	**Mon 7/15/19**	**Fri 10/25/19**	
180	0%		Bid Package Development	8 wks	Mon 7/15/19	Fri 9/6/19	176



Prepared By:
Dore and Whittier Management Partners, LLC

MANCHESTER ESSEX REGIONAL SCHOOL DISTRICT
- MEMORIAL ELEMENTARY SCHOOL PROJECT -
Schematic Design Report
Total Project Schedule

ID	% Compl	WBS	Task Name	Duration	Start	Finish	Predecessors
181	0%		Bidding & De-Scope (Expedited Contracts)	5 wks	Mon 9/9/19	Fri 10/11/19	180
182	0%		Bidding & De-Scope (Remaining Trade & Priority Non-Trade)	7 wks	Mon 9/9/19	Fri 10/25/19	180
183	0%		All Bids Due (Finish no-later-than)	0 days	Fri 10/25/19	Fri 10/25/19	182,181
184	**0%**	**6.8**	**Guaranteed Maximum Price (GMP)**	**95 days**	**Mon 7/15/19**	**Fri 11/22/19**	
185	0%		Develop GMP Contracts/Assumptions/Qualifications	2 mons	Mon 7/15/19	Fri 9/6/19	180FF
186	0%		Establish GMP	2 wks	Mon 10/28/19	Fri 11/8/19	183
187	0%		Owner GMP Review & Approval (including legal)	2 wks	Mon 11/11/19	Fri 11/22/19	186
188	0%		Sign GMP (~80-90% Subs Purchased)	0 days	Fri 11/22/19	Fri 11/22/19	187
189	0%	7	MODULE 7: CONSTRUCTION	772 days	Mon 6/3/19	Tue 5/17/22	
190	**0%**	**7.1**	**Phase 1 - Mods & Demolition Southwest Wing**	**51 days**	**Mon 6/3/19**	**Mon 8/12/19**	
191	0%		Mobilization	0 days	Mon 6/3/19	Mon 6/3/19	
192	0%		End of School 2019/SW Wing Vacated	0 days	Mon 6/24/19	Mon 6/24/19	
193	0%		Abatement of Ex. Southwest Wing	9 days	Tue 6/25/19	Fri 7/5/19	192
194	0%		Demolish Ex. Southwest Wing	15 days	Mon 7/8/19	Fri 7/26/19	193
195	0%		Temp. Classroom/Offices Installation	41 days	Mon 6/3/19	Mon 7/29/19	191
196	0%		Cert. of Occupancy	5 days	Tue 7/30/19	Mon 8/5/19	195
197	0%		Relocate Students/Equipment	5 days	Tue 8/6/19	Mon 8/12/19	196
198	**0%**	**7.2**	**Phase 2 - New Academic Wing (WEST)**	**264 days**	**Tue 8/6/19**	**Fri 8/7/20**	
199	0%		LEED Provisional Review Submittal	3 mons	Tue 8/6/19	Mon 10/28/19	196
200	0%		Utilities/Structure/Envelope/Site	11.7 mons	Tue 8/6/19	Fri 6/26/20	196
201	0%		Testing & Substantial Completion	42 days	Thu 6/11/20	Fri 8/7/20	200FS-12 days
202	0%		Cert. of Occupancy	0 days	Fri 6/26/20	Fri 6/26/20	200
203	**0%**	**7.3**	**Phase 3 - Demolition Central & East Wing**	**36 days**	**Fri 6/26/20**	**Fri 8/14/20**	
204	0%		Mobilization (Close of School 2020)	1 day	Fri 6/26/20	Fri 6/26/20	
205	0%		Abatement of Ex. Central & East Wing	10 days	Mon 6/29/20	Fri 7/10/20	204
206	0%		Demolish Ex. Central & East Wings	25 days	Mon 7/13/20	Fri 8/14/20	205
207	**0%**	**7.4**	**Phase 4 - New Academic Wing (CORE & EAST)**	**255 days**	**Mon 8/17/20**	**Fri 8/6/21**	
208	0%		Utilities/Structure/Envelope/Site	12.1 mons	Mon 8/17/20	Tue 7/20/21	206
209	0%		Testing & Substantial Completion	30 days	Mon 6/28/21	Fri 8/6/21	208FS-17 days
210	0%		Cert. of Occupancy	0 days	Mon 7/26/21	Mon 7/26/21	208FS+4 days
211	**0%**	**7.5**	**Phase 5 - Demolition & Site Finishes**	**79 days**	**Mon 6/28/21**	**Thu 10/14/21**	
212	0%		Mobilization (Close of School 2021)	3 days	Mon 6/28/21	Wed 6/30/21	
213	0%		Abatement of Core	13 days	Mon 6/28/21	Wed 7/14/21	212SS
214	0%		Demolish Ex. Core	25 days	Thu 7/15/21	Wed 8/18/21	213
215	0%		Site Finishes	76 days	Thu 7/1/21	Thu 10/14/21	212
216	**0%**	**7.6**	**Completion & Project Closeout**	**168 days**	**Fri 9/24/21**	**Tue 5/17/22**	
217	0%		Final As-Builts & Warranties	20 days	Fri 9/24/21	Thu 10/21/21	
218	0%		Completion of site contract work	0 days	Fri 10/15/21	Fri 10/15/21	
219	0%		Project Close-out documentation	30 days	Mon 10/18/21	Fri 11/26/21	218
220	0%		Required Project Completion	0 days	Tue 11/30/21	Tue 11/30/21	
221	0%		LEED Final Review Submission	6 mons	Wed 12/1/21	Tue 5/17/22	220
222	68%	8	PROCUREMENT - CM@R (All TBD)	425 days	Mon 1/22/18	Mon 9/9/19	
223	**89%**	**8.1**	**Inspector General Application Process**	**43 days**	**Mon 1/22/18**	**Wed 3/21/18**	
224	100%		OPM Prepares OIG Application	8 days	Wed 1/24/18	Fri 2/2/18	225FF+10 days
225	100%		SBC Vote to Approve CM@R Delivery	0 days	Mon 1/22/18	Mon 1/22/18	286
226	100%		Submit Application to OIG	1 day	Tue 2/13/18	Tue 2/13/18	224FS+6 days
227	85%		OIG Review Application	25 days	Wed 2/14/18	Tue 3/20/18	226
228	100%		OIG Sends Notice/Denial to Proceed	1 day	Wed 3/21/18	Wed 3/21/18	227
229	**100%**	**8.2**	**CM@R Qualifications Process (RFQ)**	**37 days**	**Tue 2/20/18**	**Wed 4/11/18**	
230	100%		Draft CM@R RFQ for Distribution & Review	20 days	Tue 2/20/18	Tue 3/20/18	231SF
231	100%		Selection Committee Approves CM@R RFQ	0 days	Tue 3/20/18	Tue 3/20/18	
232	100%		Post Ad in Central Register (posting deadline 4pm)	0 days	Thu 3/15/18	Thu 3/15/18	
233	100%		CM@R RFQ Available for Distribution	10 days	Thu 3/22/18	Wed 4/4/18	231,228,232
234	100%		SBC Reviews PreQual Committee RFQ Recommendation	0 days	Tue 3/27/18	Tue 3/27/18	289
235	100%		CM Statement of Qualifications Due	0 days	Wed 4/4/18	Wed 4/4/18	233
236	100%		CM Selection Committee Reviews Qualifications	4 days	Thu 4/5/18	Tue 4/10/18	235
237	100%		CM Selection Committee Meets & Votes to PreQ	0 days	Tue 4/10/18	Tue 4/10/18	236
238	100%		SBC Mtg to accept CM selection committee shortlist	0 days	Tue 4/10/18	Tue 4/10/18	237,291
239	100%		OPM Distributes PreQualification Notices	1 day	Wed 4/11/18	Wed 4/11/18	238
240	**100%**	**8.3**	**CM@R Proposals Process**	**46 days**	**Thu 3/8/18**	**Thu 5/10/18**	
241	100%		Develop CM@R RFP/Contracts/Schedule/Req'ts	25 days	Thu 3/8/18	Wed 4/11/18	239FF
242	100%		District Legal Council Review Contracts/Gen. Cond's	20 days	Thu 3/15/18	Wed 4/11/18	241FF
243	100%		RFP Available (min. 2 weeks)	11 days	Wed 4/11/18	Wed 4/25/18	239SS
244	100%		CM Site Visit/Walkthrough	0 days	Fri 4/13/18	Fri 4/13/18	243SS+3 days
245	100%		CM Proposals Due	0 days	Wed 4/25/18	Wed 4/25/18	243
246	100%		CM Selection Committee Reviews & Ranks CM Proposals	5 days	Thu 4/26/18	Wed 5/2/18	245
247	100%		Interview CM Firms	2 days	Tue 5/1/18	Wed 5/2/18	
248	100%		SBC Finalizes CM Rankings	0 days	Thu 5/3/18	Thu 5/3/18	247,246
249	100%		Award PO to CM for Preconstruction	5 days	Fri 5/4/18	Thu 5/10/18	248
250	100%		CM Authorized for Preconstruction Activity	0 days	Thu 5/10/18	Thu 5/10/18	249
251	**0%**	**8.4**	**Prequalification of Trade Contractors**	**60 days**	**Mon 6/17/19**	**Mon 9/9/19**	
252	0%		RFQ/SOQ Process	60 days	Mon 6/17/19	Mon 9/9/19	181SF
253	0%	PR	PUBLIC RELATIONS (ALL TBD)	165 days	Wed 10/4/17	Wed 5/23/18	
254	100%	PR.1	PDP Community Meeting No. 1	0 days	Wed 10/4/17	Wed 10/4/17	
255	100%	PR.2	PDP Community Meeting No. 2	0 days	Wed 11/1/17	Wed 11/1/17	
256	100%	PR.3	PTO Meeting for MMES (Date TBD)	0 days	Fri 12/1/17	Fri 12/1/17	
257	100%	PR.4	Pancake Breakfast @ Essex Elementary	0 days	Sat 12/2/17	Sat 12/2/17	
258	100%	PR.5	Senior Luncheon	0 days	Sat 12/16/17	Sat 12/16/17	
259	100%	PR.6	PSR Community Meeting No. 3	0 days	Wed 1/31/18	Wed 1/31/18	
260	0%	PR.6	Comm. Meeting No. 4	0 days	Wed 5/23/18	Wed 5/23/18	
261	68%	CAL	SCHOOL CALENDAR	314 days	Mon 6/19/17	Fri 8/31/18	
262	100%	CAL.1	Summer Vacation 2017	55 days	Mon 6/19/17	Mon 9/4/17	
263	100%	CAL.2	Thanksgiving Holiday 2017	2 days	Thu 11/23/17	Fri 11/24/17	
264	100%	CAL.3	Christmas Vacation	6 days	Mon 12/25/17	Mon 1/1/18	
265	100%	CAL.4	February Vacation 2018	5 days	Mon 2/19/18	Fri 2/23/18	
266	100%	CAL.5	April Vacation 2018	5 days	Mon 4/16/18	Fri 4/20/18	
267	25%	CAL.6	Summer Vacation 2018	53 days	Wed 6/20/18	Fri 8/31/18	
268	0%	M	MEETINGS	333 days	Tue 3/28/17	Mon 7/9/18	
301	0%			1 day?	Fri 7/20/18	Fri 7/20/18	



Prepared By:
Dore and Whittier Management Partners, LLC

4.1.2.17 - LOCAL ACTIONS AND APPROVALS

- Agendas, Presentations, and Meeting Minutes (Refer to Appendix 4)
- Signed Local Actions & Approvals Certification

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4.1.2.17.1 – LOCAL ACTIONS AND APPROVALS

The Manchester-Essex Regional School District has undergone an extensive and completely transparent review process for the proposed building project. The material has been reviewed by variety of Committees following the District's open meeting guidelines and local meeting requirements.

Copies of Agendas, the Presentations, and Minutes from School Building Committee meetings and relevant School Committee meetings which have occurred during the Schematic Design (SD) phase can be found together within Appendix 4.

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MANCHESTER ESSEX REGIONAL SCHOOL DISTRICT
Office of the Superintendent
P.O. Box 1407
Manchester-by-the-Sea, MA 01944

Tel. (978) 526-4919
Fax: (978) 526-7585
beaudoinp@mersd.org

PAMELA BEAUDOIN
SUPERINTENDENT OF SCHOOLS

July 11, 2018

Ms. Diane Sullivan
Senior Capital Program Manager
40 Broad Street, Suite 500
Boston, Massachusetts 02109

Dear Ms. Sullivan:

The Manchester Memorial Elementary School School Building Committee ("SBC") has completed review of the Schematic Design Submittal for the elementary school new construction project and voted to approve and authorize the OPM to submit the Schematic Design related submittals to the MSBA for consideration on July 9, 2018. A certified copy of the SBC meeting minutes, which includes the specific language of the vote and the number of votes in favor, opposed and abstained, are attached.

The SBC held 10 meetings regarding the Manchester Memorial Elementary School project since the MSBA Board of Directors approved the District to proceed into Schematic Design on March 21, 2018.

- March 27, 2018 — CM Schedule/Process/Design Update
- April 10, 2018 — CM Procurement/Design Update
- April 26, 2018 — CM Procurement/Design Update
- May 1, 2018 — CM Interviews
- May 8, 2018 — CM Interviews
- May 22, 2018 — Design Update/Estimating and Value Management
- June 12, 2018 — Design Update/Review Cost Estimates
- June 19, 2018 — VE List Review
- June 26, 2018 — VE List Review
- July 9, 2018 — SD Submission Approval

In addition to the SBC meetings listed above, the District held three public meetings, which were posted in compliance with the Open Meeting Law, at which the Manchester Memorial Elementary school project was discussed.

- May 30, 2018 — Manchester Community Meeting No. 3
- May 16, 2018 — Budget Collaboration Meeting
- June 28, 2018 — Essex Community Meeting

The meeting presentation materials, meeting minutes and summary materials as they relate to the Manchester Elementary School project are available locally for public review at *www.mersd.org*.

The Manchester Essex Regional School District does not discriminate in its programs, activities or employment practices based on race, color, age, national origin, religion, gender, sexual orientation or disability.

To the best of my knowledge the meetings listed above comply with the requirements of the Open Meeting Law, M.G.L. c. 30A, §§18-25 and 940 CMR 29.00: Open Meetings.

The District has named Pam Beaudoin as the local point of contact to receive questions.

By signing this Local Action Certification, I hereby certify that, to the best of my knowledge and belief, that the information supplied by the District is true, complete and accurate.

By: Pam Beaudoin

Title: Chief Executive Officer

Date:

By signing this Local Action Certification, I hereby certify that, to the best of my knowledge and belief, that the information supplied by the District is true, complete and accurate.

By: Pam Beaudoin

Title: Superintendent of Schools

Date:

By signing this Local Action Certification, I hereby certify that, to the best of my knowledge and belief, that the information supplied by the District is true, complete and accurate.

By: Ann Cameron

Title: Chair of the School Committee

Date:

School Buil Committee
Preferred Schematic: RANK TALLY
Manchester Memorial Elementary School Project
Voted Upon in the 7/9/2018 SBC and SC Joint Meeting

MANAGEMENT PARTNERS, LLC

	SBC MEMBERS	FOR	AGAINST
1	Ann Cameron-Co Chair	X	
2	Caroline Weld Co Chair		
3	Pam Beaudoin	X	
4	Avi Urbas	X	
5	John Willis	X	
6	Andy Oldeman		
7	Lisa O'Donnell	X	
8	Remko Breuker	X	
9	Adam Zaiger	X	
10	Tyler Virden	X	
11	George Scharfe	X	
12	Gordon Brewster		
13	Charlie Hay	X	
12	Sarah Creighton	X	
13	Maggie Tomaiolo	X	
12	Jake Foster	X	

Totals: 13

Vote Certified By: Christina Shetterman

School Buil[illegible]ommittee
SBC Vote to Approve Schematic Design
Manchester Memorial Elementary School Project
Voted Upon in the 7/9/2018 SBC Meeting

MANAGEMENT PARTNERS, LLC

I, Sarah Creighton, make a motion to proceed with the Schematic Design Submission to the MSBA with a total project budget of $, 52,232,985 and to approve the 3011 sheet as presented on July 9th, 2018 to the MERSD SBC regarding the Manchester Memorial Elementary School Project.

I, C. Hay, second the motion.

VOTE:

FOR: 13 AGAINST: 0 ABSTAIN: —

Motion Pass or Fail: ✓

Certification of Vote: Ann O Cameron 7/9/18
Ann Cameron, SBC Co-Chair *Date*

7/9/18
Pam Beaudoin, Superintendent of Schools *Date*

School mittee

Schematic Design: SC ROLL CALL VOTE TO APPROVE SBC RECOMMENDATION

Manchester Memorial Elementary School Project

Vote Upon in 7/9/2018 SBC and SC Joint Meeting

MANAGEMENT PARTNERS, LLC

SBC MEMBERS		FOR	AGAINST	ABSTAIN
1	Pam Beaudoin	X		
2	Ann Cameron	X		
3	Shannon Erdmann	X		
4	Rachel Fitzgibbon	X		
5	Julie Riordan	X		
6	Avi Urbas	X		
7	Ken Warnock	X		
8	Caroline Weld			
9	Sarah Wolf	X		
	Totals	8		

not present

A. I, S Wolf make a motion to proceed with the Schematic Design Submission to the MSBA with a total project budget of $ 52,232,925 and to approve the 3011 sheet as presented on July 9th, 2018 to the MERSD SC regarding the Manchester Memorial Elementary School Project.recommended by the School Building Committee on 7/9/2018.

I, Shannon Erdmann second the motion.

VOTE:

FOR: AGAINST: ABSTAIN:

AUTHORIZATION - IF MOTION IS APPROVED

Ann O Cameron 7/9/18

Ann Cameron, SC Chair *Date*

7/9/18

Pam Beaudoin, Superintendent of Schools *Date*

School Building Committee
Preferred Schematic: Rank Tally
Manchester Memorial Elementary School Project
Voted Upon in the 7/9/2018 SBC and SC Joint Meeting

SBC MEMBERS		FOR	AGAINST
1	Ann Cameron-Co Chair	X	
2	Caroline Weld Co Chair		
3	Pam Beaudoin	X	
4	Avi Urbas	X	
5	John Willis	X	
6	Andy Oldeman		
7	Lisa O'Donnell	X	
8	Remko Breuker	X	
9	Adam Zaiger	X	
10	Tyler Virden	X	
11	George Scharfe	X	
12	Gordon Brewster		
13	Charlie Hay	X	
12	Sarah Creighton	X	
13	Maggie Tomaiolo	X	
12	Jake Foster	X	

Totals: 13

Vote Certified By: Christina Shetterman

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School Building Committee
Preferred Schematic: Rank Tally
Manchester Memorial Elementary School Project
Voted Upon in the 7/9/2018 SBC and SC Joint Meeting

I, _____, make a motion to proceed with the Schematic Design Submission to the MSBA with a total project budget of $, 52,332,935 and to approve the 3011 sheet as presented on July 9th, 2018 to the MERSD SBC regarding the Manchester Memorial Elementary School Project.

I, _____, second the motion.

VOTE:

FOR: AGAINST: ABSTAIN:

Motion Pass or Fail:

Certification of Vote: Ann O Cameron 7/9/18
Ann Cameron, SBC Co-Chair *Date*

7/9/18
Pam Beaudoin, Superintendent of Schools *Date*

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School Building Committee
Preferred Schematic: Rank Tally
Manchester Memorial Elementary School Project
Voted Upon in the 7/9/2018 SBC and SC Joint Meeting

	SBC MEMBERS	FOR	AGAINST	ABSTAIN
1	Pam Beaudoin	X		
2	Ann Cameron	X		
3	Shannon Erdmann	X		
4	Rachel Fitzgibbon	X		
5	Julie Riordan	X		
6	Avi Urbas	X		
7	Ken Warnock	X		
8	Caroline Weld			
9	Sarah Wolf	X		
	Totals	8		

not present

A. I, _____ make a motion to proceed with the Schematic Design Submission to the MSBA with a total project budget of $_____ and to approve the 3011 sheet as presented on July 9th, 2018 to the MERSD SC regarding the Manchester Memorial Elementary School Project.recommended by the School Building Committee on 7/9/2018.

I, _____ second the motion.

VOTE:

FOR: AGAINST: ABSTAIN:

AUTHORIZATION - IF MOTION IS APPROVED

Ann Cameron, SC Chair — Date: 7/9/18

Pam Beaudoin, Superintendent of Schools — Date: 7/9/18

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SCHEMATIC DESIGN PROJECT MANUAL

SECTION 4.1.3

4.1.3 – SCHEMATIC DESIGN PROJECT MANUAL

- Schematic Design Project Manual (Provided as a Standalone Volume)

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SCHEMATIC DESIGN DRAWINGS

SECTION 4.1.4

4.1.4 – SCHEMATIC DESIGN DRAWINGS

- Schematic Design Drawings (Provided Within a Standalone Volume)

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CONSULTANT REPORTS

SECTION 4.1.5

A1

4.1.5 – APPENDIX 1

- 4.1.5.1 – Hydrant Flow Test
- 4.1.5.2 – LEED Scorecard

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Fire Protection Services

Fire Protection Engineering
Hydraulics Specialists
Code Consultants

571 Maple Grove Road, P.O. Box 452
Madison, New Hampshire 03849
MA Office: 81 Laurel Street, Fairhaven, MA 02719
E-Mail: AJWOOD13@COMCAST.NET Phone: (508) 728-8374

May 22, 2018

Chuck Dam
Manchester-By-The-Sea Department Public Works
Via Email: damc@manchester.ma.us

RE: Fire Flow Test
Manchester Memorial Elementary School
43 Lincoln Street
Manchester-By-The-Sea, MA

Dear Chuck,

On May 9, 2018 a hydrant flow test was completed to determine fire flow capacity for the Manchester Memorial Elementary School located at 43 Lincoln Street in, Manchester-By-The-Sea, Massachusetts. It is proposed that a new school be constructed on the site of the existing elementary school and a new fire service connection will be tied into the 12 inch main in Summer Street.

Using standard fire protection engineering procedure, the flow was recorded at the hydrant located on the driveway of the existing school, directly adjacent to Summer Street. This hydrant is connected to the 8 inch main that currently services the school, however it is located within several feet of the connection with the 12 inch Summer Street main. The static and residual pressures were measured at the hydrant located on Summer Street at the intersection with Brook Street. The flow was maintained through two Little Hose Monsters with 1¾" grooved inserts. See the sketch on the following page for further clarification. The results of the test are summarized below.

Test Time: 11:30 AM
Static Pressure: 101 psi
Residual Pressure: 88 psi
Pitotless Nozzle Readings of the two Little Hose Monsters: 40 psi and 48 psi
Total Flow: 1,387 gpm

Please let us know if you should have any questions.

Very truly yours,

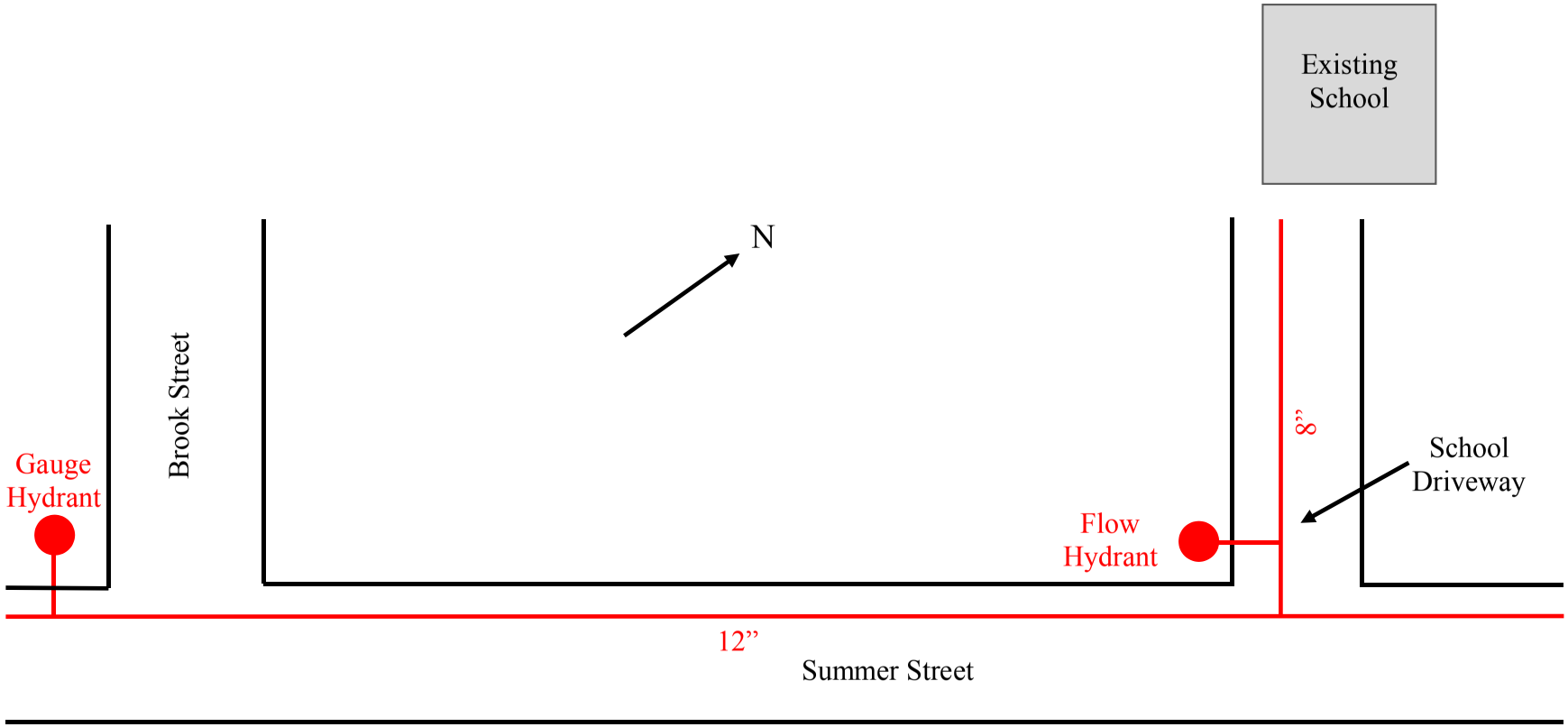
Alycia J. Wood

Alycia J. Wood, P.E.

Cc: Garcia Galuska & DeSousa, Inc.

Fire Flow Test
Manchester Memorial Elementary School
May 22, 2018

Diagram of the Hydrant Locations Used for Flow Testing



Integrative Process							STATUS
Yes	?+	?-	No	Available	Credit	Description	
1	0	0	0	1	Number of points		
						PROJECT BASICS	
						elementary school, green community, potential interest to try for more than silver level, Manchester Memorial Elementary 43 Lincoln Street, Manchester by the Sea, Massachusetts, 2018-01-17_Per PHASE I ENVIRONMENTAL SITE ASSESSMENT dated October 2017, The Site includes 11.31 acres of land. The Site contains one main 66,573 square foot school building constructed in the 1951 with two additions, one in 1954 and 1965.	
1				1	Credit 1	Integrative Process	
						Beginning in pre-design and continuing throughout the design phases, identify and use opportunities to achieve synergies across disciplines and building systems. Use the analyses described below to inform the owner's project requirements (OPR), basis of design (BOD), design documents, and construction documents.	Documentation : Integrative Process worksheet (energy and water analysis tabs)
						Energy-Related Systems DISCOVERY Perform a preliminary "simple box" energy modeling analysis before the completion of schematic design that explores how to reduce energy loads in the building and accomplish related sustainability goals by questioning default assumptions.	Credit attempted - required for Silver level! Recommended action - project to perform additional round of energy modeling
						Site conditions. *- - Assess shading, exterior lighting, hardscape, landscaping, and adjacent site conditions.* *·· Massing and orientation. Assess how massing and orientation affect HVAC sizing, energy consumption, lighting, and renewable energy opportunities.* *·· Basic envelope attributes. Assess insulation values, window-to-wall ratios, glazing characteristics, shading, and window operability.* *·· Lighting levels. Assess interior surface reflectance values and lighting levels in occupied spaces.* *·· Thermal comfort ranges. Assess thermal comfort range options.* *·· Plug and process load needs. Assess reducing plug and process loads through programmatic solutions (e.g., equipment and purchasing policies, layout options).* *·· Programmatic and operational parameters. Assess multifunctioning spaces, operating schedules, space allotment per person, teleworking, reduction of building area, and anticipated operations and maintenance*	2018-01-17_please confirm that the entry level model will be prepared- needs to be completed during schematics.
							2018-04-27_preliminary model and life-cycle study completed by GGD - 28% better than ASHRAE.

Energy-Related Systems Implementation Document how the above analysis informed design and building form decisions in the project's OPR and BOD and the eventual design of the project,	
Indoor water demand. Assess flow and flush fixture design case demand volumes, calculated in accordance with WE Prerequisite Indoor Water-Use Reduction. *·· Outdoor water demand. Assess landscape irrigation design case demand volume calculated in accordance with WE Credit Outdoor Water-Use Reduction.* *·· Process water demand. Assess kitchen, laundry, cooling tower, and other equipment demand volumes, as applicable.* *·· Supply sources. Assess all potential nonpotable water supply source volumes, such as on-site rainwater and graywater, municipally supplied nonpotable water, and HVAC equipment condensate.*	
AND Water-Related Systems DISCOVERY Perform a preliminary water budget analysis before the completion of schematic design that explores how to reduce potable water loads in the building and accomplish related sustainability goals. Assess and estimate the project's potential nonpotable water supply sources and water demand volumes.	Credit attempted - required for Silver level! Recommended action - project to prepare water budget during schematic design
	2018-04-27_Please provide the number of building occupants, please separate K-3, 4 and up, teachers, staff, part-time staff. VvS will perform water analysis.
Water-Related Systems Implementation Document how the above analysis informed building and site design decisions in the project's OPR and BOD.	

LOCATION AND TRANSPORTATION							STATUS
Yes	?+	?-	No	Available	Credit	Description	
4	2	0	9	15	Number of points		
			15	15	Credit	LEED for Neighborhood Development Location	
						Locate the project within the boundary of a development certified under LEED for Neighborhood Development (Stage 2 or Stage 3 under the Pilot or 2009 rating systems, Certified Plan or Certified Project under the LEED v4 rating system). Projects attempting this credit are not eligible to earn points under other Location and Transportation credits.	The project is not located within the LEED-ND development
1				1	Credit	Sensitive Land Protection	
						Option 1. Locate the development footprint on land that has been previously developed. OR Option 2. Locate the development footprint on land that has been previously developed or that does not meet the following criteria for sensitive land: ·· Prime farmland. Prime farmland, unique farmland, or farmland of statewide or local importance as defined by the U.S. Code of Federal Regulations, Title 7, Volume 6, Parts 400 to 699, Section 657.5 (or local equivalent for projects outside the U.S.) and identified in a state Natural Resources Conservation Service soil survey (or local equivalent for projects outside the U.S.). ·· Floodplains. A flood hazard area shown on a legally adopted flood hazard map or otherwise legally designated by the local jurisdiction or the state. For projects in places without legally adopted flood hazard maps or legal designations, locate on a site that is entirely outsidwe any floodplain subject to a 1% or greater chance of flooding in any given year	2018-01-17_the proposed project location is on the existing school grounds - either renovation, addition or replacement new construction
						·· Habitat. Land identified as habitat for the following: °° species listed as threatened or endangered under the U.S. Endangered Species Act or the state's endangered species act, or °° species or ecological communities classified by NatureServe as GH (possibly extinct), G1 (critically imperiled), or G2 (imperiled), or °° species listed as threatened or endangered specifies under local equivalent standards (for projects outside the U.S.) that are not covered by NatureServe data. ·· Water bodies. Areas on or within 100 feet (30 meters) of a water body, except for minor improvements. ·· Wetlands. Areas on or within 50 feet (15 meters) of a wetland, except for minor improvements.	

						Minor improvements within the wetland and water body buffers may be undertaken to enhance appreciation of them, provided such facilities are open all building users.	
			2	2	Credit	High-Priority Site	
						Option 1. Historic District (1 point BD+C except Core and Shell, 2 points Core and Shell) Locate the project on an infill location in a historic district.	2018-01-17_the site is not located within Manchester Historic District
						OR Option 2. Priority Designation (1 point BD+C except Core and Shell, 2 points Core and Shell). Locate the project on one of the following: ·· a site listed by the EPA National Priorities List; ·· a Federal Empowerment Zone site; ·· a Federal Enterprise Community site; ·· a Federal Renewal Community site; ·· a Department of the Treasury Community Development Financial Institutions Fund Qualified Low-Income Community (a subset of the New Markets Tax Credit Program); ·· a site in a U.S. Department of Housing and Urban Development's Qualified Census Tract (QCT) or Difficult Development Area (DDA); or ·· a local equivalent program administered at the national level for projects outside the U.S	
						OR Option 3. Brownfield Remediation (2 points BD+C except Core and Shell, 3 points Core and Shell) Locate on a brownfield where soil or groundwater contamination has been identified, and where the local, state, or national authority (whichever has jurisdiction) requires its remediation. Perform remediation to the satisfaction of that authority.	2018-01-17_Per PHASE I ENVIRONMENTAL SITE ASSESSMENT dated October 2017, potential contamination is present: "No CRECs were identified during the assessment. RECs and HRECs were identified during the assessment. They were: • Potential contamination from the two 10,000-gallon fuel oil underground storage tanks removed in 1991. This represents a HREC. • Potential Contamination from the old transformer removed from the electric room in the basement. It is unknown if polychlorinated biphenyls (PCBs) were in the transformer fluids. This represents a HREC.
							• Potential contamination from the exterior pad mounted transformer. It is unknown if PCBs are in the transformer fluids. • Potential dumping of ash from incinerator. • Potential asbestos debris within the dirt floor portion of the crawlspace. ...It is recommended that an ACM sampling and abatement plan be implemented prior to demolition, renovation or construction activities at the subject property"
1	1		3	5	Credit	Surrounding Density and Diverse Uses	
						Option 1. Surrounding Density (2–3 points BD+C except Core and Shell, 2-4 points Core and Shell). Locate on a site whose surrounding existing density within a 1/4 mile (400-meter) radius of the project boundary meets the values in Table 1.	

						and/OR Option 2. Diverse Uses (1–2 points) Construct or renovate a building or a space within a building such that the building's main entrance is within a 1/2 mile (800-meter) walking distance of the main entrance of four to seven (1 point) or eight or more (2 points) existing and publicly available diverse uses (listed in Appendix 1). ·· The counted uses must represent at least three of the five categories, exclusive of the building's primary use.	2018-01-17_project is in proximity to 10 diverse uses in 3 categories. Please note the distance is analyzed from the current MMES entrance. Schemes meeting requirement: R-1, AR-2, AR-4 (removed), N-8 (removed), most likely N-1, TBD: N-3, N-9
							Credit attempted - required for Silver level! Recommended action - designate walking/biking paths troughout the selected site to allow pedestrian and bicycle access to the services surrounding the site.
							2018-04-27_selected option main entrance is in proximity to 9 diverse uses in 3 categories: SERVICES - People's United Bank–Bank; Nor'east Cleaners; ATM; COMMUNITY-SERVING RETAIL - Essen – Bakery; Manchester Gas and Service; Coach Field Playground; CIVIC AND COMMUNITY FACILITIES - Tara Montessori School; Sacred Heart and St. John the Baptist; Sophia Karabatsos Martz – Dentist ; Additional services available in the downtown area, however a walking path within site needs to be created
			4	4	Credit	Access to Quality Transit	
						SCHOOLS Option 1. Transit-Served Location (1–4 points) Locate any functional entry of the project within a 1/4-mile (400-meter) walking distance of existing or planned bus, streetcar, or rideshare stops, or within a 1/2-mile (800-meter) walking distance of existing or planned bus rapid transit stops, light or heavy rail stations, commuter rail stations or commuter ferry terminals. The transit service at those stops and stations must meet the minimums listed in Tables 1 and 2. Planned stops and stations may count if they are sited, funded, and under construction by the date of the certificate of occupancy and are complete within 24 months of that date.	2018-01-18_commuter rail within the required 1/2 mile distance - only 15 rides per day - not sufficient to meet credit requirements. Schemes meeting requirement: R-1, AR-2, AR-4 (removed), N-8 (removed), most likely N-1, TBD: N-3, N-9. Not sufficient rides per day. Project needs to pursue Option 2
						Table 2. Minimum daily transit service for projects with commuter rail or ferry service only Weekday trips 24 Points 1 Weekday trips 40 Points 2 Weekday trips 60 Points 3	Recommended action - coordinate with the transportation authority to provide a bus stop providing sufficient service frequency within 1/4mile walking distance from the school. If bus service added, the transport frequency would have to be increased to service minimums in Table 1 (levels most likely not feasible for a suburban location)

						Table 1. Minimum daily transit service for projects with multiple transit types (bus, streetcar, rail, or ferry) Weekday Trips 72 Weekend 40 Trips Points 1 Weekday Trips 144 Weekend 108 Trips Points 2 Weekday Trips 360 Weekend 216 Trips Points 3	
						OR Option 2. Pedestrian Access (1–4 points) Show that the project has an attendance boundary such that the specified percentages of students live within no more than a 3/4-mile (1200-meter) walking distance (for grades 8 and below, or ages 14 and below), and 1 1/2-mile (2400-meter) walking distance (for grades 9 and above or ages 15 and above) of a functional entry of a school building. Points are awarded according to Table 3. 50% 1 60% 2 70% or more 4	2018-01-17_Please provide information about the percentage of students walking to school, taking the bus, bus routes and schedules, map of neighborhoods served by the school
						In addition, locate the project on a site that allows pedestrian access to the site from all residential neighborhoods that house the planned student population	
1				1	Credit	Bicycle Facilities	
						SCHOOLS Bicycle Network Design or locate the project such that a functional entry and/or bicycle storage is within a 200-yard (180-meter) walking distance or bicycling distance of a bicycle network that connects to at least one of the following: ·· at least 10 diverse uses (see Appendix 1); or ·· a bus rapid transit stop, light or heavy rail station, commuter rail station, or ferry terminal. All destinations must be within a 3-mile (4800-meter) bicycling distance of the project boundary. Provide dedicated bicycle lanes that extend at least to the end of the school property with no barriers (e.g., fences) on school property. Planned bicycle trails or lanes may be counted if they are fully funded by the date of the certificate of occupancy and are scheduled for completion within one year of that date.	Credit attempted - required for Silver level! Recommended action - coordinate with the community to designate bicycle network around the selected site to meet LEED requirement.
						Bicycle Storage and Shower Rooms Provide long-term bicycle storage for at least 5% of all regular building occupants (excluding students grade 3 and younger), but no fewer than four storage spaces per building. Provide at least one on-site shower with changing facility for the first 100 regular building occupants (excluding students) and one additional shower for every 150 regular building occupants (excluding students) thereafter.	2018-01-17_please provide student population per scheme, project to provide bicycle parking, showers and changing facilities as well as on-property bike paths connecting to bicycle network

						Long-term storage spaces must be easily accessible to occupants and be within 100 feet (30 meters) walking distance of any main entrance. Bicycle storage capacity may not be double-counted: storage that is fully allocated to the occupants of nonproject facilities cannot also serve project occupants.	2018-07-11_per Preferred Schematic Report the proposed enrollment is as follows:335 students in grades K-5, plus approximately 20-30 prekindergarten students. Please provide number of staff and student breakdown by grade. Showers and bicycle storage spaces to be provided.
	1			1	Credit	Reduced Parking Footprint	
						Do not exceed the minimum local code requirements for parking capacity. Provide parking capacity that is a percentage reduction below the base ratios recommended by the Parking Consultants Council, as shown in the Institute of Transportation Engineers' Transportation Planning Handbook, 3rd edition, Tables 18-2 through 18-4.	2018-01-17_please provide parking zoning requirement and planned parking
						Base ratio for elementary school: Higher of 0.2/auditorium or gym seat, or 0.25/student	2018-05-18_Please provide school population and auditorium/gym seating.
						Case 1. Baseline Location Projects that have not earned points under LT Credit Surrounding Density and Diverse Uses or LT Credit Access to Quality Transit must achieve a 20% reduction from the base ratios.	2018-07-11_Based on the planned enrollment from the Preferred Schematic Report of 365, the baseline ratio equals 92 spaces. With the project earning 1 point under Surrounding Density and Diverse Uses, the project needs to ensure 40% reduction = 54 max parning spaces. To be confirmed with the community. (also to be confirmed with the auditorium seating - may allow for higher number of spaces).
						Case 2. Dense and/or Transit-Served Location Projects earning 1 or more points under either LT Credit Surrounding Density and Diverse Uses or LT Credit Access to Quality Transit must achieve a 40% reduction from the base ratios.	Credit recommended to pursue for safe LEED Silver level!
						For All Projects The credit calculations must include all existing and new off-street parking spaces that are leased or owned by the project, including parking that is outside the project boundary but is used by the project. On-street parking in public rights-of-way is excluded from these calculations. For projects that use pooled parking, calculate compliance using the project's share of the pooled parking. Provide preferred parking for carpools for 5% of the total parking spaces after reductions are made from the base ratios. Preferred parking is not required if no off-street parking is provided. Mixed-use projects should determine the percentage reduction by first aggregating the parking amount of each use (as specified by the base ratios) and then determining the percentage reduction from the aggregated parking amount. Do not count parking spaces for fleet and inventory vehicles unless these vehicles are regularly used by employees for commuting as well as business purposes.	

1				1	Credit	Green Vehicles	
						Schools Option 1. Green passenger vehicles Designate 5% of all parking spaces used by the project as preferred parking for green vehicles. Clearly identify and enforce for sole use by green vehicles. Distribute preferred parking spaces proportionally among various parking sections (e.g. between short-term and long-term spaces). Green vehicles must achieve a minimum green score of 45 on the American Council for an Energy Efficient Economy (ACEEE) annual vehicle rating guide (or local equivalent for projects outside the U.S.)	2018-01-17_Project to designate parking for green vehicles.
						A discounted parking rate of at least 20% for green vehicles is an acceptable substitute for preferred parking spaces. The discounted rate must be publicly posted at the entrance of the parking area and permanently available to every qualifying vehicle.	
						In addition to preferred parking for green vehicles, meet one of the following two options for alternative-fuel fueling stations: Path 1. Electric Vehicle Charging Install electrical vehicle supply equipment (EVSE) in 2% of all parking spaces used by the project. Clearly identify and reserve these spaces for the sole use by plug-in electric vehicles. EVSE parking spaces must be provided in addition to preferred parking spaces for green vehicles. The EVSE must: ·· Provide a Level 2 charging capacity (208 – 240 volts) or greater. ·· Comply with the relevant regional or local standard for electrical connectors, such as SAE Surface Vehicle Recommended Practice J1772, SAE Electric Vehicle Conductive Charge Coupler or IEC 62196 of the International Electrotechnical Commission for projects outside the U.S. ·· Be networked or internet addressable and be capable of participating in a demand-response program or timeof-use pricing to encourage off-peak charging.	2018-01-17_We recommend installation of a Level 2 charging station

OR Path 2. Liquid, gas, or battery facilities Install liquid or gas alternative fuel fueling facilities or a battery switching station capable of refueling a number of vehicles per day equal to at least 2% of all parking spaces. OR Option 2. Green buses and school-owned vehicles Develop and implement a plan for every bus serving the school to meet the following emissions standards within seven years of the building certificate of occupancy: ·· nitrogen oxide (NOx) emissions of 0.50 grams or less per brake horsepower-hour; and ·· particulate matter emissions of 0.01 grams or less per brake horsepower-hour.	2018-01-18_please provide information about the school fleet
Emission standards must be met for each bus and not by an average of the entire fleet serving the school. Develop and implement a plan for 100% of all other (non-bus) vehicles owned or leased to serve the school to be green vehicles. Green vehicles must achieve a minimum green score of 45 on the American Council for an Energy Efficient Economy (ACEEE) annual vehicle rating guide (or local equivalent for projects outside the U.S).	

SUSTAINABLE SITES							STATUS
Yes	?+	?-	No	Available	Credit	Description	
6	4	1	1	12	Number of points		
				Required	Prerequisite	Construction Activity Pollution Prevention	
						Implement an erosion and sedimentation control plan.	GC - please submit the construction site plan and the planned construction schedule - prior to the beginning of construction.
						Create and implement an erosion and sedimentation control plan for all construction activities associated with the project. The plan must conform to the erosion and sedimentation requirements of the 2012 U.S. Environmental Protection Agency (EPA) Construction General Permit (CGP) or local equivalent, whichever is more stringent. Projects must apply the CGP regardless of size. The plan must describe the measures implemented.	
				Required	Prerequisite	Environmental Site Assessment	
						Conduct a Phase I Environmental Site Assessment as described in ASTM E1527–05 (or a local equivalent) to determine whether environmental contamination exists at the site. If contamination is suspected, conduct a Phase II Environmental Site Assessment as described in ASTM E1903–11 (or a local equivalent). If a site is contaminated, remediate the site to meet local, state, or national environmental protection agency region residential (unrestricted) standards, whichever are most stringent.	2018-01-17_phase I assessment done. Due to expected contamination, phase II assessment to be ordered.
							2018-01-17_Per PHASE I ENVIRONMENTAL SITE ASSESSMENT dated October 2017, potential contamination is present: "No CRECs were identified during the assessment. RECs and HRECs were identified during the assessment. They were: • Potential contamination from the two 10,000-gallon fuel oil underground storage tanks removed in 1991. This represents a HREC. • Potential Contamination from the old transformer removed from the electric room in the basement. It is unknown if polychlorinated biphenyls (PCBs) were in the transformer fluids. This represents a HREC.
							• Potential contamination from the exterior pad mounted transformer. It is unknown if PCBs are in the transformer fluids. • Potential dumping of ash from incinerator. • Potential asbestos debris within the dirt floor portion of the crawlspace. ...It is recommended that an ACM sampling and abatement plan be implemented prior to demolition, renovation or construction activities at the subject property"

1				1	Credit	Site Assessment
						Complete and document a site survey or assessment that includes the following information: ·· Topography. Contour mapping, unique topographic features, slope stability risks. ·· Hydrology. Flood hazard areas, delineated wetlands, lakes, streams, shorelines, rainwater collection and reuse opportunities, TR-55 initial water storage capacity of the site (or local equivalent for projects outside the U.S.). ·· Climate. Solar exposure, heat island effect potential, seasonal sun angles, prevailing winds, monthly precipitation and temperature ranges. ·· Vegetation. Primary vegetation types, greenfield area, significant tree mapping, threatened or endangered species, unique habitat, invasive plant species.
						·· Soils. Natural Resources Conservation Service soils delineation, U.S. Department of Agriculture prime farmland, healthy soils, previous development, disturbed soils (local equivalent standards may be used for projects outside the U.S.). ·· Human use. Views, adjacent transportation infrastructure, adjacent properties, construction materials with existing recycle or reuse potential. ·· Human health effects. Proximity of vulnerable populations, adjacent physical activity opportunities, proximity to major sources of air pollution.
						Land within 100 feet (30 meters) of a wetland listed as being of high ecological value by the relevant local, regional, state, provincial or federal government agency. Renovation of an existing building is allowed if construction impact is limited to the existing development footprint. n Previously undeveloped land that is within 50 feet (15 meters) of a water body, defined as seas, lakes, rivers, streams and tributaries that supports that supports or could support aquatic life, recreation or industrial use, as determined by a professional biologist. n Land that prior to acquisition for the project was public parkland except for projects which are operated by and support the function of the park.
	2			2	Credit	Site Development— Protect or Restore Habitat
						Preserve and protect from all development and construction activity 40% of the greenfield area on the site (if such areas exist). AND

Option 1. On-Site Restoration (2 points except Healthcare, 1 point Healthcare) Using native or adapted vegetation, restore 30% (including the building footprint) of all portions of the site identified as previously developed. Projects that achieve a density of 1.5 floor-area ratio may include vegetated roof surfaces in this calculation if the plants are native or adapted, provide habitat, and promote biodiversity. Restore all disturbed or compacted soils that will be revegetated within the project's development footprint to meet the following requirements:	2018-01-17_please provide predevelopment site plan in cad.
·· Soils (imported and in situ) must be reused for functions comparable to their original function. ·· Imported topsoils or soil blends designed to serve as topsoil may not include the following: °° soils defined regionally by the Natural Resources Conservation Service web soil survey (or local equivalent for projects outside the U.S.) as prime farmland, unique farmland, or farmland of statewide or local importance; or °° soils from other greenfield sites, unless those soils are a byproduct of a construction process.	
Project teams may exclude vegetated landscape areas that are constructed to accommodate rainwater infiltration from the vegetation and soils requirements, provided all such rainwater infiltration areas are treated consistently with SS Credit Rainwater Management.	
OR Option 2. Financial Support (1 point) Provide financial support equivalent to at least $0.40 per square foot (US$4 per square meter) for the total site area (including the building footprint). Financial support must be provided to a nationally or locally recognized land trust or conservation organization within the same EPA Level III ecoregion or the project's state (or within 100 miles of the project [160 kilometers] for projects outside the U.S.). For U.S. projects, the land trust must be accredited by the Land Trust Alliance.	

1				1	Credit	Open Space	
						Provide outdoor space greater than or equal to 30% of the total site area (including building footprint). A minimum of 25% of that outdoor space must be vegetated (turf grass does not count as vegetation) or have overhead vegetated canopy. The outdoor space must be physically accessible and be one or more of the following: ·· a pedestrian-oriented paving or turf area with physical site elements that accommodate outdoor social activities; ·· a recreation-oriented paving or turf area with physical site elements that encourage physical activity; ·· a garden space with a diversity of vegetation types and species that provide opportunities for year-round visual interest; ·· a garden space dedicated to community gardens or urban food production;	2018-01-17_schemes provide 53-64% vegetated area and recreation-oriented pedestrian hardscape 8-13%. Landscape design needs to be closely coordinated with VvS to meet credit requirements.
						·· preserved or created habitat that meets the criteria of SS Credit Site Development—Protect or Restore Habitat and also includes elements of human interaction. For projects that achieve a density of 1.5 floor-area ratio (FAR), and are physically accessible, extensive or intensive vegetated roofs can be used toward the minimum 25% vegetation requirement, and qualifying roof-based physically accessible paving areas can be used toward credit compliance. Wetlands or naturally designed ponds may count as open space if the side slope gradients average 1:4 (vertical : horizontal) or less and are vegetated.	
	2	1		3	Credit	Rainwater Management	
						Option 1. Percentile of Rainfall Events Path 1. 95th Percentile (2 points except Healthcare, 1 point Healthcare) In a manner best replicating natural site hydrology processes, manage on site the runoff from the developed site for the 95th percentile of regional or local rainfall events using low-impact development (LID) and green infrastructure. Use daily rainfall data and the methodology in the U.S. Environmental Protection Agency (EPA) Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act to determine the 95th percentile amount.	Install a bioswale, constructed wetland, raingarden,and/or a high efficiency separator.

						or Path 2. 98th Percentile (3 points except Healthcare, 2 points Healthcare) Achieve Path 1 but for the 98th percentile of regional or local rainfall events, using LID and green infrastructure.	Credit attempted - recommended 2 points minimum
						or Path 3. Zero Lot Line projects only—85th Percentile (3 points except Healthcare, 2 points Healthcare) The following requirement applies to zero lot line projects in urban areas with a minimum density of 1.5 FAR. In a manner best replicating natural site hydrology processes, manage on site the runoff from the developed site for the 85th percentile of regional or local rainfall events, using LID and green infrastructure.	
						OR Option 2. Natural Land Cover Conditions (3 points except Healthcare, 2 points Healthcare) Manage on site the annual increase in runoff volume from the natural land cover condition to the postdeveloped condition.	
2				2	Credit	Heat Island Reduction Option 1. Nonroof and Roof	
						Use any combination of the following strategies. Nonroof Measures ·· Use the existing plant material or install plants that provide shade over paving areas (including playgrounds) on the site within 10 years of planting. Install vegetated planters. Plants must be in place at the time of occupancy permit and cannot include artificial turf. ·· Provide shade with structures covered by energy generation systems, such as solar thermal collectors, photovoltaics, and wind turbines. ·· Provide shade with architectural devices or structures that have a three-year aged solar reflectance (SR) value of at least 0.28. If three-year aged value information is not available, use materials with an initial SR of at least 0.33 at installation.	Recommended to use light colored hardscape materials for walkways, plazas and drives. White and/or green roof. Options to discuss: open grid pavers ; pervious surface for bus loop; concrete pavers
						·· Provide shade with vegetated structures. ·· Use paving materials with a three-year aged solar reflectance (SR) value of at least 0.28. If three-year aged value information is not available, use materials with an initial SR of at least 0.33 at installation. ·· Use an open-grid pavement system (at least 50% unbound). High-Reflectance Roof Use roofing materials that have an SRI equal to or greater than the values in Table 1. Meet the three-year aged SRI value. If three-year aged value information is not available, use materials that meet the initial SRI value.	
						High-Reflectance Roof SRI - 82 (3 year - 64) low sloped	
						Vegetated Roof Install a vegetated roof.	2018-04-26_green and white roof provided. Areas need to be checked once design progresses

						OR Option 2. Parking under Cover (1 point) Place a minimum of 75% of parking spaces under cover. Any roof used to shade or cover parking must (1) have a three-year aged SRI of at least 32 (if three-year aged value information is not available, use materials with an initial SRI of at least 39 at installation), (2) be a vegetated roof, or (3) be covered by energy generation systems, such as solar thermal collectors, photovoltaics, and wind turbines	
1				1	Credit	Light Pollution Reduction	
						Meet uplight and light trespass requirements, using either the backlight-uplight-glare (BUG) method (Option 1) or the calculation method (Option 2). Projects may use different options for uplight and light trespass. Meet these requirements for all exterior luminaires located inside the project boundary (except those listed under "Exemptions"), based on the following: ·· the photometric characteristics of each luminaire when mounted in the same orientation and tilt as specified in the project design; and ·· the lighting zone of the project property (at the time construction begins). Classify the project under one lighting zone using the lighting zones definitions provided in the Illuminating Engineering Society and International Dark Sky Association (IES/IDA) Model Lighting Ordinance (MLO) User Guide. Additionally, meet the internally illuminated signage requirement	VvS | Architects & Consultants will review the selection of exterior lighting fixtures to meet the requirements of this credit. Lighting fixtures need to be full cut-off. Please provide draft exterior lighting plan, photometric plan and fixture cut sheets for verification.
						The lighting boundary is located at the property lines of the property, or properties, that the LEED project occupies. *The lighting boundary can be modified under the following conditions:* *·· When the property line is adjacent to a public area that is a walkway, bikeway, plaza, or parking lot, the lighting boundary may be moved to 5 feet (1.5 meters) beyond the property line.* *·· When the property line is adjacent to a public street, alley, or transit corridor, the lighting boundary may be moved to the center line of that street, alley, or corridor.* *·· When there are additional properties owned by the same entity that are contiguous to the property, or properties, that the LEED project is within and have the same or higher MLO lighting zone designation as the LEED project, the lighting boundary may be expanded to include those properties.*	
						Orient all luminaires less than two mounting heights from the lighting boundary such that the backlight points toward the nearest lighting boundary line. Building-mounted luminaires with the backlight oriented toward the building are exempt from the backlight rating requirement	

			1	1	Credit	Site Master Plan	
						The project must achieve at least four of the following six credits, using the associated calculation methods. The achieved credits must then be recalculated using the data from the master plan. ·· LT Credit: High Priority Site ·· SS Credit: Site Development—Protect or Restore Habitat ·· SS Credit: Open Space ·· SS Credit: Rainwater Management ·· SS Credit: Heat Island Reduction ·· SS Credit: Light Pollution Reduction A site master plan for the school must be developed in collaboration with school authorities. Previous sustainable site design measures should be considered in all master-planning efforts so that existing infrastructure is retained whenever possible. The master plan must therefore include current construction activity plus future construction (within the building's lifespan) that affects the site. The master plan development footprint must also include parking, paving, and utilities. Projects where no future development is planned are not eligible for this credit.	The project does not plan future development.
1				1	Credit	Joint Use of Facilities	
						Option 1. Make Building Space Open to the General Public (1 point) In collaboration with the school authorities, ensure that at least three of the following types of spaces in the school are accessible to and available for shared use by the general public: ·· auditorium; ·· gymnasium; ·· cafeteria; ·· one or more classrooms; ·· playing fields and stadiums; and ·· joint parking. Provide access to toilets in joint-use areas after normal school hours.	Credit attempted - required for Silver level! Recommended action - school district to decide which option will best suit the school/community needs
						OR Option 2. Contract with Specific Organizations to Share Building Space (1 point) In collaboration with the school authorities, contract with community or other organizations to provide at least two types of dedicated-use spaces in the building, such as the following: ·· commercial office; ·· health clinic; ·· community service centers (provided by state or local offices); ·· police office; ·· library or media center; ·· parking lot; and ·· one or more commercial businesses. Provide access to toilets in joint-use areas after normal school hours	

OR Option 3. Use Shared Space Owned by Other Organizations (1 point)

In collaboration with the school authorities, ensure that at least two of the following six types of spaces that are owned by other organizations or agencies are accessible to students:

·· auditorium;
·· gymnasium;
·· cafeteria;
·· one or more classrooms;
·· swimming pool; and
·· playing fields and stadiums.

Provide direct pedestrian access to these spaces from the school. In addition, provide signed joint-use agreements with the other organizations or agencies that stipulate how these spaces will be shared.

WATER EFFICIENCY							STATUS
Yes	?+	?-	No	Available	Credit	Description	
6	1	1	4	12	Number of points		
					Required	Prerequisite	Outdoor Water Use Reduction
							Reduce outdoor water use through one of the following options. Nonvegetated surfaces, such as permeable or impermeable pavement, should be excluded from the landscape area calculations. Athletic fields and playgrounds (if vegetated) and food gardens may be included or excluded at the project team's discretion.
							Option 1. No Irrigation Required Show that the landscape does not require a permanent irrigation system beyond a maximum two-year establishment period.
							OR Option 2. Reduced Irrigation Reduce the project's landscape water requirement by at least 30% from the calculated baseline for the site's peak watering month. Reductions must be achieved through plant species selection and irrigation system efficiency, as calculated by the Environmental Protection Agency (EPA) WaterSense Water Budget Tool.
					Required	Prerequisite	Indoor Water Use Reduction
							Building Water Use For the fixtures and fittings listed in Table 1, as applicable to the project scope, reduce aggregate water consumption by 20% from the baseline. Base calculations on the volumes and flow rates shown in Table 1. All newly installed toilets, urinals, private lavatory faucets, and showerheads that are eligible for labeling must be WaterSense labeled (or a local equivalent for projects outside the U.S.).
							Appliance and Process Water Use Install appliances, equipment, and processes within the project scope that meet the requirements listed in the reference guide tables.

<u>Recommendations</u>: toilets 0.4/0.8gpf; urinals: 0.26gpf; showers 1.32gpm, kitchen faucets 0.9gpm; faucets 0.35gpm under pressure 414kPa; pressure for showers: 551kPa. VvS will advise the project team on the selection of plumbing fixtures.

2018-01-17_per plumbing narrative: 1.28gpf toilets, 0.13gpf urinals, 0.35gpm metering lavatory faucets, 0.5gpm sinks, PLEASE NOTE, CLASSROOM SINKS TO ALSO BE 0.35GPM METERING FAUCETS, pre-rinse spray to be 1.3gpm, showers to be 1.5gpm

2018-01-17_the project does not intend to irrigate

						Appliance Requirement Residential clothes washers ENERGY STAR or performance equivalent Commercial clothes washers CEE Tier 3A Residential dishwashers (standard and compact) ENERGY STAR or performance equivalent Prerinse spray valves ≤ 1.3 gpm (4.9 lpm) Ice machine ENERGY STAR or performance equivalent and use either air-cooled or closed-loop cooling, such as chilled or condenser water system	
						Process Requirement Heat rejection and cooling No once-through cooling with potable water for any equipment or appliances that reject heat Cooling towers and evaporative condensers Equip with • makeup water meters • conductivity controllers and overflow alarms • efficient drift eliminators that reduce drift to maximum of 0.002% of recirculated water volume for counterflow towers and 0.005% of recirculated water flow for cross-flow towers	
				Required	Prerequisite	Building-Level Water Metering	
						Building Water Use Install permanent water meters that measure the total potable water use for the building and associated grounds. Meter data must be compiled into monthly and annual summaries; meter readings can be manual or automated. Commit to sharing with USGBC the resulting whole-project water usage data for a five-year period beginning on the date the project accepts LEED certification or typical occupancy, whichever comes first. This commitment must carry forward for five years or until the building changes ownership or lessee.	
2				2	Credit	Outdoor Water Use Reduction	
						Option 1. No Irrigation Required (2 points except Healthcare, 1 point Healthcare) Show that the landscape does not require a permanent irrigation system beyond a maximum two-year establishment period.	Other choices include plants irrigated with captured rainwater (may be expensive), bioswale, rain garden.
						OR Option 2. Reduced Irrigation (2 points except Healthcare, 1 point Healthcare) Reduce the project's landscape water requirement (LWR) by at least 50% from the calculated baseline for the site's peak watering month. Reductions must first be achieved through plant species selection and irrigation system efficiency as calculated in the Environmental Protection Agency (EPA) WaterSense Water Budget Tool. Additional reductions beyond 30% may be achieved using any combination of efficiency, alternative water sources, and smart scheduling technologies.	

						Additional reductions beyond 30% may be achieved using any combination of efficiency, alternative water sources, and smart scheduling technologies.	
3	1	1	2	7	Credit	Indoor Water Use Reduction	
						Further reduce fixture and fitting water use from the calculated baseline in WE Prerequisite Indoor Water Use Reduction. Additional potable water savings can be earned above the prerequisite level using alternative water sources. Include fixtures and fittings necessary to meet the needs of the occupants. Some of these fittings and fixtures may be outside the project boundary.	Recommendations: toilets 0.4/0.8gpf; urinals: 0.26gpf; showers 1.32gpm, kitchen faucets 0.9gpm; faucets 0.35gpm under pressure 414kPa; pressure for showers: 551kPa. VvS will advise the project team on the selection of plumbing fixtures.
						25% = 1 point 30% =2 35% =3 40% =4 45% =5	Attempted min. 3 points (35%); 4 points (40%) recommended.
						AND Appliance and Process Water Install equipment within the project scope that meets the minimum requirements in Table 2, 3, 4, or 5 . One point is awarded for meeting all applicable requirements in any one table. All applicable equipment listed in each table must meet the standard. Schools, Retail, and Healthcare projects can earn a second point for meeting the requirements of two tables.	Attempted at least 1 point, 2 recommended
			2	2	Credit	Cooling Tower Water Use	
						For cooling towers and evaporative condensers, conduct a one-time potable water analysis, measuring at least the five control parameters listed in Table 1 in Reference Guide	No cooling towers in the project. If cooling towers were to be installed, project to pursue this credit
1				1	Credit	Water Metering	
						Install permanent water meters for two or more of the following water subsystems, as applicable to the project: ·· Irrigation. Meter water systems serving at least 80% of the irrigated landscaped area. Calculate the percentage of irrigated landscape area served as the total metered irrigated landscape area divided by the total irrigated landscape area. Landscape areas fully covered with xeriscaping or native vegetation that requires no routine irrigation may be excluded from the calculation. ·· Indoor plumbing fixtures and fittings. Meter water systems serving at least 80% of the indoor fixtures and fitting described in WE Prerequisite Indoor Water Use Reduction, either directly or by deducting all other measured water use from the measured total water consumption of the building and grounds. ·· Domestic hot water. Meter water use of at least 80% of the installed domestic hot water heating capacity (including both tanks and on-demand heaters).	

·· Boiler with aggregate projected annual water use of 100,000 gallons (378 500 liters) or more, or boiler of more than 500,000 BtuH (150 kW). A single makeup meter may record flows for multiple boilers. ·· Reclaimed water. Meter reclaimed water, regardless of rate. A reclaimed water system with a makeup water connection must also be metered so that the true reclaimed water component can be determined. ·· Other process water. Meter at least 80% of expected daily water consumption for process end uses, such as humidification systems, dishwashers, clothes washers, pools, and other subsystems using process water.

ENERGY AND ATMOSPHERE							STATUS
Yes	?+	?-	No	Available	Credit	Description	
14	3	4	10	31	Number of points		
				Required	Prerequisite	Fundamental Commissioning of the Building Energy Systems	
						Ensure the building undergoes the Fundamental Commissioning	2018-01-17_fundamental commissioning to be performed
				Required	Prerequisite	Minimum Energy Performance - 5% over ASHRAE 90.1-2010	
						5% more energy efficient than ASHRAE 90.1-2010 baseline and meet all ASHRAE 90.1-2010 Mandatory Provisions listed in the rating system. *[5% for new construction, 3% for major renovations, or 2% for core and shell projects]*	The preliminary review indicates that the project may meet this prerequisite if all mandatory requirements are incorporated into the design (continuous air barrier, occupancy sensors, daylight controls equipment efficiencies, reduced lighting power density). In order to comply with LEED, the building needs to meet the requirements of ASHRAE 90.1-2010 Mandatory provisions and be 5% more energy efficient than a baseline building modeled in compliance with Appendix G. Please provide Equipment cut sheets, calculations of efficiency and sizing, refrigerants.
							2018-05-01_3 HVAC options, displacement ventilation, displacement with cooling, chilled beams; school prefers hydronic system because they can manage it themselves;
							2018-05-08_100-125kw generator
				Required	Prerequisite	Building-Level Energy Metering	
						Install new or use existing building-level energy meters, or submeters that can be aggregated to provide building level data representing total building energy consumption (electricity, natural gas, chilled water, steam, fuel oil, propane, biomass, etc). Utility-owned meters capable of aggregating building-level resource use are acceptable. Commit to sharing with USGBC the resulting energy consumption data and electrical demand data (if metered) for a five-year period beginning on the date the project accepts LEED certification. At a minimum, energy consumption must be tracked at one-month intervals. This commitment must carry forward for five years or until the building changes ownership or lessee.	2018-01-17_metering to show students how their plug load use impacts the energy usage. Tied to a display?
				Required	Prerequisite	Fundamental Refrigerant Management	
						Zero use of chlorofluorocarbon (CFC)-based refrigerants in new base building heating, ventilating, air conditioning and refrigeration (HVAC&R) systems.	
	3	3		6	Credit	Enhanced Commissioning	
						Option 1: Path 1: Implement full commissioning, beyond the requirements of the Prerequisite. (3 points)	MSBA provides this and some level of envelope CxA. Please provide the information about the exact scope of this service for analysis of LEED credit compliance
							2018-01-17_to be confirmed by school.
							Credit recommended to pursue!

						Path 2: Enhanced and Monitoring-Based Commissioning (4 points) Achieve Path 1.AND Develop monitoring-based procedures and identify points to be measured and evaluated to assess performance of energy- and water-consuming systems	2018-01-17_to be confirmed by school. Achievable assuming: a BMS or metering network and submeters will exist
						AND/OR Option 2. Envelope Commissioning (2 points) Fulfill the requirements in EA Prerequisite Fundamental Commissioning and Verification as they apply to the building's thermal envelope in addition to mechanical and electrical systems and assemblies. Complete the following commissioning process (CxP) activities for the building's thermal envelope in accordance with ASHRAE Guideline 0–2005 and the National Institute of Building Sciences (NIBS) Guideline 3–2012, Exterior Enclosure Technical Requirements for the Commissioning Process, as they relate to energy, water, indoor environmental quality, and durability	2018-01-17_to be confirmed by school. Achievable-however costs of blower door test must be considered
11	0	0	5	16	Credit	Optimize Energy Performance	
						See comments under Energy Prerequisite	
							Minimum 6 points and 20% better than MA code required for the 2% additional reimbursement
							2018-01-19_per GGD, 25-30% savings over ASHRAE 90.1-2010 are expected for each scheme. 25-30% savings for LEED for Schools equals 10-12 points for new construction projects and 11-13 points for major renovation.
							2018-04-27_per GGD schematic energy modeling, the project can achieve 28% savings = 11 points. MSBA requires the project to achieve 20% savings over current MA code. It is recommended to update the energy model baseline to also show comparisob to MA code to ensure compliance with MSBA requirements
							2018-07-11_per updated energy modeling report, the project is expected to achieve 23.9% over IECC 2015 Baseline Building / MA Energy Code
1				1	Credit	Advanced Energy Metering	
						Install advanced energy metering for the following: ·· all whole-building energy sources used by the building; and ·· any individual energy end uses that represent 10% or more of the total annual consumption of the building.	2018-01-19_achievable assuming: a BMS or metering network and submeters will exist
			2	2	Credit	Demand Response	
						Design building and equipment for participation in demand response programs through load shedding or shifting. On-site electricity generation does not meet the intent of this credit.	
						Case 1. Demand Response Program Available (2 points)	

						Case 2. Demand Response Program Not Available (1 point) Provide infrastructure to take advantage of future demand response programs or dynamic, real-time pricing programs	
			3	3	Credit	Renewable Energy Production	
						Use on-site renewable energy systems to offset building energy costs. 1% - 1 point, 5% - 2 points, 10% - 3 points	2018-05-01_project is potentially exploring cost for PVs. Area needed 10W/sf. TBD what area is available. GGD did a simulation of cost and area:- total expected as designed annual cost = 128,323 - 1% = $1,283 = 10kW PV = $40,000 = 1,000sf; 5% = $6,416 = 30kW PV = $114,000 = 3,000sf; 10% = $12,832 = 60kW PV = $204,000 = 6,000sf; Credit recommended to pursue!
			1	1	Credit	Enhanced Refrigerant Management	
						Option 1. No Refrigerants or Low-Impact Refrigerants (1 point) Do not use refrigerants, or use only refrigerants (naturally occurring or synthetic) that have an ozone depletion potential (ODP) of zero and a global warming potential (GWP) of less than 50.	2018-01-17_Recommended to target - low-impact refrigerants.
						OR Option 2. Calculation of Refrigerant Impact (1 point) Select refrigerants that are used in heating, ventilating, air-conditioning, and refrigeration (HVAC&R) equipment to minimize or eliminate the emission of compounds that contribute to ozone depletion and climate change. The combination of all new and existing base building and tenant HVAC&R equipment that serve the project must comply with the formula in the LEED Reference Guide	
2				2	Credit	Green Power and Carbon Offsets	
						Engage in a contract for qualified resources that have come online since January 1, 2005, for a minimum of five years, to be delivered at least annually. The contract must specify the provision of at least 50% or 100% of the project's energy from green power, carbon offsets, or renewable energy certificates (RECs). Green power and RECs must be Green-e Energy certified or the equivalent. RECs can only be used to mitigate the effects of Scope 2, electricity use. Carbon offsets may be used to mitigate Scope 1 or Scope 2 emissions on a metric ton of carbon dioxide–equivalent basis and must be Green-e Climate certified, or the equivalent.	VvS | Architects & Consultants will provide the necessary calculations based on the energy model (by others). Credit targeted for Silver level.

MATERIALS AND RESOURCES							STATUS
Yes	?+	?-	No	Available	Credit	Description	
5	0	2	6	13	Number of points		
				Required	Prerequisite	Storage and Collection of Recyclables.	
						Provide dedicated areas accessible to waste haulers and building occupants for the collection and storage of recyclable materials for the entire building. Collection and storage areas may be separate locations. Recyclable materials must include mixed paper, corrugated cardboard, glass, plastics, and metals. Take appropriate measures for the safe collection, storage, and disposal of two of the following: batteries, mercury-containing lamps, and electronic waste.	The project needs to implement recycling plan, including recycling inside the building and storage within the building or outside. Typically the waste is separated (5 containers - paper, cardboard, plastic, glass, metal) however comingled recycling is acceptable, it needs to be documented. VvS will help prepare recycling plan and advise the Client on the proper implementation.
				Required	Prerequisite	Construction and Demolition Waste Management Planning	
						Develop and implement a construction and demolition waste management plan: ·· Establish waste diversion goals for the project by identifying at least five materials (both structural and nonstructural) targeted for diversion. Approximate a percentage of the overall project waste that these materials represent. ·· Specify whether materials will be separated or commingled and describe the diversion strategies planned for the project. Describe where the material will be taken and how the recycling facility will process the material. Provide a final report detailing all major waste streams generated, including disposal and diversion rates. Alternative daily cover (ADC) does not qualify as material diverted from disposal. Land-clearing debris is not considered construction, demolition, or renovation waste that can contribute to waste diversion.	VvS | Architects & Consultants will prepare construction waste management plan and will coach the GC throughtout the implementation.
						Waste-to-energy may be considered a viable diversion strategy if the project team follows European Commission Waste Framework Directive 2008/98/EC and European Commission Waste Incineration Directive 200/76/EC. In addition, the facility must meet the applicable European standards based on the fuel type.	
						The combustion of wood or "wood-derived fuel" is not considered waste-to-energy and is exempt from the above criteria. Project teams must demonstrate that reuse and recycling strategies were exhausted before sending waste material to energy facilities.	
			5	5	Credit	Building Life-Cycle Impact Reduction	
						Option 1. Historic Building Reuse (5 points BD+C, 6 points Core and Shell)	renovation vs new buildings TBD;

						OR Option 2. Renovation of Abandoned or Blighted Building (5 points BD+C, 6 points Core and Shell)	
						OR Option 3. Building and Material Reuse (2–4 points BD+C, 2-5 points Core and Shell)	
						Option 3. Building and Material Reuse (2–4 points BD+C, 2-5 points Core and Shell) Reuse or salvage building materials from off site or on site as a percentage of the surface area, as listed in Table 1. Include structural elements (e.g., floors, roof decking), enclosure materials (e.g., skin, framing), and permanently installed interior elements (e.g., walls, doors, floor coverings, ceiling systems). Exclude from the calculation window assemblies and any hazardous materials that are remediated as a part of the project. Materials contributing toward this credit may not contribute toward MR Credit Material Disclosure and Optimization 25% = 2 points, 50% = 3 points, 75% = 4 points	2018-01-19_Existing building renovation presents opportunity for reuse of the building structural and non-structural parts/materials. In option R-1, the project is likely to achieve 4 points, in renovation/addition options, the number of points would depend on the percentage of retained structure. AR-2 and AR-4 could potentially achieve between 2-3 points. New construction options do not achieve points under this credit. Number of points will depend on selected option.
						OR Option 4. Whole-Building Life-Cycle Assessment (3 points)	
						For new construction (buildings or portions of buildings), conduct a life-cycle assessment of the project's structure and enclosure that demonstrates a minimum of 10% reduction, compared with a baseline building, in at least three of the six impact categories listed below, one of which must be global warming potential. No impact category assessed as part of the life-cycle assessment may increase by more than 5% compared with the baseline building.	Project may elect to conduct a life-cycle assessment
1			1	2	Credit	Building Product Disclosure and Optimization—Environmental Product Declarations	
						Option 1. Environmental Product Declaration (EPD) (1 point) Use at least 20 different permanently installed products sourced from at least five different manufacturers that meet one of the disclosure criteria below.	Credit attempted - required for Silver level! Recommended action - coordinate the design to select building materials meeting credit requirements - option TBD at later phase
						·· Product-specific declaration. °° Products with a publicly available, critically reviewed life-cycle assessment conforming to ISO 14044 that have at least a cradle to gate scope are valued as one quarter (1/4) of a product for the purposes of credit achievement calculation.	2018-01-17_VvS + JCJ to include the requirement in the bid documents, contractor to select materials per credit requirements.

·· Environmental Product Declarations which conform to ISO 14025, 14040, 14044, and EN 15804 or ISO 21930 and have at least a cradle to gate scope. °° Industry-wide (generic) EPD -- Products with third-party certification (Type III), including external verification, in which the manufacturer is explicitly recognized as a participant by the program operator are valued as one half (1/2) of a product for purposes of credit achievement calculation. °° Product-specific Type III EPD -- Products with third-party certification (Type III), including external verification in which the manufacturer is explicitly recognized as the participant by the program operator are valued as one whole product for purposes of credit achievement calculation.	
·· USGBC approved program – Products that comply with other USGBC approved environmental product declaration frameworks.	
	2018-04-27_All proposed products would have to be submitted to VvS | Architects & Consultants for verification prior to designing/ordering/purchasing. Architect to select only products with available EPDs. Min 20 products from 5 manufacturers. At least 1 point attempted.
Selected option	
Option 2. Multi-Attribute Optimization (1 point) Use products that comply with one of the criteria below for 50%, by cost, of the total value of permanently installed products in the project. Products will be valued as below. ·· Third party certified products that demonstrate impact reduction below industry average in at least three of the following categories are valued at 100% of their cost for credit achievement calculations. °° global warming potential (greenhouse gases), in CO2e; °° depletion of the stratospheric ozone layer, in kg CFC-11; °° acidification of land and water sources, in moles H+ or kg SO2; °° eutrophication, in kg nitrogen or kg phosphate; °° formation of tropospheric ozone, in kg NOx or kg ethene; and depletion of nonrenewable energy resources, in MJ.	Option not yet readily available
·· USGBC approved program -- Products that comply with other USGBC approved multi-attribute frameworks. For credit achievement calculation, products sourced (extracted, manufactured, purchased) within 100 miles (160 km) of the project site are valued at 200% of their base contributing cost. Structure and enclosure materials may not constitute more than 30% of the value of compliant building products.	

1		1		2	Credit	Building Product Disclosure and Optimization—Sourcing of Raw Materials	
						Option 1. Raw Material Source and Extraction Reporting (1 point) Use at least 20 different permanently installed products from at least five different manufacturers that have publicly released a report from their raw material suppliers which include raw material supplier extraction locations, a commitment to long-term ecologically responsible land use, a commitment to reducing environmental harms from extraction and/or manufacturing processes, and a commitment to meeting applicable standards or programs voluntarily that address responsible sourcing criteria.	Credit attempted - required for Silver level! Recommended action - coordinate the design to select building materials meeting credit requirements - option TBD at later phase. Project team to select only products meeting credit criteria. Min 20 products from 5 manufacturers. At least 1 point attempted. In Option 1, per USGBC, self-declared not yet achievable. GRI path to be pursued.
						·· Products sourced from manufacturers with self-declared reports are valued as one half (1/2) of a product for credit achievement. ·· Third-party verified corporate sustainability reports (CSR) which include environmental impacts of extraction operations and activities associated with the manufacturer's product and the product's supply chain, are valued as one whole product for credit achievement calculation. Acceptable CSR frameworks include the following: ·· Global Reporting Initiative (GRI) Sustainability Report ·· Organisation for Economic Co-operation and Develoment (OECD) Guidelines for Multinational Enterprises ·· U.N. Global Compact: Communication of Progress ·· ISO 26000: 2010 Guidance on Social Responsibility ·· USGBC approved program: Other USGBC approved programs meeting the CSR criteria.	
						Option 2. Leadership Extraction Practices (1 point) Use products that meet at least one of the responsible extraction criteria below for at least 25%, by cost, of the total value of permanently installed building products in the project.	
						·· Extended producer responsibility. Products purchased from a manufacturer (producer) that participates in an extended producer responsibility program or is directly responsible for extended producer responsibility. Products meeting extended producer responsibility criteria are valued at 50% of their cost for the purposes of credit achievement calculation.	This option could be achieved with recycled content option, doubling with regional materials. Please note that the structural and envelope materials cannot exceed 30%. Project team to select only products meeting credit criteria. Min 20 products from 5 manufacturers. At least 1 point attempted.

						·· Bio-based materials. Bio-based products must meet the Sustainable Agriculture Network's Sustainable Agriculture Standard. Bio-based raw materials must be tested using ASTM Test Method D6866 and be legally harvested, as defined by the exporting and receiving country. Exclude hide products, such as leather and other animal skin material. Products meeting bio-based materials criteria are valued at 100% of their cost for the purposes of credit achievement calculation. ·· Wood products. Wood products must be certified by the Forest Stewardship Council or USGBC-approved equivalent. Products meeting wood products criteria are valued at 100% of their cost for the purposes of credit achievement calculation.	
						·· Materials reuse. Reuse includes salvaged, refurbished, or reused products. Products meeting materials reuse criteria are valued at 100% of their cost for the purposes of credit achievement calculation. ·· Recycled content. Recycled content is the sum of postconsumer recycled content plus one-half the preconsumer recycled content, based on cost. Products meeting recycled content criteria are valued at 100% of their cost for the purposes of credit achievement calculation ·· USGBC approved program. Other USGBC approved programs meeting leadership extraction criteria. For credit achievement calculation, products sourced (extracted, manufactured, purchased) within 100 miles (160 km) of the project site are valued at 200% of their base contributing cost.	2018-01-17_VvS + JCJ to include the requirement in the bid documents, contractor to select materials per credit requirements.
						Structure and enclosure materials may not constitute more than 30% of the value of compliant building products.	
						Selected option	
1		1		2	Credit	Building Product Disclosure and Optimization—Material Ingredients	
						Option 1. Material Ingredient Reporting (1 point) Use at least 20 different permanently installed products from at least five different manufacturers that use any of the following programs to demonstrate the chemical inventory of the product to at least 0.1% (1000 ppm). ·· Manufacturer Inventory. The manufacturer has published complete content inventory for the product following these guidelines: °° A publicly available inventory of all ingredients identified by name and Chemical Abstract Service Registration Number (CASRN)	Each and every material must be submitted for the verification by VvS. VvS will provide all of the requirements to be included in the tender. VvS will also providedthe MR table to the architect to fill out missing information. It is critical that at this stage the architect collaborate with VvS to ensure the first installed materials meet the LEED requirements. Later this can be coordinated between VvS and the GC. If necessary, VvS | Architects & Consultants will assist the Client, architect and GC in the material selection to meet the credit requirements. Min 20 products from 5 manufacturers. At least 1 point attempted.

°° Materials defined as trade secret or intellectual property may withhold the name and/or CASRN but must disclose role, amount and GreenScreen benchmark, as defined in GreenScreen v1.2. ·· Health Product Declaration. The end use product has a published, complete Health Product Declaration with full disclosure of known hazards in compliance with the Health Product Declaration open Standard. ·· Cradle to Cradle. The end use product has been certified at the Cradle to Cradle v2 Basic level or Cradle to Cradle v3 Bronze level. ·· USGBC approved program. Other USGBC approved programs meeting the material ingredient reporting criteria.	Credit attempted - required for Silver level! Recommended action - coordinate the design to select building materials meeting credit requirements - option TBD at later phase
Selected option	Option selected - Cradle to Cradle certified or Health Product Declarations
and/or Option 2. Material Ingredient Optimization (1 point) Use products that document their material ingredient optimization using the paths below for at least 25%, by cost, of the total value of permanently installed products in the project. ·· GreenScreen v1.2 Benchmark. Products that have fully inventoried chemical ingredients to 100 ppm that have no Benchmark 1 hazards: °° If any ingredients are assessed with the GreenScreen List Translator, value these products at 100% of cost. °° If all ingredients are have undergone a full GreenScreen Assessment, value these products at 150% of cost.	2018-01-17_VvS + JCJ to include the requirement in the bid documents, contractor to select materials per credit requirements.
·· Cradle to Cradle Certified. End use products are certified Cradle to Cradle. Products will be valued as follows: °° Cradle to Cradle v2 Gold: 100% of cost °° Cradle to Cradle v2 Platinum: 150% of cost °° Cradle to Cradle v3 Silver: 100% of cost °° Cradle to Cradle v3 Gold or Platinum: 150% of cost ·· International Alternative Compliance Path – REACH Optimization. End use products and materials that do not contain substances that meet REACH criteria for substances of very high concern. If the product contains no ingredients listed on the REACH Authorization or Candidate list, value at 100% of cost. ·· USGBC approved program. Products that comply with USGGBC approved building product optimization criteria.	
Selected option	

and/or Option 3. Product Manufacturer Supply Chain Optimization (1 point) Use building products for at least 25%, by cost, of the total value of permanently installed products in the project that: ·· Are sourced from product manufacturers who engage in validated and robust safety, health, hazard, and risk programs which at a minimum document at least 99% (by weight) of the ingredients used to make the building product or building material, and ·· Are sourced from product manufacturers with independent third party verification of their supply chain that at a minimum verifies:
°° Processes are in place to communicate and transparently prioritize chemical ingredients along the supply chain according to available hazard, exposure and use information to identify those that require more detailed evaluation °° Processes are in place to identify, document, and communicate information on health, safety and environmental characteristics of chemical ingredients °° Processes are in place to implement measures to manage the health, safety and environmental hazard and risk of chemical ingredients
°° Processes are in place to optimize health, safety and environmental impacts when designing and improving chemical ingredients °° Processes are in place to communicate, receive and evaluate chemical ingredient safety and stewardship information along the supply chain °° Safety and stewardship information about the chemical ingredients is publicly available from all points along the supply chain
Products meeting Option 3 criteria are valued at 100% of their cost for the purposes of credit achievement calculation. For credit achievement calculation of options 2 and 3, products sourced (extracted, manufactured, purchased) within 100 miles (160 km) of the project site are valued at 200% of their base contributing cost. For credit achievement calculation, the value of individual products compliant with either option 2 or 3 can be combined to reach the 25% threshold but products compliant with both option 2 and 3 may only be counted once. Structure and enclosure materials may not constitute more than 30% of the value of compliant building products

2				2	Credit	Construction and Demolition Waste Management	
						Recycle and/or salvage nonhazardous construction and demolition materials. Calculations can be by weight or volume but must be consistent throughout. Exclude excavated soil, land-clearing debris, and alternative daily cover (ADC). Include wood waste converted to fuel (biofuel) in the calculations; other types of waste-to-energy are not considered diversion for this credit. However, for projects that cannot meet credit requirements using reuse and recycling methods, waste-to-energy systems may be considered waste diversion if the European Commission Waste Framework Directive 2008/98/EC and Waste Incineration Directive 2000/76/EC are followed and Waste to Energy facilities meet applicable European Committee for Standardization (CEN) EN 303 standards.	Option 1, path 2 Please provide contact to contracted waste company. The project needs to achieve at least 75% of diversion rate! Please provide monthly waste reports with quantities (in tonnes) and statements about diversion - who took the waste, what processing, what diversion rate) for EVERY waste in the project!
						Option 1. Diversion (1–2 points) Path 1. Divert 50% and Three Material Streams (1 point) Divert at least 50% of the total construction and demolition material; diverted materials must include at least three material streams.	
						or Path 2. Divert 75% and Four Material Streams (2 points) Divert at least 75% of the total construction and demolition material; diverted materials must include at least four material streams.	
						or Option 2. Reduction of Total Waste Material (2 points) Do not generate more than 2.5 pounds of construction waste per square foot (12.2 kilograms of waste per square meter) of the building's floor area.	

INDOOR ENVIRONMENTAL QUALITY							STATUS
Yes	?+	?-	No	Available	Credit	Description	
9	4	3	0	16	Number of points		
					Required	Prerequisite	Minimum Indoor Air Quality Performance.
							Meet the requirements for both ventilation and monitoring. Ventilation Mechanically Ventilated Spaces Option 1. ASHRAE St andard 62.1–2010 For mechanically ventilated spaces (and for mixed-mode systems when the mechanical ventilation is activated), determine the minimum outdoor air intake flow for mechanical ventilation systems using the ventilation rate procedure from ASHRAE 62.1–2010 or a local equivalent, whichever is more stringent. Meet the minimum requirements of ASHRAE Standard 62.1–2010, Sections 4–7, Ventilation for Acceptable Indoor Air Quality (with errata), or a local equivalent, whichever is more stringent.
							Option 2. CEN St andards EN 15251–2007 and EN 13779–2007
							Naturally Ventilated Spaces
							All Spaces The indoor air quality procedure defined in ASHRAE Standard 62.1–2010 may not be used to comply with this prerequisite.
							Monitoring Mechanically Ventilated Spaces For mechanically ventilated spaces (and for mixed-mode systems when the mechanical ventilation is activated), monitor outdoor air intake flow as follows: ·· For variable air volume systems, provide a direct outdoor airflow measurement device capable of measuring the minimum outdoor air intake flow. This device must measure the minimum outdoor air intake flow with an accuracy of +/–10% of the design minimum outdoor airflow rate, as defined by the ventilation requirements above. An alarm must indicate when the outdoor airflow value varies by 15% or more from the outdoor airflow setpoint. ·· For constant-volume systems, balance outdoor airflow to the design minimum outdoor airflow rate defined by ASHRAE Standard 62.1–2010 (with errata), or higher. Install a current transducer on the supply fan, an airflow switch, or similar monitoring device.
							2018-01-19_Please ensure that each system supply outdoor air have OA flow monitoring
							Once received the values, VvS | Architects & Consultants will perform the calculations and feedback to the design team to ensure compliance. Please design to 30% better than ASHRAE 62.1-2010 to attempts IEQc2.

Required	Prerequisite	Environmental Tobacco Smoke Control.	
		Prohibit smoking inside the building. Prohibit smoking outside the building except in designated smoking areas located at least 25 feet (7.5 meters) from all entries, outdoor air intakes, and operable windows. Also prohibit smoking outside the property line in spaces used for business purposes. If the requirement to prohibit smoking within 25 feet (7.5 meters) cannot be implemented because of code, provide documentation of these regulations. Signage must be posted within 10 feet (3 meters) of all building entrances indicating the no-smoking policy.	Smoking is prohibited in the building and within 25 feet from the building.
Required	Prerequisite	Minimum Acoustic Performance	
		Schools only	
		HVAC Background Noise Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems in classrooms and other core learning spaces. Follow the recommended methodologies and best practices for mechanical system noise control in ANSI Standard S12.60–2010, Part 1, Annex A.1; the 2011 HVAC Applications ASHRAE Handbook, Chapter 48, Noise and Vibration Control (with errata); AHRI Standard 885–2008; or a local equivalent for projects outside the U.S.	
		Exterior Noise For high-noise sites (peak-hour Leq above 60 dBA during school hours), implement acoustic treatment and other measures to minimize noise intrusion from exterior sources and control sound transmission between classrooms and other core learning spaces. Projects at least one-half mile (800 meters) from any significant noise source (e.g., aircraft overflights, highways, trains, industry) are exempt. Reverberation Time Adhere to the following reverberation time requirements.	

2				2	Credit	Enhanced Indoor Air Quality Strategies	
						Option 1. Enhanced IAQ St rategies (1 point) Comply with the following requirements, as applicable. Mechanically ventilated spaces: A. entryway systems; B. interior cross-contamination prevention; and C. filtration. Naturally ventilated spaces: A. entryway systems; and B. natural ventilation design calculations. Mixed-mode systems: A. entryway systems; B. interior cross-contamination prevention; C. filtration; D. natural ventilation design calculations; and E. mixed-mode design calculations.	Credit attempted - required for Silver level! Recommended action - coordinate the design to ensure the Option 1 is met
						Option 2. Additional Enhanced IAQ St rategies (1 point) Comply with the following requirements, as applicable. Mechanically ventilated spaces (select one): A. exterior contamination prevention; B. increased ventilation; C. carbon dioxide monitoring; or D. additional source control and monitoring. Naturally ventilated spaces (select one): A. exterior contamination prevention; B. additional source control and monitoring; or C. natural ventilation room by room calculations. Mixed-mode systems (select one): A. exterior contamination prevention; B. increased ventilation; C. additional source control and monitoring; or D. natural ventilation room-by-room calculations.	Credit attempted - required for Silver level! Recommended action - coordinate the design to ensure the Option 2 C, 2 A or 2 D *(due to pollen/asthmatic consitions and energy efficiency concerns option 2B will not be pursued)*
3				3	Credit	Low-Emitting Materials	
						Option 1. Product Category Calculations Achieve the threshold level of compliance with emissions and content standards for the number of product categories: Interior paints and coatings applied on site; Interior adhesives and sealants applied on site (including flooring adhesive); Flooring; Composite wood; Ceilings, walls, thermal, and acoustic insulation; Furniture (include in calculations if part of scope of work); Healthcare and Schools Projects only: Exterior applied products	Each and every material must be submitted for the verification by VvS. VvS will provide all of the requirements to be included in the tender. VvS also will provide the MR table to architect to fill out missing information. It is critical that at this stage the architect collaborate with VvS to ensure the first installed materials meet the LEED requirements. Later this can be coordinated between VvS and the GC. If necessary, VvS | Architects & Consultants will assist the Client, architect and GC in the material selection to meet the credit requirements.
						New Construction, Core and Shell, Retail, Data Centers, Warehouses and Distribution Centers, Hospitality projects without furniture: 2 categories for 1 point, 4=2, 5=3 points	Credit attempted - required for Silver level! Recommended action - coordinate the design to ensure that 3 points are achieved! All submittals should require VvS approval.

						Option 2. Budget Calculation Method If some products in a category do not meet the criteria, project teams may use the budget calculation method	
1				1	Credit	Construction Indoor Air Quality Management Plan	
						Develop and implement an indoor air quality (IAQ) management plan for the construction and preoccupancy phases of the building. The plan must address all of the following. During construction, meet or exceed all applicable recommended control measures of the Sheet Metal and Air Conditioning National Contractors Association (SMACNA) IAQ Guidelines for Occupied Buildings under Construction, 2nd edition, 2007, ANSI/SMACNA 008–2008, Chapter 3. Protect absorptive materials stored on-site and installed from moisture damage.	VvS | Architects & Consultants will prepare the IEQ plan and will coach the GC on the proper implementation.
						Do not operate permanently installed air-handling equipment during construction unless filtration media with a minimum efficiency reporting value (MERV) of 8, as determined by ASHRAE 52.2–2007, with errata (or equivalent filtration media class of F5 or higher, as defined by CEN Standard EN 779–2002, Particulate Air Filters for General Ventilation, Determination of the Filtration Performance), are installed at each return air grille and return or transfer duct inlet opening such that there is no bypass around the filtration media. Immediately before occupancy, replace all filtration media with the final design filtration media, installed in accordance with the manufacturer's recommendations.	
1		1		2	Credit	Indoor Air Quality Assessment	
						Option 1. Flush-Out (1 point) Path 1. Before Occupancy Install new filtration media and perform a building flush-out by supplying a total air volume of 14,000 cubic feet of outdoor air per square foot (4 267 140 liters per second of outdoor air per square meter) of gross floor area while maintaining an internal temperature of at least 60°F (15°C) and no higher than 80°F (27°C) and relative humidity no higher than 60%.	VvS | Architects & Consultants will prepare the IEQ plan and will coach the GC on the proper implementation. VvS will also perform the calculations and determine the length of the flush out period.

OR Path 2. During Occupancy If occupancy is desired before the flush-out is completed, the space may be occupied only after delivery of a minimum of 3,500 cubic feet of outdoor air per square foot (1 066 260 liters per second of outdoor air per square meter) of gross floor area while maintaining an internal temperature of at least 60°F (15°C) and no higher than 80°F (27°C) and relative humidity no higher than 60%. Once the space is occupied, it must be ventilated at a minimum rate of 0.30 cubic foot per minute (cfm) per square foot of outdoor air (1.5 liters of outside air per second per square meter) or the design minimum outdoor air rate determined in EQ Prerequisite Minimum Indoor Air Quality Performance, whichever is greater.	
During each day of the flush-out period, ventilation must begin at least three hours before occupancy and continue during occupancy. These conditions must be maintained until a total of 14,000 cubic feet per square foot of outdoor air (4 270 cubic meters of outdoor air per square meter) has been delivered to the space.	
OR Option 2. Air Testing (2 points) After construction ends and before occupancy, but under ventilation conditions typical for occupancy, conduct baseline IAQ testing using protocols consistent with the methods listed in Table 1 for all occupied spaces. Use current versions of ASTM standard methods, EPA compendium methods, or ISO methods, as indicated. Laboratories that conduct the tests for chemical analysis of formaldehyde and volatile organic compounds must be accredited under ISO/IEC 17025 for the test methods they use. Retail projects may conduct the testing within 14 days of occupancy. Demonstrate that contaminants do not exceed the concentration levels listed in Table 1 in Reference Guide p686.	Recommended and attempted, however may not be feasible due to budgetary restrictions
	2018-01-17_VvS and JCJ to check the contract to ensure there is a CM requirement (flush out and if no time then testing by GC)

		1		1	Credit	Thermal Comfort	
						Meet the requirements for both thermal comfort design and thermal comfort control. Thermal Comfort Design NEW CONSTRUCTION, SCHOOLS, RETAIL, DA TA CENTERS, HOS PITALITY, HEALTHCARE Option 1. ASHRAE St andard 55-2010 Design heating, ventilating, and air-conditioning (HVAC) systems and the building envelope to meet the requirements of ASHRAE Standard 55–2010, Thermal Comfort Conditions for Human Occupancy, with errata or a local equivalent.	VvS | Architects & Consultants will assist the team in the design and implementation of the appropriate strategies for the mechanically ventilated building.
						Thermal Comfort Control NEW CONSTRUCTION, SCHOOLS, RETAIL, DATA CENTERS, WAREHOUSES AND DISTRIBUTION CENTERS, HOSPITALITY Provide individual thermal comfort controls for at least 50% of individual occupant spaces. Provide group thermal comfort controls for all shared multioccupant spaces. Thermal comfort controls allow occupants, whether in individual spaces or shared multioccupant spaces, to adjust at least one of the following in their local environment: air temperature, radiant temperature, air speed, and humidity.	2018-05-01_school may not be fully air conditioned - per conversation with GGD, this credit may not be achievable
1	1			2	Credit	Interior Lighting	
						Option 1. Lighting Control (1 point) For at least 90% of individual occupant spaces, provide individual lighting controls that enable occupants to adjust the lighting to suit their individual tasks and preferences, with at least three lighting levels or scenes (on, off, midlevel). Midlevel is 30% to 70% of the maximum illumination level (not including daylight contributions). For all shared multioccupant spaces, meet all of the following requirements. ·· Have in place multizone control systems that enable occupants to adjust the lighting to meet group needs and preferences, with at least three lighting levels or scenes (on, off, midlevel). ·· Lighting for any presentation or projection wall must be separately controlled. ·· Switches or manual controls must be located in the same space as the controlled luminaires. A person operating the controls must have a direct line of sight to the controlled luminaires.	VvS | Architects & Consultants will assist the team in the design and implementation of the appropriate strategies for the mechanically ventilated building.

						AND/OR Option 2. Lighting Quality (1 point) Choose four of the following strategies. A. For all regularly occupied spaces, use light fixtures with a luminance of less than 2,500 cd/m2 between 45 and 90 degrees from nadir. Exceptions include wallwash fixtures properly aimed at walls, as specified by manufacturer's data, indirect uplighting fixtures, provided there is no view down into these uplights from a regularly occupied space above, and any other specific applications (i.e. adjustable fixtures). B. For the entire project, use light sources with a CRI of 80 or higher. Exceptions include lamps or fixtures specifically designed to provide colored lighting for effect, site lighting, or other special use.	2018-05-08_all LED, on lighting control system, possibility to load shed, LPD target 0.4-0.5W/sf. Dayight and occupancy sensors
						C. For at least 75% of the total connected lighting load, use light sources that have a rated life (or L70 for LED sources) of at least 24,000 hours (at 3-hour per start, if applicable). D. Use direct-only overhead lighting for 25% or less of the total connected lighting load for all regularly occupied spaces. E. For at least 90% of the regularly occupied floor area, meet or exceed the following thresholds for areaweighted average surface reflectance: 85% for ceilings, 60% for walls, and 25% for floors.	
						F. If furniture is included in the scope of work, select furniture finishes to meet or exceed the following thresholds for area-weighted average surface reflectance: 45% for work surfaces, and 50% for movable partitions. G. For at least 75% of the regularly occupied floor area, meet a ratio of average wall surface illuminance (excluding fenestration) to average work plane (or surface, if defined) illuminance that does not exceed 1:10. Must also meet strategy E, strategy F, or demonstrate area-weighted surface reflectance of at least 60% for walls. H. For at least 75% of the regularly occupied floor area, meet a ratio of average ceiling illuminance (excluding fenestration) to work surface illuminance that does not exceed 1:10. Must also meet option E, option F, or demonstrate area-weighted surface reflectance of at least 85% for ceilings.	
	2	1		3	Credit	Daylight	
						Provide manual or automatic (with manual override) glare-control devices for all regularly occupied spaces. Select one of the following three options.	
						Option 1. Simulation: Spatial Daylight Autonomy and Annual Sunlight Exposure (2–3 points, 1-2 points Healthcare)	
						OR Option 2. Simulation: Illuminance Calculations (1–2 points)	

						OR Option 3. Measurement (2-3 points, 1-2 points Healthcare)	2018-01-19_Recommended measurement option if within project budget.
1				1	Credit	Quality Views	
						New Construction, Core and Shell, schools, Retail, Data Centers, Hospitality Achieve a direct line of sight to the outdoors via vision glazing for 75% of all regularly occupied floor area. View glazing in the contributing area must provide a clear image of the exterior, not obstructed by frits, fibers, patterned glazing, or added tints that distort color balance. Additionally, 75% of all regularly occupied floor area must have at least two of the following four kinds of views: ·· multiple lines of sight to vision glazing in different directions at least 90 degrees apart; ·· views that include at least two of the following: (1) flora, fauna, or sky; (2) movement; and (3) objects at least 25 feet (7.5 meters) from the exterior of the glazing;	
						·· unobstructed views located within the distance of three times the head height of the vision glazing; and ·· views with a view factor of 3 or greater, as defined in "Windows and Offices; A Study of Office Worker Performance and the Indoor Environment." Include in the calculations any permanent interior obstructions. Movable furniture and partitions may be excluded. Views into interior atria may be used to meet up to 30% of the required area.	
	1			1	Credit	Acoustic Performance	
						New Construction, Data Centers, Warehouses and Distribution Centers, Hospitality For all occupied spaces, meet the following requirements, as applicable, for HVAC background noise, sound isolation, reverberation time, and sound reinforcement and masking.	
						HVAC Background Noise Achieve maximum background noise levels from heating, ventilating, and air conditioning (HVAC) systems per 2011 ASHRAE Handbook, HVAC Applications, Chapter 48, Table 1; AHRI Standard 885-2008, Table 15; or a local equivalent. Calculate or measure sound levels. For measurements, use a sound level meter that conforms to ANSI S1.4 for type 1 (precision) or type 2 (general purpose) sound measurement instrumentation, or a local equivalent. Comply with design criteria for HVAC noise levels resulting from the sound transmission paths listed in ASHRAE 2011 Applications Handbook, Table 6; or a local equivalent.	

Sound Transmission Meet the composite sound transmission class (STCC) ratings listed in Table 1 of Reference Guide, or local building code, whichever is more stringent. Reverberation Time Meet the reverberation time requirements in Table 2 (adapted from Table 9.1 in the Performance Measurement Protocols for Commercial Buildings).
Sound Reinforcement and Masking Systems Sound Reinforcement For all large conference rooms and auditoriums seating more than 50 persons, evaluate whether sound reinforcement and AV playback capabilities are needed. If needed, the sound reinforcement systems must meet the following criteria: ·· Achieve a speech transmission index (STI) of at least 0.60 or common intelligibility scale (CIS) rating of at least 0.77 at representative points within the area of coverage to provide acceptable intelligibility. ·· Have a minimum sound level of 70 dBA. ·· Maintain sound-level coverage within +/–3 dB at the 2000 Hz octave band throughout the space.
Masking Systems For projects that use masking systems, the design levels must not exceed 48 dBA. Ensure that loudspeaker coverage provides uniformity of +/–2 dBA and that speech spectra are effectively masked.

VvS | Architects & Consultants

INNOVATION IN DESIGN							STATUS
Yes	?+	?-	No	Available	Credit	Description	
4	0	2	0	6	Number of points		
1				1	Credit 1.1	Innovation in Design	
						Low mercury lighting	Lighting fixtures with low Mercury content - easy to achieve - compliant fixtures include: philips, zumtobel, lightolier
1				1	Credit 1.2	Innovation in Design	
						Occupant education campaign	VvS | Architects & Consultants will prepare a Case study, green building tour and/or signage program and assist the Client with its
1				1	Credit 1.3	Innovation in Design	
						Green cleaning/green cleaning guidelines	VvS | Architects & Consultants will prepare a green cleaning program and assist the Client with its implementation.
		1		1	Credit 1.4	Innovation in Design	
						Examplary performance - TBD	
		1		1	Credit 1.5	Innovation in Design	
						Examplary performance - TBD	
1				1	Credit 2	LEED Accredited Professional	
						Agnes Vorbrodt, LEED AP BD+C	

VvS | Architects & Consultants

REGIONAL PRIORITY						
Yes	?+	?-	No	Available	Credit	Description
2	1	0	1	4	Number of points	
			1	1	Credit	Regional Priority
						Renewable energy production; 2 points min.
1				1	Credit	Regional Priority
						Optimize Energy Performance, 8 points min.
			1	1	Credit	Regional Priority
						Surrounding density and diverse uses, 4 points min.
			1	1	Credit	Regional Priority
						Building life-cycle impact reduction, 2 points min.
	1			1	Credit	Regional Priority
						Site development - protect or restore habitat, 2 points
1				1	Credit	Regional Priority
						Outdoor water use reduction, 2 points min.

SUMMARY LEED SCORECARD

Yes	?+	?-	No	Credit	Description	
1				Credit	Integrative Process	1
4	2	0	9	Location and Transportation		15
				Credit	LEED for Neighborhood Development Location	15
1				Credit	Sensitive Land Protection	1
			2	Credit	High Priority Site	2
1	1		3	Credit	Surrounding Density and Diverse Uses	5
			4	Credit	Access to Quality Transit	4
1				Credit	Bicycle Facilities	1
	1			Credit	Reduced Parking Footprint	1
1				Credit	Green Vehicles	1
6	4	1	1	**Sustainable Sites**		**12**
Y				Prereq	Construction Activity Pollution Prevention	Required
Y				Prereq	Environmental Site Assessment	Required
1				Credit	Site Assessment	1
	2			Credit	Site Development - Protect or Restore Habitat	2
1				Credit	Open Space	1
	2	1		Credit	Rainwater Management	3
2				Credit	Heat Island Reduction	2
1				Credit	Light Pollution Reduction	1
			1	Credit	Site Master Plan	1
1				Credit	Joint Use of Facilities	1
6	1	1	4	**Water Efficiency**		**12**
Y				Prereq	Outdoor Water Use Reduction	Required
Y				Prereq	Indoor Water Use Reduction	Required
Y				Prereq	Building-Level Water Metering	Required
2				Credit	Outdoor Water Use Reduction	2
3	1	1	2	Credit	Indoor Water Use Reduction	7
			2	Credit	Cooling Tower Water Use	2
1				Credit	Water Metering	1
14	3	4	10	**Energy and Atmosphere**		**31**
Y				Prereq	Fundamental Commissioning and Verification	Required
Y				Prereq	Minimum Energy Performance	Required
Y				Prereq	Building-Level Energy Metering	Required
Y				Prereq	Fundamental Refrigerant Management	Required
	3	3		Credit	Enhanced Commissioning	6
11			5	Credit	Optimize Energy Performance	16
1				Credit	Advanced Energy Metering	1
			2	Credit	Demand Response	2
			3	Credit	Renewable Energy Production	3
		1		Credit	Enhanced Refrigerant Management	1
2				Credit	Green Power and Carbon Offsets	2
5	0	2	6	**Materials and Resources**		**13**
Y				Prereq	Storage and Collection of Recyclables	Required
Y				Prereq	Construction and Demolition Waste Management Planning	Required
			5	Credit	Building Life-Cycle Impact Reduction	5
1			1	Credit	Building Product Disclosure and Optimization - Environmental Product	2
1		1		Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
1		1		Credit	Building Product Disclosure and Optimization - Material Ingredients	2
2				Credit	Construction and Demolition Waste Management	2

9	4	3	0	**Indoor Environmental Quality**		**16**
Y				Prereq	Minimum Indoor Air Quality Performance	Required
Y				Prereq	Environmental Tobacco Smoke Control	Required
Y				Prereq	Minimum Acoustic Performance	Required
2				Credit	Enhanced Indoor Air Quality Strategies	2
3				Credit	Low-Emitting Materials	3
1				Credit	Construction Indoor Air Quality Management Plan	1
1		1		Credit	Indoor Air Quality Assessment	2
		1		Credit	Thermal Comfort	1
1	1			Credit	Interior Lighting	2
	2	1		Credit	Daylight	3
1				Credit	Quality Views	1
	1			Credit	Acoustic Performance	1

4	0	2	0	**Innovation**		**6**
3		2		Credit	Innovation	5
1				Credit	LEED Accredited Professional	1

2	1	0	1	**Regional Priority**		**4**
1				Credit	Regional Priority: Optimize Energy Performance, 8 points min.	1
	1			Credit	Regional Priority: Site development - protect or restore habitat, 2 points min.	1
1				Credit	Regional Priority: Outdoor water use reduction, 2 points min.	1
			1	Credit	Regional Priority: Specific Credit	1

51	15	13	31	**TOTALS**	Possible Points:	**110**

Certified: 40 to 49 points, Silver: 50 to 59 points, Gold: 60 to 79 points, Platinum: 80 to 110

VvS | Architects & Consultants

INTEGRATIVE PROCESS

Yes	Maybe +	Maybe -	No	Available
1	0	0	0	1

MATERIALS AND RESOURCES

Yes	Maybe +	Maybe -	No	Available
5	0	2	6	13

LOCATION AND TRANSPORTATION

Yes	Maybe +	Maybe -	No	Available
4	2	0	9	15

INDOOR ENVIRONMENTAL QUALITY

Yes	Maybe +	Maybe -	No	Available
9	4	3	0	16

SUSTAINABLE SITES

Yes	Maybe +	Maybe -	No	Available
6	4	1	1	12

INNOVATION IN DESIGN

Yes	Maybe +	Maybe -	No	Available
4	0	2	0	6

WATER EFFICIENCY

Yes	Maybe +	Maybe -	No	Available
6	1	1	4	12

REGIONAL PRIORITY

Yes	Maybe +	Maybe -	No	Available
2	1	0	1	4

ENERGY AND ATMOSPHERE

Yes	Maybe +	Maybe -	No	Available
14	3	4	10	31

PROJECT TOTAL

Yes	Maybe +	Maybe -	No	Available
51	15	13	31	110

NOTE: At least 40 points, "Certified Level" and 10% energy savings over than MA code is required by MSBA. For 2% additional reimbursement, projects must also achieve a minimum of 6 points in EA Credit "Optimize Energy Performance", LEED "Silver Level" (50 points) and 20% energy savings over MA code.

RESPONSE TO MSBA REVIEW COMMENTS (PSR)

SECTION 4.1.6

A2

4.1.6 – APPENDIX 2

- MSBA Review Comments including response by District.

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ATTACHMENT A
MODULE 3 – PREFERRED SCHEMATIC REPORT REVIEW COMMENTS

District: Manchester-Essex Regional School District
School: Manchester Memorial Elementary School
Owner's Project Manager: Dore and Whittier Management Partners, LLC.
Designer Firm: JCJ Architecture, PC.
Submittal Due Date: February 21, 2018
Submittal Received Date: February 21, 2018
Review Date: February 21 – March 12, 2018
Received 3/21/2018, District Response Due: 4/4/2018
Reviewed by: A. Waldron, F. Bradley, C. Alles, J. Jumpe

MSBA REVIEW COMMENTS

The following comments[1] on the Preferred Schematic Report submittal are issued pursuant to a review of the project submittal document for the proposed project presented as a part of the Feasibility Study submission in accordance with the MSBA Module 3 Guidelines.

3.3 PREFERRED SCHEMATIC REPORT

Overview of Preferred Schematic Submittal	Complete	Provided; *Refer to comments following each section*	Not Provided; *Refer to comments following each section*	Receipt of District's Response; *To be filled out by MSBA Staff*
OPM Certification of Completeness and Conformity	☒	☐	☐	☐
Table of Contents	☒	☐	☐	☐
3.3.1 Introduction	☒	☐	☐	☐
3.3.2 Evaluation of Existing Conditions	☒	☐	☐	☐
3.3.3 Final Evaluation of Alternatives	☐	☒	☐	☐
3.3.4 Preferred Solution	☐	☒	☐	☐
3.3.5 Local Actions and Approval Certification	☒	☐	☐	☐

[1] The written comments provided by the MSBA are solely for purposes of determining whether the submittal documents, analysis process, proposed planning concept and any other design documents submitted for MSBA review appear consistent with the MSBA's guidelines and requirements, and are not for the purpose of determining whether the proposed design and its process may meet any legal requirements imposed by federal, state or local law, including, but not limited to, zoning ordinances and by-laws, environmental regulations, building codes, sanitary codes, safety codes and public procurement laws or for the purpose of determining whether the proposed design and process meet any applicable professional standard of care or any other standard of care. Project designers are obligated to implement detailed planning and technical review procedures to effect coordination of design criteria, buildability, and technical adequacy of project concepts. Each city, town and regional school district shall be solely responsible for ensuring that its project development concepts comply with all applicable provisions of federal, state, and local law. The MSBA recommends that each city, town and regional school district have its legal counsel review its development process and subsequent bid documents to ensure that it is in compliance with all provisions of federal, state and local law, prior to bidding. The MSBA shall not be responsible for any legal fees or costs of any kind that may be incurred by a city, town or regional school district in relation to MSBA requirements or the preparation and review of the project's planning process or plans and specifications.

3.3.1 INTRODUCTION

	Provide the following Items	Complete; *No response required*	Provided; *District's response required*	Not Provided; *District's response required*	Receipt of District's Response; *To be filled out by MSBA Staff*
1	Overview of the process undertaken since submittal of the Preliminary Design Program that concludes with submittal of the Preferred Schematic Report, including any new information and changes to previously submitted information	☒	☐	☐	☐
2	Summary of updated project schedule, including				
	a) Projected MSBA Board of Directors Meeting for approval of Project Scope and Budget Agreement	☒	☐	☐	☐
	b) Projected Town/City vote for Project Scope and Budget Agreement	☒	☐	☐	☐
	c) Anticipated start of construction	☒	☐	☐	☐
	d) Target move in date	☒	☐	☐	☐
3	Summary of the final evaluation of existing conditions	☒	☐	☐	☐
4	Summary of final evaluation of alternatives	☒	☐	☐	☐
5	Summary of District's preferred solution	☒	☐	☐	☐
6	A copy of the MSBA Preliminary Design Program project review and corresponding District response	☒	☐	☐	☐

MSBA Review Comments:

No review comments for this section.

Response: Acknowledged

3.3.2 EVALUATION OF EXISTING CONDITIONS

	Provide the following Items	Complete; *No response required*	Provided; *District's response required*	Not Provided; *District's response required*	Receipt of District's Response; *To be filled out by MSBA Staff*
1	A narrative of any changes resulting from new information that informs the conclusions of the evaluation of the existing conditions and its impact on the final evaluation of alternatives	☒	☐	☐	☐
2	If changes are substantive, provide an updated Evaluation of Existing Conditions and identify as final. Identify additional testing that is recommended during future phases of the proposed project and indicate when the investigations and analysis will be completed	☒	☐	☐	☐

MSBA Review Comments:

No review comments for this section.

Response: Acknowledged

3.3.3 FINAL EVALUATION OF ALTERNATIVES

Include at least three potential alternatives, with at least one renovation and/or addition option. Include the following for each alternative where appropriate:

	Provide the following Items	Complete; *No response required*	Provided; *District's response required*	Not Provided; *District's response required*	Receipt of District's Response; *To be filled out by MSBA Staff*
1	An analysis of each prospective site including:				
	a) Natural site limitations	☒	☐	☐	☐
	b) Building footprint(s)	☒	☐	☐	☐
	c) Athletic fields	☒	☐	☐	☐
	d) Parking areas and drives	☒	☐	☐	☐
	e) Bus and parent drop-off areas	☒	☐	☐	☐
	f) Site access and surrounding site features.	☒	☐	☐	☐
2	Evaluation of the potential impact that construction of each option will have on students and measures recommended to mitigate impact	☐	☒	☐	☐
3	Conceptual architectural and site drawings that satisfy the requirements of the education program	☒	☐	☐	☐
4	An outline of the major building structural systems	☒	☐	☐	☐
5	The source, capacities, and method of obtaining all utilities	☐	☒	☐	☐
6	A narrative of the major building systems	☒	☐	☐	☐
7	A proposed total project budget and a construction cost estimate using the Uniformat II Elemental Classification format (to as much detail as the drawings and descriptions permit, but no less than Level 2)	☒	☐	☐	☐
8	Permitting requirements and associated approval schedule	☒	☐	☐	☐
9	Proposed project design and construction schedule including consideration of phasing	☐	☒	☐	☐
10	Completed Table 1 – MSBA Summary of Preliminary Design Pricing spreadsheet	☒	☐	☐	☐

MSBA Review Comments:

2) As part of the schematic design documents, please provide further detail in narrative and graphic form that clearly describes and illustrates the separation, safety provisions, and possible construction

laydown areas that will be applied during construction on the occupied site associated with the preferred solution.

Response: ***Acknowledged***

In addition, the conceptual phasing plan indicates that modular classrooms may be used during construction. Please note that the costs associated with modular classrooms will be considered ineligible for reimbursement.

Response: ***Acknowledged***

In response to these review comments, please confirm that these potential project costs will be itemized in the schematic design submission.

Response: ***Yes, they will be.***

5) The report indicates the sources of utilities but does not indicate the capacity of these systems. Please verify the capacity and extent of required utility related work that will be established prior to the schematic design submission.

Response: ***The existing conditions survey, documented and included in the PDP submission, confirmed that the existing utilities are sufficient to serve the existing Memorial School which was designed to accommodate a larger enrollment of student. The proposed school shall serve a smaller or similar enrollment (similar when including the projected expansion of the Pre-Kindergarten program.) Additionally, an initial review by the civil and MEP engineers further supports this assessment. As the various systems are further developed in Schematic Design, these assessments will continue to be tested.***

It is expected that the new building will be served by a new utilities corridor coming off either Summer Street along the School driveway and then directly to the south-eastern corner of the new building or around the north of the existing building and towards a new mechanical room in the basement of the west end of the classroom wing. The existing topography drops at this end of the property and a basement level here would actually be significantly above grade and stepped foundations would be required at this location.

9) Please incorporate the proposed construction phasing into the proposed project schedule.

Response: ***See revised schedule attached***

No further review comments for this section.

3.3.4 PREFERRED SOLUTION

	Provide the following Items	Complete; *No response required*	Provided; *District's response required*	Not Provided; *District's response required*	Receipt of District's Response; *To be filled out by MSBA Staff*
1	Educational Program				
	a) Summary of key components and how the preferred solution fulfills the educational program	☒	☐	☐	☐
	b) Design responses including desired features and/or layout considerations	☒	☐	☐	☐
	c) Proposed variances to, and benefits of, any changes to the current grade configuration (if any) and a related transition plan	☐	☐	☐	☐
2	Preferred Solution Space Summary				
	a) Updated MSBA Space Summary spreadsheet	☐	☒	☐	☐
	b) Itemization and explanation of variations from the initial space summary (and MSBA review) included in the Preliminary Design Program	☒	☐	☐	☐
3	Preliminary NE-CHPS or LEED-S scorecard	☐	☒	☐	☐
4	Conceptual floor plans of the preferred solution, in color that are clearly labeled to identify educational spaces	☐	☒	☐	☐
5	Clearly labeled site plans of the preferred solution including, but not limited to:				
	a) Structures and boundaries	☒	☐	☐	☐
	b) Site access and circulation	☐	☐	☒	☐
	c) Parking and paving	☒	☐	☐	☐
	d) Zoning setbacks and limitations	☐	☐	☒	☐
	e) Easements and environmental buffers	☐	☐	☒	☐
	f) Emergency vehicle access	☐	☐	☒	☐
	g) Safety and security features	☐	☐	☒	☐
	h) Utilities	☐	☐	☒	☐
	i) Athletic fields and outdoor educational spaces (existing and proposed)	☒	☐	☐	☐
	j) Site orientation	☐	☒	☐	☐
6	An overview of the Total Project Budget and local funding including the following:				
	a) Estimated total construction cost	☒	☐	☐	☐
	b) Estimated total project cost	☐	☒	☐	☐
	c) Estimated funding capacity	☒	☐	☐	☐
	d) List of other municipal projects currently	☐	☐	☒	☐

Provide the following Items		Complete; *No response required*	Provided; *District's response required*	Not Provided; *District's response required*	Receipt of District's Response; *To be filled out by MSBA Staff*
	planned or in progress				
	e) District's not-to-exceed Total Project Budget	☐	☐	☒	☐
	f) Brief description of the local process for authorization and funding of the proposed project	☒	☐	☐	☐
	g) Estimated impact to local property tax, if applicable	☐	☒	☐	☐
	h) Completed MSBA Budget Statement	☐	☒	☐	☐
7	Updated Project Schedule including the following projected dates:				
	a) Massachusetts Historical Commission Project Notification Form	☒	☐	☐	☐
	b) MSBA Board of Directors meeting for approval to proceed into Schematic Design	☒	☐	☐	☐
	c) MSBA Board of Directors meeting for approval of project scope and budget agreement and project funding agreement	☒	☐	☐	☐
	d) Town/City vote for project scope and budget agreement	☒	☐	☐	☐
	e) Design Development submittal date	☒	☐	☐	☐
	f) MSBA Design Development Submittal Review (include required 21-day duration)	☒	☐	☐	☐
	g) 60% Construction Documents submittal date	☒	☐	☐	☐
	h) MSBA 60% Construction Documents Submittal Review (include required 21-day duration)	☒	☐	☐	☐
	i) 90% Construction Documents submittal date	☒	☐	☐	☐
	j) MSBA 90% Construction Documents Submittal Review (include required 21-day duration)	☒	☐	☐	☐
	k) Anticipated bid date/GMP execution date	☒	☐	☐	☐
	l) Construction start	☒	☐	☐	☐
	m) Move-in date	☒	☐	☐	☐
	n) Substantial completion	☒	☐	☐	☐

MSBA Review Comments:

2a) Please refer to detailed comments in "Attachment B".

Response: ***See Responses within Attachment B response.***

3) The information provided indicates the District intends to achieve the 2% additional reimbursement through the MSBA Green School Program. Please note that in order to receive this additional

reimbursement, the District and design team must also exceed the MA state energy code by at least 20% using the current 2015 International Energy Conservation Code. In response to these review comments, please confirm with the project's sustainability consultants if the submitted LEED scorecard indicating nine points in the Energy & Atmosphere "Optimize Energy Performance" category will meet or exceed the criteria set forth in project Advisory #41.

Response: ***The design team would recommend the project to meet or exceed the criteria set forth in project Advisory #41 in order to obtain the additional 2% reimbursement and enjoy operational savings for the lifetime of the building. The strategies considered include advanced mechanical systems, passive design strategies for the building massing and orientation along the east-west axis, increased daylighting and reduced LPD, occupancy sensors, reduced exterior lighting, improved building envelope, shading, white roof and light-colored paving on-site to reduce ambient temperature around the building.***

4) The information provided indicates the building will be used after-hours by the community. In response to these review comments, please provide in graphic or narrative form, further information that describes how the building will be used by the community, how the community will enter the building, and how the building will be secured and monitored.

Response: ***Presently, the existing Memorial School supports a number of programs after school. These include:***

- ***A privately run after-school program that operates on all school days to allow later pick-up times for working parents. This program uses various spaces throughout the school, most predominately the cafeteria, gymnasium and outdoor spaces such as the playgrounds and adjacent turf field. This pattern of building use is expected to be similar in the new building. It is anticipated that the building will remain locked and secured during the program operations and access in-and-out of the building will be carefully controlled by the program's staff or by school staff who stay on beyond school hours.***

- ***A number of District-sponsored athletic activities and events including middle and high school practice sessions and intermural games. These activities occur primarily in the gymnasium and the future building configuration will allow this use have its own entry point as indicated on the plans and could be securely separated from the administrative and academic wings.***

- ***A number of community sponsored athletic sporting programs and events. Similarly, their use will be confined to the gymnasium, participants will arrive via the Community entrance***

and the academic and administrative wings will be able to securely separate those areas of the building.

- ***Town voting is anticipated to continue to be held within the Memorial School. Voting occurs occasionally, and spans day and early evening hours. Similarly, their use will be confined to the gymnasium, participants will arrive via the Community entrance and the academic and administrative wings will be able to securely separate those areas of the building.***

5b,d-h) Not specifically indicated on plans. Please update and resubmit in response to these review comments.

Response: ***Refer to attached Enhanced Site Plans***

- ***Extent of Zone 1 & II***
- ***FEMA Flood Map***
- ***Height Regulations***
- ***Zoning Restrictions***
- ***Property Line Set Back***
- ***Utilities***

Emergency Vehicle Access is assumed to be to the main entry with the East entry as a secondary entry point. During the SD phase additional study will consider improving and codifying emergency access to the southern side of the proposed building.

Safety and security features will be developed further during the Schematic Design phase. However, site line-of-sight considerations informed the proposed site layout and the interior building layout has been developed to specifically allow several zones of security depending on the building use at any given time; school use and after school public uses.

5j) In response to these review comments, please provide preliminary resiliency and sustainability documentation including a building orientation study that clearly indicates the rationale for the proposed building's orientation, location of classrooms, and outdoor learning environment.

Response: ***One of the key drivers in this design option was the opportunity to maintain school operations during construction and limit the disruption to school operations. The proposed design allows for phasing of the construction, and requires modular classroom use for only one wing during the first two phases of construction.***

The selected option also allows for incorporation of multiple passive design, sustainability and resiliency strategies info the design.

Key benefits are listed below:

- ***Limiting the site disturbance, all construction beyond the wetland buffer (sustainability)***
- ***Preserving some of the existing site circulation, while improving it will allow for reuse and efficient resource use (sustainability)***
- ***This option reduces the building perimeter as compared to the existing one, to create a more compact shape of the building (passive design) – benefit – less perimeter envelope will allow for increased insulation at reduced cost (sustainability)***
- ***The proposed structure places all core learning spaces at building perimeter, ensuring daylighting and views to the outside for all regularly occupied spaces – benefit – increased occupant wellbeing and reduced lighting load contributing to energy savings for lighting and cooling (sustainability)***
- ***Punched windows as opposed to curtain wall for majority of the building, as requested by the town, will decrease construction cost and energy consumption of the building (sustainability)***
- ***Larger glazed areas on the south side of the building (with overhangs/automated exterior shades/blinds) – in core learning spaces will provide heat gain during heating season, overhangs/exterior blinds will provide control of heat gain during cooling season. Recommended triple glazed windows with "warm" frames (passive design strategy)***
- ***Reduced glazing size on the north, east and west to reduce excessive heat loss (depending on orientation/season) (passive design strategy)***
- ***Super insulated envelope – improved insulation, reduced air leakage, underslab continuous insulation, improved roof slab insulation, no thermal bridging (passive design, comfort)***
- ***Highly efficient mechanical ventilation to ensure superior indoor air quality, to eliminate moisture or VOC built-up (passive design, comfort)***
- ***Roofs are calculated for increased snow loads and wind loads to allow for safety and climate adaptation – recommended rooftop snowmelt to decrease loads and maintenance cost (resiliency)***
- ***Sloped roofs limit snow accumulation and limit maintenance cost, overhangs provide shading (resiliency, passive strategies)***

- ***Generator required for life-safety, located at the ground floor level, not basement, to avoid potential flooding and limit construction cost (resiliency)***
- ***Native and drought-resistant vegetation, no turf, to allow for elimination of artificial irrigation and reduction in maintenance costs (sustainability)***
- ***White roof and light-colored site materials to reduce heat gain during heating season and reduce ambient temperatures (passive design, sustainability)***
- ***Exterior/architectural sunlight control on the south side, to reduce heat gain in the summer and eliminate glare (passive design)***
- ***Large green roof on over the kindergarten/admin wing to provide educational opportunities for children, reduce heat island effect and aid with stormwater management (sustainability)***
- ***Placing gym on the inside of the building mass will limit the heat/cooling losses. This will be further reduced by the possibility of sloped roof overhangs (passive design, sustainability)***
- ***The Kindergarten classrooms – as well as the cafeteria can both work to activate the outdoor areas on that south side. At the north and south outdoor spaces the project will explore making those learning area which could support environmental education, particularly related to the adjacent wetlands and river way (sustainability)***
- ***Incorporation of movable shading devices for the outside learning areas to allow for more frequent use (comfort)***
- ***MEP equipment located in raised location (rooftop enclosure) to avoid flood damage (resiliency)***
- ***Renewable energy – the project is interested to explore renewable energy option like PVs or solar thermal heating for hot water, to be discussed during design charrette with the town sustainability group (sustainability, resiliency)***
- ***If PVs were installed, the project would explore Tesla batteries to allow for building use in case of power outage without the need for fossil-fuel based generator (sustainability, resiliency)***

In addition, provide narratives that further describe the passive sustainable strategies that will be incorporated into the proposed project.

Response: **The project is planning to implement numerous sustainable and passive design strategies. The massing of the building is more compact as compared to the existing building and follows site conditions for the most optimized use of available resources. The structure, oriented on**

the east-west axis will include punched windows, with larger glazed areas on the south side to maximize solar heat gain during cold winter months, while providing architectural shading devices to avoid overheating at the end of the school year and summer if the building is used for summer programming.

The envelope will be improved beyond the MA code to ensure improved comfort and energy efficiency – it will feature triple glazed windows with insulated frames, high Ra-value insulation in walls and roof, under-slab insulation and reduced air leakage. The building will use high efficiency mechanical equipment to provide superior ventilation in a controlled manner. All learning areas are placed around the perimeter to allow for the use of natural light and reduced use of artificial light. Lighting will be LED with advanced controls. Cool roof and green roof will reduce the cooling load during warm months.

6b) The information provided in the Budget Overview section indicates the estimated total project budget is $62,610,000. However, the preliminary pricing table indicates $55,560,000 as the estimated total project budget. In response to these review comments, please clarify which is correct and resubmit updated information as necessary.

Response: ***The correct estimated project budgets are as follows:***

- ***Estimate Construction Budget:*** ***$44,505,000***
- ***Estimated Soft Costs Budget:*** ***$11,057,000***
- ***Estimated Total Project Budget:*** ***$55,562,000***

6d,e) Not provided, please submit.

Response: **List of other municipal projects currently planned or in progress**

- ***The District is inquiring with the Towns and will report the data in the future***

District's not-to-exceed Total Project Budget

- ***The District is using the Feasibility/ Schematic Design process to determine the expected costs versus the required programmatic need.***

6g) The information provided indicates the estimated impact to local property taxes is in development and will be developed using the feasibility study cost estimates. In response to these review comments, please provide an update of this process and indicate if an estimated impact to local property taxes has been identified.

Response: ***This information will be determined based on the Schematic Design estimates.***

6h) In response to these review comments, please complete the "Revenue" tab included in MSBA's Budget Statement template. This information should include the District's reported sources of revenue for the latest three fiscal years.

Response: ***This information was included in the budget statement template – Please refer to the Second (2nd) tab of the worksheet. See attached.***

In addition, please provide a revised 'Expenditures' Budget Statement that includes an itemization of Instructional – Teaching Services category.

Response: ***This section was left blank because it is not tracked in this format on MERSD's General ledger, nor is it monitored on the DESE's end-of-year-report using these categories. If Desired, MERSD can provide additional detail. A sample from FY16 is attached (See schedule 3.)***

No further review comments for this section.

3.3.5 LOCAL ACTIONS AND APPROVALS

	Provide the following Items	Complete; *No response required*	Provided; *District's response required*	Not Provided; *District's response required*	Receipt of District's Response; *To be filled out by MSBA Staff*
1	Certified copies of the School Building Committee meeting notes showing specific submittal approval vote language and voting results, and a list of associated School Building Committee meeting dates, agenda, attendees and description of the presentation materials.	☒	☐	☐	☐
2	Signed Local Actions and Approvals Certification(s):				
	a) Submittal approval certificate	☒	☐	☐	☐
	b) Grade reconfiguration and/or redistricting approval certificate (if applicable)	☐	☐	☐	☐
3	Provide the following to document approval and public notification of school configuration changes associated with the proposed project:				
	a) A description of the local process required to authorize a change to the existing grade configuration or redistricting in the district	☐	☐	☐	☐
	b) A list of associated public meeting dates, agenda, attendees and description of the presentation materials	☐	☐	☐	☐
	c) Certified copies of the governing body (e.g. School Building Committee) meeting notes showing specific grade reconfiguration and/or	☐	☐	☐	☐

	redistricting, vote language, and voting results if required locally				
	d) A certification from the Superintendent stating the District's intent to implement a grade configuration or consolidate schools, as applicable. The certification must be signed by the Chief Executive Officer, Superintendent of Schools, and Chair of the School Committee.	☐	☐	☐	☐

MSBA Review Comments:

No review comments for this section.

Response: ***Acknowledged***

Additional Comments:

- *The MSBA issues project advisories from time to time, as informational updates for Districts, Owner's Project Managers, and Designers in an effort to facilitate the efficient and effective administration of proposed projects currently pending review by the MSBA. The advisories can be found on the MSBA's website. In response to these review comments, please confirm that the District's consultants have reviewed all project advisories and they have been incorporated into the proposed project as applicable.*

  Response: ***Acknowledged***

End

ATTACHMENT B
MODULE 3 – PREFERRED SCHEMATIC SPACE SUMMARY REVIEW

District: Manchester-Essex Regional School District
School: Manchester Memorial Elementary School
Owner's Project Manager: Dore and Whittier Management Partners, LLC.
Designer Firm: JCJ Architecture, PC.
Submittal Due Date: February 21, 2018
Submittal Received Date: February 21, 2018
Review Date: February 21 – March 12, 2018
Received 3/21/2018, District Response Due: 4/4/2018
Reviewed by: A. Waldron, F. Bradley, C. Alles, J. Jumpe

The Massachusetts School Building Authority (the "MSBA") has completed its review of the proposed space summary of the preferred alternative as produced by JCJ Architecture, PC and its consultants. This review involved evaluating the extent to which the Manchester Memorial Elementary School's proposed space summary conforms to the MSBA guidelines and regulations.

The MSBA considers it critical that the Districts and their Designers aggressively pursue design strategies to achieve compliance with the MSBA guidelines for all proposed projects in the new program and strive to meet the gross square footage allowed per student and the core classroom space standards, as outlined in the guidelines. The MSBA also considers its stance on core classroom space critical to its mission of supporting the construction of successful school projects throughout the Commonwealth that meet current and future educational demands. The MSBA does not want to see this critical component of education suffer at the expense of larger or grander spaces that are not directly involved in the education of students.

The following review is based on the submitted District's "Preferred Option" with an agreed upon design enrollment of 335 students in grades PK-5.

The MSBA review comments are as follows:

- **Core Academic** – The District is proposing to provide a total of 25,500 net square feet (nsf) which exceeds the MSBA guidelines by 10,500 nsf. The proposed area in this category has not changed since the Preliminary Design Program submittal.

The following spaces are proposed in this category:

- (4) 1,200 nsf Pre-kindergarten classrooms; Please provide additional information that supports the need for (4) Pre-kindergarten classrooms.
  Response: ***The MERSD currently offers a district-wide integrated preschool program housed at Memorial School in Manchester. Enrollment is currently constrained by available space. The preschool typically serves a total of***

20-30 students through a two day program for three year olds and a three day program for four year olds. The student cohort comprises tuition paying peer pals and students with disabilities. The program runs from 8:30am-12:30pm e to space constraints, the current program is limited in size.

It is part of the district's vision to provide greater access to Pre-School by expanding the program to all residents with young children ages 3-4. An assessment of demographic data, leads us to conclude that we should anticipate enrollment to average between 45 to 65 students. Integrated Pre-Kindergarten classrooms, by standard, should be a maximum of 15 students; therefore we are requesting four classrooms.

- (3) 1,200 nsf Kindergarten classrooms which meets the MSBA guidelines. No further action required.
  Response: Acknowledged

- (15) 950 nsf general classrooms, which is 2,850 nsf and (3) classrooms in excess of the guidelines. Based on the information provided in conjunction with the District's desire to maintain a three section structure for grades 1-5, the MSBA accepts this variation to the guidelines. No further action required.
  Response: Acknowledged

  (2) 1,200 nsf Stem/Maker spaces which is 2,400 nsf in excess of the guidelines. The MSBA accepts a variation to the guidelines limited to a 1,200 nsf space located within the upper grades of the proposed project. The MSBA does not accept the variation for a 1,200 nsf space to be located within the lower grades portion of the building. However, the MSBA does not object to including this square footage in the project, but will consider this 1,200 nsf ineligible for reimbursement.
  Response: Acknowledged

Please note that any square footage exceeding these variations in subsequent submittals will be considered ineligible for reimbursement. Please acknowledge.
Response: Acknowledged

- **Special Education** – The District is proposing to provide a total of 6,540 net square feet (nsf) which exceeds the MSBA guidelines by 2,010 nsf. The proposed area in this category has not changed since the Preliminary Design Program submittal. The proposed square footage represents a significant increase from the

existing square footage; however, the numbers of full-time staff members appear to remain unchanged. Please clarify and explain the increase in programmatic space.

Response: ***As outlined in the PDP Document, the Special Education program at the Memorial School is a District-wide program. As such, the number of staff and space program requirements should be based on serving all elementary school students in the District, not just those at the Memorial School specifically as the Space Summary Template assumes.***

Presently, the staffing needs to serve all SPED elementary school students in the District is adequately being met, however, the space needs are presently inadequate based on serving all the elementary schools in the District.

Please note that the Special Education program is subject to approval by the Department of Elementary and Secondary Education (DESE). The District should provide this information for this submittal with the Schematic Design Submittal. Formal approval of the District's proposed Special Education program by the DESE is a prerequisite for executing a Project Funding Agreement with the MSBA.

Response: ***Acknowledged***

- **Art and Music** – The District is proposing to provide a total of 2,550 nsf which exceeds the MSBA guidelines by 50 nsf. The proposed area in this category has not changed since the Preliminary Design Program submittal. The MSBA does not accept this variation to the guidelines; seek to reduce overall area to align with guidelines. Please note that MSBA will consider area beyond that included in the guidelines as ineligible for reimbursement.

  Response: ***This additional square footage is a priority for the District and as such the District acknowledges that, if not possible to include in the grossing factor, it shall be ineligible for reimbursement.***

- **Health and Physical Education** – The District is proposing to provide a total of 7,900 nsf which exceeds the MSBA guidelines by 1,600 nsf. The proposed area in this category has not changed since the Preliminary Design Program submittal. The MSBA does not object to including this space in the proposed project, however as previously noted and acknowledged, all square footage in excess of MSBA guidelines will be considered ineligible for reimbursement.

  Response: ***Acknowledged***

- **Media Center** – The District is proposing to provide a total of 2,178 nsf which meets the MSBA guidelines. The proposed area in this category has not changed since the Preliminary Design Program submittal. No further action required.

  Response: ***Acknowledged***

- **Dining and Food Service** – The District is proposing to provide a total of 5,660 nsf which meets the MSBA guidelines. The proposed area in this category has not changed since the Preliminary Design Program submittal. No further action required.

  Response: ***Acknowledged***

- **Medical** – The District is proposing to provide a total of 510 nsf which meets the MSBA guidelines. The proposed area in this category has decreased by 50 nsf since the Preliminary Design Program submittal. No further action required.

  Response: ***Acknowledged***

- **Administration and Guidance** – The District is proposing to provide a total of 2,401 nsf which exceeds the MSBA guidelines by 351 nsf. The proposed area in this category has not changed since the Preliminary Design Program submittal. As previously indicated, the MSBA does not accept this variation to the MSBA guidelines and recommends that the District and its Designer investigate the potential to include these spaces within the grossing factor of the building while maintaining an overall grossing factor of 1.50. Please note that square footage proposed in this category in excess of the guidelines will be ineligible for reimbursement. Please acknowledge.

  Response: ***This additional square footage is a priority for the District and as such the District acknowledges that, if not possible to include in the grossing factor, it shall be ineligible for reimbursement.***

- **Custodial and Maintenance** – The District is proposing to provide a total of 1,935 nsf which meets the MSBA guidelines. The proposed area in this category has not changed since the Preliminary Design Program submittal. No further action required.

  Response: ***Acknowledged***

- **Other** - The District is proposing to provide a 1,800 nsf Parks and Recreational space. The proposed area in this category has not changed since the Preliminary Design Program submittal. The MSBA does not object to including this space in the proposed project, however, as previously noted and acknowledged, all square footage associated with this category will be considered ineligible for reimbursement.

  Response: ***Acknowledged***

- **Total Building Net Floor Area** – The District is proposing to provide a total of 56,974 nsf which exceeds the MSBA guidelines by 16,311 nsf. The proposed area has decreased by 50 nsf since the Preliminary Design Program submittal. Based on the comments provided above, the MSBA will continue to work with the District and its consultants to establish an acceptable square footage that will be used to determine the limits of MSBA's participation.

  Response: Acknowledged

- **Total Building Gross Floor Area** – The District is proposing to provide a total of 82,800 gsf which exceeds the MSBA guidelines by 23,868 gsf. The proposed area has increased by 2,030 gsf since the Preliminary Design Program submittal. Based on the comments provided above, the MSBA will continue to work with the District and its consultants to establish and acceptable square footage that will be used to determine the limits of MSBA's participation.

  Response: Acknowledged

Please note that in October, 2017 the MSBA released an updated space summary template Project Advisory #52. This new template will be required to be used for the Schematic Design submittal. Please Acknowledge

Response: Acknowledged

Please note that upon moving forward into subsequent phases of the proposed project, the Designer will be required to provide, with each submission, a signed, updated space summary that reflects the design and demonstrates that the design remains, except as agreed to in writing by the MSBA, in accordance with the guidelines, rules, regulations and policies of the MSBA. Should the updated space summary demonstrate changes to the previous space summary include a narrative description of the change(s) and the reason for the proposed changes to the project.

Response: Acknowledged

SCHMATIC DESIGN ESTIMATES

SECTION 4.1.7

A3

4.1.7 – APPENDIX 3

- Schematic Design Phase Estimate – VJ Associates (Designer)
- Schematic Design Phase Estimate – W.T. Rich (OPM)
- Schematic Design Phase Value Engineering Summary Version14 – W.T. Rich (OPM)

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ASSOCIATES

35 HIGHLAND CIRCLE, NEEDHAM, MASSACHUSETTS

SD ESTIMATE

MANCHESTER MEMORIAL ELEMENTARY SCHOOL

MANCHESTER BY THE SEA, MA

Architect: JCJ Architecture

July 12 , 2018

SD ESTIMATE
MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER BY THE SEA, MA

Architect: JCJ Architecture

BASIS OF ESTIMATE

The estimate is based on the SD drawings and documents prepared by JCJ Architecture, issued scope of work .

SD Value Engineering (VE) developed list from WT Rich, V13
SD Final Revision floor plans 07-10-2018 from JCJ

Qualifications / Clarifications:

1 Labor costs included at local prevailing wage labor rates.
2 The following mark ups are used:

Escalation To Mid-Point Of Construction	6.00%
Design & Estimating Contingency	10.00%
General Conditions	Included
General Requirements	Included
Bond	Included
Insurance	Included
Permit	Included
CM Fee	Included
CM Contingency	2.00%
Phasing Premium	2.00%

3 The estimate is based on the premise that the design will meet all codes, laws, ordinances, rules, & regulations in effect at the time that the estimate was prepared. The estimate shall be adjusted should any discrepancies between design and the aforementioned codes, laws or ordinances result in, or require, an increase in the cost of the work.

4 Project assumes early CMR bid package awards for sitework, concrete and steel in maintaining the overall construction schedule.

The estimate excludes the following:

1 A-E Fees
2 Overtime
3 Working in contaminated soils
4 Loose furniture and equipment
5 Builder's Risk Insurance
6 Third party commissioning costs

SD ESTIMATE
MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER BY THE SEA, MA

Architect: JCJ Architecture

TOTAL PROJECT SUMMARY

UNICODE	DESCRIPTION	COST	COST/SF 77,102	NOTE
BUILDING				
A	**SUBSTRUCTURE**			
A1010	Standard Foundations	$ 1,148,034	$ 14.89	
A1020	Special Foundations	$ 562,500	$ 7.30	
A1040	Slab on Grade	$ 694,340	$ 9.01	
A2010	Basement Excavation	$ -	$ -	
A2020	Basement Walls	$ -	$ -	
B	**SHELL**			
B1010	Floor Construction	$ 1,091,062	$ 14.15	
B1020	Roof Construction	$ 1,836,058	$ 23.81	
B2010	Exterior Walls	$ 2,317,261	$ 30.05	
B2020	Exterior Windows	$ 1,286,938	$ 16.69	
B2030	Exterior Doors	$ 205,100	$ 2.66	
B3010	Roof Coverings	$ 1,664,640	$ 21.59	
B3020	Roof Openings	$ 70,000	$ 0.91	
C	**INTERIORS**			
C1010	Partitions	$ 1,675,705	$ 21.73	
C1020	Interior Doors	$ 533,970	$ 6.93	
C1030	Fittings	$ 479,881	$ 6.22	
C2010	Stair Construction	$ 173,000	$ 2.24	
C2020	Stair Finishes	$ 84,000	$ 1.09	
C3010	Wall Finishes	$ 671,004	$ 8.70	
C3020	Floor Finishes	$ 748,262	$ 9.70	
C3030	Ceiling Finishes	$ 620,290	$ 8.05	
D	**SERVICES**			
D1010	Elevators & Lifts	$ 124,000	$ 1.61	
D2000	Plumbing	$ 930,621	$ 12.07	
D3000	HVAC	$ 3,472,674	$ 45.04	
D4000	Fire Protection	$ 380,830	$ 4.94	
D5000	Electrical	$ 2,321,870	$ 30.11	
E	**EQUIPMENT & FURNISHINGS**			
E1000	Equipment	$ 489,125	$ 6.34	
E2000	Furnishings	$ 650,936	$ 8.44	
F	**SPECIAL CONSTRUCTION & DEMOLITION**			
F1000	Special Construction	$ -	$ -	
F2000	Selective Building Demolition	$ 1,880,730	$ 24.39	
	SUBTOTAL BUILDING WORK COSTS	**$ 26,112,830**	$ 338.68	

SD ESTIMATE
MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER BY THE SEA, MA

Architect: JCJ Architecture

TOTAL PROJECT SUMMARY

UNICODE	DESCRIPTION	COST	COST/SF 77,102	NOTE
SITE WORK				
G	**BUILDING SITEWORK**			
G1010	Site Clearing	$ 256,469	$ 3.33	
G1020	Site Demolition & Relocation	$ 90,125	$ 1.17	
G1030	Site Earthwork	$ 1,076,396	$ 13.96	
G1040	Hazardous Waste Remediation	$ -	$ -	
G2010	Roadways	$ 15,000	$ 0.19	
G2020	Parking Lots	$ -	$ -	
G2030	Pedestrian Paving	$ -	$ -	
G2040	Site Development	$ 1,288,128	$ 16.71	
G2050	Landscaping	$ 333,306	$ 4.32	
G3010	Water Supply	$ 156,900	$ 2.03	
G3020	Sanitary Sewer	$ 74,100	$ 0.96	
G3030	Storm Sewer	$ 443,030	$ 5.75	
G3040	Heating Distribution	$ -	$ -	
G3050	Cooling Distribution	$ -	$ -	
G3060	Fuel Distribution	$ 56,625	$ 0.73	
G4010	Electrical Distribution	$ 130,800	$ 1.70	
G4020	Site Lighting	$ 163,545	$ 2.12	
G4030	Site Communications & Security	$ 106,150	$ 1.38	
	SUBTOTAL SITE WORK COSTS	**$ 4,190,573**	$ 54.35	
	SUBTOTAL FOR SITE & BUILDING COSTS	**$ 30,303,403**	$ 393.03	
CONTINGENCIES				
6.00%	Escalation To Mid-Point Of Construction	$ 1,818,204		
10.00%	Design & Estimating Contingency	$ 3,030,340		
	SUBTOTAL WITH CONTINGENCIES	**$ 35,151,947**		
MARKUPS				
LS	General Conditions	$ 2,914,875		Per CM Contract
LS	General Requirements	$ 945,040		Per CM Contract
LS	Bond	$ 289,250		
LS	Insurance	$ 278,875		
LS	Permit	$ -		
LS	CM Fee	$ 890,000		Per CM Contract
2.00%	CM Contingency	$ 606,068		Per CM Contract
2.00%	Phasing Premium	$ 606,068		
LS	Modular Classrooms	$ -		By Owner
	TOTAL CONSTRUCTION COST	**$ 41,682,123**	$ 540.61	

SD ESTIMATE
MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER BY THE SEA, MA

Architect: JCJ Architecture

BUILDING DETAIL

GSF 77,102

LINE #	CODE	DESCRIPTION	QTY	UNIT	RATE	ASSEMBLY COST
001	**A**	**SUBSTRUCTURE**				
002	A1010	Standard Foundations				
003		COLUMN FOOTINGS				
004		Concrete column footings - Interior area A&C - Include all concrete, reinforcing and formwork	147	CY	$570.00	$ 83,790
005		Concrete column footings - Exterior area A&C - Include all concrete, reinforcing and formwork	124	CY	$570.00	$ 70,680
006		Concrete column footings - Interior area B - Include all concrete, reinforcing and formwork	102	CY	$570.00	$ 58,140
007		Concrete column footings - Interior area B - Include all concrete, reinforcing and formwork	110	CY	$570.00	$ 62,700
008		Granular structural fill 12" under all column footing	241	CY	$55.00	$ 13,255
009		CONCRETE PIERS				
010		Concrete piers at area A, B & C - Include all concrete, reinforcing and formwork	21	CY	$700.00	$ 14,700
011		CONCRETE WALL FOOTINGS AT FROST WALLS				
012		Concrete 36" x 24" perimeter wall footings at Level 1 - Include all concrete and formwork	252	CY	$570.00	$ 143,640
013		Concrete 36" x 24" perimeter wall footings at Level 1 - Reinforcing requirements for above	9	TON	$1,700.00	$ 15,300
014		Granular structural fill 12" under all column footing	132	CY	$55.00	$ 7,260
015		CONCRETE FROST WALLS				
016		Concrete 16" thick perimeter walls at Level 1 - Include all concrete and formwork	316	CY	$570.00	$ 180,120
017		Concrete 16" thick perimeter walls at Level 1 - Reinforcing requirements for above	16	TON	$1,700.00	$ 27,200
018		Perimeter drainage system	2,005	LF	$32.00	$ 64,160
019		Perimeter drainage board	2,005	SF	$2.50	$ 5,013
020		Perimeter wall insulation	10,702	SF	$5.00	$ 53,510
021		Perimeter wall waterproofing	10,702	SF	$7.00	$ 74,914
022		Isolated earth cut at all column footings, piers, frost walls and wall footings - level 1	3,687	CY	$16.00	$ 58,992
023		Non contaminated earth disposal off site - level 1	3,687	CY	$30.00	$ 110,610
024		Borrow backfill at all column footings, piers, frost walls and wall footings	2,242	CY	$25.00	$ 56,050
025		Dewatering for excavation work	60	DY	$800.00	$ 48,000
026		Support of excavation, allowance (sheeting)	7,313	SF	$0.00	$ -
027					**SUBTOTAL:**	**$ 1,148,034**
028						
029	A1020	Special Foundations				
030		Aggregate piers & soils improvements, Allowance	750	CY	$ 750.00	$ 562,500
031					**SUBTOTAL:**	**$ 562,500**
032						
033	A1040	Slab on Grade				
034		CONCRETE SLABS ON GRADE				
035		5" Thick normal weight concrete slab at Level B - 2,390 SF - Place and finish	37	CY	$350.00	$ 12,950
036		Welded wire mesh reinforcing at Level B - including 15% overlap	2,749	SF	$2.25	$ 6,184
037		5" Thick normal weight concrete slab at Level 1 - Place and finish	887	CY	$350.00	$ 310,450
038		Welded wire mesh reinforcing at Level 1 - including 15% overlap	59,556	SF	$0.70	$ 41,689
039		Slab insulation 2" at concrete slabs on grade at Level B & Level 1	50,330	SF	$2.40	$ 120,792
040		Under slab vapor barrier including 15% overlap at all concrete slab on grades at Level B and Level 1	57,880	SF	$0.50	$ 28,940
041		Gravel base 8" under all concrete slabs on grade	1,343	CY	$35.00	$ 47,005
042		Granular structural fill 8" under all concrete slabs on grade	1,343	CY	$35.00	$ 47,005
043		Earth cut and disposal for all gravel base at concrete slabs on grade, included in A2010	3,573	CY	$0.00	$ -
044		Underslab trenching and backfill	1	LS	$60,000.00	$ 60,000
045						
046		CONCRETE ELEVATOR PITS				
047		Cast in place elevator pit - include all concrete , form and reinforcing				
048		Concrete elevator pit slab & sump pit	8	CY	$900.00	$ 7,200
049		Concrete elevator pit walls	7	CY	$1,000.00	$ 7,000
050		Granular structural fill 12" under pit slab	3	CY	$55.00	$ 165

SD ESTIMATE
MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER BY THE SEA, MA

Architect: JCJ Architecture

BUILDING DETAIL

GSF 77,102

LINE #	CODE	DESCRIPTION	QTY	UNIT	RATE	ASSEMBLY COST
051		Waterproofing at elevator pit slab and walls	248	SF	$20.00	$ 4,960
052					**SUBTOTAL:**	**$ 694,340**
053						
054	A2010	Basement Excavation				
055		No work this section	1	LS	$0.00	$ -
056					**SUBTOTAL:**	**$ -**
057						
058	A2020	Basement Walls				
059		No work this section	1	LS	$0.00	$ -
060					**SUBTOTAL:**	**$ -**
061						
062						
063	**B**	**SHELL**				
064	B1010	Floor Construction				
065						
066		STRUCTURAL STEEL FLOOR FRAMING				
067		Structural steel beams at floor framing including 10% connections				
068		Structural Steel, Level 1	10	TON	$3,600.00	$ 36,000
069		Structural Steel, Level 2	162	TON	$3,600.00	$ 583,200
070		Moment / Frame / Torsion connections as reqd.	1	LS	$31,000.00	$ 31,000
071		Anchor bolts including washer and nut at steel base plates	116	EA	$75.00	$ 8,700
072						
073		METAL FLOOR DECK				
074		L-1 - 3" deep 18 ga. Galvanized composite steel deck	2,145	SF	$3.50	$ 7,508
075		L-2 - 3" deep 18 ga. Galvanized composite steel deck	27,720	SF	$3.50	$ 97,020
076		Continuous 16 ga metal pour stop at perimeter and openings of all metal deck with concrete fill.	2,065	LF	$12.00	$ 24,780
077		CONCRETE FILL ON DECK				
078		L-1 - 4 1/2" Normal weight concrete fill (on 3" deep 18 ga. Galvanized composite steel deck) with welded wire mesh 4 x 4 - w4.0 x w4.0 Total thickness 7 1/2"	2,145	SF	$5.50	$ 11,798
079		L-2 - 4 1/2" Normal weight concrete fill (on 3" deep 18 ga. Galvanized composite steel deck) with welded wire mesh 6 x 6 - w2.9 x w2.9 Total thickness 7 1/2"	27,720	SF	$5.50	$ 152,460
080		RAISED SLABS AT GYMNASIUM				
081		Built up concrete slab	1,365	SF	$15.00	$ 20,475
082		FIRE PROOFING				
083		Fireproofing	77,102	SF	$0.50	$ 38,551
084		FIRE STOPPING				
085		Firestopping at all fire rated slabs and walls for MEP trades based on gross support arch area at all floor and roof decks	77,102	SF	$0.70	$ 53,971
086		MISCELLANEOUS				
087		Miscellaneous steel - lintels, stiffener plates, structural framing at folding doors, structural framing at hung divider curtains, misc bracing etc. (not quantified)	8	TON	$3,200.00	$ 25,600
088					**SUBTOTAL:**	**$ 1,091,062**
089						
090	B1020	Roof Construction				
091		STRUCTURAL STEEL ROOF FRAMING				
092		Structural steel beams at roof framing including 10% connections				
093		Structural Steel, Level R	207	TON	$3,600.00	$ 745,200
094		Structural Steel, Gymnasium	125	TON	$3,600.00	$ 450,000
095		Gable roof truss framing	5,214	SF	$30.00	$ 156,420
096		METAL ROOF DECK				
097		Galv roof decking	45,228	SF	$4.50	$ 203,526
098		Roof deck, concrete	45,228	SF	$4.00	$ 180,912
099		Acoustic deck as req'd	1	LS	$100,000.00	$ 100,000
100					**SUBTOTAL:**	**$ 1,836,058**
101						
102	B2010	Exterior Walls				
103		EXTERIOR WALL SYSTEMS				
104		Stud Framed Wall construction w/ Insulation, AVB	34,548	SF	$21.00	$ 725,504
105		Brick Veneer System	31,242	SF	$35.00	$ 1,093,462
106		Metal Panel Wall System	950	SF	$55.00	$ 52,250
107		Wood fiber wall panel, composite resin system	2,356	SF	$50.00	$ 117,803
108		Metal flashings at all above exterior wall systems	77,102	GSF	$0.90	$ 69,392

SD ESTIMATE
MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER BY THE SEA, MA

Architect: JCJ Architecture

BUILDING DETAIL

GSF 77,102

LINE #	CODE	DESCRIPTION	QTY	UNIT	RATE	ASSEMBLY COST
109		EXTERIOR SOFFITS AND CANOPIES				
110		Exterior insulated metal soffits including all framing	2,000	SF	$45.00	$ 90,000
111		Exterior metal edge condition at above exterior metal soffits	755	LF	Included in above	$ -
112		Wood Veneer Canopy System w/ Columns & Framing	500	SF	$55.00	$ 27,500
113		Exterior edge condition at above exterior wood canopy	310	LF	Included in above	$ -
114		OTHER				
115		Interior face of exterior wall	34,834	SF	$ 2.00	$ 69,669
116		Exterior walls, caulking at dissimiilar materials	77,102	GSF	$0.80	$ 61,682
117		Exterior walls, mock up requirements	1	LS	$10,000.00	$ 10,000
118					**SUBTOTAL:**	**$ 2,317,261**
119						
120	B2020	Exterior Windows				
121		Type CW - Exterior curtain wall construction				
122		Type CW	1,472	SF	$120.00	$ 176,688
123		Integrated Sun Shade Devices	200	LF	$400.00	$ 80,000
124		Type W - Exterior window construction				
125		Type W1	3,368	SF	$105.00	$ 353,619
126		Window sills at exterior punch windows	629	LF	$200.00	$ 125,700
127		Sill flashing at exterior punch windows	629	LF	$100.00	$ 62,850
128		Type SF - Exterior Storefront construction				
129		Type SF	3,938	SF	$105.00	$ 413,438
130		Precast infill system @ Storefront	379	SF	$65.00	$ 24,643
131		Type W - Exterior metal louvers including bird screens, allowance	1	LS	$50,000.00	$ 50,000
132		Sill flashing at exterior metal louvers	-	LF	$35.00	$ -
133					**SUBTOTAL:**	**$ 1,286,938**
134						
135	B2030	Exterior Doors				
136		EXTERIOR GLASS DOORS, FRAMES AND FINISH HARDWARE				
137		Exterior tempered glass and aluminum storefront entry doors, frame and finish hardware				
138		Single	19	EA	$3,500.00	$ 66,500
139		Double	6	PR	$6,500.00	$ 39,000
140		Glass transoms and frames at exterior glass doors	126	SF	Included B2010	$ -
141		Steel Door				
142		Single	1	EA	$2,500.00	$ 2,500
143		Double	2	PR	$3,200.00	$ 6,400
144		HARDWARE				
145		Single	19	EA	$1,700.00	$ 32,300
146		Double	6	PR	$1,900.00	$ 11,400
147		Auto operator exterior / interior pair	7	EA	$ 4,000.00	$ 28,000
148		Overhead Door 8'W x 12'H @ Receiving	1	EA	$ 12,000.00	$ 12,000
149		Sealants & caulking at above doors	1	LS	$ 7,000.00	$ 7,000
150					**SUBTOTAL:**	**$ 205,100**
151						
152	B3010	Roof Coverings				
153		Membrane roofing system - Membrane roofing on protection board on 7" tapered board insulation on vapor barrier on protection board	41,439	SF	$18.50	$ 766,617
154		Flat Roof Edge System	1,633	LF	$25.00	$ 40,835
155		Flat Roof Edge System, along wall	579	LF	$25.00	$ 14,467
156		Concrete roof pavers - Roof pavers on membrane roofing on protection board on 7" tapered board insulation on vapor barrier on protection board	1,027	SF	$40.00	$ 41,080
157		Mechanical Screen, @ Roof	4,408	SF	$50.00	$ 220,409
158		Walkway pads (sitting on roof)	15,000	SF	$9.00	$ 135,000
159		Guard rail	90	LF	$250.00	$ 22,500
160		Aluminum gutters at sloping roof	1,200	LF	$30.00	$ 36,000
161		Cap and base flashing at roof parapets	1,633	LF	$32.00	$ 52,269
162		Base flashing at roof / exterior wall intersections	579	LF	$25.00	$ 14,467
163		Pitch pockets at roof drains and over drains	144	EA	$75.00	$ 10,800
164		Metal copings including wood blocking at roof parapets	1,200	LF	$45.00	$ 54,000
165		Membrane roof copings including plywood and wood blocking at roof parapets	1,633	LF	$30.00	$ 49,002
166		Misc wood blocking as required at all roofs (based on total roof area)	41,439	SF	$3.00	$ 124,316

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LINE #	CODE		DESCRIPTION	QTY	UNIT	RATE	ASSEMBLY COST
167			Misc flashing as required at all roofs (based on total roof area)	41,439	SF	$2.00	$ 82,878
168						**SUBTOTAL:**	**$ 1,664,640**
169							
170	B3020	Roof Openings					
171			Roof hatches, frames and curbs , 5'W x 8'L	1	EA	$4,000.00	$ 4,000
172			Skylights	440	SF	$150.00	$ 66,000
173						**SUBTOTAL:**	**$ 70,000**
174							
175							
176	**C**	**INTERIORS**					
177	C1010	Partitions					
178			Interior Walls,	75,368	SF	$ 16.60	$ 1,251,105
179							
180			**Interior Alum. Storefront**				
181			Interior Alum. Storefront	2,260	SF	$ 95.00	$ 214,700
182			Storefront @ Vestibule	1,008	SF	$ 95.00	$ 95,760
183							
184			**Interior Windows**				
185			Clerestory @ Classroom (10'x2')	19	EA	$ 45.00	$ 855
186			Clerestory @ Kindergarten (8'x2')	3	EA	$ 45.00	$ 135
187			Clerestory @ Pre-K (10'x2')	4	EA	$ 45.00	$ 180
188			View Windows	234	SF	$ 45.00	$ 10,530
189							
190			**Rough Carpentry**				
191			Blocking For Walls	30	DY	$ 1,580.00	$ 47,400
192			Fire Stopping	25	DY	$ 1,280.00	$ 32,000
193			Misc interior sealants & caulking	18	DY	$ 1,280.00	$ 23,040
194							
195							
196						**SUBTOTAL:**	**$ 1,675,705**
197							
198	C1020	Interior Doors					
199			Door Type S (6'0"x7'0")	1	EA	$ 1,200.00	$ 1,200
200			Door Type S (6'2"x7'0")	1	EA	$ 1,200.00	$ 1,200
201			Door Type S (6'4"x7'0")	1	EA	$ 1,200.00	$ 1,200
202			Door Type S (7'1"x7'10")	1	EA	$ 1,200.00	$ 1,200
203			Door Type S (6'0"x8'0")	9	EA	$ 1,200.00	$ 10,800
204			Door Type S (6'0"x7'4")	2	EA	$ 1,200.00	$ 2,400
205			Door Type S (6'0"x7'1")	1	EA	$ 1,200.00	$ 1,200
206			Door Type S (6'0"x7'2")	1	EA	$ 1,200.00	$ 1,200
207			Door Type G (6'0"x7'0")	4	EA	$ 1,200.00	$ 4,800
208			Door Type F (6'0"x7'0")	4	EA	$ 1,200.00	$ 4,800
209			Door Type F (6'0"x6'8")	5	EA	$ 1,200.00	$ 6,000
210			Door Type N2 (3'0"x7'0")	40	EA	$ 700.00	$ 28,000
211			Door Type F (3'0"x7'0")	53	EA	$ 700.00	$ 37,100
212			Door Type S (6'2"x8'0")	1	EA	$ 1,200.00	$ 1,200
213			Door Type S (6'2"x7'5")	1	EA	$ 1,200.00	$ 1,200
214			Door Hardware	125	EA	$ 900.00	$ 112,500
215							
216			**Frame**				
217			Frame 3'0"x7'0"	67	EA	$ 200.00	$ 13,400
218			Frame 3'0"x7'0" with Clerestory	26	EA	$ 600.00	$ 15,600
219			Frame 6'0"x7'0"	16	EA	$ 300.00	$ 4,800
220			Frame 6'0"x8'0"	15	EA	$ 300.00	$ 4,500
221			Frame 8'0"x7'0"	1	EA	$ 300.00	$ 300
222							
223			**Glazing**				
224			Glazing @ Doors	500	SF	$ 40.00	$ 20,000
225			Glazing @ Frame	728	SF	$ 40.00	$ 29,120
226							
227			**Paint**				
228			Paint doors	125	EA	$ 125.00	$ 15,625
229			Paint Frame	125	EA	$ 125.00	$ 15,625
230							
231			**Other doors**				
232			Overhead Doors	2	EA	$ 35,000.00	$ 70,000

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LINE #	CODE	DESCRIPTION	QTY	UNIT	RATE	ASSEMBLY COST
233		Overhead Security Coiling Grille	6	EA	$ 20,000.00	$ 120,000
234						
235		**Access Doors & Frames**				
236		Access Doors & Frames	1	LS	$ 9,000.00	$ 9,000
237					**SUBTOTAL:**	**$ 533,970**
238						
239	C1030	Fittings				
240						
241		**Metal Fabrication**				
242		Misc. Metal	1	LS	$ 110,000.00	$ 110,000
243						
244		**Visual Display Surface**				
245		Tackboard (11'4"x8'5")	1	EA	$ 1,200.00	$ 1,200
246		Tackboard (6'10"x6'0")	53	EA	$ 820.00	$ 43,460
247		Tackboard (6'10"x4'0")	44	EA	$ 700.00	$ 30,800
248		Tackboard (3'0"x10'0")	8	EA	$ 650.00	$ 5,200
249						
250		**Lockers**				
251		Lockers, staff	1	LS	$ 3,000.00	$ 3,000
252						
253		**Signage**				
254		Door Singage	125	EA	$ 140.00	$ 17,500
255		Misc. Signage, Logos, Graphics	1	LS	$ 25,000.00	$ 25,000
256						
257		**Millwork**				
258		Reception Desk	1	EA	$ 20,000.00	$ 20,000
259		Circ Desk	1	EA	$ 19,000.00	$ 19,000
260		Bench	18	LF	$ 500.00	$ 9,000
261		Display cases	1	LS	$ 20,000.00	$ 20,000
262		Window sills	770	LF	$ 45.00	$ 34,650
263		Misc millwork	1	LS	$ 75,000.00	$ 75,000
264		Misc. Signage, Logos, Graphics	1	LS	$ 20,000.00	$ 20,000
265						
266						
267		**Toilet, Bath, & Laundry Accessories**				
268		H/C Toilet Partition	6	EA	$ 1,600.00	$ 9,600
269		Toilet Partition	17	EA	$ 1,200.00	$ 20,400
270		Grab Bar	46	EA	$ 90.00	$ 4,140
271		Toilet Paper Holder	37	EA	$ 40.00	$ 1,480
272		Mirror,Framed	37	EA	$ 100.00	$ 3,700
273		Soup Dispenser	37	EA	$ 15.00	$ 555
274		Waste Bin	21	EA	$ 14.00	$ 294
275		Sanitary Napkin Disposal	31	EA	$ 60.00	$ 1,860
276		Urinal Screens	6	EA	$ 600.00	$ 3,600
277		Shower Curtain Bar	1	EA	$ 130.00	$ 130
278		Soup dispensers,deck mounted, OFCI	1	EA	$ 12.00	$ 12
279		ADA Foldable Shower Set	1	EA	$ 300.00	$ 300
280						
281					**SUBTOTAL:**	**$ 479,881**
282	C2010	Stair Construction				
283						
284		Egress Stair 1 with Guardrail	1	EA	$ 39,000.00	$ 39,000
285		Egress Stair 2 with Guardrail	1	EA	$ 39,000.00	$ 39,000
286		Feature Stair	1	EA	$ 55,000.00	$ 55,000
287		Stairs @ Backstage	2	EA	$ 5,000.00	$ 10,000
288		Misc. Stair Work	1	LS	$ 30,000.00	$ 30,000
289						
290					**SUBTOTAL:**	**$ 173,000**
291	C2020	Stair Finishes				
292		**Stair finishes**				
293		Stair 1 Finishes	1	EA	$ 13,000.00	$ 13,000
294		Stair 2 Finishes	1	EA	$ 13,000.00	$ 13,000
295		Feature Stair Finishes	1	EA	$ 10,000.00	$ 10,000
296		Feature Stair Landing platform finish	1	LS	$ 40,000.00	$ 40,000
297		Paint Stairs and Landing	1	LS	$ 8,000.00	$ 8,000
298					**SUBTOTAL:**	**$ 84,000**

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LINE #	CODE	DESCRIPTION	QTY	UNIT	RATE	ASSEMBLY COST
299						
300						
301	C3010 Wall Finishes					
302		Paint Interior Wall, (GWB,CMU,Partition) - Blended Rate	177,335	SF	$ 0.80	$ 141,868
303		Misc. Wall Finish	1	LS		$ -
304		Misc. Corner Gards	1	LS		$ -
305						
306		**Wall Tile**				
307		Wall tile 4"x12"	5,403	SF	$ 18.00	$ 97,254
308		Misc. Wall Tile finishes	1	LS	$ 20,000.00	$ 20,000
309						
310		**Wood Panels and Trim**				
311		Wood Panels and Trim millwork package	3,600	SF	$ 54.00	$ 194,400
312						
313		**Acoustic Panels**				
314		Acoustic Wall Panels	860	SF	$ 25.00	$ 21,500
315		Misc. Acoustic Wall Panels	2,500	SF	$ 25.00	$ 62,500
316						
317		**Fabric Wrapped Panels**				
318		Fabric Wrapped Panels	1,078	SF	$ 30.00	$ 32,340
319		Hardwood Horizontal Plank Slat Wall System	1,873	SF	$ 54.00	$ 101,142
320						
321					**SUBTOTAL:**	**$ 671,004**
322						
323	C3020 Floor Finishes					
324		**Tile**				$ -
325		Ceramic Tile	2778	SF	$ 20.00	$ 55,560
326		Ceramic Tile Base	724	LF	$ 18.00	$ 13,032
327		Porcelain Tile	4560	SF	$ 20.00	$ 91,200
328		Porcelain Tile Base	1240	LF	$ 18.00	$ 22,320
329						$ -
330		**Carpet**				$ -
331		Carrpet Tile	23442	SF	$ 4.50	$ 105,489
332						$ -
333		**Resillient Flooring**				$ -
334		Rubber Flooring	35310	SF	$ 6.00	$ 211,860
335		Rubber Base	11305	LF	$ 3.00	$ 33,915
336		Moisture mitigation	35310	SF	$ 1.50	$ 52,965
337						$ -
338		**Wood Flooring**				$ -
339		Wood Sports Flooring @ Gym	7619	SF	$ 16.00	$ 121,904
340		Wood Flooring @ Stage	1332	SF	$ 14.00	$ 18,648
341		Moisture mitigation	7619	SF	$ 1.50	$ 11,429
342						
343		**Concrete Flooring**				$ -
344		Concrete Flooring	3976	SF	$ 2.50	$ 9,940
345						
346		Misc. Flooring	1	LS		
347					**SUBTOTAL:**	**$ 748,262**
348						
349	C3030 Ceiling Finishes					
350		**Gypsum Ceiling**				
351		GWB Ceiling	5,223	SF	$ 9.00	$ 47,007
352						
353		**Acoustic Ceiling**				
354		ACT Ceiling -	44,642	SF	$ 5.00	$ 223,210
355		ACT Ceiling - 1'0"x4'0"	7,340	SF	$ 5.50	$ 40,370
356						
357		**Wood Ceiling**				
358		Linear Wood Panels	4,064	SF	$ 40.00	$ 162,540
359		Radiant Ceiling Panels	3,131	SF	$ 45.00	$ 140,895
360						$ -
361		**Paint Ceiling**				$ -
362		Paint GWB Ceiling	5,223	SF	$ 1.20	$ 6,268
363					**SUBTOTAL:**	**$ 620,290**
364						

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LINE #	CODE	DESCRIPTION	QTY	UNIT	RATE	ASSEMBLY COST
365						
366	**D**	**SERVICES**				
367	D1010	Elevators & Lifts				
368		Elevator 1, hydraulic passenger 2-stop, L1-L2	1	EA	$ 124,000.00	$ 124,000
369					**SUBTOTAL:**	**$ 124,000**
370						
371	D2000	Plumbing				
372		Equipment	77,102	SF	$ 1.89	$ 145,723
373		Fixtures	77,102	SF	$ 2.60	$ 200,465
374		Piping & Insulation	77,102	SF	$ 7.20	$ 555,134
375		Start Up	77,102	SF	$ 0.10	$ 7,710
376		3rd Party Assist	77,102	SF	$ 0.08	$ 6,168
377		Rigging	77,102	SF	$ 0.07	$ 5,397
378		Coordination	77,102	SF	$ 0.13	$ 10,023
379					**SUBTOTAL:**	**$ 930,621**
380						
381	D3000	HVAC				
382		Equipment	77,102	SF	$ 12.70	$ 979,195
383		Piping	77,102	SF	$ 9.08	$ 700,086
384		Sheet Metal	77,102	SF	$ 12.00	$ 925,224
385		Insulation	77,102	SF	$ 3.95	$ 304,553
386		Controls	77,102	SF	$ 5.00	$ 385,510
387		Start Up	77,102	SF	$ 0.33	$ 25,444
388		Testing, Adjusting & Balancing	77,102	SF	$ 0.73	$ 56,284
389		3rd Party Assist	77,102	SF	$ 0.22	$ 16,962
390		Rigging	77,102	SF	$ 0.28	$ 21,589
391		Coordination	77,102	SF	$ 0.25	$ 19,276
392		Temporary Heat, By HVAC contractor as req'd	77,102	SF	$ 0.50	$ 38,551
393					**SUBTOTAL:**	**$ 3,472,674**
394						
395	D4000	Fire Protection				
396		BUILDING				
397		Main Backflow Preventer - 6"	1	EA	$ 6,850.00	$ 6,850
398		Main Alarm Check Valve - 6"	1	EA	$ 3,675.00	$ 3,675
399		Flow Control Valves	10	EA	$ 2,250.00	$ 22,500
400		Wet System Specialties	1	LS	$ 11,325.00	$ 11,325
401		Mains & Standpipe	2,986	LF	$ 45.00	$ 134,370
402		Branch	5,047	LF	$ 25.00	$ 126,180
403		Sprinkler Heads	617	EA	$ 90.00	$ 55,530
404		TRADE REQUIEMENTS				
405		Coordination	1	LS	$ 14,400.00	$ 14,400
406		Testing	1	LS	$ 2,500.00	$ 2,500
407		Firestopping	1	LS	$ 3,500.00	$ 3,500
408					**SUBTOTAL:**	**$ 380,830**
409						
410	D5000	Electrical				
411		Normal Power	77,102	GSF	$ 4.00	$ 308,408
412		Emergency Generator, 100 KW w/ control panel and ATS	1	LS	$ 50,000.00	$ 50,000
413		Lighting, furnish	77,102	GSF	$ 7.00	$ 539,714
414		Lighting, install	77,102	GSF	$ 2.00	$ 154,204
415		Lighting, branch wiring	77,102	GSF	$ 2.50	$ 192,755
416		Occupancy sensors	77,102	GSF	$ 1.00	$ 77,102
417		Lighting control	77,102	GSF	$ 1.30	$ 100,233
418		Devices	77,102	GSF	$ 1.50	$ 115,653
419		MEP power wiring	77,102	GSF	$ 2.00	$ 154,204
420		Fire Alarm	77,102	GSF	$ 1.80	$ 138,784
421		Security	1	LS	$ 140,000.00	$ 140,000
422		Clock/PA	77,102	GSF	$ 1.00	$ 77,102
423		Tel/Data	77,102	GSF	$ 2.00	$ 154,204
424		A/V Systems, coordination only, Equipment by FF&E	77,102	GSF	$ 0.55	$ 42,406
425		Temp Power & lighting	77,102	GSF	$ 1.00	$ 77,102
426					**SUBTOTAL:**	**$ 2,321,870**
427						
428						
429	**E**	**EQUIPMENT & FURNISHINGS**				
430	E1000	Equipment				

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LINE #	CODE	DESCRIPTION	QTY	UNIT	RATE	ASSEMBLY COST
431		Foodservice equipment @ Kitchen/Servery	1	ALW	$ 282,925.00	$ 282,925
432						
433						
434		Coat hooks @ Art Room	25	EA	$ 10.00	$ 250
435		Coat hooks @ Stem Room	25	EA	$ 10.00	$ 250
436		Kiln @ Art Room	1	EA	$ 6,000.00	$ 6,000
437		Hanging display @ Art Room	1	EA	$ 5,000.00	$ 5,000
438		Fire retardant stage curtains @ Auditorium	60	LF	$ 800.00	$ 48,000
439		Fire curtains @ Auditorium	60	LF	$ 800.00	$ 48,000
440		Projection screen @ Auditorium	1	EA	$ 4,000.00	$ 4,000
441		Manual rigging system @ Auditorium, by others	1	EA	$ -	$ -
442		Basketball Hoops @ Gym	6	EA	$ 6,000.00	$ 36,000
443		Volleyball, sleeve, nets, and pole system @ Gym	2	EA	$ 3,000.00	$ 6,000
444		Shot clock & scoreboard @ Gym, by others	2	EA	$ -	$ -
445		Stage curtains @ Drama Room	30	LF	$ 300.00	$ 9,000
446		Utility rack & shelf @ Janitor's Room	4	EA	$ 300.00	$ 1,200
447		Robe hooks	100	EA	$ 25.00	$ 2,500
448		Telescoping stands 120 seats 12 66 10.01, Gym, sections	2	EA	$ 20,000.00	$ 40,000
449						
450					**SUBTOTAL:**	**$ 489,125**
451						
452	E2000	Furnishings				
453		**Millwork**				
454		Hardwood Bench With Open Shelving Below,Typical PRE-K North	70	LF	$ 400.00	$ 28,000
455		2" Tackstrip Above	31	LF	$ 50.00	$ 1,536
456		Stackable Manual Operable Glass Door (Nanowall System)	74	SF	$ 400.00	$ 29,600
457		Displacement Airunit	11	EA	$ 1,200.00	$ 13,200
458		Hardwood Bench With Open Shelving Below, Typical Kindergarten south	25	LF	$ 300.00	$ 7,500
459		Hardwood Bench with open Shelving Below, Typical Grade 1-5 Classr	205	LF	$ 300.00	$ 61,500
460		Solid Surface Counterstop, Plastic Laminate Cabinate and Vertical Surface @ Kindergarten	33	LF	$ 300.00	$ 9,900
461		Solid Surface Counterstop, Plastic Laminate Cabinate and Vertical Surface @ Project Rim	5	LF	$ 300.00	$ 1,500
462		Solid Surface Counters, Plastic Laminated Cabinates and Vertical Surface, TYP	30	LF	$ 300.00	$ 9,000
463		Solid Surface Counters, Plastic Laminated Cabinates and Vertical Surface, TYP Classroom	190	LF	$ 300.00	$ 57,000
464		Solid Surface Counterstop, Plastic Laminate Cabinate and Vertical Surface @ Art room	4	LF	$ 300.00	$ 1,200
465		Millwork, (counters. Cabs, shelving, storage) other locations	890	LF	$ 400.00	$ 356,000
466		**Other**				
467		Shades, manual	1	LS	$ 50,000.00	$ 50,000
468		Shades, motor operated, locations TBD	1	LS	$ 25,000.00	$ 25,000
469						
470					**SUBTOTAL:**	**$ 650,936**
471						
472						
473	**F**	**SPECIAL CONSTRUCTION & DEMOLITION**				
474	F1000	Special Construction				
475		Aquarium, by others	500	GAL	$ -	$ -
476		Aquarium, enclosure and storage assemebly, by others	1	EA	$ -	$ -
477					**SUBTOTAL:**	**$ -**
478						
479	F2000	Selective Building Demolition				
480		Extg. Bldg. demolition, 1 story	54,755	SF	$ 14.00	$ 766,570
481		Extg. Bldg. demolition, 1 1/2 story	7,135	SF	$ 16.00	$ 114,160
482		Bldg. hazmat removal prior to bldg. demo, materials/classification TBD, Allowance	61,890	SF	$ 16.16	$ 1,000,000
483					**SUBTOTAL:**	**$ 1,880,730**
484						
485						
486	**G**	**BUILDING SITEWORK**				
487	G1010	Site Clearing				
488		Mobilization	1	LS	$ 40,000.00	$ 40,000
489		Temp fence	2,000	LF	$ 15.00	$ 30,000

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LINE #	CODE	DESCRIPTION	QTY	UNIT	RATE	ASSEMBLY COST
490		Construction fence, temp.	2,450	LF	$ 18.00	$ 44,100
491		Haybale & Silt fence	4,560	LF	$ 8.00	$ 36,480
492		Construction entrance	1	EA	$ 2,800.00	$ 2,800
493		Erosion control	2,000	LF	$ 10.00	$ 20,000
494		Construction entrance	1	EA	$ 3,800.00	$ 3,800
495		Signage	1	LS	$ 5,000.00	$ 5,000
496		At grade materials removals, misc	241,155	SF	$ 0.25	$ 60,289
497		Temp pedestrian and traffic barriers & protections	1	LS	$ 14,000.00	$ 14,000
498					**SUBTOTAL:**	**$ 256,469**
499						
500	G1020	Site Demolition & Relocation				
501		Utilities make-safe for removal	1	LS	$ 15,000.00	$ 15,000
502		UG existing utilities removal, approx. 675 LF	675	LF	$ 55.00	$ 37,125
503		UG existing obstructions removal	1	LS	$ 20,000.00	$ 20,000
504		Extg conditions, protections and barriers	1	LS	$ 10,000.00	$ 10,000
505		Police details, By City of MBTS	1	LS	$ -	$ -
506		Saw cut as reqd.	1	LS	$ 8,000.00	$ 8,000
507					**SUBTOTAL:**	**$ 90,125**
508						
509	G1030	Site Earthwork				
510		Overall site rough grade	241,155	SF	$ 0.40	$ 96,462
511		Rough grade at bldg.	60,465	SF	$ 0.40	$ 24,186
512		Rough grading at balance of site	180,690	SF	$ 0.75	$ 135,518
513		Import from bldg demo	17,330	CY	$ 35.00	$ 606,550
514		Dewatering for site grading work	90	DY	$800.00	$ 72,000
515		Cuts and fills for site area (less bldg footprint)	5,060	CY	$28.00	$ 141,680
516					**SUBTOTAL:**	**$ 1,076,396**
517						
518	G1040	Hazardous Waste Remediation				
519		Haz-mat soils removal, soils conditions and classification TBD	1	LS	0	$ -
520					**SUBTOTAL:**	**$ -**
521						
522	G2010	Roadways				
523		Street patching, Summer street for utilities	1	LS	$ 15,000.00	$ 15,000
524					**SUBTOTAL:**	**$ 15,000**
525						
526	G2020	Parking Lots				
527		Included in section G2040				
528					**SUBTOTAL:**	**$ -**
529						
530	G2030	Pedestrian Paving				
531		Included in section G2040				
532					**SUBTOTAL:**	**$ -**
533						
534	G2040	Site Development				
535		Granite Curb, w/ concrete footing	2,095	LF	$ 35.00	$ 73,325
536		Flush Curb	766	LF	$ 24.00	$ 18,384
537		Concrete Unit pavers	4,475	SF	$ 22.00	$ 98,450
538		Bituminous pavement, Parking lot / Roadway	40,165	SF	$ 3.00	$ 120,495
539		Bituminous pavement, court surface	8,895	SF	$ 3.00	$ 26,685
540		Stabilized crushed rock pavement	2,470	SF	$ 5.00	$ 12,350
541		Concrete paving w/ subbase	16,430	SF	$ 6.00	$ 98,580
542		Pavement markings, striping	525	SF	$ 1.00	$ 525
543		Pavement markings, standard	51	EA	$ 30.00	$ 1,530
544		Basketball / play court marking	1	LS	$ 4,500.00	$ 4,500
545		PK playground surface, poured rubber	2,585	SF	$ 13.00	$ 33,605
546		Grades K-1 playground surface, poured rubber	2,375	SF	$ 13.00	$ 30,875
547		Grades 2-5 playground surface, poured rubber	8,350	SF	$ 13.00	$ 108,550
548		Under playground surface area drainage system, 6" PERF	13,310	SF	$ 2.00	$ 26,620
549		Playground equipment package	1	LS	$ 150,000.00	$ 150,000
550		PK playground	1	EA		
551		Grades K-1 playground	1	EA		
552		Grades 2-5 playground	1	EA		
553		Trash/ Recycling receptacle w/ base	3	EA	$ 900.00	$ 2,700
554		Concrete retaining wall# 1	-	SF	$ 125.00	$ -
555		Concrete retaining wall# 2	-	SF	$ 125.00	$ -

SD ESTIMATE
MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER BY THE SEA, MA

Architect: JCJ Architecture

BUILDING DETAIL

GSF 77,102

LINE #	CODE	DESCRIPTION	QTY	UNIT	RATE	ASSEMBLY COST
556		Concrete retaining wall# 3	-	SF	$ 125.00	$ -
557		Concrete retaining wall# 4	-	SF	$ 125.00	$ -
558		Concrete seat wall	55	LF	$ 950.00	$ 52,250
559		Basketball court, bit. pavement	4,600	SF	$ 6.00	$ 27,600
560		Gravel base and prep for basketball court	170	CY	$ 35.00	$ 5,963
561		Hard surface play court, bit. pavement	4,290	SF	$ 6.00	$ 25,740
562		Gravel base and prep for basketball courts	159	CY	$ 35.00	$ 5,561
563		Bench, 6' long	12	EA	$ 1,200.00	$ 14,400
564		Bench, 8' long	6	EA	$ 1,200.00	$ 7,200
565		Bench Players, 21' long	10	EA	$ 2,200.00	$ 22,000
566		Bike racks w/ footing	26	EA	$ 800.00	$ 20,800
567		Removable Bollards	2	EA	$ 2,500.00	$ 5,000
568		Concrete ramp w/ walls & slabs	576	SF	$ 75.00	$ 43,200
569		Concrete stair w/ stone steps	440	LF	$ 120.00	$ 52,800
570		Handrail @ retaining wall	557	LF	$ 120.00	$ 66,840
571		Handrail @ handicap ramp	230	LF	$ 120.00	$ 27,600
572		Handrail Amphitheater @ stairs	36	LF	$ 375.00	$ 13,500
573		Flag pole w/ base	1	EA	$ 3,500.00	$ 3,500
574		Vinyl-Clad chain link fence, 4'	700	LF	$ 60.00	$ 42,000
575		Vinyl-clad fence gate, 4'	6	EA	$ 1,500.00	$ 9,000
576		Teaching station, concrete	1	EA	$ 6,000.00	$ 6,000
577		Table, square w/ 4 chairs	19	EA	$ 1,500.00	$ 28,500
578		Table, round	3	EA	$ 500.00	$ 1,500
579		Green house, by others	220	SF	$ -	$ -
580					**SUBTOTAL:**	**$ 1,288,128**
581	G2050	Landscaping				
582		Deciduous tree	63	EA	$ 1,200.00	$ 75,600
583		Ornamental tree	20	EA	$ 1,300.00	$ 26,000
584		Evergreen tree	6	EA	$ 900.00	$ 5,400
585		Soil for trees	267	CY	$ 60.00	$ 16,020
586		Shrubs	7,445	SF	$ 2.00	$ 14,890
587		Seeding	168,352	SF	$ 0.30	$ 50,506
588		Loam for seeding	2,141	CY	$ 40.00	$ 85,640
589		Top Soil at planting beds	365	CY	$ 100.00	$ 36,500
590		Raised planters w/ soil and planting	455	SF	$ 50.00	$ 22,750
591		IRRIGATION				
592		Irrigation System	1.00	LS	$ -	$ -
593					**SUBTOTAL:**	**$ 333,306**
594	G3010	Water Supply				
595		4" CLDI water service	800	LF	$ 60.00	$ 48,000
596		6" CLDI fire protection	800	LF	$ 70.00	$ 56,000
597		Fire hydrant	3	EA	$ 3,500.00	$ 10,500
598		Water valve	7	EA	$ 1,000.00	$ 7,000
599		Connect water service	2	EA	$ 3,500.00	$ 7,000
600		Connect fire protection service	4	EA	$ 3,500.00	$ 14,000
601		Street connections	3	EA	$ 4,800.00	$ 14,400
602					**SUBTOTAL:**	**$ 156,900**
603	G3020	Sanitary Sewer				
604		6" PVC	535	LF	$ 35.00	$ 18,725
605		6" PVC, Kitchen waste	5	LF	$ 35.00	$ 175
606		8" PVC	80	LF	$ 45.00	$ 3,600
607		Grease trap	1	EA	$ 12,000.00	$ 12,000
608		Connect 6" & 8" PVC to existing sewer	2	EA	$ 3,200.00	$ 6,400
609		Connect sanitary sewer service	2	EA	$ 3,200.00	$ 6,400
610		Connect sanitary sewer service to grease trap	1	EA	$ 3,200.00	$ 3,200
611		Sewer manhole	4	EA	$ 3,800.00	$ 15,200
612		Replace Sewer manhole	1	EA	$ 4,400.00	$ 4,400
613		Street connections	1	EA	$ 4,000.00	$ 4,000
614					**SUBTOTAL:**	**$ 74,100**
615	G3030	Storm Sewer				
616		6" PVC	1,413	LF	$ 50.00	$ 70,650
617		12" PVC	60	LF	$ 65.00	$ 3,900
618		18" PVC	150	LF	$ 75.00	$ 11,250
619		Trench drain @ basketball court	211	LF	$ 30.00	$ 6,330
620		Trench drain, 24" @ bldg.	25	LF	$ 80.00	$ 2,000
621		Area drain	8	EA	$ 900.00	$ 7,200

SD ESTIMATE
MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER BY THE SEA, MA

Architect: JCJ Architecture

BUILDING DETAIL

GSF 77,102

LINE #	CODE	DESCRIPTION	QTY	UNIT	RATE	ASSEMBLY COST
622		Catch Basin	10	EA	$ 3,500.00	$ 35,000
623		Catch Basin, dual	1	EA	$ 6,000.00	$ 6,000
624		Drainage MH	12	EA	$ 4,200.00	$ 50,400
625		Water quality unit	12	EA	$ 18,000.00	$ 216,000
626		Drywell w/ grate	2	EA	$ 8,000.00	$ 16,000
627		Headwall outlet w/ riprap	3	EA	$ 4,500.00	$ 13,500
628		Street connections	1	EA	$ 4,800.00	$ 4,800
629					**SUBTOTAL:**	**$ 443,030**
630	G3040	Heating Distribution				
631		No work this section			$ -	$ -
632					**SUBTOTAL:**	**$ -**
633	G3050	Cooling Distribution				
634		No work this section			$ -	$ -
635					**SUBTOTAL:**	**$ -**
636	G3060	Fuel Distribution				
637		E/B efforts for gas line	755	LF	$ 75.00	$ 56,625
638					**SUBTOTAL:**	**$ 56,625**
639	G4010	Electrical Distribution				
640		Tap existing line	1	EA	$ 5,000.00	$ 5,000
641		EMH	1	EA	$ 9,000.00	$ 9,000
642		Primary service (empty conduit only)	200	LF	$ 70.00	$ 14,000
643		Secondary service (empty conduit only)	565	LF	$ 70.00	$ 39,550
644		Concrete encased ductbank, as req'd ??	-	CY	$ 500.00	$ -
645		E/B efforts for ductbank	765	LF	$ 50.00	$ 38,250
646		Utility fees	1	LS	$ 25,000.00	$ 25,000
647					**SUBTOTAL:**	**$ 130,800**
648	G4020	Site Lighting				
649		Pedestrian light	29	EA	$ 1,200.00	$ 34,800
650		Sports light pole @ basket ball court	2	EA	$ 6,000.00	$ 12,000
651		Parking light pole, double head	3	EA	$ 15.00	$ 45
652		Parking light pole, single head	9	EA	$ 1,500.00	$ 13,500
653		Conduit and wiring for site pole lighting	3,225	LF	$ 14.00	$ 45,150
654		E/B efforts for site lighting	3,225	LF	$ 18.00	$ 58,050
655					**SUBTOTAL:**	**$ 163,545**
656	G4030	Site Communications & Security				
657		Empty conduit for site tel/comm connections	765	LF	$ 40.00	$ 30,600
658		Concrete encased ductbank, as req'd	765	LF	$ 50.00	$ 38,250
659		E/B efforts for site tel/comm	765	LF	$ 20.00	$ 15,300
660		Pole mounted cameras, locations TBD	4	EA	$ 5,500.00	$ 22,000
661					**SUBTOTAL:**	**$ 106,150**

SD ESTIMATE
MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER BY THE SEA, MA

Architect: JCJ Architecture

TOTAL PROJECT SUMMARY

CSI CODE	DESCRIPTION	COST	COST/SF 77,102	NOTE
02	Existing Conditions	$ 1,880,730	$ 24.39	
03	Concrete	$ 1,842,374	$ 23.90	
04	Masonry	$ 1,021,500	$ 13.25	Filed Sub Bid
05	Metals	$ -	$ -	
	050001 Misc Metals	$ 352,010	$ 4.57	Filed Sub Bid
	051000 Steel	$ 2,518,900	$ 32.67	
06	Woods & Plastics	$ 980,000	$ 12.71	
07	Thermal & Moisture Protection	$ 749,579	$ 9.72	
	070001 Waterproofing, Damproofing & Caulking	$ 61,682	$ 0.80	Filed Sub Bid
	070002 Roofing	$ 1,734,640	$ 22.50	Filed Sub Bid
08	Doors & Windows	$ 516,700	$ 6.70	
	080001 Metal Windows	$ 103,300	$ 1.34	Filed Sub Bid
	080002 Glass & Glazing	$ 49,120	$ 0.64	Filed Sub Bid
09	Finishes	$ 3,475,167	$ 45.07	
	090002 Ceramic Tile	$ 279,366	$ 3.62	Filed Sub Bid
	090003 Acoustical Tile	$ 620,290	$ 8.05	Filed Sub Bid
	090005 Resilient	$ 245,775	$ 3.19	Filed Sub Bid
	090007 Paint	$ 365,514	$ 4.74	Filed Sub Bid
10	Specialties	$ 209,900	$ 2.72	
11	Equipment	$ 711,620	$ 9.23	
12	Furnishings	$ 1,018,600	$ 13.21	
13	Special Construction	$ -	$ -	
14	Conveying Systems	$ 124,000	$ 1.61	
21	Fire Protection	$ 380,830	$ 4.94	Filed Sub Bid
22	Plumbing	$ 930,621	$ 12.07	Filed Sub Bid
23	HVAC	$ 3,472,674	$ 45.04	Filed Sub Bid
26	Electrical	$ 2,722,365	$ 35.31	Filed Sub Bid
31	Earthwork	$ 1,681,108	$ 21.80	
32	Exterior Improvments	$ 1,343,010	$ 17.42	
33	Utilities	$ 912,030	$ 11.83	
	SUBTOTAL FOR SITE & BUILDING COSTS	**$ 30,303,403**	$ 393.03	
CONTINGENCIES				
6.00%	Escalation To Mid-Point Of Construction	$ 1,818,204		
10.00%	Design & Estimating Contingency	$ 3,030,340		
	SUBTOTAL WITH CONTINGENCIES	**$ 35,151,947**		
MARKUPS				
LS	General Conditions	$ 2,914,875		Per CM Contract
LS	General Requirements	$ 945,040		Per CM Contract

SD ESTIMATE
MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER BY THE SEA, MA

Architect: JCJ Architecture

TOTAL PROJECT SUMMARY

CSI CODE	DESCRIPTION	COST	COST/SF 77,102	NOTE
LS	Bond	$ 289,250		
LS	Insurance	$ 278,875		
LS	Permit	$ -		
LS	CM Fee	$ 890,000		Per CM Contract
2.00%	CM Contingency	$ 606,068		Per CM Contract
2.00%	Phasing Premium	$ 606,068		
LS	Modular Classrooms	$ -		By Owner
	TOTAL CONSTRUCTION COST	**$ 41,682,123**	$ 540.61	

W.T. RICH COMPANY, INC.

MANCHESTER MEMORIAL ELEMENTARY SCHOOL

MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT

43 Lincoln Street, Manchester, MA 01944

Date: 6/28/2018

Schematic Design Pricing Set Drawings Dated May 23, 2018

GRAND SUMMARY - RECONCILED SD ESTIMATE (W/VE Ver R13)

		SD Budget (Included VE)
BUILDING		$25,692,150
SITE WORK		$4,028,560
TOTAL DIRECT COST ===>>		**$29,720,710**
ESCALATION TO MID-POINT OF CONSTRUCTION	6.00%	$1,783,243
DESIGN & ESTIMATING CONTINGENCY	10.00%	$2,972,071
TOTAL DIRECT COST OF WORK		**$34,476,024**
PRECONSTRUCTION	LS	Separate Budget
GENERAL CONDITIONS	LS	$2,914,875
GENERAL REQUIREMENTS	LS	$945,040
BOND	LS	$289,250
INSURANCE	LS	$278,875
PERMIT		NIC
CM FEE	LS	$890,000
CM CONTINGENCY	2.00%	$689,520
PHASING PREMIUM	2.00%	$689,520
ADJUSTED INSURANCE AND BOND COST FOR BUDGET OVERRUN/UNDERRUN		($31,000)
TOTAL CONSTRUCTION COST (PROJECTED GMP)		**$41,142,104**
Total $/SF (77,834 SF)		$533.61

Adjustment for Bonds and Insurances For Budget Overrun/Underrun		
ECC per RFP		$44,500,000
Current Projected Total ECC		$41,142,104
Project overrun (underrun)		**($3,357,896)**
	Rate per Thousand	Amount
Performance and Payment Bond	$6.50	($21,826)
Builders Risk (By Owner)	$1.25	($4,197)
General Liability	$3.00	($10,074)
Total Bond and Insurance Adjustment		**($36,097)**

Manchester-Essex Regional School District
Manchester Memorial Elementary School
Schematic Design Estimating Set
Estimate Summary - Uniformat

W.T. Rich Company, Inc.

WTR SD
June 28, 2018

Uniformat Division		WTR SD With VE Incorporated		
		TOTAL	Sub-Total	Cost Per SF
	Gross Floor Area (GSF)		77,102	
A. SUBSTRUCTURE				
A10 - FOUNDATION			$2,243,302	**$26.69**
	A1010 STANDARD FOUNDATION	$1,112,185		$14.42
	A1020 SPECIAL FOUNDATION	$506,283		$6.57
	A1030 SLAB ON GRADE	$624,834		$8.10
A20 - BASEMENT CONSTRUCTION		$0		
B. SHELL				
B10 - SUPERSTRUCTURE			$3,176,554	**$37.79**
	B1010 FLOOR CONSTRUCTION	$1,125,889		$14.60
	B1020 ROOF CONSTRUCTION	$2,050,665		$26.60
B20 - EXTERIOR ENCLOSURE			$3,554,555	**$42.28**
	B2010 EXTERIOR WALLS	$2,254,320		$29.24
	B2020 EXTERIOR WINDOWS	$1,136,531		$14.74
	B2030 EXTERIOR DOORS	$163,704		$2.12
B30 - ROOFING			$1,814,071	**$21.58**
	B3010 ROOF COVERINGS	$1,743,021		$22.61
	B3020 ROOF OPENINGS	$71,050		$0.92
C. INTERIORS				
C10 - INTERIOR CONSTRUCTION			$2,572,952	**$30.61**
	C1010 PARTITIONS	$1,618,327		$20.99
	C1020 INTERIOR DOORS	$490,255		$6.36
	C1030 SPECIALTIES/FITTINGS	$464,370		$6.02
C20 - STAIRS			$266,304	**$3.17**
	C2010 STAIR CONSTRUCTION	$180,455		$2.34
	C2020 STAIR FINISHES	$85,849		$1.11
C30 - INTERIOR FINISHES			$2,075,603	**$24.69**
	C3010 WALL FINISHES	$664,281		$8.62
	C3020 FLOOR FINISHES	$749,537		$9.72
	C3030 CEILING FINISH	$661,785		$8.58
D. SERVICES				
	D1010 ELEVATORS & LIFTS	$124,000		$1.61
D20 - PLUMBING				
	D2010 PLUMBING	$893,867		$11.59
D30 - HVAC				
	D3010 HVAC	$3,410,209		$44.23
D40 - FIRE PROTECTION				
	D4010 SPRINKLERS	$333,686		$4.33
	D4020 STANDPIPES			
	C3030 CEILING FINISHES			
D50 - ELECTRICAL		$2,319,921		$30.09
E. EQUIPMENT & FURNISHINGS			$1,184,875	**$14.10**
E10 - EQUIPMENT				
	E1010 COMMERCIAL EQUIPMENT			
	E1020 INSTITUTIONAL EQUIPMENT	$436,925		$5.67
	E1030 VEHICULAR EQUIPMENT			
	E1090 OTHER EQUIPMENT			

Manchester-Essex Regional School District
Manchester Memorial Elementary School
Schematic Design Estimating Set
Estimate Summary - Uniformat

W.T. Rich Company, Inc.

WTR SD
June 28, 2018

Uniformat Division		WTR SD With VE Incorporated		
		TOTAL	Sub-Total	Cost Per SF
E20 - FURNISHING				
	E2010 FIXED FURNISHING	$747,950		$9.70
	E2020 MOVABLE FURNISHING			
F. SPECIAL CONSTRUCTION & DEMOLITION			$1,722,251	**$20.49**
F10 - SPECIAL CONSTRUCTION		$0		$0.00
	F1010 SPECIAL STRUCTURES - Pre-Engineered Bldg)			
	F1020 INTEGRATED CONSTRUCTION			
	F1030 SPECIAL CONSTRUCTION SYSTEMS			
	F1040 SPECIAL FACILITIES			
	F1050 SPECIAL CONTROLS & INSTRUMENTATION			
F20 - SELECTIVE BUILDING DEMOLITION				
	F2010 BUILDING ELEMENTS DEMOLITION	$809,973		$10.51
	F2020 HAZARDOUS COMPONENTS ABATEMENTS	$912,278		$11.83
G. BUILDING SITEWORK			$4,028,560	**$47.92**
G10 - SITE PREPARATION		.	$1,391,110	
	G1010 SITE CLEARING	$276,558		$3.59
	G1020 SITE DEMOLITION & RELOCATIONS	$16,434		$0.21
	G1030 SITE EARTHWORK	$1,098,118		$14.24
	G1040 HAZARDOUS WASTE REMEDIATION			
G20 - SITE IMPROVEMENTS			$1,410,760	
	G2010 ROADWAYS	$214,491		$2.78
	G2020 PARKING LOTS	$21,300		$0.28
	G2020.05 SITE WALL	$56,154		$0.73
	G2030 PEDESTRIAN PAVING	$234,306		$3.04
	G2040 SITE DEVELOPMENT	$487,434		$6.32
	G2050 LANDSCAPING	$397,075		$5.15
G30 SITE MECHANICAL UTILITIES			$989,290	
	G3010 WATER SUPPLY	$95,500		$1.24
	G3020 SANITARY SEWER	$78,100		$1.01
	G3030 STORM SEWER	$796,015		$10.32
	G3040 HEATING DISTRIBUTION			
	G3050 COOLING DISTRIBUTION			
	G3060 FUEL DISTRIBUTION	$19,675		
	G3090 OTHER SITE MECHANICAL UTILITIES			
G40 SITE ELECTRICAL UTILITIES				
	G4010 ELECTRICAL UTILITIES		$237,400	
	G4010 ELECTRICAL DISTRIBUTION	$145,100		$1.88
	G4020 SITE LIGHTING	$35,350		$0.46
	G4030 SITE COMMUNICATIONS & SECURITY	$56,950		$0.74
	G4090 OTHER SITE ELECTRICAL UTILITIES			
G90 - OTHER SITE CONSTRUCTION				
	G9010 SERVICE AND PEDESTRIAN TUNNELS			
	G9090 OTHER SITE SYSTEMS			
	TOTAL DIRECT COST - BUILDING AND SITE	**$29,720,710**		$385.47

Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
	Gross Floor Area (GSF)		**77,102**	**SF**		
A	SUBSTRUCTURE					
A10	FOUNDATION					
A1010						
A1010	STANDARD FOUNDATION					
A1010	Buildings					
A1010	Foundation Spread Footing (Main Bldg)		105	EA		
A1010	Concrete		510	CY	$135.00	$68,827
A1010	Rebar (108 LBS per CY)		40,786	LBS	$1.20	$48,944
A1010	Formwork		6,632	SF	$16.00	$106,112
A1010	Place and finish		510	CY	$85.00	$43,336
A1010						
A1010	Foundation Spread Footing (Rec & Park Bldg)		4	EA		
A1010	Concrete		20	CY	$135.00	$2,700
A1010	Rebar (108 LBS per CY)		1,600	LBS	$1.20	$1,920
A1010	Formwork		256	SF	$16.00	$4,096
A1010	Place and finish		20	CY	$85.00	$1,700
A1010						
A1010	Foundation Strip footing					
A1010	Concrete		296	CY	$135.00	$39,960
A1010	Rebar		23,680	LBS	$1.20	$28,416
A1010	Formwork		5,661	SF	$16.00	$90,576
A1010	Place and finish		296	CY	$85.00	$25,160
A1010						
A1010	Foundation Strip footing (Rec & Park Bldg)					
A1010	Concrete		10	CY	$135.00	$1,350
A1010	Rebar		800	LBS	$1.40	$1,120
A1010	Formwork		168	SF	$16.00	$2,688
A1010	Place and finish		10	CY	$85.00	$850
A1010						
A1010	Foundation walls -					
A1010	Concrete		366	CY	$135.00	$49,410
A1010	Rebar		45,750	LBS	$1.20	$54,900
A1010	Formwork > 6'H		2,900	SF	$18.00	$52,200
A1010	Formwork < 6'H		12,807	SF	$17.00	$217,719
A1010	Brick shelf		1,568	LF	$10.00	$15,680
A1010	Place and finish		366	CY	$85.00	$31,110
A1010						
A1010	Pilasters & Piers					
A1010	Concrete		50	CY	$135.00	$6,750
A1010	Rebar		6,250	LBS	$1.20	$7,500
A1010	Formwork		1,899	SF	$20.00	$37,980
A1010	Place and finish		50	CY	$85.00	$4,250
A1010						
A1010	*Foundation walls - (Rec & Park Bldg)*					
A1010	Concrete		25	CY	$135.00	$3,375
A1010	Rebar		3,125	LBS	$1.20	$3,750
A1010	Formwork > 6'H		0	SF	$18.00	$0
A1010	Formwork < 6'H		1,098	SF	$16.00	$17,568
A1010	Brick shelf		122	LF	$10.00	$1,220
A1010	Place and finish		25	CY	$85.00	$2,125
A1010						
A1010	*Pilasters & Piers (Rec & Park Bldg)*					
A1010	Concrete		4	CY	$135.00	$540
A1010	Rebar		500	LBS	$1.20	$600
A1010	Formwork		108	SF	$20.00	$2,160
A1010	Place and finish		4	CY	$85.00	$340
A1010						

Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
A1010	Allow for concrete pads and bases		1	AL	$10,000.00	$10,000
A1010	Concrete accessories		1	AL	$5,000.00	$5,000
A1010	Install & grout Anchor Bolts/base plates		105	EA	$175.00	$18,375
A1010	Winter Conditions - Allowance		1	LS	$20,000.00	NR
A1010						
A1010	Foundation Wall Insulation					
A1010	2" Rigid Insulation on Exterior Fnd Walls		9,424	SF	$3.25	$30,628
A1010	2" Rigid Insulation on Exterior Fnd Walls (Rec & Park)		659	SF	$3.25	$2,142
A1010						
A1010	Waterproofing, Damproofing and Caulking					
A1010	Foundation Bituminous Damp proofing		9,424	SF	$2.50	$23,560
A1010	Eliminate damproofing on foundation walls - damproofing reduction	A-23a	(9,424)	SF	$2.50	($23,560)
A1010	Foundation Bituminous Damp proofing (Rec & Park)		659	SF	$2.50	$1,648
A1010						
A1010	Earth Moving - Foundations					
A1010	Excavate Wall Footings		2,563	CY	$13.00	$33,319
A1010	Backfill wall footings		2,280	CY	$10.00	$22,800
A1010	Excavate Column Footings		2,765	CY	$13.00	$35,945
A1010	Backfill column footings		2,280	CY	$10.00	$22,800
A1010	Elevator pit excavation & backfill;;		1	EA	$4,000.00	$4,000
A1010						
A1010	Earth Moving - Foundations (Rec & Park Bldg)					
A1010	Excavate Wall Footings		155	CY	$13.00	$2,015
A1010	Backfill wall footings		146	CY	$10.00	$1,460
A1010	Excavate Column Footings		133	CY	$13.00	$1,729
A1010	Backfill column footings		114	CY	$10.00	$1,140
A1010	Load, haul Dispose Excavate fill material off site		144	CY	$30.00	$4,320
A1010	Imported fill material to backfill foundation		130	CY	$40.00	$5,200
A1010	Elevator pit excavation & backfill;;		1	EA	$4,000.00	$4,000
A1010						
A1010	Foundation drain		1,519	LF	$35.00	$53,165
A1010	Earth Support System adjacent to existing school			SF	$55.00	NR
A1010	Dewatering (Open pumping)		1	AL	$10,000.00	$10,000
A1010						
A1010	*GSF VE Reductions*					
A1010	Remove two Pre-K classrooms	A-01	(2,702)	SF	$11.98	($32,381)
A1010	Remove parks & recreation space (2,610 SF)	A-02	(2,610)	SF	$28.16	($73,506)
A1010	Reduce SF of STEM/project room space by 200 SF each	A-03	(400)	SF	$11.98	($4,794)
A1010	Reduce Gym footprint 750 SF (overall GSF reduction).	A-25	(750)	SF	$11.98	($8,988)
A1010	Reduce circulation area by 500 SF (classroom corridors, gym corridors, or other areas if neccesary)	A-83	(500)	SF	$11.98	($5,992)
A1010	Revised GSF per updated floor plans 7-11-18	A-85	(732)	SF	$11.98	($8,772)
A1010						
A1010						
A1010	TOTAL A1010 STANDARD FOUNDATION					**$1,112,185**
A1020	SPECIAL FOUNDATION					
A1020	Aggregate Piers @ foundations & slabs (Without clay)		29,457	SF	$10.00	$294,570
A1020	Aggregate Piers @ foundations & slabs (Without clay) (Rec & Park Building)		1,893	SF	$10.00	$18,930
A1020	Rigid Inclusions at foundation & slab (With Clay)		12,540	SF	$19.00	$238,260
A1020	Remove shallow sub-soil (Area with no fill material or clay) - See Earthwork					W/ Earthwork
A1020						
A1020	*GSF VE Reductions*					
A1020	Remove two Pre-K classrooms	A-01	(2,702)	SF	$5.21	($14,072)
A1020	Remove parks & recreation space (2,610 SF)	A-02	(2,610)	SF	$7.28	($19,000)
A1020	Reduce SF of STEM/project room space by 200 SF each	A-03	(400)	SF	$5.21	($2,083)
A1020	Reduce Gym footprint 750 SF (overall GSF reduction).	A-25	(750)	SF	$5.21	($3,906)
A1020	Reduce circulation area by 500 SF (classroom corridors, gym corridors, or other areas if neccesary)	A-83	(500)	SF	$5.21	($2,604)
A1010	Revised GSF per updated floor plans 7-11-18	A-85	(732)	SF	$5.21	($3,812)
A1020						
A1020	TOTAL A1020 SPECIAL FOUNDATION					**$506,283**
A1030	SLAB ON GRADE					
A1030						
A1030	*Slab-on-Grade*		56,577	SF		

Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
A1030	Concrete 5" thick		960	CY	$135.00	$129,600
A1030	WWF -20% overlap		67,892	SF	$0.95	$64,498
A1030	Place and finish		56,577	SF	$1.50	$84,866
A1030	Slab depression		200	LF	$20.00	$4,000
A1030	Column isolation joints		40	EA	$150.00	$6,000
A1030	Slab CJ, curb and misc.		56,577	SF	$1.20	$67,892
A1030	*Slab-on-Grade (Rec & Park)*		1,893	SF		
A1030	Concrete 5" thick		33	CY	$135.00	$4,455
A1030	WWF -20% overlap		2,272	SF	$0.95	$2,158
A1030	Place and finish		1,893	SF	$1.50	$2,840
A1030	Column isolation joints		4	EA	$150.00	$600
A1030	Slab CJ and misc.		1,893	SF	$1.20	$2,272
A1030						
A1030	*Elevator pit wall & footing*					
A1030	Mat slab Concrete		17	CY	$135.00	$2,295
A1030	Mat slab Rebar (115 LB / CY)		2,125	LBS	$1.20	$2,550
A1030	Form Elev. pit slab + water stop joints		1	EA	$3,500.00	$3,500
A1030	Mat slab Place and finish		10	CY	$100.00	$1,000
A1030	Wall Concrete		18	CY	$135.00	$2,430
A1030	Wall Rebar (125 LB / CY)		2,250	LBS	$1.40	$3,150
A1030	Wall Formwork		900	SF	$18.00	$16,200
A1030	Wall concrete Place and finish		10	CY	$100.00	$1,000
A1030						
A1030	*Under Slab Vapor Barrier*					
A1030	Under slab vapor barrier - 15 mil heavy duty (+20%)		67,892	SF	$0.55	$37,341
A1030	Under slab vapor barrier - 15 mil heavy duty (+20%)		2,272	SF	$0.55	$1,249
A1030	*Insulation*					
A1030	2" Rigid insulation under slab (+20%), 4,000PSI		67,892	SF	$2.75	$186,704
A1030	Reduce slab insulation to perimeter of building only - sog insulation reduction	A-23	(48,602)	SF	$2.75	($133,656)
A1030	2" Rigid insulation under slab (+20%), 4,000PSI		2,272	SF	$2.75	$6,247
A1030	*Self Adhering Sheet Waterproofing*					
A1030	Waterproofing at elevator pit - figure metal oxide		1	EA	$3,500.00	$3,500
A1030						
A1030	*Earth Moving - Slab On Grade*					
A1030	Gravel below slab on grade -8"		1,825	CY	$42.00	$76,656
A1030	Structural Fill below slab sub-grade					W/ Earthwork
A1030	Fine grade slab area		56,577	SF	$0.25	$14,144
A1030	Under slab Drainage (At LOWER LEVEL)		1,200	LF	$32.00	$38,400
A1030	Under slab plumbing trench Excave/ BF		1,500	LF	$35.00	$52,500
A1030	*Earth Moving - Slab On Grade (Rec & Park Bldg)*					
A1030	Gravel below slab on grade -8"		61	CY	$42.00	$2,565
A1030	Structural Fill below slab sub-grade					W/ Earthwork
A1030	Fine grade slab area		1,893	SF	$0.25	$473
A1030	Under slab Drainage (At LOWER LEVEL)		100	LF	$32.00	$3,200
A1030	Under slab plumbing trench Excave/ BF		120	LF	$35.00	$4,200
A1030						
A1030	*GSF VE Reductions*					
A1030	Remove two Pre-K classrooms	A-01	(2,702)	SF	$7.82	($21,119)
A1030	Remove parks & recreation space (2,610 SF)	A-02	(2,610)	SF	$11.59	($30,259)
A1030	Reduce SF of STEM/project room space by 200 SF each	A-03	(400)	SF	$7.82	($3,126)
A1030	Reduce Gym footprint 750 SF (overall GSF reduction).	A-25	(750)	SF	$7.82	($5,862)
A1030	Reduce circulation area by 500 SF (classroom corridors, gym corridors, or other areas if neccesary)	A-83	(500)	SF	$7.82	($3,908)
A1010	Revised GSF per updated floor plans 7-11-18	A-85	(732)	SF	$7.82	($5,721)
A1030						
A1030	TOTAL A1030 SLAB ON GRADE					**$624,834**
A20	**BASEMENT CONSTRUCTION**					

Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
A2010	BASEMENT EXCAVATION					
A2010						
A2010						
A2010						
A2010						
A2010	TOTAL A2010 BASEMENT EXCAVATION					**$0**
A2020	BASEMENT WALLS					
A2020						
A2020						
A2020						
A2020						
A2020						
A2020						
A2020						
A2020						
A2020						
A2020						
A2020						
A2020						
A2020						
A2020	TOTAL A2020 BASEMENT WALLS					**$0**
B	SHELL					
B10	SUPERSTRUCTURE					
B1010	FLOOR CONSTRUCTION					
B1010						
B1010	*Structural Steel Framing*					
B1010	Structural steel for columns, beams, bracing, plates angles, misc. frames, relieving angles		187	TON	$3,500.00	$654,500
B1010	Moment connections allowance		1	LS	$20,000.00	$20,000
B1010						
B1010	*Steel Decking*					
B1010	Composite metal floor deck		26,234	SF	$3.50	$91,819
B1010	Shear Connectors		5,247	ea	$5.00	$26,234
B1010						
B1010	Allowance for exposed architectural steel		1	LS	$25,000.00	$25,000
B1010	Temp. rail and safety cable etc. @ perimeter and openings		1	LS	$15,000.00	$15,000
B1010						
B1010	*Cast In Place Concrete - Decks*					
B1010	Slab on deck		26,234	SF		
B1010	Concrete - 3 1/2" LW Conc on 3" Deck		534	CY	$180.00	$96,120
B1010	WWF -20% overlap		31,481	SF	$1.00	$31,481
B1010	Re-steel		1	LS	$15,000.00	$15,000
B1010	Place and finish		26,234	SF	$1.50	$39,351
B1010	Slab CJ and misc.		26,234	SF	$1.00	$26,234
B1010						
B1010	Spray Fire Proofing/ intumescent paint on beams & decks		1	LS	$20,000.00	$20,000
B1010	Fire stopping		1	LS	$20,000.00	$20,000
B1010	Winter Condition - Wrap Building for deck pour		30,100	SF	$1.50	$45,150
B1010						
B1010	TOTAL B1010 FLOOR CONSTRUCTION					**$1,125,889**

Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
B1020	ROOF CONSTRUCTION					
B1020						
B1020	*Roof Steel:*					
B1020	Structural steel for columns, beams, bracing, gym trusses, purlin & misc. (Primer not require for steel not exposed)		440	TON	$3,500.00	$1,540,000
B1020	Gable roof framing at gym, Pre-K premium		20,235	SF	$10.00	$202,350
B1020	Gable roof framing at HUB premium		3,007	SF	$10.00	$30,070
B1020	Allowance for exposed architectural steel		1	LS	$15,000.00	$15,000
B1020	Moment connection - Allowance		1	LS	$20,000.00	$20,000
B1020	Roof Screen supports - Allowance		1	LS	$25,000.00	$25,000
B1020	Delete exterior mechanical screening on the high roof - Roof Screen supports - reduction	A-09	(1)	LS	$12,500.00	($12,500)
B1020	Roof steel framing steel (Rec & Park Bldg)		15	Tons	$3,600.00	$52,474
B1020	*Roof Deck*					
B1020	R3 - 3" Roof Deck - Main Roof		46,252	SF	$3.75	$173,445
B1020	Acoustical Deck - Gym & CAFÉ		12,848	SF	$7.50	$96,360
B1020	Shear Connectors		1,626	ea	$5.00	$8,129
B1020	Roof Deck (Rec& Park Bldg)		2,082	SF	$3.75	$7,809
B1020	Spray Fire Proofing/ intumescent paint on beams & decks		30,714	SF		W/ Above
B1020						
B1020	*Cast In Place Concrete On Deck at low level roof (Except Gym)*					
B1020	Slab on roof deck, LW (Mechanical Area)		8,129	SF		
B1020	Concrete - 3 1/2NW Conc on 3" deck		165	CY	$180.00	$29,700
B1020	WWF - 20% overlap		9,755	SF	$1.00	$9,755
B1020	Place and finish		8,129	SF	$1.50	$12,194
B1020	Slab CJ and misc.		8,129	SF	$1.00	$8,129
B1020						
B1020	*GSF VE Reductions*					
B1020	Remove two Pre-K classrooms	A-01	(2,702)	SF	$21.04	($56,850)
B1020	Remove parks & recreation space (2,610 SF)	A-02	(2,610)	SF	$23.10	($60,283)
B1020	Reduce SF of STEM/project room space by 200 SF each	A-03	(400)	SF	$21.04	($8,416)
B1020	Reduce Gym footprint 750 SF (overall GSF reduction).	A-25	(750)	SF	$21.04	($15,780)
B1020	Reduce circulation area by 500 SF (classroom corridors, gym corridors, or other areas if neccesary)	A-83	(500)	SF	$21.04	($10,520)
A1010	Revised GSF per updated floor plans 7-11-18	A-85	(732)	SF	$21.04	($15,401)
B1020						
B1020	TOTAL B1020 ROOF CONSTRUCTION					**$2,050,665**
B20	EXTERIOR ENCLOSURE					
B2010	EXTERIOR WALLS					
B2010						
B2010	*Unit Masonry Exterior Wall*					
B2010	brick veneer		33,487	SF	$35.00	$1,172,045
B2010	Change exterior brick masonry from modular to jumbo sized units	A-15	33,487	SF	($2.00)	($66,974)
B2010	Reduce second floor to deck height at Classrooms and Media Center from 15'4" to 14'8" at classroom wing - brick veneer reduction	A-24	(1,374)	SF	$33.00	($45,342)
B2010	precast concrete panels		398	SF	$100.00	$39,800
B2010	Delete exterior classroom doors, add back precast concrete panels	A-10	230	SF	$100.00	$23,000
B2010	Change precast concrete panels to ground face CMU at classroom wing. At Cafeteria area, keep CMP 3' off the ground and have a 3' ground face CMU wall base - precast concrete panels reduction	A-17	(628)	SF	$100.00	($62,800)
B2010	Change precast concrete panels to ground face CMU at classroom wing. At Cafeteria area, keep CMP 3' off the ground and have a 3' ground face CMU wall base - add back ground face CMU	A-17	715	SF	$28.00	$20,020
B2010	3" green girts and insulation at masonry		33,885	SF	$15.00	$508,275
B2010	Utilize thermal break masonry ties in lieu of green girt at masonry	A-16	33,885	SF	($13.00)	($440,505)
B2010	Reduce second floor to deck height at Classrooms and Media Center from 15'4" to 14'8" at classroom wing - green girt already credited - credit for thermal masonry tie reduction	A-24	(1,374)	SF	$2.00	($2,748)
B2010	lintels - install only		799	LF	$15.00	$11,985
B2010	lintels - material only		799	LF	$55.00	$43,945
B2010	through wall flashing - wall base		1,161	LF	$22.00	$25,542
B2010	mortar net		1,161	LF	$5.00	$5,805
B2010	weep holes		774	EA	$10.00	$7,740
B2010	staging		65,998	SF		included

Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
B2010						
B2010	*Composite Metal Panel*					
B2010	CMP		930	SF	$75.00	$69,750
B2010	Change precast concrete panels to ground face CMU at classroom wing. At Cafeteria area, keep CMP 3' off the ground and have a 3' ground face CMU wall base - CMP reduction	A-17	(87)	SF	$75.00	($6,525)
B2010	*includes 3" green girt and insulation					
B2010						
B2010	*Fiber Cement Board*					
B2010	fiber cement board - Nichiha - Vintage Wood		2,572	SF	$65.00	$167,180
B2010	column enclosures - assume wood		202	VLF	$225.00	$45,450
B2010	*includes 3" green girt and insulation					
B2010						
B2010	*Exterior Wall Back Up*					
B2010	6" LGMF		37,387	SF	$9.00	$336,483
B2010	1/2" exterior densglass sheathing		37,387	SF	$3.50	$130,855
B2010	gwb to interior of exterior wall		37,387	SF	$2.50	$93,468
B2010						
B2010	*Insulation Exterior Walls*					
B2010	3" mineral wool		37,387	SF		w/assembly
B2010	6" batt insulation		37,387	SF	$1.50	$56,081
B2010						
B2010						
B2010	*Air and Vapor Barrier*					
B2010	Air barrier, exterior walls		37,387	SF	$5.50	$205,629
B2010						
B2010	Delete exterior classroom doors, add back ext wall back up	A-10	230	SF	$22.00	$5,060
B2010	Reduce second floor to deck height at Classrooms and Media Center from 15'4" to 14'8" at classroom wing - ext wall back up reduction	A-24	(1,374)	SF	$22.00	($30,228)
B2010						
B2010	*Soffits*		*10,740*	*SF*		
B2010	South Entrance Canopy - wood soffit		425	SF	$65.00	$27,625
B2010	North Entrance Canopy - wood soffit		1,178	SF	$65.00	$76,570
B2010	Kindergarten Entrance Canopy - wood soffit		306	SF	$65.00	$19,890
B2010	Pre K Entrance Canopy - CMP vented Soffit		34	SF	$65.00	$2,210
B2010	High Roof - Soffit - CMP vented soffit		6,267	SF	$65.00	$407,355
B2010	Gym, Pre K, HUB - CMP vented soffit		1,882	SF	$65.00	$122,330
B2010	CMP fascia/soffit at first floor classrooms		648	SF	$65.00	$42,120
B2010	light gauge metal framing		10,740	SF	$15.00	$161,100
B2010	3" mineral wool		10,740	SF		w/assembly
B2010	batt insulation		10,740	SF	$2.00	$21,480
B2010	1/2" exterior densglass sheathing		10,740	SF	$3.50	$37,590
B2010	Air barrier, soffits		10,740	SF	$5.50	$59,070
B2010	blocking		10,740	SF	$5.00	$53,700
B2010	Revised Media Center Canopy per updated soffit plan from JCJ: Reduce Media Center Canopy size and change to Pac-Cloud perforated soffit	A-07b	(1)	LS	$22,261.00	($22,261)
B2010	Updated soffit plan reduction from JCJ - with Pac-Cloud perforated soffit - This option replaces the wood soffits with metal.	A-08a	(1)	LS	$595,090	($595,090)
B2010						
B2010	*Mockups*					
B2010	Exterior Wall Mock-Up Panels (Build in place)- Allowance		1	LS	$10,000.00	$10,000
B2010						
B2010	*Metal Fabrications Exterior*					
B2010	Allowance, misc. metals to exterior		84,796	GSF	$0.75	$63,597
B2010						
B2010	*Joint Sealants Exterior*					
B2010	Caulking & sealants - Exterior Wall		84,796	GSF	$0.65	$55,117
B2010						
B2010	*Signage Exterior*					
B2010	exterior signage allowance		1	LS	$6,500.00	$6,500
B2010						
B2010	*Phasing Requirements - Exterior Wall*					
B2010	Temporary exterior wall & protection between phasing		2,600	SF	$30.00	$78,000
B2010	Frame temp opening for egress		1	LS	$2,500.00	$2,500
B2010	remove door/infill opening		1	LS	$2,000.00	$2,000
B2010						
B2010	Revise envelope to realize $400K in saving through design in lieu of A-04 and A-08	A-04c	(1)	LS	$330,558.00	($330,558)
B2010						

Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
B2010	*GSF VE Reductions*					
B2010	Remove two Pre-K classrooms	A-01	(2,702)	SF	$34.41	($92,981)
B2010	Remove parks & recreation space (2,610 SF)	A-02	(2,610)	SF	$69.30	($180,878)
B2010	Reduce SF of STEM/project room space by 200 SF each	A-03	(400)	SF	$34.41	($13,765)
B2010	Reduce Gym footprint 750 SF (overall GSF reduction).	A-25	(750)	SF	$39.33	($29,496)
B2010	Reduce circulation area by 500 SF (classroom corridors, gym corridors, or other areas if neccesary)	A-83	(500)	SF	$34.41	($17,206)
A1010	Revised GSF per updated floor plans 7-11-18	A-85	(732)	SF	$34.41	($25,190)
B2010						
B2010	TOTAL B1020 EXTERIOR WALLS					**$2,254,320**
B2020	EXTERIOR WINDOWS					
B2020	*Curtain Wall*					
B2020	curtainwall		2,086	SF	$120.00	$250,320
B2020						
B2020	*Storefront*					
B2020	storefront		7,677	SF	$105.00	$806,085
B2020	Sunshade - Allowance		204	LF	$250.00	$51,000
B2020						
B2020	*Window Rough Carpentry*					
B2020	window blocking		9,763	SF	$6.50	$63,460
B2020	Temporary weather protection - poly		9,763	SF	$2.00	$19,526
B2020	more sunshades???					
B2020	*Louvers*					
B2020	louvers - allowance		1	LS	$15,000.00	$15,000
B2020						
B2020	*Phasing Requirements*					
B2020	Temporary vision shade at classroom windows to minimize construction interference		1	LS	$25,000.00	$25,000
B2020						
B2020	*GSF VE Reductions*					
B2020	Remove two Pre-K classrooms	A-01	(2,702)	SF	$11.61	($31,365)
B2020	Remove parks & recreation space (2,610 SF)	A-02	(2,610)	SF	$13.35	($34,845)
B2020	Reduce SF of STEM/project room space by 200 SF each	A-03	(400)	SF	$11.61	($4,643)
B2020	Reduce Gym footprint 750 SF (overall GSF reduction).	A-25	(750)	SF	$11.61	($8,706)
B2020	Reduce circulation area by 500 SF (classroom corridors, gym corridors, or other areas if neccesary)	A-83	(500)	SF	$11.61	($5,804)
A1010	Revised GSF per updated floor plans 7-11-18	A-85	(732)	SF	$11.61	($8,497)
B2020						
B2020	TOTAL B2020 EXTERIOR WINDOWS					**$1,136,531**
B2030	EXTERIOR DOORS					
B2030	*Aluminum Framed Entrances & Storefront*					
B2030	storefront door - single		18	LEAF	$3,800.00	$68,400
B2030	storefront door - pair		10	EA	$7,600.00	$76,000
B2030	Delete exterior classroom doors - storefront door - single	A-10	(10)	LEAF	$3,800.00	($38,000)
B2030	Delete exterior classroom doors - storefront door - pair	A-10	(2)	EA	$7,600.00	($15,200)
B2030						
B2030	*Insulated HM Doors*					
B2030	type A HM door 3'0" x 7'		2	LEAF	$550.00	$1,100
B2030	type A HM door 6'0" x 7'		2	EA	$1,100.00	$2,200
B2030	install HM doors		4	LEAF	$200.00	$800
B2030						
B2030	*Insulated HM Frames*					
B2030	Type 1 HM frame 3'0" x 7'0"		2	LEAF	$250.00	$500
B2030	Type 1 HM frame 6'0" x 7'0"		2	LEAF	$250.00	$500
B2030	install HM frames		4	LEAF	$200.00	$800
B2030						
B2030	*Hardware*					
B2030	exterior door hardware		32	EA	$2,500.00	$80,000
B2030	install door hardware		32	EA	$200.00	$6,400
B2030	Delete exterior classroom doors - exterior door hardware	A-10	(12)	EA	$2,500.00	($30,000)
B2030	Delete exterior classroom doors - install door hardware	A-10	(12)	EA	$200.00	($2,400)
B2030	HC operator - allowance		4	EA	$3,750.00	$15,000

Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
B2030						
B2030	Exterior Overhead Doors - 8'x12' - glazed		1	EA	$15,000.00	$15,000
B2030						
B2030	*Painting*					
B2030	paint HM Door and Frame		4	EA	$250.00	$1,000
B2030						
B2030	*Phasing Requirements - Exterior Doors*					
B2030	Temp HM Double Egress Door at 2nd Floor - 3rd Grade		1	LS	$5,000.00	$5,000
B2030						
B2030	*GSF VE Reductions*					
B2030	Remove two Pre-K classrooms	A-01	(2,702)	SF	$2.58	($6,960)
B2030	Remove parks & recreation space (2,610 SF)	A-02	(2,610)	SF	$3.95	($10,300)
B2030	Reduce SF of STEM/project room space by 200 SF each	A-03	(400)	SF	$2.58	($1,030)
B2030	Reduce Gym footprint 750 SF (overall GSF reduction).	A-25	(750)	SF	$2.58	($1,932)
B2030	Reduce circulation area by 500 SF (classroom corridors, gym corridors, or other areas if neccesary)	A-83	(500)	SF	$2.58	($1,288)
A1010	Revised GSF per updated floor plans 7-11-18	A-85	(732)	SF	$2.58	($1,886)
B2030						
B2030	TOTAL B2030 EXTERIOR DOORS					**$163,704**
B30	ROOFING					
B3010	ROOF COVERINGS					
B3010	*Metal Roof*					
B3010	gym pitched roof - 4 1/2" / 12"		12,781	SF	$50.00	$639,050
B3010	Revise gym roof from metal to ashpalt shingles - metal roof reduction	A-04a, A-04b	(12,781)	SF	$50.00	($639,050)
B3010	pre k pitched roof - 7" / 12"		7,454	SF	$50.00	$372,700
B3010	Revise Pre-K roof from metal to ashpalt shingles - metal roof reduction	A-05a, A-05b	(7,454)	SF	$50.00	($372,700)
B3010	HUB pitched roof - 4 1/2" / 12"		3,007	SF	$50.00	$150,350
B3010						
B3010	*TPO Membrane*					
B3010	roof type 1 - TPO membrane - white		49,145	SF	$6.75	$331,729
B3010	Revise gym roof from metal to ashpalt shingles - asphalt shingles	A-04a, A-04b	12,781	SF	$8.00	$102,248
B3010	Revise Pre-K roof from metal to ashpalt shingles - pre k pitched roof - 7" / 12"	A-05a, A-05b	7,454	SF	$8.00	$59,632
B3010	1/2" protection board		49,145	SF	$2.50	$122,863
B3010	Revise gym roof from metal to ashpalt shingles - 1/2" protection board	A-04a, A-04b	12,781	SF	$2.50	$31,953
B3010	Revise Pre-K roof from metal to ashpalt shingles - 1/2" protection board	A-05a, A-05b	7,454	SF	$2.50	$18,635
B3010	air/vapor barrier		49,145	SF	$0.50	$24,573
B3010	Revise gym roof from metal to ashpalt shingles - air/vapor barrier	A-04a, A-04b	12,781	SF	$0.50	$6,391
B3010	Revise Pre-K roof from metal to ashpalt shingles - air/vapor barrier	A-05a, A-05b	7,454	SF	$0.50	$3,727
B3010						
B3010	*Thermal Insulation*					
B3010	roof insulation - 7" - polyiso - two layers 3 1/2"		49,145	SF	$6.00	$294,870
B3010	Revise gym roof from metal to ashpalt shingles - nailable insulation board 8"	A-04a, A-04b	12,781	SF	$8.00	$102,248
B3010	Revise Pre-K roof from metal to ashpalt shingles - nailable insulation board 8"	A-05a, A-05b	7,454	SF	$8.00	$59,632
B3010						
B3010	sheet metal flashing, trim roof edge - allowance		49,145	SF	$1.00	$49,145
B3010	Revise gym roof from metal to ashpalt shingles - sheet metal flashing, trim roof edge - allowance	A-04a, A-04b	12,781	SF	$1.00	$12,781
B3010	Revise Pre-K roof from metal to ashpalt shingles - sheet metal flashing, trim roof edge - allowance	A-05a, A-05b	7,454	SF	$1.00	$7,454
B3010	roof edge 24" - allow for profile		2,854	LF	$75.00	$214,050
B3010						
B3010	*Rough Carpentry*					
B3010	rough carpentry based on roof area		49,145	SF	$2.00	$98,290
B3010	Revise gym roof from metal to ashpalt shingles - rough carpentry based on roof area	A-04a, A-04b	12,781	SF	$2.00	$25,562
B3010	Revise Pre-K roof from metal to ashpalt shingles - rough carpentry based on roof area	A-05a, A-05b	7,454	SF	$2.00	$14,908

Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
B3010						
B3010	*Roof Screen*					
B3010	acoustic roof screen		4,940	SF	$65.00	$321,100
B3010	Delete exterior mechanical screening on the high roof	A-09	(2,760)	SF	$65.00	($179,400)
B3010						
B3010	*Misc.*					
B3010	walkway pads - 30"x30" - allowance		1,000	SF	$8.00	$8,000
B3010	roof ladder - allow		1	LS	$10,000.00	$10,000
B3010	green roof		3,300	SF	$70.00	$231,000
B3010	delete the green roof	A-06a	(3,300)	SF	$70.00	($231,000)
B3010	decking at rooftop classroom		926	SF	$25.00	$23,150
B3010	guardrail		87	LF	$250.00	$21,750
B3010	gutters		809	LF	$45.00	$36,405
B3010	downspouts		16	EA	$350.00	$5,600
B3010						
B3010	*GSF VE Reductions*					
B3010	Remove two Pre-K classrooms	A-01	(2,702)	SF	$26.13	($70,603)
B3010	Remove parks & recreation space (2,610 SF)	A-02	(2,610)	SF	$38.50	($100,474)
B3010	Reduce SF of STEM/project room space by 200 SF each	A-03	(400)	SF	$26.13	($10,452)
B3010	Reduce Gym footprint 750 SF (overall GSF reduction).	A-25	(750)	SF	$27.87	($20,904)
B3010	Reduce circulation area by 500 SF (classroom corridors, gym corridors, or other areas if neccesary)	A-83	(500)	SF	$26.13	($13,065)
A1010	Revised GSF per updated floor plans 7-11-18	A-85	(732)	SF	$26.13	($19,127)
B3010						
B3010	TOTAL B3010 ROOF COVERINGS					**$1,743,021**
B3020	ROOF OPENINGS					
B3020	Roof Hatch		1	EA	$4,000.00	$4,000
B3020	Elevator roof vent		1	EA	$1,500.00	$1,500
B3020	Skylights		437	SF	$150.00	$65,550
B3020						
B3020	TOTAL B3020 ROOF OPENINGS					**$71,050**
C10	INTERIOR CONSTRUCTION					
C1010	PARTITIONS					
C1010	*Interior Masonry Partitions*					
C1010	Elevator shafts - fully grouted and reinforced		1,012	SF	$32.00	$32,384
C1010	Type 1 - CMU Walls @ Gym - acoustic block		5,852	SF	$35.00	$204,820
C1010	Gym Walls - use CMU in lieu of acoustic block. Acoustic panels (i.e., tectum panels) are already indicated as part of the design and are carried in the estimate. Should not need both - delete acoustic block Type 1 - CMU Walls @ Gym - acoustic block	A-57	(5,852)	SF	$35.00	($204,820)
C1010	Gym Walls - use CMU in lieu of acoustic block. Acoustic panels (i.e., tectum panels) are already indicated as part of the design and are carried in the estimate. Should not need both - add Type 1 - CMU Walls @ Gym	A-57	5,852	SF	$28.00	$163,856
C1010						
C1010	*Interior Gypsum Partitions*					
C1010	Type 4K - standard devising partition - 3 5/8" mtl stud, 1 layer gyp both sides, sound attenuation batt		16,891	SF	$12.00	$202,692
C1010	Type 4Q - corridor - 6" mtl stud, 1 layer gyp both sides, sound attenuation batt insulation		18,102	SF	$13.00	$235,326
C1010	Type 4Q - gym/café offices and storage- 6" mtl stud, 1 layer gyp both sides, sound attenuation batt insulation		6,765	SF	$13.00	$87,945
C1010	Type 4Q - HUB & Vestibules - 6" mtl stud, 1 layer gyp both sides, sound attenuation batt insulation at		2,638	SF	$13.00	$34,294
C1010	Type 5K -stairwells - 2 HR - 3 5/8" mtl stud, 2 layers both sides air space, sound attenuation batt insulation		2,893	SF	$15.50	$44,842
C1010	Type 8Q - classroom to classroom - 6" mtl stud, 2 layers one side, 1 layer one side, sound attenuation batt insulation, deflection track attached to deck		13,441	SF	$14.00	$188,174
C1010	Type 8Q - gym to media corridor - 6"mtl stud, 2 layers one side, 1 layer one side, sound attenuation batt insulation, deflection track attached to deck		1,388	SF	$14.00	$19,432
C1010	Type 9 - band/practice to platform - 2 layers 3 5/8 mtl stud, 2 layers gyp both sides, air space, 3 1/2" min sound attenuation batt insulation		1,872	SF	$20.50	$38,376
C1010						
C1010	furring 3 5/8" mtl stud, 1 layer gyp 1 side		5,468	SF	$9.00	$49,212

Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
C1010	column furring 2 1/2" mtl stud, 1 layer 1 side		1,152	SF	$12.50	$14,400
C1010	furring 2 1/2" mtl stud, 1 layer 1 side		6,934	SF	$9.00	$62,406
C1010	pushouts - 3 5/8" mtl stud, 1 layer gyp both sides - walls only		2,447	SF	$12.00	$29,364
C1010	reduce portals - cut by half - pushouts - 3 5/8" mtl stud, 1 layer gyp both sides - walls only	A-58	(1,223)	SF	$12.00	($14,676)
C1010	above storefront - 3 5/8" stud, 1 layer both sides, batt insulation		244	SF	$13.00	$3,172
C1010	Replace nana walls with storefront (project rooms). NOTE: nana walls are operable glass walls that can be opened up. Storefront would be fixed in place - add for drywall above storefront - 3 5/8" stud, 1 layer both sides, batt insulation	A-52	32	SF	$13.00	$416
C1010	fire wall premium at HUB		1,325	SF	$10.00	$13,250
C1010	drywall jambs		4,388	SF	$12.00	$52,656
C1010						
C1010	*Parks and Rec*					
C1010	Type 4K - standard devising partition - 3 5/8" 1 layer gyp both sides, sound attenuation batt		631	SF	$12.00	$7,572
C1010	Type 4Q - parks and rec devising wall - 6" stud, 1 layer gyp both sides, sound attenuation batt insulation		1,071	SF	$13.00	$13,919
C1010	drywall jambs		223	SF	$12.00	$2,676
C1010						
C1010						
C1010						
C1010						
C1010	*Joint Sealants*					
C1010	Caulking & sealants		84,796	GSF	$0.75	$63,597
C1010						
C1010	*Rough Carpentry*					
C1010	Interior in-wall blockings & Rough Carpentry		84,796	GSF	$0.50	$42,398
C1010						
C1010	*Firestopping*					
C1010	Fire stopping/ Joint Restraint		84,796	GSF	$0.35	$29,679
C1010						
C1010						
C1010						
C1010						
C1010	*Interior aluminum storefront*					
C1010	storefront - 10' tall - Art		230	SF	$85.00	$19,550
C1010	storefront - 10' tall - Cafeteria		240	SF	$85.00	$20,400
C1010	storefront - 10' tall - Media Center		150	SF	$85.00	$12,750
C1010	storefront - 10' tall - Project Room 1st Floor		480	SF	$85.00	$40,800
C1010	storefront - 10' tall - Project Room 2nd Floor		350	SF	$85.00	$29,750
C1010	storefront - 10' tall - RES		280	SF	$85.00	$23,800
C1010	storefront - 10' tall - Vestibule		80	SF	$85.00	$6,800
C1010	storefront - 14'10" tall - Vestibule		237	SF	$85.00	$20,145
C1010	storefront - 4' x 7'4"		88	SF	$85.00	$7,480
C1010	storefront - 42' tall - Vestibule		1,092	SF	$85.00	$92,820
C1010	Upper interior vestibule glass wall deleted per updated design by JCJ - storefront - 42' tall - Vestibule	A-11b	(754)	SF	$85.00	($64,090)
C1010	storefront - 8'4" tall - Gym		150	SF	$85.00	$12,745
C1010	storefront - HUB		301	SF	$85.00	$25,585
C1010	storefront - HUB - wood infill		74	SF	$85.00	$6,290
C1010	discuss fire wall at HUB and need for fire rated glass					
C1010	Replace nana walls with storefront (project rooms). NOTE: nana walls are operable glass walls that can be opened up. Storefront would be fixed in place - add for storefront - 10' tall - Project Rooms	A-52	160	SF	$85.00	$13,600
C1010	Change SF to HM frame/glaze - delete Storefront - Art, Media, Project Rooms, RES, and Gym	A-59	(1,728)	SF	$85.00	($146,880)
C1010	Change SF to HM frame/glaze - add storefront - 10' - Admin area 260 SF	A-59	260	SF	$85.00	$22,100
C1010						
C1010	*Hollow Metal View Windows - Hollow Metal*					
C1010	clerestory - 10' x 2' - Classroom		380	SF	$30.00	$11,400

Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
C1010	clerestory - 8' x 2' - Kindergarten		48	SF	$30.00	$1,440
C1010	view window - 6' x 7'4" - Gym		176	SF	$30.00	$5,280
C1010	view window - 6' x 6' - Nurse		72	SF	$30.00	$2,160
C1010	glazing at view windows		676	SF	$35.00	$23,660
C1010	Utilize HM frame and glazing w/glazed wood doors in lieu of interior storefront at Art, Media Center, Project Rooms, RES, Media Center and Gym. Need to add back storefront at Admin not reflected in drawings.	A-59	1,728	SF	$65.00	$112,320
C1010						
C1010						
C1010	Installation of Access Panels w/in GWB Assemblies		84,796	GSF	$0.05	$4,240
C1010						
C1010	*Painting*					
C1010	Paint HM Frames		676	SF	$4.50	$3,042
C1010						
C1010	*Phasing Requirements - Interior Partitions*					
C1010	temp partition at 2nd floor grade 3		532	SF	$12.50	$6,650
C1010						
C1010	*GSF VE Reductions*					
C1010	Remove two Pre-K classrooms	A-01	(2,702)	SF	$17.45	($47,144)
C1010	Remove parks & recreation space (2,610 SF)	A-02	(2,610)	SF	$9.26	($24,167)
C1010	Reduce SF of STEM/project room space by 200 SF each	A-03	(400)	SF	$17.45	($6,979)
C1010	Reduce Gym footprint 750 SF (overall GSF reduction).	A-25	(750)	SF	$17.45	($13,086)
C1010	Reduce circulation area by 500 SF (classroom corridors, gym corridors, or other areas if neccesary)	A-83	(500)	SF	$17.45	($8,724)
A1010	Revised GSF per updated floor plans 7-11-18	A-85	(732)	SF	$17.45	($12,772)
C1010						
C1010	TOTAL C1010 PARTITIONS					**$1,618,327**
C1020	INTERIOR DOORS					
C1020	*Hollow Metal Doors*					
C1020	3' x 7' HM door - allowance		5	EA	$450.00	$2,250
C1020	install door		5	EA	$150.00	$750
C1020						
C1020	*Hollow Metal Door Frames*					
C1020	HM frame 3'0" x 7'0"		71	EA	$204.00	$14,484
C1020	Change SF to HM frame/glaze - add HM frame 3'0" x 7'0"	A-59	1	EA	$204.00	$204
C1020	HM frame 6'0" x 7'0"		12	EA	$240.00	$2,880
C1020	Change SF to HM frame/glaze - add HM frame 6'0" x 7'0"	A-59	7	EA	$240.00	$1,680
C1020	HM frame 8'0" x 7'0"		2	EA	$264.00	$528
C1020	HM frame 10'0" x 7'0"		1	EA	$288.00	$288
C1020	HM frame 3'0" x 7'0" w/sidelight and clerestory		39	EA	$476.00	$18,564
C1020	Change SF to HM frame/glaze - delete HM frame 3'0" x 7'0" w/sidelight and clerestory	A-59	(1)	EA	$476.00	($476)
C1020	install frames		133	EA	$150.00	$19,950
C1020	Change SF to HM frame/glaze - add install frames	A-59	7	EA	$150.00	$1,050
C1020						
C1020	*Flush Wood Doors*					
C1020	WD Door Type F - 3' x 7'		65	LEAF	$275.00	$17,875
C1020	Delete vision lights in classroom doors - add WD Door Type F - 3' x 7'	A-63	38	LEAF	$275.00	$10,450
C1020	WD Door Type FG - 3' x 7'		1	LEAF	$375.00	$375
C1020	Change SF to HM frame/glaze - add WD Door Type FG - 3' x 7'	A-59	1	LEAF	$375.00	$375
C1020	Change SF to HM frame/glaze - add WD Door Type FG - 6' x 7'	A-59	7	LEAF	$750.00	$5,250
C1020	WD Door Type V - 3' x 7'		39	LEAF	$375.00	$14,625
C1020	Change SF to HM frame/glaze - delete WD Door Type V - 3' x 7'	A-59	(1)	LEAF	$375.00	($375)
C1020	Delete vision lights in classroom doors - delete WD Door Type V - 3' x 7'	A-63	(38)	LEAF	$375.00	($14,250)
C1020	WD Door Type F - 6' x 7'		12	EA	$550.00	$6,600
C1020	WD Door Type F - 8' x 7' - cross corridor		2	EA	$700.00	$1,400
C1020	WD Door Type F - 10' x 7' - cross corridor		1	EA	$1,000.00	$1,000
C1020	install door		127	EA	$150.00	$19,050
C1020	Change SF to HM frame/glaze - add install door	A-59	7	EA	$150.00	$1,050
C1020	premium for ATC rated intercommunicating doors		10	EA	$650.00	$6,500
C1020	premium for ATC rated music/practice		3	EA	$900.00	$2,700
C1020						
C1020	*Specialty Doors*					
C1020	OH door - Media Center - glazed - motorized 14' x 7'3"		1	EA	$15,000.00	$15,000
C1020	OH door - Café/Servery - glazed - motorized 25' x 10'		1	EA	$45,000.00	$45,000
C1020	Delete the glazing from the OH Door at the servery	A-64	(1)	EA	$10,000.00	($10,000)
C1020	OH security coiling grille 25' x 14' - motorized		1	EA	$15,000.00	$15,000
C1020	OH security coiling grille 15' x 14' - motorized		1	EA	$20,000.00	$20,000

Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
C1020	delete and revisit locdown approach - OH security coiling grille 15' x 14' - motorized	A-84	(1)	EA	$20,000.00	($20,000)
C1020	OH security coiling grille 16'6" x 14' - motorized		2	EA	$20,000.00	$40,000
C1020	delete and revisit locdown approach - OH security coiling grille 16'6" x 14' - motorized	A-84	(2)	EA	$20,000.00	($40,000)
C1020	Nanawall - Project Room - 8' x 10'		2	EA	$14,000.00	$28,000
C1020	Replace nana walls with storefront (project rooms). NOTE: nana walls are operable glass walls that can be opened up. Storefront would be fixed in place - delete Nanawall - Project Room - 8' x 10'	A-52	(2)	EA	$14,000.00	($28,000)
C1020	Folding Partition - Café/Gym - 73' x 12'		1	EA	$68,000.00	$68,000
C1020						
C1020	*Interior Storefront Doors*					
C1020	storefront door - single		1	EA	$3,800.00	$3,800
C1020	storefront door - pair		13	EA	$7,600.00	$98,800
C1020	Change SF to HM frame/glaze - add storefront door - single	A-59	1	EA	$3,800.00	$3,800
C1020	Change SF to HM frame/glaze - delete storefront door - pair	A-59	(7)	EA	$7,600.00	($53,200)
C1020						
C1020	*Door Hardware*					
C1020	hardware allowance		147	EA	$850.00	$124,950
C1020	install door hardware		147	EA	$175.00	$25,725
C1020	Change SF to HM frame/glaze - add hardware allowance	A-59	1	EA	$850.00	$850
C1020	Change SF to HM frame/glaze - add install door hardware	A-59	1	EA	$175.00	$175
C1020						
C1020	*Glass & Glazing*					
C1020	glazing on doors		144	SF	$35.00	$5,040
C1020	Change SF to HM frame/glaze - delete glazing on doors	A-59	(4)	SF	$35.00	($140)
C1020	Change SF to HM frame/glaze - add glazing on doors	A-59	180	SF	$35.00	$6,300
C1020	Delete vision lights in classroom doors - delete glazing on doors	A-63	(140)	SF	$35.00	($4,900)
C1020	glazing on frames		843	SF	$35.00	$29,505
C1020	Change SF to HM frame/glaze - delete glazing on frames	A-59	(141)	SF	$35.00	($4,935)
C1020						
C1020	*Access Doors & Frames*					
C1020	Access doors		84,796	GSF	$0.10	$8,480
C1020						
C1020	*Painting*					
C1020	Paint metal doors		5	EA	$120.00	$600
C1020	Paint door frames		133	EA	$110.00	$14,630
C1020	Change SF to HM frame/glaze - delete Paint door frames	A-59	(1)	EA	$110.00	($110)
C1020	Change SF to HM frame/glaze - add Paint door frames	A-59	8	EA	$110.00	$880
C1020						
C1020	*Phasing Requirements - Interior Doors*					
C1020	HM frame, doors, hardware at 2nd floor grade 3		1	EA	$2,000.00	$2,000
C1020						
C1020	*GSF VE Reductions*					
C1020	Remove two Pre-K classrooms	A-01	(2,702)	SF	$6.26	($16,904)
C1020	Remove parks & recreation space (2,610 SF)	A-02	(2,610)	SF	$3.05	($7,967)
C1020	Reduce SF of STEM/project room space by 200 SF each	A-03	(400)	SF	$6.26	($2,502)
C1020	Reduce Gym footprint 750 SF (overall GSF reduction).	A-25	(750)	SF	$6.26	($4,692)
C1020	Reduce circulation area by 500 SF (classroom corridors, gym corridors, or other areas if neccesary)	A-83	(500)	SF	$6.26	($3,128)
A1010	Revised GSF per updated floor plans 7-11-18	A-85	(732)	SF	$6.26	($4,579)
C1020						
C1020	TOTAL C1020 INTERIOR DOORS					**$490,255**
C1030	FITTINGS / Millwork					
C1030	*Metal Fabrications*					
C1030	misc. metals		84,796	GSF	$1.50	$127,194
C1030	Elev. Hoist Beam, pit ladders		1	LS	$4,500.00	$4,500
C1030	steel roof ladder - epoxy painted		1	LS	$2,500.00	$2,500
C1030	Metal band at second floor overlook and bridge		131	LF	$45.00	$5,895
C1030						
C1030	*Visual Display Surface - per room data sheets*					
C1030	tack board 3' x 6'10"		2	EA	$307.00	$614
C1030	tack board 4' x 6'10"		47	EA	$410.00	$19,270
C1030	tack board 6' x 6'10"		56	EA	$615.00	$34,440
C1030	tack board 8' x 6'10"		15	EA	$820.00	$12,300
C1030	tack board 10' x 6'10"		1	EA	$1,025.00	$1,025
C1030	tack board 4' x 4'		6	EA	$240.00	$1,440

Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
C1030	tack board 6' x 4'		1	EA	$360.00	$360
C1030	tack board 8' x 4'		5	EA	$480.00	$2,400
C1030	tackboard 12' x 4'		2	EA	$720.00	$1,440
C1030	white board 4' x 4'		3	EA	$304.00	$912
C1030	white board 6' x 4'		1	EA	$456.00	$456
C1030	white board 8' x 4'		5	EA	$608.00	$3,040
C1030	dry erase paint		5,376	SF	$13.00	$69,888
C1030	level 5 finish premium - select locations		5,376	SF	$3.00	$16,128
C1030	tackstrip		768	LF	$25.00	$19,200
C1030	visual display - design to budget $1.50/SF	A-66	(1)	LS	$55,719.00	($55,719)
C1030						
C1030	*Lockers*					
C1030	Kitchen lockers		10	EA	$325.00	$3,250
C1030	Gym lockers		3	EA	$325.00	$975
C1030						
C1030						
C1030						
C1030						
C1030	*Signage*					
C1030	Allowance for Exterior Building graphic & lettering					w/ext wall
C1030	Allowance for Interior ADA Signage		84,796	GSF	$0.35	$29,679
C1030						
C1030	*Prefabricated Specialties*					
C1030	Curtain & Track at the Nurse's Exam Room		3	EA	$1,200.00	$3,600
C1030	Corner guard - allowance		84,796	GSF	$0.05	$4,240
C1030	Fire extinguishers & cabinets based on 1 for every 4,000 SF		21	EA	$320.00	$6,784
C1030	AED		1	EA	$1,800.00	$1,800
C1030						
C1030	*Toilet Compartments*					
C1030	Partitions - HC		6	EA	$1,200.00	$7,200
C1030	Partitions		17	EA	$950.00	$16,150
C1030	Urinal Screen		4	EA	$550.00	$2,200
C1030						
C1030						
C1030						
C1030						
C1030						
C1030						
C1030						
C1030						
C1030						
C1030	*Toilet and Bath Accessories*					
C1030	Grab Bar		54	EA	$73.01	$3,943
C1030	Shower Curtain Rods		1	EA	$85.00	$85
C1030	Vinyl Curtain		1	EA	$50.00	$50
C1030	Curtain Rings		12	EA	$2.50	$30
C1030	Mirror 24" x 36" S.S.		37	EA	$88.00	$3,256
C1030	Sanitary Napkin Disposal Unit		6	EA	$299.34	$1,796
C1030	Sanitary Napkin Dispenser Unit		1	EA	$448.49	$448
C1030	Waste Receptacle		23	EA	$300.00	$6,900
C1030						
C1030	Utility Shelf		2	EA	$124.12	$248
C1030	Custodial shelf		2	EA	$217.99	$436
C1030	Soap Dispenser		35	EA	$40.00	$1,400
C1030	Toilet Tissue Disp Dbl		44	EA	$50.00	$2,200
C1030	electric hand dryer at gang baths		6	EA	$704.03	$4,224
C1030						
C1030	Towel Dispenser		27	EA	$100.00	$2,700
C1030	changing table		1	EA	$650.00	$650
C1030	install toilet accessories		252	EA	$35.00	$8,820
C1030						
C1030	*Classroom Accessories*					
C1030	Soap Dispenser		33	EA	$40.00	$1,320
C1030	Towel Dispenser		33	EA	$100.00	$3,300
C1030	install toilet accessories		66	EA	$35.00	$2,310
C1030						
C1030	*Parks and Rec*					
C1030	*Toilet and Bath Accessories*					
C1030	Grab Bar		4	EA	$73.01	$292
C1030	Mirror 24" x 36" S.S.		2	EA	$88.00	$176

Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
C1030	Coat Hook		2	EA	$30.00	$60
C1030	Soap Dispenser		1	EA	$40.00	$40
C1030	Toilet Tissue Disp Dbl		1	EA	$50.00	$50
C1030	Towel Dispenser		2	EA	$100.00	$200
C1030	install toilet accessories		12	EA	$35.00	$420
C1030						
C1030	*Millwork*					
C1030	Bench		18	LF	$500.00	$9,000
C1030	Display Cases - allowance		20	LF	$1,000.00	$20,000
C1030	reception desks		20	LF	$1,000.00	$20,000
C1030	circulation desk		19	LF	$1,000.00	$19,000
C1030	book drop		1	EA	$2,000.00	$2,000
C1030	stone top on book drop		1	EA	$1,000.00	$1,000
C1030	wood window sills		765	LF	$45.00	$34,425
C1030						
C1030	*GSF VE Reductions*					
C1030	Remove two Pre-K classrooms	A-01	(2,702)	SF	$5.18	($14,007)
C1030	Remove parks & recreation space (2,610 SF)	A-02	(2,610)	SF	$1.23	($3,214)
C1030	Reduce SF of STEM/project room space by 200 SF each	A-03	(400)	SF	$5.18	($2,074)
C1030	Reduce Gym footprint 750 SF (overall GSF reduction).	A-25	(750)	SF	$5.18	($3,888)
C1030	Reduce circulation area by 500 SF (classroom corridors, gym corridors, or other areas if neccesary)	A-83	(500)	SF	$5.18	($2,592)
A1010	Revised GSF per updated floor plans 7-11-18	A-85	(732)	SF	$5.18	($3,795)
C1030						
C1030	TOTAL C1030 FITTINGS / Millwork					**$464,370**
C20	STAIRS					
C2010	STAIR CONSTRUCTION					
C2010						
C2010	*Egress Stair 1*		1	FLT		
C2010	metal pan stairs 5'		120	LFR	$135.00	$16,200
C2010	landing		57	SF	$115.00	$6,555
C2010	guardrail		70	LF	$200.00	$14,000
C2010						
C2010	*Egress Stair 2*		1	FLT		
C2010	metal pan stairs 5'		120	LFR	$135.00	$16,200
C2010	landing		73	SF	$115.00	$8,395
C2010	guardrail		61	LF	$200.00	$12,200
C2010						
C2010	*Main Stair*		1	FLT		
C2010	metal pan stairs 6'		114	LFR	$135.00	$15,390
C2010	glass guardrail		131	LF	$350.00	$45,850
C2010	Replace glass guards at monumental stair and bridge with metal pickets - delete glass guardrail	A-54	(131)	LF	$350.00	($45,850)
C2010	wood wall rail		164	LF	$125.00	$20,500
C2010	allowance for upgraded main structures		1	AL	$10,000.00	$10,000
C2010	Replace glass guards at monumental stair and bridge with metal pickets - add guardrail	A-54	131	LF	$200.00	$26,200
C2010	*Platform Stairs*					
C2010	metal pan stairs - various lengths		88	LFR	$135.00	$11,880
C2010	glass guardrail		17	LF	$350.00	$5,950
C2010	Replace glass guards at monumental stair and bridge with metal pickets - glass guardrail	A-54	(17)	LF	$350.00	($5,950)
C2010	Replace glass guards at monumental stair and bridge with metal pickets - add guardrail	A-54	17	LF	$200.00	$3,400
C2010						
C2010	wood wall rail					w/main stair
C2010						
C2010	*Backstage Steps & Ramp*					
C2010	stage structure					w/sog
C2010	ramp structure					w/sog
C2010	metal pan stairs - various lengths		31	LFR	$135.00	$4,185
C2010	wall rail		48	LF	$125.00	$6,000
C2010						
C2010	*Electric Room Stair*		1	FLT		utilize metal ladder?
C2010						
C2010	*Stage Steps*					
C2010	frame steps to stage		74	SF	$25.00	$1,850

Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
C2010						
C2010	*Platform at HUB*					
C2010	platform structure and large steps		449	SF		w/sog
C2010						
C2010						
C2010	*Cast-In-Place Concrete - Stairs*					
C2010	Stairs & landings - concrete infill		5	FLT	$1,500.00	$7,500
C2010						
C2010						
C2010						
C2010						
C2010						
C2010	TOTAL C2010 STAIR CONSTRUCTION					**$180,455**
C2020	STAIR FINISHES					
C2020	*Stairs Finishes*					
C2020	Rubber flooring on stairs		271	LFR	$15.00	$4,065
C2020	rubber landings		130	SF	$12.00	$1,560
C2020	Change wood treads/risers to rubber at central stair - add rubber landings	A-68	202	SF	$12.00	$2,424
C2020	wood treads and risers at platform		202	LFR	$150.00	$30,300
C2020	Change wood treads/risers to rubber at central stair - delete wood treads and risers at platform	A-68	(202)	LFR	$150.00	($30,300)
C2020	large wood treads and risers at platform		218	LFR	$200.00	$43,600
C2020	Wood on platform @ HUB		450	SF	$22.00	$9,900
C2020	Wood risers and treads at stage step		112	LFR	$150.00	$16,800
C2020						
C2020	*Painting Stairs*					
C2020	Paint stair & rails		5	FLT	$1,500.00	$7,500
C2020						
C2020						
C2020						
C2020						
C2020	TOTAL C2020 STAIR FINISHES					**$85,849**
C30	FINISHES					
C3010	WALL FINISHES					
C3010	*Painting Walls*					
C3010	Paint drywall partition		123,077	SF	$0.75	$92,308
C3010	Paint exterior drywall partition		37,387	SF	$0.75	$28,040
C3010	Paint CMU walls - Interior partitions		12,716	SF	$1.10	$13,988
C3010	epoxy paint - 10' tall		8,990	SF	$3.50	$31,465
C3010	Replace nana walls with storefront (project rooms). NOTE: nana walls are operable glass walls that can be opened up. Storefront would be fixed in place - Paint drywall partition	A-52	32	SF	$0.75	$24
C3010						
C3010	*FRP*					
C3010	Fiberglass Reinforced Panels in kitchen in lieu of tile. These are typically in low visibility, high abuse areas. - add FRP	A-56	1,410	SF	$12.00	$16,920
C3010						
C3010						
C3010	*Vinyl Wall Covering*					
C3010	custom digital printed mural - allowance		1	EA	$15,000.00	$15,000
C3010						
C3010	*Wall Tile*					
C3010	wall tile 4"x12" - 10' - Kitchen		1,410	SF	$18.00	$25,380
C3010	Fiberglass Reinforced Panels in kitchen in lieu of tile. These are typically in low visibility, high abuse areas - delete wall tile 4"x12" - 10' - Kitchen	A-56	(1,410)	SF	$18.00	($25,380)
C3010	wall tile 4"x12" - 10' tall		4,610	SF	$18.00	$82,980
C3010	Reduce wet wall tile height to 6' - wall tile 4"x12" - 10' tall	A-70	(1,844)	SF	$18.00	($33,192)
C3010	tile/masonry veneer HUB		1,325	SF	$25.00	$33,125
C3010						
C3010	*Wood Walls*					

Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
C3010	wood wainscot 3'8"		3,398	SF	$55.00	$186,890
C3010	wood cap at 3'8" wainscot		926	LF	$35.00	$32,410
C3010	Change corridor wood walls to ceramic tile - delete wood wainscot 3'8"	A-71	(4,629)	SF	$55.00	($254,595)
C3010	Change corridor wood walls to ceramic tile - delete wood cap at 3'8" wainscot	A-71	(926)	LF	$35.00	($32,410)
C3010	Change corridor wood walls to ceramic tile - add wall tile	A-71	4,629	SF	$18.00	$83,322
C3010	wood wainscot 9'0"		801	SF	$55.00	$44,055
C3010	wood wainscot 10'0"		430	SF	$55.00	$23,650
C3010	wood at proscenium		928	SF	$55.00	$51,040
C3010	frame proscenium overhang		153	SF	$30.00	$4,590
C3010	wood at media center garage door		178	SF	$55.00	$9,790
C3010	wood at café/servery garage door		111	SF	$55.00	$6,105
C3010	wood at media center 6'0"		234	SF	$55.00	$12,870
C3010	wood finish at "push outs"		840	SF	$55.00	$46,200
C3010	reduce portals - cut by half - wood finish at "push outs"	A-58	(420)	SF	$55.00	($23,100)
C3010	wood for HUB columns		1,152	SF	$55.00	$63,360
C3010						
C3010	*Acoustic Panels*					
C3010	acoustical wall panel 2' tall - Corridors		186	SF	$30.00	$5,580
C3010	acoustical wall panel 2'10" tall - Art		133	SF	$30.00	$3,990
C3010	acoustical wall panel 2'8" tall - Project Rooms		75	SF	$30.00	$2,250
C3010	acoustical wall panel 3'0" tall - Project Rooms		282	SF	$30.00	$8,460
C3010	acoustical wall panel 3'8" tall - Media Center		136	SF	$30.00	$4,080
C3010	acoustical wall panel 4' tall - Gym		1,408	SF	$30.00	$42,240
C3010	acoustical wall panel 8' tall - Cafe		512	SF	$30.00	$15,360
C3010	wall diffusers and acoustical panel allowance - Music		400	SF	$30.00	$12,000
C3010	wall diffusers and acoustical panel allowance - Ensemble		100	SF	$30.00	$3,000
C3010	sound block CMU at gym					w/partitions
C3010						
C3010	*Fabric Wrapped Panels*					
C3010	tackable fabric wrapped panels - corridors 10' x 3'0"		240	SF	$26.00	$6,240
C3010	tackable fabric wrapped panels - corridors 10' x 3'4"		633	SF	$26.00	$16,458
C3010	tackable fabric wrapped panels - corridors 8' x 3'4"		186	SF	$26.00	$4,836
C3010	tackable fabric wrapped panels 2' - Media Center		80	SF	$26.00	$2,080
C3010	tackable fabric wrapped panels 4' x 4'		1	EA	$416.00	$416
C3010	tackable fabric wrapped panels 6' x 4'		1	EA	$624.00	$624
C3010	tackable fabric wrapped panels 8' x 4'		1	EA	$832.00	$832
C3010						
C3010	*Phasing Requirements - Wall Finishes*					
C3010	Infill/patch walls as required at Grade 3 classroom		1	EA	$1,000.00	$1,000
C3010						
C3010	*GSF VE Reductions*					
C3010	Remove two Pre-K classrooms	A-01	(2,702)	SF	$8.80	($23,778)
C3010	Remove parks & recreation space (2,610 SF)	A-02	(2,610)	SF	$4.71	($12,292)
C3010	Reduce SF of STEM/project room space by 200 SF each	A-03	(400)	SF	$8.80	($3,520)
C3010	Reduce Gym footprint 750 SF (overall GSF reduction).	A-25	(750)	SF	$8.80	($6,600)
C3010	Reduce circulation area by 500 SF (classroom corridors, gym corridors, or other areas if neccesary)	A-83	(500)	SF	$8.80	($4,400)
A1010	Revised GSF per updated floor plans 7-11-18	A-85	(732)	SF	$8.80	($6,442)
C3010						
C3010	TOTAL C3010 WALL FINISHES					**$664,281**
C3020	FLOOR FINISHES					
C3020	*Floor Prep*					
C3020	moisture mitigation - Floor adhesive premium@ 99%		52,360	SF	$1.50	$78,540
C3020						
C3020	*Tile*					
C3020	Ceramic Tile		2,966	SF	$18.00	$53,388
C3020	Ceramic Tile Base		1,207	LF	$10.00	$12,070
C3020	utilize epoxy floors in lieu of ceramic tile at baths - delete Ceramic Tile	A-72	(2,966)	SF	$18.00	($53,388)
C3020	utilize epoxy floors in lieu of ceramic tile at baths - delete Ceramic Tile Base	A-72	(1,207)	LF	$10.00	($12,070)
C3020	Large Format Porcelain Tile		5,851	SF	$20.00	$117,020
C3020	Porcelain Tile Base		695	LF	$12.00	$8,340
C3020	Porcelain Tile Base @ Vestibules		153	LF	$12.00	$1,836
C3020						
C3020	*Wood Flooring*					
C3020	Wood Athletic Flooring, Painted Basketball & Volleyball Lines included		7,151	SF	$20.00	$143,020
C3020	Vented Rubber 4"		65	LF	$10.00	$650

Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
C3020						
C3020						
C3020	*Resilient Flooring*					
C3020	LVT		25,935	SF	$5.50	$142,643
C3020	Linoleum Sheet Goods on Stage		1,467	SF	$8.00	$11,736
C3020	Rubber Base 4"		10,078	LF	$3.00	$30,234
C3020						
C3020	*Carpet*					
C3020	Carpet Tile		22,792	SF	$6.00	$136,752
C3020						
C3020						
C3020	*Resinous Flooring*					
C3020	Poured Epoxy Floor		1,716	SF	$14.00	$24,024
C3020	Epoxy Base		238	LF	$6.00	$1,428
C3020	utilize epoxy floors in lieu of ceramic tile at baths - add Poured Epoxy Floor	A-72	2,966	SF	$14.00	$41,524
C3020	utilize epoxy floors in lieu of ceramic tile at baths - add Epoxy Base	A-72	1,207	LF	$6.00	$7,242
C3020						
C3020	*Painting*					
C3020	Sealed/ PTD concrete floors		2,237	SF	$1.25	$2,796
C3020	Sealed/ PTD concrete floors - Local shells and sea glass incorporated in concrete mix		2,135	SF	$5.00	$10,675
C3020						
C3020	*Entrance Mats*					
C3020	Entry Grate at Vestibules		461	SF	$55.00	$25,355
C3020						
C3020	*Parks and Rec*					
C3020	moisture mitigation - Floor adhesive premium		1,672	SF	$1.50	$2,508
C3020	LVT		1,551	SF	$5.50	$8,531
C3020	Ceramic Tile		121	SF	$18.00	$2,178
C3020	Ceramic Tile Base		62	LF	$10.00	$620
C3020	Sealed Concrete		64	SF	$1.25	$80
C3020	Rubber Base 4"		208	LF	$3.00	$624
C3020						
C3020	*Phasing Requirements - Wall Finishes*					
C3020	Infill/patch floors as required at Grade 3 classroom		1	EA	$1,000.00	$1,000
C3020						
C3020	*GSF VE Reductions*					
C3020	Remove two Pre-K classrooms	A-01	(2,702)	SF	$7.70	($20,795)
C3020	Remove parks & recreation space (2,610 SF)	A-02	(2,610)	SF	$5.57	($14,541)
C3020	Reduce SF of STEM/project room space by 200 SF each	A-03	(400)	SF	$7.70	($3,078)
C3020	Reduce Gym footprint 750 SF (overall GSF reduction).	A-25	(750)	SF	$7.70	($5,772)
A1010	Revised GSF per updated floor plans 7-11-18	A-85	(732)	SF	$7.70	($5,633)
C3020						
C3020	TOTAL C3020 FLOOR FINISHES					**$749,537**
C3030	CEILING FINISHES					
C3030	*Acoustic Ceilings*					
C3030	ACT 1'x4' - Corridors		8,111	SF	$8.50	$68,944
C3030	2'x2' ACT in corridors in lieu of 1'x4' - delete ACT 1'x4' - Corridors	A-75	(8,111)	SF	$8.50	($68,944)
C3030	ACT 2'x2' - Administrative		4,186	SF	$5.25	$21,977
C3030	ACT 2'x2' - Back of House		2,928	SF	$5.25	$15,372
C3030	ACT 2'x2' - Classrooms		31,966	SF	$5.25	$167,822
C3030	Reduce amount of wood ceiling finish by 50%. Replace with ACT - add ACT 2'x2' - Classrooms	A-50	1,833	SF	$5.25	$9,623
C3030	2'x2' ACT in corridors in lieu of 1'x4' - add ACT 2'x2' - Classrooms	A-75	8,111	SF	$5.25	$42,583
C3030	ACT 2'x2' - Clouds		438	SF	$20.00	$8,760
C3030	ACT 2'x2' - Clouds		597	SF	$20.00	$11,940
C3030	ACT 2'x2' - Kitchen		1,784	SF	$4.50	$8,028
C3030	ACT 2'x2' - Music/Ensemble - allow for 50% pyramidal sound diffusers		1,475	SF	$16.25	$23,969
C3030	ACT trim at Art		181	LF	$20.00	$3,620
C3030	ACT trim at Media Center		225	LF	$20.00	$4,500
C3030	Hunter Douglas High Profile Series @ Café Clouds - trim included		1,619	SF	$65.00	$105,235
C3030	Simplify cafeteria ceilings - Hunter Douglas High Profile Series @ Café Clouds - trim included	A-76	(1,619)	SF	$65.00	($105,235)
C3030	Simplify cafeteria ceilings - add cafeteria ceiling allowance	A-76	1,619	SF	$32.50	$52,618
C3030	*Wood Ceilings*					
C3030	wood plank ceiling		3,665	SF	$45.00	$164,925

Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
C3030	Reduce amount of wood ceiling finish by 50%. Replace with ACT - wood plank ceiling reduction	A-50	(1,832)	SF	$45.00	($82,440)
C3030	wood plank ceiling @ HUB		1,970	SF	$45.00	$88,650
C3030	wood plank ceiling in pushout in hallways					w/wall finishes
C3030	wood cladding on furdowns - assume 2'		478	SF	$45.00	$21,510
C3030	Reduce amount of wood ceiling finish by 50%. Replace with ACT - wood cladding on furdowns - assume 2' reduction	A-50	(239)	SF	$45.00	($10,755)
C3030						
C3030	*Gypsum Drywall Assemblies*					
C3030	GWB ceiling		7,013	SF	$10.00	$70,130
C3030	GWB ceiling/structure at "pushouts"		1,641	SF	$15.00	$24,615
C3030	reduce portals - cut by half - wood finish at "push outs"	A-58	(820)	SF	$15.00	($12,300)
C3030	GWB underside of stairs		468	SF	$10.00	$4,680
C3030	delete GWB underside of stairs	A-78	(468)	SF	$10.00	($4,680)
C3030						
C3030	*GWB furdown and trims*					
C3030	Furdowns		422	LF	$25.00	$10,550
C3030	Furdowns at wood cladding		239	LF	$25.00	$5,975
C3030	gym divider furdown - 8'		73	LF	$50.00	$3,650
C3030	allowance for additional soffits		1	LS	$10,000.00	$10,000
C3030						
C3030						
C3030	*Painting*					
C3030	Paint GWB ceilings		10,763	SF	$1.10	$11,839
C3030	Paint GWB soffits		2,856	SF	$1.10	$3,142
C3030	exposed deck painted @ Gym & non-occupied Area		15,540	SF	$1.50	$23,310
C3030						
C3030	*Parks and Rec*					
C3030	ACT 2'x2' - Administrative		1,630	SF	$5.25	$8,558
C3030	GWB ceiling		180	SF	$1.50	$270
C3030	Paint GWB ceilings		180	SF	$1.10	$198
C3030						
C3030	*Phasing Requirements - Wall Finishes*					
C3030	Infill/patch ceilings as required at Grade 3 classroom		1	EA	$1,000.00	$1,000
C3030						
C3030	*GSF VE Reductions*					
C3030	Remove two Pre-K classrooms	A-01	(2,702)	SF	$8.42	($22,762)
C3030	Remove parks & recreation space (2,610 SF)	A-02	(2,610)	SF	$3.46	($9,026)
C3030	Reduce SF of STEM/project room space by 200 SF each	A-03	(400)	SF	$8.42	($3,370)
C3030	Reduce Gym footprint 750 SF (overall GSF reduction).	A-25	(750)	SF	$8.42	($6,318)
C3030	Reduce circulation area by 500 SF (classroom corridors, gym corridors, or other areas if neccesary)	A-83	(500)	SF	$8.42	($4,212)
A1010	Revised GSF per updated floor plans 7-11-18	A-85	(732)	SF	$8.42	($6,166)
C3030						
C3030	TOTAL C3030 CEILING FINISHES					**$661,785**
D10	CONVEYING					
D1010	ELEVATORS AND LIFTS					
D1010	Elevator (1 EA)		2	STOP	$62,000.00	$124,000
D1010						
D1010	TOTAL D1010 ELEVATORS AND LIFTS					**$124,000**
D20	PLUMBING					
D2010	PLUMBING					
D2010	*Equipment*					
D2010	Gas fired hot water heater w/ storage tank, 400,000BTUH		2	EA	$14,000.00	$28,000
D2010	Reduced pressure backflow preventer, 4" main		1	EA	$6,300.00	$6,300
D2010	Water meter assembly		1	EA	$3,800.00	$3,800
D2010	Backflow preventer, local		1	EA	$725.00	$725
D2010	Connection to gas meter (provided by others)		1	EA	$750.00	$750
D2010	Hot water circulation pump assembly		2	EA	$600.00	$1,200
D2010	Mixing valve		1	EA	$4,850.00	$4,850
D2010	Grease trap; interior		2	EA	$5,000.00	$10,000
D2010	Grease trap; exterior		1	EA	$13,500.00	By div 33
D2010	*Floor drain*					
D2010	2" Floor Drain		1	EA	$450.00	$450
D2010	3" Floor Drain		8	EA	$600.00	$4,800
D2010	4" Floor Drain		1	EA	$800.00	$800

Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
D2010	Trap primer		5	EA	$700.00	$3,500
D2010	Wall hydrant		7	EA	$325.00	$2,275
D2010	Hose bibb		5	EA	$250.00	$1,250
D2010	Kitchen equipment; connections		1	LS	$25,000.00	$25,000
D2010						
D2010	*Plumbing Fixtures*					
D2010	Water Closet		44	EA	$1,250.00	$55,000
D2010	Lavatory; wall hung		29	EA	$1,050.00	$30,450
D2010	Lavatory; 3 Station		2	EA	$6,800.00	$13,600
D2010	Urinal		7	EA	$1,500.00	$10,500
D2010	Sink; nurse station (allow)		1	EA	$1,150.00	$1,150
D2010	Sink; staff dining		1	EA	$1,150.00	$1,150
D2010	Sink; classroom		64	EA	$1,150.00	$73,600
D2010	Sink; classroom w/ bubbler		4	EA	$1,300.00	$5,200
D2010	Sink; art classroom w/ sediment trap		1	EA	$3,500.00	$3,500
D2010	Shower		1	EA	$4,800.00	$4,800
D2010	Mop Sink w/ rack		2	EA	$1,400.00	$2,800
D2010	Drinking Fountain; bi-level w/ bottle fill		5	EA	$3,850.00	$19,250
D2010	Misc. Plumbing Fixtures		1	LS	$15,000.00	$15,000
D2010	Eliminate two toilets in SPED rooms on 2nd floor	M-07	(1)	LS	$20,000.00	($20,000)
D2010	Eliminate two toilets in SPED rooms on 2nd floor	M-08	(1)	LS	$10,000.00	($10,000)
D2010						
D2010	*Plumbing Hydronic Piping*					
D2010	Domestic Water Piping					
D2010	Copper pipe type L with fittings & hangers		77,102	GSF	$2.40	$185,045
D2010	Valves & accessories		77,102	GSF	$0.55	$42,406
D2010						
D2010	*Sanitary Waste And Vent Piping*					
D2010	Cast iron pipe with fittings & hangers		77,102	GSF	$1.50	$115,653
D2010						
D2010	*Storm Drainage System, Primary and Secondary*					
D2010	Roof drains and pipe with fittings & hangers		77,102	GSF	$1.15	$88,667
D2010						
D2010	*Natural Gas Piping*					
D2010	Natural Gas pipe with fittings & hangers		77,102	GSF	$0.85	$65,537
D2010	Valves & accessories		77,102	GSF	$0.10	$7,710
D2010						
D2010	*Plumbing pipe Insulation*					
D2010	Domestic pipe insulation		77,102	GSF	$0.80	$61,682
D2010	Storm pipe insulation (horizontal only)		77,102	GSF	$0.20	$15,420
D2010						
D2010	*Miscellaneous*					
D2010	System testing and flushing		1	LS	$10,000.00	$10,000
D2010	Coring, cutting, sleeves & fire stopping		1	LS	$9,300.00	$9,300
D2010	Seismic Restraints and Structural Steel Comp.		1	LS	$3,100.00	$3,100
D2010	Hydraulic lifts/rigging		1	LS	$14,500.00	$14,500
D2010	Shop drawings / BIM / ENG Support / As-Built		1	LS	$15,000.00	$15,000
D2010	Commissioning Support		1	LS	$1,100.00	$1,100
D2010	Fees & permits		1	LS	$10,500.00	$10,500
D2010						
D2010	***Parks and Recreation***					
D2010	*Equipment*					
D2010	*Floor drain*					
D2010	3" Floor Drain (allow)		1	EA	$600.00	$600
D2010	Trap primer		1	EA	$700.00	$700
D2010	Wall hydrant		1	EA	$325.00	$325
D2010	Hose bibb		1	EA	$250.00	$250
D2010						
D2010	*Plumbing Fixtures*					
D2010	Water Closet (allow)		2	EA	$1,250.00	$2,500
D2010	Lavatory; wall hung (allow)		2	EA	$1,050.00	$2,100
D2010	Sink; staff dining (allow)		1	EA	$1,150.00	$1,150
D2010	Drinking Fountain; bi-level w/ bottle fill (allow)		1	EA	$3,850.00	$3,850
D2010	Misc. Plumbing Fixtures		2,610	SF	$0.50	NR
D2010						
D2010	*Plumbing Hydronic Piping*					
D2010	*Domestic Water Piping*					
D2010	Copper pipe type L with fittings & hangers		2,610	SF	$2.00	$5,220
D2010	Valves & accessories		2,610	SF	$0.50	$1,305

Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
D2010						
D2010	*Sanitary Waste And Vent Piping*					
D2010	Cast iron pipe with fittings & hangers		2,610	SF	$1.50	$3,915
D2010						
D2010	*Storm Drainage System, Primary and Secondary*					
D2010	Roof drains and pipe with fittings & hangers		2,610	SF	$1.00	$2,610
D2010						
D2010	*Natural Gas Piping*					
D2010	Natural Gas pipe with fittings & hangers		2,610	SF	$0.75	$1,958
D2010	Valves & accessories		2,610	SF	$0.10	$261
D2010	Natural Gas Storage Tank(s)		1	EA		By Others
D2010						
D2010	*Plumbing pipe Insulation*					
D2010	Domestic pipe insulation		2,610	SF	$0.75	$1,958
D2010	Storm pipe insulation (horizontal only)		2,610	SF	$0.20	$522
D2010						
D2010	*Miscellaneous*					
D2010	System testing and flushing		1	LS	$700.00	$700
D2010	Coring, cutting, sleeves & fire stopping		1	LS	$300.00	$300
D2010	Seismic Restraints and Structural Steel Comp.		1	LS	$100.00	$100
D2010	Hydraulic lifts/rigging		1	LS	$500.00	$500
D2010	Shop drawings / BIM / ENG Support / As-Built		1	LS	$900.00	$900
D2010	Commissioning Support		1	LS	$100.00	$100
D2010	Fees & permits		1	LS	$400.00	$400
D2010						
D2010	*GSF VE Reductions*					
D2010	Remove two Pre-K classrooms	A-01	(2,702)	SF	$9.86	($26,653)
D2010	Remove parks & recreation space (2,610 SF)	A-02	(2,610)	SF	$12.85	($33,528)
D2010	Reduce SF of STEM/project room space by 200 SF each	A-03	(400)	SF	$9.86	($3,946)
D2010	Reduce Gym footprint 750 SF (overall GSF reduction).	A-25	(750)	SF	$9.86	($7,398)
D2010	Reduce circulation area by 500 SF (classroom corridors, gym corridors, or other areas if neccesary)	A-83	(500)	SF	$9.86	($4,932)
A1010	Revised GSF per updated floor plans 7-11-18	A-85	(732)	SF	$9.86	($7,220)
D2010						
D2010	TOTAL D2010 PLUMBING					**$893,867**
D30	HVAC					
D3010	HVAC					
D3010	*Equipment*					
D3010	Cooling equipment					
D3010	Chiller, air cooled 20 ton		1	EA	$35,000.00	$35,000
D3010	*VRF Equipment and distribution*					
D3010	*VRF Condenser*					
D3010	- ACCU		2	EA	$28,000.00	$56,000
D3010	VRF Air Handler Cassette					
D3010	- VRF-A		10	EA	$3,800.00	$38,000
D3010	- VRF-B		10	EA	$3,500.00	$35,000
D3010	Mode Control Unit		2	EA	$14,000.00	$28,000
D3010	Mode Control Sub-Unit		1	EA	$10,500.00	$10,500
D3010	Refrigerant Tubing		1,150	LF	$25.00	$28,750
D3010	Split HVAC Systems (AC/ACCU)		2	EA	$10,500.00	$21,000
D3010						
D3010	*Heating equipment*					
D3010	Gas fired condensing hot water boilers 2,000 MBH		3	EA	$65,000.00	$195,000
D3010	Cabinet unit heaters		2	EA	$775.00	$1,550
D3010	Unit heaters (allow)		4	EA	$1,100.00	$4,400
D3010	Air separator		1	EA	$1,800.00	$1,800
D3010	Expansion tank		1	EA	$3,000.00	$3,000
D3010	Chemical pot feeder		1	EA	$1,200.00	$1,200
D3010	Glycol feed system		1	EA	$3,800.00	$3,800
D3010	Radiant ceiling panel		1,540	LF	$85.00	$130,900
D3010	Active chilled beam panels (Admin, Nurse, Guidance, Media) allow		26	EA	1,500.00	$39,000
D3010	Fin tube radiation		60	lf	$85.00	$5,100
D3010	Miscellaneous HVAC equipment		77,102	GSF	$0.50	$38,551
D3010						
D3010	*Pumps*					
D3010	Hot water pump, 400 gpm		2	EA	$18,000.00	$36,000
D3010	Chilled water pump, 55 gpm		2	EA	$3,500.00	$7,000
D3010	VFD's		4	EA	$1,100.00	$4,400

Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
D3010						
D3010	*Air Distribution*					
D3010	*Air Handling Unit*					
D3010	RTU-1 11,000 cfm with HW Coil, DX cooling, ERW (100% OA) South Classroom Wing		**1**	EA	$150,000.00	$150,000
D3010	RTU-2 10,000 cfm with HW Coil, DX cooling, ERW (100% OA) North Classroom Wing		**1**	EA	$150,000.00	$150,000
D3010	RTU-3 6,000 cfm with HW Coil, DX cooling, ERW (100% OA) Pre-K Classroom Wing		**1**	EA	$80,000.00	$80,000
D3010	RTU-4 4,500 cfm with HW Coil, DX cooling, ERW (100% OA) Admin/Nurse/Guidance/Media		**1**	EA	$60,000.00	$60,000
D3010	RTU-5 5,200 cfm with HW Coil, DX cooling, ERW (100% OA) Cafeteria		**1**	EA	$40,000.00	$40,000
D3010	RTU-6 8,500 cfm with HW Coil, DX cooling, ERW (100% OA) Gymnasium/Stage		**1**	EA	$115,000.00	$115,000
D3010	MAU-1 4,500cfm, HHW Coil Kitchen		**1**	EA	$32,000.00	$32,000
D3010	VAV box w/ temp, humidity and C02 controls		**62**	EA	1,200.00	$74,400
D3010	Miscellaneous air distribution equipment		**77,102**	SF	$0.50	$38,551
D3010						
D3010	*Supply and Exhaust fans*					
D3010	KEF-1 4,500cfm		1	EA	$20,150.00	$20,150
D3010	Miscellaneous exhaust fans		77,102	GSF	$0.45	$34,696
D3010						
D3010	*Sheet metal & Accessories*					
D3010	Galvanized ductwork with fittings & hangers		77,102	GSF	$8.50	$655,367
D3010	Duct insulation		77,102	GSF	$4.00	$308,408
D3010	Induction Units		104	EA	$850.00	$88,400
D3010	Miscellaneous sheet metal accessories		77,102	GSF	$1.00	$77,102
D3010						
D3010	*Hydronic Piping*					
D3010	Heating Hot Water piping with fittings & hangers		77,102	GSF	$2.00	$154,204
D3010	Condensate piping with fittings & hangers		77,102	GSF	$0.65	$50,116
D3010						
D3010	*Piping Insulation*					
D3010	Piping insulation		77,102	GSF	$0.45	$34,696
D3010						
D3010	*Controls (DDC)*					
D3010	Automatic temperature controls		77,102	GSF	$5.50	$424,061
D3010						
D3010	*Testing and Balancing*					
D3010	Test & balance		77,102	GSF	$0.80	$61,682
D3010						
D3010	*Miscellaneous*					
D3010	System testing and flushing		1	LS	$41,100.00	$41,100
D3010	Coring, cutting, sleeves & fire stopping		1	LS	$19,000.00	$19,000
D3010	Seismic Restraints and Structural Steel Comp.		1	LS	$6,400.00	$6,400
D3010	Hydraulic lifts/rigging		1	LS	$44,300.00	$44,300
D3010	Shop drawings / BIM / ENG Support / As-Built		1	LS	$73,800.00	$73,800
D3010	Commissioning Support		1	LS	$12,400.00	$12,400
D3010						
D3010						
D3010	***Parks and Recreation***					
D3010	*Equipment*					
D3010						
D3010	*Heating equipment*					
D3010	Cabinet unit heaters (allow)		1	EA	$775.00	$775
D3010	Unit heaters (allow)		1	EA	$1,100.00	$1,100
D3010	Radiant ceiling panel (allow)		100	LF	$85.00	$8,500
D3010	Miscellaneous HVAC equipment (allow)		2,610	SF	$0.50	$1,305
D3010						
D3010	*Air Distribution*					
D3010	*Air Handling Unit*					
D3010	RTU-6 2,000 cfm with HW Coil, DX cooling, ERW (100% OA)		1	EA	$27,000.00	$27,000
D3010	VAV box w/ temp, humidity and C02 controls		3	EA	$1,200.00	$3,600
D3010	Miscellaneous air distribution equipment		2,610	SF	$0.50	$1,305
D3010						
D3010	*Supply and Exhaust fans*					
D3010	Miscellaneous exhaust fans		2,610	SF	$0.45	$1,175
D3010						
D3010	*Sheet metal & Accessories*					
D3010	Galvanized ductwork with fittings & hangers		2,610	SF	$8.00	$20,880
D3010	Duct insulation		2,610	SF	$4.00	$10,440

Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
D3010	Miscellaneous sheet metal accessories		2,610	SF	$0.50	$1,305
D3010						
D3010	*Hydronic Piping*					
D3010	Heating Hot Water piping with fittings & hangers		2,610	SF	$2.00	$5,220
D3010	Condensate piping with fittings & hangers		2,610	SF	$0.65	$1,697
D3010						
D3010	*Piping Insulation*					
D3010	Piping insulation		2,610	SF	$0.45	$1,175
D3010						
D3010	*Controls (DDC)*					
D3010	Automatic temperature controls		2,610	SF	$5.50	$14,355
D3010						
D3010	*Testing and Balancing*					
D3010	Test & balance		2,610	SF	$0.80	$2,088
D3010						
D3010	*Miscellaneous*					
D3010	System testing and flushing		1	LS	$1,200.00	$1,200
D3010	Coring, cutting, sleeves & fire stopping		1	LS	$600.00	$600
D3010	Seismic Restraints and Structural Steel Comp.		1	LS	$200.00	$200
D3010	Hydraulic lifts/rigging		1	LS	$1,600.00	$1,600
D3010	Shop drawings / BIM / ENG Support / As-Built		1	LS	$2,600.00	$2,600
D3010	Commissioning Support		1	LS	$600.00	$600
D3010						
D3010	*GSF VE Reductions*					
D3010	Remove two Pre-K classrooms	A-01	(2,702)	SF	$31.39	($84,810)
D3010	Remove parks & recreation space (2,610 SF)	A-02	(2,610)	SF	$41.65	($108,719)
D3010	Reduce SF of STEM/project room space by 200 SF each	A-03	(400)	SF	$31.39	($12,555)
D3010	Reduce Gym footprint 750 SF (overall GSF reduction).	A-25	(750)	SF	$31.39	($23,541)
D3010	Reduce circulation area by 500 SF (classroom corridors, gym corridors, or other areas if neccesary)	A-83	(500)	SF	$31.39	($15,694)
A1010	Revised GSF per updated floor plans 7-11-18	A-85	(732)	SF	$31.39	($22,976)
D3010						
D3010	TOTAL D3010 HVAC					**$3,410,209**
D40	FIRE PROTECTION					
D4010	SPRINKLERS					
D4010	*Equipment*					
D4010	Fire Pump, with jockey and controller		1	EA	$44,000.00	NR
D4010	Double check valve assembly		1	EA	$4,500.00	$4,500
D4010	Wet alarm check valve assembly		1	EA	$2,850.00	$2,850
D4010	Fire department connections		1	EA	$1,800.00	$1,800
D4010	Fire suppression standpipe		1	EA	$4,800.00	$4,800
D4010	Alarm valve assembly		1	EA	$4,000.00	$4,000
D4010	Fire department valve cabinet		2	EA	$3,100.00	$6,200
D4010	Zone control valve station		5	EA	$2,400.00	$12,000
D4010						
D4010	*Distribution and heads*					
D4010	Sprinkler heads		77,102	GSF	$0.75	$57,827
D4010	Branch piping with fittings and hangers		77,102	GSF	$1.95	$150,349
D4010	Main piping with fittings and hangers		77,102	GSF	$1.00	$77,102
D4010						
D4010	*Miscellaneous*					
D4010	System testing and flushing		1	LS	$7,200.00	$7,200
D4010	Coring, cutting, sleeves & fire stopping		1	LS	$1,500.00	$1,500
D4010	Seismic Restraints and Structural Steel Comp.		1	LS	$1,300.00	$1,300
D4010	Hydraulic lifts/rigging		1	LS	$8,900.00	$8,900
D4010	Shop drawings / BIM / ENG Support / As-Built		1	LS	$8,100.00	$8,100
D4010	Fees & permits		1	LS	$3,600.00	$3,600
D4010						
D4010	***Parks and Recreation***					
D4010	*Distribution and heads*					
D4010	Sprinkler heads		2,610	SF	$0.75	$1,958
D4010	Branch piping with fittings and hangers		2,610	SF	$1.95	$5,090
D4010	Main piping with fittings and hangers		2,610	SF	$1.15	$3,002
D4010	*Miscellaneous*					
D4010	System testing and flushing		1	LS	$300.00	$300
D4010	Coring, cutting, sleeves & fire stopping		1	LS	$100.00	$100
D4010	Seismic Restraints and Structural Steel Comp.		1	LS	$100.00	$100
D4010	Hydraulic lifts/rigging		1	LS	$300.00	$300

Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
D4010	Shop drawings / BIM / ENG Support / As-Built		1	LS	$300.00	$300
D4010	Fees & permits		1	LS	$200.00	$200
D4010						
D4010	*GSF VE Reductions*					
D4010	Remove two Pre-K classrooms	A-01	(2,702)	SF	$3.61	($9,749)
D4010	Remove parks & recreation space (2,610 SF)	A-02	(2,610)	SF	$4.35	($11,349)
D4010	Reduce SF of STEM/project room space by 200 SF each	A-03	(400)	SF	$3.61	($1,443)
D4010	Reduce Gym footprint 750 SF (overall GSF reduction).	A-25	(750)	SF	$3.61	($2,706)
D4010	Reduce circulation area by 500 SF (classroom corridors, gym corridors, or other areas if neccesary)	A-83	(500)	SF	$3.61	($1,804)
A1010	Revised GSF per updated floor plans 7-11-18	A-85	(732)	SF	$3.61	($2,641)
D4010						
D4010	TOTAL D4010 SPRINKLERS					**$333,686**
D50	ELECTRICAL					
D5010	**16000-ELECTRICAL**					
D5010	***Gear and Distribution***					
D5010	*Normal power*					
D5010	1200A 277/480V main switchboard with SPD		**1**	EA	$32,000.00	$32,000
D5010	Check metering		**1**	LSUM	$5,000.00	$5,000
D5010	400A 277/480V panelboard		**1**	EA	$8,000.00	$8,000
D5010	225A 277/480V panelboard		**2**	EA	$2,300.00	$4,600
D5010	100A 277/480V panelboard		**2**	EA	$1,650.00	$3,300
D5010	75KVA dry type transformer (K rated)		**7**	EA	$11,200.00	$78,400
D5010	225A 120/208V double tub panelboard		**4**	EA	$4,000.00	$16,000
D5010	225A 120/208V panelboard		**3**	EA	$2,300.00	$6,900
D5010	200A disconnect switch		**5**	EA	$1,500.00	$7,500
D5010	SPD		**12**	EA	$650.00	$7,800
D5010	400A feed		**70**	LF	$85.00	$5,950
D5010	225A feed		**965**	LF	$48.00	$46,320
D5010	150A feed		**1,535**	LF	$33.00	$50,655
D5010	100A feed		**620**	LF	$21.00	$13,020
D5010	Use Aluminum conductors in lieu of copper conductors 100A and above	E-03	**(1)**	LS	$33,515.00	($33,515)
D5010	*Emergency power*					
D5010	100KW Diesel generator set in weatherproof enclosure		**1**	LSUM	$45,000.00	$45,000
D5010	Remote annunciator		**1**	EA	$2,500.00	$2,500
D5010	400A ATS		**1**	EA	$8,000.00	$8,000
D5010	100A ATS		**1**	EA	$4,000.00	$4,000
D5010	600A 277/480V distribution panelboard (400A feed)		**1**	EA	$12,000.00	$12,000
D5010	400A 277/480V distribution panelboard		**2**	EA	$8,000.00	$16,000
D5010	75KVA dry type transformer (K rated)		**3**	EA	$11,200.00	$33,600
D5010	225A 120/208V double tub panelboard		**1**	EA	$4,000.00	$4,000
D5010	225A 277/480V panelboard		**2**	EA	$2,300.00	$4,600
D5010	100A 120/208V panelboard		**3**	EA	$1,650.00	$4,950
D5010	SPD		**9**	EA	$650.00	$5,850
D5010	400A feed		**575**	LF	$85.00	$48,875
D5010	100A feed MI cable		**280**	LF	$40.00	$11,200
D5010	100A feed		**45**	LF	$21.00	$945
D5010	*Uninterruptable Power Supply*					
D5010	18KW UPS		**1**	EA	$12,000.00	$12,000
D5010	100A 120/208V panelboard		**1**	EA	$1,650.00	$1,650
D5010	Emergency power off button		**1**	EA	$300.00	$300
D5010	200A disconnect		**1**	EA	$1,500.00	$1,500
D5010	100A feed		**60**	LF	$21.00	$1,260
D5010	PV (Provisions only)					
D5010	Rough-in with empty conduits		**1**	LSUM	$2,500.00	$2,500
D5010						
D5010	***Equipment Wiring feed and connections:***					
D5010	Elevator cab power feed and connection		**1**	EA	$4,000.00	$4,000
D5010	Elevator feed and connection		**1**	EA	$1,500.00	$1,500
D5010	Fire pump feed and connection		**1**	EA	$8,500.00	$8,500
D5010	Jockey pump feed and connection		**1**	EA	$2,500.00	$2,500
D5010	Boiler feed and connection		**3**	EA	$1,500.00	$4,500
D5010	RTU feed and connection		**5**	EA	$4,500.00	$22,500
D5010	Chiller unit feed and connection		**1**	EA	$10,500.00	$10,500
D5010	MAU feed and connection		**1**	EA	$3,500.00	$3,500
D5010	ACCU feed and connection		**2**	EA	$2,500.00	$5,000

Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
D5010	VRF feed and connection		**10**	EA	$2,000.00	$20,000
D5010	CUH/UH feed and connection		**6**	EA	$650.00	$3,900
D5010	Pump feed and connection		**4**	EA	$1,200.00	$4,800
D5010	DDC feed and connection		**1**	EA	$550.00	$550
D5010	VFD feed and connection only		**4**	EA	$850.00	$3,400
D5010	Kiln feed and connection		**1**	EA	$650.00	$650
D5010						
D5010	Kitchen equipment wiring					
D5010	Kitchen equipment feed and connections		**1**	LSUM	$15,000.00	$15,000
D5010	Ware washer point feed and connection		**1**	EA	$2,500.00	$2,500
D5010	Kitchen exhaust fan feed and connection WP		**1**	EA	$1,200.00	$1,200
D5010						
D5010	***Lighting & Branch Power***					
D5010	*Lighting Fixtures*					
D5010	Type EL		**1**	EA	$160.00	$160
D5010	Type LP4		**45**	EA	$360.00	$16,200
D5010	Type LP8		**354**	EA	$720.00	$254,880
D5010	Type LPD2		**12**	EA	$450.00	$5,400
D5010	Type LPD3		**12**	EA	$450.00	$5,400
D5010	Type LPD4		**12**	EA	$450.00	$5,400
D5010	Type LPG		**8**	EA	$950.00	$7,600
D5010	Type LRD2		**36**	EA	$450.00	$16,200
D5010	Type LR14		**93**	EA	$200.00	$18,600
D5010	Type LS4		**48**	EA	$255.00	$12,240
D5010	Type LS8		**9**	EA	$365.00	$3,285
D5010	Type LK24		**18**	EA	$260.00	$4,680
D5010	Type LW4		**17**	EA	$400.00	$6,800
D5010	Type LWS		**250**	LF	$115.00	$28,750
D5010	Type RC1		**56**	EA	$300.00	$16,800
D5010	Type RSH		**2**	EA	$350.00	$700
D5010	Type SL4		**42**	EA	$350.00	$14,700
D5010	Exit		**52**	EA	$180.00	$9,360
D5010	Music Hall lighting		**1,253**	SF	$6.00	$7,518
D5010	Building Networked Lighting Control System		**81,452**	SF	$1.25	$101,815
D5010	Ceiling mounted occupancy/photo sensor		**164**	EA	$150.00	$24,600
D5010	Single pole switch LV		**72**	EA	$28.00	$2,016
D5010	Double duplex receptacle		**122**	EA	$42.00	$5,124
D5010	Duplex receptacle		**318**	EA	$21.00	$6,678
D5010	GFI duplex receptacle		**84**	EA	$36.00	$3,024
D5010	Security system power supply connection		**1**	EA	$65.00	$65
D5010	Circuitry					
D5010	Device plate WP		**31**	EA	$12.00	$372
D5010	Device plate		**570**	EA	$4.00	$2,280
D5010	3-gang floor box		**6**	EA	$450.00	$2,700
D5010	Poke-thru floor box		**6**	EA	$650.00	$3,900
D5010	Device box		**2,300**	EA	$25.00	$57,500
D5010	3/4" EMT		**3,000**	LF	$6.00	$18,000
D5010	#12 THHN		**15,000**	LF	$0.80	$12,000
D5010	CAT cable		**5,000**	lf	$1.20	$6,000
D5010	MC cable		**38,000**	LF	$4.10	$155,800
D5010						
D5010	***Fire Alarm***					
D5010	Fire alarm control panel		**1**	EA	$12,000.00	$12,000
D5010	LCD remote annunciator		**3**	EA	$1,500.00	$4,500
D5010	Fire alarm terminal cabinet		**5**	EA	$1,000.00	$5,000
D5010	Graphic map		**1**	EA	$850.00	$850
D5010	Plan cabinet		**1**	EA	$750.00	$750
D5010	Exterior beacon		**1**	EA	$350.00	$350
D5010	Knox box		**1**	EA	$650.00	$650
D5010	Digital dialer		**1**	EA	$850.00	$850
D5010	Master box		**1**	EA	$3,500.00	$3,500
D5010	Bell		**1**	EA	$250.00	$250
D5010	Drill key		**1**	EA	$85.00	$85
D5010	Initiating device		**99**	EA	$120.00	$11,880
D5010	CO detector		**11**	EA	$140.00	$1,540
D5010	Audio/visual device		**118**	EA	$110.00	$12,980
D5010	Visual device		**101**	EA	$105.00	$10,605

Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
D5010	Duct smoke detector with remote test switch		**7**	EA	$425.00	$2,975
D5010	Elevator recall connection		**1**	EA	$150.00	$150
D5010	Kitchen connection		**1**	EA	$150.00	$150
D5010	FP equipment connection, allow		**10**	EA	$230.00	$2,300
D5010	Monitoring/control module		**30**	EA	$140.00	$4,200
D5010	Device box WP		**2**	EA	$35.00	$70
D5010	Device box		**370**	EA	$25.00	$9,250
D5010	3/4" EMT		**500**	LF	$6.00	$3,000
D5010	FA cable		**1,000**	LF	$0.70	$700
D5010	FA MC cable		**14,000**	LF	$4.50	$63,000
D5010	Testing & programming		**1**	LSUM	$5,000.00	$5,000
D5010						
D5010	***Bi-Directional Amplification System***					
D5010	BDA		**1**	LSUM	$45,000.00	$45,000
D5010	***Two-way communication System***					
D5010	Two-way communication System		**1**	LSUM	$15,000.00	$15,000
D5010						
D5010	***Telephone/Data/CATV***					
D5010	*Devices and cabling*					
D5010	MDF fit out		**1**	LSUM	$7,500.00	$7,500
D5010	IDF fit out		**1**	LSUM	$5,500.00	$5,500
D5010	PBX Network switching					By Others
D5010	Telephone device		**42**	EA	$18.00	$756
D5010	2 port data		**36**	EA	$36.00	$1,296
D5010	3 port data		**12**	EA	$54.00	$648
D5010	Teacher device (2-port)		**42**	EA	$36.00	$1,512
D5010	WAP device		**45**	EA	$350.00	$15,750
D5010	Backbone cabling		**250**	LF	$15.00	$3,750
D5010	Cat cabling		**57,000**	LF	$1.25	$71,250
D5010	*Rough-in*					
D5010	4" EMT		**200**	LF	$22.00	$4,400
D5010	4' sleeves and weatherheads		**1**	LSUM	$1,500.00	$1,500
D5010	Device box with conduit stub		**216**	EA	$85.00	$18,360
D5010	Device box		**45**	EA	$25.00	$1,125
D5010	Backboard		**2**	EA	$350.00	$700
D5010	Closet grounding		**2**	EA	$500.00	$1,000
D5010						
D5010	***Security System***					
D5010	Security (Not shown at this scope level)					
D5010	Head-end		**1**	EA	$20,000.00	$20,000
D5010	CCTV camera, sensors, devices and cabling		**81,452**	EA	$1.50	$122,178
D5010	Area of Refuge system		**1**	LSUM	$8,500.00	NIC
D5010						
D5010	***Master Clock / PA System***					
D5010	Head-end		**1**	LSUM	$10,000.00	$10,000
D5010	Hand set		**42**	EA	$250.00	$10,500
D5010	Clock (Wireless)		**52**	EA	$150.00	$7,800
D5010	Speaker		**129**	EA	$150.00	$19,350
D5010	Volume control		**11**	EA	$200.00	$2,200
D5010	Device box with conduit stub		**63**	EA	$77.00	$4,851
D5010	Speaker cabling		**7,500**	LF	$1.25	$9,375
D5010						
D5010	***Classroom Speech Reinforcement System***					
D5010	Classroom Local Speech Reinforcement system, speakers and head sets included		**29**	EA	$2,200.00	$63,800
D5010						
D5010	***Audiovisual***					
D5010	*Cafeteria Sound System (in pipe & wire)*					
D5010	Cafeteria sound system		**1**	LSUM	$10,000.00	$10,000
D5010	Assisted listening system		**1**	LSUM	$4,500.00	$4,500
D5010	*Gymnasium Stage*					
D5010	Dimming/stage lighting system allowance		**1**	LSUM	$25,000.00	$25,000
D5010	Dimming system rough-in & power		**1**	LSUM	$10,000.00	$10,000
D5010	A/V systems allowance					By others
D5010	A/V system rough-in & power		**1**	LSUM	$10,000.00	$10,000
D5010	*Gymnasium Sound System*					
D5010	Gymnasium Sound System		**1**	LSUM	$15,000.00	$15,000
D5010	Assisted listening system		**1**	LSUM	$4,500.00	$4,500
D5010	Projector screen feed and connection		**1**	EA	$450.00	$450
D5010	*Misc Rooms Sound System (Music, Media Center)*					

Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
D5010	Sound System		**2**	LSUM	$10,000.00	$20,000
D5010	Delete Sound System	E-01	**(2)**	LSUM	$10,000.00	($20,000)
D5010	*Classroom AV*					
D5010	Equipment, installation & LV wiring					AV contractor
D5010	Rough-in:					
D5010	Back box and conduit		**81,452**	SF	$0.25	$20,363
D5010	Media Center rough-in with conduit and backboxes		**1**	LSUM	$7,500.00	$7,500
D5010						
D5010	***Gymnasium***					
D5010	Scoreboard and shot clocks		**1**	EA	$10,500.00	$10,500
D5010	Backstop power feed and connection		**6**	EA	$1,500.00	$9,000
D5010	Motorized curtain feed and connection		**1**	EA	$1,500.00	$1,500
D5010	Motorized partition feed and connection		**2**	EA	$1,500.00	$3,000
D5010						
D5010	***Grounding***					
D5010	Grounding		**1**	LSUM	$7,500.00	$7,500
D5010						
D5010	***Lightning Protection for entire Building***					
D5010	Lightning protection system		**1**	LSUM	$35,000.00	$35,000
D5010	Utilize lightning preventer vs lighting protection	E-02	**(1)**	LSUM	$25,000.00	($25,000)
D5010						
D5010	***Miscellaneous***					
D5010	Fire stopping		**1**	LSUM	$3,500.00	$3,500
D5010	Temporary Light & Power		**1**	LSUM	$40,000.00	$40,000
D5010	Testing & studies: Fault current, Arc Flash, Coordination		**1**	LSUM	$5,000.00	$5,000
D5010						
D5010	Fees		**1**	LSUM	$29,000.00	$29,000
D5010						
D5010	***Parks and Recreation***					
D5010	*Gear and Distribution*					
D5010	*Normal power*					
D5010	Make connections at existing panelboards		1	EA	$1,500.00	$1,500
D5010	Equipment Wiring feed and connections:					
D5010	Misc equipment feed and connections		2,610	SQFT	$0.50	$1,305
D5010	RTU feed and connection		1	EA	$4,500.00	$4,500
D5010	CUH/UH feed and connection		2	EA	$650.00	$1,300
D5010						
D5010	*Lighting & Branch Power*					
D5010	*Lighting Fixtures*					
D5010	Type LP8		14	EA	$750.00	$11,900
D5010	Type SL4		1	EA	$350.00	$350
D5010	Exit		1	EA	$180.00	$180
D5010	Dimmers, sensors and switches		2,610	SQFT	$0.30	$783
D5010	Duplex receptacle		4	EA	$21.00	$84
D5010	GFI duplex receptacle		1	EA	$36.00	$36
D5010	*Circuitry*					
D5010	Device plate WP		1	EA	$15.00	$15
D5010	Device plate		4	EA	$4.00	$16
D5010	Device box		21	EA	$25.00	$525
D5010	3/4" EMT		450	LF	$6.00	$2,700
D5010	#12 THHN		210	LF	$0.80	$168
D5010						
D5010	*Fire Alarm*					
D5010	Initiating device		1	EA	$120.00	$102
D5010	Audio/visual device		2	EA	$110.00	$290
D5010	Device box		3	EA	$21.60	$65
D5010	FAMC cable		100	LF	$4.50	$450
D5010	Testing & programming		1	LSUM	$500.00	$500
D5010						
D5010	*Telephone/Data/CATV*					
D5010	*Devices and cabling*					
D5010	Make connections at IDF		1	EA	$450.00	$450
D5010	Devices and cabling		2,610	SQFT	$0.75	$1,958
D5010	Rough-in					
D5010	Rough-in cable tray, conduit and backboxes		2,610	SQFT	$0.50	$1,305
D5010						
D5010	*Security System*					
D5010	Make connections at Head-end		1	EA	$1,000.00	$1,000
D5010	CCTV camera, detectors, sensors and cabling		2,610	SQFT	$2.00	$5,220
D5010						

Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
D5010	*Master Clock / PA System*					
D5010	Speaker		1	EA	$150.00	$150
D5010	Clock (Wireless)		1	EA	$150.00	$150
D5010	Device box with conduit stub		1	EA	$77.00	$77
D5010	Speaker cabling		150	LF	$1.25	$188
D5010						
D5010	*Lightning Protection for entire Building*					
D5010	Lightning protection system		1	LSUM	$1,100.00	$1,100
D5010						
D5010	*Miscellaneous*					
D5010	Fire stopping		1	LSUM	$750.00	$750
D5010	Temporary Light & Power/ Owner trailer tie-in		1	LSUM	$1,000.00	$1,000
D5010	Fees		1	LSUM	$1,000.00	$1,000
D5010						
D5010	adjust electrical for SD		84,796	SF	$2.00	$169,592
D5010						
D5010	*GSF VE Reductions*					
D5010	Remove two Pre-K classrooms	A-01	(2,702)	SF	$24.16	($65,280)
D5010	Remove parks & recreation space (2,610 SF)	A-02	(2,610)	SF	$15.20	($39,664)
D5010	Reduce SF of STEM/project room space by 200 SF each	A-03	(400)	SF	$24.16	($9,664)
D5010	Reduce Gym footprint 750 SF (overall GSF reduction).	A-25	(750)	SF	$24.16	($18,120)
D5010	Reduce circulation area by 500 SF (classroom corridors, gym corridors, or other areas if neccesary)	A-83	(500)	SF	$24.16	($12,080)
A1010	Revised GSF per updated floor plans 7-11-18	A-85	(732)	SF	$24.16	($17,685)
D5010						
D5010	TOTAL D5010 16000-ELECTRICAL					**$2,319,921**
E10	EQUIPMENT					
E1010	COMMERCIAL EQUIPMENT					
E1010						
E1010	TOTAL E1010 COMMERCIAL EQUIPMENT					**$0**
E1020	INSTITUTIONAL EQUIPMENT					
E1020						
E1020						
E1020						
E1020						
E1020	TOTAL E1020 INSTITUTIONAL EQUIPMENT					**$0**
E1030	VEHICULAR EQUIPMENT					
E1030						
E1030						
E1030						
E1030						
E1030	TOTAL E1030 VEHICULAR EQUIPMENT					**$0**
E1090	OTHER EQUIPMENT					
E1090	Appliances - Allowance		1	LS	$5,000.00	$5,000
E1090						
E1090	*Food service equipment*					
E1090	Food service equipment - Allowance		1	LS	$282,925.00	$282,925
E1090						
E1090	*Screens*					
E1090	Motorized projection screen @ Gym and Media		2	EA	$8,500.00	$17,000
E1090	manual projection screens @ Classrooms		30	EA	$500.00	$15,000
E1090	delete manual projection screens @ Classrooms	A-80	(30)	EA	$500.00	($15,000)
E1090						
E1090	*Athletic Equipment*					
E1090	basketball hoop - motorized - overhead mtd		6	EA	$8,000.00	$48,000
E1090	volley ball equipment and climbing ropes		1	LS	$15,000.00	$15,000
E1090	motorized center roll gym divider		1	EA	$18,000.00	$18,000
E1090	gym wall pads					NIC
E1090	bleachers		1	LS	$50,000.00	$50,000
E1090	Eliminate gym bleachers on one side of the gym (keep other side in place) - delete 1 set of bleachers	A-53	(1)	LS	$25,000.00	($25,000)
E1090	Scoreboards - 8'x5'		1	EA		w/electrical

Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
E1090						
E1090						
E1090	*Theatrical Equipment*					
E1090	stage rigging and drapery - Allowance		1	LS	$20,000.00	$20,000
E1090						
E1090	*Misc. Equipment*					
E1090	kiln		1	EA	$6,000.00	$6,000
E1090	green screen cyclorama		1	EA	$15,000.00	$15,000
E1090	delete green screen cyclorama	A-79	(1)	EA	$15,000.00	($15,000)
E1090	slide at HUB		1	EA		NIC
E1090						
E1090	TOTAL E1090 OTHER EQUIPMENT					**$436,925**
E20	FURNISHINGS					
E1010	FIXED FURNISHINGS					
E1010						
E1010	*Window shades*					
E1010	Window shades		7,677	SF	$7.00	$53,739
E1010	shades at interior view windows, door and sidelights		4,661	SF	$7.00	$32,627
E1010						
E1010	*Casework*					
E1010	Utilize plam countertops in lieu of solid surface countertops except at Art and Project Rooms	A-81	(1)	LS	$36,720.00	($36,720)
E1010	*Kindergarten Classroom Instruction*		*3*	*RM*		
E1010	Closed Base Cabinets		9	LF	$375.00	$3,375
E1010	Upper Cabinets		30	LF	$200.00	$6,000
E1010	Sink Cabinets		21	LF	$325.00	$6,825
E1010	solid surface counters		30	LF	$200.00	$6,000
E1010	Sink Cutout		6	EA	$100.00	$600
E1010	Tall Storage/Wardrobe Cabinets		30	LF	$600.00	$18,000
E1010	built-in bookcase		24	LF	$500.00	$12,000
E1010	*General Classrooms - Grades 1-5*		*15*	*RM*		
E1010	Closed Base Cabinets		60	LF	$375.00	$22,500
E1010	Sink Cabinets		90	LF	$325.00	$29,250
E1010	solid surface counters		150	LF	$200.00	$30,000
E1010	Sink Cutout		30	EA	$100.00	$3,000
E1010	Tall Storage/Wardrobe Cabinets		120	LF	$600.00	$72,000
E1010	built-in bookcase - 8' at 1-2, 15' at 3-5		197	LF	$500.00	$98,500
E1010	*Pre-Kindergarten w/ toilet*		*4*	*RM*		
E1010	Closed Base Cabinets		16	LF	$375.00	$6,000
E1010	Sink Cabinets		28	LF	$325.00	$9,100
E1010	solid surface counters		44	LF	$200.00	$8,800
E1010	Sink Cutout		8	EA	$100.00	$800
E1010	Upper Cabinets		44	LF	$200.00	$8,800
E1010	Tall Storage/Wardrobe Cabinets		56	LF	$600.00	$33,600
E1010	built-in bookcase		32	LF	$500.00	$16,000
E1010	*Pre-Kindergarten Storage*		*2*	*RM*		
E1010	Open Metal Shelving		75	LF	$250.00	$18,750
E1010	*STEM - Maker Classroom w/Storage*		*2*	*RM*		
E1010	Upper Cabinets		10	LF	$200.00	$2,000
E1010	Sink Cabinets		10	LF	$325.00	$3,250
E1010	solid surface counters		20	LF	$200.00	$4,000
E1010	Sink Cutout		4	EA	$100.00	$400
E1010	Tall Storage		48	LF	$600.00	$28,800
E1010	*Self- Contained SPED Classroom*		*4*	*RM*		
E1010	Closed Base Cabinets		16	LF	$375.00	$6,000

Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
E1010	Sink Cabinets		24	LF	$325.00	$7,800
E1010	solid surface counters		40	LF	$200.00	$8,000
E1010	Sink Cutout		8	EA	$100.00	$800
E1010	Tall Storage/Wardrobe Cabinets		32	LF	$600.00	$19,200
E1010	built-in bookcase		32	LF	$500.00	$16,000
E1010	*Resource Room*		*5*	*RM*		
E1010	Closed Base Cabinets		30	LF	$375.00	$11,250
E1010	Upper Cabinets		30	LF	$200.00	$6,000
E1010	solid surface counters		30	LF	$200.00	$6,000
E1010	Sink Cutout		5	EA	$100.00	$500
E1010	Tall Storage/Wardrobe Cabinets		45	LF	$600.00	$27,000
E1010	built-in bookcase		40	LF	$500.00	$20,000
E1010	*Small Group Room/Reading*		*1*	*RM*		
E1010	Closed Base Cabinets		6	LF	$375.00	$2,250
E1010	solid surface counters		6	LF	$200.00	$1,200
E1010	Upper Cabinets		6	LF	$200.00	$1,200
E1010	Tall Storage/Wardrobe Cabinets		9	LF	$600.00	$5,400
E1010	built-in bookcase		8	LF	$500.00	$4,000
E1010	*Art Classroom*		*1*	*RM*		
E1010	Closed Base Cabinets		12	LF	$375.00	$4,500
E1010	solid surface counters		12	LF	$200.00	$2,400
E1010	Upper Cabinets		5	LF	$200.00	$1,000
E1010	Tall Storage/Wardrobe Cabinets		9	LF	$600.00	$5,400
E1010	*Music Classroom*		*1*	*RM*		
E1010	Closed Base Cabinets		5	LF	$375.00	$1,875
E1010	Sink Cabinets		3	LF	$325.00	$975
E1010	solid surface counters		8	LF	$200.00	$1,600
E1010	Upper Cabinets		8	LF	$200.00	$1,600
E1010	Tall Storage/Wardrobe Cabinets		3	LF	$600.00	$1,800
E1010	instrument storage		22	LF	$600.00	$13,200
E1010	6-shelf sheet music storage units		3	EA	$350.00	$1,050
E1010	*Media Center/Reading Room*		*1*	*RM*		
E1010	built-in bookcase with open bookshelf below		26	LF	$600.00	$15,600
E1010	triangle wood enclosure at bookcase		8	LF	$500.00	$4,000
E1010	*Staff Lunch Room*		*1*	*RM*		
E1010	Closed Base Cabinets		16	LF	$375.00	$6,000
E1010	solid surface counters		16	LF	$200.00	$3,200
E1010	Upper Cabinets		16	LF	$200.00	$3,200
E1010	*Exam Room/Resting*		*3*	*RM*		
E1010	Closed Base Cabinets		18	LF	$375.00	$6,750
E1010	Sink Cabinets		9	LF	$325.00	$2,925
E1010	solid surface counters		27	LF	$200.00	$5,400
E1010	Sink Cutout		3	EA	$100.00	$300
E1010	Upper Cabinets		18	LF	$200.00	$3,600
E1010	*Teacher's Mail and Time Room*		*1*	*RM*		
E1010	Closed Base Cabinets		18	LF	$375.00	$6,750
E1010	solid surface counters		18	LF	$200.00	$3,600
E1010	Upper Cabinets		18	LF	$200.00	$3,600
E1010	*Duplicating Room*		*1*	*RM*		
E1010	Closed Base Cabinets		12	LF	$375.00	$4,500
E1010	Sink Cabinets		12	LF	$325.00	$3,900
E1010	solid surface counters		24	LF	$200.00	$4,800
E1010	Upper Cabinets		12	LF	$200.00	$2,400
E1010	Sink Cutout		1	EA	$100.00	$100
E1010	*Teacher's Work Room*		*1*	*RM*		
E1010	Closed Base Cabinets		12	LF	$375.00	$4,500
E1010	solid surface counters		12	LF	$200.00	$2,400
E1010	Upper Cabinets		12	LF	$200.00	$2,400
E1010	*Custodian's Workshop*		*1*	*RM*		
E1010	Closed Base Cabinets		15	LF	$375.00	$5,625
E1010	solid surface counters		15	LF	$200.00	$3,000
E1010	Upper Cabinets		15	LF	$200.00	$3,000
E1010	*Faculty Toilet*		*9*	*RM*		
E1010	ADA solid surface sink counter		27	LF	$215.00	$5,805
E1010	Sink Cutout		9	EA	$100.00	$900
E1010	*Park and Recreation Space*		*1*	*RM*		
E1010	Closed Base Cabinets		12	LF	$375.00	$4,500
E1010	solid surface counters		12	LF	$200.00	$2,400
E1010	Upper Cabinets		12	LF	$200.00	$2,400
E1010						

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Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
E1010	*GSF VE Reductions*					
E1010	Remove two Pre-K classrooms	A-01	(2,702)	SF	$7.88	($21,292)
E1010	Remove parks & recreation space (2,610 SF)	A-02	(2,610)	SF	$4.39	($11,449)
E1010	Reduce SF of STEM/project room space by 200 SF each	A-03	(400)	SF	$7.88	($3,152)
E1010	Reduce circulation area by 500 SF (classroom corridors, gym corridors, or other areas if neccesary)	A-83	(500)	SF	$7.88	($3,940)
A1010	Revised GSF per updated floor plans 7-11-18	A-85	(732)	SF	$7.88	($5,768)
E1010						
E1010	TOTAL E1010 FIXED FURNISHINGS					**$747,950**
E1020	MOVEABLE FURNISHINGS					
E1020						
E1020						
E1020						
E1020						
E1020	TOTAL E1020 MOVEABLE FURNISHINGS					**$0**
F10	SPECIAL CONSTRUCTION					
F1040	SALT WATER AQUARIUMS					
F1040	Salt water Aquarium - 500 gal, 1 year maintenance		1	LS	$35,000.00	$35,000
F1040	fish and invertebrates allowance		1	LS	$500.00	$500
F1040	delete aquarium	A-82	(1)	LS	$35,500.00	($35,500)
F1040						
F1040	TOTAL					**$0**
F20	SELECTIVE BUILDING DEMOLITION					
F2010	BUILDING ELEMENTS DEMOLITION					
F2010	*Existing Building*					
F2010	Complete building demolition including foundation		66,573	SF	$11.00	$732,303
F2010	Demo existing 1 story brick building		1,767	SF	$10.00	$17,670
F2010	Separate buildings and additional mob		3	EA	$20,000.00	$60,000
F2010	TOTAL F2010 BUILDING ELEMENTS DEMOLITION					**$809,973**
F2020	HAZARDOUS COMPONENT ABATEMENTS					
F2020	HAZARDOUS MATERIAL ABATEMENTS - AS PER REPORT		1	LS	$ 912,278.00	$912,278
F2020						
F2020	TOTAL F2020 HAZARDOUS COMPONENT ABATEMENTS					**$912,278**
G10	SITE PREPARATION					
G1010	SITE CLEARING					
G1010	Clear & grub & protect trees - Site Area		123,226	SF	$0.25	$30,807
G1010	Dust control		1	LS	$6,000.00	$6,000
G1010	Street cleaning (Allowance)		1	LS	$10,000.00	$10,000
G1010	Snow Removal		2	SEASON	$15,000.00	$30,000
G1010	Construction fence, including rental		1,800	LF	$12.00	$21,600
G1010	Relocate Construction Fence, Phase 3&5		1,300	LF	$6.00	$7,800
G1010	Double construction gate		2	EA	$850.00	$1,700
G1010	Demo play equipment		1	LS	$5,000.00	$5,000
G1010	Temporary construction entrance/ Maintain		2,000	SF	$5.00	$10,000
G1010	Construction staging area - install and maintain		1	LS	$20,000.00	$20,000
G1010	Temporary walks and protection		1	LS	$45,000.00	$45,000
G1010	Resurface existing tennis court		6,400	SF	$4.00	$25,600
G1010	Temp signs/ Safety		1	LS	$3,000.00	$3,000
G1010	Temporary Water & Sewer Service and Distribution		1	LS	$20,000.00	$20,000
G1010	Erosion control barrier - Fiber Log		4,293	LF	$7.00	$30,051
G1010	Erosion Control - Inlet protections & misc.		1	LS	$10,000.00	$10,000
G1010						
G1010	TOTAL G1010 SITE CLEARING					**$276,558**
G1020	SITE DEMOLITION & RELOCATIONS					
G1020	Remove and dispose bituminous pavement (Reuse existing bit. Paving material as base instead of remove & dispose)	C-14	(54,353)	SF	$0.80	($43,482)
G1020	Pulverized existing bit paving	C-14	6,039	SY	$2.00	$12,078
G1020	Remove & dispose play area & other hardscape		8,000	SF	$1.00	$8,000
G1020	R/D Existing sheds		2	EA	$500.00	$1,000

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Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
G1020	R/D existing green house		1	EA	$2,500.00	$2,500
G1020	Remove chain link fence		669	LF	$2.00	$1,338
G1020	Existing Utilities demolition, removal and bi-pass		1	LS	$20,000.00	$20,000
G1020	Remove miscellaneous other than above		1	LS	$15,000.00	$15,000
G1020						
G1020						
G1020						
G1020						
G1020						
G1020	TOTAL G1020 SITE DEMOLITION & RELOCATIONS					**$16,434**
G1030	REVISED LANDSCAPE PLAN	C-31				
G1030	SITE EARTHWORK					
G1030	*Building Pads Bulk Excavation & Backfill:*					
G1030	Strip top soil and subsoil		2,222	CY	$10.00	$22,222
G1030	Phase 1&2:					
G1030	Site Cut to sub-grade		0	CY	$10.00	NR
G1030	Fill to sub-grade		11,718	CY	$12.00	$140,616
G1030	Import Fill Material		14,062	CY	$25.00	$351,540
G1030	Phase 3&4:					
G1030	Site Cut to sub-grade		1,071	CY	$10.00	$10,710
G1030	Fill to sub-grade		5,361	CY	$12.00	$64,332
G1030	Import Fill Material		5,148	CY	$25.00	$128,700
G1030	Phase 5					
G1030	Site Cut to sub-grade		1,367	CY	$10.00	$13,670
G1030	Fill to sub-grade		13,334	CY	$12.00	$160,008
G1030	Import Fill Material (Subtract material from infiltration system)		10,001	CY	$25.00	$250,020
G1030	Lower first floor elevation by 6-inches (includes associated reductions in retaining walls, height of exterior stairs/ lengths of ramps)	A-13	(3,019)	CY	$40.00	($120,760)
G1030	Lower building elevation additional 3" and reduce site fill costs	A-13A	(1,509)	CY	$40.00	($60,360)
G1030	Reuse crushed concrete from building demolition	C-16	1	LS	($20,000.00)	($20,000)
G1030	Street cleaning - Allowance		1	LS	$15,000.00	$15,000
G1030	*Gravel and DG stone Base For Paving*					
G1030	Bit. Concrete Pavement (4" DG. Crushed stone)		703	TONS	$38.00	$26,705
G1030	Bit. Concrete Pavement (8" Gravel)		1,500	CY	$40.00	$60,011
G1030	Reuse pulverized material as base	C-14	(1,007)	CY	$25.00	($25,163)
G1030	Concrete Ped Walk, hardscape gravel base - 8"		1,311	CY	$42.00	$55,042
G1030						
G1030	*Site layout and grading*					
G1030	Rough & fine grade bituminous & conc pavement area		46,507	SF	$0.35	$16,277
G1030	Ped conc walk, play area & misc paving		54,119	SF	$0.65	$35,177
G1030	Rough grade lawn & planting		126,482	SF	$0.25	$31,621
G1030	Rough grade new building area		57,000	SF	$0.75	$42,750
G1030	adjust for regrade	C-31	(4,000)	CY	$25.00	($100,000)
G1030						
G1030	TOTAL G1030 SITE EARTHWORK					**$1,098,118**
G1040	HAZARDOUS WASTE REMEDIATION					
G1040						
G1040						
G1040						
G1040	TOTAL G1040 HAZARDOUS WASTE REMEDIATION					**$0**
G20	SITE IMPROVEMENTS					
G2010	ROADWAYS					
G2010	*Asphalt Paving*					
G2010	Bit. concrete pavement - Vehicle		46,507	SF	$3.00	$139,521
G2010						
G2010	VGC - Parking & Road		1,785	LF	$42.00	$74,970
G2010						
G2010						
G2010						
G2010						
G2010	TOTAL G2010 ROADWAYS					**$214,491**

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Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
G2020	PARKING LOTS					
G2020	*CAST-IN-PLACE DETECTABLE*					
G2020	Handicap Ramp - ADA Panels		6	EA	$550.00	inc. below
G2020						
G2020	*PARKING LOT APPURTENANCES*					
G2020	New parking striping		1	LS	$15,000.00	$15,000
G2020	New parking striping ADA		4	EA	$75.00	$300
G2020	Cross walk & misc. stripping		1	LS	$2,500.00	$2,500
G2020	Traffic/ parking signs		1	LS	$3,500.00	$3,500
G2020						
G2020	TOTAL G2020 PARKING LOTS					**$21,300**
G2040.20	SITE RETAINING WALLS AND STEPS					
G2040.20	Modular Block Wall			SF	$28.00	NR
G2040.20						**$0**
G2040.20	Retaining Wall Ftgs (VE C-04)	C-04				
G2040.20	Concrete - assume 6' wide, 24" thick	C-04	87	CY	$135.00	VE C-04
G2040.20	Rebar - Epoxy coated	C-04	6,960	LBS	$1.40	VE C-04
G2040.20	Formwork	C-04	780	SF	$16.00	VE C-04
G2040.20	Place and finish	C-04	87	CY	$85.00	VE C-04
G2040.20						
G2040.20	Concrete Retaining Wall					
G2040.20	Concrete - assume 16" walls	C-04	66	CY	$135.00	VE C-04
G2040.20	Rebar	C-04	8,250	LBS	$1.40	VE C-04
G2040.20	Formwork	C-04	2,674	SF	$18.00	VE C-04
G2040.20	Architectural Finish - Premium	C-04	928	SF	$8.00	VE C-04
G2040.20	Place and finish	C-04	66	CY	$85.00	VE C-04
G2040.20	Amphitheater Concrete step	C-04	0	LS	$35,000.00	VE C-04
G2040.20	Excavate retaining wall ftgs	C-04	415	CY	$12.00	VE C-04
G2040.20	Backfill retaining walls	C-04	537	CY	$15.00	VE C-04
G2040.20						
G2040.20	Use large block wall instead of Cast-In-Place Concrete Retaining Wall	C-04	1,337	SF	$42.00	$56,154
G2040.20						
G2040.20						**$56,154**
G2030	PEDESTRIAN PAVING					
G2030	Pedestrian conc paving 5"		16,423	SF	$7.50	$123,173
G2030	Conc Ramp/Stair and curb form		913	SF	$15.00	$13,695
G2030	Tactile Warning Tiles (5/L5.01)		5	EA	$500.00	$2,500
G2030	Concrete Paver		0	SF	$22.00	$0
G2030	Misc pads and landing		1	LS	$25,000.00	$25,000
G2030	Crushed Rock Pavement w/ base		1,627	SF	$6.00	$9,762
G2030	Basketball Court and hard play surface (W/ paint & graphic)		4,862	SF	$8.00	$38,896
G2030	Hardsurface play area		2,660	SF	$8.00	$21,280
G2030						
G2030	TOTAL G2030 PEDESTRIAN PAVING					**$234,306**
G2040	SITE DEVELOPMENT					
G2040	Playground Equipment - Allowance		1	LS	$250,000.00	$250,000
G2040	Reduce Playground Equipment Allowance	C-01	1	LS	($100,000.00)	($100,000)
G2040	Reduce Play Area C-05	C-05				
G2040	Playground Protective Surfacing - Rubber	C-05	8,182	SF	$18.00	C-05
G2040	Playground Protective Surfacing - Mulch	C-05	3,507	SF	$7.50	C-05
G2040	Flush concrete edge - Curved	C-05	886	LF	$32.00	C-05
G2040	Stone base for play surface	C-05	779	TONS	$40.00	C-05
G2040						
G2040	Playground Protective Surfacing	C-05	5,600	SF	$18.00	$100,800
G2040	Playground Protective Surfacing - Mulch	C-05	2,400	SF	$7.50	$18,000
G2040	Flush concrete edge - Curved	C-05	689	LF	$32.00	$22,061
G2040	Stone base for play surface	C-05	533	TONS	$40.00	$21,333
G2040						
G2040	Flag Pole		1	EA	$6,500.00	$6,500
G2040	Green House (16' x 14') - Allowance		0	LS	$25,000.00	$0
G2040	Bicycle Rack		19	EA	$450.00	$8,550

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Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
G2040	Benches		6	EA	$1,200.00	$7,200
G2040	Player Benches at basketball court - 22'L		4	EA	$5,500.00	$22,000
G2040	Delete Players Benches	C-07a	(4)	EA	$5,500.00	($22,000)
G2040	Basketball Goals		2	EA	$6,500.00	$13,000
G2040	Trash Receptacle		6	EA	$850.00	$5,100
G2040	Tables and Chairs		13	EA		FF&E
G2040	Relocate bronze statue		1	EA		
G2040	Concrete Teaching Station		0	EA		
G2040	Concrete Seat Wall		46	LF	$400.00	$18,400
G2040	Removable Bollards		2	EA	$1,500.00	$3,000
G2040	Handrail on conc wall		203	LF	$150.00	$30,450
G2040	Handrail at conc ramp		270	LF	$175.00	$47,250
G2040	Handrail at Amphitheater		0	LF	$175.00	$0
G2040	Fence And Gates					
G2040	vinyl clad CLF - 4'H		636	LF	$45.00	$28,620
G2040	vinyl clad CLF - Ped Gate		5	EA	$550.00	$2,750
G2040	vinyl clad CLF - 4'H (Basketball court)		299	LF	$80.00	$23,920
G2040	vinyl clad CLF Gate - 4'H (Basketball court)		3	EA	$850.00	$2,550
G2040	Delete handrail on retaining wall	C-15	(210)	LF	$150.00	($31,500)
G2040	Use 4'H CLF on retaining wall instead	**C-15**	210	LF	$45.00	$9,450
G2040						
G2040	TOTAL G2040 SITE DEVELOPMENT					**$487,434**
G2050	LANDSCAPING					
G2050	*Planting*					
G2050	Trees & Shrubs - Allowance		1	LS	$200,000.00	$200,000
G2050	Raised Garden Boxes/ soil		21	EA	$1,400.00	$29,400
G2050	Planting area		9,280	SF		
G2050						
G2050						
G2050						
G2050						
G2050						
G2050						
G2050	*Landscape Seeding*					
G2050	Top soil, spread and grade - Lawn & Planting		2,500	CY	$55.00	$137,500
G2050	Lawn		67,055	SF	$0.35	$23,469
G2050	Maintain		67,055	SF	$0.10	$6,706
G2050	*Irrigation*					
G2050	Irrigation					NIC
G2050						
G2050	TOTAL G2050 LANDSCAPING					**$397,075**
G30	SITE MECHANICAL UTILITIES					
G3010	WATER SUPPLY					
G3010	Connect to existing on site with new T&V	C-21	3	EA	$5,500.00	VE C-21
G3010	New 6" CLDI - Fire	C-21	800	LF	$75.00	VE C-21
G3010	New 4" CLDI - Domestic	C-21	800	LF	$65.00	VE C-21
G3010	Hydrant & valve		3	EA	$5,500.00	$16,500
G3010	Run FP and water service lines as single 6" line and split before we enter the building. Note these services are fed from a 6" line. - VE C-21	C-21				
G3010	New 6" CLDI - Fire	C-21	800	LF	$75.00	$60,000
G3010	New 4" CLDI - Domestic	C-21	100	LF	$65.00	$6,500
G3010	Connect to existing on site with new T&V	C-21	2	EA	$5,500.00	$11,000
G3010	Reducer & Misc. fittings	C-21	1	LS	$1,500.00	$1,500
G3010						
G3010	TOTAL G3010 WATER SUPPLY					**$95,500**
G3020	SANITARY SEWER					
G3020	Connection to existing sewer MH - On Site		2	EA	$2,500.00	$5,000
G3020	6" PVC SDR35 pipe incl. trench and backfill		610	LF	$60.00	$36,600
G3020	Grease Trap		1	EA	$9,500.00	$9,500
G3020	SMH		6	EA	$4,500.00	$27,000
G3020						
G3020						
G3020						
G3020						
G3020						

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Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
G3020						
G3020						
G3020						
G3020	TOTAL G3020 SANITARY SEWER					**$78,100**
G3030	STORM SEWER					
G3030	Drain Pipe		1,523	LF	$65.00	$98,995
G3030	Replace existing corrugated drain Line (34" x 24") - included clear & grub and repair surface		288	LF	$150.00	$43,200
G3030	Reduce above scope by 50%	C-19	(144)	LF	$150.00	($21,600)
G3030	Trench Drain		210	LF	$165.00	$34,650
G3030	Delete trench drain at basketball court	C-17	(210)	LF	$165.00	($34,650)
G3030	6" Perf Pipe w/ stone wrap		228	LF	$80.00	$18,240
G3030	UD below play area		1,130	LF	$50.00	$56,500
G3030	Delete under drain system below play surface	C-18	(1,130)	LF	$50.00	($56,500)
G3030	CB		11	EA	$4,000.00	$44,000
G3030	MH		13	EA	$4,500.00	$58,500
G3030	AD		8	EA	$2,500.00	$20,000
G3030	DCB		1	EA	$5,000.00	$5,000
G3030	HW Outlet		7	EA	$7,500.00	$52,500
G3030	Rip Rap		159	SF	$20.00	$3,180
G3030	WQU		12	EA	$15,000.00	$180,000
G3030	DW		2	EA	$4,500.00	$9,000
G3030	Infiltration System:	C-13	9,500	SF		
G3030	Excavate for infiltration	C-13	5,583	CY	$8.00	VE C-13
G3030	Install precast galleys (4.25'Hx4'Wx4'D)	C-13	500	EA	$450.00	VE C-13
G3030	Backfill with 3/4" crushed stone	C-13	2,000	Tons	$40.00	VE C-13
G3030	Install filter fabric and misc. fittings	C-13	1	LS	$10,000.00	VE C-13
G3030	Change design using Stormtech or similar	C-13	9,500	SF	$30.00	$285,000
G3030						
G3030	TOTAL G3030 STORM SEWER					**$796,015**
G3060	FUEL DISTRIBUTION					
G3060	New Gas Line (Excavate & Backfill)		787	LF	$25.00	$19,675
G3060						
G3060	TOTAL G3060 FUEL DISTRIBUTION					**$19,675**
G3090	OTHER SITE MECHANICAL UTILITIES					
G3090						
G3090	TOTAL G3090 OTHER SITE MECHANICAL UTILITIES					**$0**
G40	SITE ELECTRICAL UTILITIES					
G4010	ELECTRICAL UTILITIES					
G4010	Primary riser pole		1	LS	$1,200.00	$1,200
G4010	Manhole		1	EA	$8,500.00	$8,500
G4010	Primary power ductbank 2-4"		200	LF	$60.00	$12,000
G4010	Transformer					By Utility Co.
G4010	Transformer pad		1	LS	$2,500.00	$2,500
G4010	1200A Secondary power ductbank (allow)		320	LF	$260.00	$83,200
G4010	Generator ductbank with 400A, 100A feed & control wiring		290	LF	$130.00	$37,700
G4010	Utility back charges - By owner					NIC
G4010						
G4010	TOTAL G4010 ELECTRICAL UTILITIES					**$145,100**
G4030	SITE LIGHTING					
G4030	*Site Lighting*					
G4030	Type SL1		3	EA	$2,000.00	$6,000
G4030	Type SL2		4	EA	$2,600.00	$10,400
G4030	Type SL6		3	EA	$850.00	$2,550
G4030	Pole Base		4	LF	$350.00	$1,400
G4030	Sport lights at basketball court with poles & circuity		2	EA	$7,000.00	$14,000
G4030	Delete sport lights (VE C-23)	C-23	(2)	EA	$7,000.00	($14,000)
G4030	Circuitry		1,000	LF	$15.00	$15,000
G4030						
G4030	TOTAL G4030 SITE LIGHTING					**$35,350**
G4040	SITE COMMUNICATIONS & SECURITY					

W.T. RICH COMPANY, INC.

WTR SD
June 28, 2018

Uniformat	Description	VE No.	Qty	Unit	Unit Cost	Total
G4040	Commination riser pole		1	LS	$1,200.00	$1,200
G4040	Communications / fire alarm duct bank D 4-4" empty		350	LF	$75.00	$26,250
G4040	Handhole		3	EA	$1,500.00	$4,500
G4040						
G4040	*Site Security*					
G4040	Pole cameras and circuitry (allow)		1	LSUM	$25,000.00	$25,000
G4040						
G4040	TOTAL G4040 SITE COMMUNICATIONS & SECURITY					**$56,950**

Manchester Memorial Elementary School
SD Estimate - Summary of Potential Value Engineering
Date: 6/25/2018

W.T. RICH COMPANY, INC.

	Accept 1 only	Accept 1 and 2	Accept 1 to 3	Accept 1 to 4	All VE (for reference)
Original Reconciled Cost Estimate (Pre-VE)	**$50,502,335**	**$50,502,335**	**$50,502,335**	**$50,502,335**	**$50,502,335**
Potential Value Engineering					
- Category 1 - Strongly Recommended by WG (Unanimous)	($8,995,076)	($8,995,076)	($8,995,076)	($8,995,076)	($8,995,076)
- Category 2 - Recommended by Working Group		($158,071)	($158,071)	($158,071)	($158,071)
- Category 3 - Further Analysis / Subject to SBC vote			($1,567,429)	($1,567,429)	($1,567,429)
- Category 4 - Not Recommended by Working Group				($1,735,270)	($1,735,270)
- Category 5 - Unacceptable/Rejected					($445,582)
TOTAL ACCEPTED VE	($8,995,076)	($9,153,147)	($10,720,576)	($12,455,846)	($12,901,428)
Revised Estimate with Potential Accepted VE	**$41,507,259**	**$41,349,188**	**$39,781,759**	**$38,046,489**	**$37,600,907**
PSR Budget	**$44,500,000**	**$44,500,000**	**$44,500,000**	**$44,500,000**	**$44,500,000**
Delta versus PSR Budget	**$2,992,741**	**$3,150,812**	**$4,718,241**	**$6,453,511**	**$6,899,093**

Manchester Memorial Elementary School
SD Estimate - Summary of Potential Value Engineering

W.T. RICH COMPANY, INC.

Last Updated **6/25/2018**
Reconciled Budget Amount **$50,502,335**

Markups/ Contingencies	
10.00%	Design & Estimating
6.00%	Escalation
2.00%	CM Contingency
2.00%	PHASING PREMIUM
1.01%	Bonds and Insurances
21.01%	**Total**

VE #	VE Description	Total Cost Impact W/ Markup	Status (1 to 5)	Remarks	Program Related
C-01	Reduce playground equipment allowance from $250K to $150K ($100k savings). This will serve as a "design to" number and will limit the amount of playground equipment to stay within the target budget.	($121,008)	1		yes
C-02	~~Reduce 50% of all exterior unit pavers. Currently 4,468 sf of unit pavers. Note, where unit pavers are eliminated, they will be replaced by concrete paving.~~ Pavers have been completely deleted per the most recent C-31 and the most recent landscape drawing.		1	see C-27, C-28, C-29 for breakout savings for different areas. Paver deletion is part of C-31	
C-03	~~Reduce linear footage of segmental block retaining wall (C-04) by 20%. This includes elimination of metal railing system on top of wall at the area of reduction.~~ Savings accepted in C-31.		1	Anticipated savings for C-03 and C-04 was 442k. Actual savings for these two items is 522k.	
C-04	Accept C-31, revise quantities and utilize large block wall in lieu of concrete wall at all retaining walls.	($96,649)	1		
C-05	Accept C-31 and reduce playground areas from 11,689 SF to 8,000 SF. (30% reduction from what is shown on the revised L-300 plan) 70% of areas are rubber, 30% of areas are mulch per new landscape plan. Keep the same percentage of areas.	($85,803)	1	To achieve goal of reduction, consider combining two of the play areas. Original plans were 100% rubber. Target savings to reduce rubber was 86k. The new savings is to reduce the area as stated and utlize 70% rubber 30% mulch per the current plan.	
C-06	~~Eliminate north portion of the emergency access loop (includes associated fill – assumes sidewalk between classroom wing and upper grade playground would be increased in width from 8 feet to 12 feet)~~ Savings accepted in C-31.		1	Included with C-24	
C-07	~~Eliminate Basketball court and adjacent hardscape (including associated tree cutting and added fill). Does not include elimination of trench drain~~ (separate VE item)		2	Updated with C-24 per revised L-300 plan. See C-07 and C-07b for new VE	yes
C-07a	~~Delete team benches at baseketball court, reduce fence by 50%, delete concrete walk along side of court (price as asphalt see C-11)~~ Delete player benches at basketball	($26,622)	1	group to revisit. Updates made per new plan	
C-08	~~Eliminate greenhouse (acquire by donation or fundraising)~~ Savings accepted in C-31		1	Full savings realized 30k	yes
C-09	~~Eliminate amphitheater exterior stairs between school and athletic fields at southwest corner of new building. Utilize ramp only for access to the building (or replace with much smaller set of stairs)~~ Savings accepted in C-31		2	Full savings realized 25k	
C-11	~~Change 60% of pedestrian concrete paving to bituminous paving.~~ Savings accepted in C-31		1	updated per revised L-300 quantities Anticipated savings was 74k, realized savings is 80k.	

VE #	VE Description	Total Cost Impact W/ Markup	Status (1 to 5)	Remarks	Program Related
C-13	Change the design approach for the two stormwater Infiltration Systems: Change to stormtech or equivalent (current design is precast chambers - very expensive approach).	($90,349)	2	Confirm load requirements for vehicle traffic. Confirm that these are needed at all (or this much). Civil to review.	
C-14	At areas where existing bituminous pavement is to be demolished, pulverize existing bit paving and stockpile for re-use instead of removal and disposal	($68,451)	1		
C-15	Replace metal handrail on top of retaining wall with chain link fence - Accept C-31 and revise quantities per updated plans	($25,793)	2	Could also consider eliminate entirely. Using shrubs to protect wall. Previous savings was 54k. Wall has been reduced in length.	
C-16	Crush existing concrete from building demolition to 12" pieces and use on site for backfill	($24,202)	1		
C-17	Eliminate trench drain around basketball court (or reduce). The trench drain currently is along the per miter of two sides of the basketball court and existing hardscape play area. Currently 210 LF	($41,929)	2	confirm with civil	
C-18	Eliminate drainage system under all playgrounds	($68,369)	1	Civil confirmed that if there is a layer of crushed stone base material, this was acceptable and quite typical. The stone base material was assumed and is carried in the estimate	
C-19	Reduce length of corrugated 34"x24" drain line replacement. Scope line and replace only locations that have collapsed or have issues. We have assumed 50% replacement will remain	($26,138)	1		
C-20	line deleted (moved to M-01)	$0	2		
C-21	Run FP and water service lines as single 6" line and split before we enter the building. Note these services are fed from a 6" line.	($59,899)	1		
C-22	duplicate - see item A-10	$0	2		?
C-23	Eliminate sports lighting at basketball court	($16,941)	1		
C-24	~~Incorporate all revisions indicated in revised L-300 dated 6/8/18.~~ Savings accepted in C-31.		1	Previous savings were 98k. This item is now part of C-31.	
C-26	Review water/FP service line routing - TBD - coordinate with civil engineer and JCJ	$0	1	These services need to be relocated to a different location. Current location shown does not work with phasing. New location might be a cost savings.	
C-27	~~Delete pavers and seat wall outside of Art room. Replace with scored concrete. Add back wall.~~ Savings accepted in C-31.		1	Full savings realized 10k	
C-28	~~Delete pavers between Pre-K wing and gym wing. Replace with scored pedestrian concrete~~ Savings accepted in C-31.		1	Full savings realized 25k	
C-29	~~Replace pavers outside of cafeteria with scored pedestrian concrete~~ Savings accepted in C-31.		1	Full savings realized 27k	
C-31	Revised Site Plan L-200 and L-300 dated 6/19/18	($847,252)	1		

VE #	VE Description	Total Cost Impact W/ Markup	Status (1 to 5)	Remarks	Program Related
A-01	Remove two Pre-K classrooms	($820,597)	1	reconfirm with school committee	yes
A-02	Remove parks & recreation space	($993,112)	1	Parks and Rec confirmed as out	yes
A-03	Reduce SF of STEM/project room space by 200 SF each	($121,008)	1	Cannot take with A-03a, A-03b	yes
A-04a	Revise Gym gabled roof from standing seam metal roofing to gabled roof with sarnifil ribs	($318,512)	1	confirming price on Sarnifil Ribs	
A-04b	Accept A-04a and realize additional savings by revising the Gym gabled roof from sarnafil ribs to asphalt shingles	($126,908)	1		
A-04c	Revise envelope to realize $400K in saving	($400,000)	1	taken in lieu of A-04 and A-08	
A-05a	Revise Pre-K gabled roof from standing seam metal roof to gabled roof with sarnifil ribs	($187,614)	1	confirming price on Sarnifil Ribs	
A-05b	Accept A-05a and realize additional savings by revising the Pre-K gabled roof from sarnafil ribs to asphalt shingles	($72,159)	1		
A-06a	Delete 100% of green roof	($279,527)	1	cannot take with A-06	
A-07b	Revised Media Center Canopy per updated soffit plan from JCJ: Reduce Media Center Canopy size and change to Pac-Cloud perforated soffit	($26,938)	1		
A-08a	Updated soffit plan reduction from JCJ - with Pac-Cloud perforated soffit - This option replaces the wood soffits with metal.	($720,103)	1	Includes deletion of skylight that was within North Entrance canopy	
A-09	Delete exterior mechanical screening on the high roof	($232,213)	1		
A-10	Delete classroom exterior doors (other than K and Pre-K) - inc. leaves, hardware, security, and landscape features along the North elevation. This includes Art and pavers outside Art.	($159,715)	1	Confirm that Art doors and pavers are not part of this VE item (i.e., still in the estimate)	
A-11b	Upper interior vestibule glass wall deleted per updated design by JCJ	($77,554)	1		
A-12	Delete slide from bridge -> first floor	$0	1	Not included per 6/29 call	
A-13	Lower first floor elevation by 6-inches (includes associated reductions in retaining walls, height of exterior stairs/ lengths of ramps)	($146,105)	1		
A-13a	Lower building elevation additional 3" and reduce site fill costs	($73,053)	1		
A13b	Lower upper playground further	$0	1	assume 9" reduction. WTR to confirm earthwork savings.	
A-14	duplicate - see item A-01	$0	1		
A-15	Change exterior brick masonry from modular to jumbo sized units	($81,044)	1	affects all VE items w/masonry	
A-16	Utilize thermal break masonry ties in lieu of green girt at masonry	($410,034)	1	affects all VE items w/masonry. Note, green girt (SmartCI - is very expensive and not required for masonry installation or thermal performance)	
A-17	~~Replace metal panels with Nichiha fiber cement board to 3' above ground. Add ground face block below. Change precast concrete panels to ground face as well.~~ - Change precast concrete panels to ground face CMU at classroom wing. At Cafeteria area, keep CMP 3' off the ground and have a 3' ground face CMU wall base.	($39,624)	1		
A-23	Reduce slab insulation to perimeter of building only	($186,788)	1	current codes do not require. LEED impact?	
A-23a	Eliminate damproofing on foundation walls	($30,503)	1	current codes do not require. LEED impact?	

VE #	VE Description	Total Cost Impact W/ Markup	Status (1 to 5)	Remarks	Program Related
A-24	Reduce second floor to deck height at Classrooms and Media Center from 15'4" to 14'8" at classroom wing	($119,739)	1		
A-25	Reduce Gym footprint ~~1,500 SF~~ 750 SF (overall GSF reduction).	($226,889)	1	requires deletion of 2nd set of bleachers or less than regulation size gym	
A-27	Delete added fee for increase in GMP	($120,047)	1		
A-50	Reduce amount of wood ceiling finish by 50%. Replace with ACT	($101,155)	1		
A-52	Replace nana walls with storefront (project rooms). NOTE: nana walls are operable glass walls that can be opened up. Storefront would be fixed in place.	($16,893)	1		
A-53	Eliminate gym bleachers on one side of the gym (keep other side in place)	($30,252)	1	Many schools use team benches provided out of FFE	
A-54	Replace glass guards at monumental stair and bridge with metal pickets	($23,778)	1		
A-56	Fiberglass Reinforced Panels in kitchen in lieu of tile. These are typically in low visibility, high abuse areas.	($10,237)	1		
A-57	Gym Walls - use CMU in lieu of acoustic block. Acoustic panels (i.e., tectum panels) are already indicated as part of the design and are carried in the estimate. Should not need both.	($49,570)	1		
A-58	Reduce "portals" in corridors and classrooms. This refers to the short wing walls that extend into the corridors to create a project work space in the corridors. These wing walls are wrapped in wood wall paneling and thus are currently expensive. Also, the wing walls are "mirrored" in the classroom on the opposite side of the corridor wall and on the far (exterior) wall of the classroom as well.	($60,612)	1	JCJ to explore design options. The targeted savings here is half of the total portal cost. Most of the cost is in the wood lining of the corridor portals. Total cost = 120k, Targeted savings = 60k	?
A-59	Utilize HM frame and glazing w/glazed wood doors in lieu of interior storefront at Art, Media Center, Project Rooms, RES, Media Center and Gym. Need to add back storefront at Admin not reflected in drawings.	($61,025)	1		
A-60	Discuss Type IIA vs Type IIB construction.	$0	1	estimate includes firewall at HUB. Glazed areas to be sprinklered	
A-63	Delete vision lights in classroom doors	($10,666)	1		
A-64	Delete the glazing from the OH Door at the servery	($12,101)	1	Waiting on pricing to confirm savings	
A-66	Design to budget for markerboards, tackboards, and markerboard paint. Target $1.5 per GSF, which is typical for an elementary school	($67,424)	1		
A-68	Change wood treads/risers to rubber at central stair	($32,999)	1		
A-70	Reduce wet wall tile height to 6'	($40,165)	1		
A-71	Change corridor wood walls to ceramic tile	($246,472)	1		
A-72	utilize epoxy floors in lieu of ceramic tile at baths. Specify low grit finish to avoid maintenance concerns	($20,199)	1		
A-75	2'x2' ACT in corridors in lieu of 1'x4'	($31,898)	1		
A-76	Simplify cafeteria ceilings	($63,671)	1		
A-78	Delete GWB at underside of stairs	($4,531)	1		
A-79	Delete green screen, paint wall green	($18,151)	1		yes
A-80	Delete manual projection screens at classrooms	($18,151)	1		

VE #	VE Description	Total Cost Impact W/ Markup	Status (1 to 5)	Remarks	Program Related
A-81	Utilize plam countertops in lieu of solid surface countertops except at Art and Project Rooms	($44,434)	1	keep solid surface at art and project rooms	
A-82	Delete Aquarium	($42,958)	1		yes
A-83	Reduce circulation area by 500 SF (classroom corridors, gym corridors, or other areas if neccesary)	($151,259)	1		
A-84	Delete motorized security grills in the Hub and revise HUB shut down approach at stairs	($72,605)	1		
A-85	Revised GSF per updated floor plans 7-11-18	($221,444)	1		
M-02	HVAC - Radiant panels at perimeter instead of fin tube (architectural savings as well)	$0	1	Radiant panels are in the base estimate. At this stage, radiant panels and fin tube are carried at the same cost in the estimate. Fin tube may require additional pipe runs to the floor. Recommend review at DD.	
M-07	Eliminate two toilets in SPED rooms on 2nd floor	($24,202)	1		
M-08	Eliminate one toilets in SPED rooms on 1st floor	($12,101)	1		
E-01	Delete sound systems at music, media center	($24,202)	1		yes
E-02	Utilize lightning preventer vs lighting protection	($30,252)	1	WTR/GGD to advise. Engineer review. Send info to Ari for confirmation with insurance company	
E-03	Use Aluminum conductors in lieu of copper conductors 100A and above	($40,556)	1		

SCHEMATIC DESIGN
AGENDAS, PRESENTATIONS & MEETING MINUTES

SECTION 4.1.8

A4

4.1.8 – LOCAL ACTIONS AND APPROVAL CERTIFICATION

- List of SBC, Community Forums and School Committee meeting dates
- Agendas, Materials Presented, Certified Meeting Minutes (Organized by Date)
  - March 27, 2018 – SBC Meeting #21
  - April 10, 2018 – SBC Meeting #22
  - April 26, 2018 – SBC Meeting #23
  - May 1, 2018 – MEP & Sustainability Meeting
  - May 1, 2018 – SBC Meeting #24 (CM Interviews)
  - May 8, 2018 – SBC Meeting #25
  - May 22, 2018 – SBC Meeting #26
  - May 30, 2018 – Community Meeting #4 (Morning & Evening)
  - June 12, 2018 – SBC Meeting #27
  - June 19, 2018 – SBC Meeting #28
  - June 26, 2018 – SBC Meeting #29
  - July 9, 2018 – SBC Meeting #30
  - July 16, 2018 – SBC Meeting #31 (Joint Meeting with School Committee)
- Signed Local Actions and Approval Certification

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4.1.8 – LOCAL ACTIONS AND APPROVAL CERTIFICATION

The Manchester-Essex Regional School District has undergone an extensive and completely transparent review process for the proposed building project. The material has been reviewed by variety of Committees through the open meeting guidelines and local meeting requirements in both Towns. The following pages include copies of the agendas, presentations and minutes from School Building Committee meetings and well as the presentations for the one (1) Community Meeting held on May 30 2018 as well as the May 8, 2018 MEP Systems Sub-Committee meeting which included discussions about the overall Sustainability approach . All of the meetings that occurred as part of the PDP and PSR phases are documented in the submitted report for each of those phases.

PRELIMINARY SCHEMATIC REPORT PHASE PROJECT MEETING DATES

- March 27, 2018 – SBC Meeting #21
- April 10, 2018 – SBC Meeting #22
- April 26, 2018 – SBC Meeting #23
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PRELIMINARY SCHEMATIC REPORT PHASE PROJECT MEETINGS

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+AGENDA

Project:	Manchester Memorial Elementary School	Project No:	MP17-114
Subject:	School Building Committee Meeting	Meeting Date:	3/27/2018
Location:	Manchester MS/HS – Library	Time:	7:00 PM
Distribution:	Attendees, Project File	Prepared By:	C.Shefferman

1. Call to Order
2. Previous Topics & Approval of February 13, 2018 Meeting Minutes
3. Invoices & Commitments for Review/Approval
    i. DWMP February OPM Invoice #12 in the amount of $7,142.85. (invoice attached). Vote expected.
    ii. JCJ February Designer Invoice #7 in the amount of $43,213.00. (invoice attached). Vote expected.
4. CM at Risk Schedule/Process
5. Discussion of Legal Counsel
6. Design Update/MSBA Submission Update
7. Schedule
8. Other Topics Not Reasonably Anticipated 48 hours prior to Meeting
9. Public Comments
10. Adjourn

MANAGEMENT PARTNERS, LLC

PROJECT MANAGERS
ARCHITECTS

Newburyport, MA 01950
260 Merrimac Street Bldg 7
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978.499.2944 fax

www.doreandwhittier.com

Manchester Memorial Elementary School

Schematic Design Phase - SBC Meeting #21

March 27, 2018



1. Call to Order
2. Previous Topics & Approval of February 13, 2018 Meeting Minutes
3. Invoices & Commitments for Review/Approval
4. CM at Risk Schedule/Process
5. Discussion of Legal Counsel
6. Design Update/MSBA Submission Update
7. Schedule
8. Next Steps
9. Other Topics Not Reasonably Anticipated 48 hours prior to Meeting
10. Public Comments
11. Adjourn

MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS



1. Call to Order



2. Previous Topics & Approval of February 13, 2018 Minutes

MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS



3. Invoices & Commitments for Review/Approval

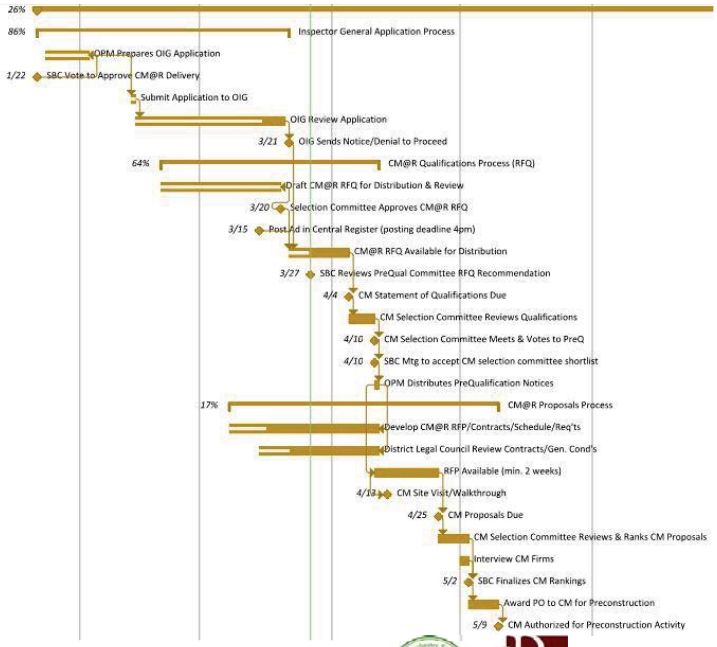
DWMP February OPM invoice No. 12 in the amount of $7,142.85

JCJ February Designer invoice No. 7 in the amount of $43,213.00

4. CM at Risk Schedule/Process

4. CM at Risk Schedule

26%	8	PROCUREMENT - CM@R (All TBD)	469 days	Mon 1/22/18	Thu 11/7/19
86%	8.1	**Inspector General Application Process**	**43 days**	**Mon 1/22/18**	**Wed 3/21/18**
100%		OPM Prepares OIG Application	8 days	Wed 1/24/18	Fri 2/2/18
100%		SBC Vote to Approve CM@R Delivery	0 days	Mon 1/22/18	Mon 1/22/18
100%		Submit Application to OIG	1 day	Tue 2/13/18	Tue 2/13/18
85%		OIG Review Application	25 days	Wed 2/14/18	Tue 3/20/18
0%		OIG Sends Notice/Denial to Proceed	1 day	Wed 3/21/18	Wed 3/21/18
64%		**CM@R Qualifications Process (RFQ)**	37 days	Tue 2/20/18	Wed 4/11/18
100%		Draft CM@R RFQ for Distribution & Review	20 days	Tue 2/20/18	Tue 3/20/18
100%		Selection Committee Approves CM@R RFQ	0 days	Tue 3/20/18	Tue 3/20/18
100%		Post Ad in Central Register (posting deadline 4pm)	0 days	Thu 3/15/18	Thu 3/15/18
25%		CM@R RFQ Available for Distribution	10 days	Thu 3/22/18	Wed 4/4/18
0%		SBC Reviews PreQual Committee RFQ Recommendation	0 days	Tue 3/27/18	Tue 3/27/18
0%		CM Statement of Qualifications Due	0 days	Wed 4/4/18	Wed 4/4/18
0%		CM Selection Committee Reviews Qualifications	4 days	Thu 4/5/18	Tue 4/10/18
0%		CM Selection Committee Meets & Votes to PreQ	0 days	Tue 4/10/18	Tue 4/10/18
0%		SBC Mtg to accept CM selection committee shortlist	0 days	Tue 4/10/18	Tue 4/10/18
0%		OPM Distributes PreQualification Notices	1 day	Wed 4/11/18	Wed 4/11/18
17%	8.3	**CM@R Proposals Process**	45 days	Thu 3/8/18	Wed 5/9/18
25%		Develop CM@R RFP/Contracts/Schedule/Req'ts	25 days	Thu 3/8/18	Wed 4/11/18
25%		District Legal Council Review Contracts/Gen. Cond's	20 days	Thu 3/15/18	Wed 4/11/18
0%		RFP Available (min. 2 weeks)	11 days	Wed 4/11/18	Wed 4/25/18
0%		CM Site Visit/Walkthrough	0 days	Fri 4/13/18	Fri 4/13/18
0%		CM Proposals Due	0 days	Wed 4/25/18	Wed 4/25/18
0%		CM Selection Committee Reviews & Ranks CM Proposals	5 days	Thu 4/26/18	Wed 5/2/18
0%		Interview CM Firms	2 days	Tue 5/1/18	Wed 5/2/18
0%		SBC Finalizes CM Rankings	0 days	Wed 5/2/18	Wed 5/2/18
0%		Award PO to CM for Preconstruction	5 days	Thu 5/3/18	Wed 5/9/18
0%		CM Authorized for Preconstruction Activity	0 days	Wed 5/9/18	Wed 5/9/18



JCJARCHITECTURE

4. CM at Risk - Milestones

4/4/18- CM Statement of Qualifications Due

4/10/18-CM Prequalification Committee Meets & Votes to Prequalify

4/11/18-CM RFP Available-CM Contract and GC's Due

4/13/18-CM Site Visit Walk Through

4/24/18-CM Proposals Due

5/1/18-SBC Meeting-Interview CM Firms

5/2/18-SBC Meeting-Interview Cm Firms (Select CM)

JCJARCHITECTURE

4. CM at Risk – RFQ Holders

Requests:

1. W.T. Rich Company, Inc.
2. Monitor Builders
3. Shawmut Construction
4. Consigli Construction
5. Cosentini Associates
6. Bond Brothers

5. Discussion of Legal Counsel

6. Design Update/MSBA Submission Update

7. Schedule

MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS

JCJARCHITECTURE

2018 March

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
26	27	28	01	02
05	06	07	08	09
12	13	14	15	16
19	20	21 MSBA FAS Meeting 11:10a	22	23
26	27 SBC Meeting - 7p	28 Teacher & Staff Meetings - All Day	29	30

2018 April

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
26	27	28	29	30
02 Manchester Town Mtg. - 7p	03	04 CM Statement of Qualifications Due	05	06
09	10 CM PreQ WG - 6p SBC Meeting - 7p	11 CM RFP Available (Contract and GC's Due)	12	13 CM Site Visit Walkthrough - Time TBD
16	17	18	19	20
23	24 CM Proposals Due	25	26 SBC Meeting - 7p	27

2018 May

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
30	01 SBC/CM Interviews - 7p	02 SBC/CM Interviews - 7p	03	04
07	08 SBC Meeting - 7p	09	10	11
14	15	16	17	18
21	22 SBC Mtg - 7p	23 Comm. Meeting No. 4	24	25
28	29	30	31	01

8. Next Steps

Next Steps

4/10	SBC Meeting-Design Update
4/26	SBC Meeting-Design Update
5/1	SBC Meeting-Interview CM Firms
5/2	SBC Meeting-Interview CM Firms (Select CM)
5/8	SBC Meeting-Design Update/Sustainability Review
5/22	SBC Meeting-Design Update/Comm Meeting #4 Review
5/23	Community Meeting #4
6/12	SBC Meeting-Review Cost Estimate
6/26	SBC Meeting-Review Cost Estimates/SD Package Approval

8. Other Topics Not Reasonably Anticipated (48 hours prior to meeting)

9. Public Comments

10. Adjourn

THANK YOU

MEETING MINUTES

MANAGEMENT PARTNERS, LLC

Project:	Manchester Memorial Elementary School	Project No:	MP17-114
Subject:	School Building Committee/School Committee Meeting	Meeting Date:	3/27/2018
Location:	Manchester MS/HS – Library	Time:	7:00 PM
Distribution:	Attendees, Project File	Prepared By:	C.Shefferman

Present	Name	Affiliation	Present	Name	Affiliation
✓	Caroline Weld *	SBC Co-Chair	✓	Jim LaPosta	JCJ
✓	Ann Cameron *	SBC Co-Chair	✓	Daniel Ruiz	JCJ
✓	Pam Beaudoin *	Superintendent		Lauren Braren	JCJ
✓	Avi Urbas *	Dir. of Fin. & Ops		Emily Czarnecki	JCJ
✓	Alva Ingaharro *	Essex	✓	Mike Burton	DWMP
	John Willis *	Principal MMES	✓	Steven Brown	DWMP
✓	Jay Pagliarulo	Dir. of Facilities	✓	Christina Shefferman	DWMP
✓	Andy Oldeman *	Man. Fin. Comm.			
✓	Lisa O'Donnell *	Essex B.O.S.			
✓	Remko Brueker *	Manchester			
✓	Adam Zaiger *	Manchester			
✓	Tyler Virden *	Essex			
✓	George Scharfe *	Manchester			
✓	Gordon Brewster *	Manchester			
✓	Charlie Hay *	Essex			
	Sarah Creighton *	Manchester			
	Maggie Tomaiolo *	Essex			
✓	Jake Foster *	Essex			

Action Items:

Item No.	Responsible Party:	Description
21.6	ALL	PSR Review Comments Response

** SBC Voting Member*

PROJECT MANAGERS
ARCHITECTS

Newburyport, MA 01950
260 Merrimac Street Bldg 7
978.499.2999 ph
978.499.2944 fax

www.doreandwhittier.com

Item No.	Description	Action
21.1	Call to Order: 7:02 pm meeting was called to order by the SBC Co-Chair Caroline Weld with 14 of 17 voting members in attendance. S. Brown of DWMP notes the meeting will follow the Power Point presentation that is being projected on the screen and to follow the agenda that was provided to the SBC prior to the meeting via Dropbox.	Record
21.2	Previous Topics & Approval of February 13, 2018 Meeting Minutes: A motion to approve the 2/13/2018 meeting minutes as submitted made by A. Oldeman and seconded by A. Ingaharro. Discussion: None. Vote: All in favor: Motion passes, minutes approved.	Record
21.3.1	Invoices & Commitments for Approval: DWMP invoice no. 12 in the amount of $7,142.85 (invoice attached) vote expected. Motion made by G. Scharfe to approve invoice no. 11 in the amount of $7,142.85, 2nd by A.Ingaharro. Discussion: None. Vote: Unanimous to approve.	Record
21.3.2	Invoice & Commitments for Approval: JCJ invoice no. 7 for Designer Feasibility services in the amount of $43,213.00 (invoice attached) vote expected. Motion made by G. Scharfe to approve invoice no. 7 in the amount of $42,213.00, 2nd by C. Weld. Discussion: None. Vote: Unanimous to approve.	Record
21.4	CM at Risk Schedule/Process: S. Brown directs SBC to meeting packet reviewing the cm procurement schedule. An outline of the discussion is below: ➢ 4/4/18-CM Statement of Qualifications Due ➢ 4/10/18-CM Prequalification Committee Meets & Votes to Prequalify ➢ 4/11/18-CM RFP Available-CM Contract and CG's Due ➢ 4/13/18-CM Site Visit Walk Through ➢ 4/24/18-CM Proposals Due ➢ 5/1/18-SBC Meeting-Interview CM Firms ➢ 5/2/18-SBC Meeting-Interview CM Firms (Select CM) The SBC was informed that on behalf of the district, DWMP received 5 SOQ's, Colantonio, Commodore Builders, Consigli, Shawmut, and WT Rich. The RFQ and SOQ have both been uploaded to the project dropbox for the SBC to view. The RFP will be issued on 4/11/18, DWMP to send draft RFP to prequalification committee to review prior to issuing.	Record
21.5	Discussion of Legal Counsel: A motion was made to approve MERSD and the project team to hire Bob Gerrity as legal counsel for the project. Discussion: None. Vote: Unanimous to approve.	Record
21.6	Design Update/MSBA Submission Update: J. Laposta provides the SBC with a PSR submission update regarding the FAS subcommittee meeting that the team attended on 3/21/18. An outline of the discussion is below: ➢ Provided a brief 20-minute presentation to the sub committee ➢ Feedback was very positive ➢ Small about of comments received regarding PSR that need to be addressed ➢ Supported the 4 PRE-K classrooms ➢ Complimentary of the educational program Comments and response will be sent to MSBA by 4/4/18. The District, JCJ, and DWMP are all working on the response.	ALL

21.7.1	Schedule: S. Brown recaps the schedule/calendar slides attached in the packet. An outline of the discussion is below: ➢ 3/28/18-Teacher and Staff Meetings at MMES ➢ 4/2/18-Manchester Town Meeting ➢ 4/4/18-CM SOQ's Due ➢ 4/10/18-CM Prequal Committee Meeting/SBC Meeting ➢ 4/11/18-CM RFP Available (Contract and CG's Due) ➢ 4/13/18-CM Walk Through ➢ 4/24/18-CM Proposals Due ➢ 4/26/18-SBC Meeting ➢ 5/1/18-CM Interviews ➢ 5/2/18-CM Interviews (Select CM) ➢ 5/8/18-SBC Meeting ➢ 5/22/18-SBC Meeting ➢ 5/23/18-Community Meeting #4	Record
21.7.2	Schedule/JCJ Workplan: J. Laposta reviews JCJ workplan. An outline of the discussion is below: ➢ 4/10/18-SBC Meeting-Schematic Design Begins • Project update, precedent study & imagery, design update ➢ Late April (Time and Date TBD)-Safety and Security Meeting • Review safety and security goals with district ➢ 4/26/18-SBC Meeting-Schematic Design • Project update, design update (massing, floor plans, site plan) ➢ Late April (Time and Date TBD)-Sustainability Goals Meeting • Review PSR assumptions/refine for SD ➢ Late April (Time and Date TBD)-MEP Subcommittee Meeting • Review proposed systems approach and decision points ➢ 4/30/18-Design Subcommittee Meeting • Review design process ➢ 5/8/18-SBC Meeting-Schematic Design • Project update, design update, sustainability, building systems ➢ Mid May (Time and Date TBD)-Safety and Security Meeting • Introduce project to first responders (Fire and Police) ➢ 5/22/18-SBC Meeting-Schematic Design • Project update, review comm #4 presentation, building systems, design ➢ 5/23/18-Community Meeting #4 • Project update, SD design progress ➢ 5/23/18-Send SD package for estimating ➢ 6/8/18-Reconcilation of Estimates After reviewing JCJ's workplan the SBC requested that P. Beaudoin, A. Urbas and J. Willis be a part of the sub meetings. The District recommended that as part of the sustainability goals meeting that the green communities grant group be involved in the discussion. D. Ruiz states that meetings with ConCom also need to be added to the schedule. R. Breuker to be included in ConCom discussion and meetings.	Record
21.8.1	Other Topics Not Reasonably Anticipated (48 hours prior to meeting): P. Beaudoin states that Manchester Town Meeting is Monday 4/2/18 at 7pm. The town has allowed District 5	Record

	minutes to provide a brief project update. DWMP and the District to review materials for update.	
21.8.2	Other Topics Not Reasonably Anticipated (48 hours prior to meeting): A. Cameron asks whether the SBC or group has thought or considered combing the MMES and EES projects together. There have been discussions between some SBC members on what this would mean for the MMES project. An outline of the discussion is below: ➢ Concerns about Essex passing the vote for the MMES project ➢ Concerns whether Essex will get MSBA approval to move forward once MMES has been completed ➢ EES is in better shape than MMES. The District has continued to maintain and update EES. ➢ According to the Habeeb Report, MMES was the priority. EES is in better shape and condition than MMES. ➢ Windows, roof, lighting, painting have all been updated at EES ➢ Upcoming Essex projects include the new fire station, upgrades to the existing public safety building for the police department, and studies of the town water system. ➢ Essex may not welcome the idea to combine schools instead of waiting since they have other projects scheduled After discussion it was determined that the District may want to have JCJ look at the layout of EES and determine whether some minor changes within existing spaces could be made to help fit the educational program. The District to confirm if JCJ will evaluate.	District
21.8.3	Other Topics Not Reasonably Anticipated (48 hours prior to meeting): A meeting for families with younger children that are anticipating joining the MERSD school system will be held on 4/26/18 at 10am at the Manchester Community Center.	Record
21.9	Public Comments: None.	Record
21.10	Adjourn: A motion was made by G. Scharfe and seconded by A. Ingaharro to adjourn the meeting. Discussion: None. Vote: Unanimous to approve. Meeting adjourned at 8:45 pm.	Record

Attached:
SBC Meeting Agenda, Sign In Sheet, SBC Meeting No. 20 2/13/18 Meeting Minutes, Manchester Memorial Elementary School Presentation 3/27/18

DORE AND WHITTIER MANAGEMENT PARTNERS, LLC.

Christina Shefferman
Assistant Project Manager
Cc: Attendees, File

The above is my summation of our meeting. If you have any additions and/or corrections, please contact me for incorporation into these minutes.

PRELIMINARY SCHEMATIC REPORT PHASE PROJECT MEETINGS

- March 27, 2018 – SBC Meeting #21
- April 10, 2018 – SBC Meeting #22
- April 26, 2018 – SBC Meeting #23
- May 1, 2018 – MEP & Sustainability Meeting
- May 1, 2018 – SBC Meeting #24 (CM Interviews)
- May 8, 2018 – SBC Meeting #25
- May 22, 2018 – SBC Meeting #26
- May 30, 2018 – Community Meeting #4 (Morning & Evening)
- June 12, 2018 – SBC Meeting #27
- June 19, 2018 – SBC Meeting #28
- June 26, 2018 – SBC Meeting #29
- July 9, 2018 – SBC Meeting #30
- July 16, 2018 – SBC Meeting #31 (Joint Meeting with School Committee)

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AGENDA

Project:	Manchester Memorial Elementary School	Project No:	MP17-114
Subject:	School Building Committee Meeting	Meeting Date:	4/10/2018
Location:	Manchester MS/HS – Library	Time:	7:00 PM
Distribution:	Attendees, Project File	Prepared By:	C.Shefferman

1. Call to Order
2. Previous Topics & Approval of March 27, 2018 Meeting Minutes
3. Invoices & Commitments for Review/Approval
    i. North of Boston Invoice No. 714297 for CM @ Risk ad in the amount of $173.06. (invoice attached). Vote expected.
    ii. DWMP Invoice No. 13 for SD phase activity in the amount of $7,142.85. (invoice attached). Vote expected.
    iii. JCJ Invoice No. 8 for Feasibility phase activity in the amount of $13,473.00. (invoice attached). Vote expected.
4. Schedule/Budget Update
5. CM at Risk Procurement Update
6. Project Update
7. Building Precedents and Imagery
8. Design Update
9. Other Topics Not Reasonably Anticipated 48 hours prior to Meeting
10. Public Comments
11. Adjourn

MANAGEMENT PARTNERS, LLC

PROJECT MANAGERS
ARCHITECTS

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978.499.2999 ph
978.499.2944 fax

www.doreandwhittier.com

MANCHESTER MEMORIAL ELEMENTARY SCHOOL

SCHEMATIC DESIGN PHASE
SBC MEETING #22
APRIL 10TH, 2018

TODAY'S AGENDA

PROJECT UPDATE

PRECEDENT STUDY

DESIGN UPDATE

PROJECT UPDATE

TEACHER/ STAFF INTERVIEWS

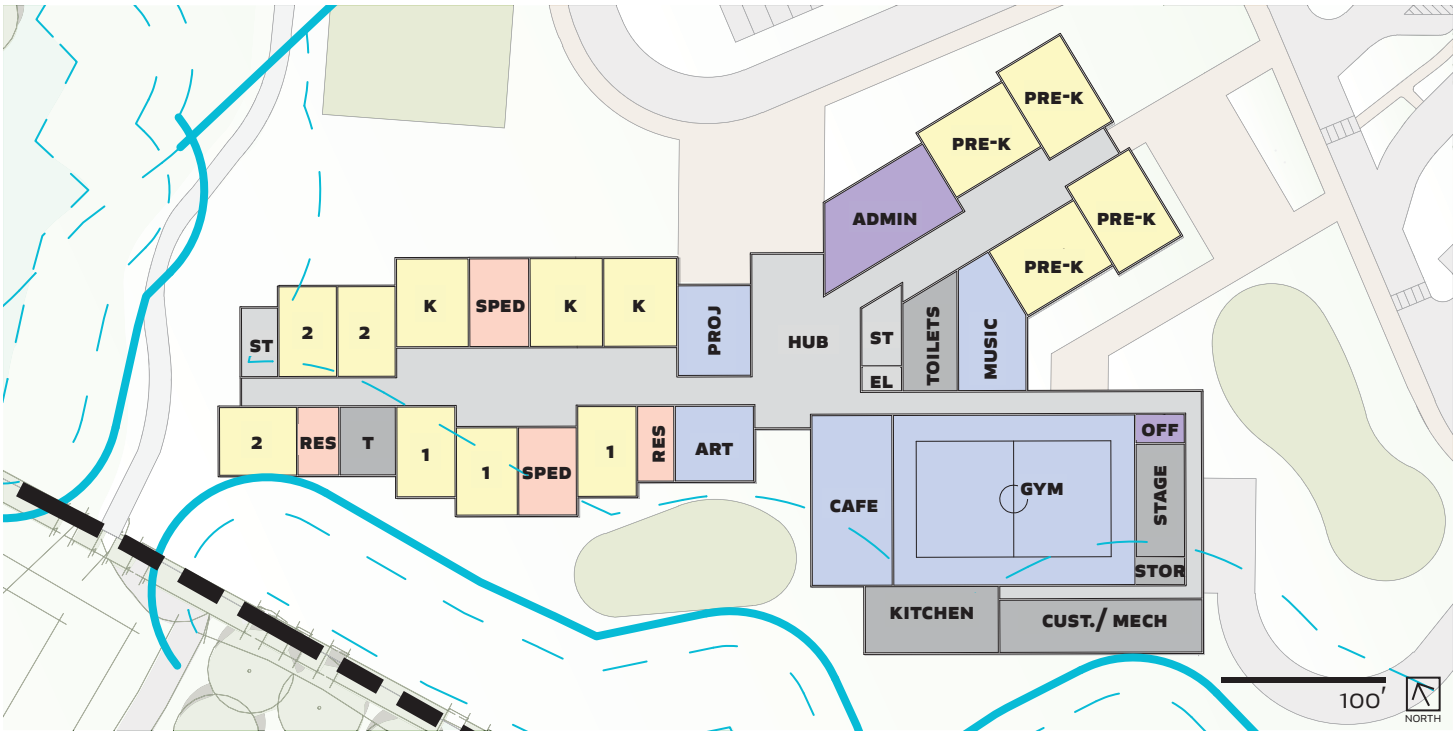
MET WITH:

- ADMINISTRATION (SOME)
- NURSING
- MUSIC
- PHYSICAL EDUCATION
- AUDITORIUM
- LIBRARY/ MEDIA
- ART
- CUSTODIAL/ MAINTENANCE
- SPECIAL EDUCAITON
- GRADES 1-5

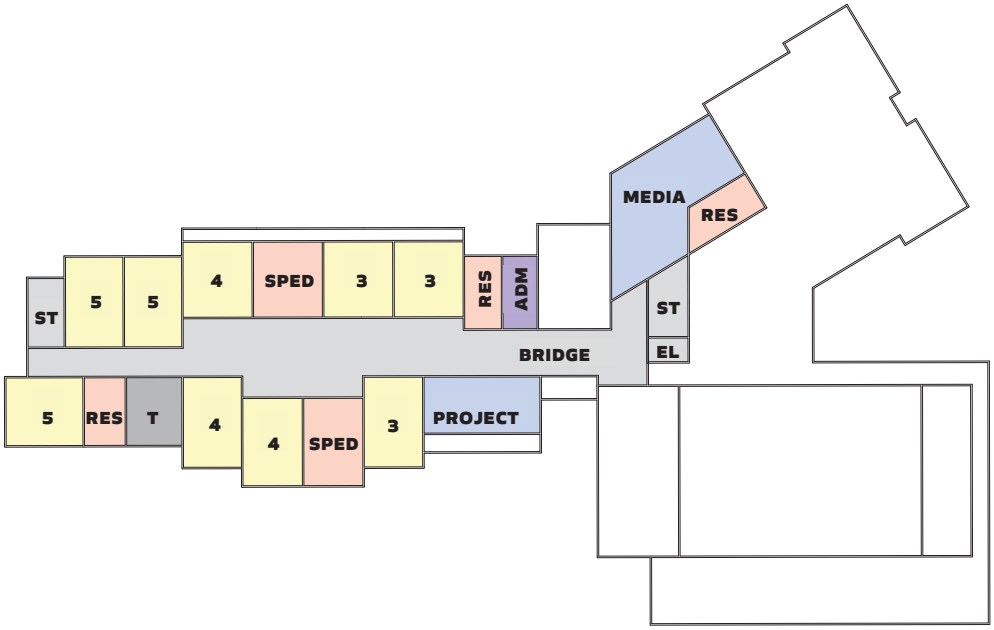
OUTSTANDING MEETINGS:

- PRE-KINDERGARTEN
- KINDERGARTEN
- ADMINISTRATION (THE REST)
- CAFETERIA
- PARKS & RECREATION

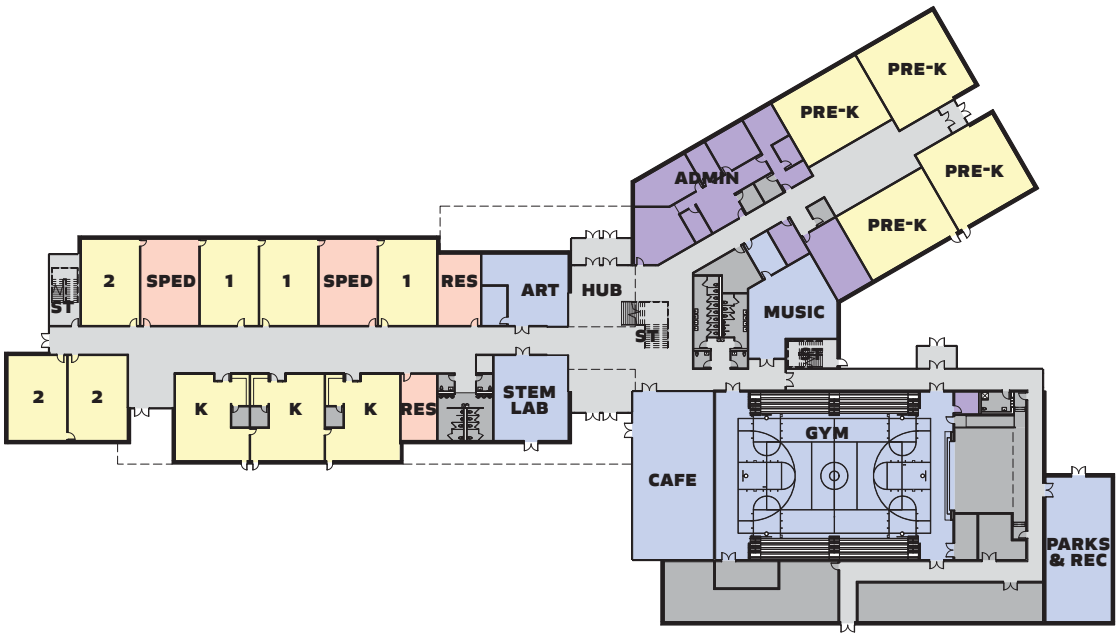
FIRST FLOOR PLAN AT PSR



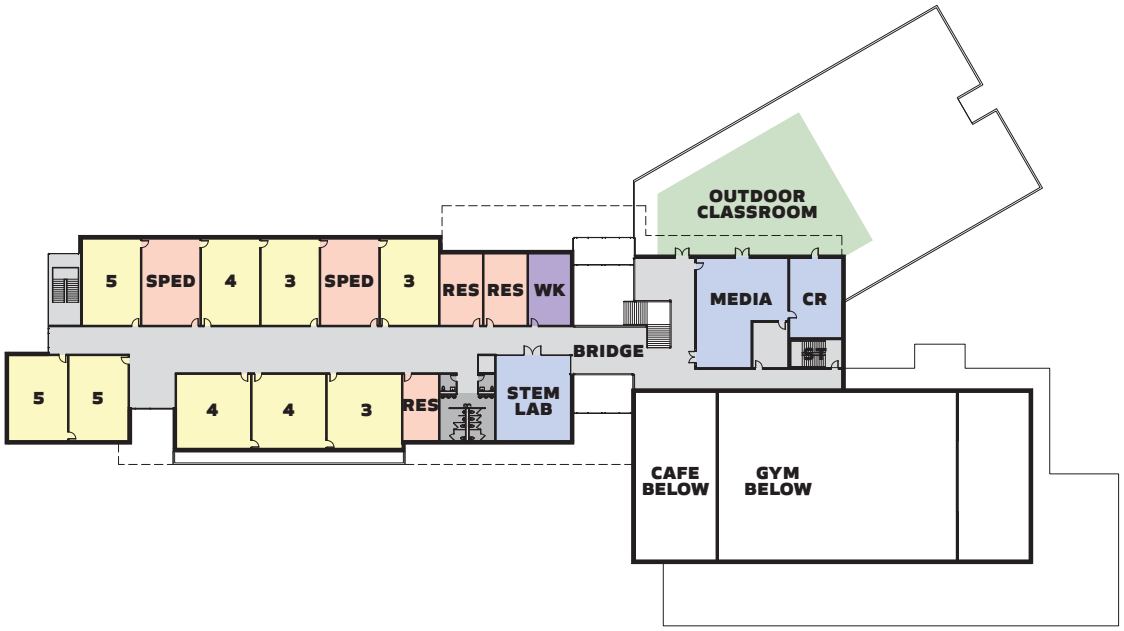
SECOND FLOOR PLAN AT PSR



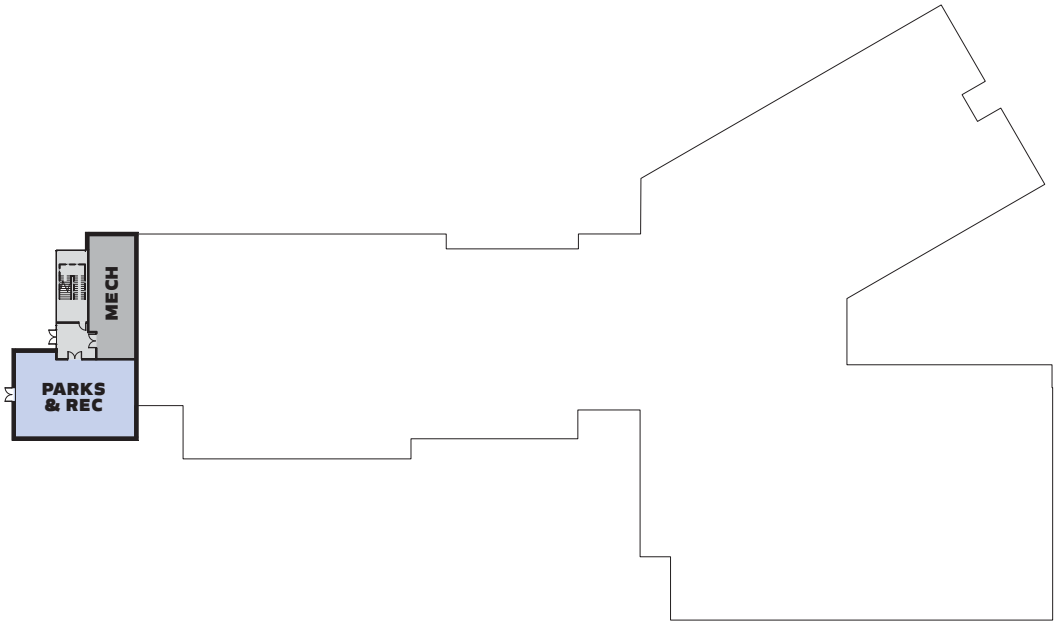
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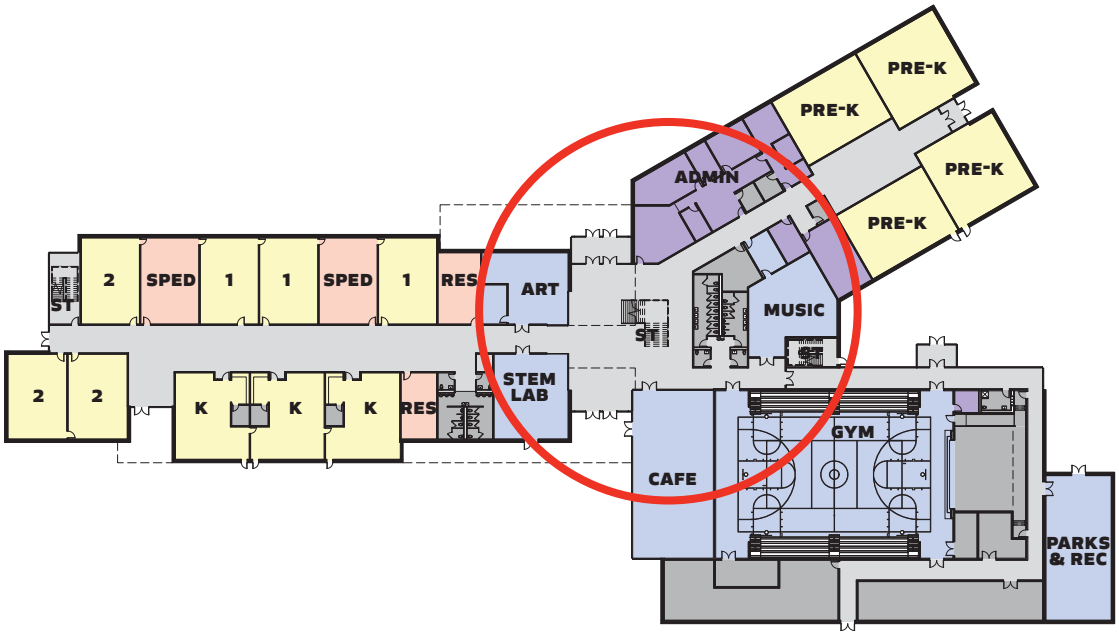
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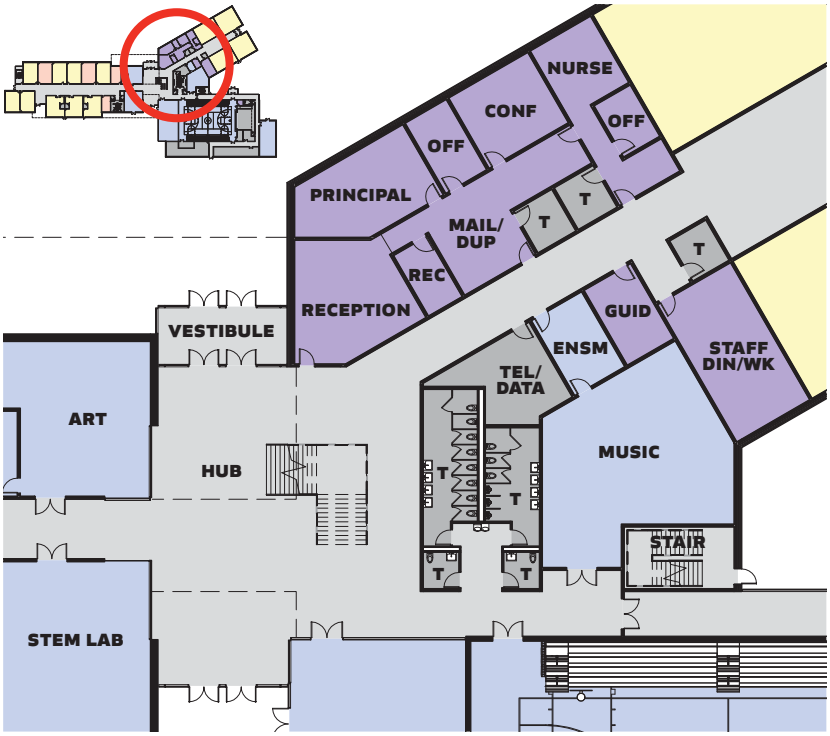
ALTERNATE LOWER LEVEL PLAN

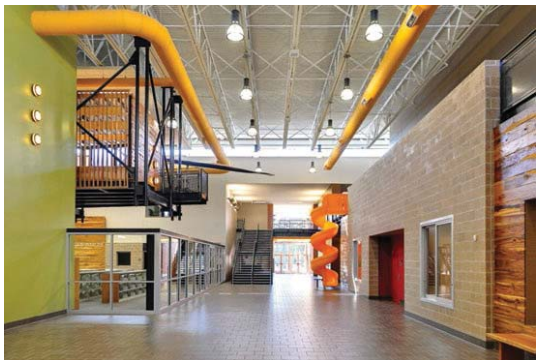


FIRST FLOOR KEY PLAN



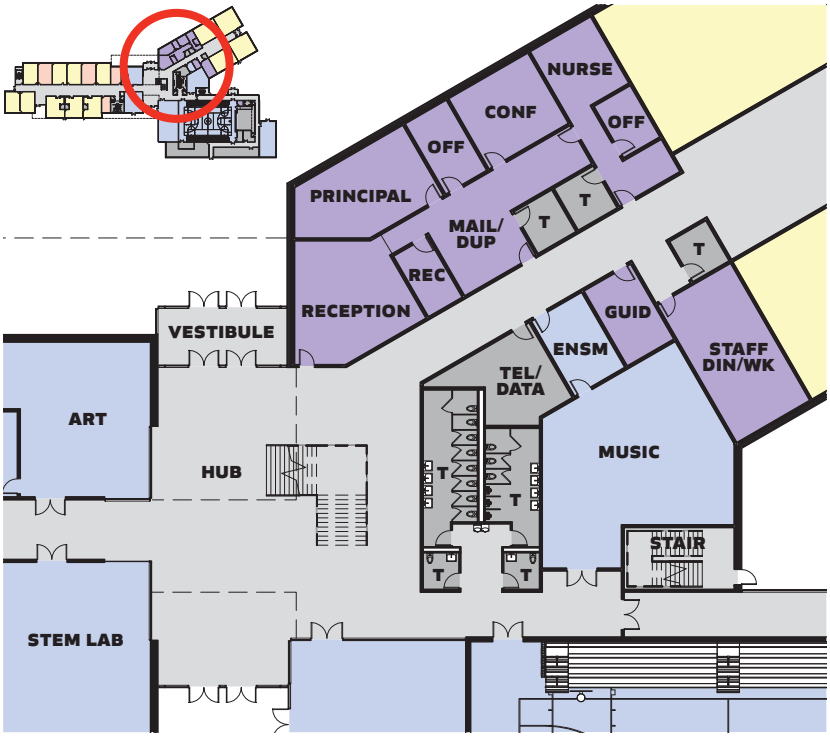
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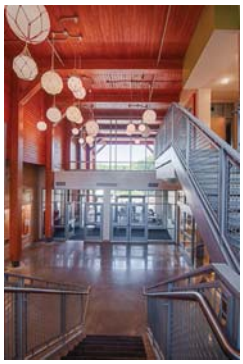




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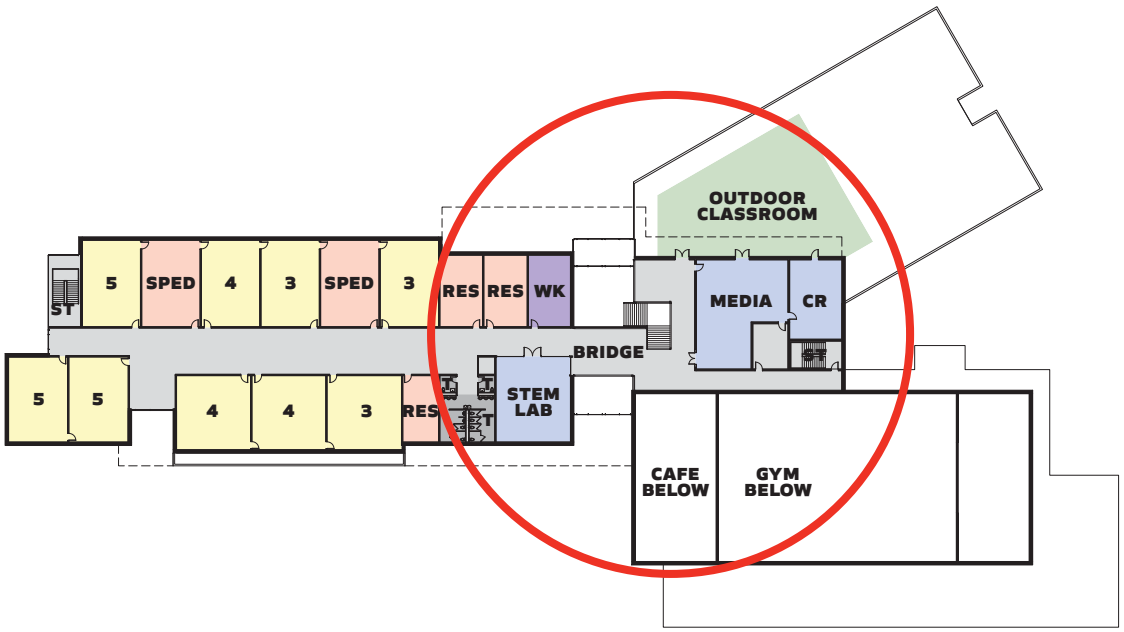
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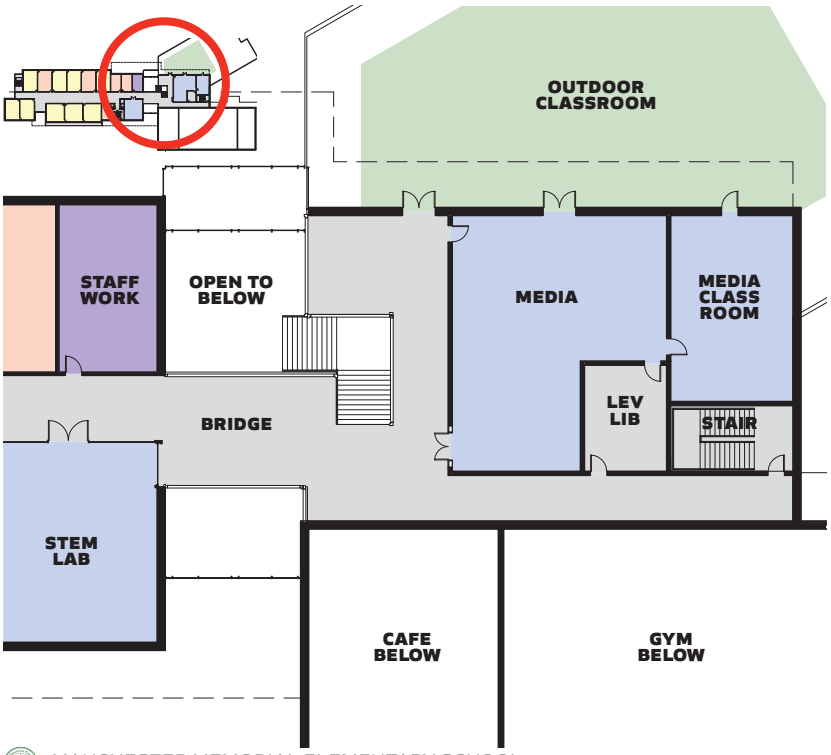
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SECOND FLOOR KEY PLAN



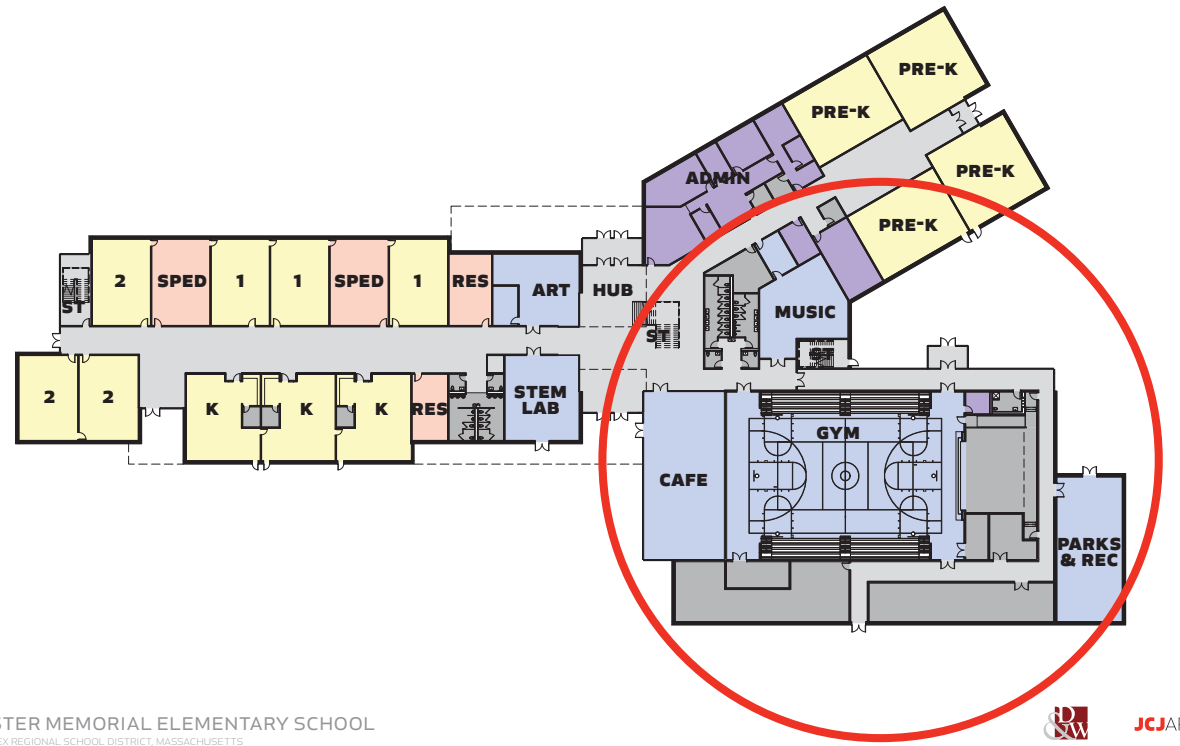
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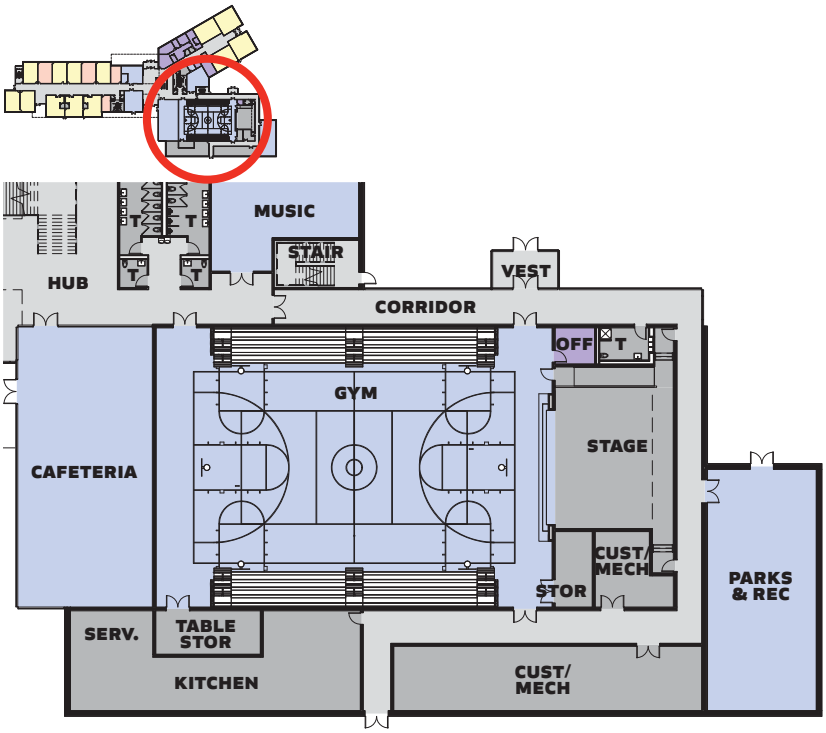




FIRST FLOOR KEY PLAN



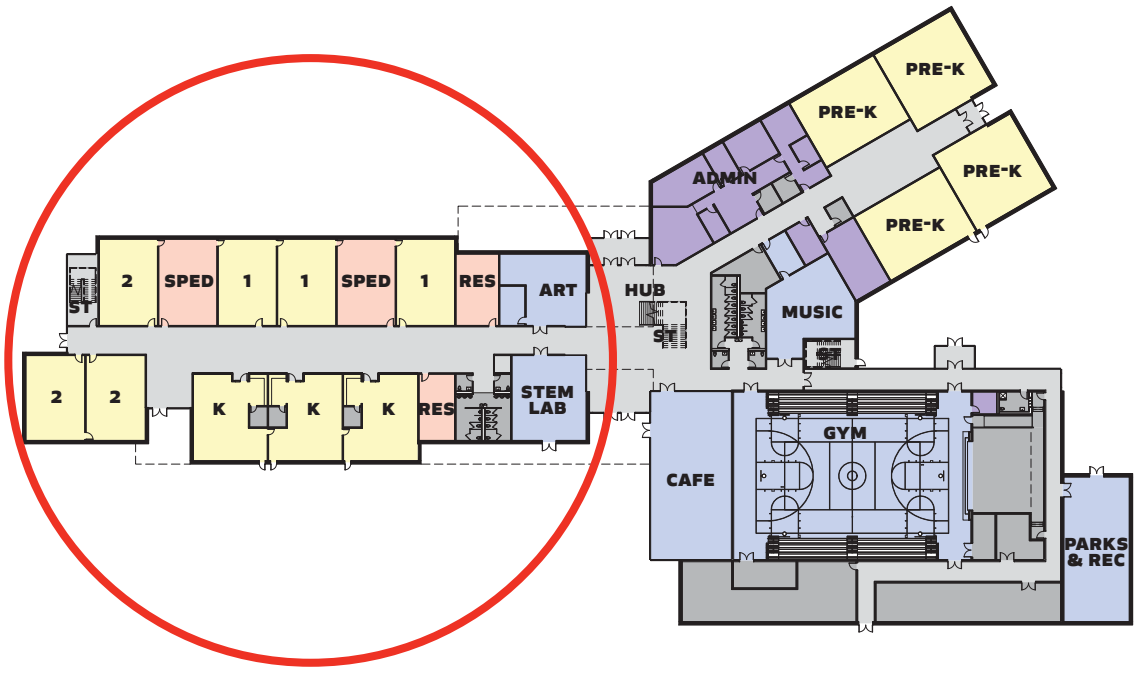
CAFETERIA/ GYMNASIUM/ STAGE



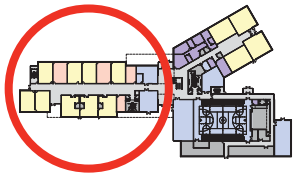


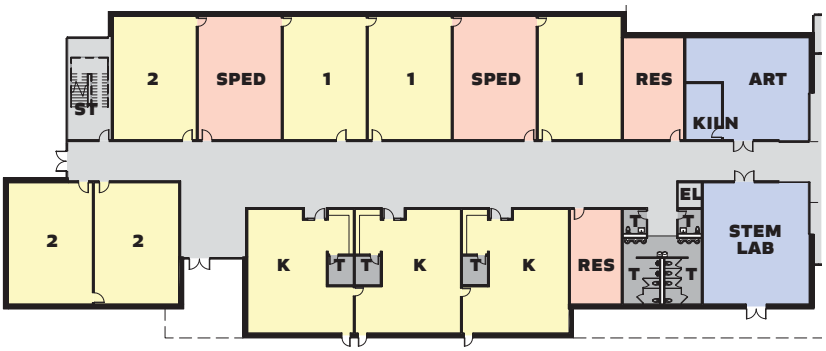


FIRST FLOOR KEY PLAN



CLASSROOM COMMUNITIES - FIRST FLOOR

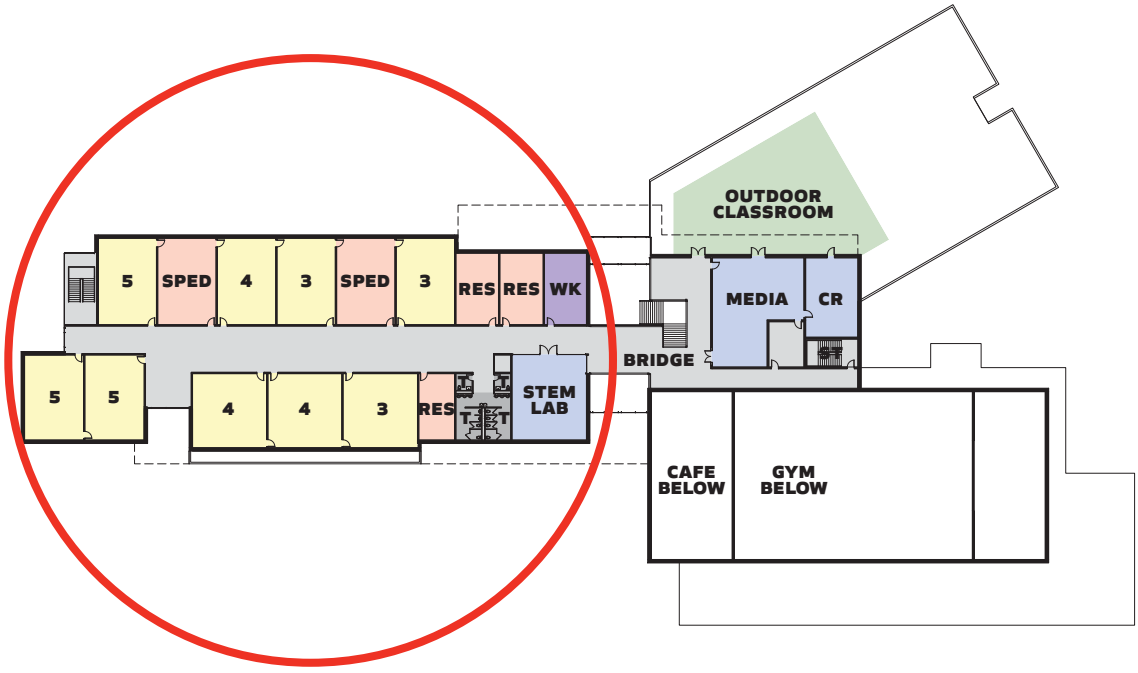




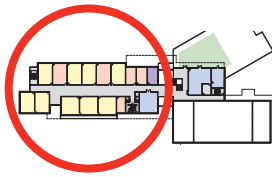


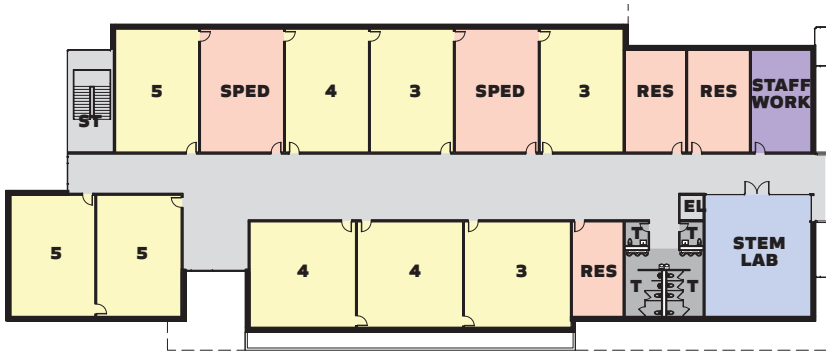


SECOND FLOOR KEY PLAN



CLASSROOM COMMUNITIES - SECOND FLOOR

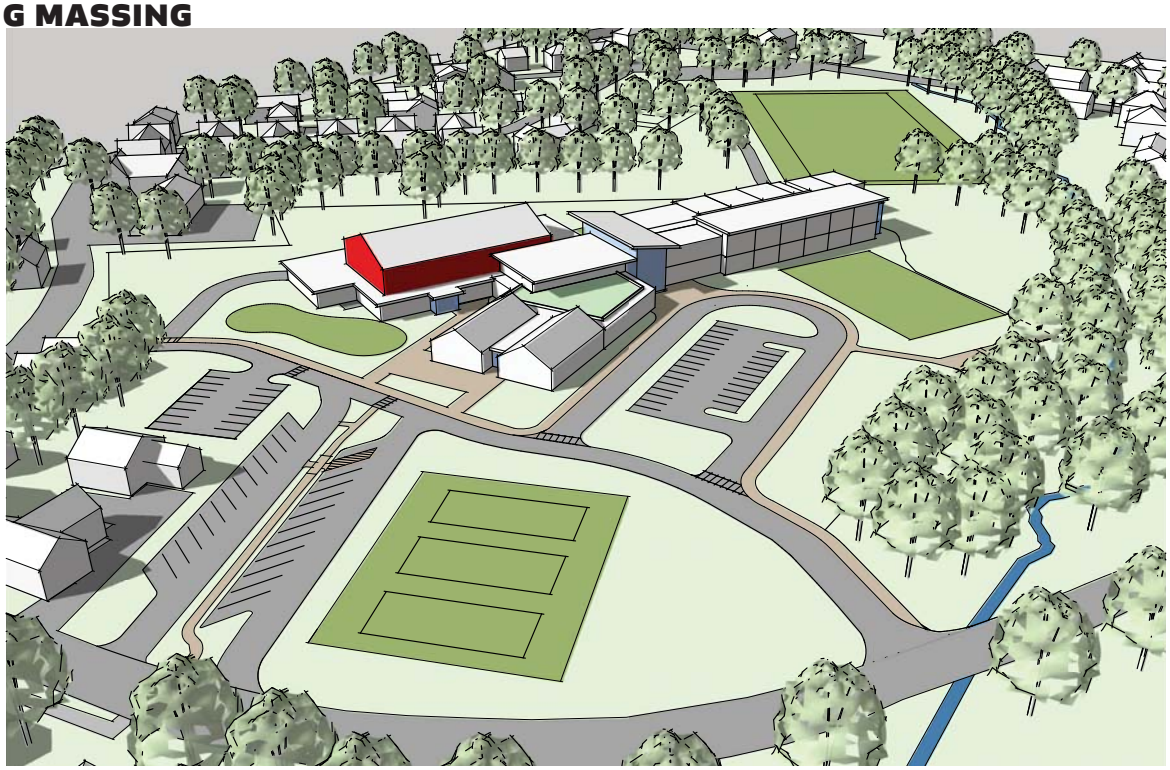








BUILDING MASSING



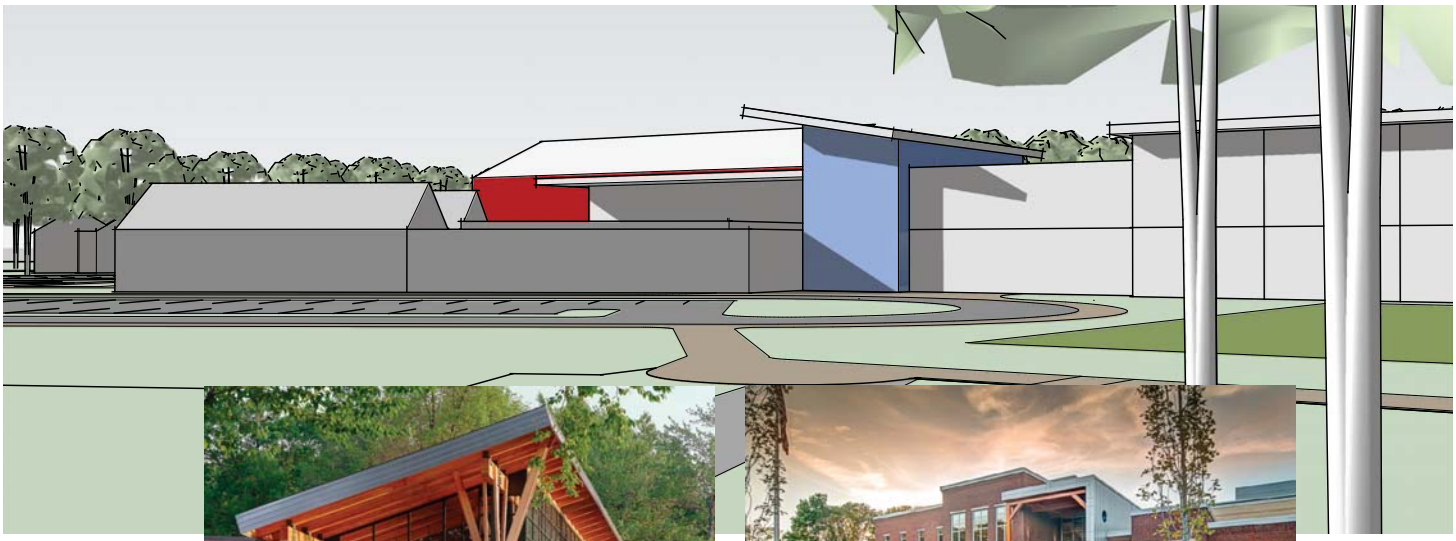
BUILDING MASSING







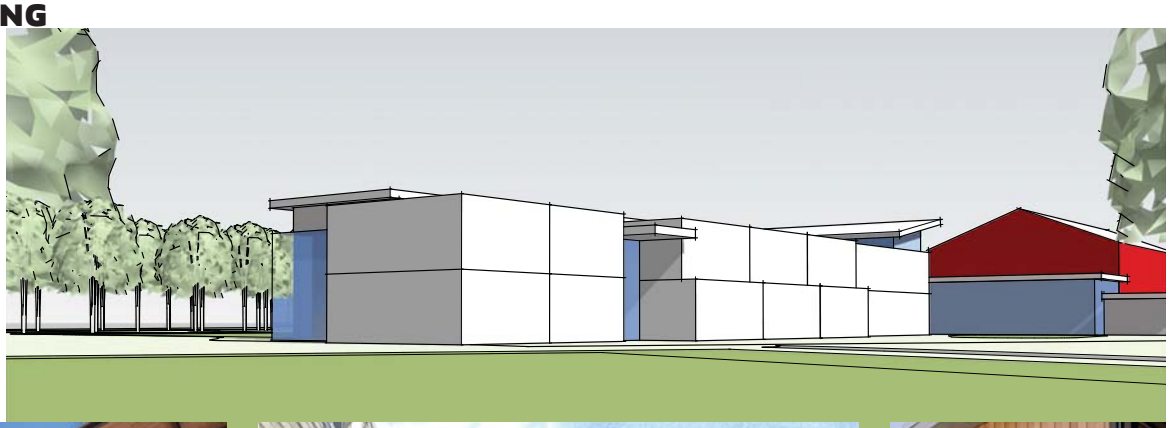
BUILDING MASSING







BUILDING MASSING









BUILDING MASSING







NEXT STEPS

4/26	SBC Meeting - Design Update
5/8	SBC Meeting - Design Update/ Interiors/ FF&E
5/22	SBC Meeting - Design Update/ Approval For Estimating
5/23	Community Meeting #4
6/12	SBC Meeting - Review Cost Estimates
6/26	SBC Meeting - Initial Approval of SD Package
7/9	SBC Meeting - Approval to Submit SD to MSBA

THANK YOU

MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS
JCJARCHITECTURE

MEETING MINUTES

MANAGEMENT PARTNERS, LLC

Project:	Manchester Memorial Elementary School	Project No:	MP17-114
Subject:	School Building Committee/School Committee Meeting	Meeting Date:	4/10/2018
Location:	Manchester MS/HS – Library	Time:	7:00 PM
Distribution:	Attendees, Project File	Prepared By:	C.Shefferman

Present	Name	Affiliation	Present	Name	Affiliation
	Caroline Weld *	SBC Co-Chair	✓	Jim LaPosta	JCJ
✓	Ann Cameron *	SBC Co-Chair	✓	Daniel Ruiz	JCJ
✓	Pam Beaudoin *	Superintendent	✓	Lauren Braren	JCJ
✓	Avi Urbas *	Dir. of Fin. & Ops		Emily Czarnecki	JCJ
✓	Alva Ingaharro *	Essex	✓	Mike Burton	DWMP
✓	John Willis *	Principal MMES	✓	Steven Brown	DWMP
	Jay Pagliarulo	Dir. of Facilities	✓	Christina Shefferman	DWMP
✓	Andy Oldeman *	Man. Fin. Comm.			
✓	Lisa O'Donnell *	Essex B.O.S.			
✓	Remko Brueker *	Manchester			
✓	Adam Zaiger *	Manchester			
✓	Tyler Virden *	Essex			
✓	George Scharfe *	Manchester			
✓	Gordon Brewster *	Manchester			
✓	Charlie Hay *	Essex			
✓	Sarah Creighton *	Manchester			
	Maggie Tomaiolo *	Essex			
✓	Jake Foster *	Essex			

Action Items:

Item No.	Responsible Party:	Description
22.9	ALL	Updated Workplan, WG Dates/Meetings

** SBC Voting Member*

PROJECT MANAGERS
ARCHITECTS

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Item No.	Description	Action
22.1	Call to Order: 7:05 pm meeting was called to order by the SBC Co-Chair A. Cameron with 15 of 17 voting members in attendance. S. Brown of DWMP notes the meeting will follow the Power Point presentation that is being projected on the screen and to follow the agenda that was provided to the SBC prior to the meeting via Dropbox.	Record
22.2	Previous Topics & Approval of March 27, 2018 Meeting Minutes: A motion to approve the 3/27/2018 meeting minutes as submitted made by G. Scharfe and seconded by J. Foster. Discussion: None. Abstentions: S. Creighton. Vote: All in favor: Motion passes, minutes approved.	Record
22.3.1	Invoices & Commitments for Approval: North of Boston Invoice no. 714297 in the amount of $173.06 (invoice attached) vote expected. Motion made by G. Scharfe to approve invoice no. 714297 in the amount of $173.06, 2nd by T. Virden. Discussion: None. Vote: Unanimous to approve.	Record
22.3.2	Invoice & Commitments for Approval: DWMP invoice No. 13 in the amount of $7,142.85 (invoice attached) vote expected. Motion made by G. Scharfe to approve invoice No. 13 in the amount of $7,142.85, 2nd by J. Foster. Discussion: None. Vote: Unanimous to approve.	Record
22.3.3	Invoice & Commitments for Approval: JCJ invoice No. 8 for Designer Feasibility services in the amount of $13,473.00 (invoice attached) vote expected. Motion made by G. Scharfe to approve invoice No. 8 in the amount of $13,473.00, 2nd by J. Foster. Discussion: None. Vote: Unanimous to approve.	Record
22.4	Schedule/Budget Update: S. Brown reviews the schedule update slide as well as the project budget slide. A recap of the discussion is outlined below: Schedule: ➢ 4/26-SBC Meeting-Design Update ➢ 5/1-SBC Meeting-Interview CM Firms ➢ 5/3-SBC Meeting-Select CM ➢ 5/8-SBC Meeting-Design Update ➢ 5/22-SBC Meeting-Design Update ➢ 5/23-Community Meeting No. 4 ➢ 6/12-SBC Meeting-Review Cost Estimate ➢ 6/26-SBC Meeting-Review Cost Estimates-SD Approval Budget: ➢ Currently there is $55,069.33 left in the project budget for the feasibility and schematic design phase of the project. $20,000 has been ear-marked for preconstruction SD services once the CM is on board, the remainder is contingency (legal fees, additional designer consultant survey if needed).	Record
22.5	CM at Risk Procurement Update: S. Brown provides SBC with an update regarding the CM at Risk procurement. An outline of the discussion is below: ➢ 5 SOQ's received • Colantonio, Commodore Builders, Consigli, Shawmut, W.T. Rich ➢ Prequalification committee met prior to SBC meeting and evaluated all SOQ's based on the established criteria. ➢ Based on evaluation of SOQ's set by criteria, G. Brewster on behalf of the prequalification committee provided the SBC with a recommendation to prequalify,	Record

	Consigli, Shawmut and W.T. Rich. The evaluations for the submitting CM firms were as follows: Colantonio - 61; Commodore – 65; Consigli – 100; Shawmut – 100; W.T. Rich – 90. The approved criteria set the prequalification requirement rating of 70 or higher. ➢ Criteria was heavily weighted based highly on proposed management personnel, and the firm's similar project history. A motion was made by G. Brewster and seconded by S. Creighton to prequalify Consigli, Shawmut and W.T. Rich and allow the 3 firms to submit an RFP. Discussion: None. All in favor: Motion passes.	
22.6	Project Update: JCJ presents the SBC with project update slides. An outline of the discussion is below: ➢ JCJ met with the MMES Teachers and Staff on 3/28/18 ➢ This included: • Administration, Nursing, Music, Physical Education, Auditorium, Library/Media, Art, Custodial/Maintenance, Special Education, Grades 1-5 ➢ Additional meetings needed: • Pre-K, Kindergarten, additional Administration, Cafeteria, Parks & Rec JCJ states that working groups for safety & security, sustainability, MEP, Design, etc. still need to be scheduled. JCJ to work with DWMP, and Owner on scheduling meetings with appropriate groups.	Record
22.7	Building Precedents and Imagery: L. Braren from JCJ presents building precedents and imagery slides to the SBC. An outline of the discussion is below: ➢ Updated First Floor Plan ➢ Updated Second Floor Plan ➢ Alternate Lower Level Plan ➢ Hub Key Plan ➢ Second Floor Key Plan ➢ First Floor Key Plan ➢ Cafeteria/Gymnasium/Stage ➢ Classroom Communities After the SBC reviewed the updated building precedents and imagery they had the following comments: ➢ SPED rooms are a full classroom, resource room can be used to pull a child from a regular classroom and use for one on one or small group. ➢ Parks and Rec might be best if it is moved up to the north end of the building along gym corridor. ➢ Possibility of adding a moving wall in the middle of the gymnasium to separate between classes, and or auditorium use. L. Braren presents SBC with building massing slides. The slides include birds eye views of the developing design of the building, potential gable style buildings for the pre-k wing, front entrance design, main classroom wing design, and the gymnasium. JCJ to develop further massing images for design working group meeting.	Record
22.8	Schedule: S. Brown recaps the schedule/calendar slides attached in the packet. An outline of the discussion is below: ➢ 4/11/18-CM RFP Available (Contract and CG's Due) ➢ 4/13/18-CM Walk Through	Record

	➢ 4/24/18-CM Proposals Due ➢ 4/26/18-SBC Meeting ➢ 5/1/18-CM Interviews ➢ 5/3/18-(Select CM) ➢ 5/8/18-SBC Meeting ➢ 5/22/18-SBC Meeting ➢ 5/23/18-Community Meeting #4	
22.9	Other Topics Not Reasonably Anticipated (48 hours prior to meeting): A. Urbas requests that JCJ provide an updated workplan with working group meetings to be scheduled asap. JCJ, DWMP, and the OWNER to discuss meeting dates and times.	ALL
22.10	Public Comments: A member from the public stated that she likes the idea to pull the parks and recreation forward towards end of the wing near the corridor. She also states maybe there is potential to make the stage deeper and eliminate some of the large corridor space. She also states that she likes the slanted roof design.	Record
22.11	Adjourn: A motion was made by G. Scharfe and seconded by S. Creighton to adjourn the meeting. Discussion: None. Vote: Unanimous to approve. Meeting adjourned at 9:12 pm.	Record

Attached:
SBC Meeting Agenda, Sign In Sheet, SBC Meeting No. 21 3/27/18 Meeting Minutes, North of Boston Invoice #714297, DWMP Invoice No. 13, JCJ Invoice No. 8, Manchester Memorial Elementary School Presentation 4/10/18

DORE AND WHITTIER MANAGEMENT PARTNERS, LLC.



Christina Shefferman
Assistant Project Manager
Cc: Attendees, File

The above is my summation of our meeting. If you have any additions and/or corrections, please contact me for incorporation into these minutes.

PRELIMINARY SCHEMATIC REPORT PHASE PROJECT MEETINGS

- March 27, 2018 – SBC Meeting #21
- April 10, 2018 – SBC Meeting #22
- April 26, 2018 – SBC Meeting #23
- May 1, 2018 – MEP & Sustainability Meeting
- May 1, 2018 – SBC Meeting #24 (CM Interviews)
- May 8, 2018 – SBC Meeting #25
- May 22, 2018 – SBC Meeting #26
- May 30, 2018 – Community Meeting #4 (Morning & Evening)
- June 12, 2018 – SBC Meeting #27
- June 19, 2018 – SBC Meeting #28
- June 26, 2018 – SBC Meeting #29
- July 9, 2018 – SBC Meeting #30
- July 16, 2018 – SBC Meeting #31 (Joint Meeting with School Committee)

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AGENDA

Project:	Manchester Memorial Elementary School	Project No:	MP17-114
Subject:	School Building Committee Meeting	Meeting Date:	4/26/2018
Location:	Manchester MS/HS – Library	Time:	7:00 PM
Distribution:	Attendees, Project File	Prepared By:	C.Shefferman

1. Call to Order
2. Previous Topics & Approval of April 10, 2018 Meeting Minutes
3. Schedule/Budget Update
4. CM at Risk Procurement Update
5. Project Update
6. Design Update
7. Other Topics Not Reasonably Anticipated 48 hours prior to Meeting
8. Public Comments
9. Adjourn

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MANCHESTER MEMORIAL ELEMENTARY SCHOOL

SCHEMATIC DESIGN PHASE
SBC MEETING #23
APRIL 26TH, 2018

TODAY'S AGENDA

PROJECT UPDATE

PRECEDENT STUDY

DESIGN UPDATE

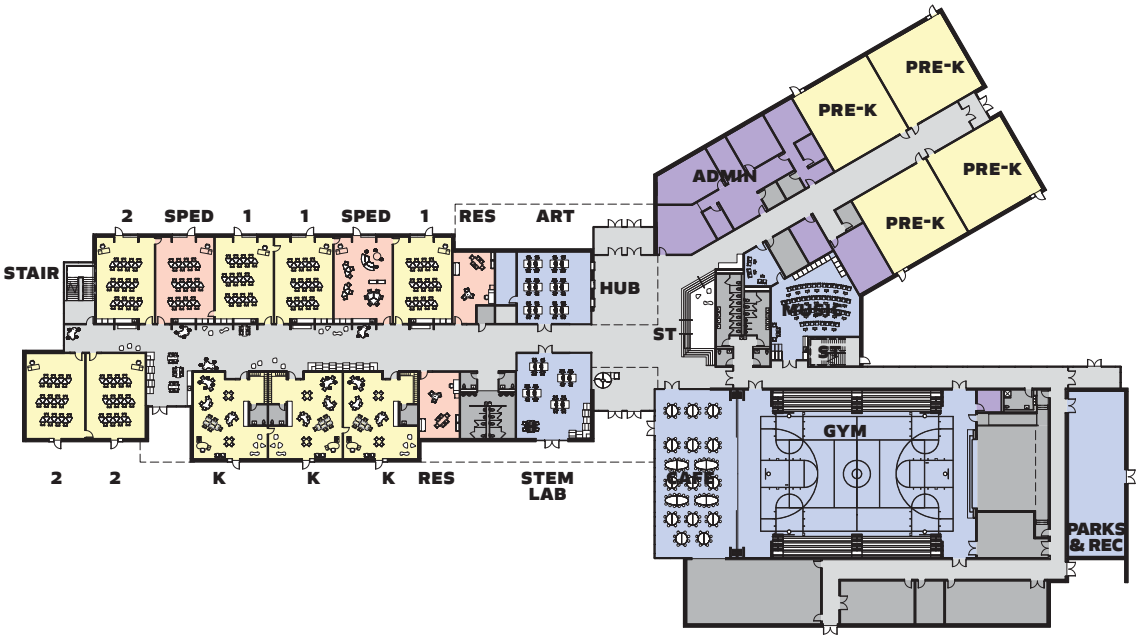
PROJECT UPDATE

MEETINGS

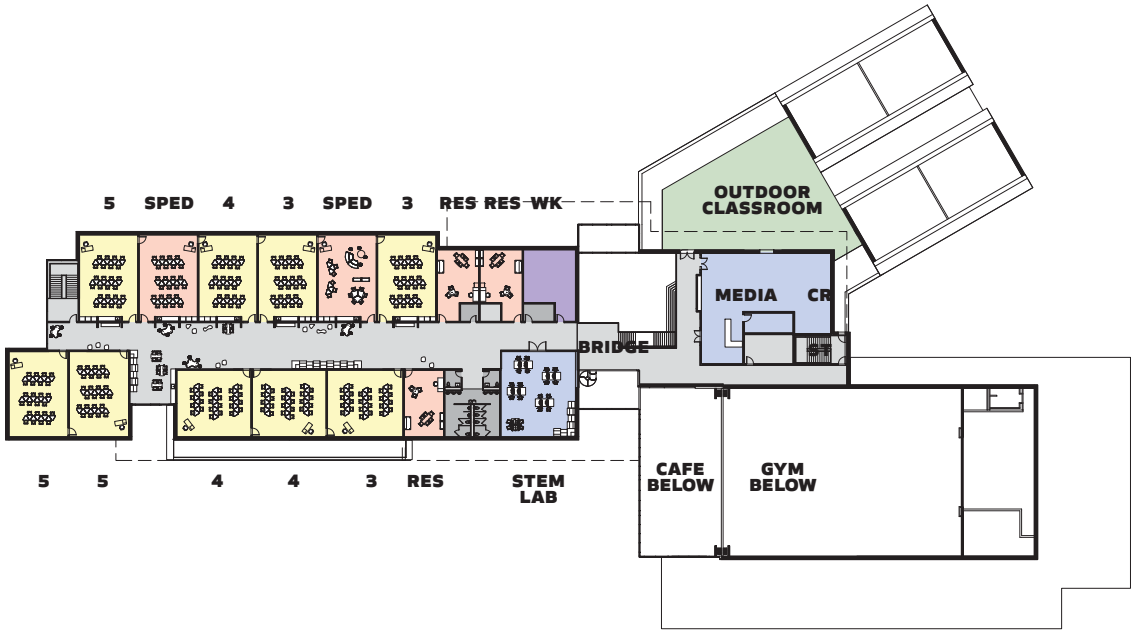
MET WITH:

- FUTURE PARENTS
- FOOD SERVICES
- TEACHER / STAFF (CONTINUED)
- PARKS & RECREATION
- BICYCLISTS & PEDESTRIANS
- DESIGN SUB-COMMITTEE

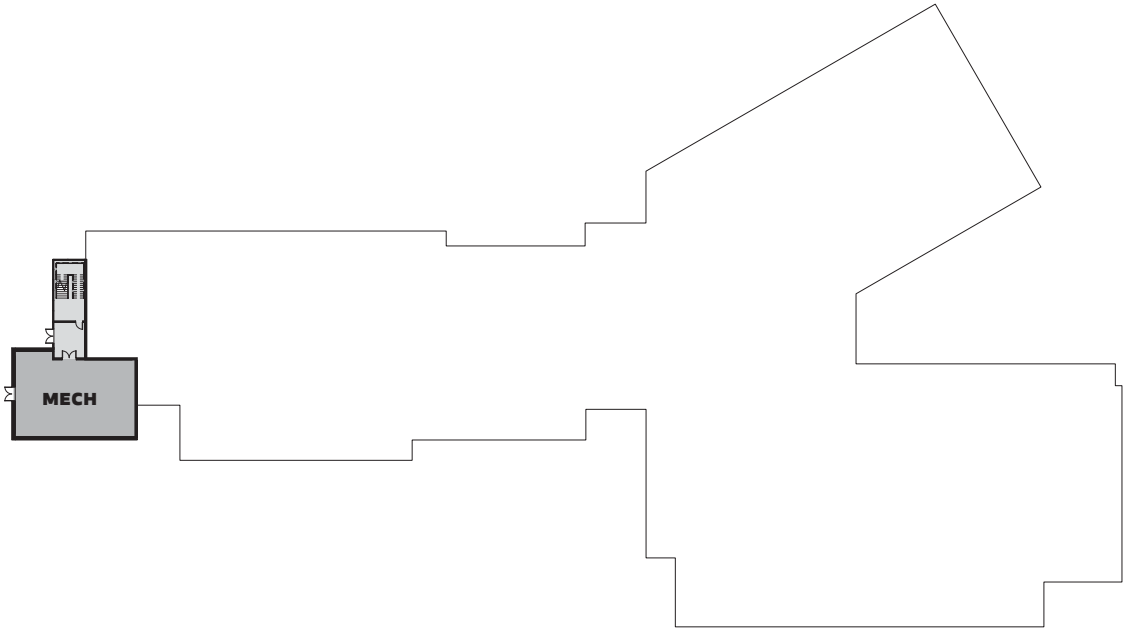
FIRST FLOOR PLAN UPDATED



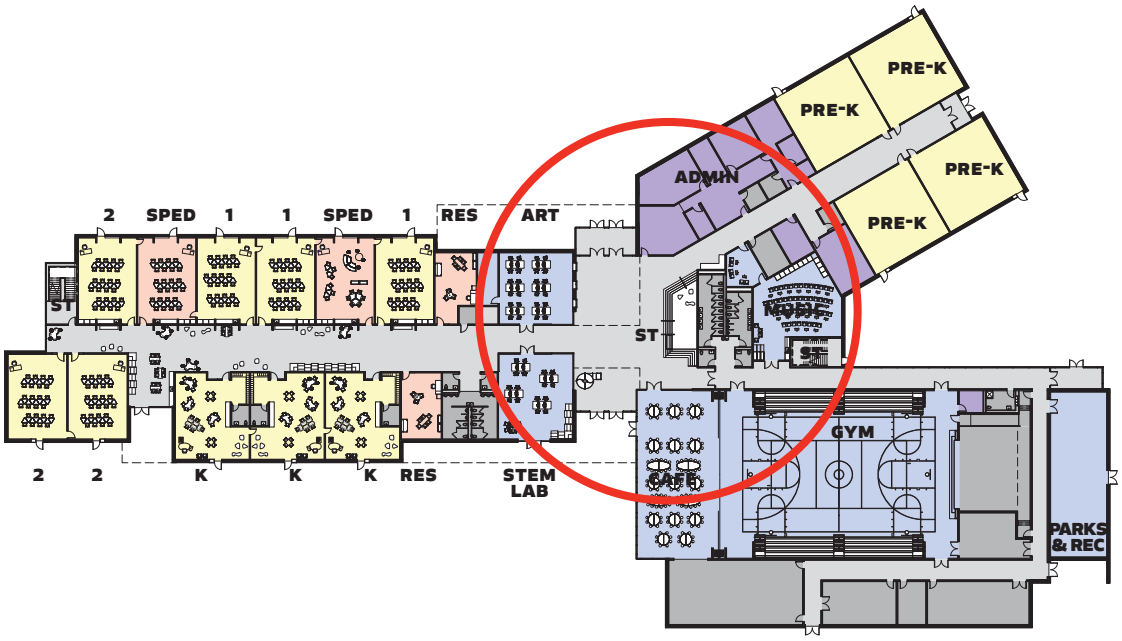
SECOND FLOOR PLAN UPDATED



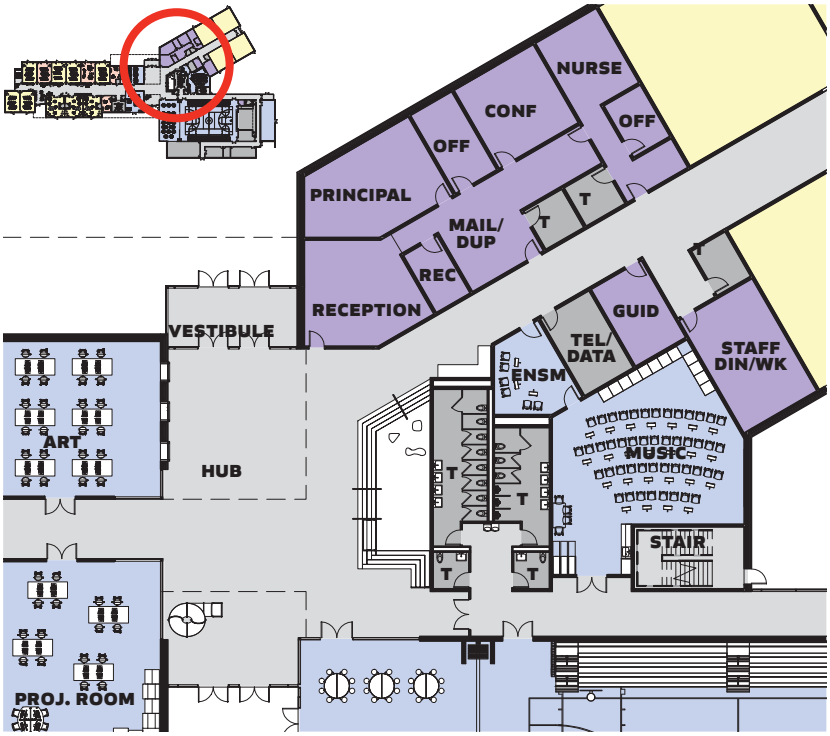
ALTERNATE LOWER LEVEL PLAN



FIRST FLOOR KEY PLAN



HUB



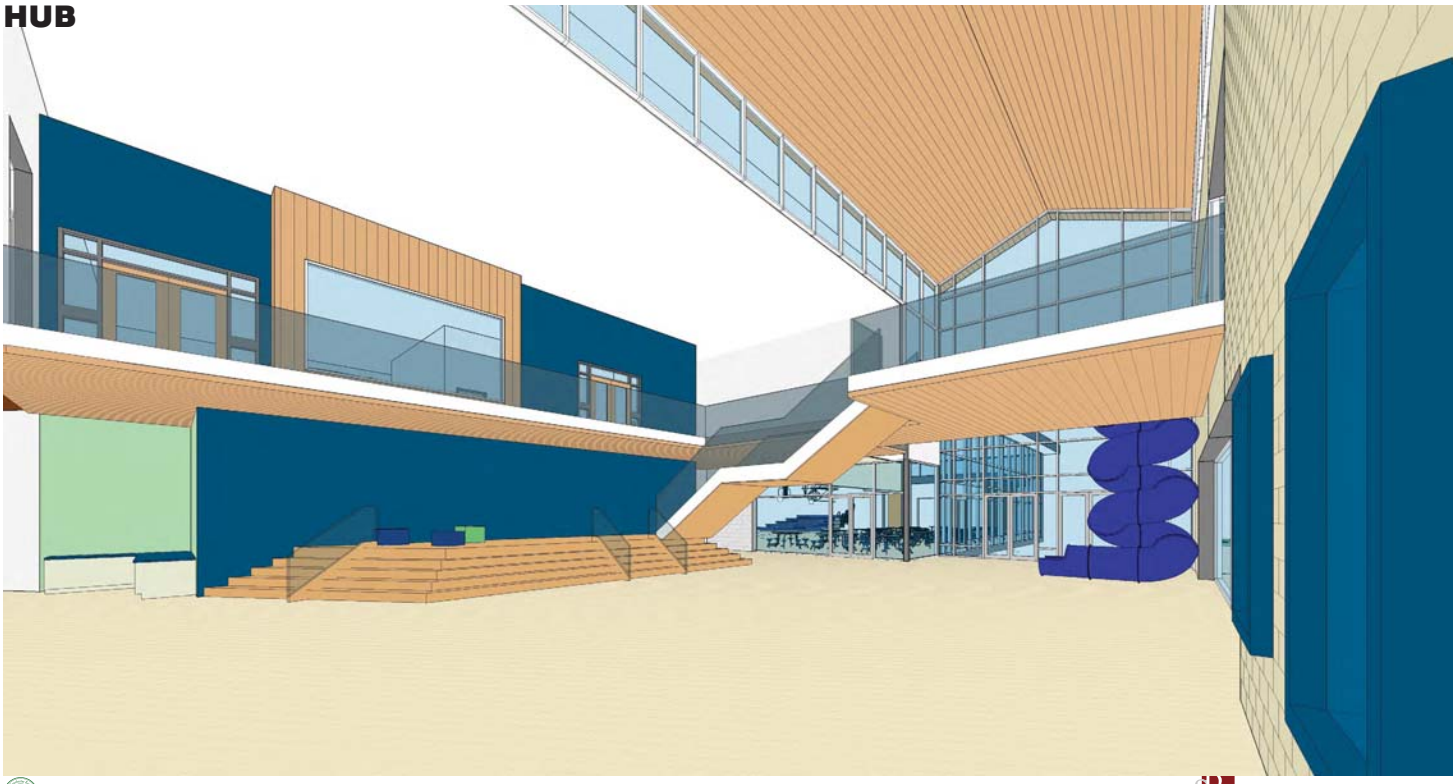




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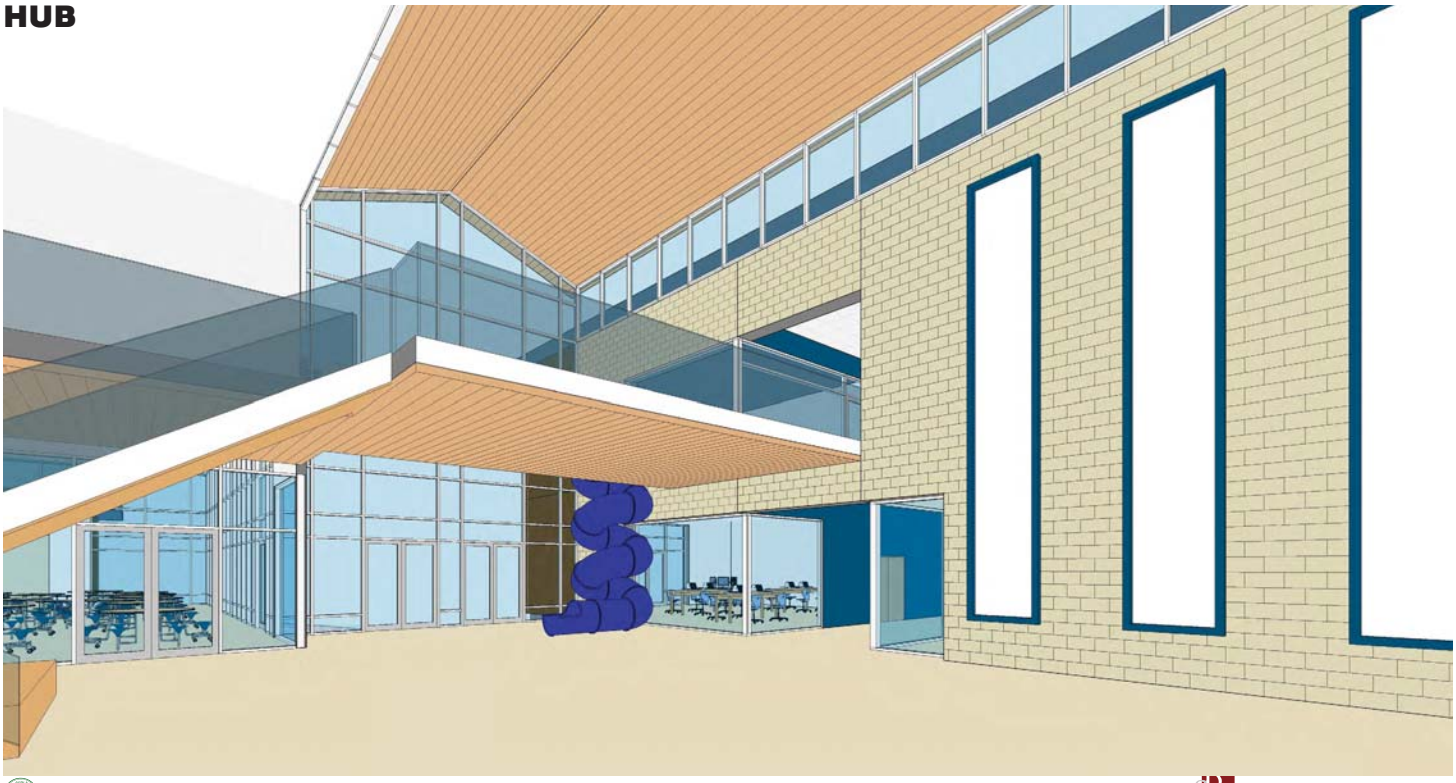


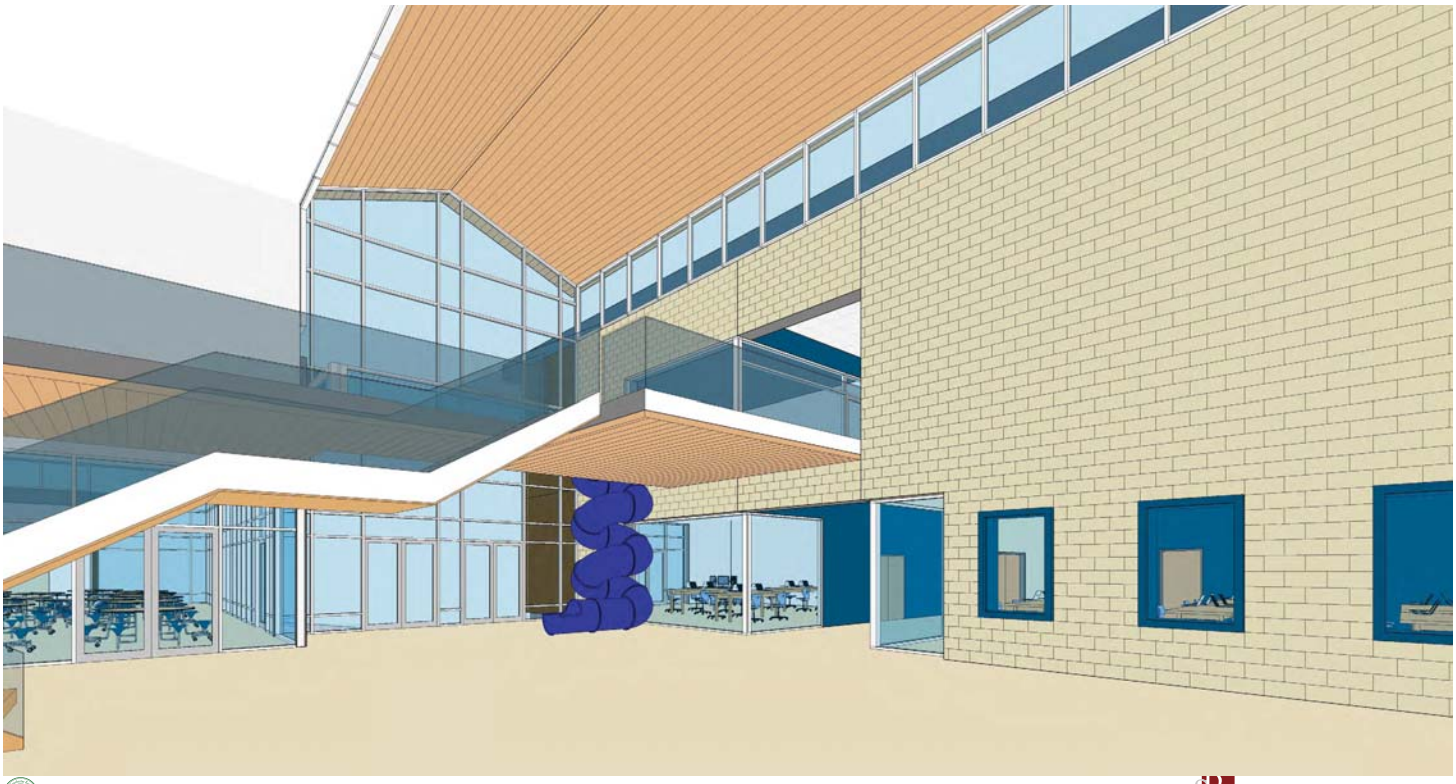
HUB

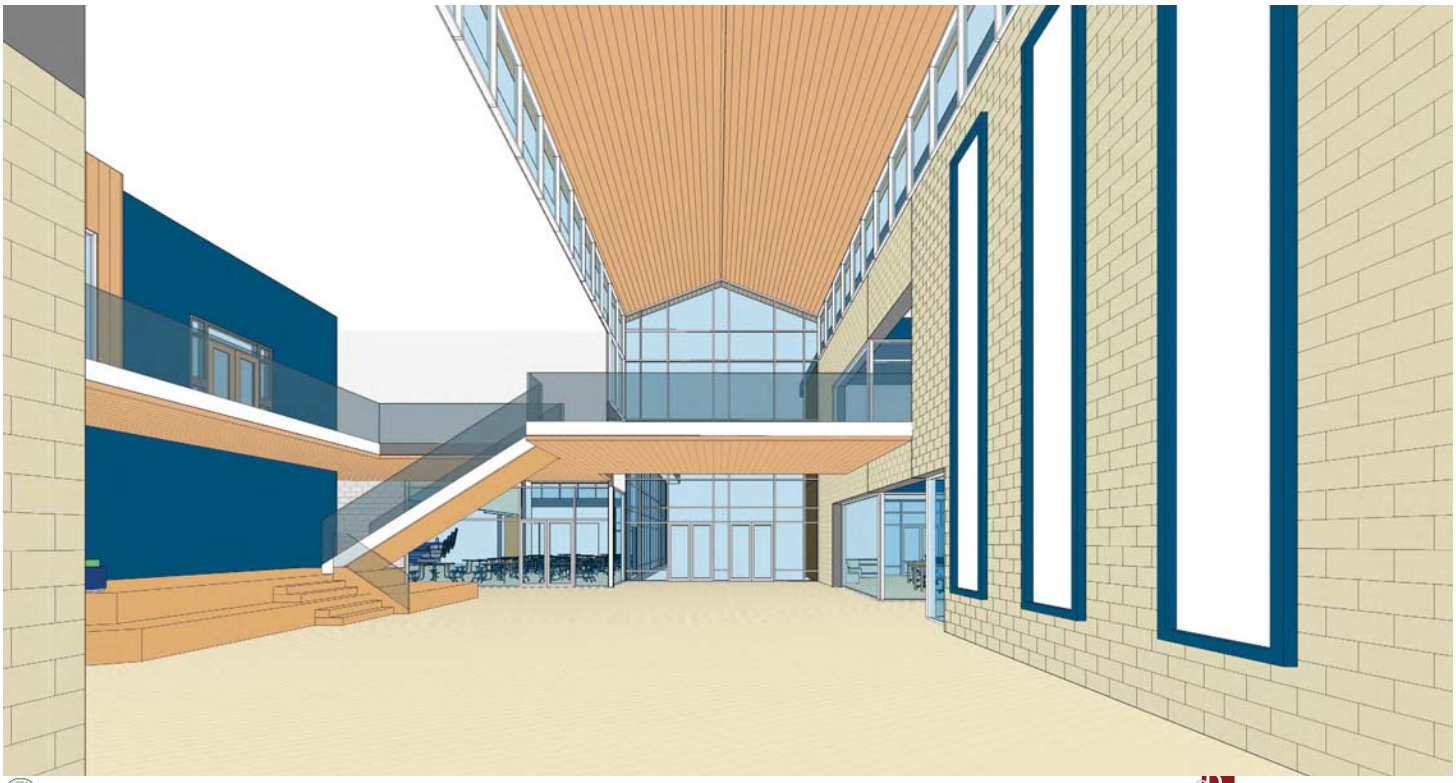


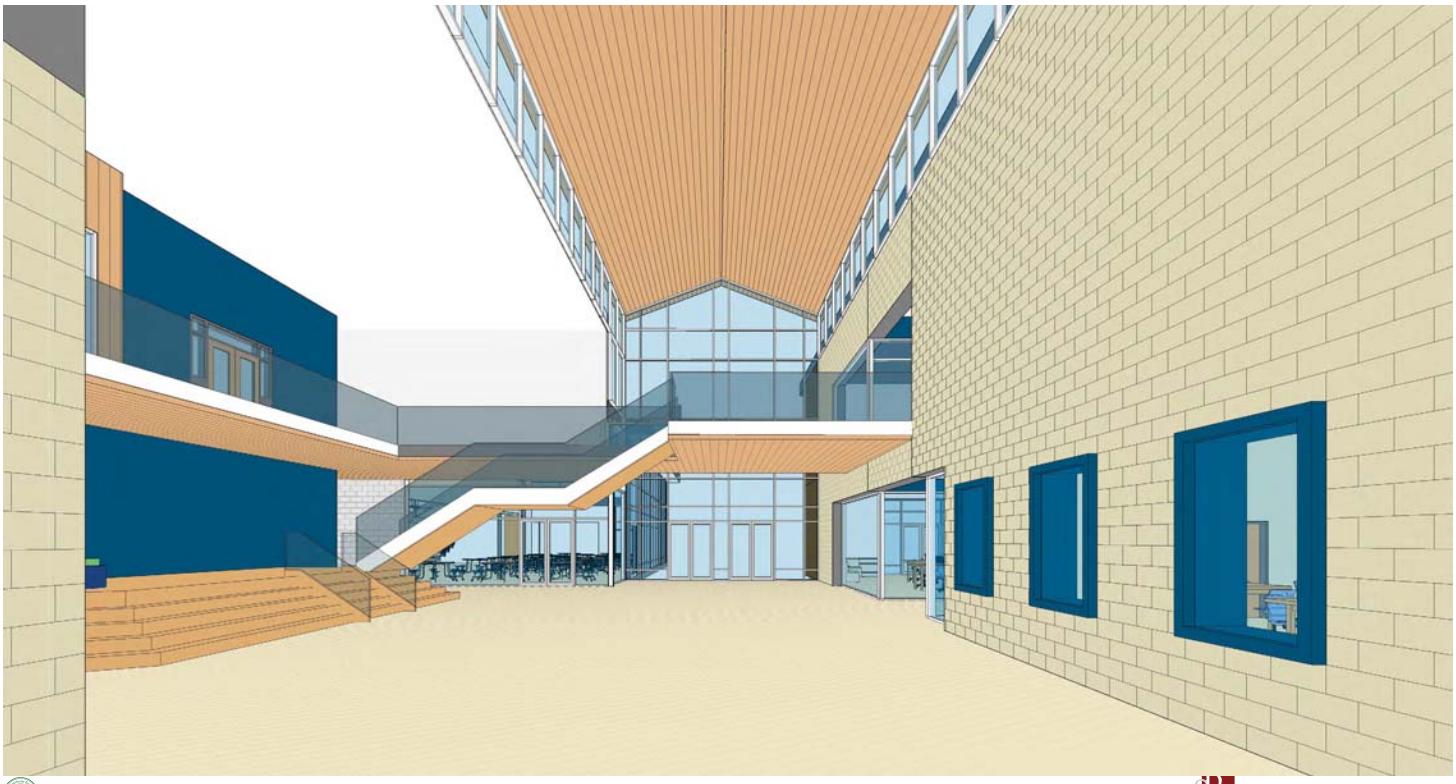
MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS
JCJARCHITECTURE

HUB



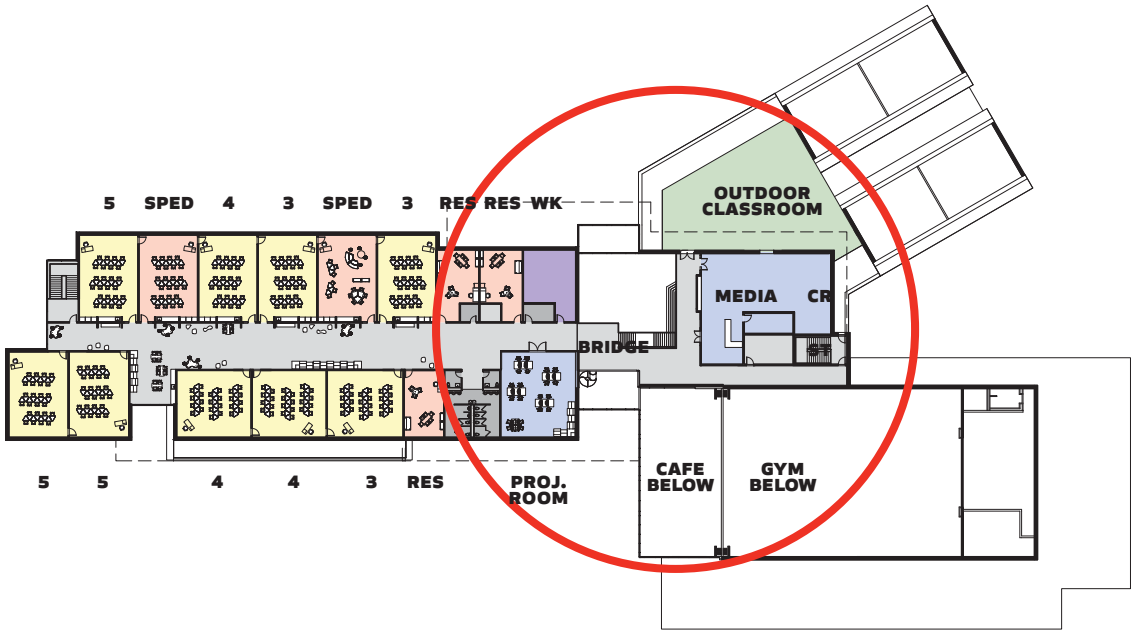




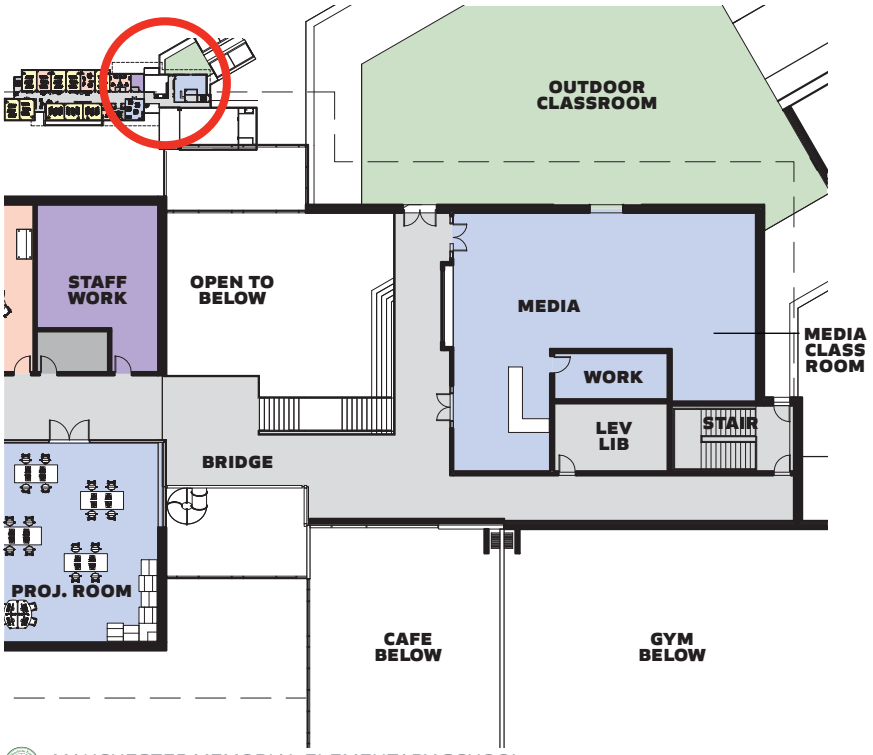




SECOND FLOOR KEY PLAN



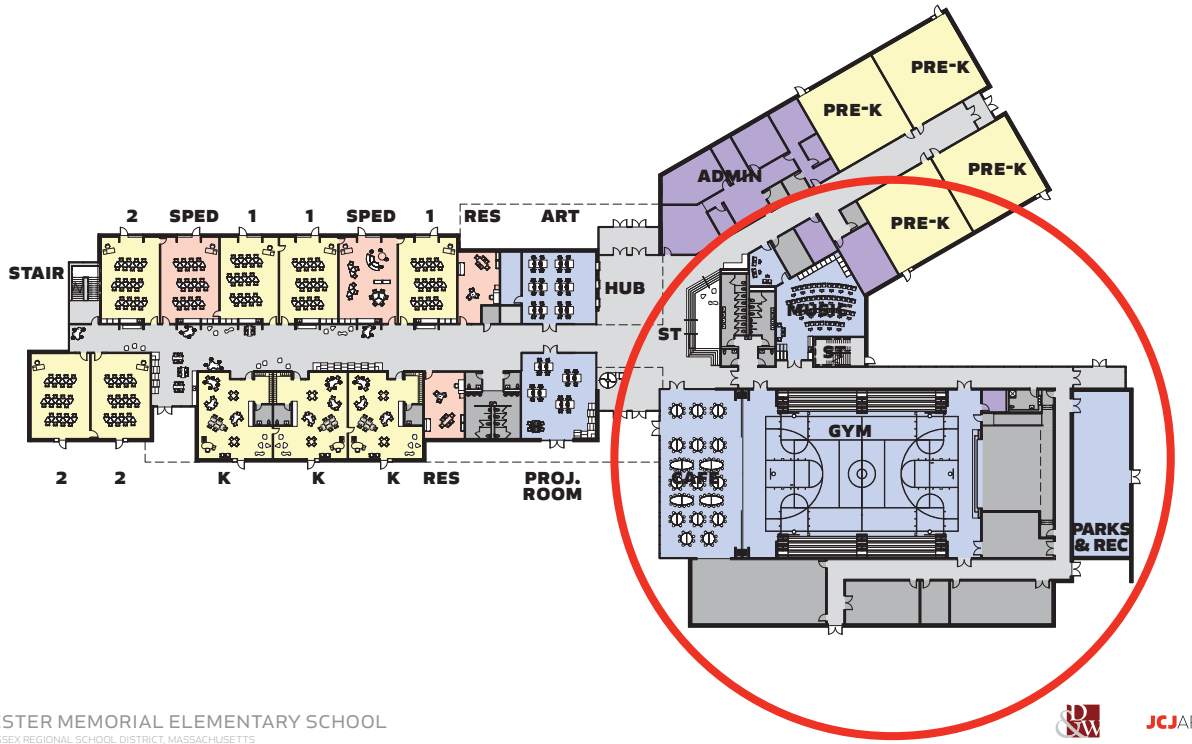
MEDIA CENTER



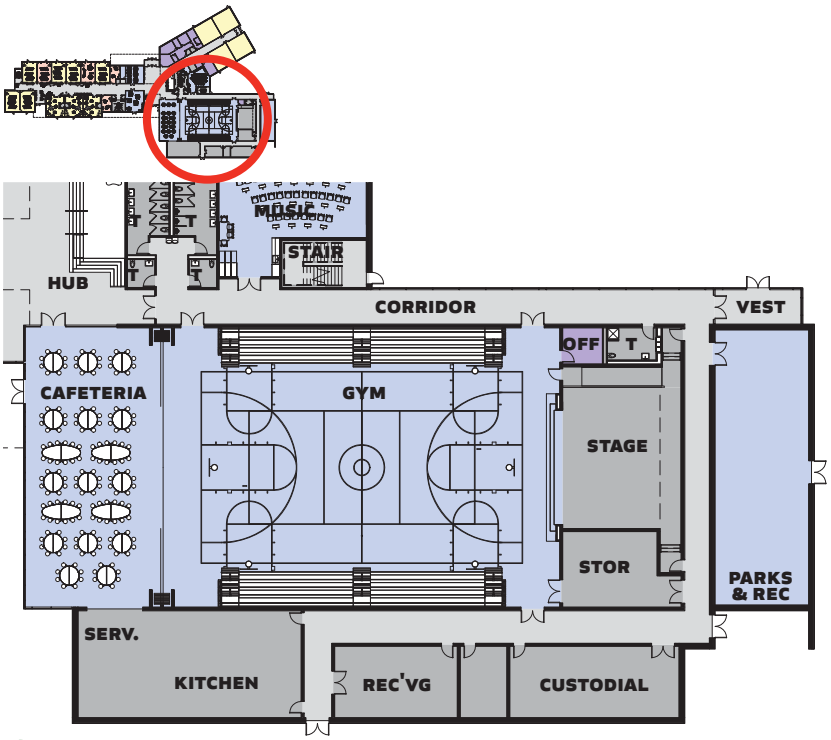




FIRST FLOOR KEY PLAN



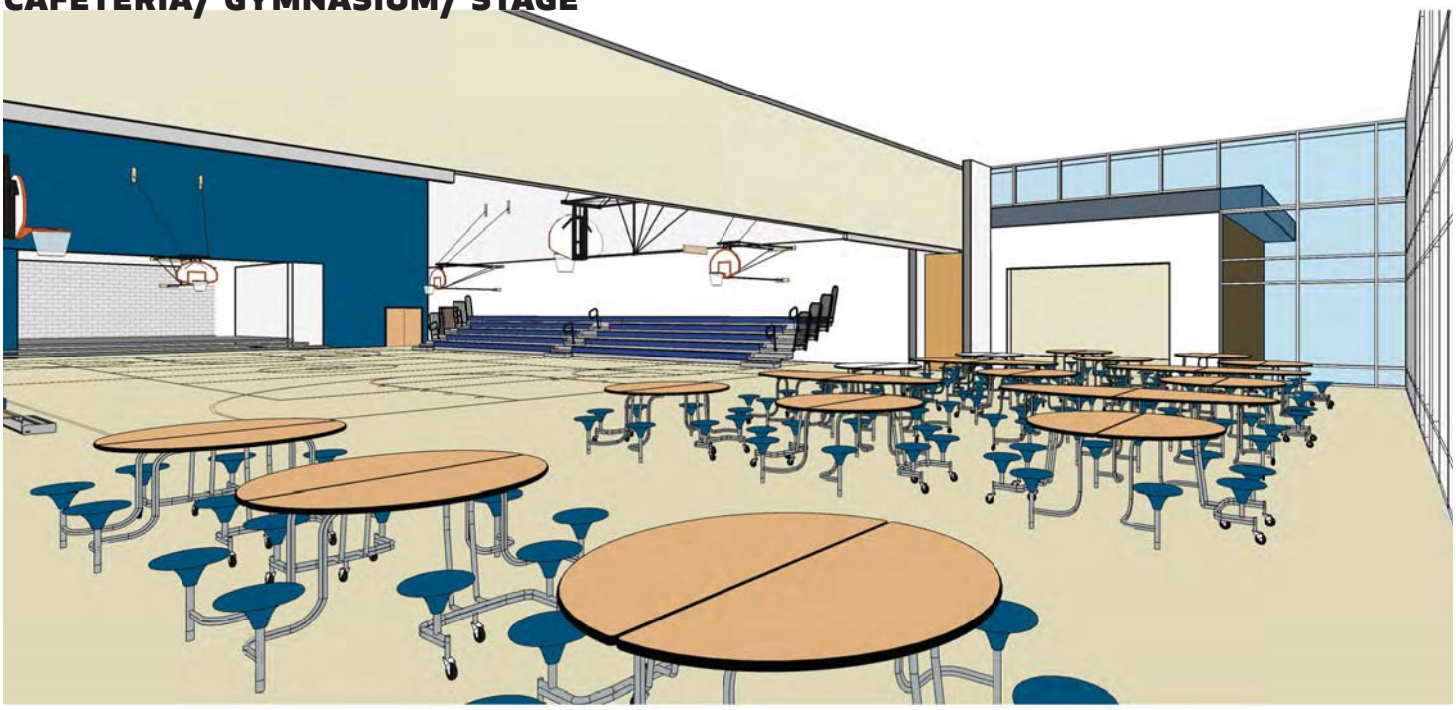
CAFETERIA/ GYMNASIUM/ STAGE



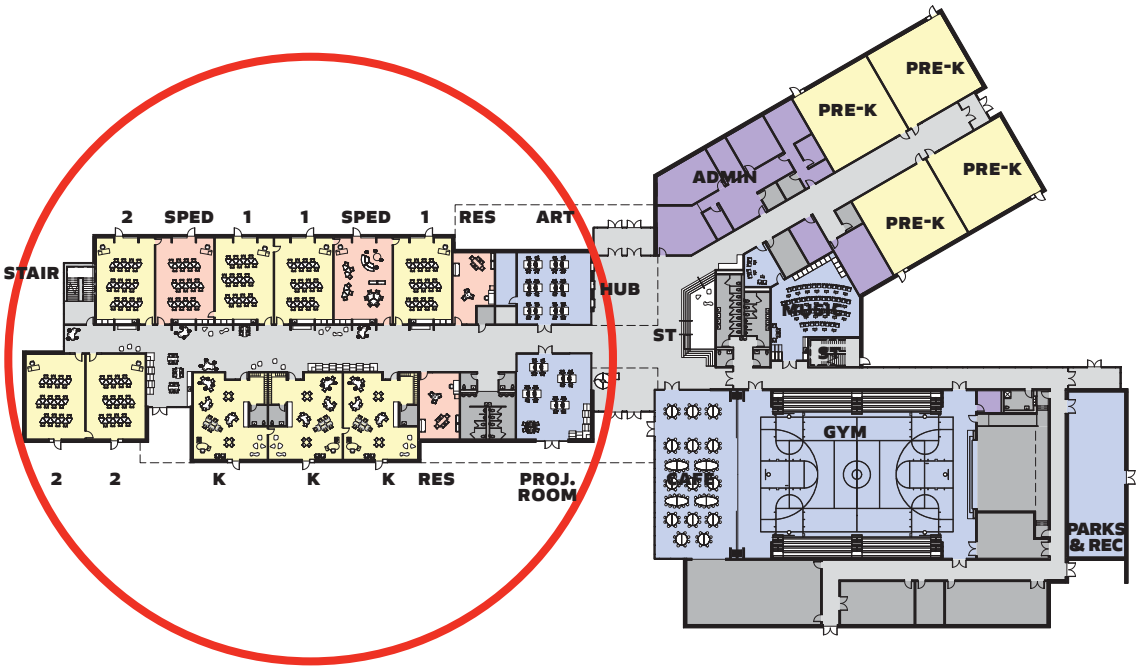




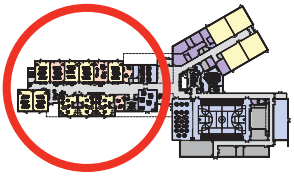
CAFETERIA/ GYMNASIUM/ STAGE

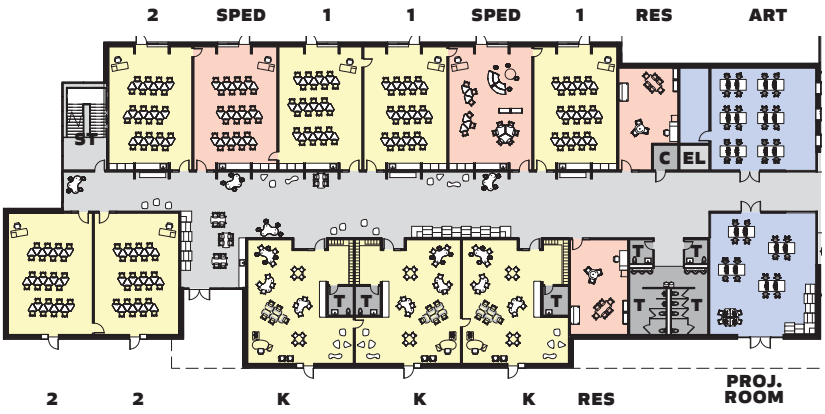


FIRST FLOOR KEY PLAN



CLASSROOM COMMUNITIES - FIRST FLOOR

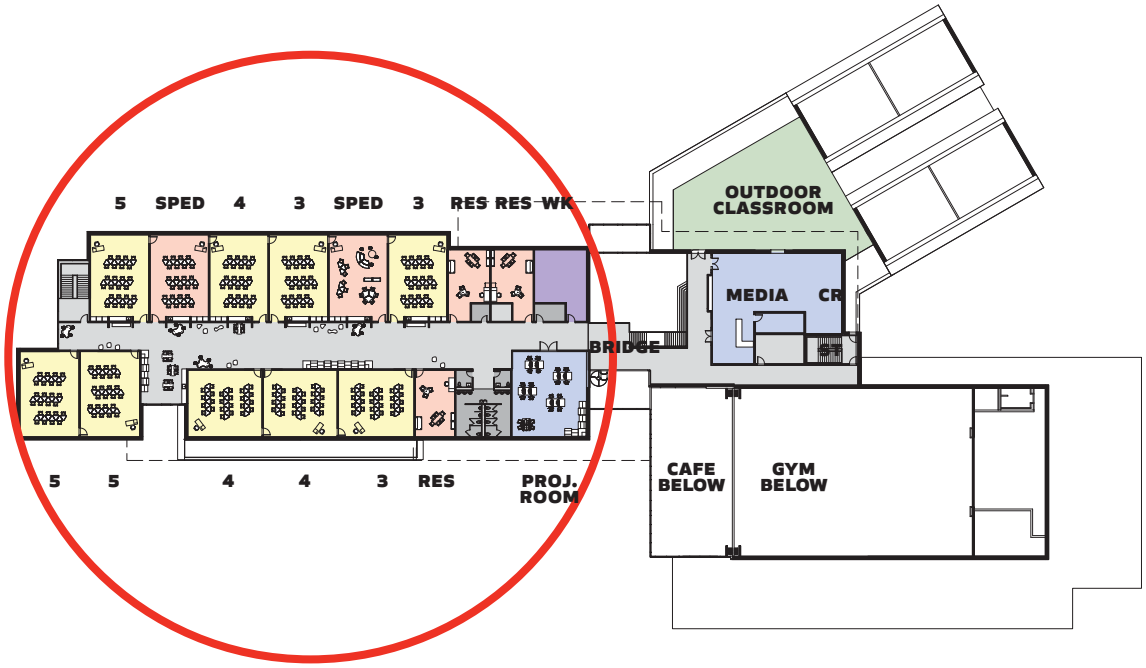




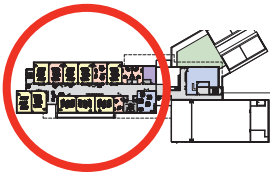


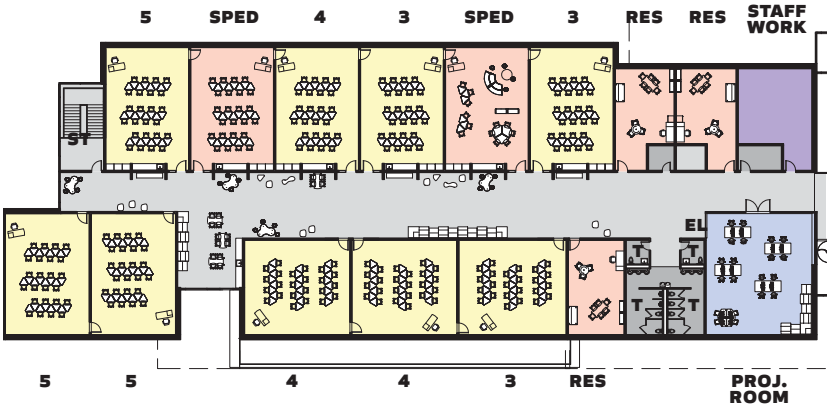


SECOND FLOOR KEY PLAN



CLASSROOM COMMUNITIES - SECOND FLOOR









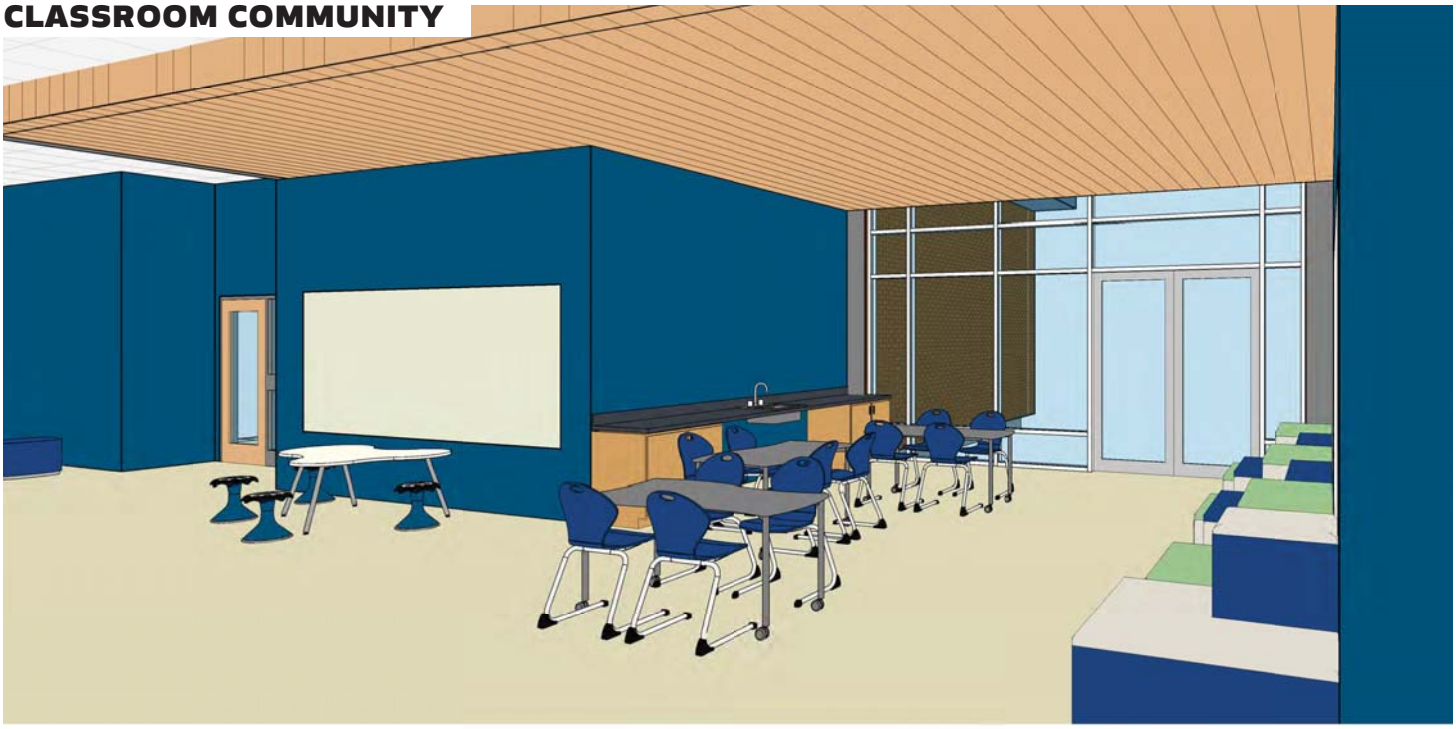
CLASSROOM COMMUNITY



CLASSROOM COMMUNITY



CLASSROOM COMMUNITY



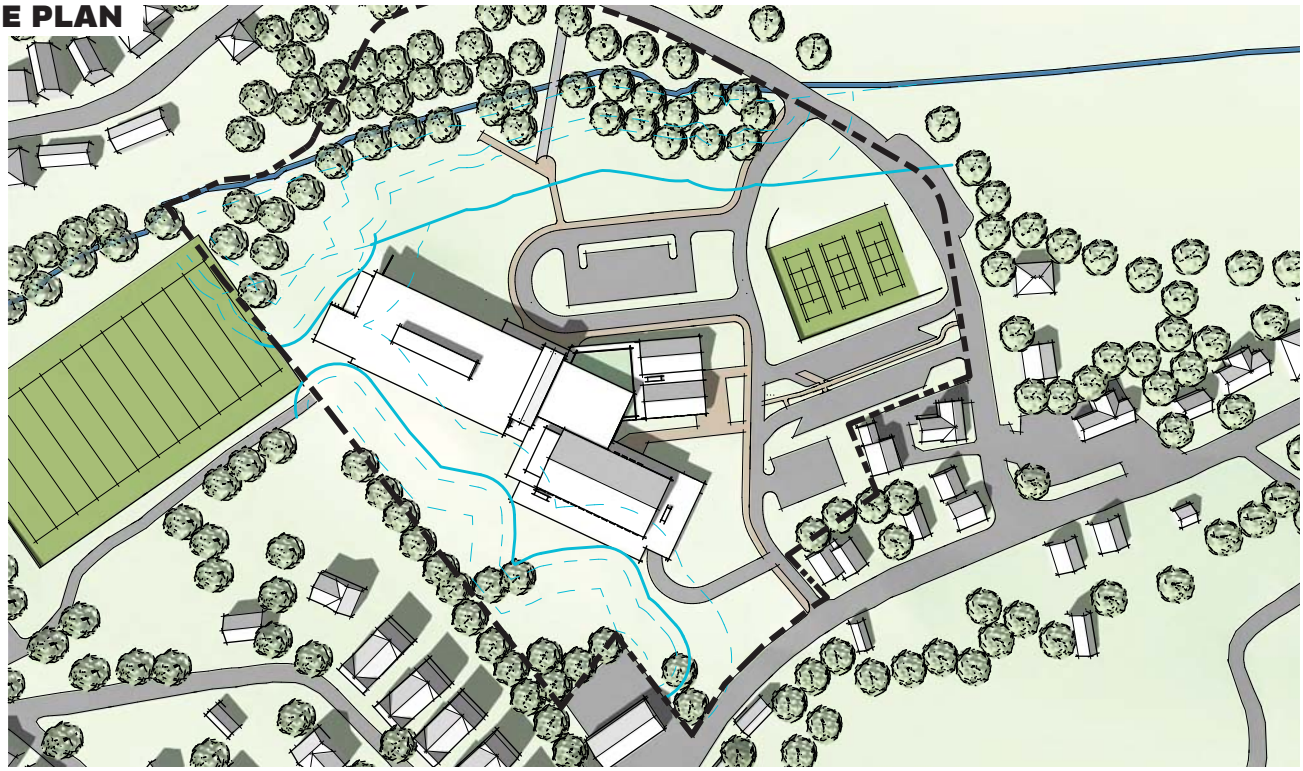
CLASSROOM



CLASSROOM



SITE PLAN



BUILDING MASSING



BUILDING MASSING



BUILDING MASSING



BUILDING MASSING



BUILDING MASSING



BUILDING MASSING



NEXT STEPS

5/8	SBC Meeting - Design Update/ Interiors/ FF&E
5/22	SBC Meeting - Design Update/ Approval For Estimating
5/23	Community Meeting #4
6/12	SBC Meeting - Review Cost Estimates
6/26	SBC Meeting - Initial Approval of SD Package
7/9	SBC Meeting - Approval to Submit SD to MSBA

THANK YOU

MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS
JCJARCHITECTURE

MEETING MINUTES

Project:	Manchester Memorial Elementary School	Project No:	MP17-114
Subject:	School Building Committee/School Committee Meeting	Meeting Date:	4/26/2018
Location:	Manchester MS/HS – Library	Time:	7:00 PM
Distribution:	Attendees, Project File	Prepared By:	C.Shefferman

Present	Name	Affiliation	Present	Name	Affiliation
✓	Caroline Weld *	SBC Co-Chair		Jim LaPosta	JCJ
✓	Ann Cameron *	SBC Co-Chair	✓	Daniel Ruiz	JCJ
✓	Pam Beaudoin *	Superintendent	✓	Lauren Braren	JCJ
✓	Avi Urbas *	Dir. of Fin. & Ops		Emily Czarnecki	JCJ
✓	Alva Ingaharro *	Essex		Mike Burton	DWMP
✓	John Willis *	Principal MMES	✓	Steven Brown	DWMP
✓	Jay Pagliarulo	Dir. of Facilities	✓	Christina Shefferman	DWMP
✓	Andy Oldeman *	Man. Fin. Comm.			
✓	Lisa O'Donnell *	Essex B.O.S.			
✓	Remko Brueker *	Manchester			
✓	Adam Zaiger *	Manchester			
✓	Tyler Virden *	Essex			
✓	George Scharfe *	Manchester			
✓	Gordon Brewster *	Manchester			
✓	Charlie Hay *	Essex			
	Sarah Creighton *	Manchester			
	Maggie Tomaiolo *	Essex			
✓	Jake Foster *	Essex			

** SBC Voting Member*

MANAGEMENT PARTNERS, LLC

PROJECT MANAGERS
ARCHITECTS

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www.doreandwhittier.com

Item No.	Description	Action
23.1	Call to Order: 7:04 pm meeting was called to order by the SBC Co-Chair A. Cameron with 15 of 17 voting members in attendance. S. Brown of DWMP notes the meeting will follow the Power Point presentation that is being projected on the screen and to follow the agenda that was provided to the SBC prior to the meeting via Dropbox.	Record
23.2	Previous Topics & Approval of March 27, 2018 Meeting Minutes: A motion to approve the 4/10/2018 meeting minutes as submitted made by G. Scharfe and seconded by A. Ingaharro. Discussion: None. Abstentions: C. Weld. Vote: All in favor: Motion passes, minutes approved.	Record
23.3	Schedule/Budget Update: S. Brown reviews the schedule update slide as well as the project budget slide. A recap of the discussion is outlined below: Schedule: ➢ 5/1-SBC Meeting-Interview CM Firms ➢ 5/3-SBC Meeting-Select CM ➢ 5/8-SBC Meeting-Design Update ➢ 5/22-SBC Meeting-Design Update ➢ 5/23-Community Meeting No. 4 ➢ 6/12-SBC Meeting-Review Cost Estimate ➢ 6/26-SBC Meeting-Review Cost Estimates-SD Approval Budget: ➢ Currently there is $54,546.97 left in the project budget for the feasibility and schematic design phase of the project. $20,000 has been ear-marked for preconstruction SD services once the CM is on board, the remainder is contingency (legal fees, additional designer consultant survey if needed).	Record
23.4	CM at Risk Procurement Update: S. Brown provides SBC with an update regarding the CM at Risk procurement. An outline of the discussion is below: • 5/1/18-SBC Meeting-Interview CM Firms • 5/3/18-SBC Meeting-Interview CM Firms (Select CM)	Record
23.5	Project Update: JCJ presents the SBC with project update slides. An outline of the discussion is below: ➢ JCJ met with: • Future Parents • Food Services • Teacher/Staff (Continued) • Parks & Recreation • Bicyclists & Pedestrians • Design Sub-Committee After reviewing the list of meeting that's have occurred, the SBC expressed that they would like to be included in part of the decision-making process where necessary. At the next SBC, 5/8/18, the SBC will be provided with a list of decisions that have been made by the working groups, and a list of decisions to be made by the SBC.	Record
23.6	Design Update: L. Braren from JCJ presents building precedents and imagery slides to the SBC. An outline of the discussion is below: ➢ First Floor Plan Updated	Record

	➢ Second Floor Plan Updated ➢ Alternate Lower Level Plan ➢ Hub Updates ➢ Cafeteria/Gymnasium/Stage Updates ➢ Classroom Communities-First Floor ➢ Classroom Communities-Second Floor ➢ Site Plan ➢ Building Massing After further development in the design working group meetings, the classrooms, walls, etc, have all started to take shape. JCJ to further develop design with the working group, and to provide potential decisions that the SBC can make at our next meeting on 5/8/18.	
23.7	Other Topics Not Reasonably Anticipated (48 hours prior to meeting): None.	Record
23.8	Public Comments: A member from the public J. Carlson expressed his opinion about the bike paths and walkways for the new design of the school be thoroughly design to accommodate all of the students/teachers/staff on campus. J. Carlson also asked when will technology be developed for the school and when will it be available for the public to review? A. Cameron states that the team will review with the districts team, report out to the SBC, and include in the design. After the design has been developed, materials including project presentations, community presentations, etc are all uploaded to the project website where anyone can view.	Record
23.9	Adjourn: A motion was made by C. Weld and seconded by G. Scharfe to adjourn the meeting. Discussion: None. Vote: Unanimous to approve. Meeting adjourned at 8:55 pm.	Record

Attached:
SBC Meeting Agenda, Sign In Sheet, SBC Meeting No. 22 4/10/18 Meeting Minutes, Manchester Memorial Elementary School Presentation 4/10/18

DORE AND WHITTIER MANAGEMENT PARTNERS, LLC.

Christina Shefferman
Assistant Project Manager
Cc: Attendees, File

The above is my summation of our meeting. If you have any additions and/or corrections, please contact me for incorporation into these minutes.

PRELIMINARY SCHEMATIC REPORT PHASE PROJECT MEETINGS

- March 27, 2018 – SBC Meeting #21
- April 10, 2018 – SBC Meeting #22
- April 26, 2018 – SBC Meeting #23
- May 1, 2018 – MEP & Sustainability Meeting
- May 1, 2018 – SBC Meeting #24 (CM Interviews)
- May 8, 2018 – SBC Meeting #25
- May 22, 2018 – SBC Meeting #26
- May 30, 2018 – Community Meeting #4 (Morning & Evening)
- June 12, 2018 – SBC Meeting #27
- June 19, 2018 – SBC Meeting #28
- June 26, 2018 – SBC Meeting #29
- July 9, 2018 – SBC Meeting #30
- July 16, 2018 – SBC Meeting #31 (Joint Meeting with School Committee)

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HVAC AND ELECTRICAL SYSTEMS OVERVIEW

Manchester Memorial Elementary School
Manchester, MA

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AGENDA

- **LEED Silver vs. Net Zero Overview**
- Mechanical Systems (based on LEED Silver) to be studied:
  1. Baseline system (VAV-DX / gas)
  2. Displacement Partial AC w/ Packaged DX/Gas RTUs
  3. Displacement Full AC w/ Packaged DX/Gas RTUs
  4. Chilled Beams w/ Chilled/HW AHU/RTUs
- Air Handling Systems
  1. Indoor Enclosed vs. Outdoor Packaged
- Cooling and Heating Systems
  1. Chilled Water/hot water vs. Packaged RTUs
- LCCA Overview
- BMS System Overview
- Electrical Systems:
  1. Lighting, Lighting Control Systems, Light Power Density
  2. Emergency Power System
- Utility Incentives
  1. Energy Conservation Measures

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LEED LEVEL VERSUS NET ZERO

- In order to meet higher LEED Level or Net Zero Level, different systems would need to be considered
- Mechanical System studied will achieve LEED Silver +20% Energy Efficiency

LEED/ CHPS	Net Zero	Net Zero Carbon
(Min. Req't) Silver + 20% Better than Energy Code to get 2% Reimbursement	*Geothermal Wells*	*Similar to Net Zero*
Gold	*Photovoltaic Panels*	*Zero Carbon Emissions*
Platinum	*Higher Efficiency Equipment*	*All Electrical System*
	Improved Envelope	*More Geothermal Wells*
	Glazing	*More Photovoltaic Panels*
	Higher Capital & Maint Costs	*Higher Capital & Maint Costs*
	Lower Utility Costs	*Lower Utility Costs*



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HVAC SYSTEM OVERVIEW

- Mechanical Systems
- Comparison: Mixed Air versus Displacement Ventilation
- Code Baseline- Overhead Mixed VAV System
- Displacement Ventilation System (Dehumidification or Full A/C)
- Chilled Beam (Induction) System
- Air Handling Systems Overview
- Hot Water and Chilled Water Plant versus Packaged Units
- Building Energy Management Systems Overview
- Energy Modeling Methodology and Life Cycle Cost Analysis (LCCA) Overview



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HVAC SYSTEM COMPARISON
MIXING VS. DISPLACEMENT SYSTEMS

- **AIR CONDITIONING**
- **MIXED AIR SYSTEM**

- VENTILATION AIR COOLED AND SUPPLIED AT 55 DEG F. TO SPACE
- MAINTAINS SPACE TEMP. AT 75 DEG F.
- ADDITIONAL EQUIP. REQD. WITH INCREASED CAP. TO MAINTAIN 75 DEG F.
- INCREASED DUCT SIZES OR NEED FOR ADDITIONAL PIPING SYSTEM
- INCREASED CONSTRUCTION COST BY 20-30% (Dependent upon AC System)
- INCREASED OPERATIONAL COST BY 25-30%

- **DEHUMIDIFIED AIR**
- **DISPLACEMENT SYSTEM**

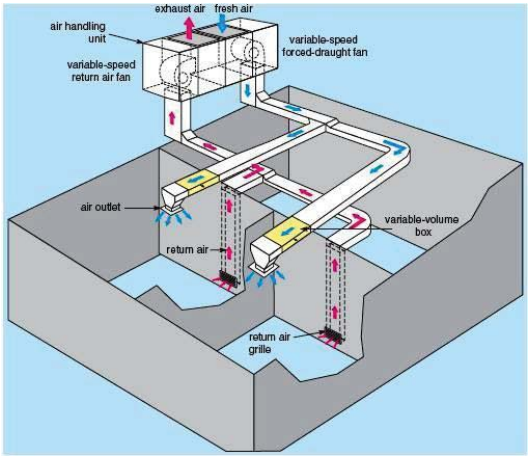
- VENTILATION AIR COOLED BY DEHUMIDIFICATION AND REHEATED BY HOT GAS HEAT RECOVERY TO 68 DEG F.
- TEMP. FLOATS IN SPACE WITHIN COMFORT ZONE
- REDUCED DUCT SIZES OR NEED FOR SECONDARY EQUIPMENT
- REDUCED CONSTRUCTION COST WHEN COMPARED TO CONVENTIONAL NON-CONDITIONED BUILDINGS
- SIMILAR OPERATIONAL COST WHEN COMPARED TO CONVENTIONAL NON AIR CONDITIONED BUILDINGS
- DISPLACEMENT COULD ALSO PROVIDE FULL A/C LEVELS WHEN INCREASED AIRFLOW IS PROVIDED.

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ASHRAE BASELINE

Pros:

- Lower piping installed costs due to two-pipe system as chilled water piping is not required
- Moderate to high overall installed costs
- Chiller plant and distribution systems or Packaged Direct Expansion (DX) Cooling
- Low maintenance; no condensate drains, fans, or filters at terminal units
- Reduced automatic temperature controls installed costs resulting from reduced control components



Cons:

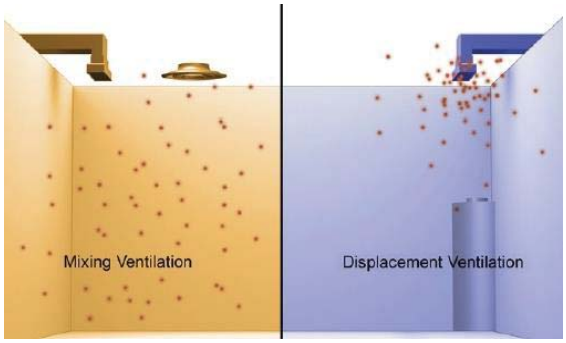
- Moderate noise levels
- Reduced temperature control if several rooms are served by the same VAV unit
- Reduced indoor air quality as a result of being a mixed-air system
- Maintenance of equipment is in occupied area
- Higher energy consumption due to increased fan energy
- Higher energy consumption as summertime use of hot water system is required for hot water reheats of VAV boxes
- Overall ductwork costs are greater due to the larger supply and return ductwork systems providing mixed-air rather than ventilation only



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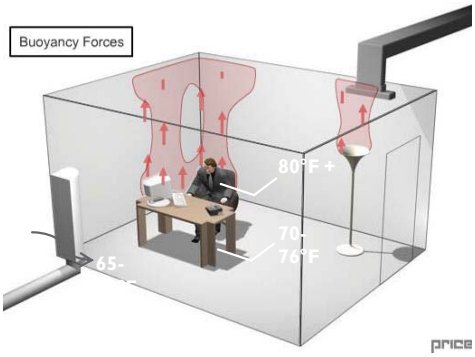
DISPLACEMENT SYSTEM

- Ventilation air is provided from high efficiency hot water coil heating/chilled water coil cooling RTU w/ ERV
- Air is delivered at low velocity and at low levels within the space
- The system uses naturally occurring buoyant forces within the space to create a vertical rise of the air throughout the space.
- 2-4˚ F differential supply air to space
- Supply air rises when heat source is contacted
- Displaces room air upward
- Air rises with pollutants to ceiling
- Air returns at ceiling back to air handling unit



Mixed Systems E_c= 0.8

DV Systems E_c=1.2 - 1.4



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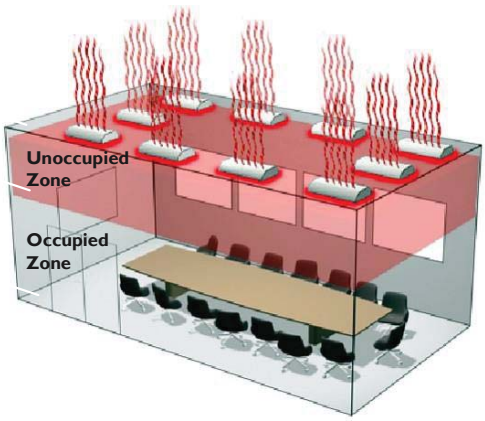
DISPLACEMENT SYSTEM – ENERGY CONSERVATION

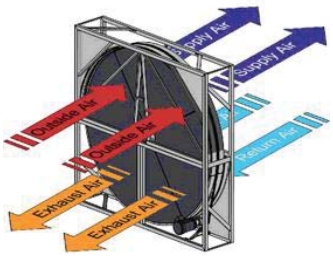
Load Calculation Reductions

- Conventional System: All heat generated in room is included in air flow calculation since all airflow is mixed.
- Displacement System: Only loads which occur in the Occupied Zone are factored
- Results in: Smaller equipment & systems and lower installed and operating costs for Displacement Systems

Additional Energy Efficiency Measures

- Energy Recovery: Transfers energy from the return air stream to the supply air stream to pre-heat or pre-cool the outside air.
- Variable Air Volume w/ Aircuity CO2 Demand Control Ventilation: Modulates the airflow to large single zone areas in accordance to space mounted thermostat and CO2 sensors reducing energy consumption due to reduced air changes.
- Supplemental Radiant Cooling Panels: Provide additional cooling without increasing airflow requirements reducing energy consumption due to smaller equipment and fan run time.







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DISPLACEMENT SYSTEM

Pros:

- Excellent pollution removal
- Very low noise levels
- Very low air velocity
- Low moisture levels
- Reduced cooling loads
- Reduced initial cost
- Variable volume reheat is not required
- High ventilation effectiveness





Displacement Diffuser Options

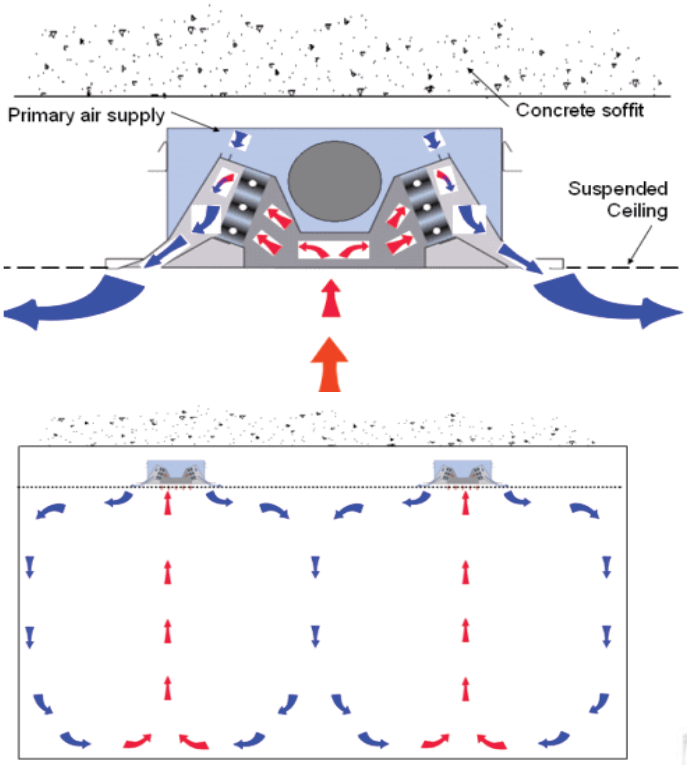
Cons:

- Requires perimeter radiation heating
- Requires perimeter radiation cooling to maintain full AC setpoints during peak cooling conditions

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INDUCTION (ACTIVE CHILLED BEAM) UNITS

- Ventilation air is provided from high efficiency hot water coil heating/chilled water coil cooling RTU w/ ERV
- Primary (Ventilation) air is supplied to plenum and discharges through nozzles
- Room air is induced through the heating/cooling coils
- Mixture of Primary and Room air is delivered to room through diffuser slots.
- Condensate drain pans and piping system for condensate removal



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INDUCTION UNITS

Pros:

- Energy efficient
- Low Noise Levels
- Flexibility of Installation
- Moderate first cost
- Simplified Controls (No Fans)
- Lower Maintenance (No Terminal Filters)





Cons:

- Requires increased coordination with "ceiling" system. (e.g. additional piping, HW, CHW & condensate piping)
- Requires additional ventilation air in some cases
- Increase Energy Consumption vs. Dehumidified Air System

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Preliminary Decision Points
RTUs: Enclosed vs. Exposed

Enclosed

- *Protection from Salt Air*
- *Ease of Maintenance*
- *Acoustical Control*
- *Additional Costs (Envelope and Additional Ductwork/Louvers)*

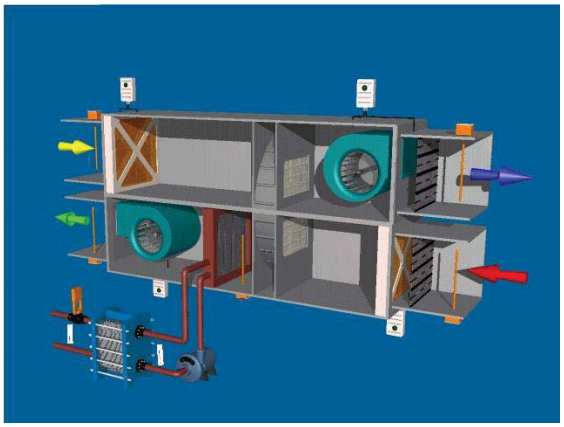
Exposed

- *Salt-Rated Equipment Possible*
- *Lower Costs*
- *Reduced Expected Service Life versus Enclosed Units*

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100% Outside Air Central Ventilation Rooftop Unit Enclosures with Energy Recovery, CO2 demand Ventilation for Displacement and Induction Unit Systems





- Ventilation air is provided from Rooftop or Indoor Air Handling Units
- Packaged Gas-Fired Heating/DX Electric Cooling
- Hot water Heating and Chilled water Cooling

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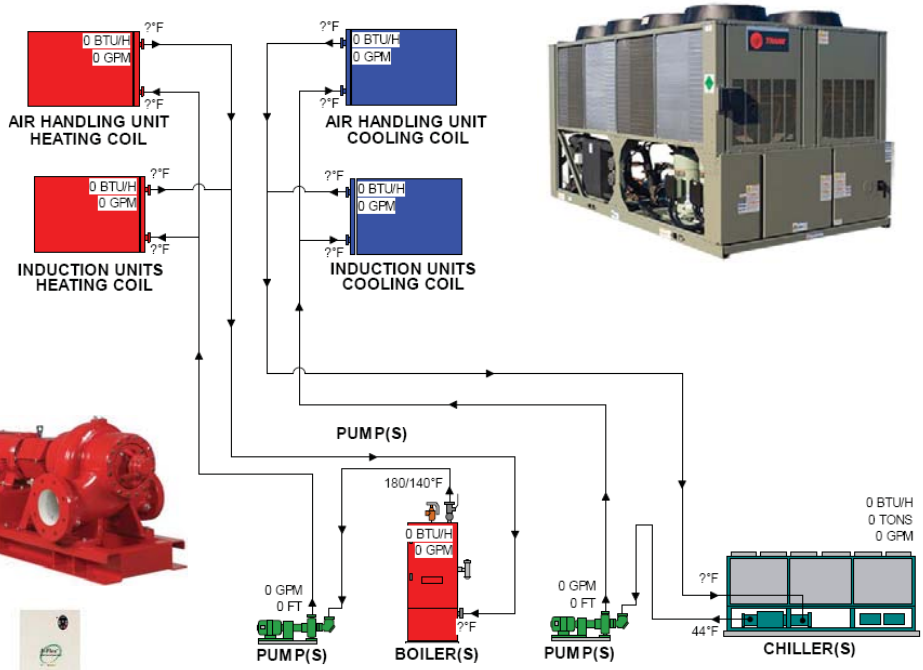
HIGH-EFFICIENCY GAS-FIRED CONDENSING BOILER AND ELECTRIC CHILLER SYSTEMS





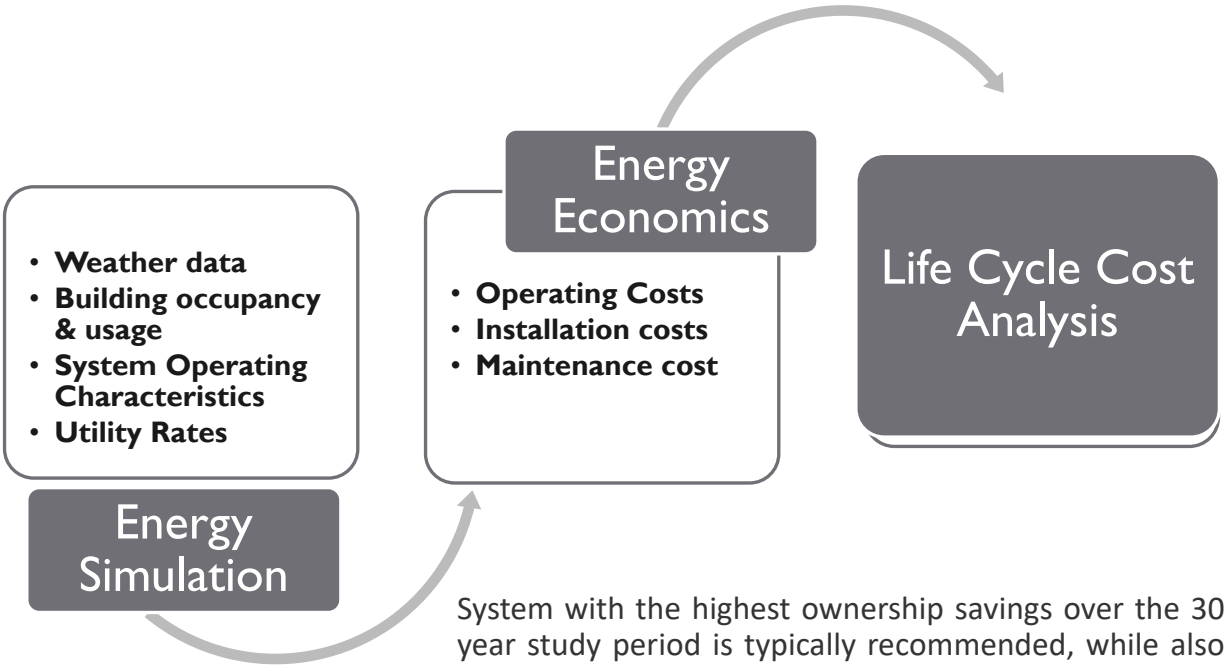






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ECONOMICS METHODOLOGY



System with the highest ownership savings over the 30 year study period is typically recommended, while also factoring budget limitations, maintenance requirements, site limitations, thermal comfort conditions, and other factors unique to the project studied.

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MANCHESTER MEMORIAL ELEMENTARY SCHOOL- MECHANICAL SYSTEM PAYBACK SUMMARY

Baseline	System	Gross Capital Investment*	Annual Elec. Cons. (kWh)	Annual Gas Cons. (MBTU)	Annual Electric Cost	Annual Gas Cost	Combined Utility Cost	Annual Utility $/s.f.	Annual kBTU/s.f. (EUI)	Annual Maint. Cost	Combined Annual Expense	Combined Expense Savings*	Total Life-Cycle Savings**	Discounted Payback (Years)***
-	1. Hot water coil heating/chilled water coil cooling VAV AHU system with energy recovery and terminal VAV boxes with hot water reheat coils 2. Code efficient gas-fired non-condensing boiler plant 3. High efficiency (code) water-cooled chiller plant with cooling tower	$4,504,300	522,500	2,833.4	$87,780	$30,873	$118,653	$1.26	49.1	$22,975	$141,628	-	-	-

Option	System	Gross Capital Investment*	Annual Elec. Cons. (kWh)	Annual Gas Cons. (MBTU)	Annual Electric Cost	Annual Gas Cost	Combined Utility Cost	Annual Utility $/s.f.	Annual kBTU/s.f. (EUI)	Annual Maint. Cost	Combined Annual Expense	Combined Expense Savings*	Total Life-Cycle Savings**	Discounted Payback (Years)***
1	1. Displacement ventilation diffusers with terminal VAV boxes and perimeter hot water radiant heating panels 2. Gas-fired heating/dx dehumidification 100% O.A. VAV ventilating units with energy recovery and demand ventilation serving the classroom areas 3. Hot/chilled water coil induction units serving the administration areas 4. Gas-fired heating/dx cooling 100% O.A. VAV ventilating units with energy recovery and demand ventilation serving the administration areas 5. Gas-fired heating/dx cooling overhead VAV unit with energy recovery and demand ventilation serving the cafe and gym areas 6. High efficiency gas-fired condensing central boiler plant 7. High efficiency air-cooled chiller plant	$3,641,050	475,530	2,408.2	$80,058	$26,240	$106,298	$1.13	42.9	$22,025	$128,323	$13,305	$1,377,416	Instant*****
2	1. Displacement ventilation diffusers with terminal VAV boxes and perimeter hot water radiant heating panels 2. Gas-fired heating/dx cooling VAV ventilating units with energy recovery and demand ventilation serving the classrooms areas 3. Hot/chilled water coil induction units serving the administration areas 4. Gas-fired heating/dx cooling 100% O.A. VAV ventilating units with energy recovery and demand ventilation serving the administration areas 5. Gas-fired heating/dx cooling overhead VAV unit with energy recovery and demand ventilation serving the cafe and gym areas 6. High efficiency gas-fired condensing central boiler plant 7. High efficiency air-cooled chiller plant	$4,186,050	486,890	2,452.1	$81,797	$26,718	$108,515	$1.15	43.8	$20,725	$129,240	$12,388	$803,036	Instant*****
3	1. Hot/chilled water coil induction units serving the classroom and administration areas 2. Hot/chilled water coil 100% O.A. VAV ventilating units with energy recovery and demand ventilation serving induction units 3. Hot/chilled water coil overhead VAV unit with energy recovery and demand ventilation serving the cafe and gym areas 4. High efficiency gas-fired condensing central boiler plant 5. High efficiency air-cooled chiller plant	$4,401,150	500,440	2,568.3	$84,075	$27,984	$112,059	$1.19	45.5	$25,025	$137,084	$4,544	$402,459	Instant*****

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MANCHESTER MEMORIAL ELEMENTARY SCHOOL- LEED SUMMARY

Manchester Memorial Elementary School - LEED Energy Savings Summary

Baseline	System	Annual Elec. Cons. (kWh)	Annual Gas Cons. (MBTU)	Annual Electric Cost	Annual Gas Cost	Combined Utility Cost	Annual Utility $/s.f.	Annual kBTU/s.f. (EUI)	Combined Expense Savings*	Energy Cost Savings Percentage
LEED Baseline	1. ASHRAE Standard 90.1-2010 Envelope (Wall Insulation R-13 + R-7.5 c.i., Roof Insulation R-20 c.i., Windows 0.55 U-Value/0.40 SHGC, Curtainwall 0.45 U-Value/0.40 SHGC) 2. ASHRAE Standard 90.1-2010 Mechanical Systems (System 5 - Packaged VAV w/ Reheat and 80% Eff. Hot-Water Boilers) 3. ASHRAE Standard 90.1-2010 Lighting Systems (0.99 w/s.f.) 4. ASHRAE Standard 90.1-2010 Domestic Hot Water Systems (80% Eff. Hot Water Heaters)	667,600	3,309.3	$112,157	$36,058	$148,215	$1.58	59.44	-	-

Option	System	Annual Elec. Cons. (kWh)	Annual Gas Cons. (MBTU)	Annual Electric Cost	Annual Gas Cost	Combined Utility Cost	Annual Utility $/s.f.	Annual kBTU/s.f. (EUI)	Combined Expense Savings*	Energy Cost Savings Percentage
Design Building	1. Design Envelope (Wall Insulation R-18 c.i., Roof Insulation R-40 c.i., Windows & Curtainwall 0.29 U-Value w/ 0.40 SHGC) 2. Design Mechanical Systems (VAV Displacement Ventilation Systems with High-Efficiency Condensing Boilers) 3. Design High-Efficiency Lighting Systems (0.6 w/s.f.) 4. Design High-Efficiency Domestic Hot Water Systems (94% Eff. Hot Water Heaters)	476,530	2,408.2	$80,058	$26,240	$106,298	$1.13	42.92	$41,917	28.3%

*Combined expense savings is the difference between the combined annual expense of the baseline and building in comparison.

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MANCHESTER MEMORIAL ELEMENTARY SCHOOL- IECC COMPARISON CHART

Manchester Memorial Elementary School - IECC 2015 Energy Savings Summary

Baseline	System	Annual Elec. Cons. (kWh)	Annual Gas Cons. (MBTU)	Annual Electric Cost	Annual Gas Cost	Combined Utility Cost	Annual Utility $/s.f.	Annual kBTU/s.f. (EUI)	Combined Expense Savings*	Energy Savings Percentage
IECC 2015 Baseline	1. IECC 2015 Envelope (Wall Insulation R-13 + R-7.5 c.i., Roof Insulation R-30 c.i., Windows 0.45 U-Value/0.45 SHGC (Avg.), Curtainwall 0.38 U-Value/0.45 SHGC (Avg.)) 2. IECC 2015 Mechanical Systems (System 5 - Packaged VAV w/ Reheat and 80% Eff. Hot-Water Boilers) 3. IECC 2015 Lighting Systems (0.87 w/s.f.) 4. IECC 2015 Domestic Hot Water Systems (80% Eff. Hot Water Heaters)	629,840	3,154.5	$105,813	$34,371	$140,184	$1.49	56.42	-	-

Option	System	Annual Elec. Cons. (kWh)	Annual Gas Cons. (MBTU)	Annual Electric Cost	Annual Gas Cost	Combined Utility Cost	Annual Utility $/s.f.	Annual kBTU/s.f. (EUI)	Combined Expense Savings*	Energy Savings Percentage
Design Building	1. Design Envelope (Wall Insulation R-18 c.i., Roof Insulation R-40 c.i., Windows & Curtainwall 0.29 U-Value w/ 0.40 SHGC) 2. Design Mechanical Systems (VAV Displacement Ventilation Systems with High-Efficiency Condensing Boilers) 3. Design High-Efficiency Lighting Systems (0.6 w/s.f.) 4. Design High-Efficiency Domestic Hot Water Systems (94% Eff. Hot Water Heaters)	476,530	2,408.2	$80,058	$26,240	$106,298	$1.13	42.92	$33,886	23.9%

*Combined expense savings is the difference between the combined annual expense of the baseline and building in comparison.

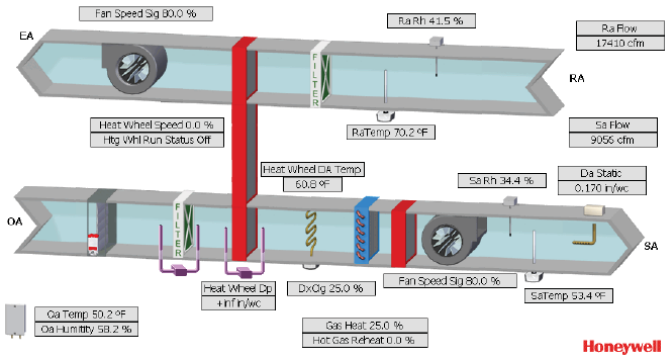
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BUILDING MANAGEMENT SYSTEM CONTROLLING HVAC AND LIGHTING





- System (Zone) Scheduling
- Occupied-Unoccupied Control
- Night Setback Operation
- Lighting Control System Integration
- Increased Energy Savings
- Integrate with Preventative Maintenance Scheduling

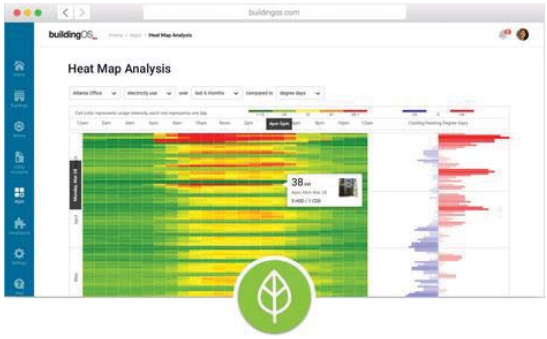




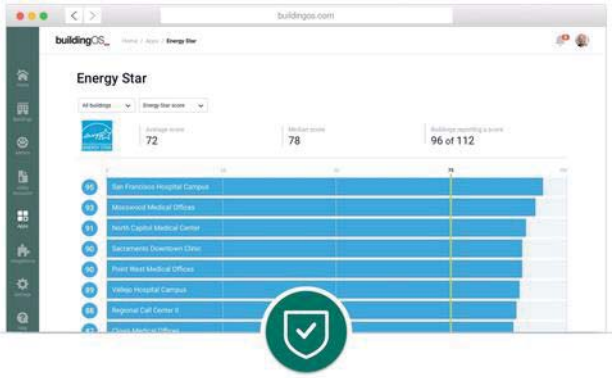
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BUILDING DASHBOARD ENERGY METERING SYSTEM

- Building Dashboard System
  - Utility Bill Data
  - Building Automation Systems Data
  - On-Site Generation System Data
  - Submetering Data







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HIGH EFFICIENCY LED LIGHTING WITH OCCUPANCY SENSOR & DAYLIGHT HARVESTING

- Dual Technology Occupancy Sensor & Daylight Photosensor
- Lighting Control System
- LPD Target of .4 to .5



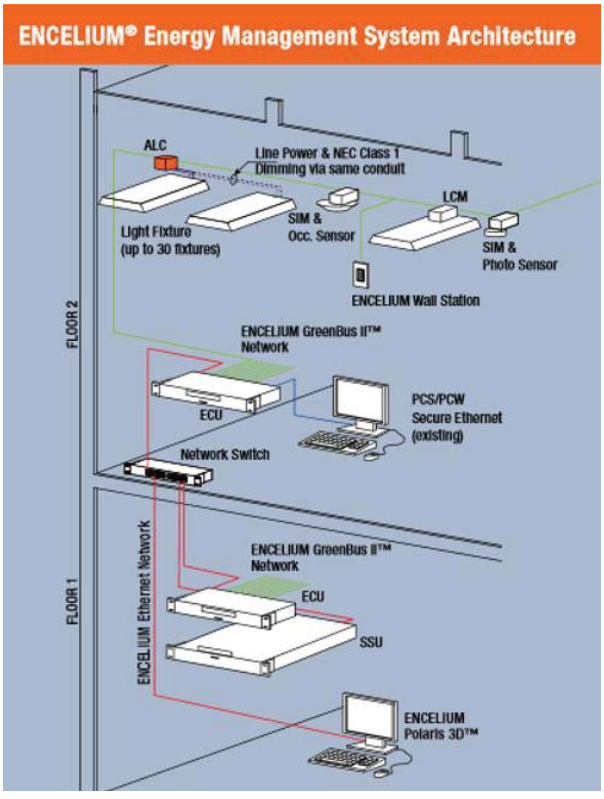




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ADDRESSABLE LIGHTING CONTROL SYSTEM

- Lighting Control System
  - Occupancy Sensor
  - Daylight Sensor
  - BMS Integration
  - Addressable groups



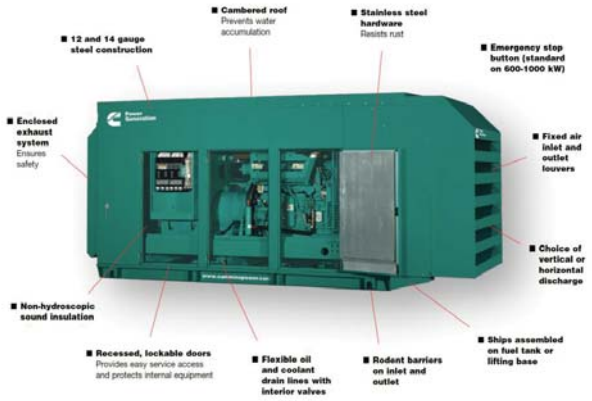
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100-125 KW GENERATOR (ESTIMATED SIZE)

Load Breakdown for Life Safety Equipment:

•All Exit Signs and Emergency Lighting in the areas listed below are fed by Life Safety Emergency Power:

1. Corridors
2. Electrical Rooms
3. Gymnasium Cafeteria
4. Media Center
5. Lobbies
6. Central Administration area
7. Health Suite/Nurses office
8. Toilets
9. Cafetorium
10. Data rooms “Head End room & IDF Closets
11. Kitchen & Servery
12. Exterior Building mounted lights over doors required for egress lighting
13. Where required by code (egress areas)



Load Breakdown for Optional Standby Equipment:

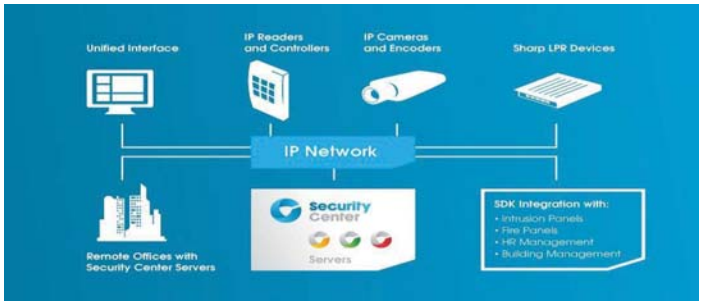
- Equipment listed below is fed by Optional Standby Power

1. Boilers, Water Pumps
2. Door Access Controls, Security System, CCTV
3. ATC Controls
4. Strategically located receptacles in the following areas. These receptacles will be RED in color
    a. Cafeteria
    b. Kitchen/Servery
    c. Central Administration
    d. Electric Rooms and Emergency Electric rooms
    e. Mechanical Rooms
6. Electronic faucets and sinks (where applicable)
7. Heating and ventilation systems required for freeze protection
8. Cooling unit serving Head End room & IDF rooms.
9. Unit heater serving water service room.
10. Equipment within the Head End and IDF rooms including:
    a. Paging/Intercom System
    b. Telephone System
    c. Network electronics
    d. Servers
    e. Telephone system
    f. Clock system
11. Fire alarm system (system also has full battery back-up)
12. Refrigeration

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INTEGRATED ELECTRONIC SECURITY SYSTEM

- Security System Components
    - Access Control
    - CCTV
    - Intrusion
    - Integration
        - With each other
        - With other systems, Paging/Lighting
- Sequence of operations of key elements
    - Typical access control door
    - Main Entrance
    - CCTV video retrieval
    - Intrusion system





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- Custom Measure Approach
- Energy Conservation Measures
  - High Efficiency Lighting
  - Daylight Harvesting
  - High Efficiency Cooling and Heating
  - VFD's on Pumps
  - High Efficiency Domestic Water Heaters
  - AHU Low Fan Power
  - Enhanced Kitchen Hood Controls



JCJARCHITECTURE

JCJ.COM

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FAX 617.532.6601
BOSTON@JCJ.COM

AN EMPLOYEE OWNED COMPANY

MMES – MEP SUB-COMMITTEE MEETING 5/8/2018

- Attendees:
    - Remko Breuker, Community Member, SBC Member
    - Avi Urbas, MERSD Finance Director, SBC Member
    - Steve Hunt, MERSD Facilities Dept.
    - Jay Pagliarulo, MERSD Director of Facilities, Non-Voting SBC Member
    - Steve Brown, Project Manager, DW
    - Christina Shefferman, DWMP
    - Daniel Ruiz, Project Manager, JCJ
    - David Pereira, Electrical Engineer, GGD
    - Dominick Puniello, Mechanical Engineer, GGD
    - Agnes Vorbrodt, Sustainability Consultant, VvS
    - Jon Rich, President, WT Rich
    - Steve Koutalakis, MEP Coordinator, WT Rich

Lighting System

- 100% LED
- Will have Addressable Modules
- Vacancy sensors to meet LEED requirements
- You can group lights as you like
- Lighter load using LED
- Load shedding strategies will be explored
- Expect to provide daylight dimming along exterior windows
    - Expression of concerns based on experience at Middle High School
    - The technology has improved with dimming (especially with fluorescents)
- Looking to save Light density
    - Watts per square foot
- Dim any fixture in building
- No more variety of bulbs – change drivers instead
- All sensors are on the network
- Integrate with the building management system
- No emergency bypass relay any more
    - Simplifies the wiring
- Occupancy sensor
    - Moving to add occupancy sensors in hallways and stairways
    - Can ramp lights down in increments
- At full brightness expecting to be 30-40% less than current

- Emergency Generator
    - Expecting to be 100-125 KW for this building

- Life safety
- Assembly spaces
- Look at list
- LED doesn't put as much load on the generator any more
- Optional load (physically separated)
    - Freeze protection
    - Security systems
    - ATC controls /Mech controls
    - Fridges (nurse/ kitchen)
    - communication
    - Receptacles in certain areas admin/ custodial/ nurse
- Assuming there is no desire to put the whole building load on the generator
    - Fuel source – gas vs diesel – costs are about the same
    - Local inspectors sometimes doesn't allow natural gas. Examples of natural gas generators in Town
- Anything you wish you had added to the Generator at the MHS?

- Security System
    - Currently use S2 platform – continue with this system- proprietary item
    - Planning for a Fiber link between the buildings
    - Would like to move to a different video management platform
        - S2 now has a video management and access control system – if the committee is interested in making this proprietary – should start to consider now
    - IP cameras
    - Will need to discuss which doors will get cameras during DD
        - Initial recommendation – building perimeter – main entry points – interior corridors – assembly areas and stairwells
    - Avi wants to see a mini time-line for security design
- Utility Incentives
    - Get the utilities involved now
    - $2 a sq ft for this category of building
    - Utilities like to be involved at the SD level.

- Mechanical
- SBC member gives a summary of where the discussion is now
    - A Baseline system is not expected to be pursued
    - Andy met with Steve H and Jay and then Pam and Avi to discuss the preferences of the facilities team
- Some interest in having a system that is easier for the maintenance staff to actually repair/themselves
- Penthouse versus roof screens
    - Life cycle cost analysis

- How do we come to a consensus about the options?
    - Let's consider it from the stand point of full or partial AC
    - PSR assumed full AC in the estimate
    - The maintenance costs don't take into account how the labor costs are considered
        - outside provider or in-house staff
    - Partial AC admin library
- If the gymnasium is going to be the auditorium do we want full AC there?
    - If you design an auditorium – it would be fully AC-ed
    - Steve H – experience having to run full AC in the MHS auditorium on a 65 degree day due to the occupant heat load
    - Concerns about the public reaction of buying full AC in thebuilding
    - Important to frame the matter for the committee – discussion about coverage zones for the future
    - With displacement The VAV boxes won't have a heating or cooling coil
- Already have a high hot water radiation cost
    - Preference is to consider a hot water option – not gas
- Any advocates for chilled beam?
    - Better for the environment but huge costs
- Gym doesn't need AC when gym use – but it would be good to have better cooling in gym when its operating as an auditorium
    - Thru ATC controls could allow you to lock out AC use in gym
    - Gym 25 tons if displacement and 35
- Some concerns about use of radiant panels in a displacement situation
    - It is a wash, cost-wise, for panels versus fin tubes
    - More radiant panels in schools
    - Fin tubes a concern with all our doors to outside on first floor
    - Dom – concern of first heating lag in the morning
- Avi – indoor penthouse concepts
    - A 25 year payback is not worth it
    - Enclosing the RTU is more square footage
- Option 1 is the compelling choice from a cost perspective – however the district might want to buy a little more "comfort"
- Sub-committee option 1 with the option of DX cooling with hot water coils

Sustainability

- Concerns about the cost impacts between the HVAC choices
    - Would like to give the wider committee a chance to weigh in
- Return on Investment is a critical factor
    - LEED Silver is a good base and then see which additional efforts might be worth the R.O.I.
- Concerned to have Salt-rated equipment for any exposed rooftop equipment
- Concerns about the additional maintenance costs by going to packaged units
    - Additional maintenance costs

PRELIMINARY SCHEMATIC REPORT PHASE PROJECT MEETINGS

- March 27, 2018 – SBC Meeting #21
- April 10, 2018 – SBC Meeting #22
- April 26, 2018 – SBC Meeting #23
- May 1, 2018 – MEP & Sustainability Meeting
- May 1, 2018 – SBC Meeting #24 (CM Interviews)
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Manchester Memorial Elementary School Project

Construction Management at Risk Presentation

May 1, 2018

W.T. RICH COMPANY, INC.

CELEBRATING 50 YEARS OF EXCELLENCE 1968 - 2018

Presentation Overview

- Preconstruction
- Safety and Logistics
- Schedule
- Budget
- Why W.T. Rich?

What's in the binder?

- Presentation
- Supplemental Slides
  - Preconstruction services
  - Supporting the vote
  - Budget approach and performance
  - Temporary modular classrooms
  - Neighborhood management
  - Site access analysis
  - Traffic plan
  - MEP management and facilities turnover
- Cost Estimate
- Sample Design Reviews
- Images from 3D Models



Preconstruction

What **distinguishes** W.T. Rich's Preconstruction Services?

SD Preconstruction → **Full Preconstruction**



- Estimating accuracy and turnaround
- Depth of design reviews
- MSBA experience
- On-site investigations
- School communication
- Supporting the vote



Safety and Logistics



SAFETY MANDATE

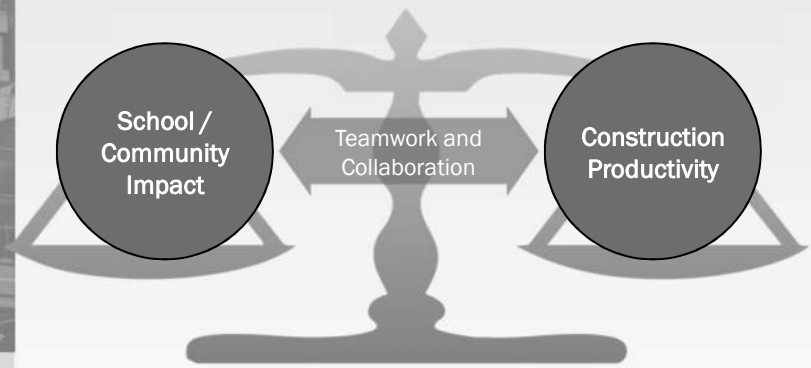
Above all else, ensure the health, safety and well-being of the school community, the general public and construction workforce

- Site-specific safety plan
- School/construction separation
- CORI/SORI
- Mandatory safety orientations
- School evacuation drills
- Daily communication

Logistical Considerations

SAFETY MANDATE

Above all else, ensure the health, safety and well-being of the school community, the general public and construction workforce



Manchester Memorial Elementary School 6

MMES Site Challenges

- Phased demolition/construction
- Proximity of new construction to existing (3' to 5')
- Site size
- Slopes and grade changes
- Limited access and laydown
- Wetlands (35' "No Disturb")
- Current school parking / drop-off challenges

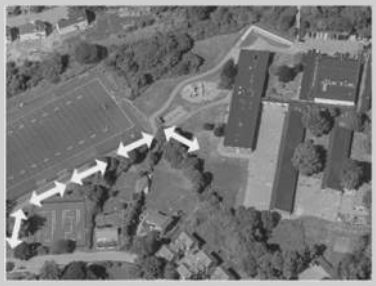
Manchester Memorial Elementary School 7

W.T. Rich Site Logistics Approach

- Collaborative effort with the right stakeholders
- Well-conceived and vetted approach
- Communication and coordination
- Consistency, stability and predictability
- Adaptability

Significant Challenge – Site Access

1. From South via Brook Street



2. Southeast near Summer Street



3. North Side of the Existing Building



Site Access Options

1. From South via Brook Street



Pros:
- Isolated from the school
- Minimal re-working of site
- Tennis courts as laydown
- Construction parking at dirt lot
- Turf field kept open
- Path to turf field open

Cons:
- Disruptive/inconvenient to playfield users
- Loss of tennis courts / cost to resurface
- Very tight turn near southwest corner of new West Wing

2C. Southeast near Summer Street



Pros:
- Required for Phase 4
- Well isolated from school
- OK turning radiuses

Cons:
- Tight passage at SC Wing
- Significant re-work

For purpose of the Preliminary Logistics presented within our proposal, we have chosen Options 1 and 2C:

- Safest
- Most isolated from the school
- Least disruptive to school traffic
- No impact on school parking/traffic

We remain open to all options and would seek to collaborate with the team to determine optimal approach

Existing Site



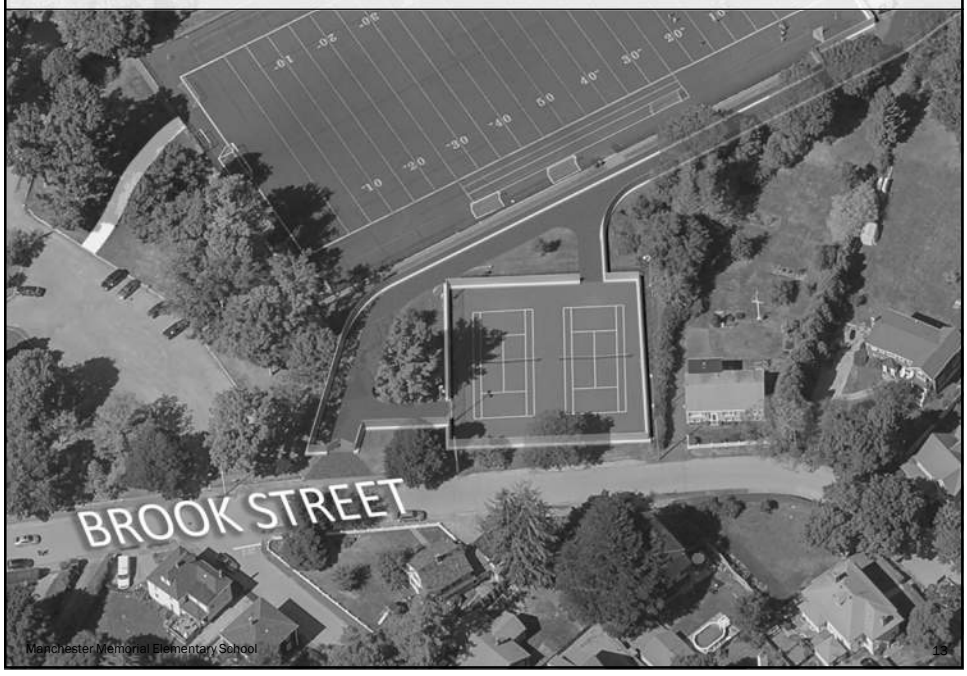
Overall Initial Site Configuration

Configuration Duration
June 2019 to June 2020



Brook Street Entrance

Configuration Duration
June 2019 to June 2021



Summer Street Entrance

Configuration Duration
June 2019 to June 2021



Main Construction Zone

Configuration Duration
June 2019 to June 2020



Phase 1 – Modulars, Abatement/Demolition of SW Wing

Configuration Duration
June 2019 to June 2020



Phase 2 – New West Wing Construction

Configuration Duration
June 2019 to June 2020



Summer 2020 (Phase 2 and 3 Overlap)

Configuration Duration
Late June 2020 to August 2020



Phase 4 – New East Wing Construction

Configuration Duration
September 2020 to June 2021



Summer 2021 (Phase 4 and 5 Overlap)

Configuration Duration
Late June 2021 to August 2021



Phase 5 – Final Site Finishes

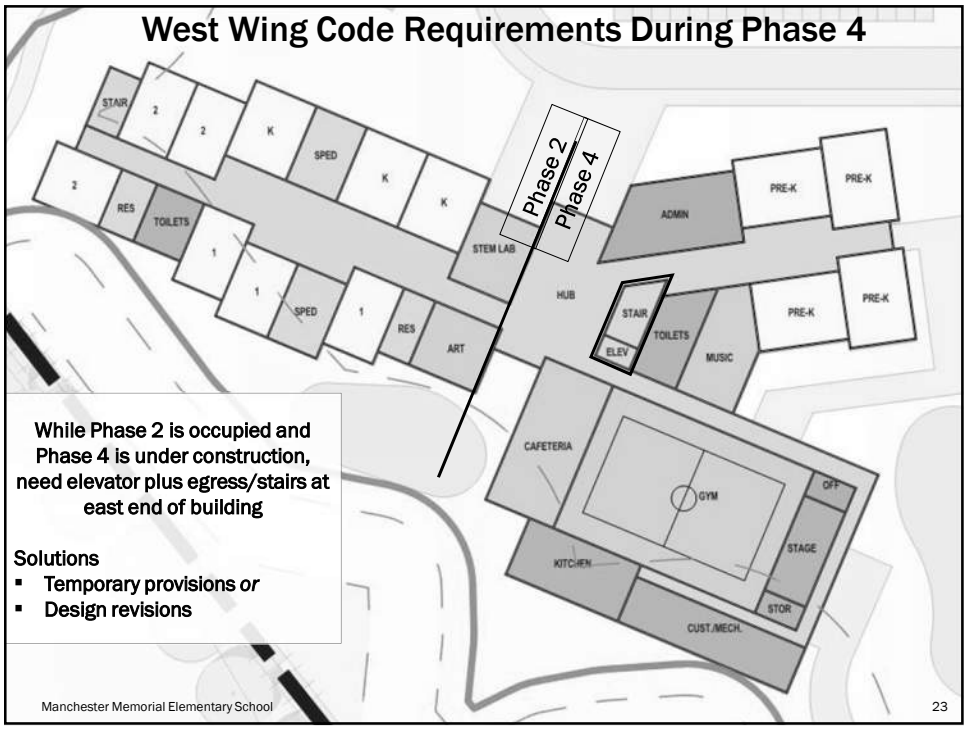
Configuration Duration
August 2021 to October 2021



Final Completion



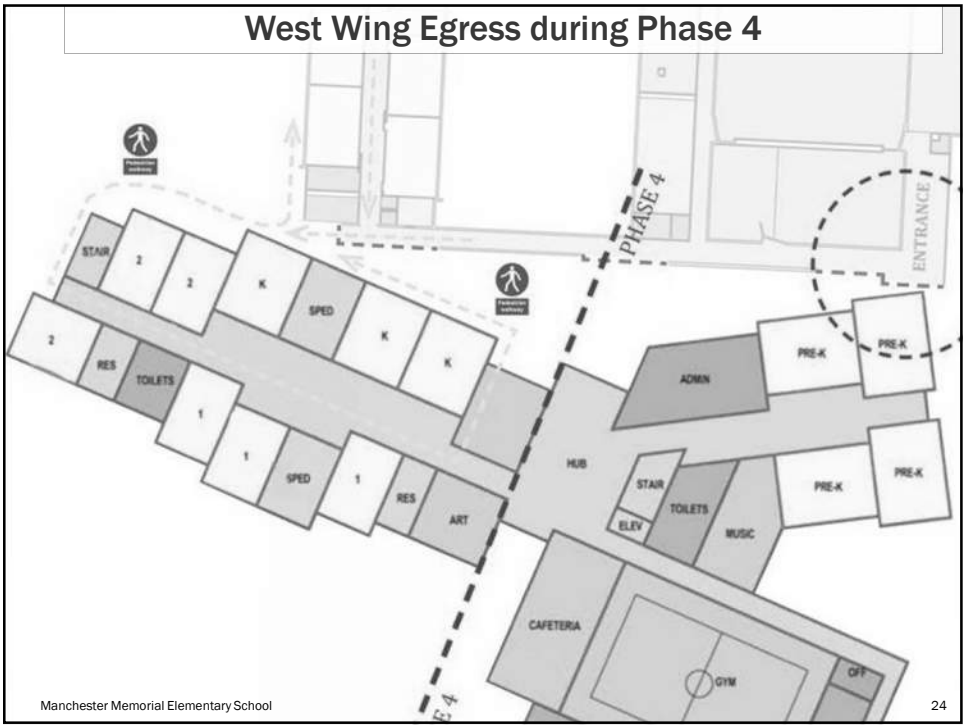
West Wing Code Requirements During Phase 4



While Phase 2 is occupied and Phase 4 is under construction, need elevator plus egress/stairs at east end of building

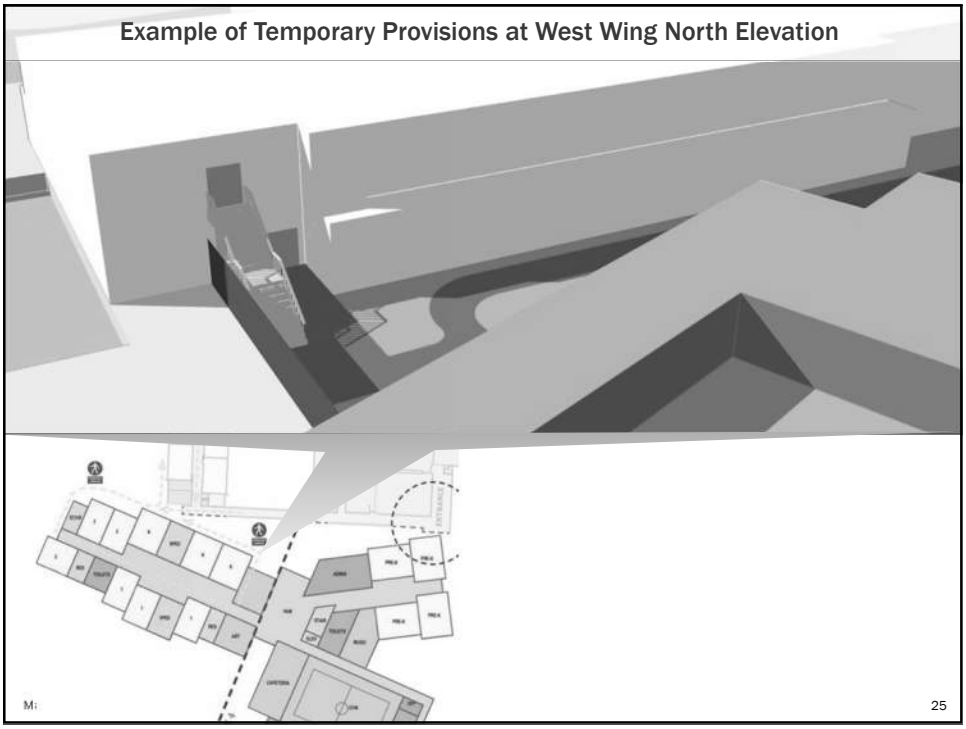
Solutions
- Temporary provisions *or*
- Design revisions

West Wing Egress during Phase 4



Manchester Memorial Elementary School 24

Example of Temporary Provisions at West Wing North Elevation

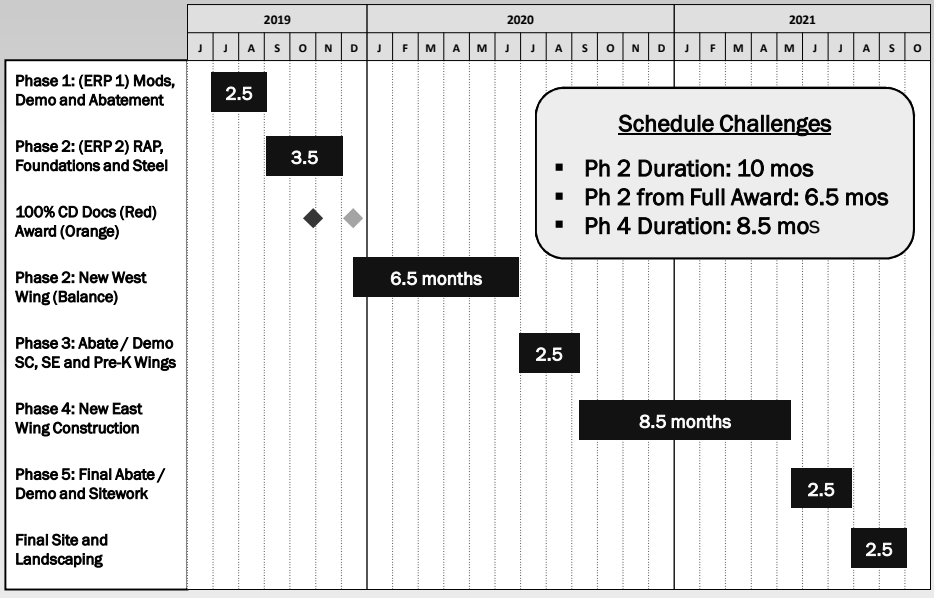


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Scheduling

RFP Schedule (Provided per Addendum 2)



Lead Time Challenge for Phase 2 Construction

2019				2020					
Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun

100% Bid Docs	Award	Phase 2 (6.5 months from full award)

Typical Long Lead Items	Typical Total Lead Time
Power Study/Switch Gear	24 weeks
Light Fixtures	20 weeks
Rooftop Equipment	22 weeks
Millwork and Casework	20 weeks
Windows	24 weeks
Elevator	26 weeks

Total Lead Time = Submittal/Shop Drawing Preparation + Review Time + Resubmission Contingency + Fabrication and Delivery Time



W.T. Rich Schedule Strategies

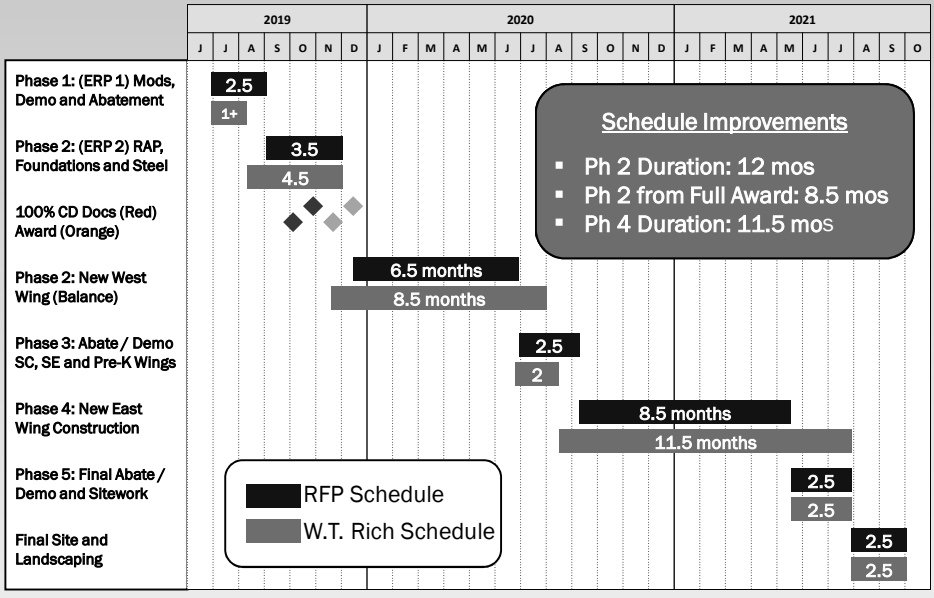
Early Packages 1: Abatement/Demolition 2: RAP, Fdn, Steel and Site	• ERP 1 – Docs: 4/4/19; Award: 5/2/19 • ERP 2 – Docs: 5/9/19; Award: 6/6/19
Compressed Phase 1 Abate/Demo	• SW Wing is 9,100 SF (small) • 1.5 weeks abatement (double shifts) • 3 weeks demo (extended work hours)
Advance 100% CD's	• CM estimate 2 weeks instead of 3 • One week savings x 3 estimates = 3 weeks
Expedited Award for Select Scopes	• Majority of contracts: 6 weeks • Five high priority: 4 weeks (Metal Windows, Roofing, Drywall, Millwork and Doors/Frames)



W.T. Rich Schedule Strategies (continued)

Subs Completion for Phase 2	• August 7, 2020 • 3+ week school move-in
Summer Overlap Work	• Summer 2020: End of Ph 2 and Ph 3 Abate/Demo • Summer 2021: End of Ph 4 and Ph 5 Abate/Demo
Compressed Phase 3 Abate/Demo	• 26,700 SF - work 3 wings concurrently • 2 weeks abatement (double shifts) • 5 weeks demo (extended work hours)
Subs Completion for Phase 4	• July 30, 2021 • 4+ week school move-in

W.T. Rich Proposed Schedule (Green)



Benefits of Proposed Approach

- Meet all school opening requirements
- Preserve all design durations
- Alleviate Phase 2 lead time challenge
- Increase Phase 2 duration to 12 months
- Increase Phase 4 duration to 11.5 months
- Perform abatement/demo summers only
- More attractive to bidders => Cost Savings!

"Cons"

- Some premium time (abatement/demo)
- Expedited owner move-in (but achievable)



Budget



W.T. Rich Preliminary MMES Cost Estimate

Basis / Assumptions

- Design Documents: PDP and PSR Documents
- Design Option: N-3 The Hub
- GC's, Fees, Bond and Insurance: "Actual" (based on our proposal)
- Design and Pricing Contingency: 12%
- Escalation: 6% (2 years to construction midpoint)
- Project Phasing/Premium Time: 2%
- GMP Contingency: 2%

Description	Total Estimated Construction Cost	Cost / SF
Target Budget	$44,500,000	$537
W.T. Rich Estimate	$43,153,570	$521

W.T. Rich estimate is more than $1.3MM under RFP budget

Copy of our detailed estimate is provided within the handout



Why W.T. Rich?

Outstanding Team

Clark Avenue Middle School Team Members

West Parish School Gloucester



Jonathan Rich
Project Executive



Steve Buckley
Quality Control Manager



Harvey Eskenas
Senior Project Manager



Norm O'Brien
Safety Director



Sunny Mak
Chief Estimator



Eileen Olsen
Project Administrator



Mike Michaud
Project Manager



Steve Koutalakis
MEP Manager



Ed Condon
Superintendent



Laury Barbanti
Project Scheduler



Caroline Kmiec
Assistant PM



Alex Corbett
Assistant PM



Eddy Serrao
Asst Supt/ On-Site QA-QC

Case Study: Clark Avenue MS – Chelsea, MA









Case Study: Clark Avenue Project References

School Principal
- Mary Leverone
- 617-466-5100
- leveronem@chelseaschools.com

City Manager
- Tom Ambrosino
- 617-466-4000
- tambrosino@chelseama.gov

Facilities Director
- Joe Cooney
- 617-466-5110
- jcooney@chelseama.gov

Designer – HMFH Architects
- Arthur Duffy
- 617-492-2200
- aduffy@hmfh.com

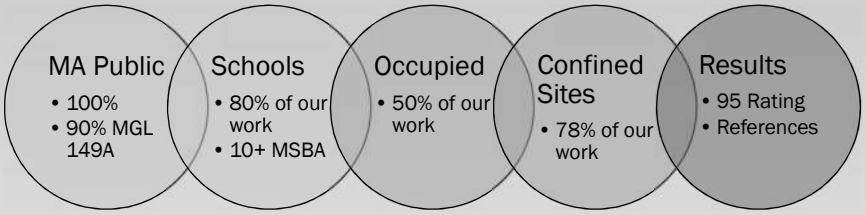
OPM – Pinck & Co.
- Andraya Lombardi
- 617-445-3555
- alombardi@pinck-co.com

City Advisor – NV5
- Stuart Lesser
- 617-744-3110
- stuart.lesser@nv5.com



Project has been an overwhelming success

Experience and Results



If W.T. Rich is selected as the MERSD's Construction Manager, the project will receive the *commitment of one of our most experienced and talented project teams*

Any result short of total client satisfaction will be unacceptable to us

4D Summary Presentation of Logistics and Phasing

MEETING MINUTES

Project:	Manchester Memorial Elementary School	Project No:	MP17-114
Subject:	School Building Committee/School Committee Meeting	Meeting Date:	5/1/2018
Location:	Manchester MS/HS – Library	Time:	5:00 PM
Distribution:	Attendees, Project File	Prepared By:	C.Shefferman

Present	Name	Affiliation	Present	Name	Affiliation
✓	Caroline Weld *	SBC Co-Chair	✓	Jim LaPosta	JCJ
✓	Ann Cameron *	SBC Co-Chair	✓	Daniel Ruiz	JCJ
✓	Pam Beaudoin *	Superintendent	✓	Lauren Braren	JCJ
✓	Avi Urbas *	Dir. of Fin. & Ops		Emily Czarnecki	JCJ
✓	Alva Ingaharro *	Essex	✓	Mike Burton	DWMP
	John Willis *	Principal MMES	✓	Steven Brown	DWMP
✓	Jay Pagliarulo	Dir. of Facilities	✓	Christina Shefferman	DWMP
✓	Andy Oldeman *	Man. Fin. Comm.			
✓	Lisa O'Donnell *	Essex B.O.S.			
✓	Remko Brueker *	Manchester			
✓	Adam Zaiger *	Manchester			
✓	Tyler Virden *	Essex			
✓	George Scharfe *	Manchester			
✓	Gordon Brewster *	Manchester			
✓	Charlie Hay *	Essex			
	Sarah Creighton *	Manchester			
	Maggie Tomaiolo *	Essex			
✓	Jake Foster *	Essex			

** SBC Voting Member*

MANAGEMENT PARTNERS, LLC

PROJECT MANAGERS
ARCHITECTS

Newburyport, MA 01950
260 Merrimac Street Bldg 7
978.499.2999 ph
978.499.2944 fax

www.doreandwhittier.com

Item No.	Description	Action
24.1	Call to Order: 4:59 pm meeting was called to order by the SBC Co-Chair A. Cameron with 14 of 17 voting members in attendance. S. Brown of DWMP notes the meeting will follow the agenda that was provided to the SBC prior to the meeting via Dropbox.	Record
24.2.1	Construction Manager at Risk Interviews-WT Rich: WT Rich presented to the SBC and Prequalification Committee with a 25-minute interview and 35 minutes of questions and answers totaling 50 minutes.	Record
24.2.2	Construction Manager at Risk Interviews-Consigli: Consigli presented to the SBC and Prequalification Committee with a 25-minute interview and 35 minutes of questions and answers totaling 50 minutes.	
24.2.3	Construction Manager at Risk Interviews-Shawmut: Shawmut presented to the SBC and Prequalification Committee with a 25-minute interview and 35 minutes of questions and answers totaling 50 minutes.	Record
24.2.4	Construction Manager at Risk Interviews-Deliberation: After the 3 interviews the SBC and prequalification committee reviewed and discussed each CM firm. A review of the discussion is outlined below: ➢ WT Rich: • Spent a lot of time reviewing documents, layout, phasing • Impressed with creative approach to site • Best presentation • Appreciated the dedication towards community involvement • Some concerns about superintendent communication with the principal • Aggressive pricing on proposal ➢ Consigli: • Creative approach • Still used the turf field as a lay down area even though they were told it was not an option • Concerns about abbreviated schedule • Modulars looked nice, but still concerned about non-reimbursable price even though abbreviated schedule • Premium involved to accelerate construction ➢ Shawmut • Impressed with presentation • Proposal lacked creativity • Preconstruction lacked options • Liked they included Concom hearing dates • Impressed with superintendent • Concerns that team will change throughout project	Record
24.2.5	Construction Manager at Risk Interviews-Recommendation from Prequalification Committee: A motion was made by C. Hay seconded by A. Zaiger by the CM Prequalification Committee to recommend to the SBC to select WT Rich Company, Inc.'s proposal as most advantageous and move forward with negotiations. Discussion: None. Vote: 7 CM selection committee members approved. Motion passes.	Record

24.2.6	Construction Manager at Risk Interviews-SBC Approval: A motion was made by A. Cameron and seconded by C. Hay to accept the CM selection committee recommendation to select WT Rich Company, Inc.'s proposal as most advantageous and move forward with negotiations. Discussion: None. Vote: Unanimous to approve. Abstentions: G. Scharfe. Motion passes.	Record
23.1	Adjourn: A motion was made by C. Hay and seconded by A. Zaiger to adjourn the meeting. Discussion: None. Vote: Unanimous to approve. Meeting adjourned at 9:01 pm.	Record

Attached:
CM Interview Meeting Agenda, Sign In Sheet

DORE AND WHITTIER MANAGEMENT PARTNERS, LLC.



Christina Shefferman
Assistant Project Manager
Cc: Attendees, File

The above is my summation of our meeting. If you have any additions and/or corrections, please contact me for incorporation into these minutes.

PRELIMINARY SCHEMATIC REPORT PHASE PROJECT MEETINGS

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AGENDA

Project:	Manchester Memorial Elementary School	Project No:	MP17-114
Subject:	School Building Committee Meeting	Meeting Date:	5/8/2018
Location:	Manchester MS/HS – Library	Time:	7:00 PM
Distribution:	Attendees, Project File	Prepared By:	C.Shefferman

1. Call to Order

2. Previous Topics & Approval of Meeting Minutes
   i. April 26, 2018
   ii. May 1, 2018

3. Invoices & Commitments for Review/Approval

   i. DWMP April Invoice No. 14 for SD phase activity in the amount of $7,142.85. (invoice attached). Vote expected.
   ii. JCJ April Invoice No. 9 for SD phase activity in the amount of $49,473.00. (invoice attached). Vote expected.
   iii. WT Rich SD Preconstruction P.O. in the amount of $20,000.00. (p.o. attached). Vote expected.

4. Schedule/Budget Update

5. CM at Risk Procurement Update

6. Project Update (vote anticipated)

7. Design Update

8. Other Topics Not Reasonably Anticipated 48 hours prior to Meeting

9. Public Comments

10. Adjourn

MANAGEMENT PARTNERS, LLC

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MANCHESTER MEMORIAL ELEMENTARY SCHOOL

SCHEMATIC DESIGN PHASE

SBC MEETING #24

MAY 8TH, 2018

TODAY'S AGENDA

PROJECT UPDATE

DESIGN UPDATE

PROJECT UPDATE

MEETINGS

- MEP SUB-COMMITTEE
- TECHNOLOGY PROGRAM

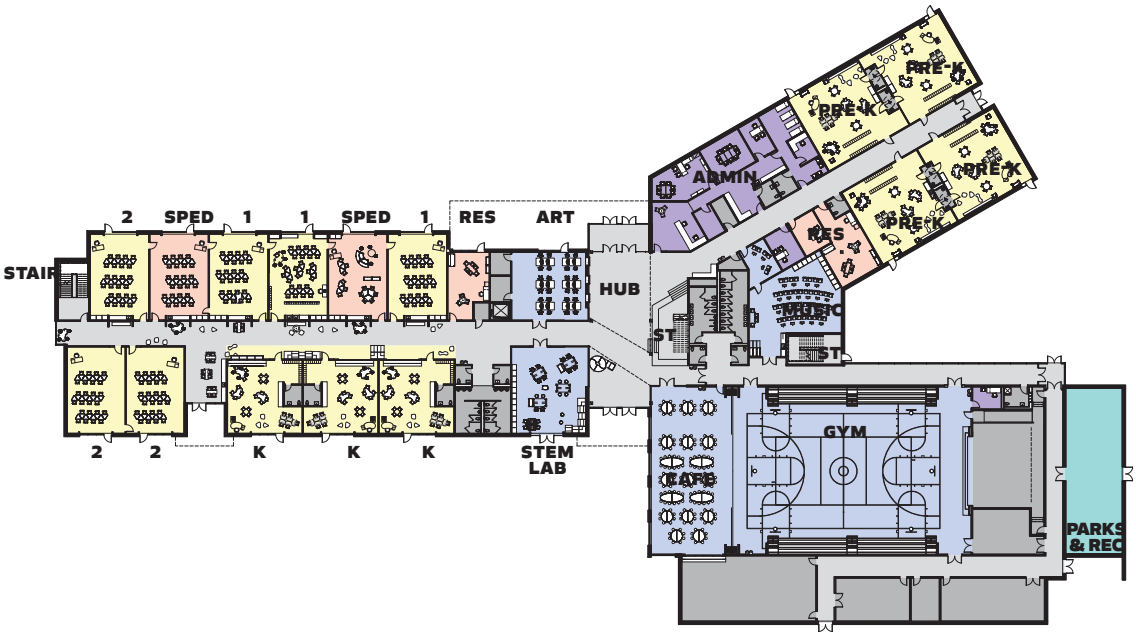
UPCOMING

- HYDRANT FLOW TEXT (5/9)
- SAFETY & SECURITY (5/16 T.B.C.)
- LANDSCAPE (5/16)
- COMMUNITY MEETING #4 (5.30)

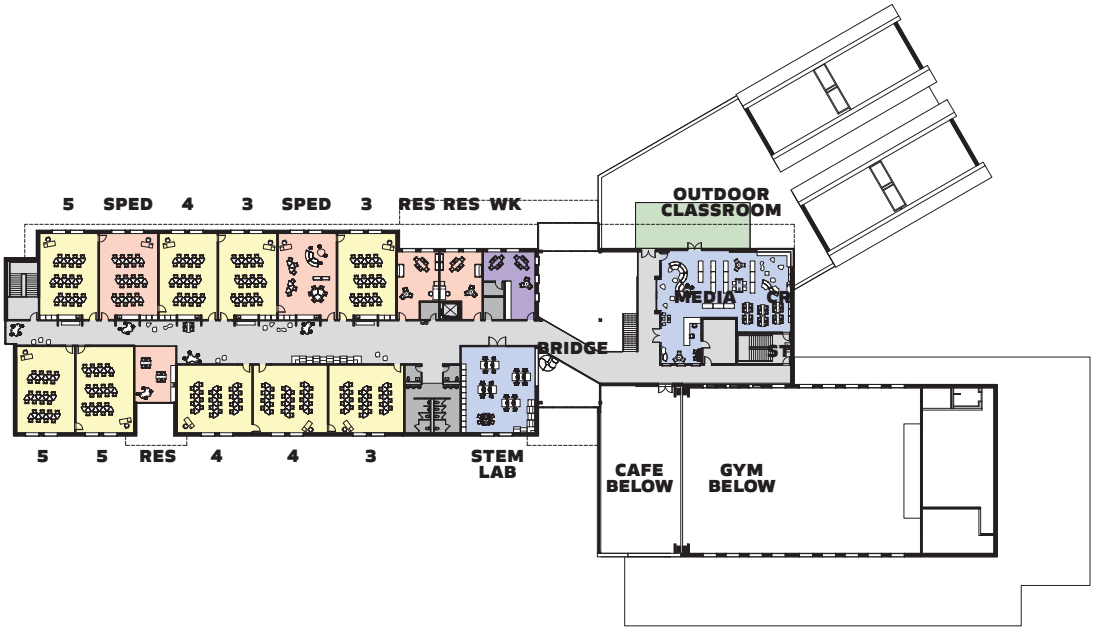
AREA COMPARISONS IN SQUARE FEET

PROGRAM AREA	PSR	5/8/2018
Lower Level		2,315 SF
First Floor		59,145 SF
Second Floor		24,025 SF
Total Net Square Feet	56,974 SF	56,974 SF
Total Gross Square Feet	82,800 SF	85,485 SF
Gross Up Factor	1.45	1.50
Overage (GSF)		2,685 SF

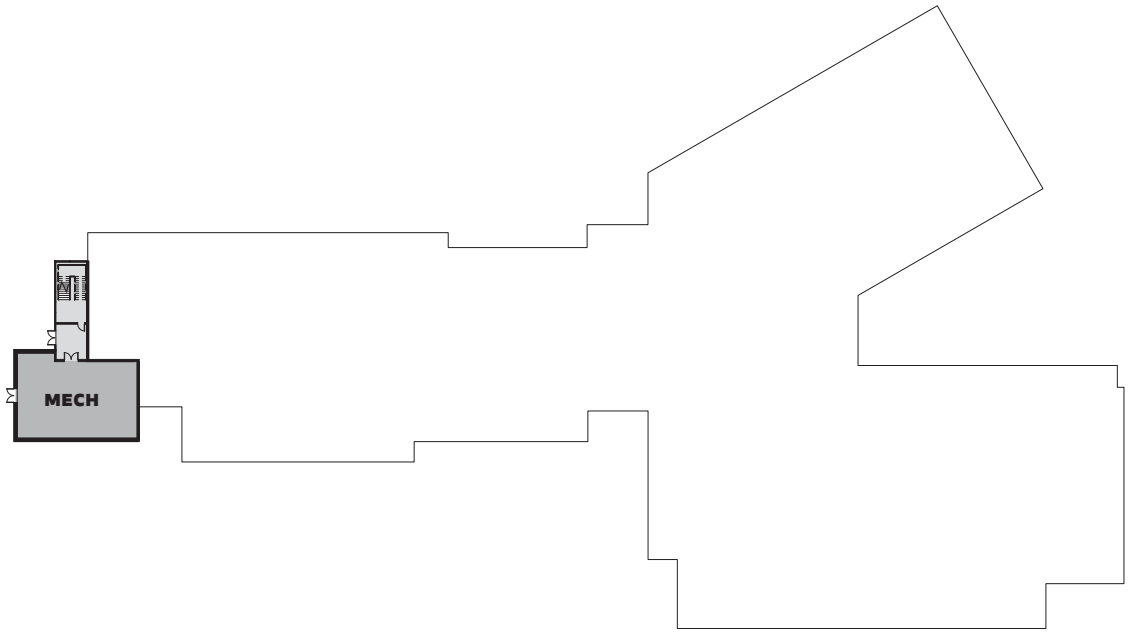
MAIN LEVEL PLAN UPDATED



UPPER LEVEL PLAN UPDATED



LOWER LEVEL PLAN



ROOM DATA SHEETS



JCJARCHITECTURE

MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-BY-THE-SEA

March 15, 2018
SCHEMATIC DESIGN

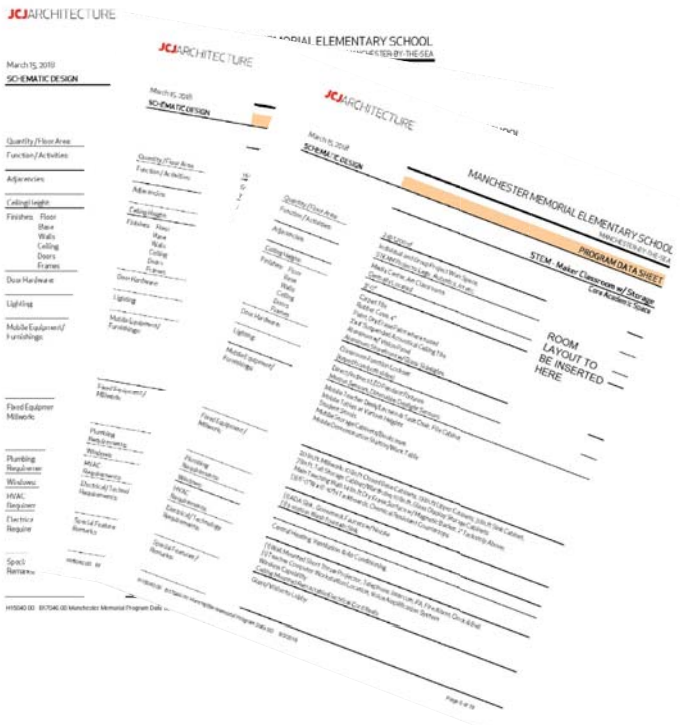
PROGRAM DATA SHEET

General Classrooms - Grades 1-5
Core Academic Space

Quantity / Floor Area:	15 @ 950 sf
Function / Activities:	Grades 1-5 Classroom Instruction, Individual and Group Activity
Adjacencies:	Academic Wing Shared Resource Rooms
Ceiling Height:	10'-0" /8'-0"
Finishes: Floor Base Walls Ceiling Doors Frames	VCT Resilient Flooring Rubber Cove Paint 2'x4' Suspended Acoustical Ceiling Tile Solid Core Wood w/ Vision Panel Hollow Metal Frame w/ Sidelight
Door Hardware:	Classroom Function Lockset (keyed from both sides)
Lighting:	Direct/Indirect Fluorescent Linear Pendant Fixtures, Motion Sensors
Mobile Equipment/ Furnishings:	Mobile Teacher Desk/Lectern & Task Chair, File Cabinet Student Tables Student Stack Chairs Small Group Tables Mobile Storage Cabinets/Bookcases/Wardrobe Area Rug Modular Lounge Seats
Fixed Equipment / Millwork:	12 lin.ft. Millwork: 9 lin.ft Closed Base Cabinets, 3 lin.ft Sink Cabinet Main Teaching Wall: 14 lin.ft Dry Erase Surfaces w/ Magnetic Backer, (1) 6'-0"W x 6'-10"H Tackboard, 2" Tackstrip Above (1) 12' Tackboard
Plumbing Requirements:	Adult Height ADA Sink, Child Height ADA Sink
Windows:	Operable Windows w/ Screens & Roller Shades
HVAC Requirements:	Central Heating, Ventilation & Air Conditioning
Electrical/ Technology Requirements:	(1) Wall Mounted Short Throw Projector, Telephone, Intercom, PA, Fire Alarm, Clock & Bell (1) Teacher Computer Workstation Location, Voice Amplification System (2) Student Computers Wireless Capability
Special Features / Remarks:	First & Second Grade Direct Exterior Access to Outdoor Learning Space

ROOM LAYOUT TO BE INSERTED HERE

H15040.00 B17046.00 Manchester Memorial Program Data SD 5/2/2018 Page 2 of 79



INTERIOR INSPIRATION





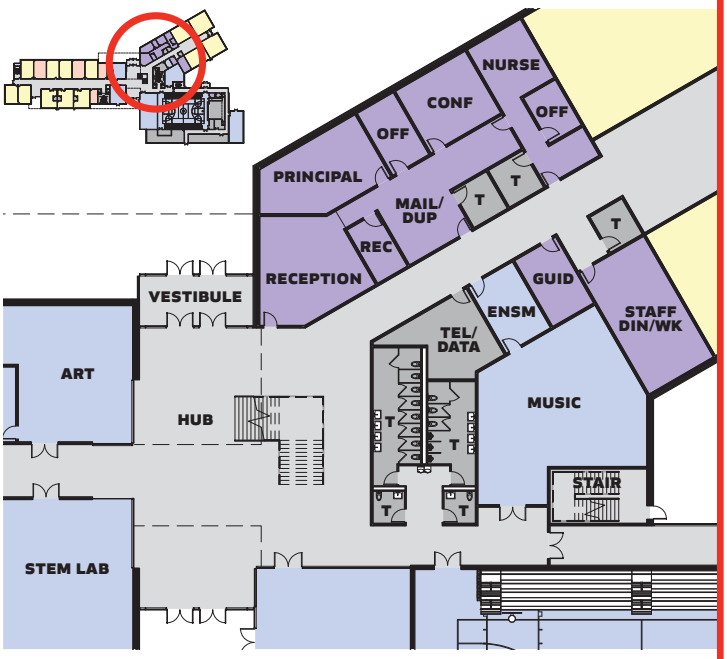




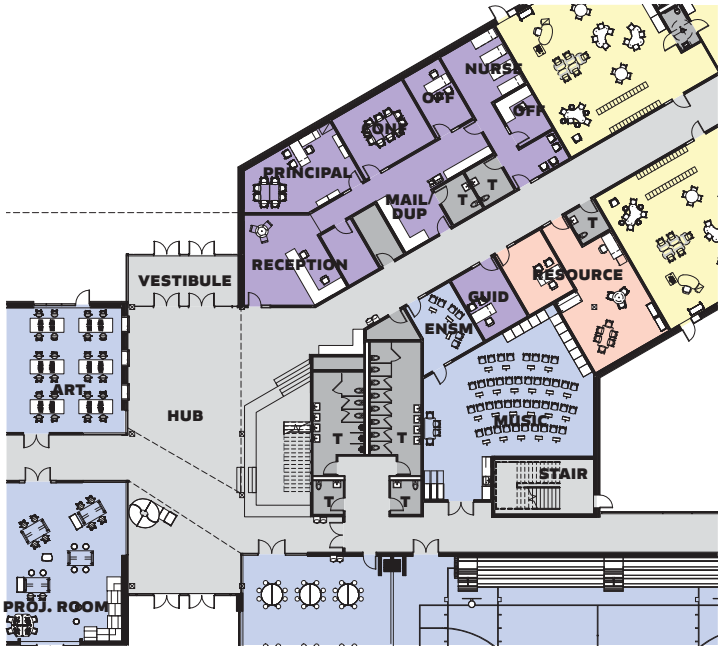




HUB 4/10/2018



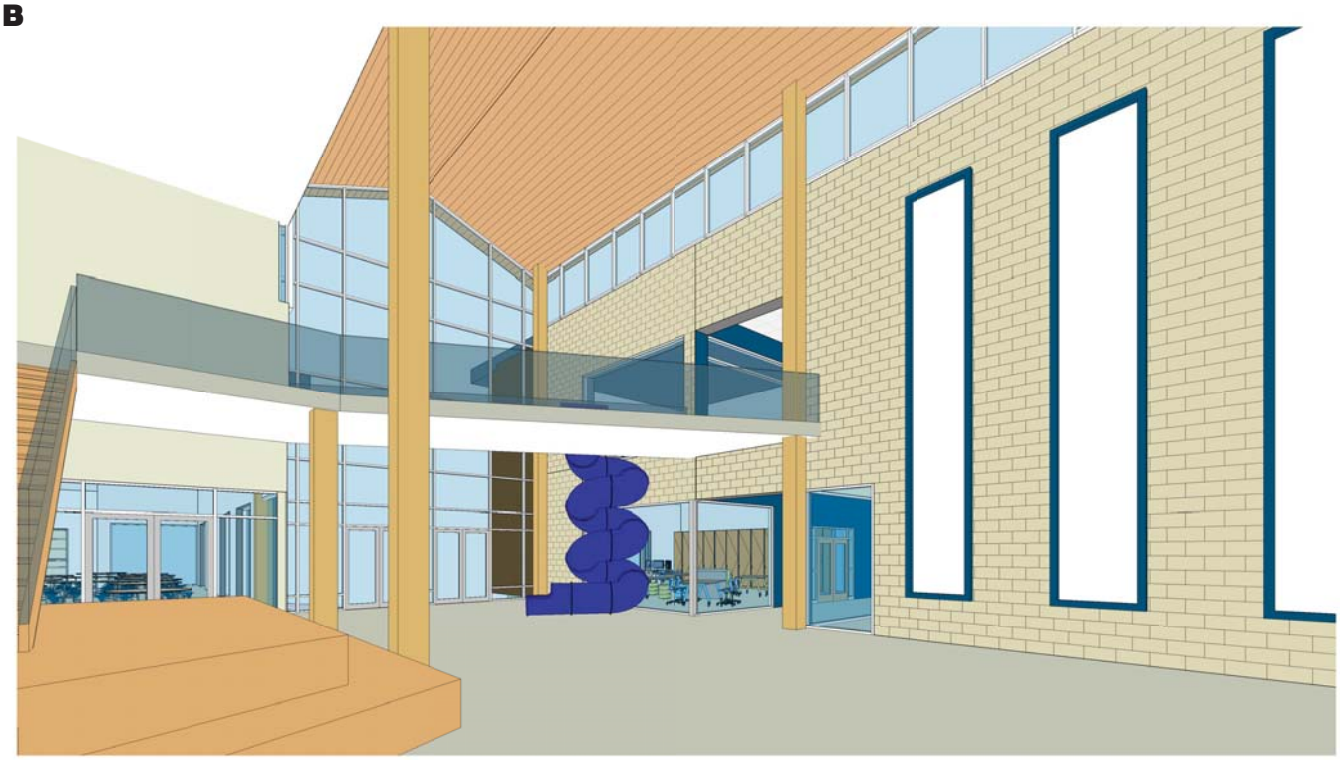
HUB 5/8/2018



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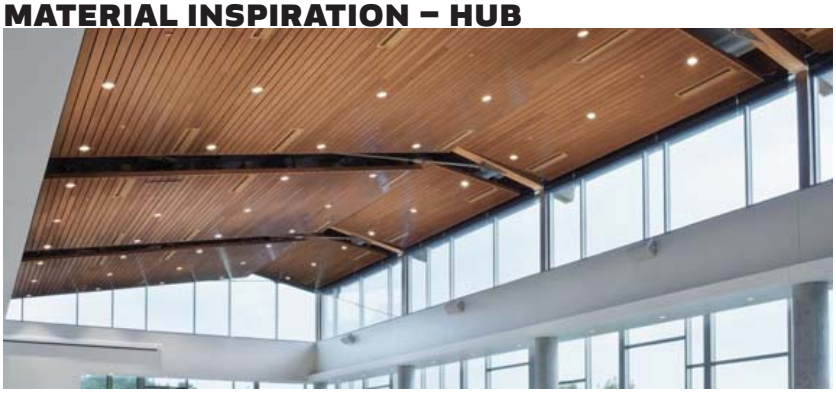
HUB



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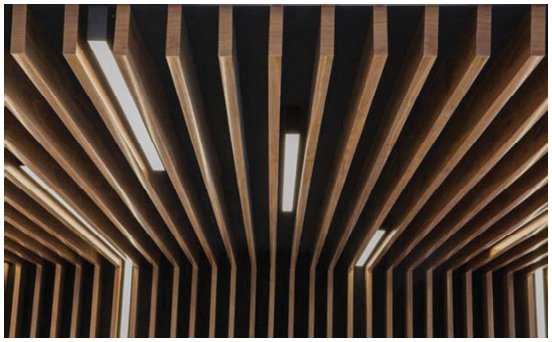


MATERIAL INSPIRATION – HUB



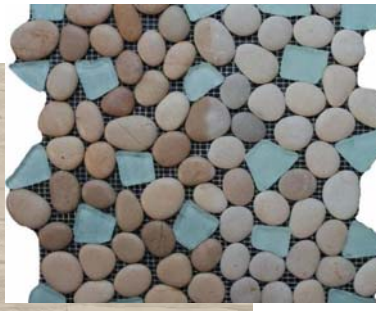


WOOD PLANK OR SLATE STYLE CEILINGS



LARGE FORMAT PORCELAIN TILE FLOORING





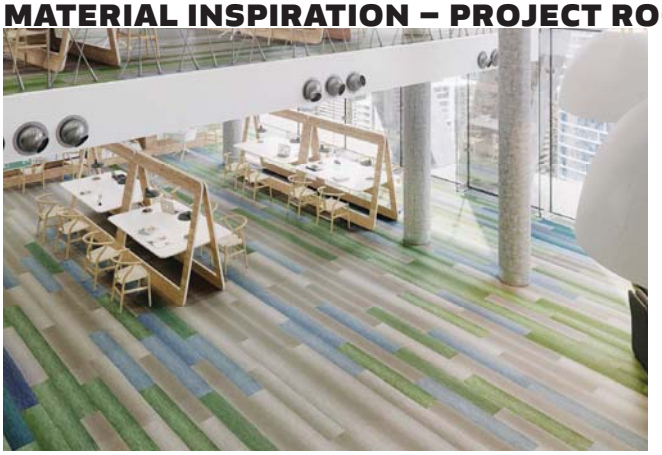
PROJECT ROOM



PROJECT ROOM

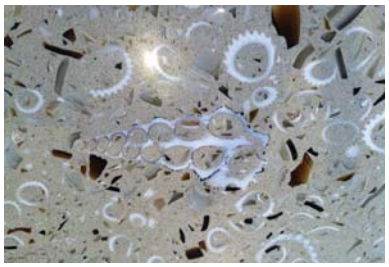


MATERIAL INSPIRATION – PROJECT ROOMS

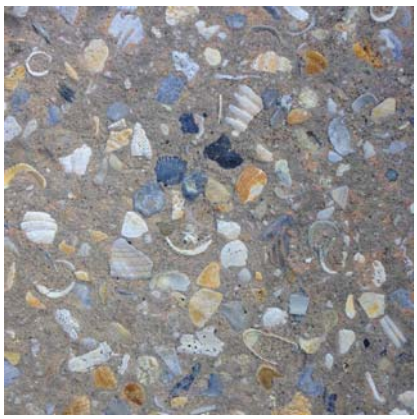


SOLID VINYL TILE FLOORING









SEALED CONCRETE FLOORING WITH SHELLS AND SEAGLASS



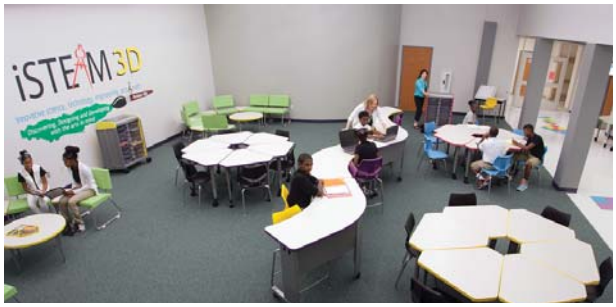




FURNITURE INSPIRATION – PROJECT ROOMS

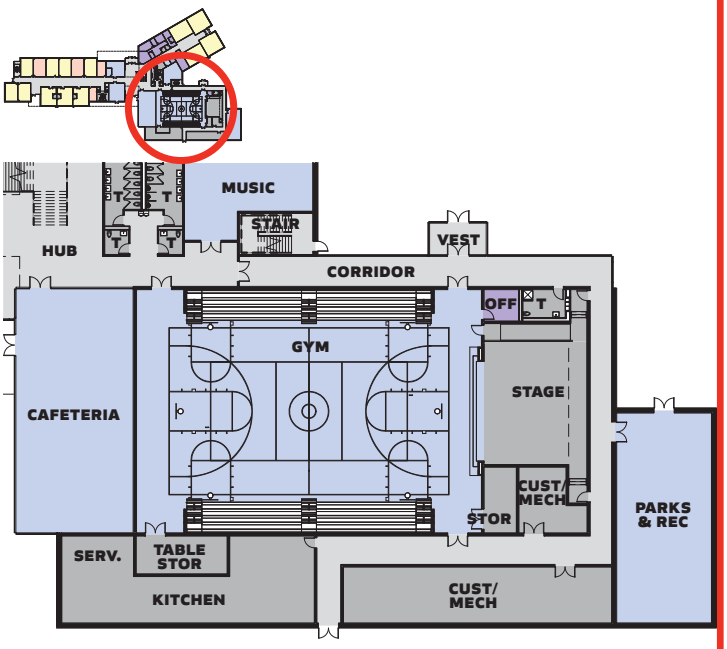




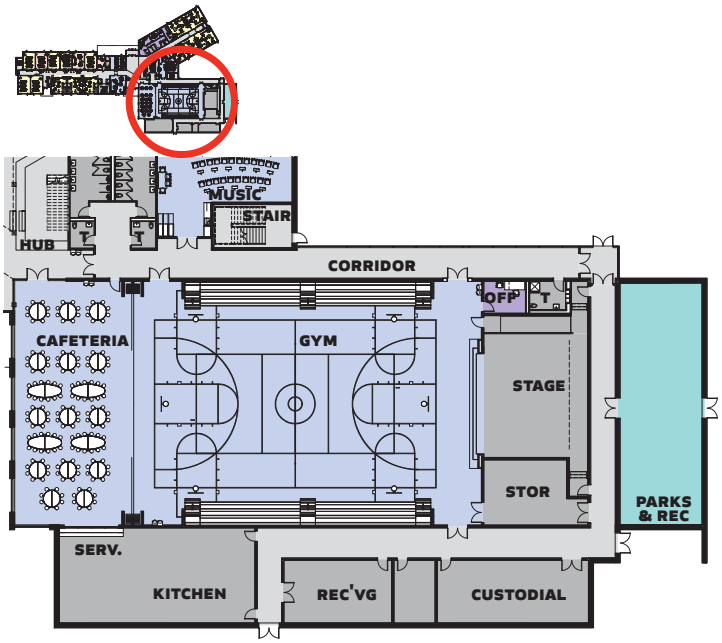




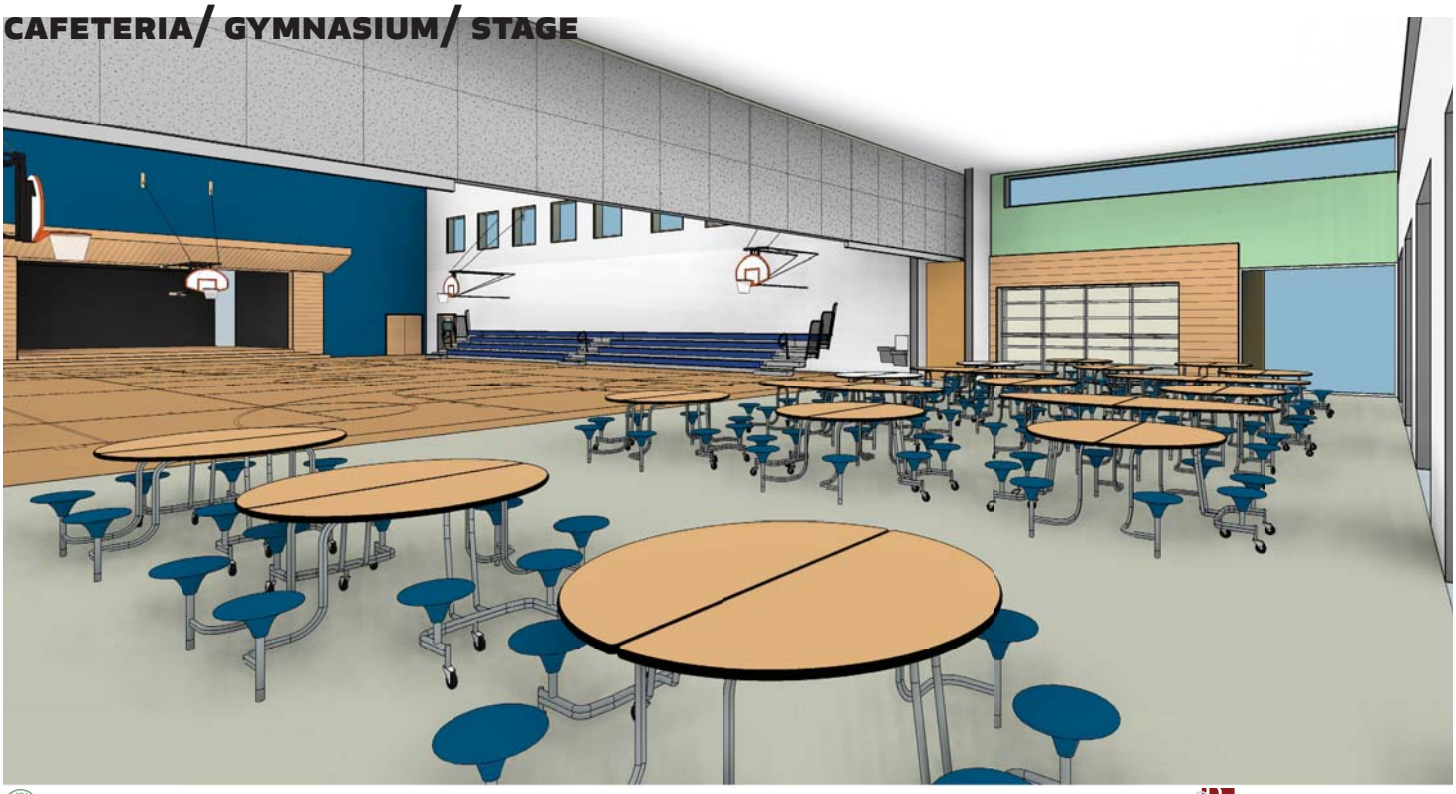
CAFE/GYM/STAGE 4/10/2018



CAFE/GYM/STAGE 5/8/2018



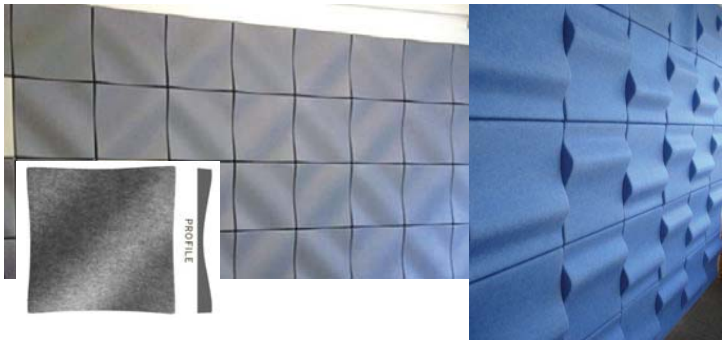
CAFETERIA/ GYMNASIUM/ STAGE



MATERIAL INSPIRATION - CAFETERIA



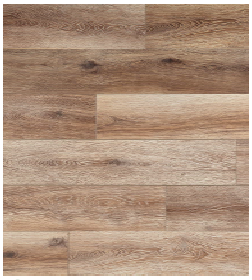
ACOUSTICAL WALL PANELS



SEALED CONCRETE FLOORING WITH SHELLS AND SEAGLASS



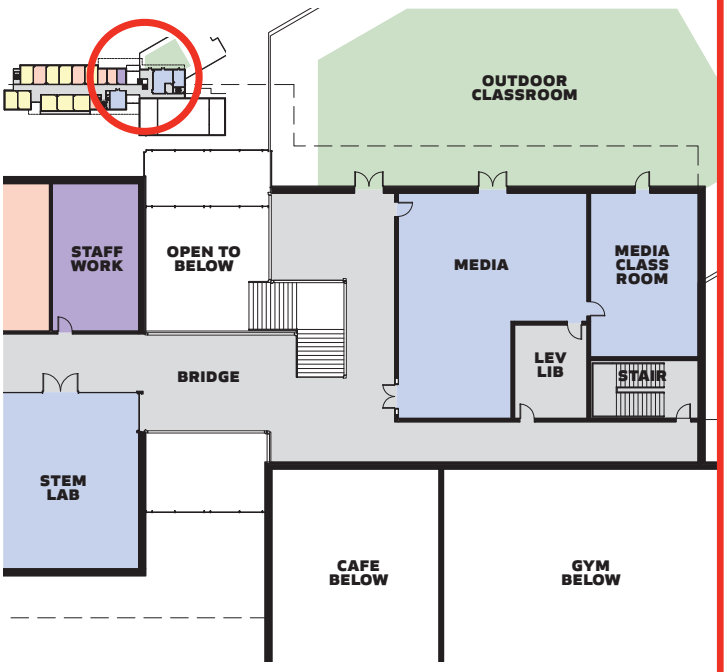




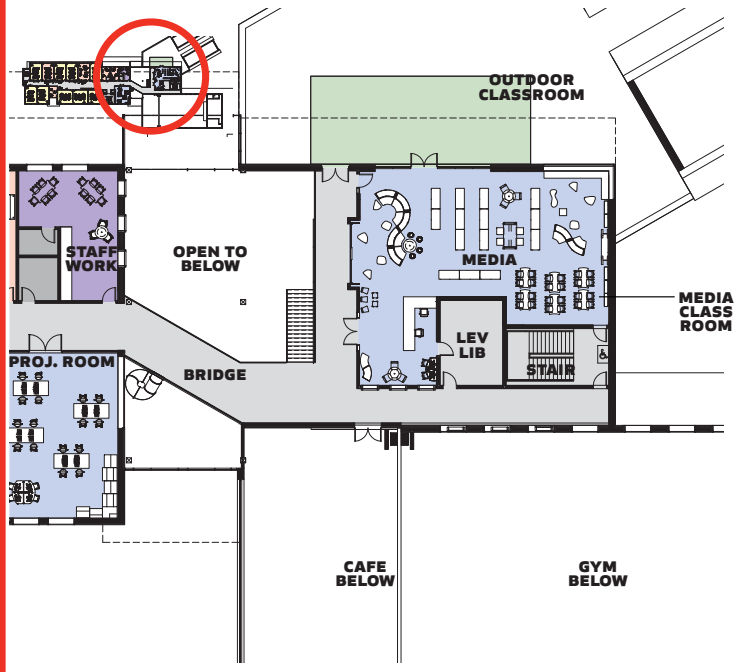


PORCELAIN TILE OPTION

MEDIA CENTER 4/10/2018



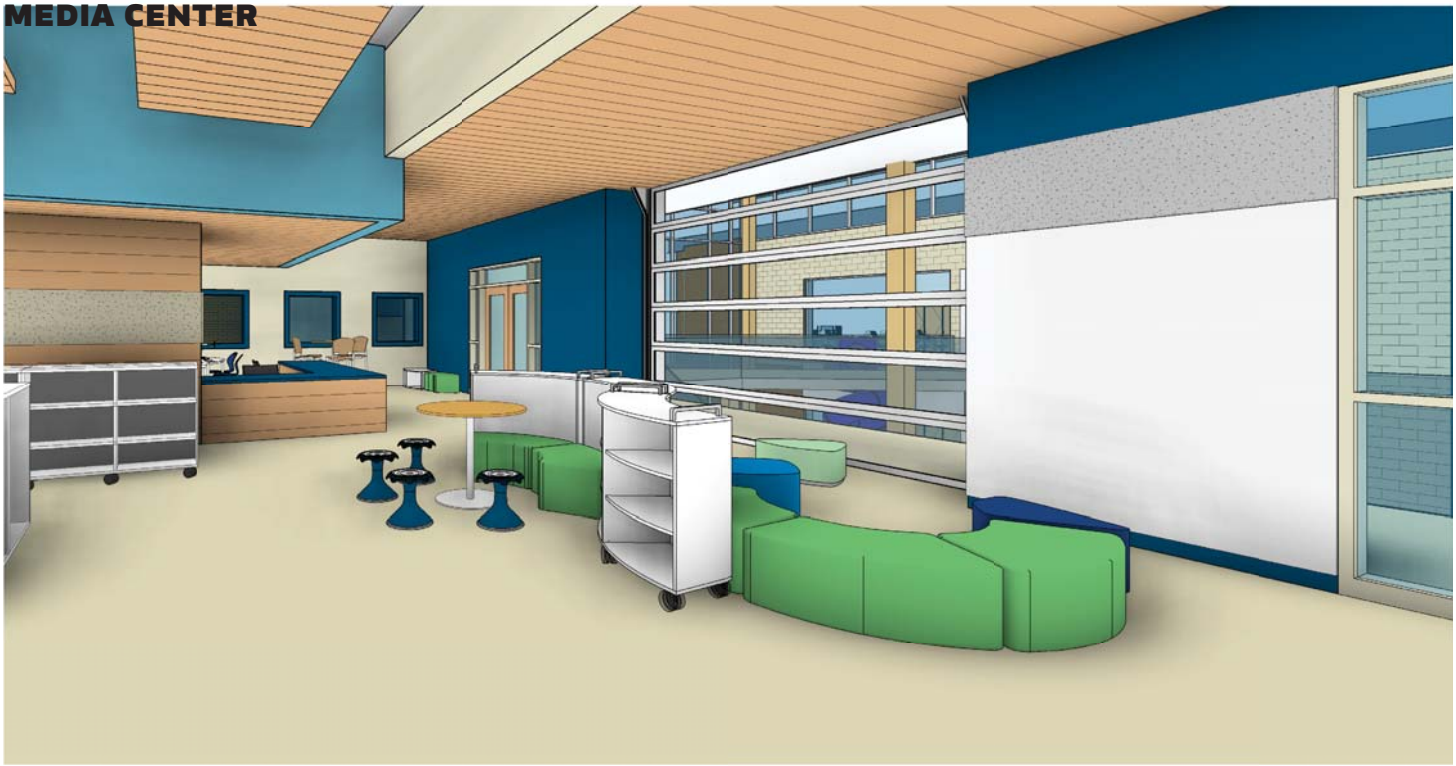
MEDIA CENTER 5/8/2018



MEDIA CENTER



MEDIA CENTER



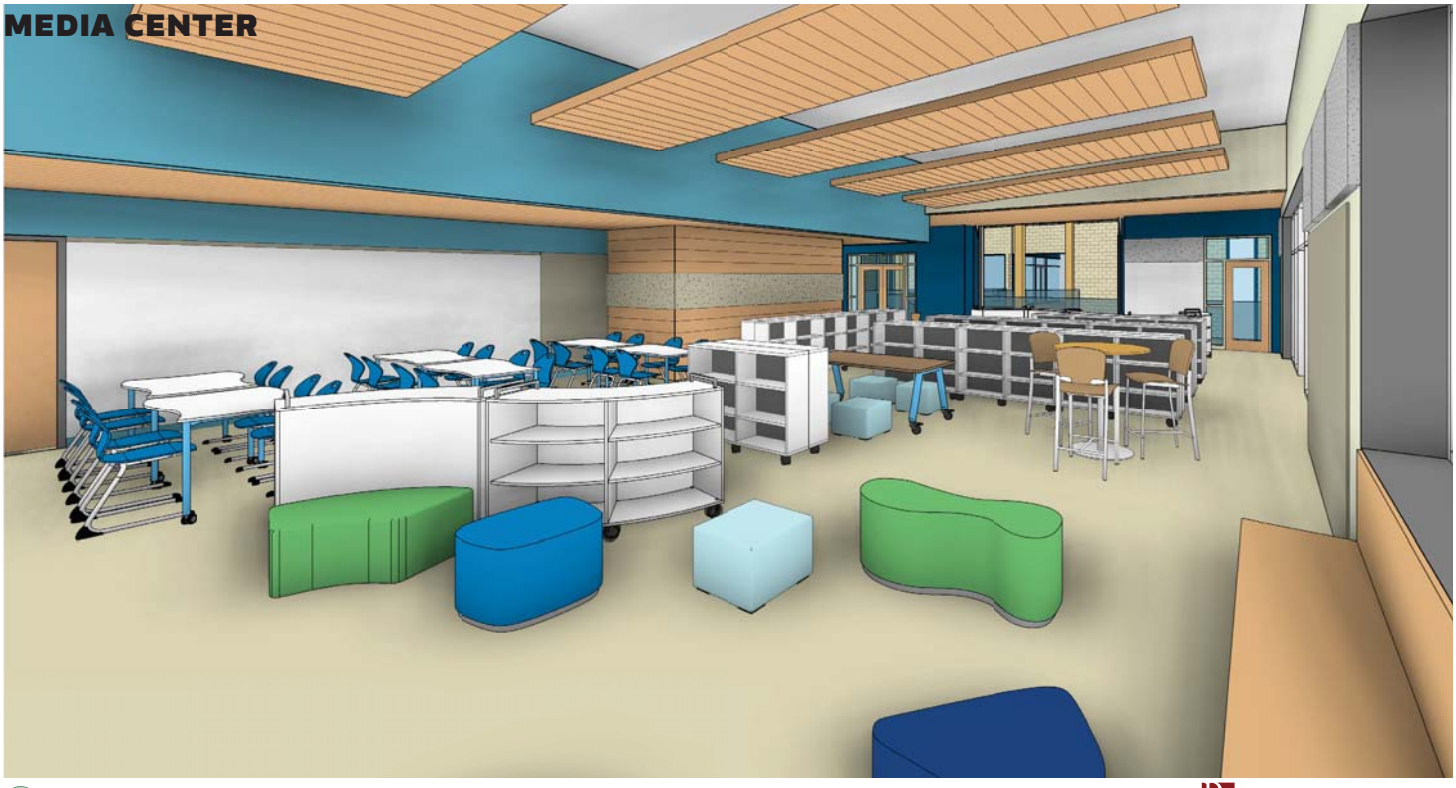
MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS

DLW JCJARCHITECTURE

MEDIA CENTER



MEDIA CENTER



MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS

JCJARCHITECTURE

MEDIA CENTER



MATERIAL INSPIRATION – MEDIA CENTER



CARPET TILE FLOORING

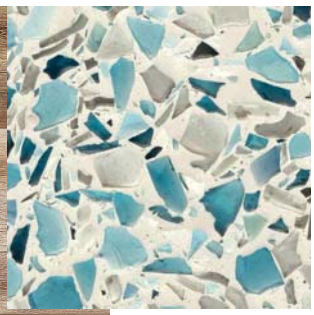












FURNITURE INSPIRATION – MEDIA CENTER





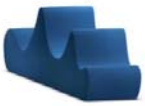




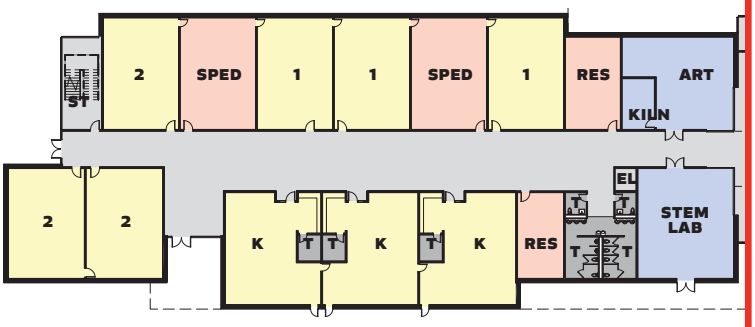




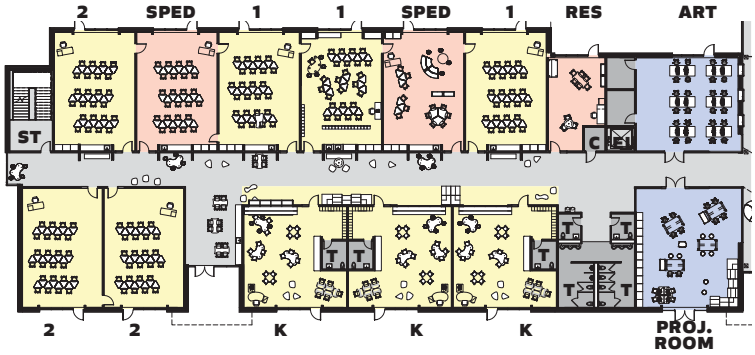




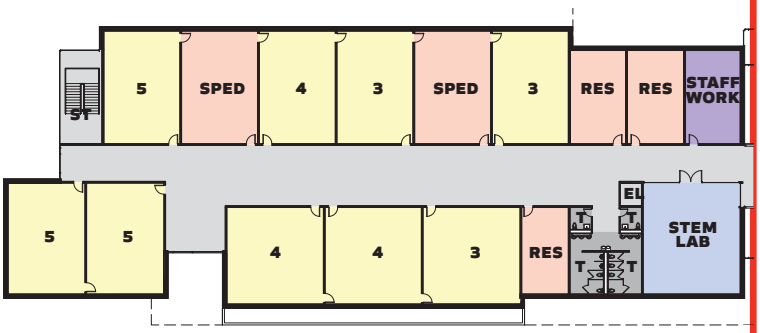
MAIN LEVEL COMMUNITIES 4/10/2018



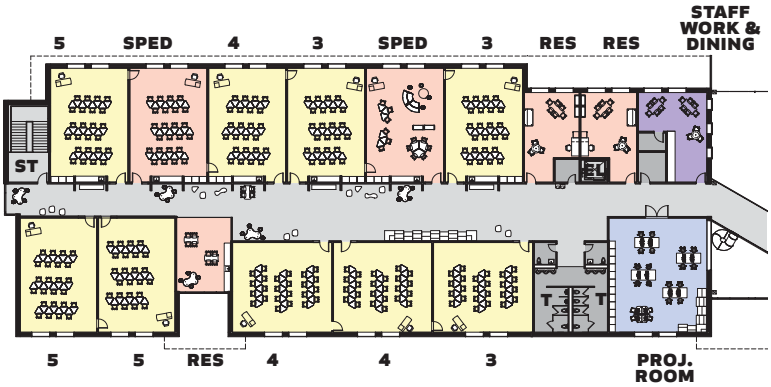
MAIN LEVEL COMMUNITIES 5/8/2018



UPPER LEVEL COMMUNITIES 4/10/2018



UPPER LEVEL COMMUNITIES 5/8/2018



CLASSROOM COMMUNITY



CLASSROOM COMMUNITY



CLASSROOM COMMUNITY



MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS

JCJARCHITECTURE

MATERIAL INSPIRATION – CORRIDORS/CLASSROOMS



SOLID VINYL TILE FLOORING





CARPET TILE FLOORING



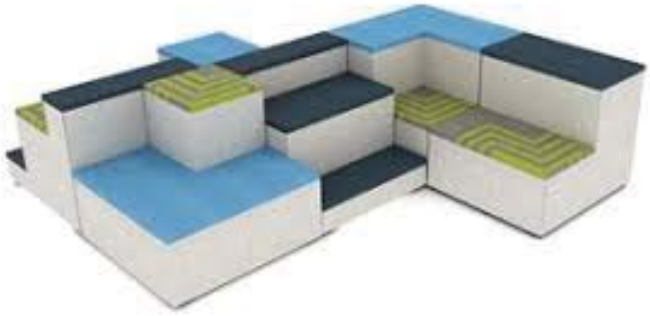




MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS

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FURNITURE INSPIRATION – CORRIDORS











MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS

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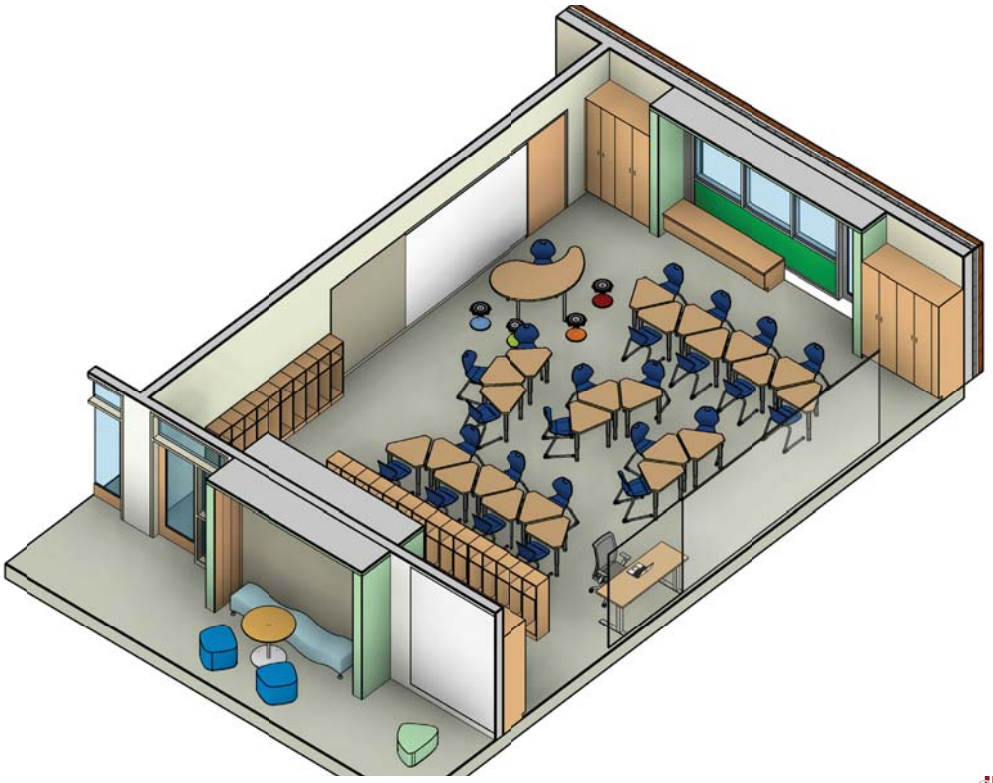
CLASSROOM



CLASSROOM

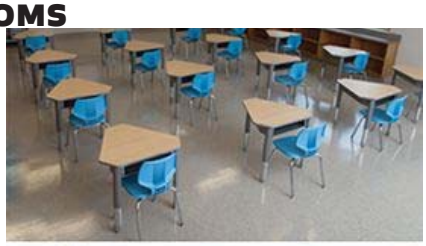


CLASSROOM



FURNITURE INSPIRATION – CLASSROOMS







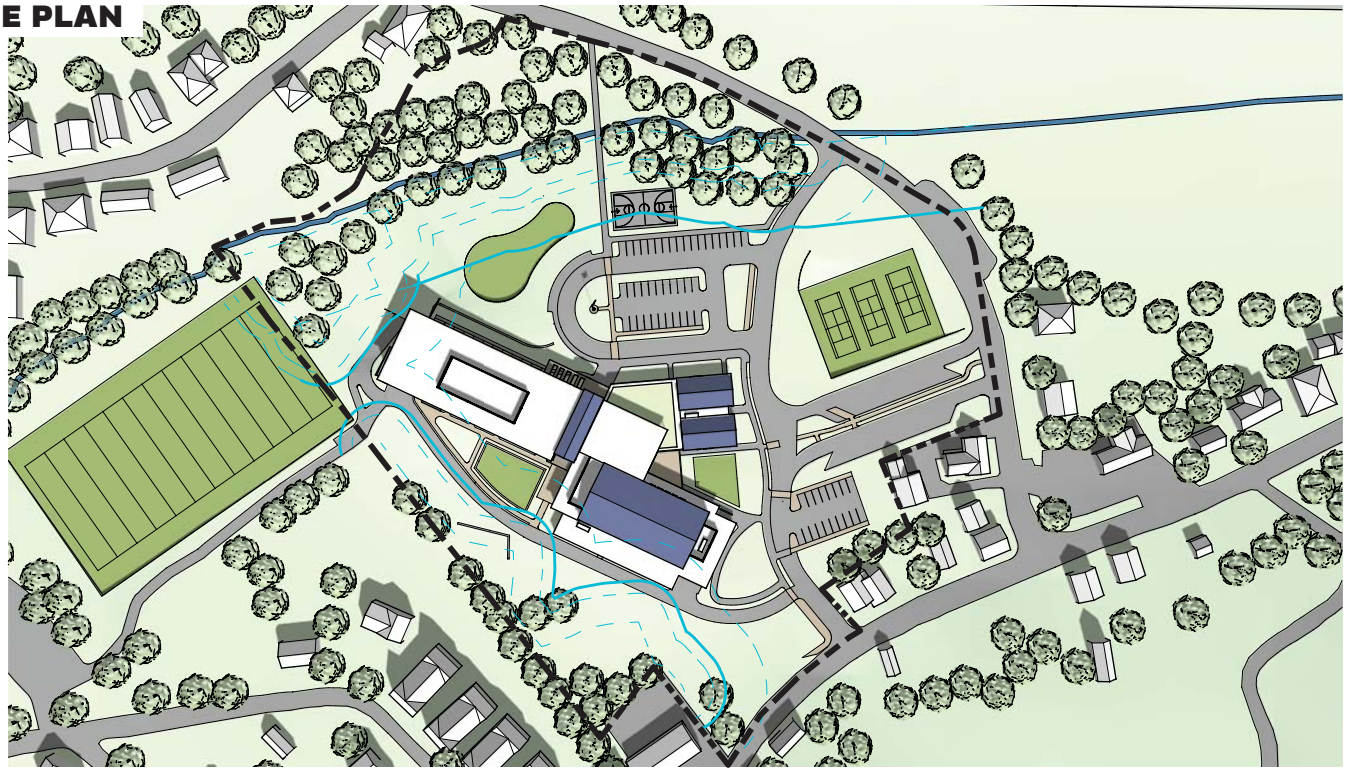








SITE PLAN



BUILDING MASSING



BUILDING MASSING



BUILDING MASSING



BUILDING MASSING



BUILDING MASSING



BUILDING MASSING



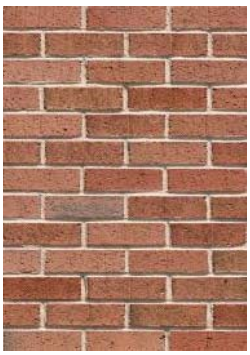
MATERIAL INSPIRATION – EXTERIORS

















NEXT STEPS

5/22	SBC Meeting - Design Update/ Approval For Estimating
5/30	Community Meeting #4
6/12	SBC Meeting - Review Cost Estimates
6/26	SBC Meeting - Initial Approval of SD Package
7/9	SBC Meeting - Approval to Submit SD to MSBA

THANK YOU

MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS
JCJARCHITECTURE

MEETING MINUTES

Project:	Manchester Memorial Elementary School	Project No:	MP17-114
Subject:	School Building Committee/School Committee Meeting	Meeting Date:	5/8/2018
Location:	Manchester MS/HS – Library	Time:	7:00 PM
Distribution:	Attendees, Project File	Prepared By:	C.Shefferman

Present	Name	Affiliation	Present	Name	Affiliation
✓	Caroline Weld *	SBC Co-Chair		Jim LaPosta	JCJ
✓	Ann Cameron *	SBC Co-Chair	✓	Daniel Ruiz	JCJ
✓	Pam Beaudoin *	Superintendent	✓	Lauren Braren	JCJ
✓	Avi Urbas *	Dir. of Fin. & Ops	✓	Emily Czarnecki	JCJ
✓	Alva Ingaharro *	Essex	✓	Mike Burton	DWMP
✓	John Willis *	Principal MMES	✓	Steven Brown	DWMP
✓	Jay Pagliarulo	Dir. of Facilities	✓	Christina Shefferman	DWMP
✓	Andy Oldeman *	Man. Fin. Comm.	✓	David Pereira	GGD
✓	Lisa O'Donnell *	Essex B.O.S.	✓	Dominic Puniello	GGD
✓	Remko Brueker *	Manchester	✓	Jon Rich	WT Rich
✓	Adam Zaiger *	Manchester	✓	Mike Michaud	WT Rich
✓	Tyler Virden *	Essex			
✓	George Scharfe *	Manchester			
✓	Gordon Brewster *	Manchester			
✓	Charlie Hay *	Essex			
✓	Sarah Creighton *	Manchester			
	Maggie Tomaiolo *	Essex			
✓	Jake Foster *	Essex			

** SBC Voting Member*

MANAGEMENT PARTNERS, LLC

PROJECT MANAGERS
ARCHITECTS

Newburyport, MA 01950
260 Merrimac Street Bldg 7
978.499.2999 ph
978.499.2944 fax

www.doreandwhittier.com

Item No.	Description	Action
24.1	Call to Order: 7:13 pm meeting was called to order by the SBC Co-Chair A. Cameron with 16 of 17 voting members in attendance. S. Brown of DWMP notes the meeting will follow the Power Point presentation that is being projected on the screen and to follow the agenda that was provided to the SBC prior to the meeting via Dropbox.	Record
24.2	Previous Topics & Approval of April 26, 2018, and May 1, 2018 Meeting Minutes: A motion to approve the 4/26/2018 and the 5/1/2018 meeting minutes as submitted made by A. Ingaharro and seconded by J. Foster. Discussion: None. Abstentions: S. Creighton. Vote: All in favor: Motion passes, minutes approved.	Record
24.3.1	Invoices and Commitments for Approval: DWMP Invoice No. 14 for SD phase activity in the amount of $7,142.85 (invoice attached) vote expected. Motion made by G. Scharfe to approve invoice no. 14 in the amount of $7,142.85 2nd by S. Creighton. Discussion: None. Vote: Unanimous to approve.	Record
24.3.2	Invoices and Commitments for Approval: JCJ Invoice No. 9 for SD phase activity in the amount of $49,473.00 (invoice attached) vote expected. Motion made by G. Scharfe to approve invoice no. 9 in the amount of $49,473.00 2nd by S. Creighton. Discussion: None. Vote: Unanimous to approve.	Record
24.3.3	Invoices and Commitments for Approval: W.T. Rich SD Preconstruction P.O. in the amount of $20,000.00 (p.o. attached) vote expected. Motion made by G. Scharfe to approve P.O. in the amount of $20,000.00 2nd by S. Creighton. Discussion: None. Vote: Unanimous to approve.	Record
24.4	Schedule/Budget Update: S. Brown reviews the schedule update slide as well as the project budget slide. A recap of the discussion is outlined below: Schedule: ➢ 5/22-SBC Meeting-Design Update ➢ 5/30-Community Meeting No. 4 ➢ 6/12-SBC Meeting-Review Cost Estimate ➢ 6/26-SBC Meeting-Review Cost Estimates-SD Approval Budget: ➢ Currently there is $34,546.97 left in the project budget for the feasibility and schematic design phase of the project.	Record
24.5	CM at Risk Procurement Update: S. Brown provides SBC with an update regarding the CM at Risk procurement. WT Rich joined the SBC meeting. WT Rich preconstruction services p.o. was approved this evening and will move forward with attending meetings, and providing services during the Schematic Design phase.	Record
24.6.1	Project Update: GGD presented the SBC with MEP options. An outline of the discussion is below: ➢ Mechanical Systems • 7 Options • Life Cycle Cost Analysis • Building Energy Management System Overview • Electrical Systems • Utility Incentives	Record

- HVAC-Mixing vs. Displacement Systems
  - Displacement system:
    - Ventilation air is provided from high efficiency heating/cooling RTU w/ ERV
    - Air is delivered at low velocity and at low levels within the space
    - The system uses naturally occurring buoyant forces within the space to create a vertical rise of the air throughout the space
    - 2-4" F differential supply air to space
    - Supply air rises when heat source is contacted
    - Displaces room air upward
    - Air rises with pollutants to ceiling
    - Air returns at ceiling back to air handling unit
    - Pros: excellent pollution removal, very low noise levels, very low air velocity, low moisture levels, reduced cooling loads, reduced initial cost, variable volume reheat is not required, high ventilation effectiveness
    - Cons: requires perimeter radiation heating, requires perimeter radiation cooling to maintain full AC setpoints during peak cooling conditions

  - Induction (Active chilled beams) Units
    - Ventilation air is provided from high efficiency hot water coil heating/chilled water coil cooling RTU w/ ERV
    - Primary (ventilation) air is supplied to plenum and discharges through nozzles
    - Room air is induced through the heating/cooling coils
    - Mixture of primary and room air is delivered to room through diffuser slots
    - Condensate drain pans and piping system for condensate removal
    - Pros: Energy efficient, low noise levels, flexibility of installation, moderate first cost, simplified controls (no fans), lower maintenance (no terminal filters)
    - Cons: requires increase coordination with "ceiling" system (e.g. additional piping, HW, CHW, & condensate piping), requires additional ventilation air in some cases, increase energy consumption vs. dehumidified air system
- Preliminary Decision Points: RTUs: Enclosed vs. Exposed
  - Enclosed:
    - Protection from salt air
    - Ease of maintenance
    - Acoustical control
    - Additional costs (envelop and additional ductwork/louvers)
  - Exposed:
  - Salt-rated equipment possible
  - Lower costs
  - Reduced expected service life versus enclosed units

	After reviewing the mechanical system options and comparison sheet the MEP subcommittee made a recommendation to the full SBC to select Option 1, Displacement Dehumidification. A motion was made by S. Creighton and seconded by J. Foster to accept the recommendation and select Option 1, Displacement Dehumidification. Discussion: None. All in favor: motion passes.	
24.6.2	Project Update: GGD presents the SBC with building management system controlling HVAC and lighting information. An outline of the discussion is below: ➢ System (zone) scheduling ➢ Occupied-unoccupied control ➢ Night setback operation ➢ Lighting control system integration ➢ Increased energy savings ➢ Integrate with preventative maintenance scheduling ➢ Building Dashboard energy metering system ➢ Utility bill data ➢ Building automation systems data ➢ On-site generation system data ➢ Submetering data ➢ High efficiency LED lighting with occupancy sensor & daylight harvesting • Dual technology occupancy sensor & daylight photometer • Lighting control system • LPD target of .4 to .5 ➢ Addressable lighting control system • Occupancy sensor • Daylight sensor • BMS integration • Addressable groups ➢ 100-125 KW Generator (estimated size) • Load breakdown for life safety equipment: o All exit signs and emergency lighting in the areas listed below are fed by life safety emergency power ▪ Corridors, electrical rooms, gymnasium cafeteria, media center, lobbies, central admin, health suite, toilets, cafetorium, data rooms, kitchen & server, exterior building mounted lights, were required by code (egress) • Load breakdown for optional standby equipment: o Equipment listed below is fed by optional standby power ▪ Boilers, water pumps, door access controls, security systems, cctv, atc controls, strategically located receptacles, electronic faucets, heating and ventilation systems required for freeze protection, cooling unit serving head end room &IDF rooms, unit heater serving water service room, equipment within the head end and IDF rooms, fire alarm system, refrigeration ➢ Integrated Electronic Security System • Security System Components o Access Control, CCTV, Intrusion, Integration	Record

	• Sequence of Operations of Key Elements
	  ○ Typical access control door
	  ○ Main entrance
	  ○ CCTV video retrieval
	  ○ Intrusion system
	➢ Utility Incentives
	  • Custom Measure Approach
	  • Energy Conservation Measures
	  ○ High efficiency lighting
	  ○ Daylight harvesting
	  ○ High efficiency cooling and heating
	  ○ VFS's on pumps
	  ○ High efficiency domestic water heaters
	  ○ AHU low fan power
	  ○ Enhanced kitchen hood controls	

24.6.3	Project Update: JCJ presents the SBC with project update slides. An outline of the discussion is below:
	➢ Meetings:
	  • MEP Sub-Committee
	  • Technology program
	➢ Upcoming:
	  • Hydrant flow text 5/9
	  • Safety and security 5/16 tbd
	  • Landscape 5/16
	  • Community Meeting #4 5/30
		Record

24.7.1	Design Update: L. Braren from JCJ presents building precedents and imagery slides to the SBC. An outline of the discussion is below:
	➢ Area Comparisons in SF
	  • Lower Level=2,315 sf
	  • First Floor=59,145 sf
	  • Second Floor=24,025 sf
	  • Total net SF=56,974 sf
	  • Total Gross SF=82,800SF (PSR), 85,485 SF (5/8)
	  • Gross Up Factor=1.45 (PSR), 1.50 (5/8)
	  • Overage (GSF)=2,685 sf
	After reviewing the area comparisons sheet, the SBC agreed that JCJ needs to continue to work on getting the Gross Up Factor lower and total Gross SF as low as possible. JCJ to continue to work on sf and discuss with Design Sub Committee.
		Record

24.7.2	Design Update: E. Czarnecki from JCJ presents Interior Inspiration slides to the SBC. An outline of the discussion is below: ➢ Inspiration for design stems from the ocean, including sea glass, light wood, and sea tones ➢ Solid vinyl tile flooring, carpet tile flooring and sealed concrete flooring with shells and sea glass are a few of the ideas that JCJ presented	Record

	➢ Furniture inspiration in project rooms, cafeteria, gymnasium, stage, media center and classrooms were presented Further decisions and development of the interior design materials and furniture will need to be determined as part of the SD submission. An interior design subcommittee will be formed.	
24.7.3	Design Update: L. Braren from JCJ presents site plan and building massing slides. An outline of the discussion is below: ➢ Site Plan: • Birds eye view of site and building ➢ Building Massing: • Exterior materials, roofing details, glass and glazing, etc. After reviewing the slides L. Braren states that some of the inspiration for this school stems from the MS/HS campus and how they can somewhat tie together. General comments from the SBC include: ➢ Reduce amount of glazing, pricing for metal roof vs. tile roof, cost of metal panel vs brick. ➢ JCJ, DWMP, and CM to gather pricing to present to SBC to formally make decisions at next SBC meeting.	Record
24.8	Other Topics Not Reasonably Anticipated (48 hours prior to meeting): None.	Record
24.9	Public Comments: A member from the public C. Gates inquired whether the design team had considered putting the gymnasium on the eastern part of the site. L. Braren explains that all placements were considered, and a number of factors led to the approved placement. Wetlands, swales, the general neighborhood, sunlight, phasing, etc, were all considered in the design implementation.	Record
24.10	Adjourn: A motion was made by A. Ingaharro and seconded by S. Creighton to adjourn the meeting. Discussion: None. Vote: Unanimous to approve. Meeting adjourned at 10:29 pm.	Record

Attached:
SBC Meeting Agenda, Sign In Sheet, SBC Meeting No. 23 4/26/18 Meeting Minutes, SBC Meeting No. 24 5/1/18 Meeting Minutes, Manchester Memorial Elementary School Presentation 5/8/18

DORE AND WHITTIER MANAGEMENT PARTNERS, LLC.

Christina Shefferman
Assistant Project Manager
Cc: Attendees, File

The above is my summation of our meeting. If you have any additions and/or corrections, please contact me for incorporation into these minutes.

Manchester Essex Regional School District
School Building Committee

Meeting Date: 5/8
Meeting No. 25

MANAGEMENT PARTNERS, LLC

Member name	Town/Affiliation	email contact	Signature
** Caroline Weld	SBC Co-Chair -Manchester	weldc1@mersd.org	
** Ann Cameron	SBC Co-Chair-Essex	cameron@mersd.org	
* Alva Ingaharro	School Comm. Member/Essex	alvai@comcast.net	
* Pam Beaudoin	Superintendent of Schools	beaudoinp@mersd.org	
* Avi Urbas	Dir. Of Finance & Operations	urbasa@mersd.org	
* John Willis	Principal MMES	willisj@mersd.org	
Jay Pagliarulo	Facilities Director	pagliaruloj@mersd.org	
* Andy Oldeman	Mancester Finance Comm	aoldeman@smma.com oldemana@mersd.org	
* Lisa O'Donnell	Essex Board of Selectman	lisatheengineer@comcast.net odonnelll@mersd.org	
* Remko Brueker	Manchester	remko@breukerdesign.com breukerr@mersd.org	
* Adam Zaiger	Manchester	azaiger@choate.com zaigera@mersd.org	
* Tyler Virden	Essex	tyler@windover.com virdent@mersd.org	
* George Scharfe	Manchester	gscharfe@johnpenney.com scharfeg@mersd.org	
* Gordon Brewster	Manchester	gbrewster@smma.com brewsterg@mersd.org	
* Charlie Hay	Essex	chay@tappe.com	
* Sarah Creighton	Manchester	sarahhammondcreighton@gmail.com creightons@mersd.org	
* Maggie Tomaiolo	Essex	tomaiolom@mersd.org	
* Jake Foster	Essex	fosterig@verizon.net	JFoster
Mike Burton	DWMP	mburton@doreandwhittier.com	
Steve Brown	DWMP	sbrown@doreandwhittier.com	
Christina Shefferman	DWMP	cshefferman@doreandwhittier.com	
Jim LePosta	JCJ	jlaposta@jcj.com	
Dan Ruiz	JCJ	druiz@jcj.com	Dan Ruiz
Lauren Braren	JCJ	lbraren@jcj.com	
Emily Czarnecki	JCJ	eczarnecki@jcj.com	
David Perera	GGD	david_perera@ggd.com	
Dominic Polnelli GGD		dom_polnelli@ggdcom	
Jon Rich WT. Rich		jonrich@wtrich.com	
Mike Michaud WT RICH		mmichaud@wtrich.com	

** Chair/Co-Chair
*Voting Member

PRELIMINARY SCHEMATIC REPORT PHASE PROJECT MEETINGS

- March 27, 2018 – SBC Meeting #21
- April 10, 2018 – SBC Meeting #22
- April 26, 2018 – SBC Meeting #23
- May 1, 2018 – MEP & Sustainability Meeting
- May 1, 2018 – SBC Meeting #24 (CM Interviews)
- May 8, 2018 – SBC Meeting #25
- May 22, 2018 – SBC Meeting #26
- May 30, 2018 – Community Meeting #4 (Morning & Evening)
- June 12, 2018 – SBC Meeting #27
- June 19, 2018 – SBC Meeting #28
- June 26, 2018 – SBC Meeting #29
- July 9, 2018 – SBC Meeting #30
- July 16, 2018 – SBC Meeting #31 (Joint Meeting with School Committee)

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AGENDA

Project:	Manchester Memorial Elementary School	Project No:	MP17-114
Subject:	School Building Committee Meeting	Meeting Date:	5/22/2018
Location:	Manchester MS/HS – Library	Time:	7:00 PM
Distribution:	Attendees, Project File	Prepared By:	C.Shefferman

1. Call to Order
2. Previous Topics & Approval of Meeting Minutes
3. Invoices & Commitments for Review/Approval
    i. Garrity & Knisely Invoice No. 10377 for legal counsel re: CM agreement & general conditions in the amount of $4,800.00 (invoice attached). Vote expected.
4. Schedule/Budget Update
5. Estimating & Value Management Overview
6. Project Update (vote anticipated)
7. Design Update
8. Schematic Design Estimating Package (vote anticipated)
9. Other Topics Not Reasonably Anticipated 48 hours prior to Meeting
10. Public Comments
11. Adjourn

MANAGEMENT PARTNERS, LLC

PROJECT MANAGERS
ARCHITECTS

Newburyport, MA 01950
260 Merrimac Street Bldg 7
978.499.2999 ph
978.499.2944 fax

www.doreandwhittier.com

MANCHESTER MEMORIAL ELEMENTARY SCHOOL

SCHEMATIC DESIGN PHASE
SBC MEETING #26
MAY 22ND, 2018

TODAY'S AGENDA

PROJECT UPDATE

LANDSCAPE DESIGN

DESIGN UPDATE

REVIEW BASIS OF DESIGN

MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-BY-THE-SEA, MA

SCHEMATIC LANDSCAPE REVIEW

JCJARCHITECTURE

HORIUCHI SOLIEN
LANDSCAPE ARCHITECTS

EXISTING CONDITIONS



EXISTING CONDITIONS



EXISTING CONDITIONS



EXISTING CONDITIONS



EXISTING CONDITIONS



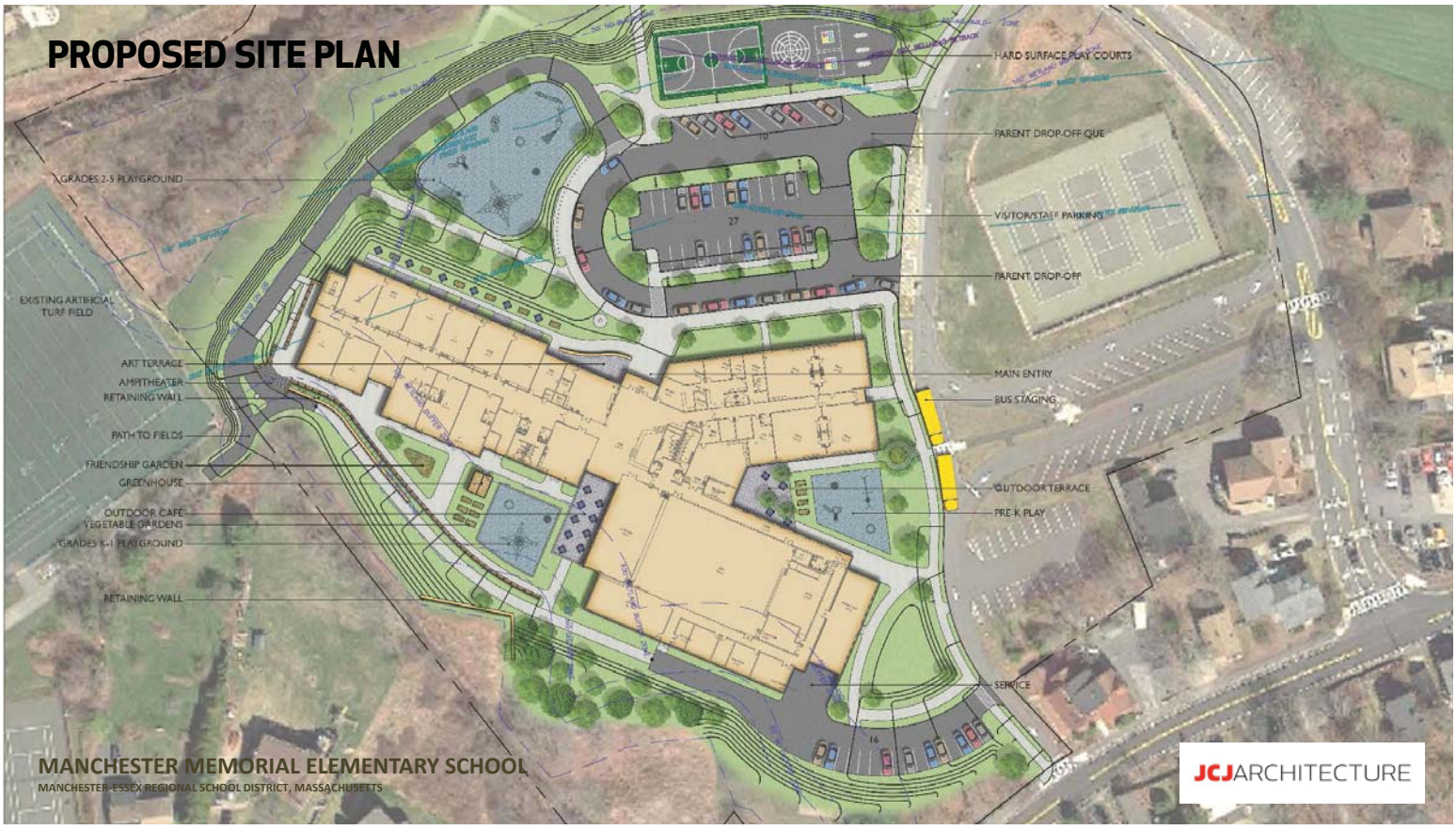
EXISTING CONDITIONS



MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS

JCJARCHITECTURE

PROPOSED SITE PLAN



MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS

JCJARCHITECTURE

EXISTING VS PROPOSED

	EXISTING	PROPOSED
PARENT DROP-OFF QUE	680 FT	700 FT
BUS STAGING	2 BUSES	2 BUSES
PRE-K PLAYGROUND	1,622 SF	2,584 SF
K-1 PLAYGROUND	1,664 SF	2,367 SF
GRADES 1-5 PLAYGROUND	5,583 SF	8,268 SF
HARD SURFACE PLAYCOURT	24,000 SF	8,070 SF
RAISED GARDEN BEDS	12 BEDS (+ 8 SMALL)	12 BEDS

PLAYGROUND EQUIPMENT – PRESCHOOL AGE (2-6 YEARS)

-SENSORY AND MOTOR SKILLS
-ROLE PLAY
-IMAGINATION AND FRIENDSHIPS



PLAYGROUND EQUIPMENT – PRESCHOOL AGE (2-6 YEARS)

-THEMED PLAY
-SPRINGERS
-SEESAWS
-BALANCE AND MOVEMENT
-SWINGS
-CAROUSELS AND SPINNERS











PLAYGROUND EQUIPMENT – SCHOOL AGE (6+ YEARS)

-AGILITY, BALANCE, COORDINATION
-"RULE PLAY" SCENARIOS
-FRIENDSHIPS



PLAYGROUND EQUIPMENT – SCHOOL AGE (6+ YEARS)

-URBAN CLIMBING
-CAROUSELS & SPINNERS
-BALANCE & MOVEMENT
-SLIDES






PLAYGROUND EQUIPMENT – NAUTICAL THEME







PLAYGROUND EQUIPMENT – NAUTICAL THEME








PLAYGROUND EQUIPMENT – NATURE THEME




PLAYGROUND EQUIPMENT – NATURE THEME





PLAYGROUND EQUIPMENT – INCLUSIVE PLAY

-SENSORY SKILLS
-MOTOR SKILLS
-COGNITIVE SKILLS
-SOCIAL SKILLS









PLAYGROUND EQUIPMENT – MUSICAL







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PLAYGROUND EQUIPMENT – HARD COURT GAMES









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MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS

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PLAYGROUND SURFACING – ENGINEERED WOOD FIBER

-MOST ECONOMIC
-REQUIRES MAINTENANCE
-ACCESSIBILITY QUESTIONS



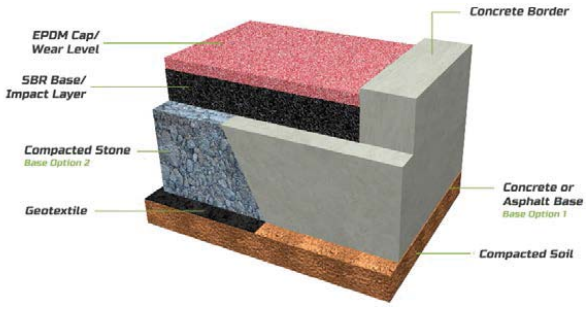


MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS

JCJARCHITECTURE

PLAYGROUND SURFACING – POURED-IN-PLACE RUBBER

-CUSTOM SHAPES/COLORS
-SHOCK ABSORPTION
-LOW MAINTENANCE
-ACCESSIBLE
-HIGHER COST





MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS

JCJARCHITECTURE

PLAYGROUND SURFACING – COMBINED RUBBER/WOOD FIBER

-ECONOMICS
-SAFETY






PLAYGROUND EQUIPMENT – SHADE










OUTDOOR LEARNING - CLASSROOMS








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OUTDOOR LEARNING – KITCHEN GARDENS





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MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS

JCJARCHITECTURE

OUTDOOR LEARNING – BUTTERFLY GARDENS











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JCJARCHITECTURE

OUTDOOR LEARNING – RAIN GARDENS





MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS

JCJARCHITECTURE

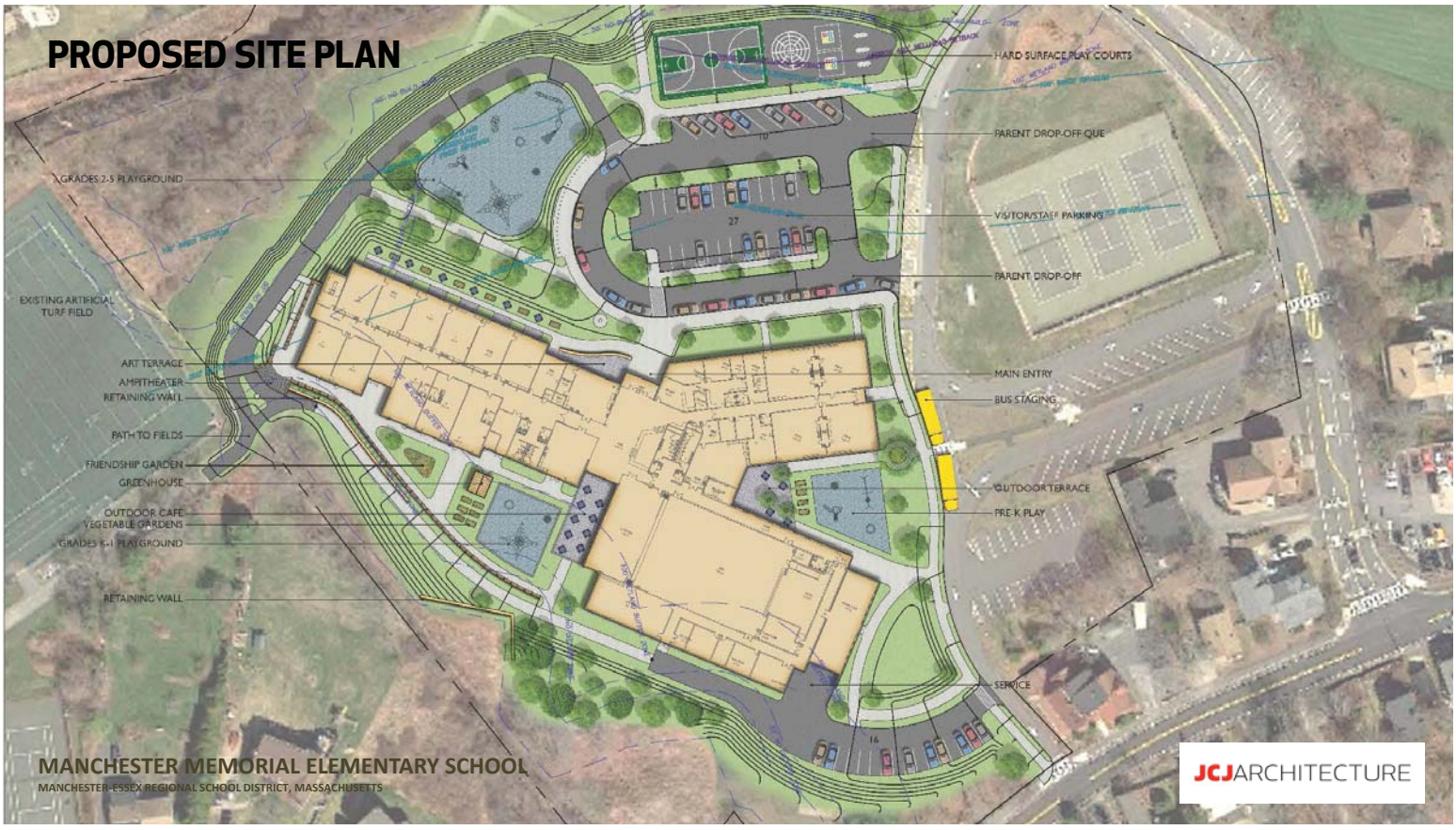
RETAINING WALLS



MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS

JCJARCHITECTURE

PROPOSED SITE PLAN



MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS

JCJARCHITECTURE

MEETINGS AND INTERVIEWS

- BUDGET COLLABORATION MEETING
- LANDSCAPE DESIGN
- SAFETY AND SECURITY

NEXT STEPS

5/22	SBC Meeting - Design Update/ Approval For Estimating
5/30	Community Meeting #4
6/12	SBC Meeting - Review Cost Estimates
6/26	SBC Meeting - Initial Approval of SD Package
7/9	Joint School Committee/SBC Meeting - Approval to Submit
7/11	Submitt to MSBA
7/27	Project Scope & Budget Meeting w/ MSBA
8/29	MSBA Board Approval
10/15-16	Town Meetings in Essex & Manchester-by-the-Sea
11/6	Public Funding Vote

PROJECT UPDATE

JUNE 12: SBC MEETING

- REVIEW COST ESTIMATES
- REVIEW ANY VALUE ENGINEERING (V.E.) CONCEPTS *(IF REQUIRED)*
- DETERMINE WHICH V.E. CONCEPTS TO FURTHER STUDY

JUNE 26: SBC MEETING

- *REVIEW V.E. CONCEPTS AND DESIGN UPDATES*
- *INITIAL APPROVAL OF DESIGN SCOPE AND BUDGET*

JULY 9: JOINT SC & SBC MEETING

- APPROVAL TO SUBMITT SD PACKAGE TO MSBA

BUILDING SYSTEMS

MECHANICAL

- DISPLACEMENT DEHUMIDIFICAITON
- FIN-TUBE OR RADIANT PANEL HEATING AT PERIMETER

ELECTRICAL

- EMERGENCY GENERATOR: APPROX 100-125KW
- 100% LED LIGHTING SYSTEM WITH AUTOMATED CONTROLS

SUSTAINABILITY

NET ZERO

ESTIMATED TO BE AN ADDITIONAL $40-$50/ SF

- *APPROXIMATELY A $3.3M TO $4.2M PREMIUM*

NOT A COMMON CHOICE FOR MSBA PROJECTS

- *ONLY A FEW PROJECTS HAVE CONSIDERED IT*
- *NONE COMPLETED TO DATE*

REQUIRES GEOTHERMAL

- *70 CLOSED LOOP WELLS / 18,400 SQ FT*

SUSTAINABILITY

NET ZERO

ADDITIONAL 750 SF MECHANICAL ROOM

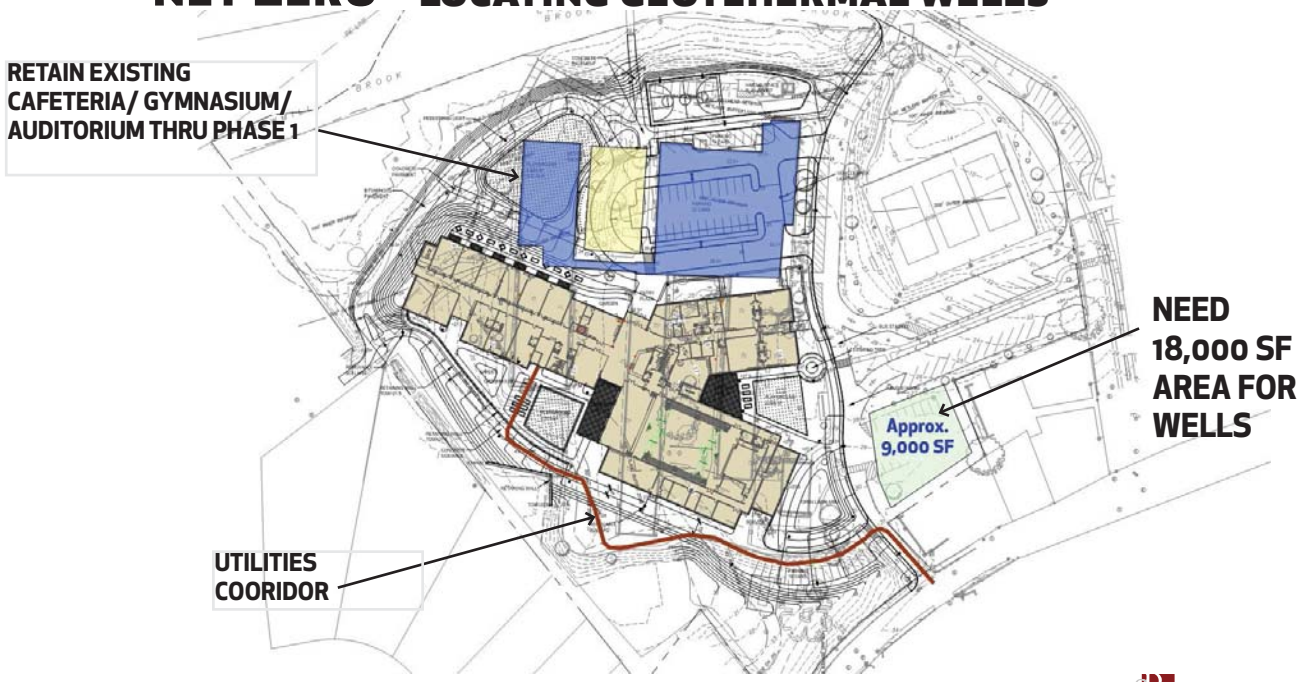
- *HOUSE ADDITIONAL GEOTHERMAL EQUIPMENT*
- *IDEALLY GEO-MECHANICAL ROOM NEAR WELLS*
- *HEAT PUMP CHILLER (NOT A HOT WATER SYSTEM)*

REQUIRES GEOTHERMAL

- *70 CLOSED LOOP WELLS / 18,400 SQ FT*
- *AVOID OBSTRUCTIONS UTILITIES, TREES, PLAY EQUIP.*
- *PHYSICALLY CHALLENGING TO FIT ON THE SITE*

SUSTAINABILITY

NET ZERO - LOCATING GEOTEHERMAL WELLS



SUSTAINABILITY

NET ZERO

WOULD REQUIRE AN ALL ELECTRIC SYSTEM

- EXPANSIVE PHOTOVOLTAIC SYSTEM REQUIRED

EXTERIOR ENVELOPE IMPROVEMENTS NECESARY

- GLAZING, SOLAR GAIN, INSULATION

SUSTAINABILITY

DECISION POINT

- **LEED CERTIFIED**
  NO 2% REIMBURSEMENT

- **LEED SILVER** **RECOMMENDTION**
  2% REIMBURSEMENT

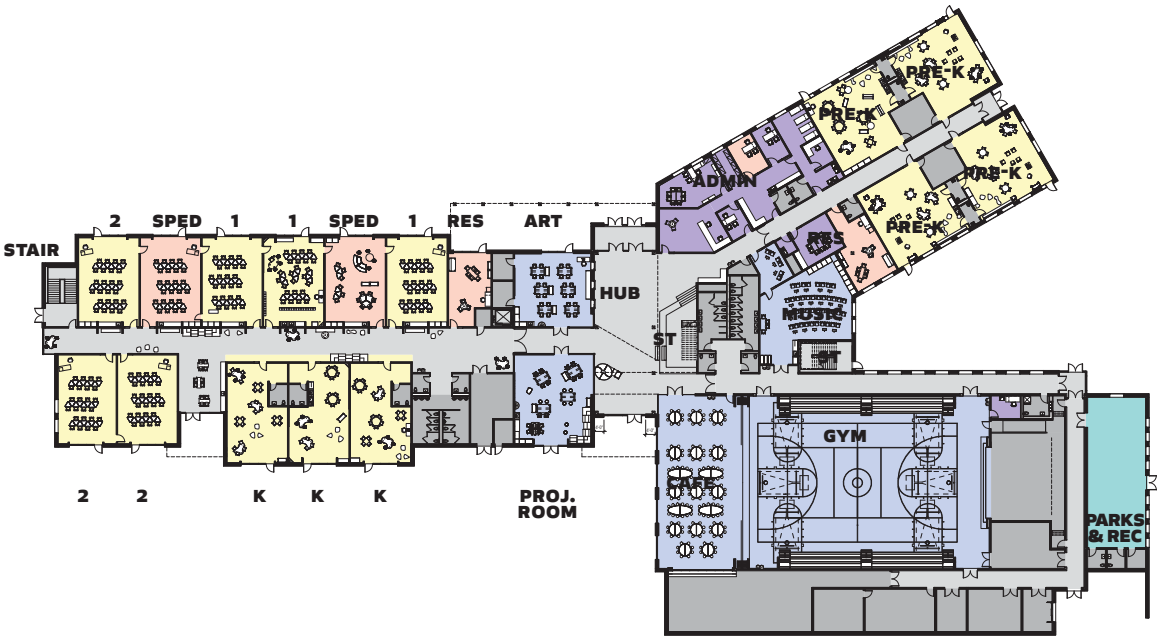
- **LEED GOLD OR PLANTINUM**
  2% REIMBUSEMENT, NO ADDITIONAL REIMBURSEMENT
  ADDITIONAL CAPITAL COSTS / LONG PAYBACK PERIOD

- **NET ZERO**
  2% REIMBUSEMENT, NO ADDITIONAL REIMBURSEMENT
  $40-$50/ SF ADDITIONAL COSTS/ LONGER PAYBACK PERIOD
  PHYSICAL SITE LIMITATIONS

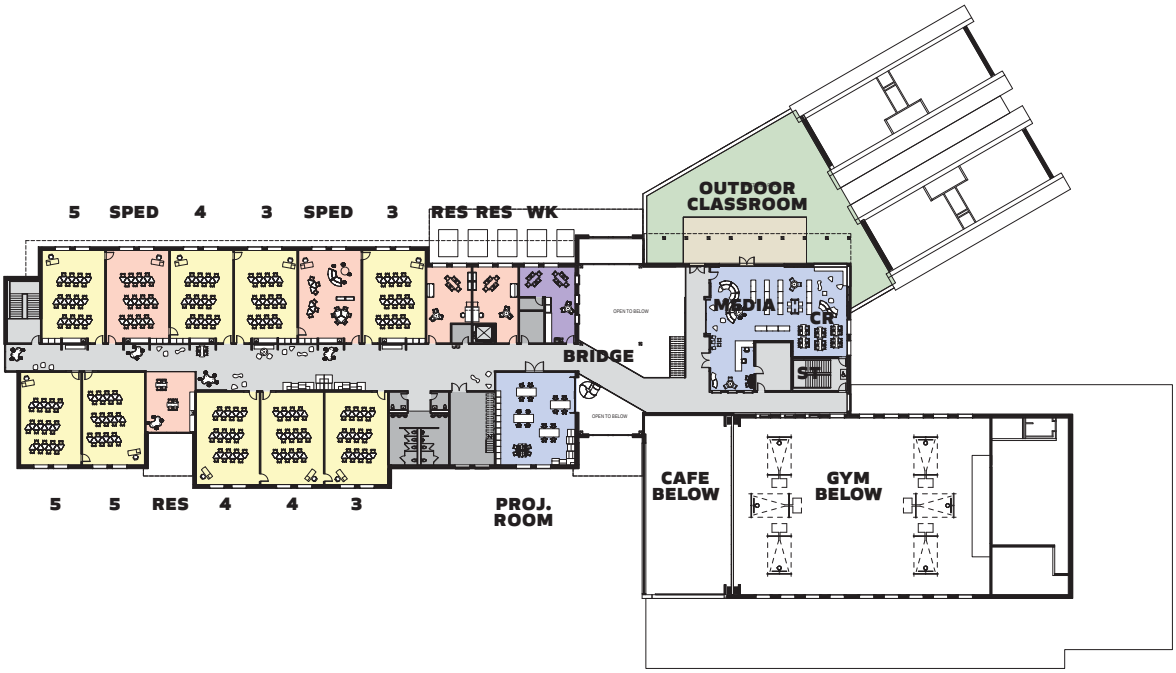
AREA UPDATE IN SQUARE FEET

PROGRAM AREA	PSR	5/8/2018	5/22/2018
Lower Level		2,315 SF	0 SF
First Floor		56,535 SF	56,742 SF
Parks & Recreation	1,800 NSF	2,610 SF	2,610 SF
Second Floor		24,025 SF	24,710 SF
Total Net Square Feet	56,974 SF	56,974 SF	56,974 SF
Total Gross Square Feet	82,800 SF	85,485 SF	84,062 SF
Gross Up Factor	1.45	1.50	1.48
Change			-1,423 SF
Increase from PSR (GSF)		2,685 SF	1,262 SF

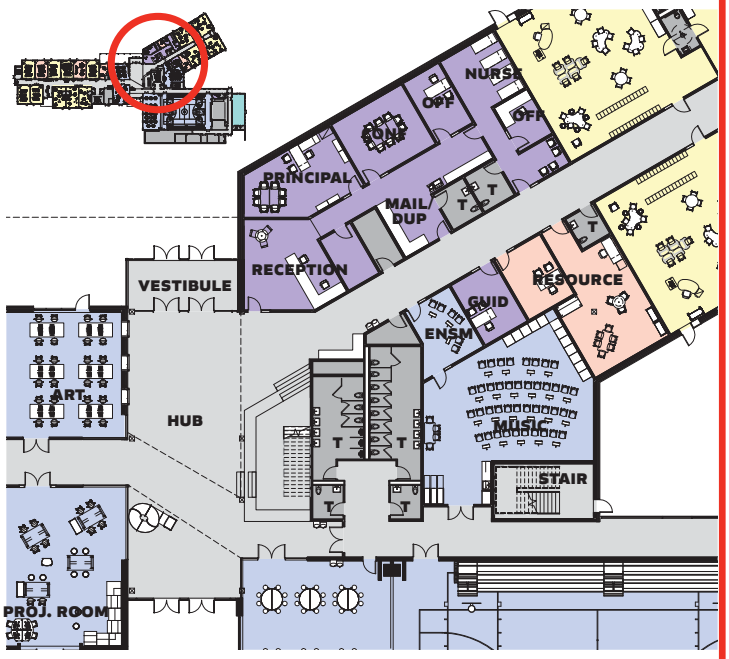
MAIN LEVEL PLAN UPDATED



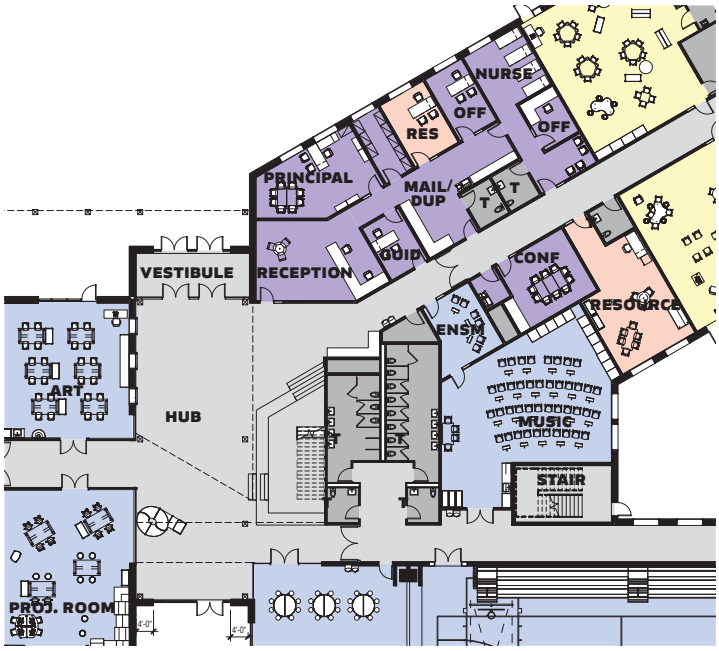
UPPER LEVEL PLAN UPDATED



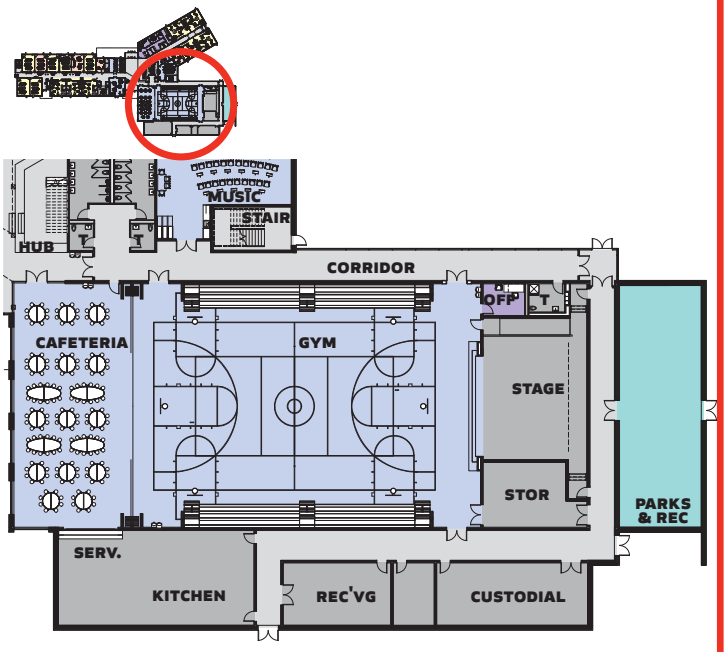
HUB 5/8/2018



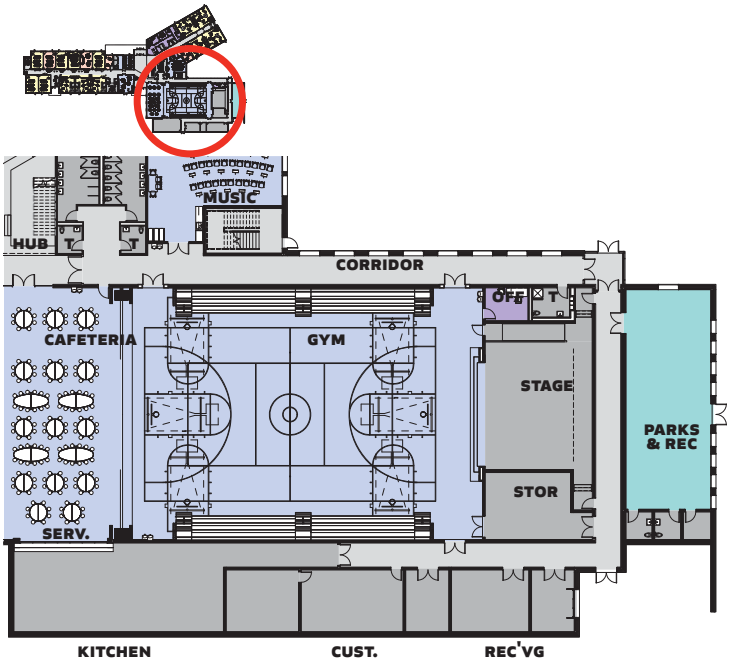
HUB 5/22/2018



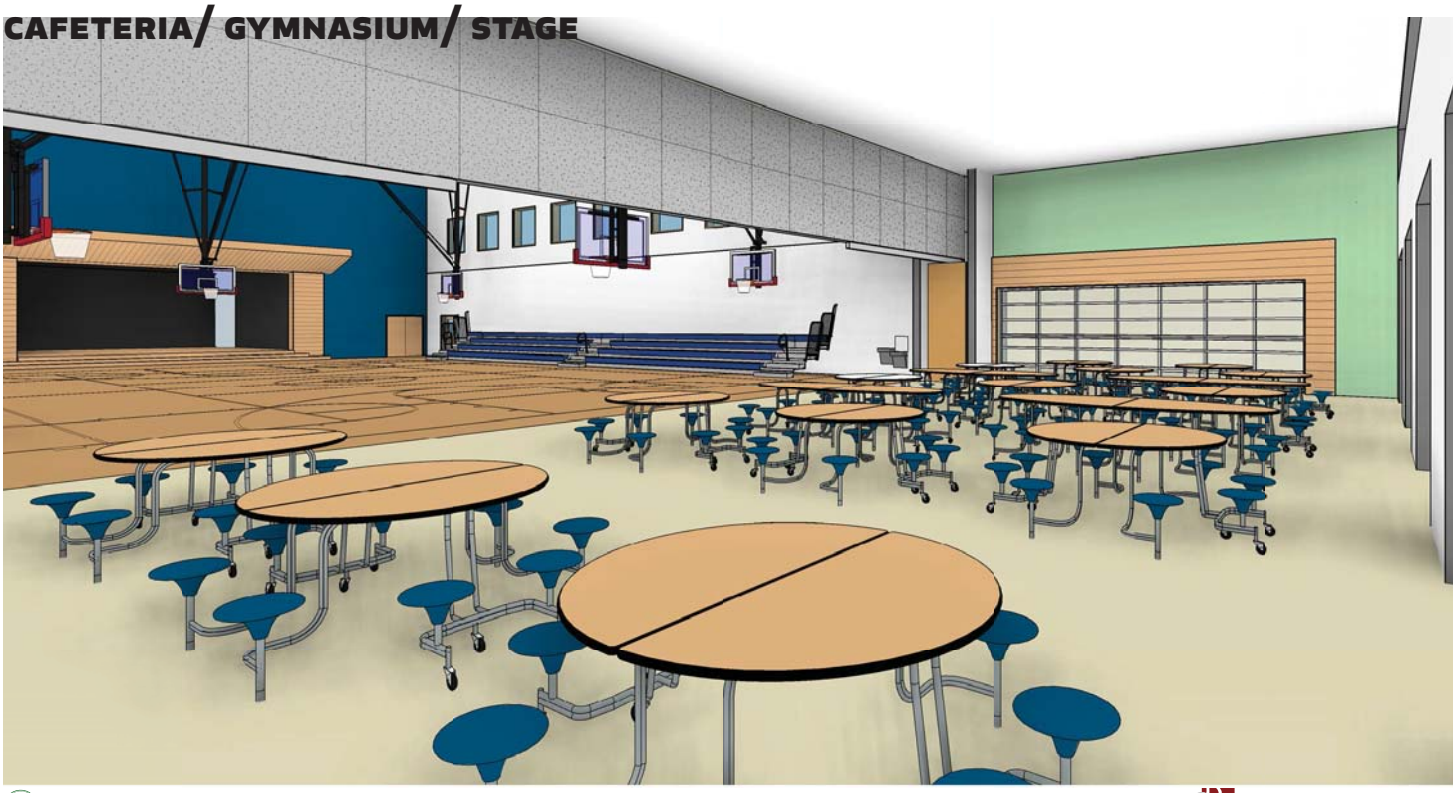
CAFE/GYM/STAGE 5/8/2018



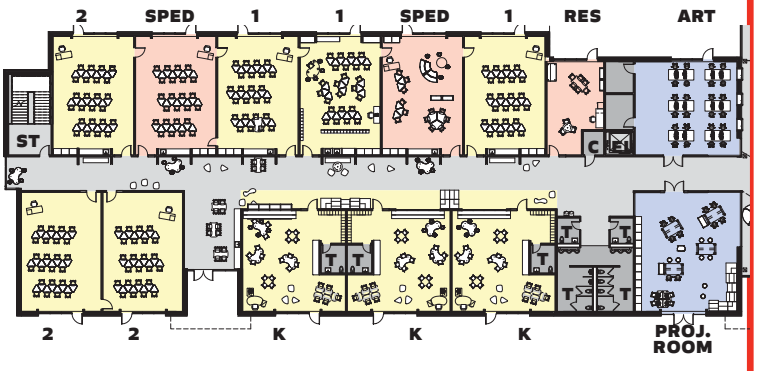
CAFE/GYM/STAGE 5/8/2018



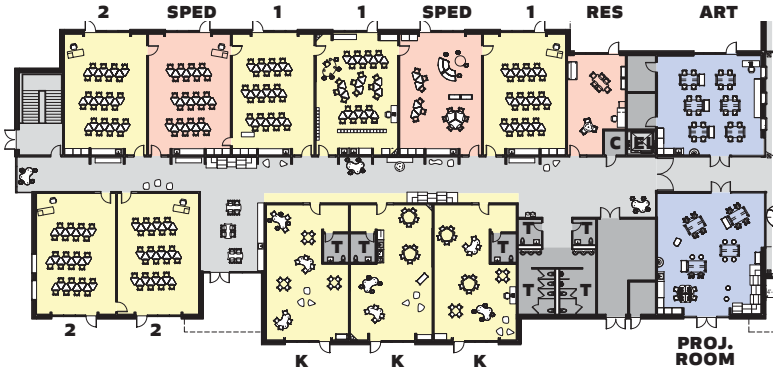
CAFETERIA/ GYMNASIUM/ STAGE



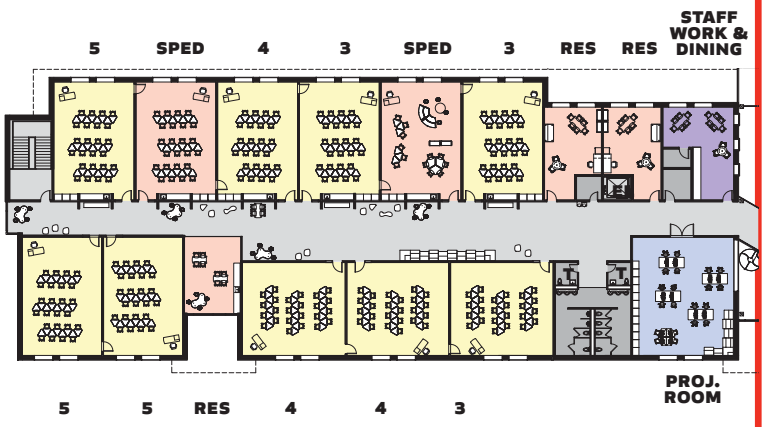
MAIN LEVEL COMMUNITIES 5/8/2018



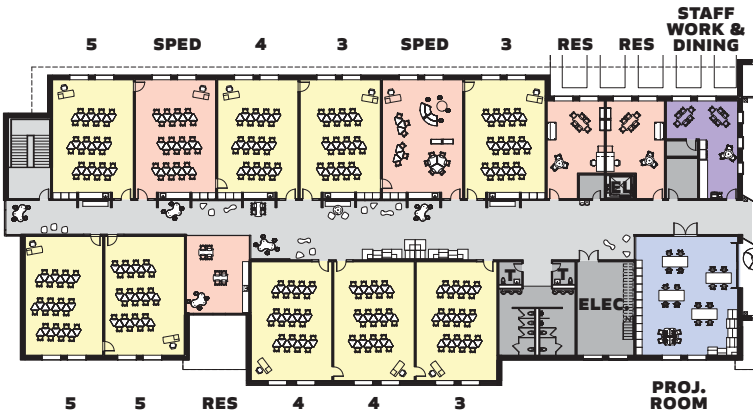
MAIN LEVEL COMMUNITIES 5/22/2018



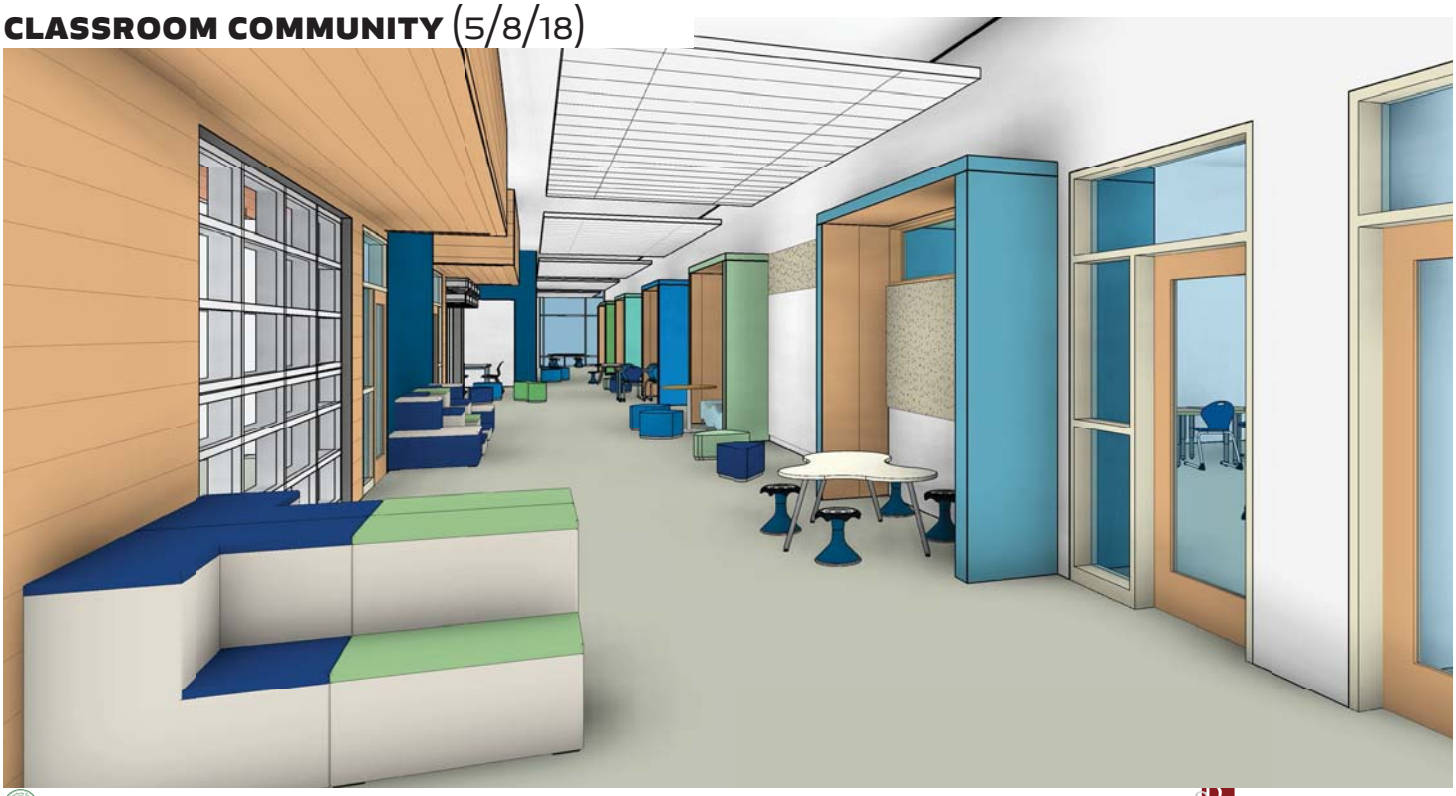
UPPER LEVEL COMMUNITIES 5/8/2018



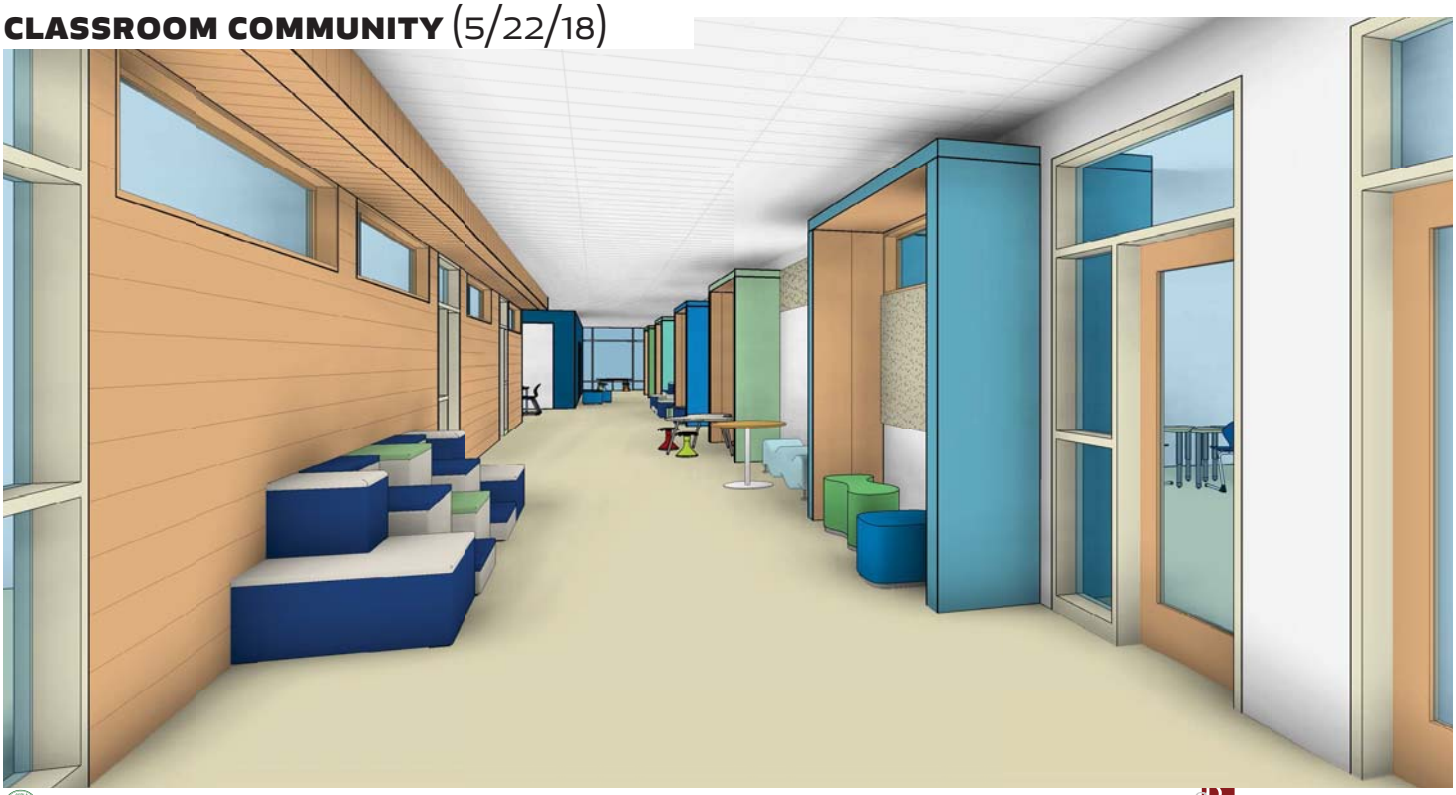
UPPER LEVEL COMMUNITIES 5/22/2018



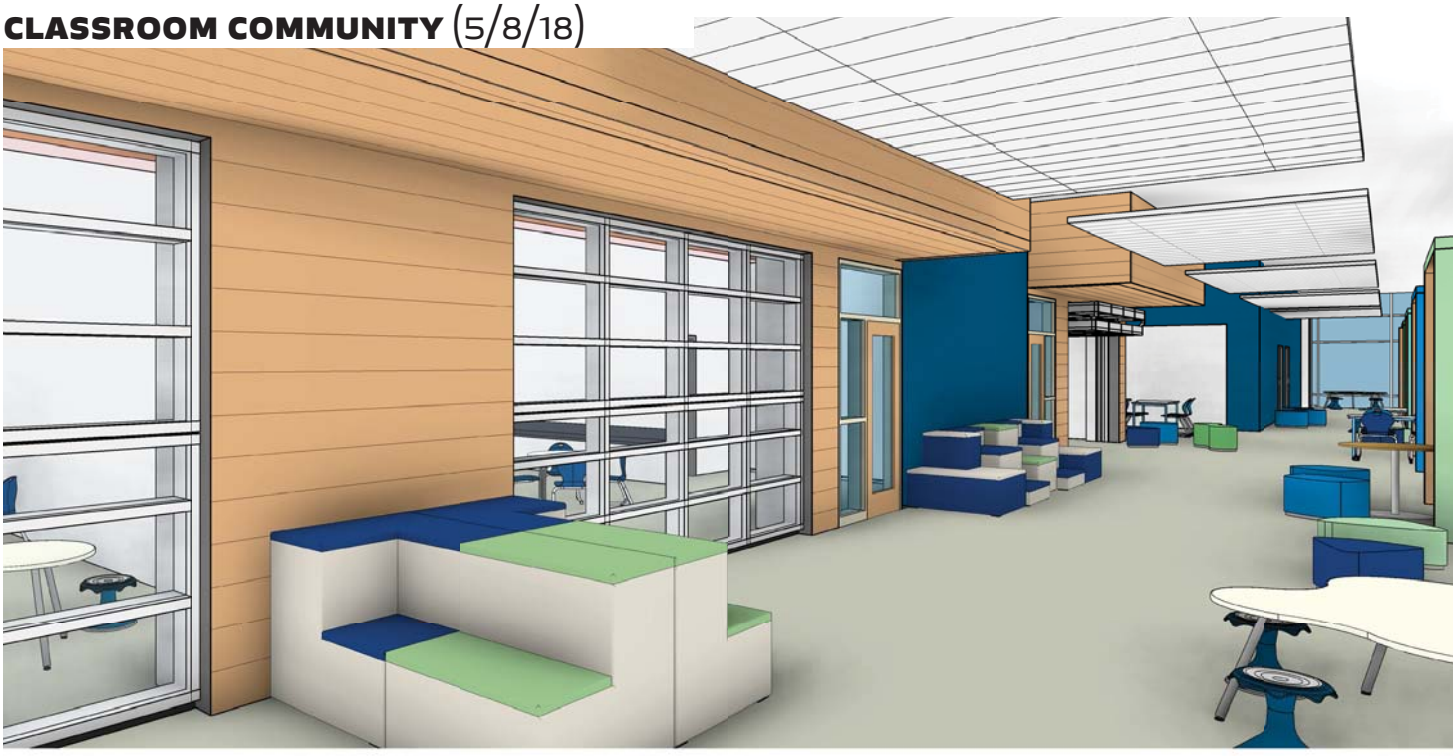
CLASSROOM COMMUNITY (5/8/18)



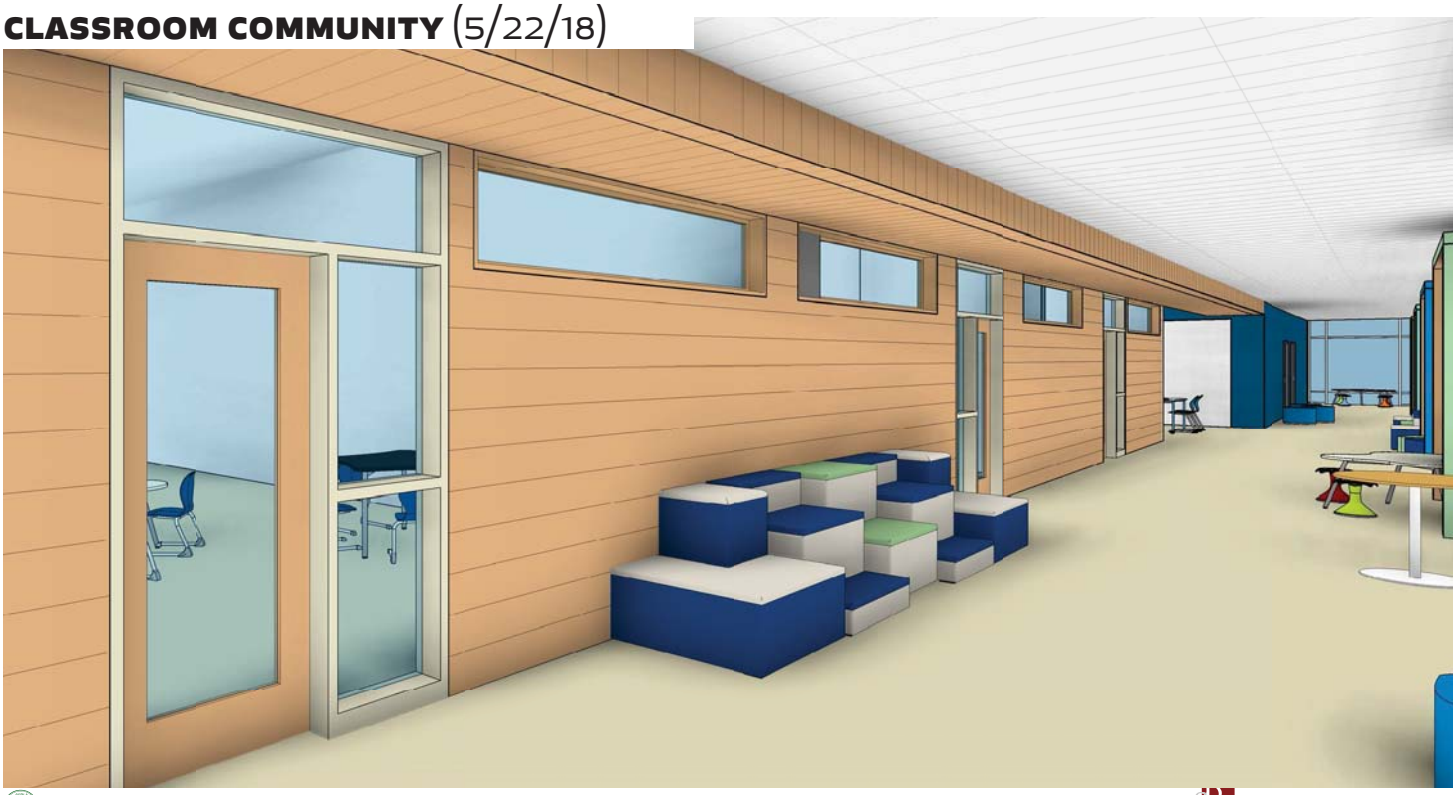
CLASSROOM COMMUNITY (5/22/18)



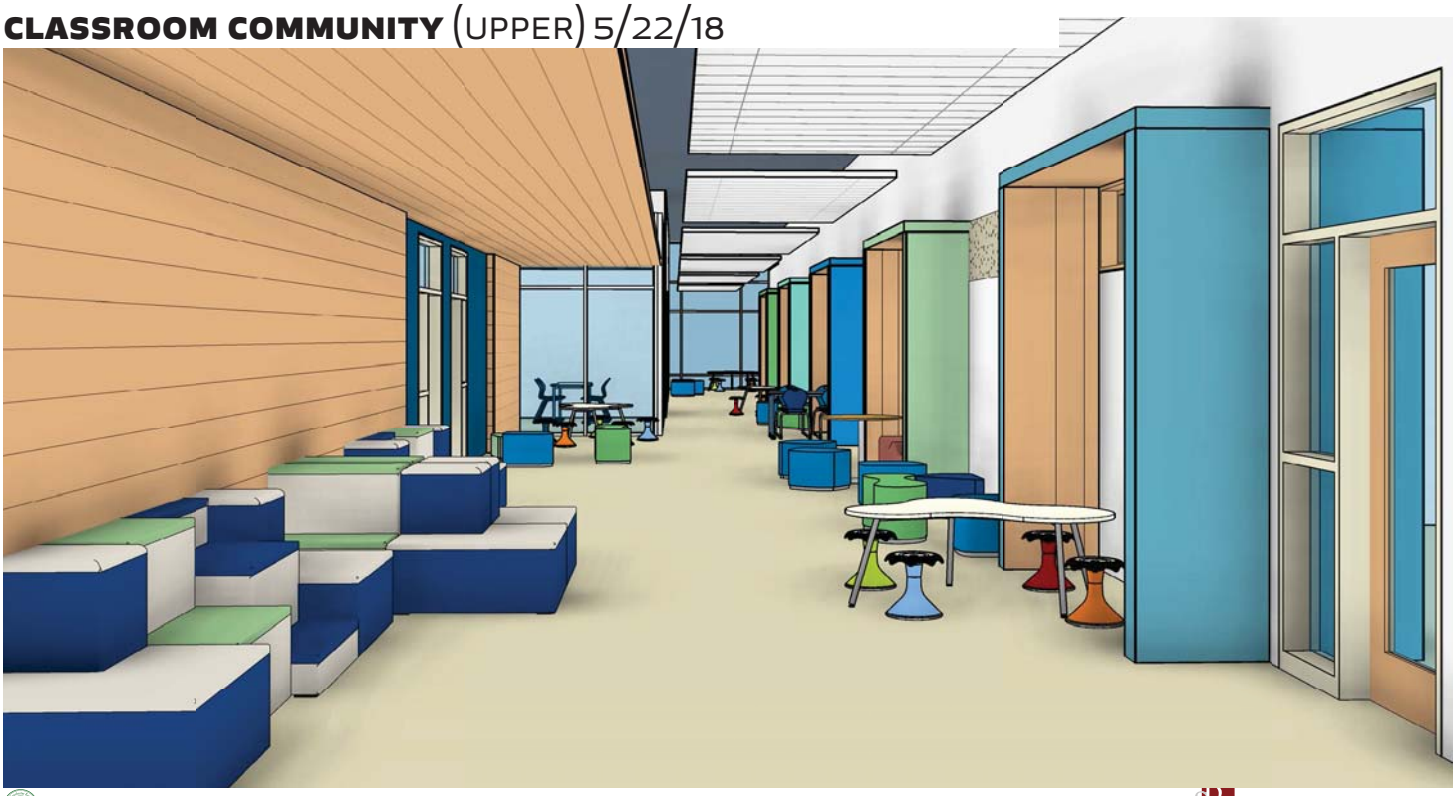
CLASSROOM COMMUNITY (5/8/18)



CLASSROOM COMMUNITY (5/22/18)



CLASSROOM COMMUNITY (UPPER) 5/22/18



DECISION POINT **BUILDING AREA** IN SQUARE FEET

PROGRAM AREA	PSR	5/8/2018	5/22/2018
Lower Level		2,315 SF	0 SF
First Floor		56,535 SF	56,742 SF
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Gross Up Factor	1.45	1.50	1.48
Change			-1,423 SF
Increase from PSR (GSF)		2,685 SF	1,262 SF

SITE PLAN



BUILDING MASSING



BUILDING MASSING - MAIN ENTRY (ORIGINAL)



BUILDING MASSING - MAIN ENTRY (LESS GLASS)



BUILDING MASSING



HUB



BUILDING MASSING - EXTERIOR (ORIGINAL)



BUILDING MASSING - EXTERIOR (BARN GYM)



BUILDING MASSING - EXTERIOR (FLAT GYM)



BUILDING MASSING - APPROACH (ORIGINAL)



BUILDING MASSING - APPROACH (BARN GYM)



BUILDING MASSING - APPROACH (FLAT GYM)



BUILDING MASSING - GYM ENTRY (ORIGINAL)



BUILDING MASSING - GYM ENTRY (BARN GYM)



BUILDING MASSING - GYM ENTRY (FLAT GYM)



BUILDING MASSING - SUMMER STREET (ORIGINAL)



BUILDING MASSING - SUMMER STREET (BARN GYM)



BUILDING MASSING - SUMMER STREET (FLAT GYM)

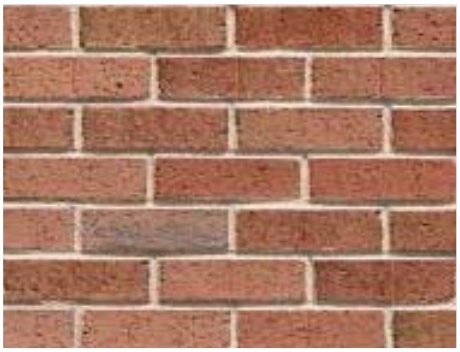


BUILDING ENVELOPE: ENVELOPE









BRICK



CEMENTITIOUS FIBER BOARD



METAL PANEL

ROOFING OPTIONS









PVC W/ RIBS



ASPHALTIC SHINGLES



STANDING SEAM METAL

BUILDING ENVELOPE: ROOFING

PRICING ALTERNATES: GYMNASIUM & PRE-K ROOF

- **FLAT ROOF / TPO MEMBRANE**
  ($675,000) (25-30 YEARS) ($1,500,000 OVER 50 YEARS)
- **GABLED / ASPHALTIC SHINGLE**
  ($725,000) (20-25 YEARS) ($1,115,000 OVER 50 YEARS)
- **GABLED / SARNAFIL W/ RIBS**
  ($885,000) (25-30 YEARS) ($1,370,000 OVER 50 YEARS)
- **GABLED/ STANDING SEAM**
  ($1,360,000) (50 YEARS) ($1,360,000 OVER 50 YEARS)

ASSUMES 4.5% ESCALATION YEAR-OVER-YEAR

NEXT STEPS

5/22	SBC Meeting - Design Update/ Approval For Estimating
5/30	Community Meeting #4
6/12	SBC Meeting - Review Cost Estimates
6/26	SBC Meeting - Initial Approval of SD Package
7/9	Joint School Committee/SBC Meeting - Approval to Submit
7/11	Submitt to MSBA
7/27	Project Scope & Budget Meeting w/ MSBA
8/29	MSBA Board Approval
10/15-16	Town Meetings in Essex & Manchester-by-the-Sea
11/6	Public Funding Vote

THANK YOU

MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS
JCJARCHITECTURE

MEETING MINUTES

MANAGEMENT PARTNERS, LLC

Project:	Manchester Memorial Elementary School	Project No:	MP17-114
Subject:	School Building Committee/School Committee Meeting	Meeting Date:	5/22/2018
Location:	Manchester MS/HS – Library	Time:	7:00 PM
Distribution:	Attendees, Project File	Prepared By:	C.Shefferman

Present	Name	Affiliation	Present	Name	Affiliation
✓	Caroline Weld *	SBC Co-Chair	✓	Jim LaPosta	JCJ
✓	Ann Cameron *	SBC Co-Chair	✓	Daniel Ruiz	JCJ
✓	Pam Beaudoin *	Superintendent	✓	Lauren Braren	JCJ
✓	Avi Urbas *	Dir. of Fin. & Ops		Emily Czarnecki	JCJ
✓	Alva Ingaharro *	Essex	✓	Mike Burton	DWMP
✓	John Willis *	Principal MMES	✓	Steven Brown	DWMP
✓	Jay Pagliarulo	Dir. of Facilities	✓	Christina Shefferman	DWMP
✓	Andy Oldeman *	Man. Fin. Comm.	✓	Dan	Landscape
✓	Lisa O'Donnell *	Essex B.O.S.	✓	Jon Rich	WT Rich
	Remko Brueker *	Manchester			
✓	Adam Zaiger *	Manchester			
✓	Tyler Virden *	Essex			
✓	George Scharfe *	Manchester			
✓	Gordon Brewster *	Manchester			
✓	Charlie Hay *	Essex			
✓	Sarah Creighton *	Manchester			
✓	Maggie Tomaiolo *	Essex			
✓	Jake Foster *	Essex			

** SBC Voting Member*

PROJECT MANAGERS
ARCHITECTS

Newburyport, MA 01950
260 Merrimac Street Bldg 7
978.499.2999 ph
978.499.2944 fax

www.doreandwhittier.com

Item No.	Description	Action
26.1	Call to Order: 7:02 pm meeting was called to order by the SBC Co-Chair A. Cameron with 16 of 17 voting members in attendance. S. Brown of DWMP notes the meeting will follow the Power Point presentation that is being projected on the screen and to follow the agenda that was provided to the SBC prior to the meeting via Dropbox.	Record
26.2	Previous Topics & Approval of May 8, 2018 Meeting Minutes: A motion to approve the 5/8/2018 meeting minutes as submitted made by S. Creighton and seconded by J. Foster. Discussion: J. Foster states on item 24.7.1 the sf conversation seems sparse compared to the discussion that was had during the previous meeting. M. Burton states that the design team will be covering the sf details further tonight and will clarify further notes and approvals in this meetings minutes. Abstentions: M. Tomaiolo. Vote: All in favor: Motion passes, minutes approved.	Record
26.3	Invoices and Commitments for Approval: Garrity and Knisley Invoice No. 10377 for legal counsel re: CM agreement & general conditions in the amount of $4,800.00 (invoice attached) vote expected. Motion made by S. Creighton to approve invoice no. 10377 in the amount of $4,800.00 2nd by A. Zaiger. Discussion: None. Vote: Unanimous to approve.	Record
26.4	Schedule/Budget Update: S. Brown reviews the schedule update slide as well as the project budget slide. A recap of the discussion is outlined below: Schedule: ➢ 5/23-SD package sent to estimators ➢ 5/30-Community Meeting No. 4 ➢ 6/11-Estimates due ➢ 6/11-Reconciliation ➢ 6/12-SBC Meeting-Review Cost Estimate/VE ➢ 6/26-SBC Meeting-Approve Estimate/VE ➢ 7/9-SBC Meeting-SD Approval ➢ 7/11-Submit SD to MSBA ➢ 7/27-MSBA PS&B Conference ➢ 8/7-SBC Meeting-Approve previous minutes of SD approval, update, and send to MSBA ➢ 8/15-Responses due to MSBA Budget: ➢ Currently there is $34,546.97 left in the project budget for the feasibility and schematic design phase of the project.	Record
26.5	Estimating/Value Management Overview: S. Brown presents SBC with estimating/value management overview. An outline of the discussion is below: ➢ Part of the Project Scope and Budget submittal to the MSBA ➢ All districts are required to provide a value engineering list detailing items in the design that could be changed, if necessary, to reduce the cost estimates and keep the project on budget. ➢ As design is developed, drawings and specs are developed in more detail, therefore estimate costs are more accurate. ➢ Help prioritize design features in order to stay on budget 1. Set of drawings and specs result in estimates higher than target budget	Record

	2. VE (value engineering) process is undertaken and those items are eliminated or modified or reflected in the subsequent design submittal. After reviewing the information presented, the SBC had many questions regarding VE. The questions and answers are listed below: Q: What will be our approach to VE? A: Start with what we know today. Drawings and specs sent to estimators. Big ticket items that will affect the project will be reviewed and considered. i.e. Roof material, site, glass and glazing, etc. Q: When will the SBC vote to formally approve VE? A: 6/23 Q: is VE identified by room or type of areas? A: can be product specific/room specific/area specific. Q: 4 rooms still need to be voted on, 2 prek, and 2 "STEM" or "SPED" rooms A: prek is decided upon by SC, and "STEM" or "SPED" will need to be voted tonight based on sf. Q: Is the life cycle of the product detailed? A: not in estimating, but as part of VE can be presented	
26.6	<u>Project Update:</u> JCJ presented the SBC with a project update. An outline of the discussion is below: ➢ Prior to meeting JCJ/DWMP sent SBC design memo outlining SD estimation. The memo is a preamble to the real detailed information on specifications and room data sheets. ➢ Flooring was not specified. JCJ to confirm and provide info to the SBC. ➢ Concern over "extras" presented in the interior finishes ➢ Interior finishes sub committee will need to be formed to make decisions on finishes ➢ AC in gymnasium-is it worth cooling gymnasium for 3-4 times a year when the gymnasium will be full for an event ➢ MEP decision was voted upon at last SBC meeting: Dehumidification system with partial AC in administration and media center.	Record
26.7.1	<u>Design Update/Landscape Design:</u> D. Solien from Horiuchi Solien Landscape Architects, presents the SBC with proposed landscape design slides. An outline of the discussion is below: ➢ Existing Conditions ➢ Proposed Site Plan ➢ Existing vs. Proposed: • Parent drop-off que: existing 680ft, proposed 700 ft • Bust staging: existing 2 buses, proposed 2 buses • Pre-k playground: 1,622sf, proposed 2,584 sf • K-1 playground: 1,664 sf, proposed 2,367 sf • Grades 1-5 playground: existing 5,583sf, proposed 8,268 sf • Hard surface playcourt: existing 24,000 sf, proposed 8,070 sf • Raised garden beds: existing 12 beds (8+ small), proposed 12 beds ➢ Playground equipment-preschool age (sensory and motor skills, role play, imagination and friendships, themed play, springers, seesaws, balance and movement, swings, carousels and spinners)	JCJ

- Playground equipment-school age (6+ years): Agility, balance, coordination, rule play scenarios, friendships, urban climbing, carousels and spinners, balance and movement, slides
- Nautical theme
- Nature theme
- Inclusive play (sensory skills, motor skills, cognitive skills, social skills)
- Musical equipment
- Hard court games
- Playground surfacing: engineered wood fiber (most economic, requires maintenance, accessibility questions)
- Playground surfacing: poured in place rubber (custom shapes/colors, shock absorption, accessible, higher cost)
- Playground surfacing: combined rubber/wood fiber (economics, safety)
- Shade structures
- Outdoor classrooms
- Kitchen gardens
- Butterfly gardens
- Rain gardens
- Proposed site plan

After D. Solien presented the slides, the SBC had discussion. Questions and answers outlined below:

- Main entry loop will have 27 parking spots in middle and 10 spots on the side.
- Service entrance will have 16 parking spots
- Emergency vehicle access around building:
    - Q: Is it necessary to have pavement all the way around building for emergency access including fire and police vehicles?
    - Need to meet with fire and police and determine what is required for them to have access in case of an emergency. Need to determine fire truck radium, egress, muster points, etc. Once meeting is scheduled, team to propose plan that has less pavement, and determine if more is necessary
    - Q: Any expectations of pervious pavement?
    - A: Have not determined yet
    - Q: can the amount of bituminous pavement be reduced?
    - A: need to meet with fire and police and determine what is required
    - Q: is it necessary to have 2 retaining walls?
    - A: grading along side of building needs to be evaluated further. Need to determine whether retaining walls of that size are necessary or if could be solved with fill and grading
    - Q: where will snow be stored?
    - A: could be stored and edge of driveways, various areas on main loop, and back by the service area.
    - Q: could the basketball court double as additional parking?
    - A: could fence off and open if needed for special events
    - Q: what material will the retaining walls be constructed of?
    - A: WT Rich to review plans and provide cost estimates on various materials for the retaining wall

26.8	Project Update: JCJ presents the SBC with project update slides. An outline of the discussion is below: ➢ Meetings and Interviews (budget collaboration, landscape design, safety and security) ➢ June 12: SBC Meeting (review cost estimates, review any ve if required, determine which ve concepts to further study ➢ June 26: SBC meeting (review ve concepts and design updates, initial approval of design scope and budget ➢ July 9: Joint SC & SBC meeting (approval to submit SD package to MSBA) ➢ Building Systems • Mechanical: displacement dehumidification, fin-tube or radiant panel heating at perimeter • Electrical: emergency generator: approx. 100-125kw, 100% LED lighting system with automated control ➢ Sustainability • Net Zero: estimated to be an additional $40-50 sf, approx. a $3.3M to $4.2M premium • Not a common choice for MSBA projects: only a few projects have considered it, none completed to date • Requires geothermal: 70 closed loop wells/`18,400 sqft • Would require an all electrical system: expansive photovoltaic system required, exterior envelop improvements necessary, glazing solar gain insulation ➢ Decision Point: • -LEED Silver (recommendation) 2% reimbursement • A motion was made by S. Creighton and seconded by G. Scharfe to select LEED Silver as the preferred sustainability building option. Discussion: S. Creighton asks whether the MSBA requires a certification? A: yes, MSBA requires at least LEED Silver for new construction. Vote: All in favor, motion passes.	Record
26.9.1	Design Update: JCJ presents the SBC with design update slides. An outline of the discussion is below: ➢ Area Update. Please see page 42 of design presentation to view the table. • Parks & Rec: 1800 nsf at PSR, 2,610 SF 5/22 • Total Gross Square Feet: 82,800 SF at PSR, 84,062 SF 5/22 • Increase from PSR: 1,262 SF • Changes made to reduce gross square feet include moving the mechanical and electrical rooms into the first and second floor classroom wings and changed the orientation of kindergarten rooms. No longer have garage doors on kindergarten classrooms, and reduced amount of sf in corridors. • Need to review and determine reduction of glass on classroom doors. ➢ Decision Point: 1,262 SF over from PSR. • Q: extra “STEM” or “SPED” rooms, and 2 extra pre-k rooms, do we need to vote tonight? • A: MSBA at PSR agreed to allow them in the program but haven’t agreed yet whether they will be considered reimbursable.	Record

	• Prek decision will be made by SC. STEM or SPED rooms are swing space need to be voted on tonight. • A motion was made by A. Zaiger and seconded by S. Creighton to proceed with SD plans and 1,262 SF as presented by JCJ. Discussion: the team needs to review amount of glass and shades. The team will review and see what reductions can be made. Vote: All in favor, motion passes.	
26.9.2	Design Update: JCJ presents the SBC with design update slides. An outline of the discussion is below: ➢ Updated upper level, lower level, hub, cafeteria/gym/auditorium, and community spaces floor plans ➢ Building Massing: • Main entry from 5/8, updated entry with less glass 5/22 • Exterior from 5/8, updated exterior gym with cementitious fiber board instead of brick • Flat roof on gym • Proposed exterior envelope materials: o Brick, cementitious fiber board, metal panel • Roofing options: o PVC w Ribs o Asphaltic Shingles o Standing seam metal • Pricing Alternates: Gymnasium & Prek-K Roof: o Flat roof/tpo membrane ($675,000 25-30 years, $1,500,000 over 50 years) o Gabled/Asphaltic Shingle ($725,000 20-25 years $1,115,000 over 50 years) o Gabled/Sarnafil w/ribs ($885,000 25-30 years $1,370,000 over 50 years) o Gabled/Standing Seam ($1,360,000 50 years $1,360,000 over 50 years) o Assumes 4.5% escalation year-over-year	Record
26.10	Other Topics Not Reasonably Anticipated (48 hours prior to meeting): Any member of the SBC that wishes to be a part of the Interior finishes subcommittee, MEP, and or Landscape, please email DWMP to schedule and include in further details.	Record
26.11	Public Comments: None.	Record
26.12	Adjourn: A motion was made by G. Scharfe and seconded by J. Foster to adjourn the meeting. Discussion: None. Vote: Unanimous to approve. Meeting adjourned at 9:36 pm.	Record

Attached:
SBC Meeting Agenda, Sign In Sheet, SBC Meeting No. 25 5/8/18 Meeting Minutes, Manchester Memorial Elementary School Presentation 5/8/18

DORE AND WHITTIER MANAGEMENT PARTNERS, LLC.



Christina Shefferman
Assistant Project Manager
Cc: Attendees, File

The above is my summation of our meeting. If you have any additions and/or corrections, please contact me for incorporation into these minutes.

PRELIMINARY SCHEMATIC REPORT PHASE PROJECT MEETINGS

- March 27, 2018 – SBC Meeting #21
- April 10, 2018 – SBC Meeting #22
- April 26, 2018 – SBC Meeting #23
- May 1, 2018 – MEP & Sustainability Meeting
- May 1, 2018 – SBC Meeting #24 (CM Interviews)
- May 8, 2018 – SBC Meeting #25
- May 22, 2018 – SBC Meeting #26
- May 30, 2018 – Community Meeting #4 (Morning & Evening)
- June 12, 2018 – SBC Meeting #27
- June 19, 2018 – SBC Meeting #28
- June 26, 2018 – SBC Meeting #29
- July 9, 2018 – SBC Meeting #30
- July 16, 2018 – SBC Meeting #31 (Joint Meeting with School Committee)

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MANCHESTER MEMORIAL ELEMENTARY SCHOOL

COMMUNITY MEETING #4

MAY 30TH, 2018

TODAY'S AGENDA

- WELCOME
- ORGANIZATION / PROJECT TEAM
- PROCESS & SCHEDULE
- DESIGN UPDATE
- NEXT STEPS

THE SCHOOL DISTRICT'S PROCESS

Began with three schools in need



MIDDLE HIGH SCHOOL
COMPLETED 2009



MEMORIAL ELEMENTARY SCHOOL
IN PROCESS (YOU ARE HERE)



ESSEX ELEMENTARY SCHOOL
NEXT STEP

THE SCHOOL DISTRICT'S PROCESS

Effort began in 2013 with an Elementary School Facilities Needs Assessment Report by Habeeb & Associates & Elementary Facilities Task Force and Community Survey

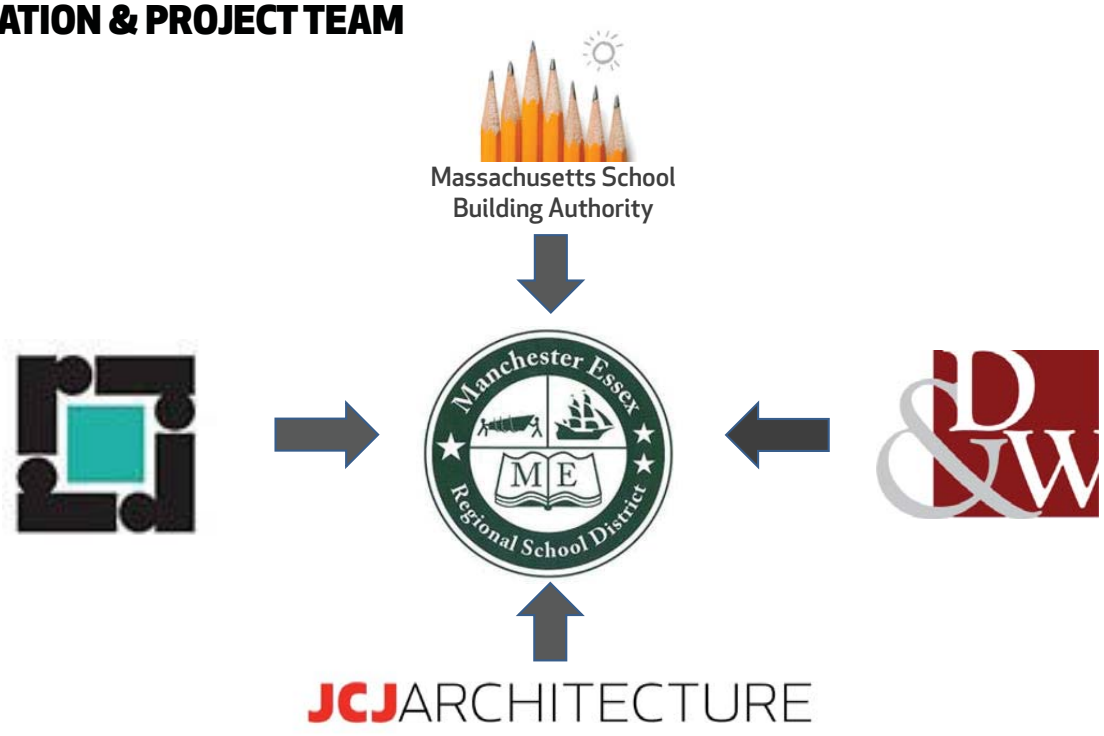
SOIs Submitted to MSBA for both Memorial and Essex Elementary Schools in January 2015

THE SCHOOL DISTRICT'S PROCESS

January 2016
Memorial Elementary Accepted into MSBA's Eligibility Phase

September 2016
Accepted into Feasibility Phase

ORGANIZATION & PROJECT TEAM



ORGANIZATION & PROJECT TEAM

MEMORIAL SCHOOL BUILDING COMMITTEE

Local committee recognized by the MSBA to oversee the design and construction of public school facilities

Caroline Weld CO-CHAIR
Ann Cameron CO-CHAIR
Pam Beaudoin SUPERINTENDENT
Avi Urbas
Alva Ingaharro
John Willis
Jay Pagliarulo
Andy Oldeman
Lisa O'Donnell
Remko Brueker
Adam Zaiger
Tyler Virden
George Scharfe
Gordon Brewster
Charlie Hay
Sarah Creighton
Maggie Tomaiolo
Jake Foster

ORGANIZATION & PROJECT TEAM

DORE & WHITTIER MANAGEMENT PARTNERS

Owner's Project Manager acts as the District's representative and is responsible for managing the project from design through construction.

Michael Burton PROJECT DIRECTOR
Steve Brown PROJECT MANAGER
Christina Shefferman ASSISTANT PROJECT MANAGER

MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS
JCJARCHITECTURE

ORGANIZATION & PROJECT TEAM

JCJARCHITECTURE

Design team which includes a variety of Architectural and engineering consultants. Responsible for developing the building design.

Jim LaPosta PRESIDENT / PRINCIPAL-IN-CHARGE
Daniel Ruiz SENIOR PROJECT MANAGER
Lauren Braren SENIOR PROJECT ARCHITECT
Emily Czarnecki SENIOR INTERIOR DESIGNER

ORGANIZATION & PROJECT TEAM

W.T. RICH COMPANY, INC

Construction Manager which oversee all the building trade and sub contractors. Responsible for Constructing the building design.

Jonathan Rich PROJECT EXECUTIVE
Harvey Eskenas SENIOR PROJECT MANAGER
Sunny Mak CHIEF ESTIMATOR
Mike Michaud PROJECT MANAGER
Ed Condon SUPERINTENDENT

ORGANIZATION & PROJECT TEAM

Massachusetts School Building Authority

THE MASSACHUSETTS SCHOOL BUILDING AUTHORITY

A State Agency Created to Reform Funding of Capital Improvement in the Commonwealth's Public Schools

They Support the Design and Construction of Educationally Appropriate, Flexible, Sustainable and Cost-Effective Schools

PROCESS & SCHEDULE

FEASIBILITY PHASE SCHEDULE

NOVEMBER 22ND 2017	FEBRUARY 21ST 2018	APRIL 10TH 2018	JULY 10TH 2018	AUGUST 29TH 2018	NOVEMBER 2018
PRELIMINARY DESIGN PROGRAM	PREFERRED SCHEMATIC REPORT	MSBA REVIEW PERIOD	SCHEMATIC DESIGN	MSBA REVIEW PERIOD	LOCAL APPROVALS
MODULE 3			MODULE 4		MODULE 5

Community Input is Important Throughout the Process

PROCESS & SCHEDULE

FEASIBILITY PHASE PROCESS

NOVEMBER 22ND 2017	FEBRUARY 21ST 2018	APRIL 10TH 2018	JULY 10TH 2018	AUGUST 29TH 2018	NOVEMBER 2018
(PDP)	(PSR)		(SD)		
PRELIMINARY DESIGN PROGRAM	**PREFERRED SCHEMATIC REPORT**	**MSBA REVIEW PERIOD**	**SCHEMATIC DESIGN**	**MSBA REVIEW PERIOD**	**LOCAL APPROVALS**
Identify the Issues/ Articulate the Educational Plan Select Site List Options to be Studied in PSR	Evaluate the Site & Building Options Select a Preferred Option	Approve Preferred Option and Authorize SD	Develop Schematic Drawings and Specifications to Establish the Project Budget	Approve SD Scope and Budget Finalize Reimbursement Rate	Seek Local Funding Approval in Essex & Manchester-by-the-Sea

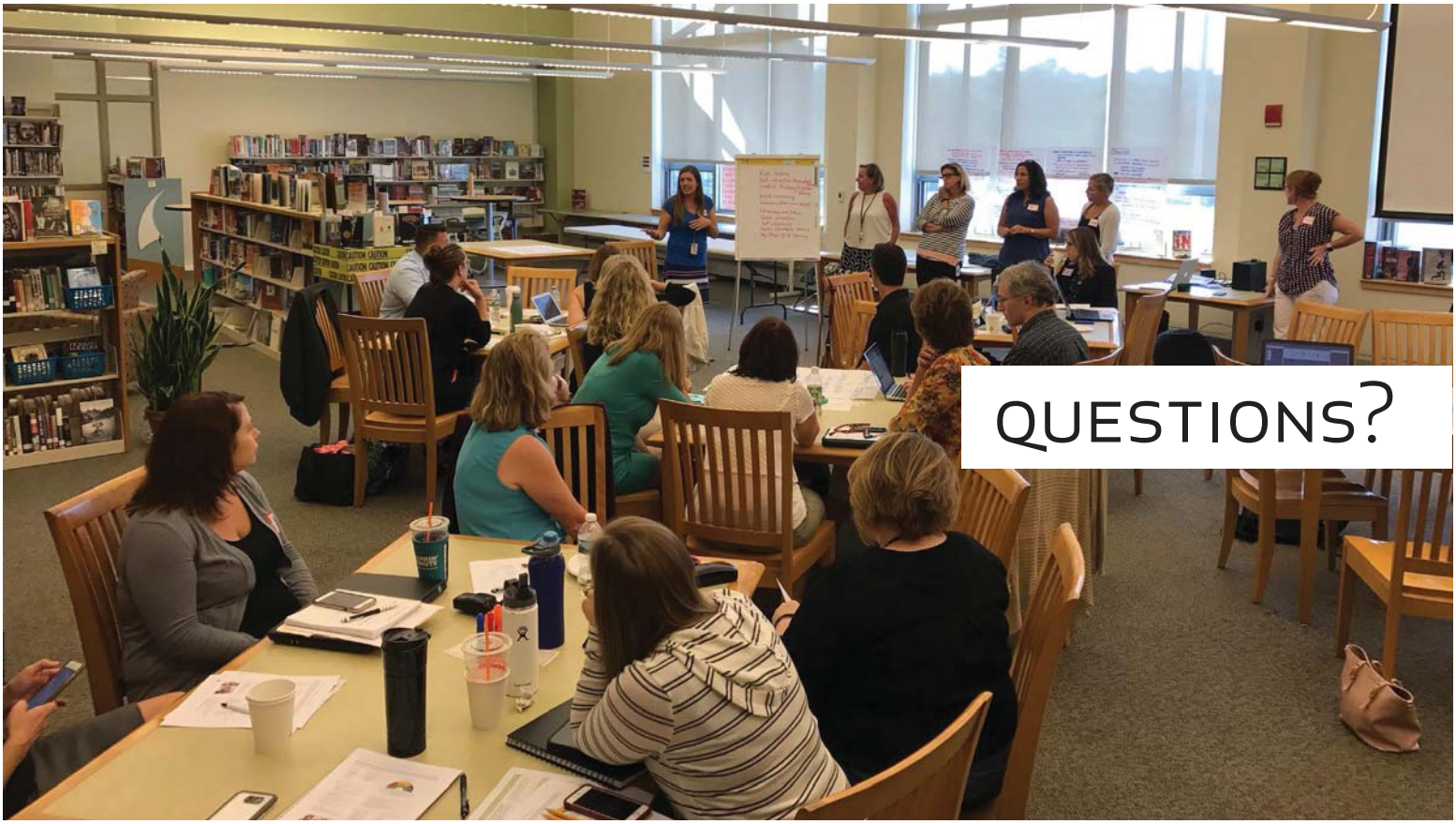
If Project is Approved: Proceed to Detailed Design and Construction

PROCESS & SCHEDULE

FEASIBILITY PHASE ACCOMPLISHMENTS

- ✓ **Building Existing Conditions Survey**
  Architectural / Structural / Mechanical / Electrical/ Plumbing-Fire Protection / Technology
- ✓ **Site Survey**
- ✓ **Wetlands Delineation**
- ✓ **Geotechnical Investigation**
- ✓ **Hazardous Materials Survey**
- ✓ **Phase I Environmental Report**
- ✓ **Traffic Impact Analysis**
- ✓ **Educational Visioning Sessions (2)**
- ✓ **Building Committee Mtgs (18)**
- ✓ **Community Meetings (3)**
- ✓ **Various Sites Considered (7)**
- ✓ **Schemes Developed (14)**
- ✓ **Building Systems Considered**
- ✓ **Preliminary Design Program Submitted**
- ✓ **Preferred Schematic Design**

MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS
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SITES CONSIDERED

Identified Sites

MSBA Requires all Available Sites to be Considered

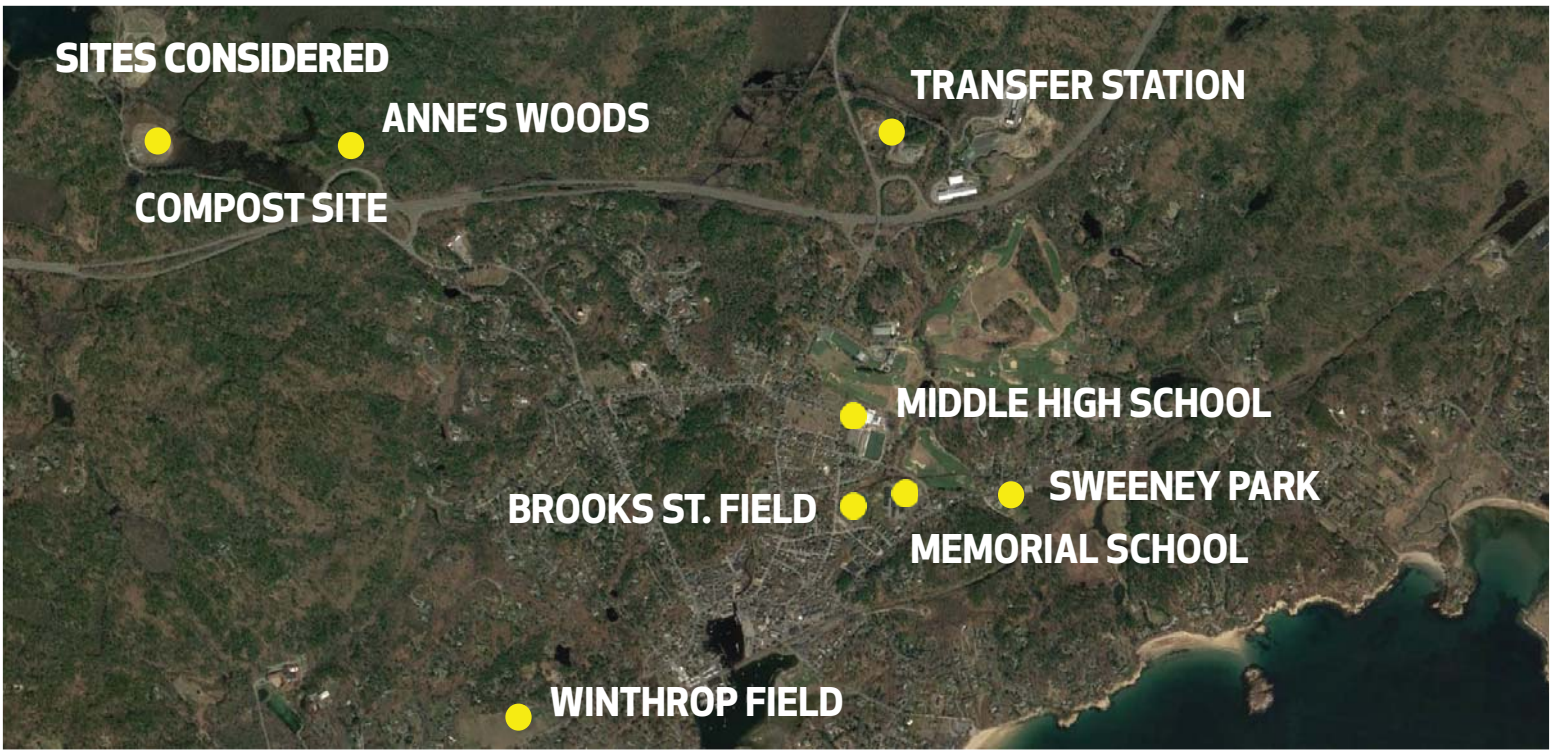
SBC Reevaluated the List of Possible Sites Identified in the Middle High School Process Plus some Additional Properties

Sites Under Consideration all Owned by Manchester

Private Site Acquisition would be Cost Prohibitive and Not Eligible for State Reimbursement

CRITERIA

Located within Manchester-by-the-Sea
No Land Purchase
MBTS-Owned Site
Neighborhood School
MSBA Guideline of 8 Acres
Vehicular and Pedestrian Safety
Utilities (Water, Sewer, Etc.)
Development Costs



MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS

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THE MSBA REQUIRES THREE OPTIONS TO BE CONSIDERED

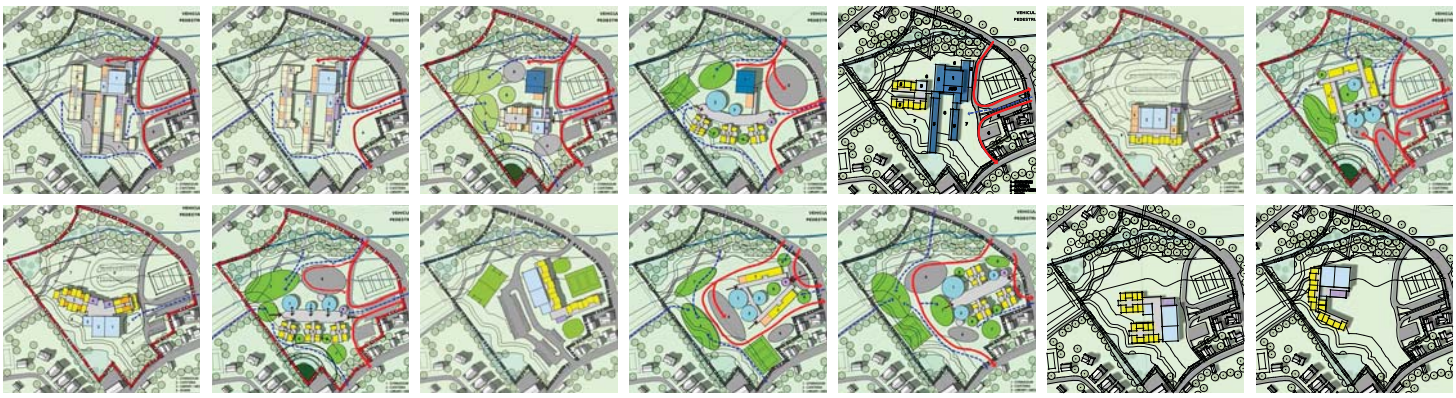
Renovation Only

Addition/Renovation

New Construction

EVALUATING THE OPTIONS

PDP PHASE (July '17 - Nov '17) 14 SCHEMES WERE CONSIDERED

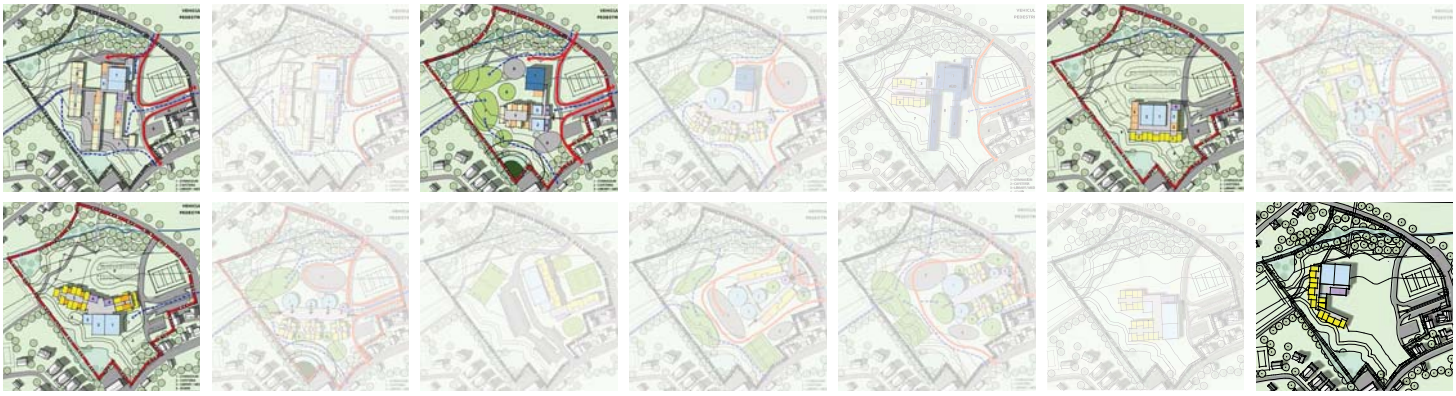


MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS

JCJARCHITECTURE

EVALUATING THE OPTIONS

END OF PDP (Nov '17)
FIVE RECOMMENDED FOR FURTHER DEVELOPMENT



EVALUATING THE OPTIONS
RECOMMENDED FOR FURTHER DEVELOPMENT

PSR PHASE (Dec '17 - Feb '18)

R-1



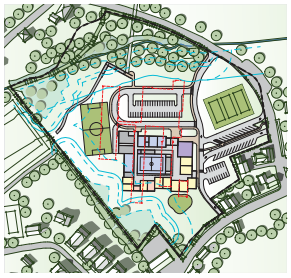
RENOVATION ONLY

AR-2



ADDITION/RENOVATION

N-1



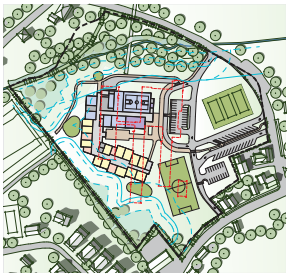
NEW CONSTRUCTION

N-3



NEW CONSTRUCTION

N-9



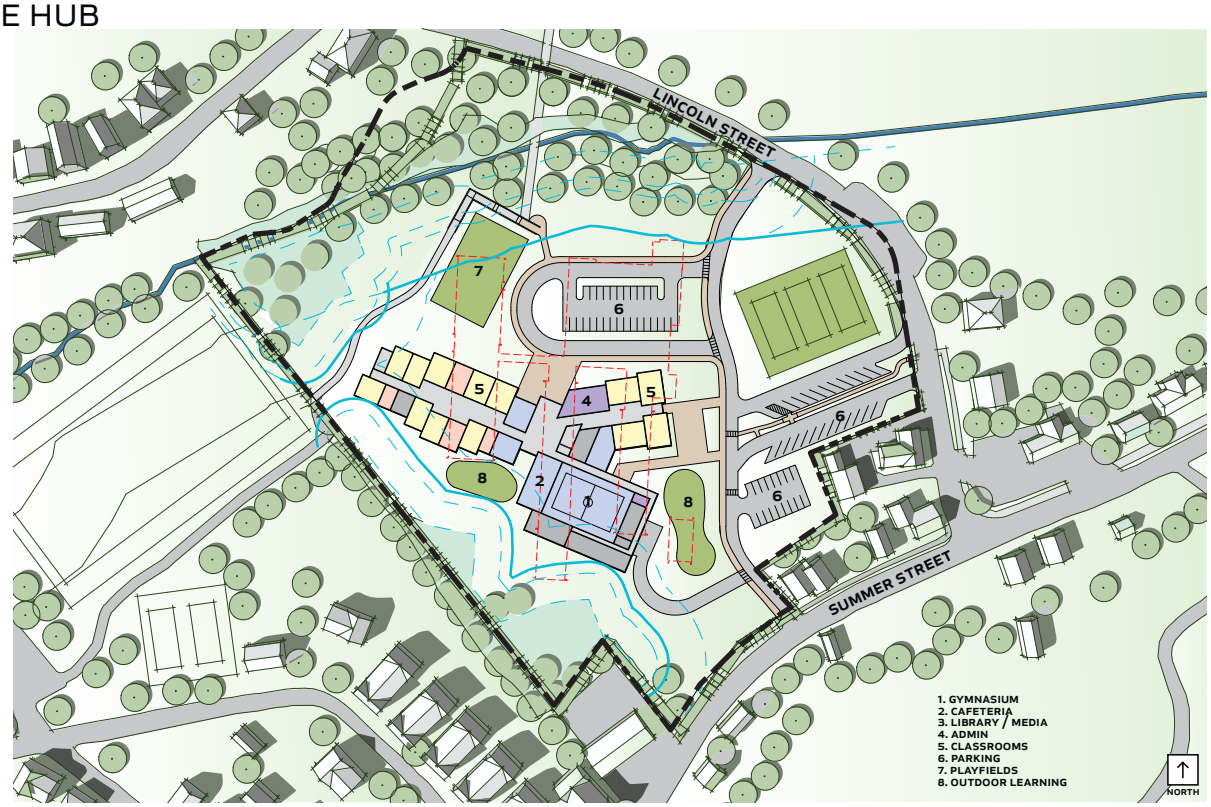
NEW CONSTRUCTION

RECOMMENDATIONS

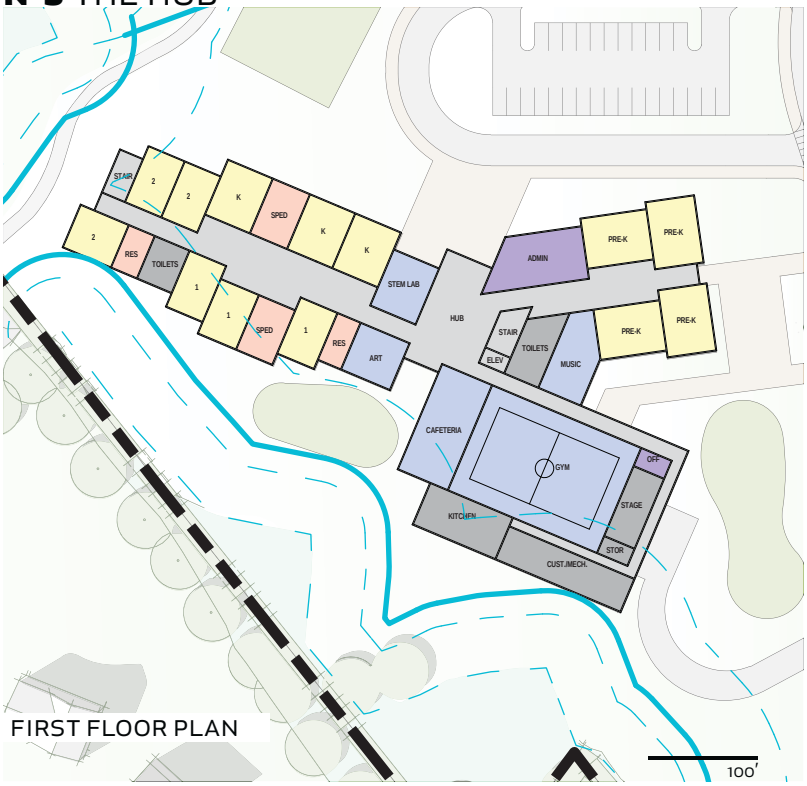
● FAVORABLE
◉ NEUTRAL
○ UNFAVORABLE

	Option R-1 *"Four Walls"*	Option AR-2 *"Save the Core"*	Option N-1 *"The Piano"*	Option N-3 *"The Hub"*	Option N-9 *"The Hook"*
Educational					
Meets District's Space Program Goals	○	○	●	●	●
Provides Flexibility for Future Building Expansion	○	○	○	●	●
Flexibility for Grade Level Re-Configuration (Bubble Grades)	◉	●	◉	◉	◉
Minimizes Impact to Students During Construction	◉	◉	◉	◉	○
Provides Separated Whole School Gathering Space w/ Stage	○	○	●	●	●
Community					
Provides Independent Access to Community Used Space	●	●	○	●	●
Allows for Competition Size Gym with Bleachers	○	○	●	●	●
Site					
Increases Amount of Play Areas/ Fields	◉	●	●	●	●
Welcoming Street Presence	◉	●	●	●	◉
Improves Parent Drop-Off/ Pick-Up Queuing	◉	◉	●	●	●
Improves Impact to Riverfront Resource Areas	◉	◉	●	●	◉
Minimizes Potential Pedestrian/ Vehicular Conflicts	◉	◉	●	●	●
Building					
Optimizes Building Area to Perimeter Ratio	○	◉	●	◉	◉
Costs and Schedule					
Relative Capital Costs	$ 35.8 M	$ 55.8 M	$ 57.0 M	$ 55.6 M	$ 62.6 M
District Share (Estimated)	$ 24.2 M	$ 39.6 M	$ 42.4 M	$ 41.6 M	$ 47.8 M

N-3 THE HUB



N-3 THE HUB



FIRST FLOOR PLAN

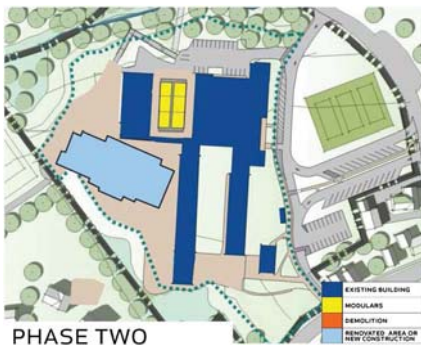


SECOND FLOOR PLAN

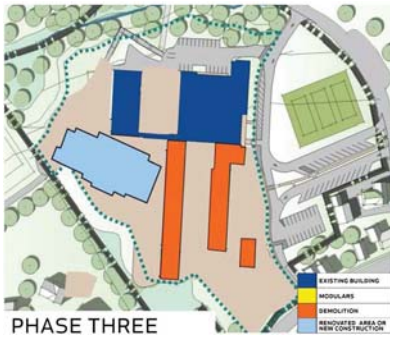
PHASING (INITIAL CONCEPT)



PHASE ONE



PHASE TWO



PHASE THREE



PHASE FOUR



PHASE FIVE

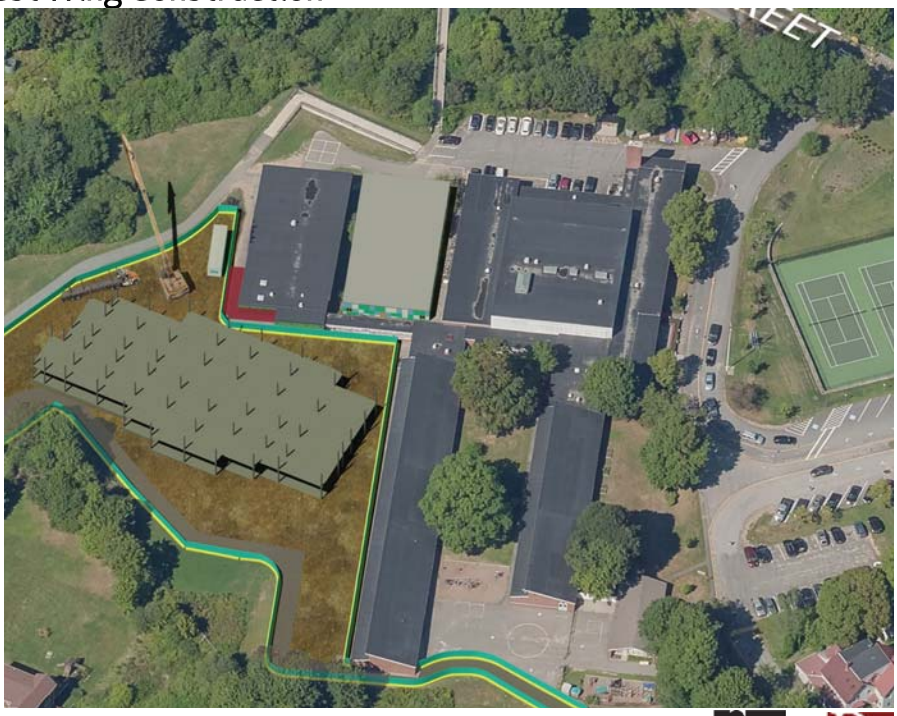
PHASING – Mobilization



PHASING – Modulars, Abatement/ Demolition of SW Wing



PHASING – New West Wing Construction



PHASING – Remove Modulars, Abatement/ Demolition of Remaining Wings



PHASING – New East Wing Construction



PHASING – Abatement/ Demolition of Remaining Existing Building



PHASING – Final Site Finishes



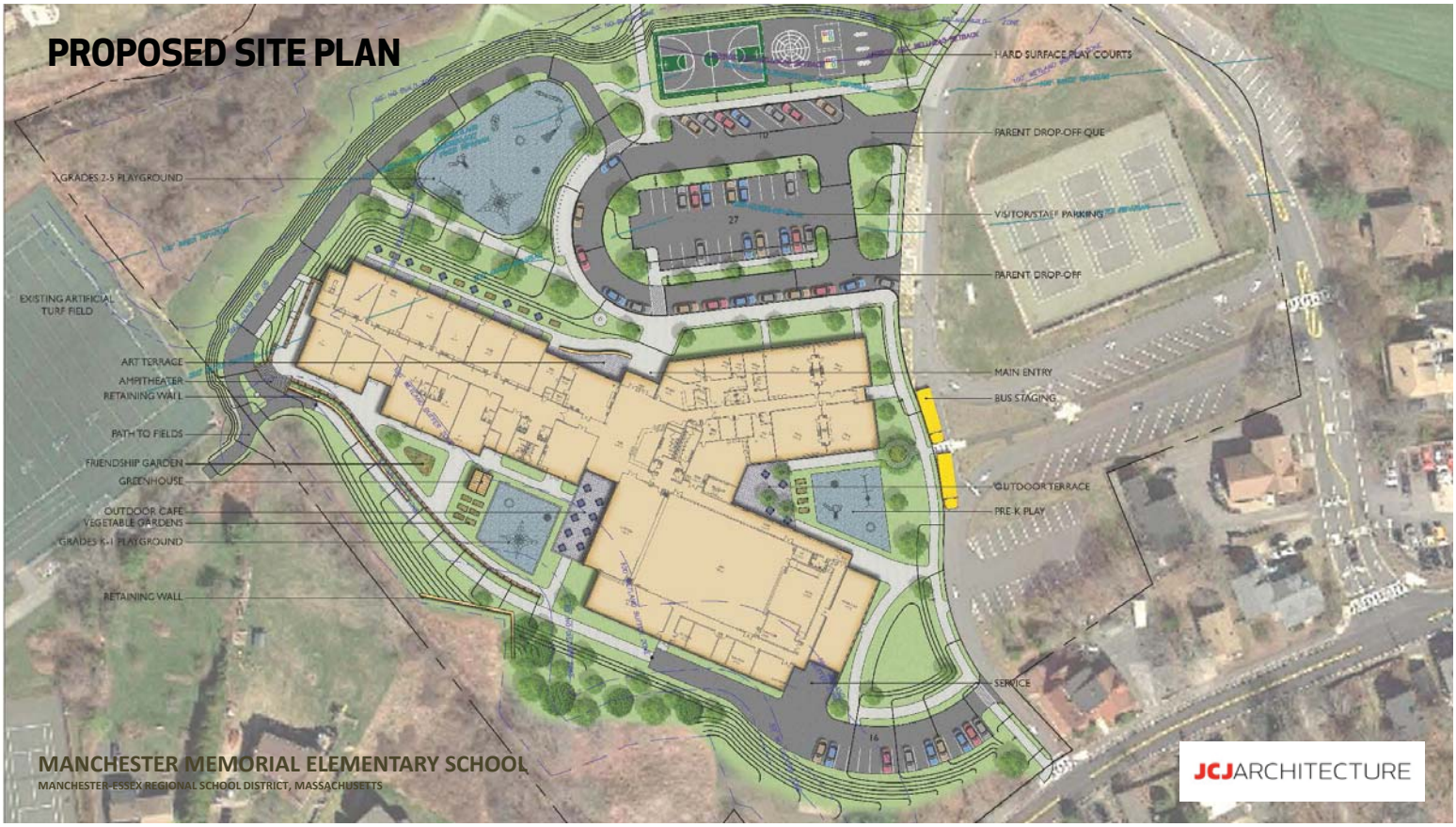
PHASING – Final Site Finishes



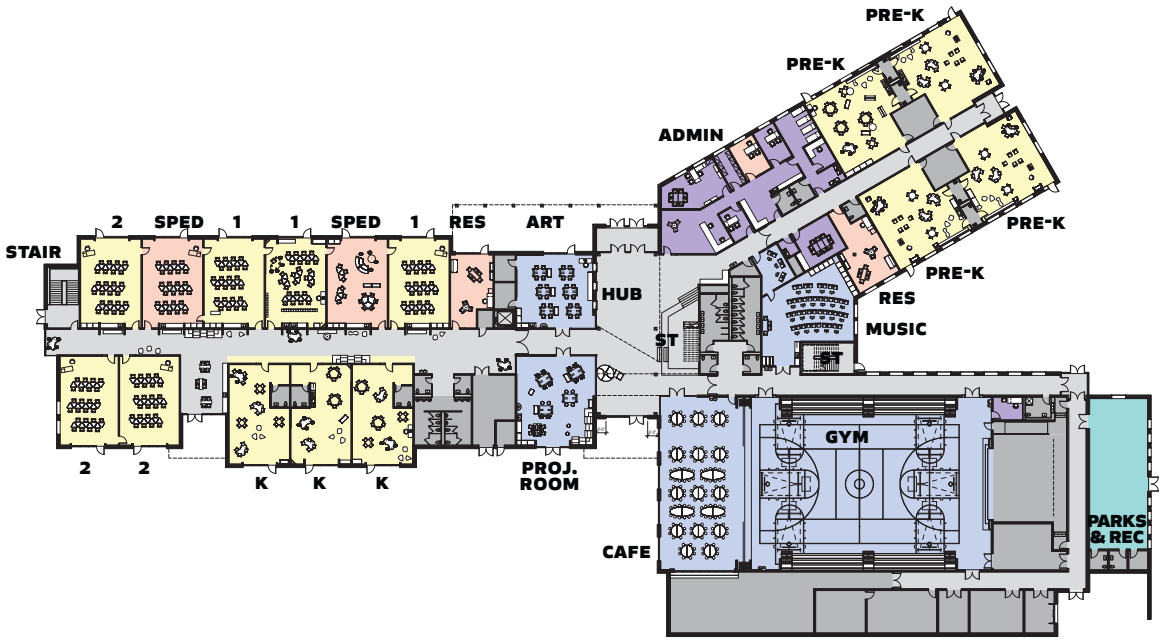
MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS

JCJARCHITECTURE

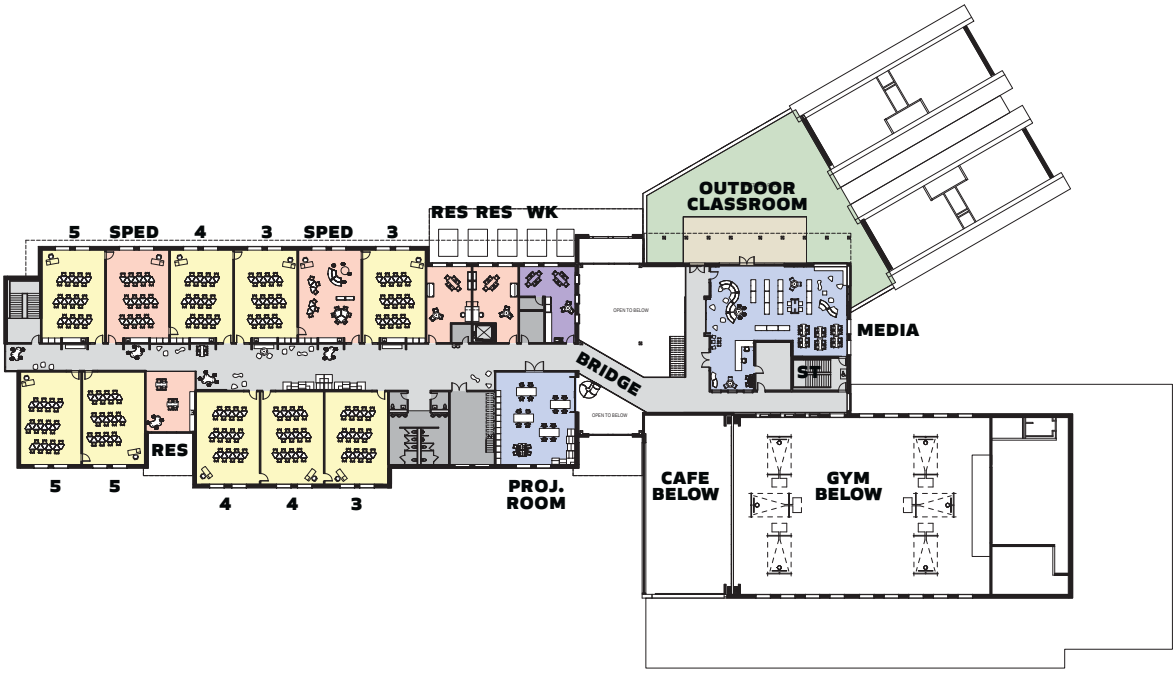
PROPOSED SITE PLAN



MAIN LEVEL PLAN UPDATED



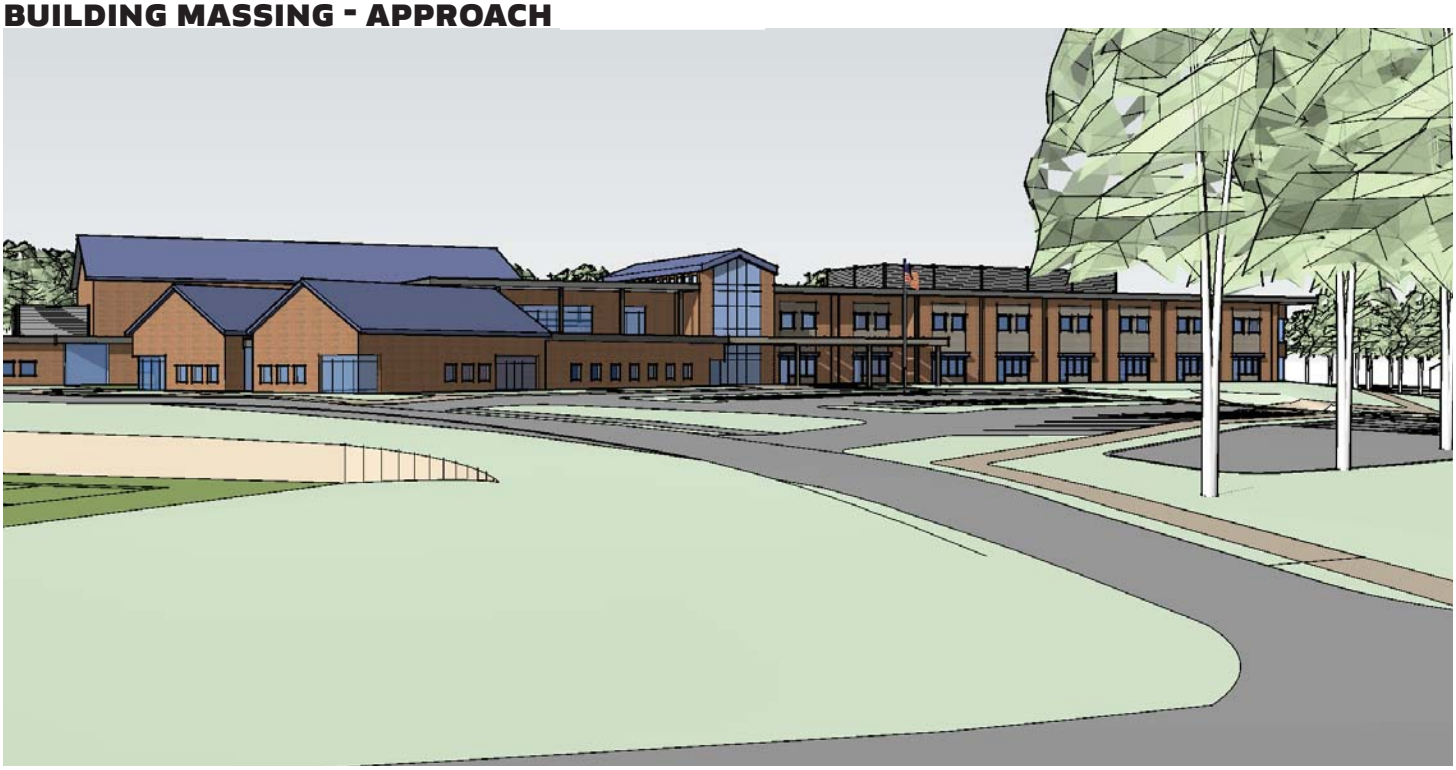
UPPER LEVEL PLAN UPDATED



BUILDING MASSING - EXTERIOR



BUILDING MASSING - APPROACH



BUILDING MASSING - MAIN ENTRY



BUILDING MASSING



BUILDING MASSING

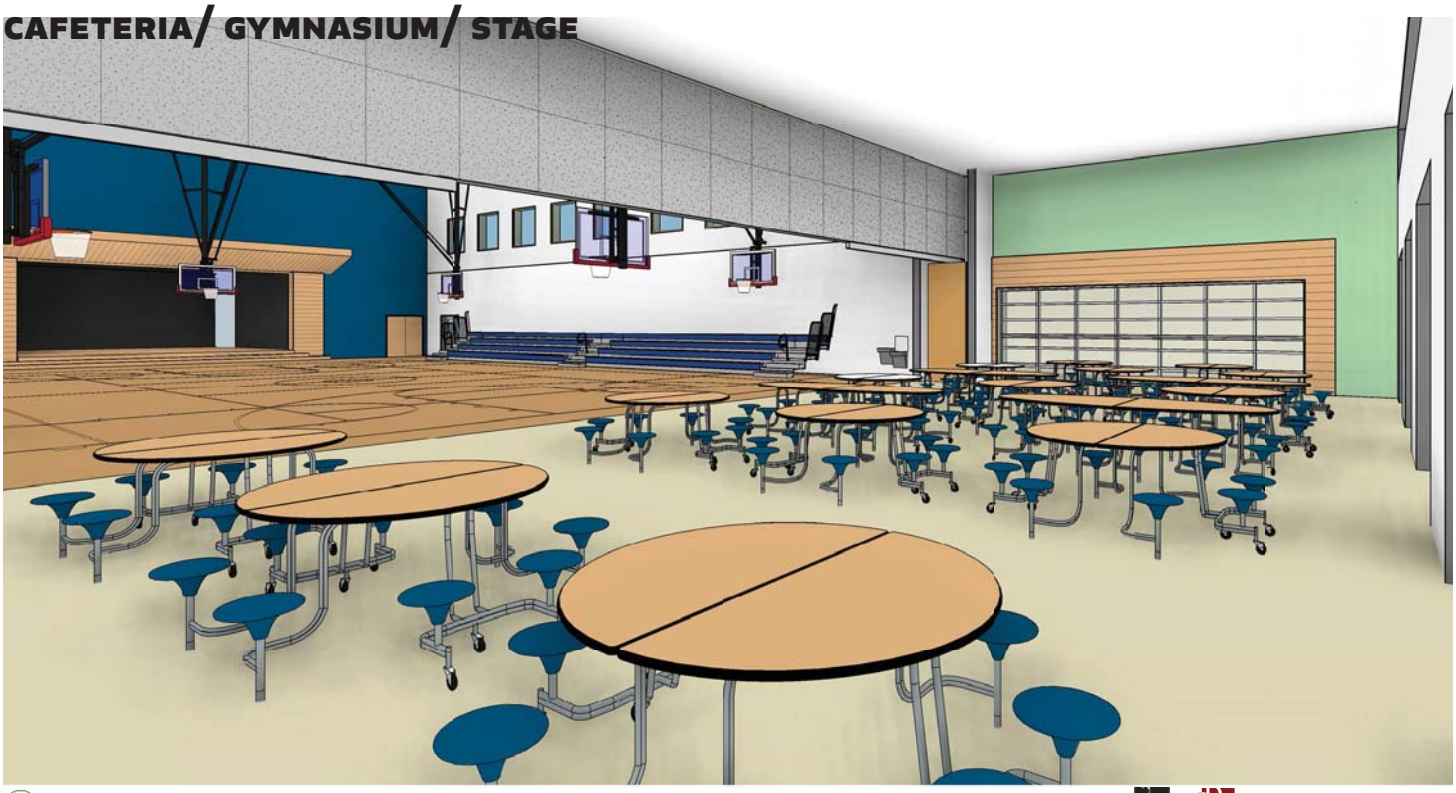


HUB





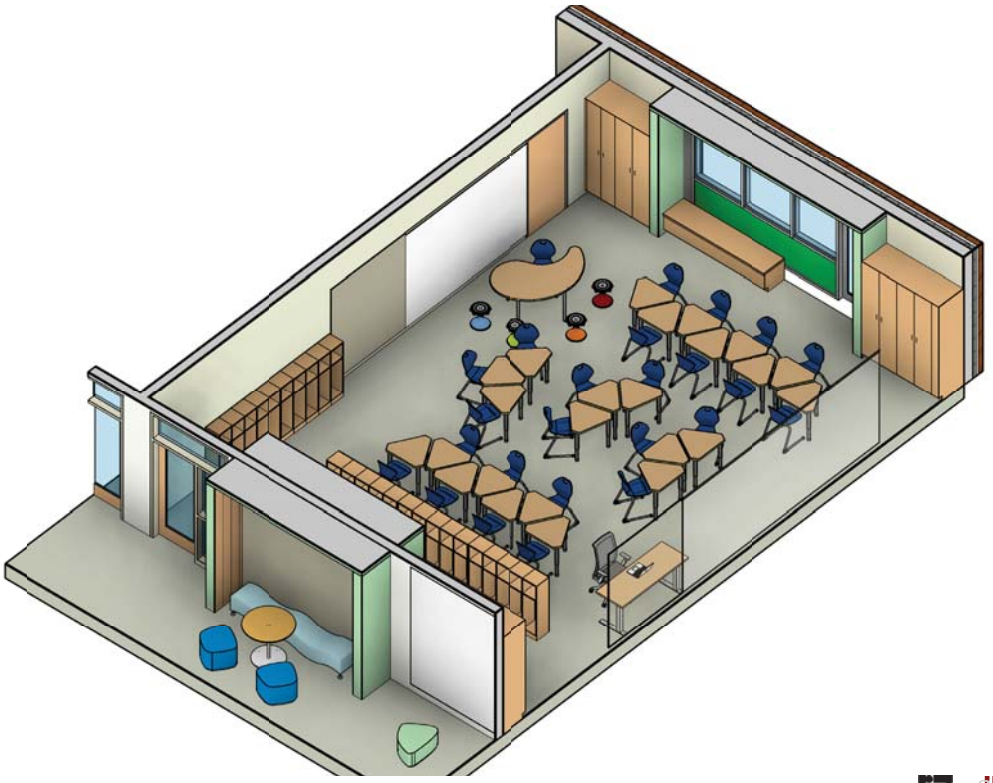
CAFETERIA/ GYMNASIUM/ STAGE



CLASSROOM COMMUNITY



CLASSROOM



NEXT STEPS

5/30	Community Meeting #4
6/12	SBC Meeting - Review Cost Estimates
6/26	SBC Meeting - Initial Approval of SD Package
7/9	SBC Meeting - Approval to Submit SD to MSBA
7/11	Submit toMSBA
7/27	Project Scope & Budget Meeting w/ MSBA (Tentative)
8/29	MSBA Board Approval
10/15-16	Town Meetings in Essex & Manchester-by-the-Sea
11/6	Public Funding Vote

WE NEED YOUR FEEDBACK

PARTICIPATE IN THE PROCESS

Attend Building Committee Meetings

Dates/Times Posted on the Building Committee Webpage
Watch for Newspaper & Web Announcements
Meetings are Replayed on Cape Ann TV - Channel 67 or Video Download

NEXT STEPS

WE NEED YOUR FEEDBACK

FOLLOW THE PROJECT

WWW.MERSD.COM

Meeting Agendas & Minutes
Project Updates
Presentations & Documents

eMail Comments & Questions:
msbcquestions@mersd.com

THANK YOU

JCJARCHITECTURE

JCJ.COM

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BOSTON, MA 02109
TEL 617.532.6600
FAX 617.532.6601
BOSTON@JCJ.COM

AN EMPLOYEE OWNED COMPANY

ATTENDEE QUESTIONS – COMMUNITY MEETING #4

Morning Session – Approximately 27 members of the public were in attendance, apart from SBC members and other local leaders.

Questions and Comments:

- Is it possible to see the physical copy of the Report Book?
- When will know what the MSBA's reimbursement rate will be?
- What is the status of the pedestrian bridge?
- When will the abatement occur?
- How noisy will the abatement be?
- Can you get your demo schedule shared with the Town?
- What's the hoped for completion date?
- How will air-quality be monitored?
- What's the status of the Senior Center?
- Will the building have photovoltaic panels?
- Why are there 4 Pre-K classrooms?

Evening Session – Approximately 21 members of the public were in attendance, apart from SBC members and other local leaders.

Questions and Comments

- Will there be public access to the playgrounds during construction?
- Will there be a basement area for storage?
- What is the average size classroom?
- Does two phases cost more?
- What happened with the Auditorium?
- What are the opportunities to expand in the future?
- Have you considered using a pre-fabrication building system?
- Is the trash going to be visible from Summer Street?
- What will happen to the Parks & Rec summer program during construction?

PRELIMINARY SCHEMATIC REPORT PHASE PROJECT MEETINGS

- March 27, 2018 – SBC Meeting #21
- April 10, 2018 – SBC Meeting #22
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- June 26, 2018 – SBC Meeting #29
- July 9, 2018 – SBC Meeting #30
- July 16, 2018 – SBC Meeting #31 (Joint Meeting with School Committee)

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AGENDA

Project:	Manchester Memorial Elementary School	Project No:	MP17-114
Subject:	School Building Committee Meeting	Meeting Date:	6/12/2018
Location:	Manchester MS/HS – Library	Time:	7:00 PM
Distribution:	Attendees, Project File	Prepared By:	C.Shefferman

1. Call to Order
2. Previous Topics & Approval of May 22, 2018 Meeting Minutes
3. Invoices & Commitments for Review/Approval
    i. DWMP May Invoice No. 15 for SD phase activity in the amount of $7,142.85. (invoice attached). Vote expected.
    ii. JCJ May Invoice No. 10 for SD phase activity in the amount of $36,000.00. (invoice attached). Vote expected.
    iii. Minuteman Press Invoice No. 88442 for community meeting no. 4 flyers in the amount of $515.20. (p.o. attached). Vote expected.
4. Budget Update (vote anticpated)
5. Project Update
6. Design Update
7. Review Cost Estimates
8. VE Sub Committee
9. Schedule Update
10. Other Topics Not Reasonably Anticipated 48 hours prior to Meeting
11. Public Comments
12. Adjourn

MANAGEMENT PARTNERS, LLC

PROJECT MANAGERS
ARCHITECTS

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MANCHESTER MEMORIAL ELEMENTARY SCHOOL

SCHEMATIC DESIGN PHASE

SBC MEETING #27

JUNE 12TH, 2018

TODAY'S AGENDA

PROJECT UPDATE

DESIGN UPDATE

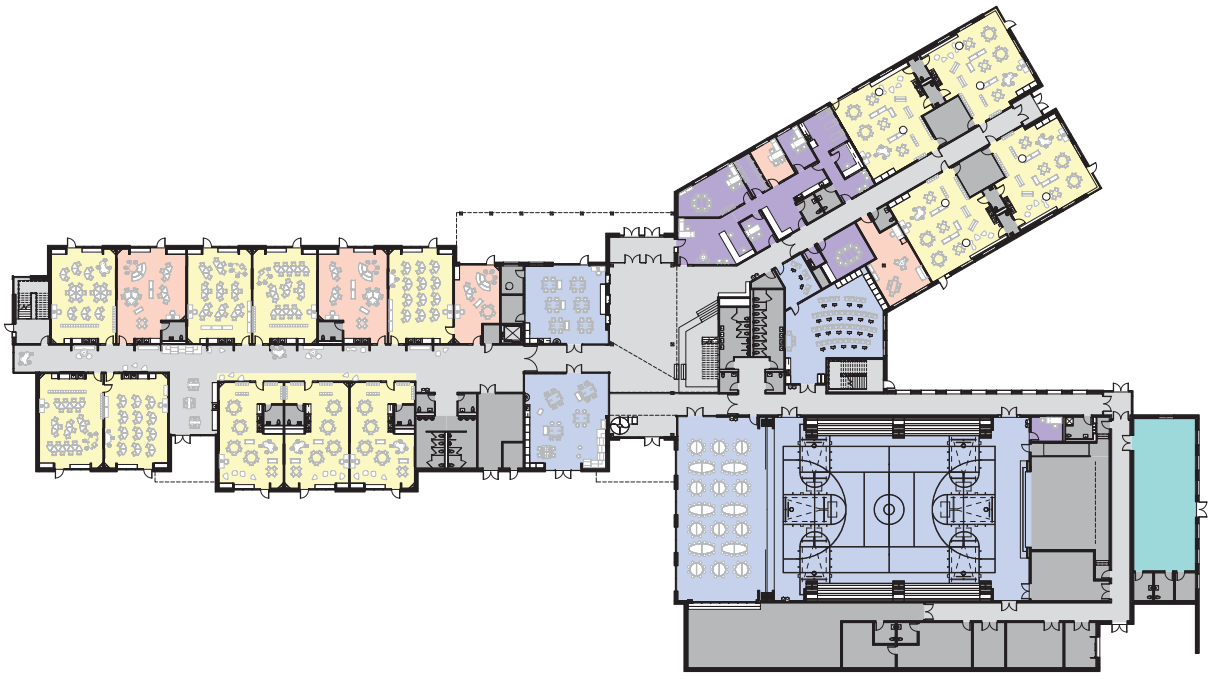
VE CONSIDERATIONS

PROJECT UPDATE

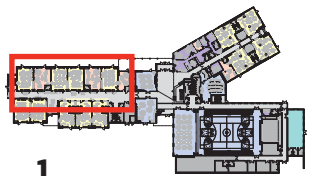
- **CONSULTANT COMPLETED HYDRANT FLOW TEST**
- **FIRE PUMP NOT REQUIRED**

- **ANRAD APPLICATION TO CONSERVATION COMMISSION**
- **INTAKE MEETING TONIGHT, 6/12**

MAIN LEVEL PLAN (UPDATED)



ENLARGEMENT OF SP.ED. TOILET ROOM ADDITIONS (MAIN LEVEL)

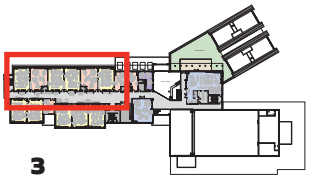




UPPER LEVEL PLAN (UPDATED)

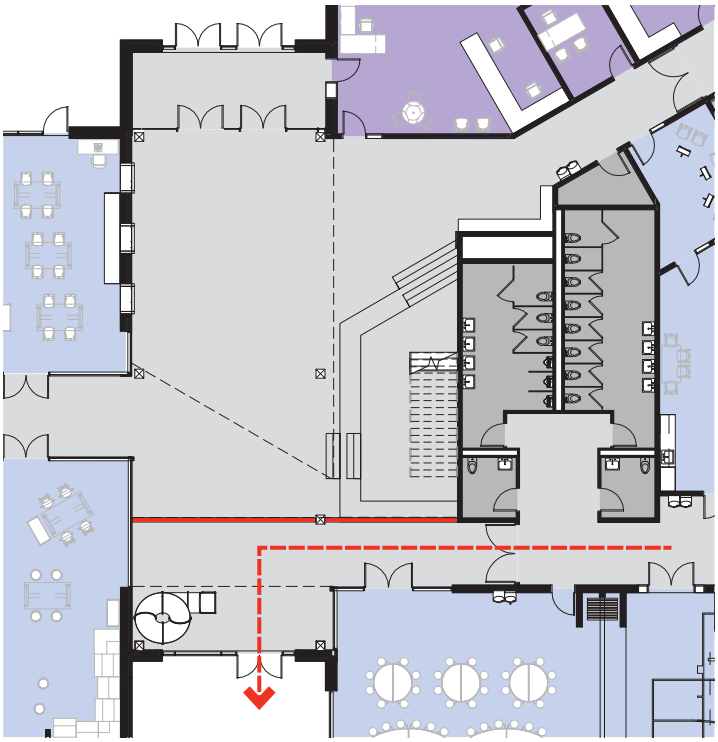


ENLARGEMENT OF SP.ED. TOILET ROOM ADDITIONS (UPPER LEVEL)

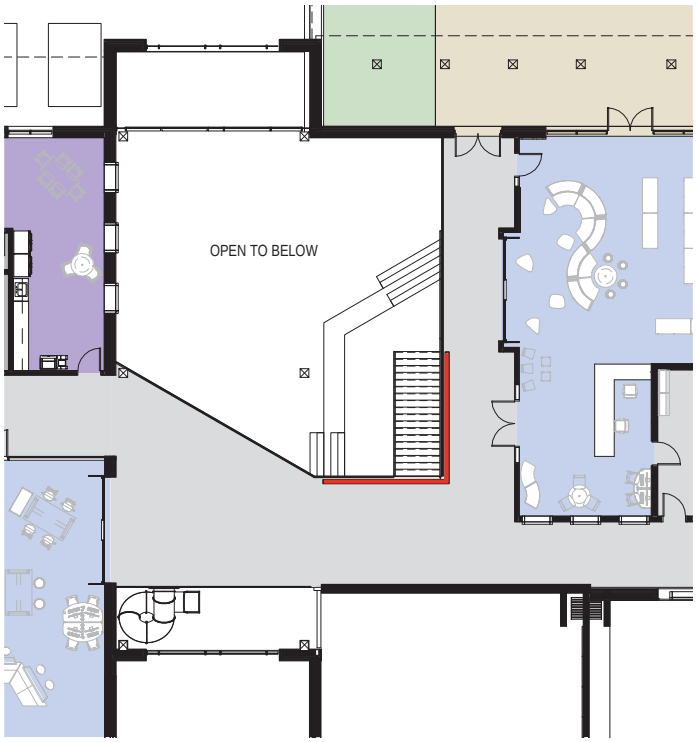




SECURITY GRILLES MAIN LEVEL



UPPER LEVEL



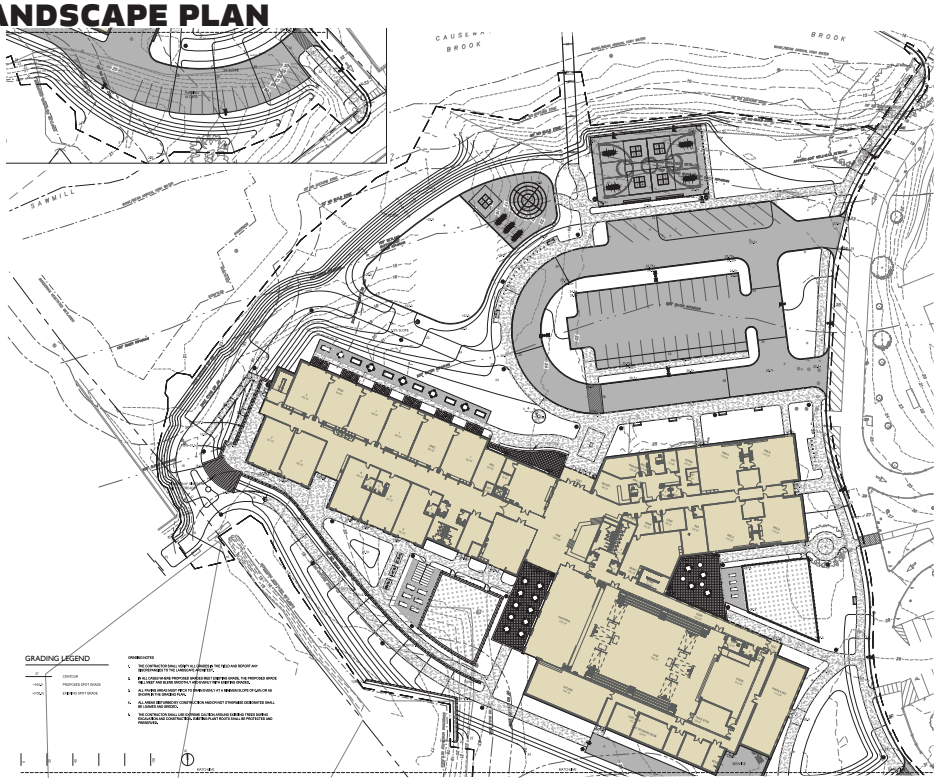
UPDATED AREA MATRIX (SQUARE FEET)

PROGRAM AREA	PSR	5/22/2018	6/12/2018
Lower Level		0 SF	0 SF
First Floor		56,742 SF	57,000 SF
Parks & Recreation	1,800 NSF	2,610 SF	2,610 SF
Second Floor		24,710 SF	25,186 SF
Total Net Square Feet	56,974 SF	56,974 SF	56,974 SF
Total Gross Square Feet	82,800 SF	84,062 SF	84,796 SF
Gross Up Factor	1.45	1.48	1.49
Change		-1,423 SF	734 SF
Increase from PSR (GSF)		1,262 SF	1,996 SF

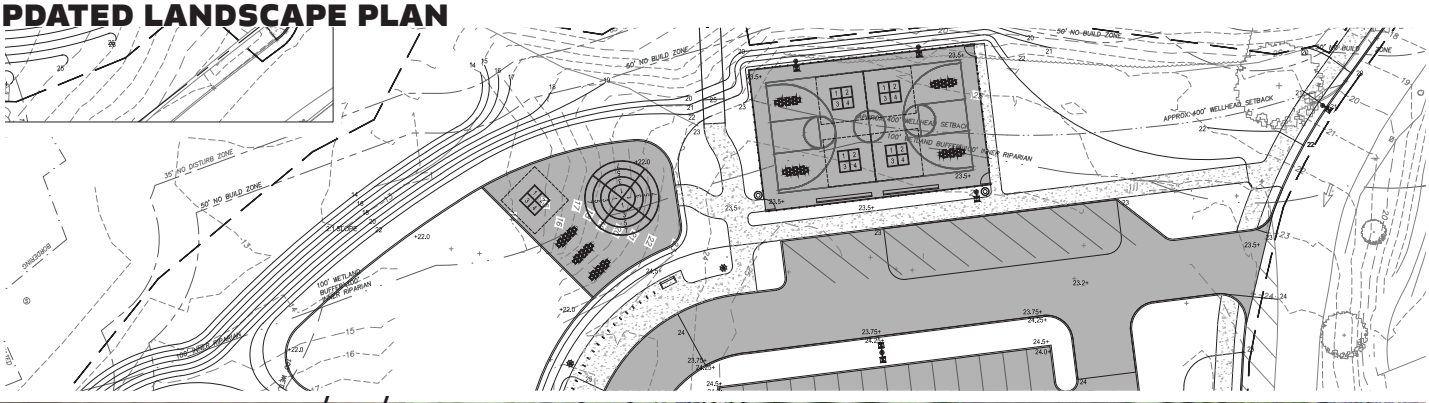
LANDSCAPE PLAN 5/22/2018



UPDATED LANDSCAPE PLAN



UPDATED LANDSCAPE PLAN



LANDSCAPE PLAN 5/22/2018



NEXT STEPS

6/26	SBC Meeting - Initial Approval of SD Package
7/9	Joint School Committee/SBC Meeting - Approval to Submit SD to MSBA
7/11	Submit to MSBA
7/27	Project Scope & Budget Meeting w/ MSBA
8/29	MSBA Board Approval
10/15-16	Town Meetings in Essex & Manchester-by-the-Sea
11/6	Public Funding Vote

THANK YOU

MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS
JCJARCHITECTURE

MEETING MINUTES

Project:	Manchester Memorial Elementary School	Project No:	MP17-114
Subject:	School Building Committee/School Committee Meeting	Meeting Date:	6/12/2018
Location:	Manchester MS/HS – Library	Time:	7:00 PM
Distribution:	Attendees, Project File	Prepared By:	C.Shefferman

Present	Name	Affiliation	Present	Name	Affiliation
✓	Caroline Weld *	SBC Co-Chair	✓	Jim LaPosta	JCJ
✓	Ann Cameron *	SBC Co-Chair	✓	Daniel Ruiz	JCJ
✓	Pam Beaudoin *	Superintendent	✓	Lauren Braren	JCJ
✓	Avi Urbas *	Dir. of Fin. & Ops		Emily Czarnecki	JCJ
✓	Alva Ingaharro *	Essex	✓	Mike Burton	DWMP
	John Willis *	Principal MMES	✓	Steven Brown	DWMP
✓	Jay Pagliarulo	Dir. of Facilities	✓	Christina Shefferman	DWMP
✓	Andy Oldeman *	Man. Fin. Comm.	✓	Jon Rich	WT Rich
✓	Lisa O'Donnell *	Essex B.O.S.			
✓	Remko Brueker *	Manchester			
	Adam Zaiger *	Manchester			
✓	Tyler Virden *	Essex			
✓	George Scharfe *	Manchester			
✓	Gordon Brewster *	Manchester			
✓	Charlie Hay *	Essex			
✓	Sarah Creighton *	Manchester			
	Maggie Tomaiolo *	Essex			
✓	Jake Foster *	Essex			

** SBC Voting Member*

MANAGEMENT PARTNERS, LLC

PROJECT MANAGERS
ARCHITECTS

Newburyport, MA 01950
260 Merrimac Street Bldg 7
978.499.2999 ph
978.499.2944 fax

www.doreandwhittier.com

Item No.	Description	Action
27.1	Call to Order: 7:04 pm meeting was called to order by the SBC Co-Chair A. Cameron with 15 of 17 voting members in attendance. S. Brown of DWMP notes the meeting will follow the Power Point presentation that is being projected on the screen and to follow the agenda that was provided to the SBC prior to the meeting via Dropbox.	Record
27.2	Previous Topics & Approval of May 22, 2018 Meeting Minutes: A motion to approve the 5/22/2018 meeting minutes as submitted made by P. Beaudoin and seconded by J. Foster. Discussion: Abstentions: C. Hay, A. Oldeman, R. Breuker. Vote: All in favor: Motion passes, minutes approved.	Record
27.3	Invoices and Commitments for Approval: DWMP invoice no. 15 for SD phase activity in the amount of $7,142.85 (invoice attached) vote expected. JCJ invoice no.10 for SD phase activity in the amount of $36,000.00 (invoice attached) vote expected. Minuteman Press invoice no. 88442 for community meeting no. 4 flyers in the amount of $515.20 (invoice attached) vote expected. A motion made by C. Weld to approve all three invoices as presented and 2nd by A. L. O'Donnell. Discussion: None. Vote: Unanimous to approve.	Record
27.4	Budget Update: Currently there is $29,531.77 left in the project budget for the feasibility and schematic design phase of the project. The budget is 95% encumbered, 75% expended, and 82% phase elapsed.	Record
27.5	Meeting Goals: S. Brown discusses the meeting goals for this evening. The team will be reviewing the construction budget confirmation/discussion, and the Value Engineering process & subgroup. S. Brown explains that on Monday the team met with JCJ estimator, VJ Associates, and WT Rich estimator and reconciled to a construction budget. At the PSR phase of the project the estimate for construction was $44.5 million. The estimates reconciled between VJ Associates and WT Rich were higher, therefore VE will need to be discussed and taken to get back to the target budget of $44.5million.	Record
27.6	Project Update: JCJ presented the SBC with a project update. An outline of the discussion is below: ➢ Consultant completed hydrant flow test (fire pump not required) ➢ ANRAD application to conservation commission (intake meeting tonight, 6/12) • D. Ruiz attended. Meeting confirmed where wetland boundaries are and setbacks. Concom to walk site 6/20 at 5pm. Next concom hearing is 7/10.	Record
27.7.1	Design Update: JCJ presented the SBC with design update. An outline of the discussion is below: ➢ Main Level/Upper Level Floor plan • Addition of SPED toilet rooms in every SPED room (4) ➢ Security Grilles-Main Level • Addition of security grilles along stairwell on the main level to keep hub secured while community wing in use ➢ Decision Point: • P. Beaudoin to review SPED toilet rooms with ed. program group. Will confirm if all 4 are necessary. Possible VE item. • Security grilles were estimated at $100k total. P. Beaudoin would like to review with security group.	P. Beaudoin

	• Security grilles to be added to VE list as potential category "1" item.	
27.7.2	Design Update: Updated Area Matrix (Square Feet) presented to SBC. An outline of the discussion is below: ➢ Total gross square feet increased due to security grilles from last meeting. 5/22 meeting total gross square feet of 84,062 to 84,796. Gross up factor changed from 1.48 to 1.49. ➢ Decision point: • SBC would like to see parks and rec below the line outside of the sf, since it will be a cost only to the Town of Manchester.	Record
27.7.3	Design Update: JCJ presents updated landscape plan to SBC. An outline of the discussion is below: ➢ Basketball court and hard scape reduced. No longer in 400' well head zone. ➢ Eliminated loop road that came around north side of playground. This was added as a VE item. ➢ Widened sidewalk from 8' to 10' which will allow emergency vehicles down the path. ➢ Meeting with the local MFD and MPD later in the week to determine paths, entries, security, etc. ➢ Q: Will the playgrounds be designed to accommodate different age groups? ➢ A: the playgrounds are designed to accommodate the different grades by location of classrooms around the building. Some hardscapes/playgrounds could be designed to accommodate multiple age groups through different equipment. ➢ Q: R. Brueker would like to see survey plan that indicates property line for Summer Street. D. Ruiz to send to R. Breuker. ➢ Q. Are the stadium plaza steps on southwest side of the building a VE item? ➢ A: Yes, it is on the VE list as a potential item.	D. Ruiz
27.8	Review Cost Estimates: S. Brown states that both cost estimates and the draft VE list are available on the project dropbox for review. The estimates between WT Rich and VJ Associates were within 1%. The control estimate, WT Rich, was reconciled to $50,502,335 at $595.57/sf. At PSR, the estimate was $44.5mil, therefore VE must be taken in order to bring the project back to budget. The VE list presented is labeled identifying items categorized #1-5. 1=project team recommended, 2 =decision by owner, 3=not preferred, 4-undesirable, and 5=unacceptable. The SBC reviewed the information, questions and answers outlined below: ➢ Q: What is each towns share going to be? ➢ A: The District soon will have this information and provide to SBC ➢ Q: Why has the number dramatically increased from PSR to SD? ➢ A: Site work increased by $2.5 mil, demo has increased, metal roofs, wood ceilings, challenging site, significant grading, location, and occupied site with many phases. All of these items are listed as potential items to take on the VE log. ➢ Q: Can you provide us with the soft costs for a total project cost? ➢ A: Yes, estimates and reconciliation were a day prior, still developing soft costs. Will send to SBC. ➢ Q: Will Parks and Recreation be included? ➢ A: Parks and Recreation will be included, the senior center will not. The Town of Manchester will only be paying for the Parks and Recreation, not the Town of Essex.	Record

	➢ Q: Will the additional 2 classrooms for Pre-K be included? ➢ A: The School Committee voted to include the 2 additional classrooms for Pre-k and will be open to both towns. The SBC decided with the team that a specific VE working group must be formed to review the VE list. Once the working group meets and reviews, they will then provide a recommendation to the SBC of what items should be taken to reach the project construction budget goal of $44.5mil. The working group will consist of SBC members that are involved in design, education, facilities, administration, school committee and construction. The working group will meet on: ➢ 6/14/18 from 12:30pm-3:30pm (L. O'Donnell, G. Scharfe, R. Breuker, A. Urbas, P. Beaudoin, J. Pagliarulo, C. Weld) ➢ 6/18/18 from 1:00pm-5:00pm (T. Virden, R. Breuker, C. Weld, A. Urbas, P. Beaudoin, R. Breuker, J. Pagliarulo, J. Willis) The SBC agreed that another SBC meeting was necessary to review the VE items as presented from the working group to make the decision to take certain items to get back to budget. The project team will provide the SBC with a working live excel VE list so they can provide their own comments and feedback. Once they have comments, the SBC member can send their list to one of the working group members, so it can be discussed during the working group meetings. After each working group meeting the project team will report out what was reviewed, discussed and provide any notes associated with the VE list.	
27.9	Schedule/Look Ahead: ➢ 6/19/18-SBC Meeting-Review VE list and recommendations from working group. ➢ 6/26/18-SBC Meeting-Vote to take VE items ➢ 7/9/18-Joint SBC/SC Meeting-Vote to approve SD submission	Record
26.10	Other Topics Not Reasonably Anticipated (48 hours prior to meeting): P. Beaudoin informs SBC that the Essex Community Meeting is scheduled for 6/28.	Record
26.11	Public Comments: None.	Record
26.12	Adjourn: A motion was made by T. Virden and seconded by A. Oldeman to adjourn the meeting. Discussion: None. Vote: Unanimous to approve. Meeting adjourned at 9:05 pm.	Record

Attached:
SBC Meeting Agenda, Sign In Sheet, SBC Meeting No. 26 5/22/18 Meeting Minutes, Manchester Memorial Elementary School Presentation 6/12/18

DORE AND WHITTIER MANAGEMENT PARTNERS, LLC.

Christina Shefferman
Assistant Project Manager
Cc: Attendees, File

The above is my summation of our meeting. If you have any additions and/or corrections, please contact me for incorporation into these minutes.

Manchester Essex Regional School District
School Building Committee

Meeting Date: 6/12/19
Meeting No. 27

MANAGEMENT PARTNERS, LLC

Member name	Town/Affiliation	email contact	Signature
** Caroline Weld	SBC Co-Chair -Manchester	weldc1@mersd.org	
** Ann Cameron	SBC Co-Chair-Essex	cameron@mersd.org	
* Alva Ingaharro	School Comm. Member/Essex	alvai@comcast.net	
* Pam Beaudoin	Superintendent of Schools	beaudoinp@mersd.org	
* Avi Urbas	Dir. Of Finance & Operations	urbasa@mersd.org	
* John Willis	Principal MMES	willisj@mersd.org	
Jay Pagliarulo	Facilities Director	pagliaruloj@mersd.org	
* Andy Oldeman	Mancester Finance Comm	aoldeman@smma.com oldemana@mersd.org	
* Lisa O'Donnell	Essex Board of Selectman	lisatheengineer@comcast.net odonnelll@mersd.org	
* Remko Brueker	Manchester	remko@breukerdesign.com breukerr@mersd.org	
* Adam Zaiger	Manchester	azaiger@choate.com zaigera@mersd.org	
* Tyler Virden	Essex	tyler@windover.com virdent@mersd.org	
* George Scharfe	Manchester	gscharfe@johnpenney.com scharfeg@mersd.org	
* Gordon Brewster	Manchester	gbrewster@smma.com brewsterg@mersd.org	
* Charlie Hay	Essex	chay@tappe.com	
* Sarah Creighton	Manchester	sarahhammondcreighton@gmail.com creightons@mersd.org	
* Maggie Tomaiolo	Essex	tomaiolom@mersd.org	
* Jake Foster	Essex	fosterig@verizon.net	
Mike Burton	DWMP	mburton@doreandwhittier.com	
Steve Brown	DWMP	sbrown@doreandwhittier.com	
Christina Shefferman	DWMP	cshefferman@doreandwhittier.com	
Jim LePosta	JCJ	jlaposta@jcj.com	
Dan Ruiz	JCJ	druiz@jcj.com	
Lauren Braren	JCJ	lbraren@jcj.com	
Emily Czarnecki	JCJ	eczarnecki@jcj.com	
Jon Rich	WT Rich	jonrich@wtrich.com	

** Chair/Co-Chair
*Voting Member

PRELIMINARY SCHEMATIC REPORT PHASE PROJECT MEETINGS

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AGENDA

Project:	Manchester Memorial Elementary School	Project No:	MP17-114
Subject:	School Building Committee Meeting	Meeting Date:	6/19/2018
Location:	Manchester MS/HS – Library	Time:	7:00 PM
Distribution:	Attendees, Project File	Prepared By:	C.Shefferman

1. Call to Order
2. Previous Topics & Approval of June 12, 2018 Meeting Minutes
3. VE Working Group Report Out
4. VE List Review and Approval (vote anticipated)
5. Other Topics Not Reasonably Anticipated 48 hours prior to Meeting
6. Public Comments
7. Adjourn

MANAGEMENT
PARTNERS, LLC

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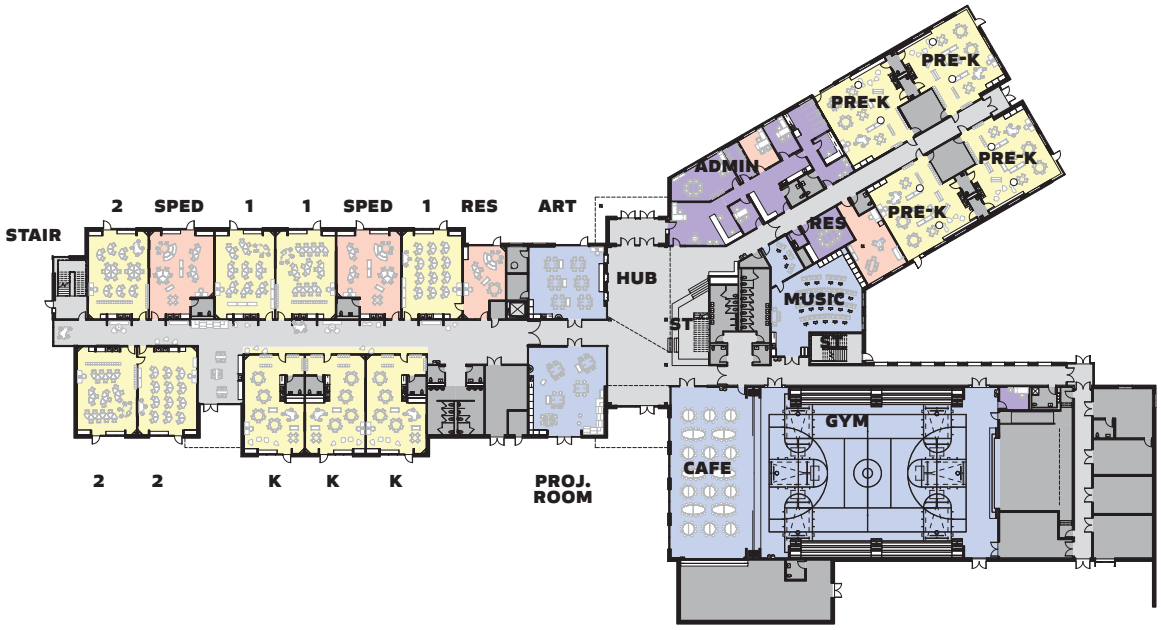
MANCHESTER MEMORIAL ELEMENTARY SCHOOL

SCHEMATIC DESIGN PHASE
SBC MEETING #27
JUNE 19TH, 2018

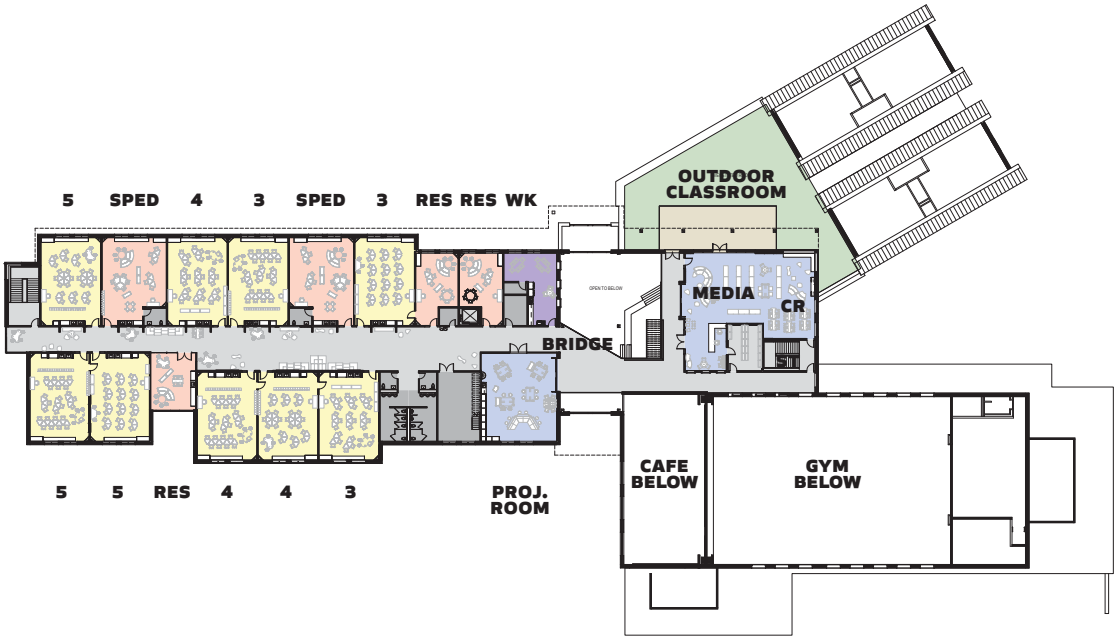
AREA UPDATE IN SQUARE FEET

PROGRAM AREA	PSR	6/12/2018	6/19/2018
Lower Level		0 SF	0 SF
First Floor		57,000 SF	56,994 SF
Second Floor		25,186 SF	25,186 SF
Total Net Square Feet	56,974 SF	56,974 SF	55,174 SF
Total Gross Square Feet	82,800 SF	84,796 SF	82,180 SF
Gross Up Factor	1.45	1.49	1.49
Change		734 SF	-620 SF
Increase from PSR (GSF)		1,996 SF	-2,616 SF
Parks & Recreation	1,800 NSF	2,610 SF	0 SF

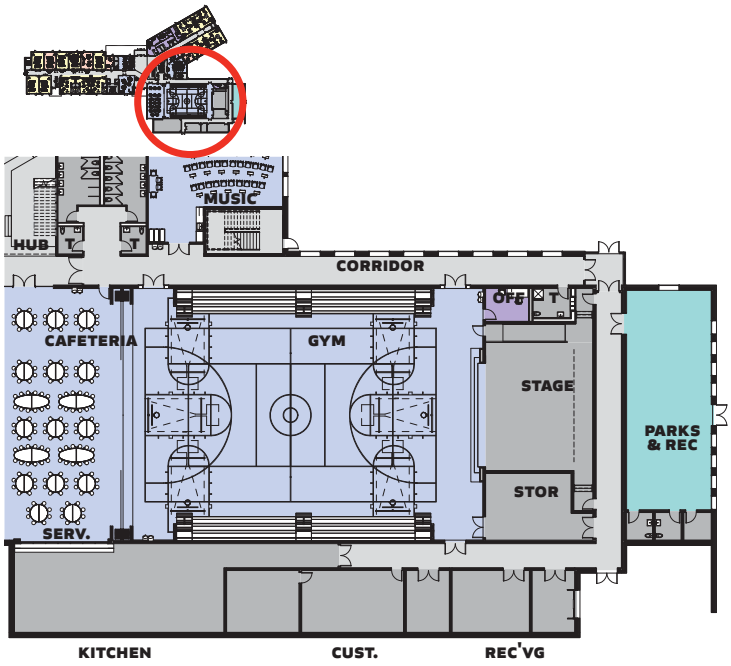
MAIN LEVEL PLAN UPDATED



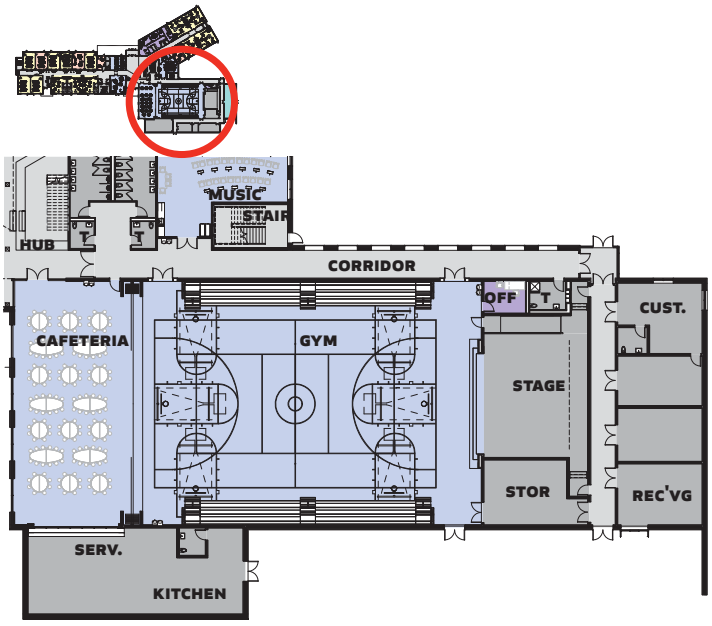
UPPER LEVEL PLAN UPDATED



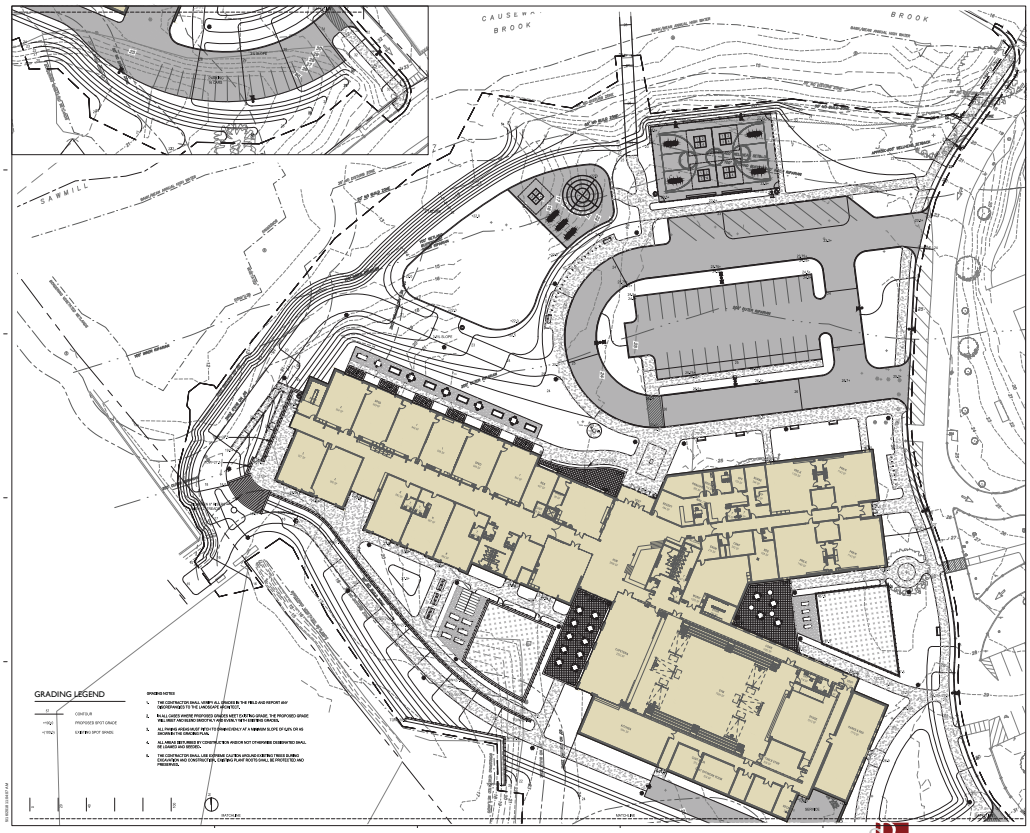
CAFE/GYM/STAGE 5/22/2018



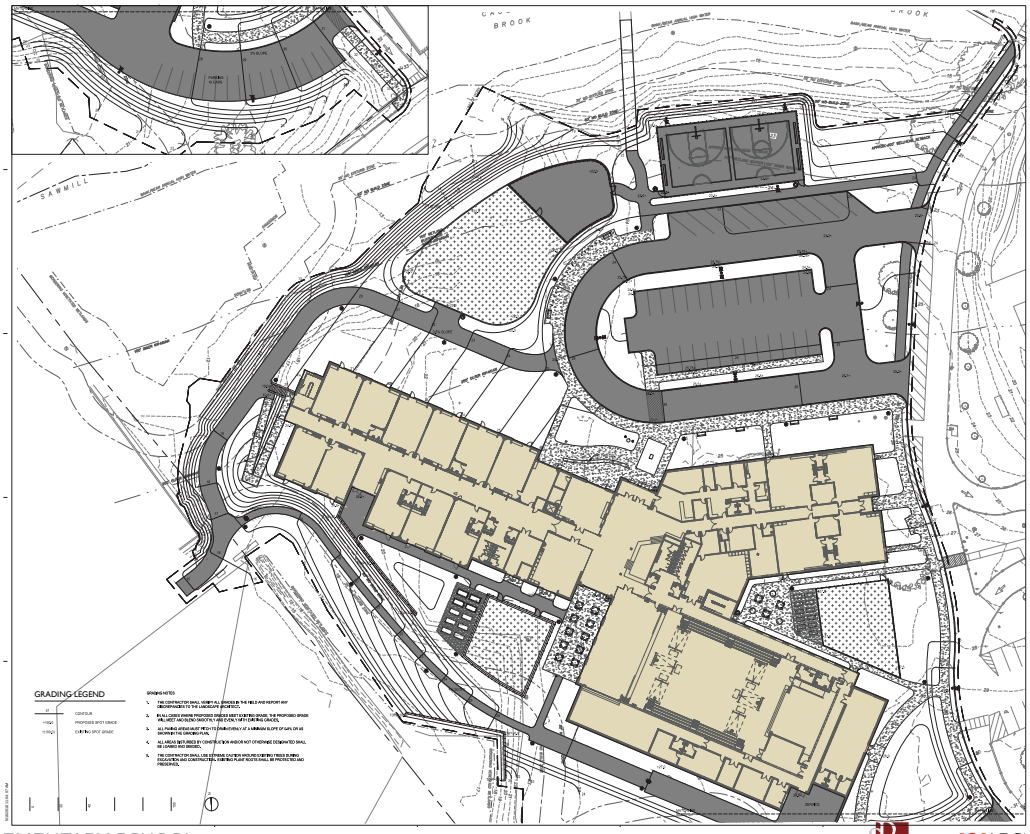
CAFE/GYM/STAGE 6/19/2018



SITE PLAN 6/12/18



SITE PLAN 6/19/18



BUILDING MASSING - MAIN ENTRY 6/19/18



BUILDING MASSING - MAIN ENTRY 6/12/18



BUILDING MASSING - MAIN ENTRY 6/19/18



BUILDING MASSING - MAIN ENTRY 6/19/18



BUILDING ENVELOPE: ROOFING

PRICING ALTERNATES: GYMNASIUM & PRE-K ROOF

- **FLAT ROOF / TPO MEMBRANE**
  ($675,000) (25-30 YEARS) ($1,500,000 OVER 50 YEARS)
- **GABLED / ASPHALTIC SHINGLE**
  ($725,000) (20-25 YEARS) ($1,115,000 OVER 50 YEARS)
- **GABLED / SARNAFIL W/ RIBS**
  ($885,000) (25-30 YEARS) ($1,370,000 OVER 50 YEARS)
- **GABLED/ STANDING SEAM**
  ($1,360,000) (50 YEARS) ($1,360,000 OVER 50 YEARS)

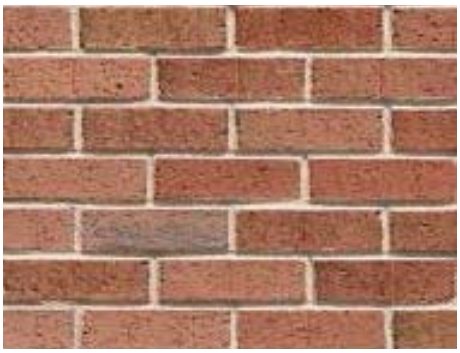
ASSUMES 4.5% ESCALATION YEAR-OVER-YEAR

BUILDING ENVELOPE: ENVELOPE









BRICK



CEMENTITIOUS FIBER BOARD



METAL PANEL

ROOFING OPTIONS









PVC W/ RIBS



ASPHALTIC SHINGLES



STANDING SEAM METAL

BUILDING MASSING - EXTERIOR (ORIGINAL)



BUILDING MASSING - EXTERIOR (BARN GYM)



BUILDING MASSING - EXTERIOR (FLAT GYM)



BUILDING MASSING - APPROACH (ORIGINAL)



BUILDING MASSING - APPROACH (BARN GYM)



BUILDING MASSING - APPROACH (FLAT GYM)



BUILDING MASSING - GYM ENTRY (ORIGINAL)



BUILDING MASSING - GYM ENTRY (BARN GYM)



BUILDING MASSING - GYM ENTRY (FLAT GYM)



BUILDING MASSING - SUMMER STREET (ORIGINAL)



BUILDING MASSING - SUMMER STREET (BARN GYM)



BUILDING MASSING - SUMMER STREET (FLAT GYM)



THANK YOU

MEETING MINUTES

MANAGEMENT PARTNERS, LLC

Project:	Manchester Memorial Elementary School	Project No:	MP17-114
Subject:	School Building Committee/School Committee Meeting	Meeting Date:	6/19/2018
Location:	Manchester MS/HS – Library	Time:	7:00 PM
Distribution:	Attendees, Project File	Prepared By:	C.Shefferman

Present	Name	Affiliation	Present	Name	Affiliation
✓	Caroline Weld *	SBC Co-Chair		Jim LaPosta	JCJ
✓	Ann Cameron *	SBC Co-Chair		Daniel Ruiz	JCJ
✓	Pam Beaudoin *	Superintendent	✓	Lauren Braren	JCJ
✓	Avi Urbas *	Dir. of Fin. & Ops		Emily Czarnecki	JCJ
✓	Alva Ingaharro *	Essex		Mike Burton	DWMP
✓	John Willis *	Principal MMES	✓	Steven Brown	DWMP
✓	Jay Pagliarulo	Dir. of Facilities	✓	Christina Shefferman	DWMP
✓	Andy Oldeman *	Man. Fin. Comm.	✓	Jon Rich	WT Rich
✓	Lisa O'Donnell *	Essex B.O.S.			
✓	Remko Brueker *	Manchester			
✓	Adam Zaiger *	Manchester			
✓	Tyler Virden *	Essex			
✓	George Scharfe *	Manchester			
✓	Gordon Brewster *	Manchester			
✓	Charlie Hay *	Essex			
✓	Sarah Creighton *	Manchester			
✓	Maggie Tomaiolo *	Essex			
✓	Jake Foster *	Essex			

** SBC Voting Member*

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Item No.	Description	Action
28.1	Call to Order: 7:09 pm meeting was called to order by the SBC Co-Chair A. Cameron with 17 of 17 voting members in attendance. S. Brown of DWMP notes the meeting will follow the Power Point presentation that is being projected on the screen and to follow the agenda that was provided to the SBC prior to the meeting via Dropbox.	Record
28.3.1	VE Working Group Report Out: S. Brown explains that the VE working group met 3 times out of the SBC meetings and have a list of items to recommend to the SBC to take. The items the working group is recommending are not to jeopardize the goals of delivering the education plan.	Record
28.4.1	VE List Review and Approval: The project team and VE working group present the VE list by category to the SBC. An outline of the discussion is below: ➢ The VE list presented is labeled identifying items categorized #1-5. 1=project team recommended, 2 =decision by owner, 3=not preferred, 4-undesirable, and 5=unacceptable. ➢ The PSR budget was $44.5 million. Goal of the SBC is to be under this number. ➢ Category 1: VE working group unanimously agrees these items should be taken • P. Beaudoin reports to SBC that the Budget Collaboration Group met with the Town of Manchester and decided based on timing of project and SD submission to pull Parks and Recreation from the project. The administration is waiting for formal documentation from the Town Manager. • Total of $6,645,308 taken (revised estimate of $43,857,027) • S. Creighton asked whether phasing was included in any categories within the VE list? • A: J. Rich states that has not been discussed since it is a tight site with many phases. Modulars however have been reduced to a trailer to be used for administration only. • A. Oldeman asked whether A-04a, A-04b, A-05a, and A-05b are linked incrementally to the gabled roof indicated in category 3? • A: J. Rich states that all category 1 items identified by A. Oldeman are taking a shingle roof in lieu of metal roof. • G. Brewster asks if A-58 reduce the portals in corridors? • A. L Braren states its only the removal of the portals in the classrooms, not the corridors. • Q: A-83, reduce circulation by 500sf. The VE team and design team reviewed during the VE working group meetings. JCJ to confirm whether the 500sf can be taken. • S. Gordon asks for more information regarding A-60. • A: L. Braren states type 2a, and type 2b building depends on the overall sf of the building. This will be determined whether pre-k and stem labs are removed that a firewall will not be needed. • A motion was made by J. Foster and seconded by S. Creighton to hold A-03, the reduction of SF of STEM/project room space by 200sf each. Discussion: S. Creighton seconds the motion with the recommendation to accept all category 1 items with the exception of A-03. All in favor: 13 out of 17 SBC members accept. Motion passes.	Record

28.4.2	VE List Review and Approval: The SBC reviews category 2 VE items. An outline of the discussion is below: ➢ S. Creighton states that C-07 needs to be reviewed by DEP and ConCom since she believes the basketball court is in zone 1. ➢ A: The plan was presented to ConCom and C. Bertoni raised no issue with the basketball court. Still needs to be presented to DEP. ➢ G. Brewster asks for further explanation on C-13. ➢ A: J. Rich states that this is to change the stormwater infiltration system from precast champers to stormtech (plastic) ➢ A motion was made by A. Ingaharro and seconded by J. Foster to accept category 2 items as presented, recommended and discussed by the project team and VE working group. Discussion: none. Vote: All in favor, motion passes.	Record
28.4.3	VE List Review and Approval: After reviewing and approving category 1 and category 2 items with the exception of A-03, the project team states that the total construction budget is currently estimated at $43.6 million. The SBC asks what the project softs costs are. The project team states that contingencies, fees, modulars costs, etc, are all % based. The team is still working on providing estimates for soft costs. The SBC reviews category 3a VE items. An outline of the discussion is below: ➢ Q: C-12 Redesign stormwater to allow for fewer water quality unit (WQU) structures. Currently there are 12 carried. Can it be reduced to 5? ➢ A: JCJ to review and confirm with civil engineer whether it can be reduced to 5. ➢ Q & A: A-01: remove 2 prek classrooms. SC wants voted to include 4 prek classrooms. Next Tuesday, 6/26, the SC will vote to approve the school budget including the 4 prek. Once budget approved, prek will be included with 4 classrooms. ➢ Q & A: A-13a, lower building elevation an additional 6” and reduce site fill costs. JCJ to confirm if this is possible. ➢ Q & A: A-17, replace metal panels with Nichiha fiber cement board to 3’ above ground. Add ground face block below. Change precast concrete panels to ground face as well. T. The SBC had some concerns with the product surrounding windows. T. Virden states that he has heard when having to replace a window it is difficult to work with and difficult to install. L. Braren comfortable with purchasing Nichiha now, and comfortable with selecting now, and further review in DD. The SBC agreed to move this item to category 1 and accept. ➢ Q & A: A-73, Utilize linoleum at HUB in lieu or large format porcelain tile. J. Pagliarulo states that tile will last forever, and linoleum needs to be maintained and replaced every few years and is hard to repair. Overall maintenance cost for tile is significantly less than linoleum. R. Breuker states that many items have been cut but cutting tile in the HUB specifically is jeopardizing the design intent in the area that welcomes students and the community. The SBC agreed to move this item to category 4 and hold. ➢ Q & A: M-03, Delete 2nd sink in each classroom. One of the sinks is an ADA sink. It sits lower and has a smaller tub. Some SBC members felt the 2nd sink was not necessary in all classrooms. Overall the SBC agreed that providing a second sink would provide teachers and students with additional options for filling buckets, cleaning, etc easier. The SBC agreed to move this item to category 4 and hold.	

	➢ Q & A: M-05, change RTU from hot water heating to gas fired heating. With reduced hot water load boiler capacity and hot water pipe sizing would be reduced. A. Oldeman states for the long-term value of the school, and short term savings, t his is a long term expense. J. Pagliarulo agrees. The SBC agreed to move this item to category 4. ➢ E-02, utilize lightning preventer vs. lightning protection. The SBC agreed to move this to category 1 and accept this item. ➢ A motion was made by J. Foster and seconded by A. Ingaharro to accept A-13a (if JCJ states this item can be taken), A-17, and E-2. Discussion: None. Vote: All in favor, motion passes.	
28.4.4	<u>VE List Review and Approval:</u> The SBC reviews category 3a VE items. An outline of the discussion is below: ➢ Q & A: C-07a, delete half of the basketball court, delete benches, reduce fence, and delete concrete walkways along side court. J. Willis states that there are many months where the students need a paved space in order to play outside when equipment cannot be used (cold months, snow, rain, etc). The SBC asks JCJ to move a half-sized basketball court next to the rubber playground in order to utilize as much space as possible for shoulder months. The SBC agreed to move this item to 3a with the reduction of a half-sized court and moving the court next to the rubber play surface. JCJ to provide an updated drawing indicating change. ➢ Q & A: A-04, revised gym gabled roof with asphalt singles to be a low slope roof w/TPO roofing material and parapet. R. Breuker states that as part of the design he prefers the gabled roof but understands the cost savings if this item were taken. P. Beaudoin states that reducing the size of the gym to a non-regulation size gym is still an option. The regulation size gym would be not enhancing the basketball program at the elementary school but mostly utilized for the high school program. SBC members point out that the elementary school would be considered a district building, which means everyone in the district can use it including parks and rec, youth league, high school, middle school, etc. ➢ Q & A: A-07, delete outdoor classroom deck and railing. The SBC agreed that this item will affect program and to move to category 4. ➢ Q & A: A-07a, delete outdoor classroom canopy wrapping around Media Center. The SBC asked to confirm the value of savings on this item since it seems high. ➢ Q & A: A-08, Delete all building overhangs. Keep canopies at entrances (cost does not include Media Center canopy taken above). Most of the savings are captured in A-08a which incremental savings has already been accepted. This item will be repriced.	Record
28.4.5	<u>VE List Review and Approval:</u> After reviewing category 1-3, the SBC asked to put a hold for further review on category 4 items specifically A-07a, A-11, A-21, A-51, A-55, and A-65. At the next SBC meeting the project team will be providing an update VE list based on the discussion today, items taken, and further updates to the items that were requested. The team lets the SBC know that our next meeting we will have an updated cost for the reduction of roadway surrounding the building since after the fire and police meeting it was determined that the roadway was not needed all the way around the building.	
28.5	<u>Schedule/Look Ahead:</u> ➢ 6/26/18-SBC Meeting-Vote to take VE items	Record

	➢ 7/9/18-Joint SBC/SC Meeting-Vote to approve SD submission	
28.6	Other Topics Not Reasonably Anticipated (48 hours prior to meeting): None.	Record
28.7	Public Comments: None.	Record
28.8	Adjourn: A motion was made by T. Virden and seconded by R. Breuker to adjourn the meeting. Discussion: None. Vote: Unanimous to approve. Meeting adjourned at 10:06 pm.	Record

Attached:
SBC Meeting Agenda, Sign In Sheet, SBC Meeting No. 28 6/19/18 Meeting Minutes, Manchester Memorial Elementary School Presentation 6/19/18

DORE AND WHITTIER MANAGEMENT PARTNERS, LLC.

Christina Shefferman
Assistant Project Manager
Cc: Attendees, File

The above is my summation of our meeting. If you have any additions and/or corrections, please contact me for incorporation into these minutes.

PRELIMINARY SCHEMATIC REPORT PHASE PROJECT MEETINGS

- March 27, 2018 – SBC Meeting #21
- April 10, 2018 – SBC Meeting #22
- April 26, 2018 – SBC Meeting #23
- May 1, 2018 – MEP & Sustainability Meeting
- May 1, 2018 – SBC Meeting #24 (CM Interviews)
- May 8, 2018 – SBC Meeting #25
- May 22, 2018 – SBC Meeting #26
- May 30, 2018 – Community Meeting #4 (Morning & Evening)
- June 12, 2018 – SBC Meeting #27
- June 19, 2018 – SBC Meeting #28
- June 26, 2018 – SBC Meeting #29
- July 9, 2018 – SBC Meeting #30
- July 16, 2018 – SBC Meeting #31 (Joint Meeting with School Committee)

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AGENDA

Project:	Manchester Memorial Elementary School	Project No:	MP17-114
Subject:	School Building Committee Meeting	Meeting Date:	6/26/2018
Location:	Manchester MS/HS – Library	Time:	7:00 PM
Distribution:	Attendees, Project File	Prepared By:	C.Shefferman

1. Call to Order
2. Previous Topics & Approval of June 12, 2018 and June 19, 2018 Meeting Minutes
3. Total Project Budget Review (vote anticipated)
4. VE List Review and Approval (vote anticipated)
5. Other Topics Not Reasonably Anticipated 48 hours prior to Meeting
6. Public Comments
7. Adjourn

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Manchester Memorial Elementary School

Schematic Design Phase - SBC Meeting #29

June 26, 2018

1. Call to Order
2. Previous Topics & Approval of May 22, 2018 Meeting Minutes
3. Invoices & Commitments for Review/Approval
4. Budget Update (vote anticipated)
5. VE Recap
6. Anticipated Total Project Budget
7. Finalize Remaining VE List – VOTE FINAL APPROVED VE
8. Update Anticipated Total Project Budget
9. Project Team Amendments
10. Look Ahead Schedule
11. Other Topics Not Reasonably Anticipated 48 hours prior to Meeting
12. Public Comments
13. Adjourn

MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS

1. Call to Order

Meeting Goals

- Recap Previous VE discussion
- Review DRAFT of Total Project Budget
- Complete VE exercise
- Review Soft Costs

MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS

2. Previous Topics & Approval of June 12, 2018 & June 19, 2018 Minutes

3. Invoices & Commitments for Review/Approval

None

MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS

4. Budget Update

Budget Category	Original Budget	Budget Transfers (NET)	Current Budget	Contract Amount	Expended	Contract Remaining	Budget Balance
0000-0000 Feasibility Study Agreement							
0001-0000: OPM - Feasibility Study	$125,000.00	$37,040.00	$162,040.00	$162,040.00	$140,611.40	$21,428.60	$0.00
0002-0000: A&E - Feasibility Study	$400,000.00	-$50,000.00	$350,000.00	$350,000.00	$252,000.00	$98,000.00	$0.00
0003-0000: Environmental & Site	$100,000.00	$0.00	$100,000.00	$79,110.00	$68,396.00	$10,714.00	$20,890.00
0004-0000: Other	$25,000.00	$12,960.00	$37,960.00	$29,318.23	$9,618.23	$19,700.00	$8,641.77
Total - 0000-0000 Feasibility Study Agreement	**$650,000.00**	**$0.00**	**$650,000.00**	**$620,468.23**	**$470,625.63**	**$149,842.60**	**$29,531.77**

95% encumbered

75% expended

82% phase elapsed

5. VE Recap

Manchester Memorial Elementary School
SD Estimate - Summary of Potential Value Engineering
Date: 6/25/2018

	Accept 1 only	Accept 1 and 2	Accept 1 to 3	Accept 1 to 4	All VE (for reference)
Original Reconciled Cost Estimate (Pre-VE)	**$50,502,335**	**$50,502,335**	**$50,502,335**	**$50,502,335**	**$50,502,335**
Potential Value Engineering					
- Category 1 - Strongly Recommended by WG (Unanimous)	($7,326,146)	($7,326,146)	($7,326,146)	($7,326,146)	($7,326,146)
- Category 2 - Recommended by Working Group		($158,071)	($158,071)	($158,071)	($158,071)
- Category 3 - Further Analysis / Subject to SBC vote			($2,841,804)	($2,841,804)	($2,841,804)
- Category 4 - Not Recommended by Working Group				($1,735,270)	($1,735,270)
- Category 5 - Unacceptable/Rejected					($445,582)
TOTAL ACCEPTED VE	($7,326,146)	($7,484,217)	($10,326,021)	($12,061,291)	($12,506,873)
Revised Estimate with Potential Accepted VE	**$43,176,189**	**$43,018,118**	**$40,176,314**	**$38,441,044**	**$37,995,462**
PSR Budget	**$44,500,000**	**$44,500,000**	**$44,500,000**	**$44,500,000**	**$44,500,000**
Delta versus PSR Budget	**$1,323,811**	**$1,481,882**	**$4,323,686**	**$6,058,956**	**$6,504,538**

5. VE Recap

Building Analysis

Item	GSF	Status	Savings
SD Baseline GSF	84,796		
- A-02: Remove parks and recreation space	(2,610)	Accepted	Included in accepted VE
- A-03: Reduce SF of STEM/project room space by 200 SF each	(400)	Accepted	Included in accepted VE
- A-83 - Reduce circulation (or other) areas by 500 sf	(500)	Accepted	Included in accepted VE
- A-01 - Remove two Pre-K classrooms	(2,702)	Pending	($813,765)
- A-25 - Reduce Gym 1,500 SF	(1,500)	Pending	($453,778)
Revised GSF - Accepted Only	**81,286**	Accepted	$0
Revsied GSF - Accepted and Pending	**77,084**	Pending	($1,267,543)

5. VE Recap

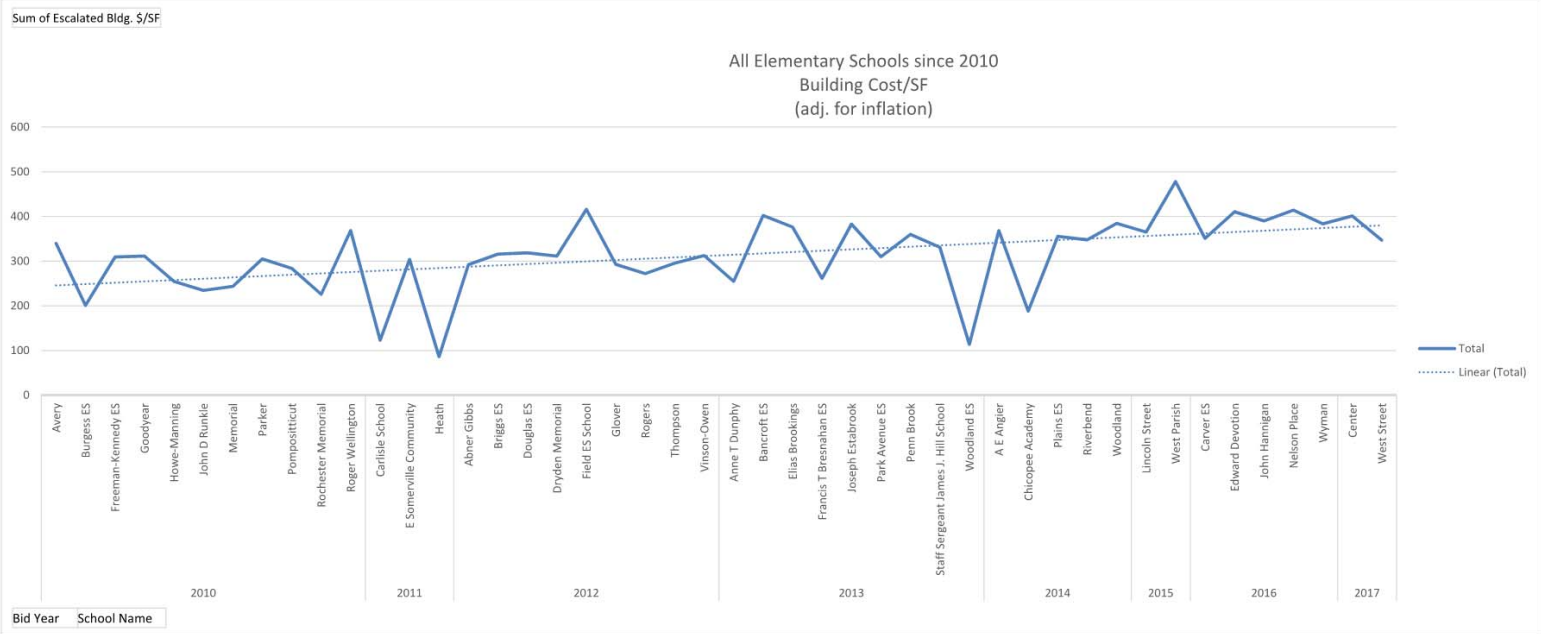
Budget Analysis - Total Construction Costs

Project Scope	GSF	Total Construction Cost Estimate	Total Construction Cost per GSF
All current VE 1's and 2's	81,286	$43,018,118	$529.22
All current VE 1's and 2's plus pending item(s) above	77,084	$41,750,575	$541.62

Budget Analysis -Direct Building Costs (excludes all site, building demolition, abatement, phasing premium, general con/req/bond/ins., CM Fee, CM contingency)

Project Scope	GSF	Building Construction Cost Estimate	Building Construction Cost per GSF
All current VE 1's and 2's	81,286	$29,162,119	$358.76
All current VE 1's and 2's plus pending item(s) above	77,084	$27,894,576	$361.87

5. VE Recap



6. Approx. Total Project Budget – Current Accepted VE

Budget Group	PSR Value	Budget Value	Delta from PSR	$psf
Feasibility		$650,000		
Legal Fees		$70,000		
OPM		$1,918,000		
A&E		$4,731,993		
PreCon		$146,000		
Construction	$44,505,250	$43,018,118	-$1,487,132	$529.34
Misc. Project Costs		$450,000		
Modulars		$200,000		
Furniture & Equipment		$858,485		
Technology		$600,000		
Subtotal		$52,642,596		
Construction Contingency		$1,720,725		
Owner's Contingency		$430,181		
Total	$62,610,000	$54,793,502	-$7,816,498	$674

6. Approx. Total Project Budget – All VE accepted

Budget Group	PSR Value	Budget Value	Delta from PSR	$psf
Feasibility		$650,000		
Legal Fees		$70,000		
OPM		$1,918,000		
A&E		$4,592,563		
PreCon		$146,000		
Construction	$44,505,250	$41,750,575	-$2,754,675	$513.74
Misc. Project Costs		$450,000		
Modulars		$200,000		
Furniture & Equipment		$858,485		
Technology		$600,000		
Subtotal		$51,235,623		
Construction Contingency		$1,670,023		
Owner's Contingency		$417,506		
Total	$62,610,000	$53,323,152	-$9,286,848	$656

7. Finalize VE (3s and 4s) – Conclude with Vote

8. Total Project Budget

Update TPB Based on final VE List

9. Total Project Budget – Project Team Amendments

OPM Proposal

Designer Proposal

MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS

10. Schedule Update

Upcoming dates / milestones

- 7/9 – Joint SC/SBC Meeting to Approve SD Submission
- 7/11 – JCJ Submit SD
- 7/27 – PS&B Conference with MSBA
- 8/7 – SBC to approve 7/9 Meeting Minutes
- 8/15 – SD Comments due back to MSBA
- 8/29 – MSBA Board Meeting

MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS

11. Other Topics Not Reasonably Anticipated (48 hours prior to meeting)

12. Public Comments

13. Adjourn

THANK YOU

MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS

JCJARCHITECTURE

MANCHESTER MEMORIAL ELEMENTARY SCHOOL

SCHEMATIC DESIGN PHASE
SBC MEETING #29
JUNE 26TH, 2018

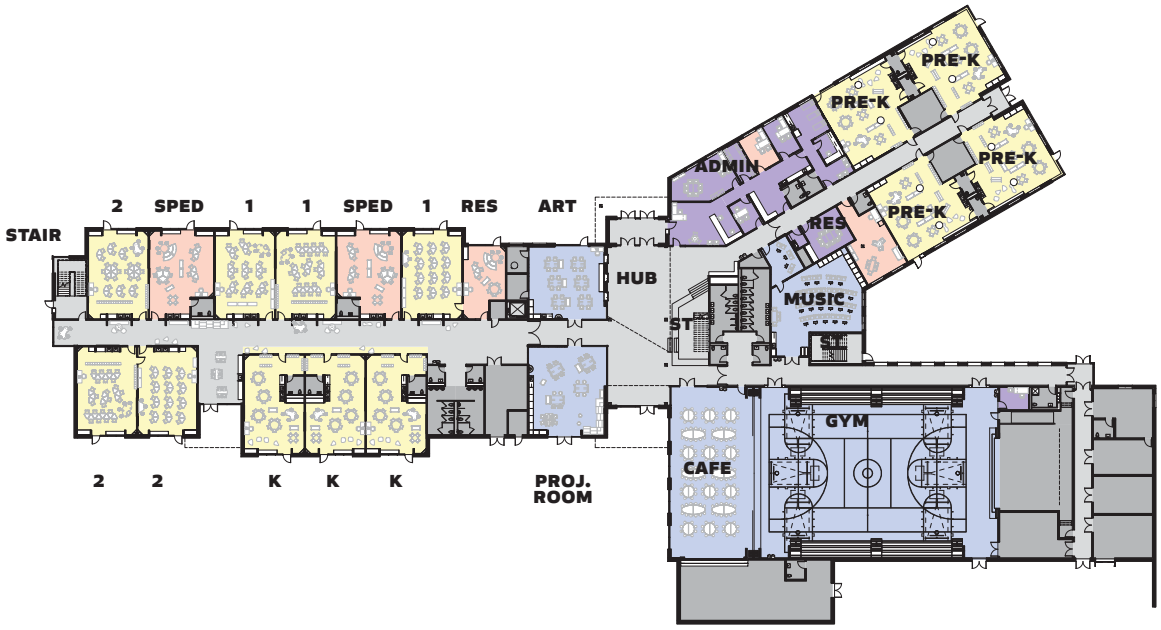
EDUCATIONAL PROGRAM



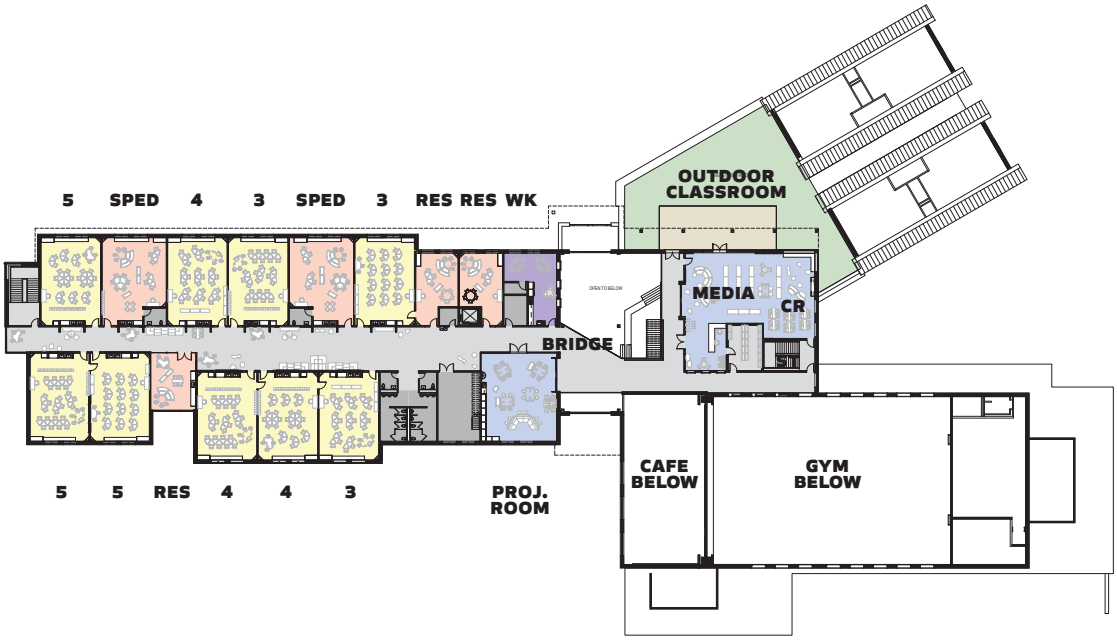
GUIDING PRINCIPLES

- **WHOLE CHILD FOCUS/ STUDENT ACHIEVEMENT**
  - JOY OF LEARNING/ HIGHER ORDER THINKING
  - COMFORTABLE AND PLAYFUL
  - SOCIAL EMOTIONAL FOCUS
- **COOPERATIVE & COLLABORATIVE**
  - STUDENT AND TEACHER COLLABORATIONS
- **FLEXIBLE AND ADAPTABLE**
  - INQUIRY-BASED AND HANDS-ON INSTRUCTION VISIBLE LEARNING
  - LAB / MAKER SPACE / PROJECT SPACES
  - VISIBLE LEARNING
- **NEIGHBORHOOD SCHOOL**
  - SAFE, WARM, AND WELCOMING
  - CONTROLLED COMMUNITY ACCESS
- **OUTDOOR SPACE & SUSTAINABILITY**
  - MAINTAIN OUTDOOR PLANTING BEDS AND GREENHOUSE
- **CLASSIC, NOT TRENDY**

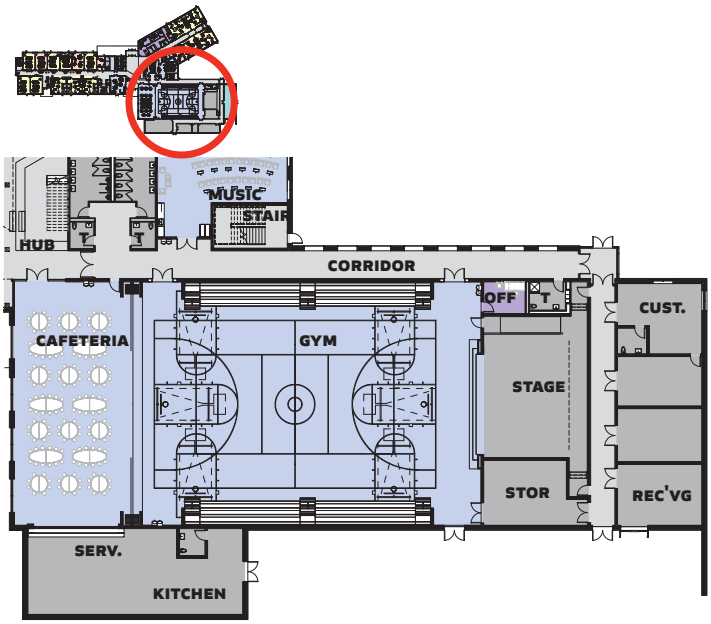
MAIN LEVEL PLAN UPDATED



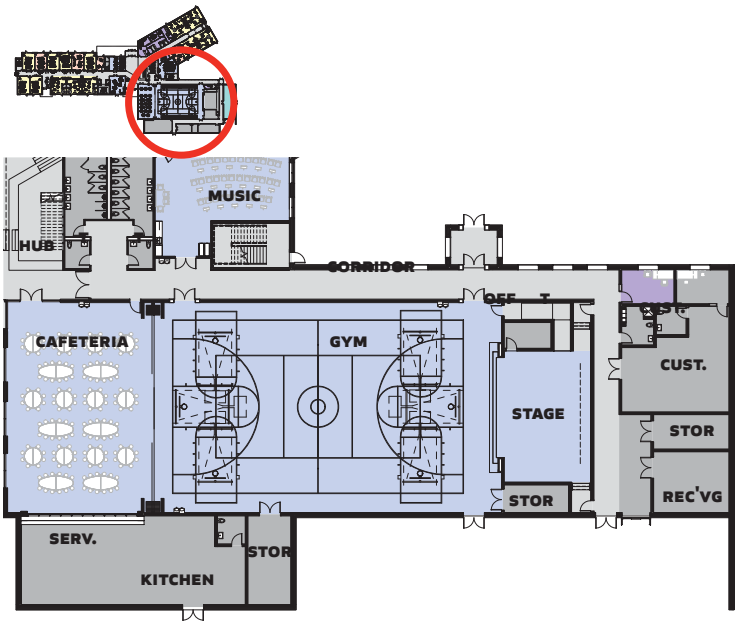
UPPER LEVEL PLAN UPDATED



CAFE/GYM/STAGE 6/19/2018



6,000SF GYM 6/26/2018



SITE PLAN



SITE PLAN DETAIL



BUILDING MASSING - 6/19/18



BUILDING MASSING - NO OVERHANGS



BUILDING MASSING - MAIN ENTRY 6/19/18



BUILDING MASSING - NO OVERHANGS



BUILDING MASSING - 6/19/18



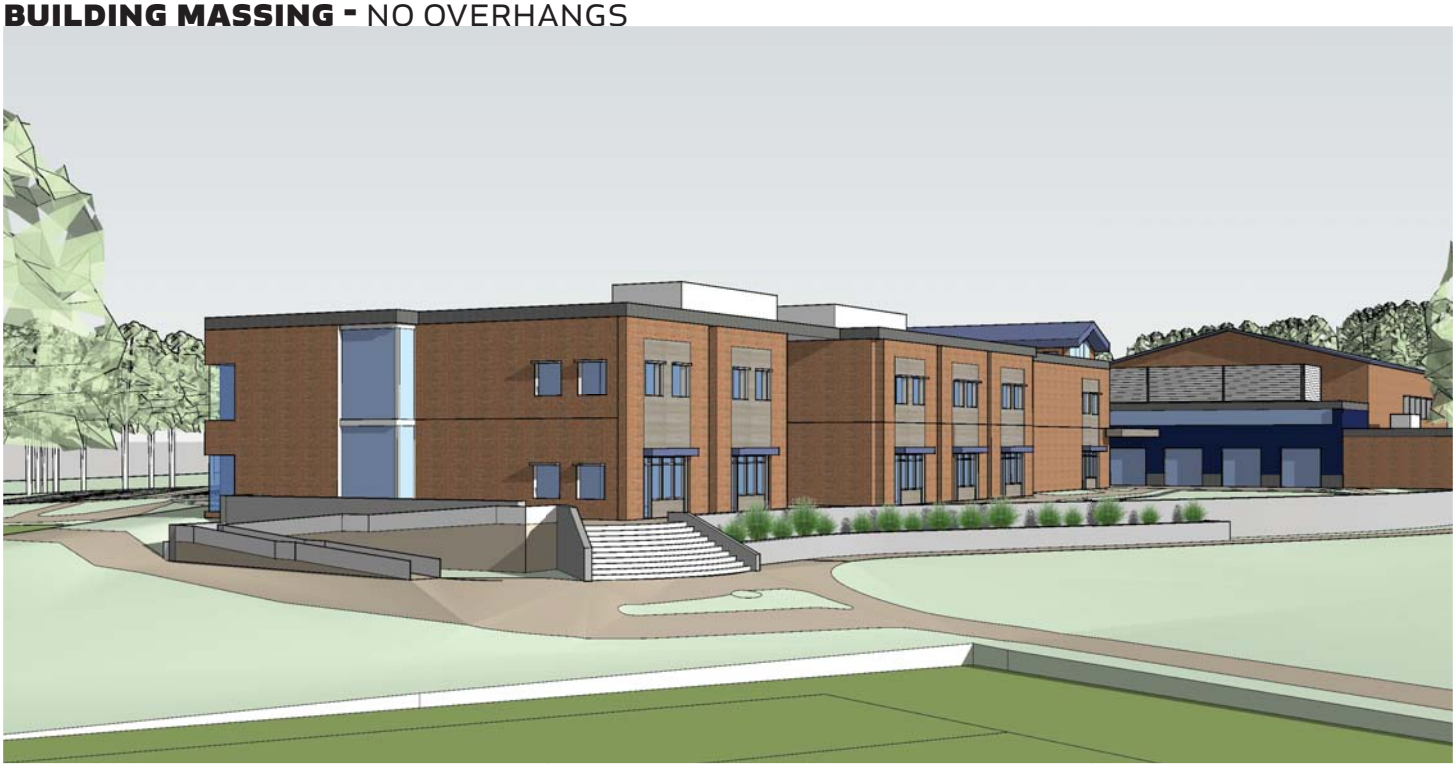
BUILDING MASSING - NO OVERHANGS



BUILDING MASSING - 6/19/18



BUILDING MASSING - NO OVERHANGS



THANK YOU

MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS

JCJARCHITECTURE

MEETING MINUTES

Project:	Manchester Memorial Elementary School	Project No:	MP17-114
Subject:	School Building Committee/School Committee Meeting	Meeting Date:	6/26/2018
Location:	Manchester MS/HS – Library	Time:	7:00 PM
Distribution:	Attendees, Project File	Prepared By:	C.Shefferman

Present	Name	Affiliation	Present	Name	Affiliation
✓	Caroline Weld *	SBC Co-Chair	✓	Jim LaPosta	JCJ
	Ann Cameron *	SBC Co-Chair	✓	Daniel Ruiz	JCJ
✓	Pam Beaudoin *	Superintendent	✓	Lauren Braren	JCJ
✓	Avi Urbas *	Dir. of Fin. & Ops		Emily Czarnecki	JCJ
✓	Alva Ingaharro *	Essex	✓	Mike Burton	DWMP
✓	John Willis *	Principal MMES		Steven Brown	DWMP
✓	Jay Pagliarulo	Dir. of Facilities	✓	Christina Shefferman	DWMP
✓	Andy Oldeman *	Man. Fin. Comm.	✓	Jon Rich	WT Rich
✓	Lisa O'Donnell *	Essex B.O.S.			
✓	Remko Brueker *	Manchester			
✓	Adam Zaiger *	Manchester			
✓	Tyler Virden *	Essex			
✓	George Scharfe *	Manchester			
✓	Gordon Brewster *	Manchester			
✓	Charlie Hay *	Essex			
✓	Sarah Creighton *	Manchester			
✓	Maggie Tomaiolo *	Essex			
✓	Jake Foster *	Essex			

** SBC Voting Member*

MANAGEMENT PARTNERS, LLC

PROJECT MANAGERS
ARCHITECTS

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Item No.	Description	Action
29.1	Call to Order: 7:04 pm meeting was called to order by the SBC Co-Chair C. Weld with 16 of 17 voting members in attendance. M. Burton of DWMP notes the meeting will follow the Power Point presentation that is being projected on the screen and to follow the agenda that was provided to the SBC prior to the meeting via Dropbox.	Record
29.2	Previous Topics & Approval of June 12, and June 19, 2018 Meeting Minutes: A motion to approve the 6/12/2018 & 6/19/2018 meeting minutes as submitted made by A. Oldeman and seconded by A. Ingaharro. Discussion: None. Vote: All in favor: Motion passes, minutes approved.	Record
29.3	Invoices & Commitments for Review and Approval: None.	Record
29.4.1	Meeting Goals: M. Burton presents the meeting goals to the SBC. Goals: • Recap previous VE discussion • Review draft of Total Project Budget • Complete VE exercise • Review soft costs	Record
29.4.2	Budget Update: Currently there is $29,531.77 left in the project budget for the feasibility and schematic design phase of the project. The budget is 95% encumbered, 75% expended, and 82% phase elapsed.	Record
29.5.1	VE Recap: M. Burton provides the SBC with a VE Recap. At the last SBC meeting the category 1 and category 2 VE items were accepted. Currently the total construction cost including the accepted VE items is $43,018,118. The team will be reviewing the category 3 and 4 VE items tonight.	Record
29.5.2	VE Recap: M. Burton discusses the GSF that has been accepted with current VE items is 81,286. If the remaining VE items this evening that affect GSF are accepted, we could end up with a GSF of 77,084.	Record
29.5.3	VE Recap: M. Burton discusses total construction cost budget analysis slide. A recap of the discussion is below: Budget Analysis-Total Construction cost • All current VE 1's and 2's • GSF=81,286-Total Construction cost estimate $43,018,118- Total construction cost per GSF $529.22 • All current VE 1's and 2's plus pending item(s) above • GSF=77,084-Total construction cost estimate $41,750,575-Total construction cost per GSF $541.62 Budget Analysis-Direct Building Costs (excludes all site, building demo, abatement, phasing premium, general con/req/bond/ins., CM fee, CM contingency) • All current VE 1's and 2's • GSF=81,286-Building Construction cost estimate $29,162,119-Building construction cost per GSF $358.76 • All current VE 1's and 2's plus pending item(s) above • GSF=77,084-Building construction cost estimate $27,894,576-Building construction cost per GSF $361.87	Record

	After reviewing the VE recap slides the SBC asked: • Q: What is driving the cost of the project so high? • A: The particular site is difficult, involves phasing, fill, grading, wetlands surround the building.	
29.6.1	Anticipated Total Project Budget: M. Burton discusses the approximate total project budget with current accepted VE items. The slide is outlined below: ➢ Feasibility=Budget Value $650,000 ➢ Legal Fees=Budget Value $70,000 ➢ OPM Fee=Budget Value $1,918,000 ➢ A&E Fee=Budget Value $4,766,300 ➢ Pre-Construction=Budget Value $146,000 ➢ Construction-PSR=$44,505,250, Budget Value=$43,018,118, Delta from PSR=$1,487,132 ➢ Misc. Project Costs=Budget Value $450,000 ➢ Modulars=$200,000 ➢ Furniture & Equipment=Budget Value $858,485 ➢ Technology=Budget Value $600,000 ➢ Subtotal=$52,676,903 ➢ Construction Contingency=budget Value $1,720,725 ➢ Owner's Contingency=Budget Value $430,181 ➢ Total=$54,827,809 After review, the administration let the SBC know that there is no longer a need for classroom modulars, just a trailer for 4 desks for administration.	Record
29.6.2	Anticipated Total Project Budget: M. Burton discusses the approximate total project budget with ALL VE Items accepted. The slide is outlined below: ➢ Feasibility=Budget Value $650,000 ➢ Legal Fees=Budget Value $70,000 ➢ OPM Fee=Budget Value $1,918,000 ➢ A&E Fee=Budget Value $4,766,300 ➢ Pre-Construction=Budget Value $146,000 ➢ Construction-PSR=$44,505,250, Budget Value=$41,750,575, Delta from PSR=$2,754,675 ➢ Misc. Project Costs=Budget Value $450,000 ➢ Modulars=$200,000 ➢ Furniture & Equipment=Budget Value $858,485 ➢ Technology=Budget Value $600,000 ➢ Subtotal=$51,409,360 ➢ Construction Contingency=budget Value $1,670,023 ➢ Owner's Contingency=Budget Value $417,506 ➢ Total=$53,496,889 Outline of discussion and questions below: ➢ Q: What is the effective reimbursement rate? ➢ A: 24-25% of eligible costs, with site being the biggest cap, and construction is capped at $326 a sf. ➢ Q: What is the status of prek?	Record

	➢ A: Prek was voted by the SC to only include 2 classrooms at this time. The SC felt that at this time they did not have enough enrollment to support the additional 2 classrooms and would not be explored further. ➢ Decision Point: • A motion was made by S. Creighton and seconded by J. Foster to accept the SC recommendation and vote to proceed with 2 prek classrooms. Discussion: None. Vote: All in favor, motion passes. ➢ Q: Why do these VE steps have to be taken? Its unfortunate part of the process with not enough time to develop design, systems, etc. ➢ A: Following the MSBA process which requires a lot of design before the SD submission.	
29.7	Design Update: L. Braren presents the SBC with updated design slides. An outline of the discussion is below: ➢ Reduction of the gymnasium • No bleachers, bigger court • Q: Can you remove all bleachers, and just have a court regulation size? • A: yes, just court and hoops ➢ Decision point: • SC voted and approved to move forward with a regulation size gym with bleachers on one side of the court.	Record
29.8.1	Finalize Remaining VE List-Vote Final Approved VE: J. Rich discusses the final remaining VE list. An outline of the discussion is below: ➢ Minor changes=deleted the outdoor benches next to basketball court, reduction of $30,000. ➢ New site plan has been incorporated, but it was partially included under C-31. Overall an additional $250,000 in additional savings. ➢ Removed 200sf from each project rooms.	Record
29.8.2	Finalize Remaining VE List-Vote Final Approved VE: After taking the 2 PreK classrooms out and the 1 and 2 category VE items, the total construction cost is $42,797,000. C. Hay felt that taking A-04 and A-08 don't affect program therefore should be taken. A motion was made by S. Creighton and seconded by L. O'Donnell to take A-04 and A-08. Discussion: R. Breuker felt cutting the PreK already dramatically changes the building, taking the sloped roofs and changing to flat pitched roofs will dramatically change the building. A. Ingaharro doesn't mind the flat roof. A. Oldeman agrees with R. Brueker that changing the roof changes the massing and neighborhood feel of the building. A motion was made by A. Oldeman and seconded by J. Foster to retract the original motion to remove and accept VE items A-04 and A-08. A motion was made by J. Foster and seconded by S. Creighton to take $400,000 further from envelope of the building for further development in DD. Discussion: Removing nothing specifically, just further design reduction in DD. Vote: 16 members approved, 1 member opposed. Motion passes.	Record
29.8.3	Finalize Remaining VE List-Vote Final Approved VE: The SBC further discusses the VE item A-25, regarding the gym size and bleachers. An outline of the discussion is below: ➢ Decision Point: • A. motion was made by G. Scharfe and seconded by S. Creighton to reduce the gym by 750 sf and keep it a regulation size gym, one side of	Record

	bleachers, and an off-center court. Discussion: A. Oldeman states that this would impact the view to the stage. S. Creighton asks JCJ whether the stage could be moved to the center of the court? JCJ to review. P. Beaudoin reminds the SBC that the stage will be replacing the existing auditorium. Many community members were hesitant about the removal of the auditorium and want to make sure don't dismiss the use of the stage for current auditorium use activities. Vote: 8 approve, 7 oppose. Motion passes. ➢ Decision point: • A motion was made by C. Weld and seconded by A. Urbas to take and accept VE items A-07 and A-07a, delete outdoor classroom deck and railing, and accept A-08a, and delete remaining overhands. This does not affect entrance canopies. This does not affect the "eye brow" at first floor classrooms. Discussion: everyone opposed. Vote: motion does not pass. A motion was made by L. O'Donnell and seconded by C. Hay to keep both A-07 and A-07a. Discussion: is it common to have a 2-story elementary school? Yes, there are some that have been designed recently by JCJ. Vote: 12 approve, 3 oppose. Motion passes.	
29.8.4	<u>Finalize Remaining VE List-Vote Final Approved VE:</u> After further discussion and review of VE, the SBC discuss that currently the total project budget is estimated at $53.3 million. ➢ Decision point: • A motion was made by J. Foster and seconded by C. Hay to accept the current total project budget of $53.3 million and to no longer move forward with accepting any additional VE items. o Discussion: R. Breuker is concerned there are more VE items on the table to take. Concerned that the communities won't approve, might look too fancy. o MSBA process once you lock in and sign 3011, making a deal that it can't go up, and has to stay within that budget. o S. Creighton asks whether to further explore the idea of single phasing and have whole school in modulars will help save money. Modulars are non-reimbursable though and therefore would result in $2million cost direct to district without reimbursement. o C. hay states that if the SBC approves and takes remaining category 3 VE items would reduce to $53 million. o Vote: 13 approve, 2 oppose. Motion passes. M. Burton states that he will update the 3011 sheet by Thursday and send to the SBC to review. On 7/9/18 we will be asking the SBC to approve the SD submission which includes the Total Project Budget and Total Construction Cost. The project team will be submitted the SD package to the MSBA on 7/11/18.	Record
29.9	<u>Project Team Amendments:</u> M. Burton discusses the OPM and Design project team amendments. An outline of the discussion is below: ➢ MSBA provides dates from all elementary schools and OPM and Design costs on their website. OPM fee is capped at 3.5%, and Designer at 10%. ➢ DWMP Proposal: • See attached graph which shows people and time allocated for OPM. • M. Burton allocated 20% to project=1day a week	Record

	• S. Brown allocated 60% to project=3days a week • C. Shefferman allocated 50% to project=2.5 days a week • Rate is higher due to coverage needed for additional construction time from phasing. ➢ JCJ Proposal • D. Ruiz states that the have essentially done the same thing DWMP has and figured based on months/duration of time, assigned people per time needed, etc. • JCJ proposal includes hazmat, monitoring and 3 early release packages, modular package. ➢ G. Scharfe asks whether WT Rich considered the single-phase option considering a shorter schedule and determining whether will save money? ➢ J. Rich states that if they did full modulars, they will still need to demo the building, still a very aggressive 15 months, but could shave off 10 months. The CM's GC's, bond insurance, etc. will not change.	
29.10	Schedule/Look Ahead: ➢ 7/9/18-Joint SBC/SC Meeting-Vote to approve SD submission and 3011	Record
29.11.1	Total Project Budget Sheet Review: M. Burton discusses total project budget spreadsheet. An outline of the discussion is below: ➢ Misc. Costs: $450,000-includes bringing power to the site from Eversource, transformer hook up, temporary power, etc. ➢ Testing: $100,000-includes independent testing, soil compaction reports, concrete, steel, a 3rd party agent ➢ A motion was made by C. Hay and seconded by A. Ingaharro to use the recommended cap of FF&E and Technology from the MSBA at $2400 total. Discussion: None. Vote: Unanimous to approve, motion passes. ➢ Other Costs: $250,000-catch all for unforeseen. Some moving costs. Adds up quickly. ➢ Legal Costs: $70,000-if go over would come out of 1% owner contingency ➢ Decision Point: • A motion was made by A. Urbas and seconded by A. Oldeman to move take $100,000 from other costs and move to legal costs. Discussion: none. Vote: Unanimous to approve. All in favor: motion passes.	Record
29.12.1	Other Topics Not Reasonably Anticipated (48 hours prior to meeting): Will not need the SBC meeting on 8/7 since we will have approval on the 9th with a certification form sign, will act as the approval of the meeting minutes and approval of the SD submission.	Record
29.12.2	Other Topics Not Reasonably Anticipated (48 hours prior to meeting): A working group will meeting to discuss and review both DWMP and JCJ proposals on 6/29. The working group includes S. Creighton, A. Ingaharro, A. Urbas, J. Foster and P. Beaudoin.	Record
29.13	Public Comments: None.	Record
29.14	Adjourn: A motion was made by G. Scharfe and seconded by A. Oldeman to adjourn the meeting. Discussion: None. Vote: Unanimous to approve. Meeting adjourned at 10:00 pm.	Record

Attached:
SBC Meeting Agenda, Sign In Sheet, SBC Meeting No. 28 6/19/18 Meeting Minutes, Manchester Memorial Elementary School Presentation 6/26/18

DORE AND WHITTIER MANAGEMENT PARTNERS, LLC.



Christina Shefferman
Assistant Project Manager
Cc: Attendees, File

The above is my summation of our meeting. If you have any additions and/or corrections, please contact me for incorporation into these minutes.

PRELIMINARY SCHEMATIC REPORT PHASE PROJECT MEETINGS

- March 27, 2018 – SBC Meeting #21
- April 10, 2018 – SBC Meeting #22
- April 26, 2018 – SBC Meeting #23
- May 1, 2018 – MEP & Sustainability Meeting
- May 1, 2018 – SBC Meeting #24 (CM Interviews)
- May 8, 2018 – SBC Meeting #25
- May 22, 2018 – SBC Meeting #26
- May 30, 2018 – Community Meeting #4 (Morning & Evening)
- June 12, 2018 – SBC Meeting #27
- June 19, 2018 – SBC Meeting #28
- June 26, 2018 – SBC Meeting #29
- July 9, 2018 – SBC Meeting #30
- July 16, 2018 – SBC Meeting #31 (Joint Meeting with School Committee)

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AGENDA

Project:	Manchester Memorial Elementary School	Project No:	MP17-114
Subject:	School Building Committee Meeting	Meeting Date:	7/9/2018
Location:	Manchester MS/HS – Library	Time:	7:00 PM
Distribution:	Attendees, Project File	Prepared By:	C.Shefferman

1. Call to Order
2. Previous Topics & Approval of June 26, 2018 Meeting Minutes
3. Invoices & Commitments for Review and Approval
4. Working Group Updates
    - Review/Recommendations on MSBA 3011 Budget Form
5. DWMP and JCJ Proposal Review/Recommendation (vote anticipated)
6. Address Lingering Questions Necessary for SD Submission
    - Design
    - Costs-Soft Costs
7. SD Approval (vote anticipated)
8. Other Topics Not Reasonably Anticipated 48 hours prior to Meeting
9. Public Comments
10. Adjourn

MANAGEMENT PARTNERS, LLC

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Manchester Memorial Elementary School

Schematic Design Phase - SBC Meeting #30

July 9, 2018



1. Call to Order
2. Previous Topics & Approval of June 26, 2018 Meeting Minutes
3. Invoices & Commitments for Review/Approval
4. Working Group Updates (Single/Multi Phase, Consultant soft costs)
5. Design Updated (Current SF, Grossing, Design options)
6. Total Project Budget
7. SD Approval (vote anticipated)
8. Other Topics Not Reasonably Anticipated 48 hours prior to Meeting
9. Public Comments
10. Adjourn



1. Call to Order

2. Previous Topics & Approval of June 26, 2018 Minutes

MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS

3. Invoices & Commitments for Review/Approval

DWMP invoice no. 16 in the amount of $7,142.85. Invoice attached. Vote expected.

JCJ invoice no. 11 in the amount of $38,750.00. Invoice attached. Vote expected.

4. Working Group Updates

- Single vs Multi Phase
- DWMP Proposal
- JCJ Proposal
- Remaining Soft Cost Questions?

MANCHESTER MEMORIAL ELEMENTARY SCHOOL
MANCHESTER-ESSEX REGIONAL SCHOOL DISTRICT, MASSACHUSETTS

5. Design Updates

- Current Building SF
- Impact to Grossing (Net to gross ration)
- Design solutions
  - Gym and Project room(s)
  - Other Reductions

6. Total Project Budget

- 6/26/18 – SBC Voted $53.3M
- 3011 Updated based on accepted VE @ 77,796sf - $52.67M
- 3011 Updated based on 78,055sf - $52.74M
- 3011 Updated Based on 79,125sf - $53.02M

SBC Vote to approve Total Project Budget (Bottom Line Number on 3011). The Reimbursement will be evaluation @ PS&B Meeting 8/2/18.

7. SD Approval (vote anticipated)

8. Other Topics Not Reasonably Anticipated (48 hours prior to meeting)

9. Public Comments

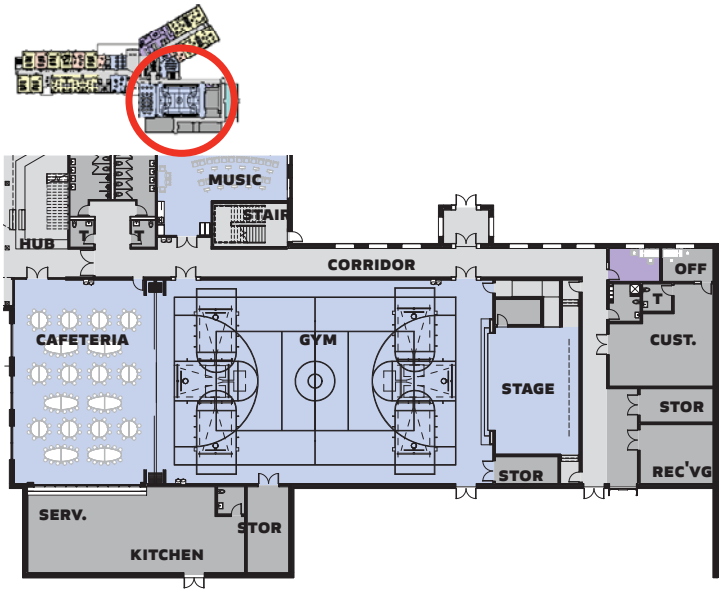
10. Adjourn

THANK YOU

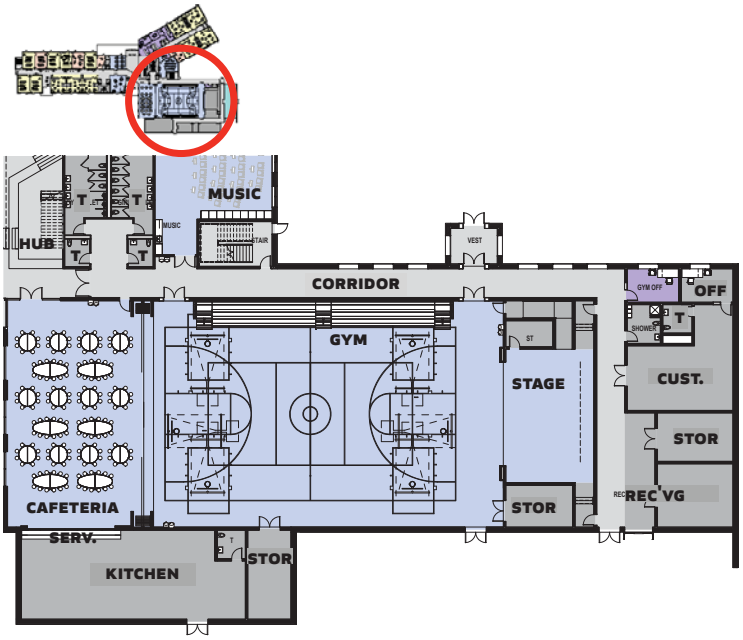
MANCHESTER MEMORIAL ELEMENTARY SCHOOL

SCHEMATIC DESIGN PHASE
SBC MEETING #30
JULY 9TH, 2018

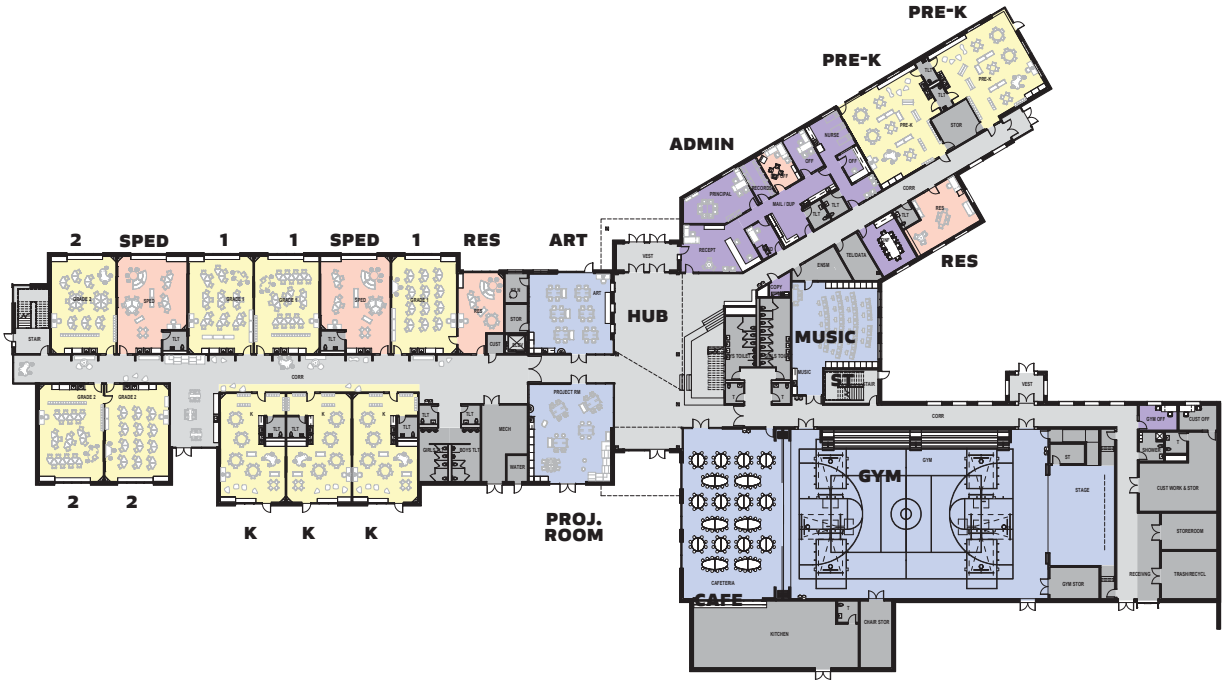
6,000SF **GYM** 6/26/2018



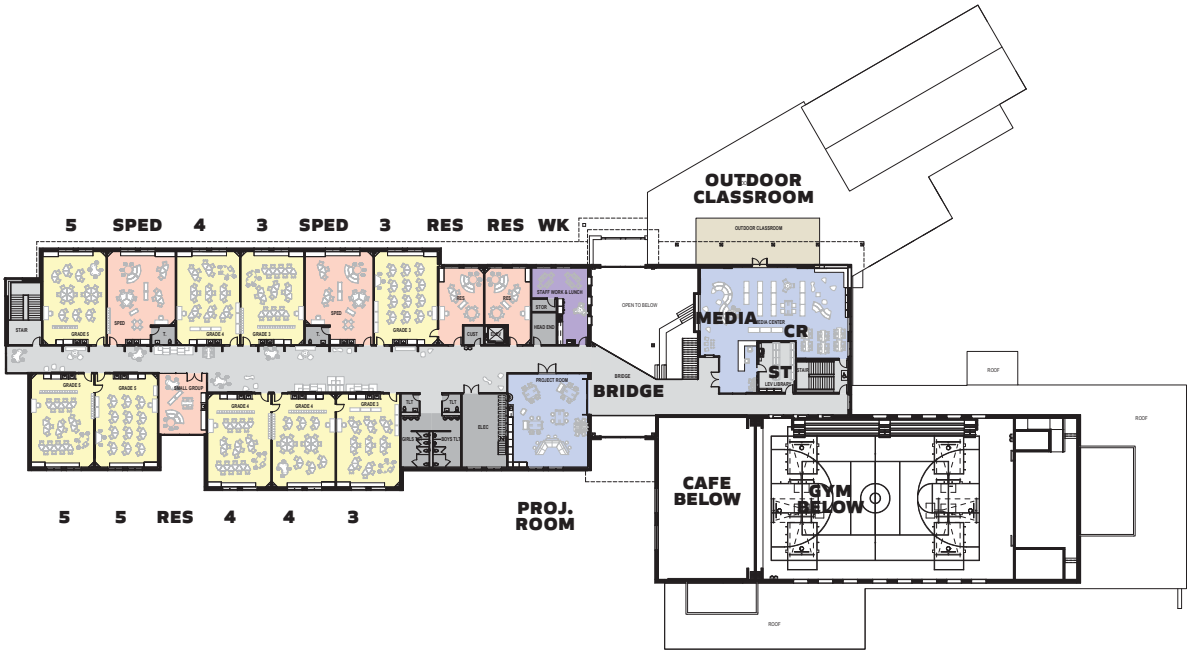
6,750SF **GYM** 7/9/2018



MAIN LEVEL PLAN UPDATE - OPTION 1



UPPER LEVEL PLAN UPDATE - OPTION 1



BUILDING MASSING - OPTION 1



BUILDING MASSING - OPTION 1: APPROACH



BUILDING MASSING - OPTION 1: MAIN ENTRY



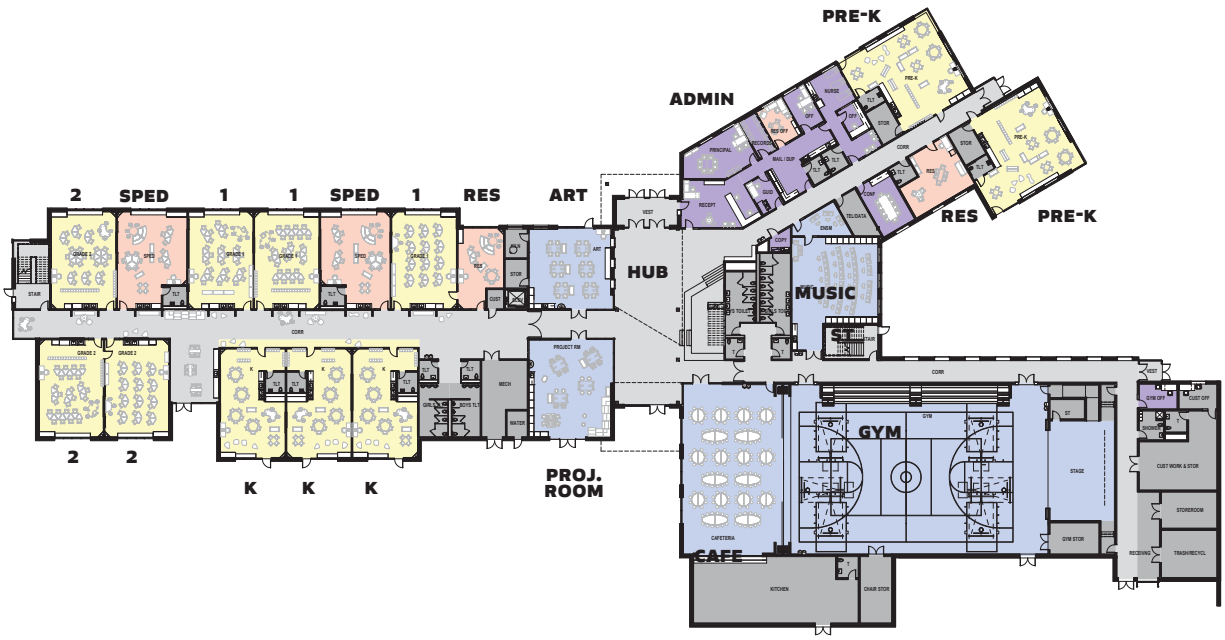
BUILDING MASSING - OPTION 1: VIEW FROM SUMMER STREET



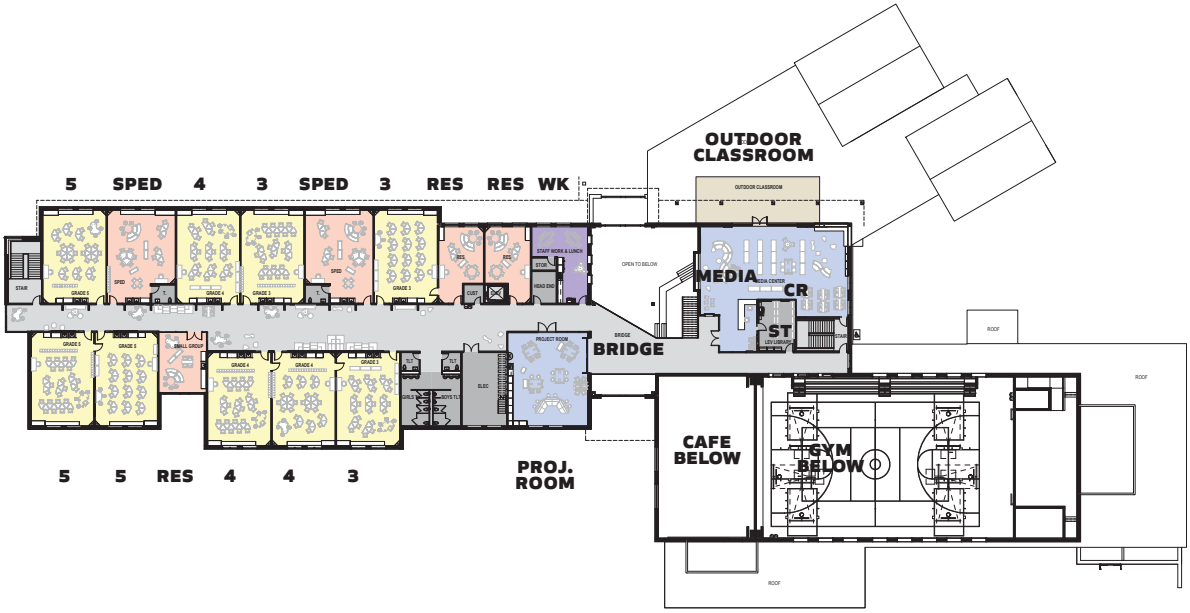
BUILDING MASSING - OPTION 1: GYM ENTRY



MAIN LEVEL PLAN UPDATE - OPTION 2



UPPER LEVEL PLAN UPDATE - OPTION 2



BUILDING MASSING - OPTION 2



BUILDING MASSING - OPTION 2: APPROACH



BUILDING MASSING - OPTION 2: MAIN ENTRY



BUILDING MASSING - OPTION 2: VIEW FROM SUMMER STREET



BUILDING MASSING - OPTION 2: GYM ENTRY



THANK YOU

MEETING MINUTES

Project:	Manchester Memorial Elementary School	Project No:	MP17-114
Subject:	School Building Committee/School Committee Meeting	Meeting Date:	7/9/2018
Location:	Manchester MS/HS – Library	Time:	7:00 PM
Distribution:	Attendees, Project File	Prepared By:	C.Shefferman

Present	Name	Affiliation	Present	Name	Affiliation
	Caroline Weld *	SBC Co-Chair		Jim LaPosta	JCJ
✓	Ann Cameron *	SBC Co-Chair	✓	Daniel Ruiz	JCJ
✓	Pam Beaudoin *	Superintendent	✓	Lauren Braren	JCJ
✓	Avi Urbas *	Dir. of Fin. & Ops		Emily Czarnecki	JCJ
✓	Alva Ingaharro *	Essex	✓	Mike Burton	DWMP
	John Willis *	Principal MMES	✓	Steven Brown	DWMP
✓	Jay Pagliarulo	Dir. of Facilities	✓	Christina Shefferman	DWMP
	Andy Oldeman *	Man. Fin. Comm.	✓	Jon Rich	WT Rich
✓	Lisa O'Donnell *	Essex B.O.S.	✓	Shannon Erdmann	SC
✓	Remko Brueker *	Manchester	✓	Rachel Fitzgibbon	SC
✓	Adam Zaiger *	Manchester	✓	Ken Warnock	SC
✓	Tyler Virden *	Essex	✓	Sarah Wofl	SC
✓	George Scharfe *	Manchester			
	Gordon Brewster *	Manchester			
✓	Charlie Hay *	Essex			
✓	Sarah Creighton *	Manchester			
✓	Maggie Tomaiolo *	Essex			
✓	Jake Foster *	Essex			

** SBC Voting Member*

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Item No.	Description	Action
30.1	Call to Order: 7:05 pm meeting was called to order by the SBC Co-Chair A. Cameron with 12 of 17 voting members in attendance. M. Burton of DWMP notes the meeting will follow the Power Point presentation that is being projected on the screen and to follow the agenda that was provided to the SBC prior to the meeting via Dropbox.	Record
30.2	Previous Topics & Approval of June 26, 2018 Meeting Minutes: A motion to approve the 6/26/2018 meeting minutes as submitted made by J. Foster and seconded by A. Ingaharro. Discussion: J. Foster requested that in 29.8.4 of the previous meeting minutes be amended to state that A. Ingaharro expressed concern that the committees tend to spend all of the money they have in their contract, so if the VE process stops at that point they would want to commit to try to spend less than the approved amount and not just spend money because they have an approval to go to a certain amount. Vote: All in favor: Motion passes, minutes approved.	Record
30.3	Invoices & Commitments for Review and Approval: DWMP invoice no. 16 for SD phase activity in the amount of $7,142.85 (invoice attached) vote expected. JCJ invoice no. 11 for SD phase activity in the amount of $38,750.00 (invoice attached) vote expected. A motion made by A. Urbas to approve both invoices as presented and 2nd by G. Scharfe. Discussion: DWMP states there will be two additional invoices for the month of June and July JCJ states they also will have an additional invoice for July, and then the invoices will greatly reduce through the fall before the vote. Vote: Unanimous to approve.	Record
30.4.1	Working Group Updates-Single Phase vs Multi Phase: A. Urbas provided the SBC with an update and recommendation from the working group. The discussion is outlined below: ➢ Single phase option: • Consultant team of WTR, JCJ & DWMP spent week of 7/2 documenting an analysis of potential savings for money from proposed phasing option towards a single phase. • After a thorough review, working group did not recommend changing the team's current proposed phasing for the following reasons: o Both options are driver by a constrained site o Total estimated project savings (construction and soft costs) of $112k nets out to $64k savings to MERSD, after factoring in reduced MSBA reimbursement for $2.2MM increased cost of modulars in single phase. o No sites identified, studies or approved that can house the 24 modulars associated with single phase option o Original phasing has slightly reduced impact on students by moving demolition to summer months and keeping students out of modulars o Single phase option would, however, reduce timeline by 4 months, reduce timeline risk and potentially be more appealing to sub bidders o The single-phase option did assume that modular design would need to begin prior to a November 2019 vote, which might not be acceptable to SBC. J. foster states that he thought it was useful to see all $'s associated for every scenario and to see that single phase is basically a wash compared to multi-phase due to the extra cost of	Record

	modulars. A. Ingaharro states that moving forward the team when relaying information to the community should focus on the site costs not phasing to be the costly factor.	
30.4.2	Working Group Updates-DWMP Proposal: A. Urbas provided the SBC with an update and recommendation from the working group. The discussion is outlined below: ➢ DWMP Proposal • Working group recommend accepting DWMP proposal as is, provided that proposed staffing and related cost could be reduced once project is underway if SBC determines that project is overstaffed. • Amount of current proposal in excess of MSBA's 3.5% guideline ($626K) would be don-reimbursable cost. This excess has been attributed to extended schedule associated with constrained site and proposed phasing. Moving forward the SBC would like to continue to evaluate time allocated to each team member and determine whether the amount of staff is needed during each phase.	Record
30.4.3	Working Group Updates-JCJ Proposal: A. Urbas provided the SBC with an update and recommendation from the working group. The discussion is outlined below: ➢ JCJ Proposal • Working group recommend accepting JCJ proposal as is, provided JCJ furnishes additional information supporting its allocation of $2MM (out of total Basic Services proposal of $4.6MM) to sub-contractors. • Amount of current proposal in excess of MSBA's 10% guideline ($817K) would be non-reimbursable cost. This excess has been attributed to extended schedule associated with constrained site and proposed phasing. • JCJ proposed cost is in line with comparable projects based on MSBA data. The SBC requests additional information for the CA portion of the proposal and itemization of the sub consultant's contracts. D. Ruiz to provide.	Record
30.5.1	Design Update: L. Braren from JCJ presents design update slides. An outline of the discussion is below: ➢ Gymnasium • 6000sf vs 6750sf. Shows 2 rows of bleachers on one side ➢ Pre-K 92 options) • 1st option shows prek on same side with the removal of 2 from the other side. • 2nd option shows prek separate sides of the corridor. • JCJ presents different massing elevations for option 1 and option 2. Massing elevations can be found in the attached presentation. ➢ Q: Can you extend the gabled roof over the hallway next to prek rooms? ➢ A: Will need to review to determine ➢ Q: Can you add PV panels on low slopped flat roof ➢ A: yes, you can add PV panels ➢ Q: what is the difference of cost between option 1 and option 2? ➢ A: Didn't perform a cost analysis, purely for design ➢ Q: Is there time in DD to change or modify the service and gym entrance? ➢ A: yes, in DD design is further developed	Record

	➢ Decision Point: • A motion was made to select option 2 as the preferred pre-k layout. Vote: 7 SBC members approve, 4 oppose. Motion passes.	
30.5.2	Design Update: Current gross SF is 1.52. MSBA will not accept an elementary school project if the gross SF is over 1.5. The SBC discussed and proposed options to reduce the gross SF: ➢ Reduce overall corridor width ➢ Q: Is it possible to receive include corridor learning space within the project space SF? ➢ A: SF can be taken from classrooms and offset in corridor space ➢ Q: what is the width of the corridors? ➢ A: First floor is 10', second floor is 12', with the narrowest part of the corridors at 8'. ➢ M. Tomaiolo states that teachers might be willing to give up some SF in classroom instead of SF in corridor. Currently the project is at 78,055 SF. JCJ is challenged with removing 1,099 SF in order to receive gross SF of 1.5 or less. Potential solutions include corridor reduction, gymnasium, and project room reductions.	Record
30.6	Review Total Project Budget (3011): M. Burton discuss the current total project budget. A recap of the discussion is outlined below: ➢ 6/26/18-SBC voted $53.3M ➢ 3011 updated based on accepted VE @77,796sf-$52.67M ➢ 3011 updated based on 78,055 sf-$52.74M ➢ 3011 updated based on 79,125sf-$53.02M ➢ SBC vote to approve Total Project Budget (Bottom Line Number on 3011). The reimbursement will be evaluation @ PS&B meeting 8/2/18. ➢ M. Burton displays current 3011 draft to SBC. Explains everything in yellow is a formula and the second section of the form will change based on the SF entered above. ➢ WT Rich and JCJ estimator will make changes to estimates based on VE and decisions made tonight. ➢ Decision point: • A motion was made by S. Creighton and seconded by C. Hay to accept the total project budget of $52,670,521 as long as the number is not exceed and the total gross sf is within 1.5. Discussion: The SBC would like 24 hours to review the total project budget after revised estimates are received and updated before SD submission to the MSBA on 7/18/18. JCJ to take sf out of design in order to meet the 1.5 gross sf. Vote: all in favor. Motion passes. • A motion was made by S. Wolf and seconded by S. Erdmann to accept the same motion made by SBC above of the total project budget of $52,670,521 as long as the number is not exceed and the total gross sf is within 1.5. Vote: all in favor. Motion passes.	Record
30.7	Schematic Design Submission: A motion was made by S. Creighton and seconded by C. Hay to allow P. Beaudoin and A. Cameron approve and sign the local actions and approvals certification form and submit to the MSBA the Schematic Design package after the estimates have been updated as well as the 3011 form as long as its within the total project budget of	Record

	$52,670,521 and the gross sf is within 1.5. Vote: All in favor. Motion passes. A motion was made by S. Wolf and seconded by S. Erdmann to accept the same motion made by the SBC above to allow P. Beaudoin and A. Cameron approve and sign the local actions and approvals certification form and submit to the MSBA the Schematic Design package after the estimates have been updated as well as the 3011 form as long as its within the total project budget of $52,670,521 and the gross sf is within 1.5. Vote: All in favor. Motion passes.	
30.8	Other Topics Not Reasonably Anticipated (48 hours prior to meeting): S. Creighton suggest that during the DD phase of the project the SBC meets at the MMES school. P. Beaudoin to confirm whether there is enough space along with a projector for meeting presentations.	Record
29.13	Public Comments: None.	Record
29.14	Adjourn: A motion was made by G. Scharfe and seconded by T. Virden to adjourn the meeting. Discussion: None. Vote: Unanimous to approve. Meeting adjourned at 8:34 pm.	Record

Attached:
SBC Meeting Agenda, Sign In Sheet, SBC Meeting No. 29 6/26/18 Meeting Minutes, Manchester Memorial Elementary School Presentation 7/9/18, JCJ Design Update Presentation 7/9/18, DWMP Invoice no. 16, JCJ Invoice no. 11

DORE AND WHITTIER MANAGEMENT PARTNERS, LLC.

Christina Shefferman
Assistant Project Manager
Cc: Attendees, File

The above is my summation of our meeting. If you have any additions and/or corrections, please contact me for incorporation into these minutes.

PRELIMINARY SCHEMATIC REPORT PHASE PROJECT MEETINGS

- March 27, 2018 – SBC Meeting #21
- April 10, 2018 – SBC Meeting #22
- April 26, 2018 – SBC Meeting #23
- May 1, 2018 – MEP & Sustainability Meeting
- May 1, 2018 – SBC Meeting #24 (CM Interviews)
- May 8, 2018 – SBC Meeting #25
- May 22, 2018 – SBC Meeting #26
- May 30, 2018 – Community Meeting #4 (Morning & Evening)
- June 12, 2018 – SBC Meeting #27
- June 19, 2018 – SBC Meeting #28
- June 26, 2018 – SBC Meeting #29
- July 9, 2018 – SBC Meeting #30
- July 16, 2018 – SBC Meeting #31 (Joint Meeting with School Committee)

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4.18.2.13 – SBC MEETING NO. 31 – JULY 16, 2018

- Originally scheduled as the final approval meeting, via a joint session of the Building and School Committees, both of these committees, instead, met jointly on July 9, 2018 and, at that meeting, provided their approval to submit the schematic design to the MSBA.

  Thus, there was no meeting on July 16, 2018

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