HILLSIDE ELEMENTARY SCHOOL

TOWN OF NEEDHAM NEEDHAM, MASSACHUSETTS



SCHEMATIC DESIGN REPORT

JUNE 2, 2016



260 Merrimac St. Bldg 7, 2nd Flr •Newburyport•Massachusetts Phone: 978-499-2999 • Fax: 978-499-2944 1795 Williston Road, Suite 5 •South Burlington• Vermont Phone: 802.863.1428 • Fax: 802.863.6955 www.doreandwhittier.com



Permanent Public Building Committee Public Facilities Department - Construction Town of Needham 500 Dedham Avenue Needham, MA 02492

781 455-7550 781 453-2510 fax

May 31, 2016

Mr. Caulen Finch and Ms. Sarah Blache Massachusetts School Building Authority 40 Broad Street, Suite 500 Boston, MA 02109

Re: Hillside Elementary School, Needham, MA MSBA Project No: 201301990035 Schematic Design (SD) Submission

Dear Mr. Finch and Ms. Blache;

We hereby submit the Schematic Design (SD) documents for the Hillside Elementary School Project to the Massachusetts School Building Authority (MSBA) for your review and approval.

During the Schematic Design Stage of the project we have acted as the Owner's Project Manager (OPM) and coordinated the work of the Designer, Dore and Whittier Architects, Inc. (D&W) with the Permanent Public Building Committee (PPBC) who is the School Building Committee for this project. We have also coordinated the review and approval of the SD with other District and Town of Needham approving bodies, including the School Committee, Board of Selectmen, Conservation Commission, Development Review Team (DRT) as well as the School Department, and the Working Group that they established to work with the Designer in the development of the educational program information.

Documentation of the public review process during this phase is contained within the SD- Local Actions and Approvals section, including the meeting notes from each of the public meetings, and the Local Actions and Approval letter signed by the Town Manager, Superintendent, and Chair of the School Committee. The PPBC voted unanimously to approve the Schematic Design for submittal to the MSBA at their meeting on May 24, 2016. The Certified Vote from this PPBC meeting is also included within the MSBA's SD binder – Local Action and Approvals section.

May 31, 2016 Schematic Design Submittal Letter to the MSBA

I have reviewed and coordinated the SD materials and certify to the best of my knowledge and belief, the information supplied in the SD is complete. The Proposed Total Project Budget as documented within the Schematic Design submittal is within the District's Budget. We are therefore submitting the completed Schematic Design Documents on June 2, 2016 as required for review and approval by the MSBA Board Design at their meeting on July 20, 2016.

If there are any questions I can be reached at 781-455-7550 or by e-mail at spopper@needhamma.gov.

Very Truly Yours, Town of Needham

won topper

Steven H. Popper, P.E. Director of Design and Construction, PFD- Construction Employee Owner's Project Manager

 cc. Dan Gutekanst, Superintendent, Needham Public Schools George Kent, Chairman, PPBC Kate Fitzpatrick, Town Manager Hank Haff, Sr. Project Manager

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LAND USE LICENSE

ACKNOWLEDGEMENTS

Needham Public Schools and Town of Needham

Dore & Whittier Architects, Inc. would like to acknowledge the following individuals for their dedication to the Town of Needham and for their assistance to the Design Team.

Town of Needham Administration

Kate Fitzpatrick, Town Manager David Davison, Finance Director Steven Popper, Director of Design and Construction (Employee OPM) Hank Haff, Sr. Project Manager (Employee OPM) Charles Laffey, Director of Facilities

Needham School District Administration

Dr. Daniel Gutekanst, Superintendent of Schools Mary Lammi, Director of Student Support Services Dr. Terry Duggan, Director of Student Learning Matthew Ganas, Director of Special Education Anne Gulati – Director of Financial Operations Michael Kascak, Principal Hillside Elementary School Jessica Downey, Principal High Rock School

School Committee

Susan Neckes, Chair (Project Rep. on PPBC) Heidi Black, Vice Chair (Project Rep. on PPBC) Michael Greis Andrea Longo Carter Kim Marie Nicols Aaron Pressman Connie Barr, Chair

Permanent Public Building Committee

George Kent, Chair Stuart Chandler Natasha Espada Peter Schneider Paul Salamone Roy Schifilliti Irwin Silverstein

Board of Selectmen

Matthew Borrelli, Chair Marianne Cooley, Vice Chair Daniel Matthews, Clerk John Bulian Maurice Handel

Design Team

Design Team:

Architect

Dore & Whittier Architects, Inc 260 Merrimac Street Newburyport, MA

Civil Engineering

Nitsch Engineering 2 Center Place Boston, MA 02116

Structural Engineer

Engineers Design Group, Inc 350 Main Street Floor 2 Malden, MA 02148

Data / Communications

EDvance Technology Design, Inc. 3 Summer Street Chelmsford, MA 01824

Cost Estimating

Project Management & Cost 59 South Street Hingham, MA 02043

Sustainable / Green Design / Renewable Energy

The Green Engineer 54 Junction Square Concord, MA 01742

Landscape Architecture Brown Sardina 24 Roland Street Boston, MA 02129

Mechanical, Electrical, Plumbing & Fire Protection Garcia, Galuska, DeSousa, Inc. 370 Faunce Corner Road Dartmouth, MA 02747

Hazardous Material

Universal Environmental 12 Brewster Road Framingham, MA 01702

Kitchen / Food Service Consultant

Crabtree McGrath Associates, Inc 161 West Main Street Georgetown, MA 01833

Geotechnical/ LSP

HML Associates 19 Rockwood Rd Hingham, MA 02043

MODULE 4 – SCHEMATIC DESIGN HILLSIDE SCHOOL

HILLSIDE ELEMENTARY SCHOOL

TOWN OF NEEDHAM NEEDHAM, MASSACHUSETTS



DESE Report JUNE 2, 2016



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Permanent Public Building Committee Public Facilities Department - Construction Town of Needham

500 Dedham Avenue Needham, MA 02492 781 455-7550 781 453-2510 fax

May 24, 2016

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

Dear Ms. Pichetti:

The District is pursuing execution of a Project Scope and Budget Agreement for the MSBA approved preferred schematic for Hillside Elementary School on Central Ave, Needham a new 90,702 GSF building. The District's 2015-2016 enrollment is 467 students. The design enrollment for the proposed school project is 430 students. The existing Hillside Elementary school currently serves grades kindergarten to fifth (K-5) and is proposed to serve grades kindergarten to fifth (K-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 Hillside Elementary School. The following are attached per the 'Submittal Requirements':

- 1. A letter from Superintendent Dan Gutekanst of Needham School District describing its 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 6,594 square feet of space dedicated to the delivery of special education.
- 3. The floor plans for the proposed 90,702 square foot Hillside Elementary School.
- 4. A completed Special Education Adjacency Table

I have reviewed the attached documents and confirm that the Permanent Public Building Committee which is the District's School Building Committee has officially approved the attached submittal on May 24, 2016and verify that the space summary match the floor plan and is complete and conform to the MSBA requirements as described in Module 4 – Schematic Design Guidelines.

Sincerely,

Steven Hopper

Steven Popper, P.E. Director of Design and Construction



Needham Public Schools Office of the Superintendent

A school and community partnership that creates excited learners, inspires excellence, fosters integrity

May 31, 2016

Ms. Christine Lynch Office of the Director of School Governance Massachusetts Department of Elementary and Secondary Education 75 Pleasant St. Malden, MA 02148

Dear Ms. Lynch:

I write this letter as part of the Town of Needham's application for an elementary school building project through the Massachusetts School Building Authority. The information provided is related to Appendix 4B, specifically, 4B.2 Special Education Delivery Methodology.

Consistent with the District's core values of Scholarship, Personal Growth, Community, and Citizenship, the Needham Public Schools is committed to providing students with disabilities access to the curriculum and general education programs. Combining the skills of a talented and dedicated staff with appropriate and robust curriculum, programs, and resources, we are able to assist all children with disabilities to meet their instructional and learning goals.

In the Needham schools, special education support and services are provided in an inclusionary setting and not viewed as a separate model, but rather as a part of an integrated continuum of supports, services and interventions created to ensure that the general education environment is responsive to the diverse learning needs of all students. Working together, general education staff and special education staff ensure equal opportunity, full participation and increased learning and achievement for all learners, including students with disabilities.

We are proud of the many different programs we have available for all students, especially those students requiring special education services, and I look forward to our new school building project, which will provide additional space and resources to support the needs of Needham's children.

Should you need further information, please do not hesitate to contact me.

Sinderely

Daniel Gutekanst, Ed.D. Superintendent of Schools

SPECIAL EDUCATION DELIVERY METHODOLOGY

Inclusion is a core belief and practice in the Needham Public Schools. This educational model challenges schools to meet the needs of all students by educating learners with disabilities alongside their non-disabled peers. The environment necessary to nurture and foster inclusion is built upon a shared belief system between general and special education, and a willingness to merge the talents and resources of teachers. An inclusive education helps prepare students with disabilities for an integrated adult life and builds understanding and acceptance within the broader community.

Decisions regarding special education programs to be offered in the project and the spaces designed to support them remain unchanged since the PSR. The narratives that follow are largely excerpts from the Preferred Schematic Report submission.

Current Program

Description

In 2015-2016, 13% of the student enrollment at the Hillside School includes students with special needs who receive individual education programs (IEPs). This includes both students from the Hillside School community, as well as students from across the District who are enrolled in the Elementary Learning Center (ELC) Grades 3-5. It is a program specially designed for students with autism or similar learning profiles who require intensive instruction based on the teaching methodology of applied behavior analysis. Curriculum and instruction are tailored to meet the individual needs of each student and is provided through individual and small group instruction. Student progress is closely monitored through data collection and analysis as well as curriculum-based measures. Behavior support plans are also designed and implemented to support students' social/emotional development, including strategies to teach and maintain safe behaviors. The ELC offers both a partial inclusion and sub-separate program model depending upon the individual needs of the students. It is the goal of the ELC to provide opportunities for successful inclusion as much as possible. This is provided through supported inclusion in the general education classrooms and specials, small group instruction with typical peer models in and out of the classroom, and individualized peer support groups within the ELC classroom.

Currently, the Elementary Learning Center is split across two elementary schools with grades K-2 located at Newman Elementary and grades 3-5 located at Hillside Elementary. Transitioning students between these two locations mid-elementary experience has been a challenge for some students, their families, and overall programming.

In addition to the Elementary Learning Center, the current and proposed programs include special education liaisons (3.6) at Hillside who support students with special needs in the general education classroom setting whenever possible, as well as in smaller learning spaces when a quieter and more discrete learning environment is needed. Both the current and proposed programs also include related service providers such as the full-time speech therapist, part-time Occupational Therapist, counselors, and an ELL Instructor.

| District-wide Special Education Programs | | | | | | | |
|--|----------|-----------|--|--|--|--|--|
| | Grade | Number of | | | | | |
| Program and Locations | Levels | Students | | | | | |
| | Served | Served | | | | | |
| Early Learning Center Grades (K-2) Newman ES | K-2 | 10 | | | | | |
| Early Learning Center Grades (3-5) Hillside ES | 3-5 | 8 | | | | | |
| Physical Therapy Hillside ES | K-5 | 3 | | | | | |
| Occupational Therapy Hillside ES | K-5 | 9 | | | | | |
| Physical Therapy All Other Schools | Prek-12 | 20 | | | | | |
| Occupational Therapy All Other Schools | PreK-12 | 125 | | | | | |
| Preschool | PreK | 65 | | | | | |
| Elementary Connections Program (Therapeutic) | 2-5 | 8 | | | | | |
| High Rock Middle School Connections Program | 6 | 6 | | | | | |
| Pollard Middle School Connections Program | 7-8 | 12 | | | | | |
| High School Middle School Connections Program | 9-12 | 25 | | | | | |
| Elementary Language Based Classroom | 4-5 | 10 | | | | | |
| High Rock Middle School Language Based Classroom | 6 | 12 | | | | | |
| Pollard Middle School Language Based Program | 7-8 | 16 | | | | | |
| High School Foundations Program | 9-12 | 9 | | | | | |
| HighRock Middle School Intensive Learning Center | 6 | 8 | | | | | |
| Pollard Middle School Bridges Program | 6-8 | 8 | | | | | |
| High School Skills & Post Grad | 9-12, PG | 6 | | | | | |
| High Rock Insight Program | 6 | 16 | | | | | |
| Pollard Insight Program | 7-8 | 16 | | | | | |
| High School Insight Program | 9-12 | 22 | | | | | |

Deficiencies

At present, achieving the District's elementary educational vision is impaired by the building constraints and infrastructure at the Hillside School. The existing building is undersized for the population served and many programmatic offerings have been determined based on current overcrowding conditions. The facility is lacking appropriate space to provide programs equitable to

MODULE 4 – SCHEMATIC DESIGN HILLSIDE SCHOOL

those offered at other schools in the District. Modular classrooms have been on site for 18 years and have exceeded their useful life. The facility lacks several necessary educational spaces such as learning areas of different size, function, and acoustical properties for small group work, individual study, collaborative space, and assembly space to deliver the programs and services that will be the future of the Hillside School.

Educational, emotional, and physical well-being of children is a central component to Needham schools. Psychologists/ counselors, occupational/ physical therapists and similar support staff all need space within each school. Currently, these professionals might have space in storage closets, hallways, and converted toilet rooms. A lack of appropriate space forces testing to happen sometimes in stairwell landings, hallways, and other found spaces, while the occupational and physical therapy services occur in the hallway of a modular addition.

Proposed Program

Continuation & Elimination of Programs

All currently offered programs will remain at Hillside Elementary School in the proposed project. Additionally, the design of the ELC at Hillside will allow for increased flexibility within programming to respond to individual student needs. The size of the classrooms should allow for partitioned areas to be set up for students who require individual instruction with minimal distractions. The sub-separate classrooms must also mimic the set-up of the general education classrooms in order for students to practice classroom readiness and participatory skills needed to be successful during inclusion opportunities. Creating flexibility within the Elementary Learning Center will maximize the school/ District's ability to tailor programming to meet the needs of both current and incoming students.

Both the current and proposed programs also include related service providers such as the fulltime speech therapist, part-time Occupational Therapist, counselors, and an ELL Instructor. As mentioned, the existing facility underserves children receiving services within these programs due to insufficient or inappropriate space. The proposed project provides therapy rooms, dedicated office and meeting space for these professionals and the students they serve.

These smaller learning spaces allow for individualized or small group instruction that supports students' access to the curriculum and enhances their learning experience. The Schematic Design plans for the new school are designed to enable these special education learning spaces to be intermixed among general education classrooms. The location of the learning spaces and classrooms allows staff to communicate and collaborate fluidly throughout the day on student

needs and programming. Additionally, a part-time physical therapist and adaptive physical education teacher work with students to address gross motor and functional life skills.

The physical environment impacts learning. This is especially true for our students with disabilities at Hillside. It is important that every student has an authentic sense of belonging and feels safe in their school. Providing the opportunity for the District Elementary Learning Center to be housed at one school, creating specialized learning classrooms that allow for structure and flexibility of programming, and spreading learning spaces throughout the school are all important examples of how the physical environment of Hillside will promote inclusion and the opportunity for all students to learn and grow alongside one another.

Moved Programs

In the new facility, however, the District plans to expand the Early Learning Center at Hillside to include grades K-2 in order to reduce transitions for students and to provide the consistency and stability of specialized programming that is needed for this population of students. This K-2 program is currently housed at the Newman Elementary School. With the expansion of the ELC at Hillside to Grades K-5, the enrollment would reach 23 students.

Service Needs Addressed

The proposed project addresses needs related to space and spatial relationships. Special education spaces for each of the programs described have been sized based on individual program needs, in compliance with MSBA space guidelines, and to be equitable with general education spaces. Special education spaces have also been located within grade level teams to address ease of service delivery and to support the District's policies.

Latest Coordinated Review Findings

The last Coordinated Program Review was 2010-2011. The areas that required a Corrective Action Plan were:

- SE #3 Special requirements for determination of specific learning disability CPR rating of Partially Implemented
- SE #8 IEP Team composition and attendance CPR rating of Partially Implemented
- SE #18B Determination of placement; provisions of IEP to parent CPR rating of Partially Implemented
- SE #22 IEP Implementation and availability CPR rating of Partially Implemented
- SE #29 Communications are in English and primary language of home CPR rating of Partially Implemented

• SE #55 - Special education facilities and classrooms – CPR rating Partially Implemented

Coordinated Review Status/Remedy

Each of the above criteria required a corrective action plan. All were submitted and approved by DESE and implemented. The date of completion for each was May of 2012.

Local Review Process

Dore & Whittier's Educational Planner conducted site visits and held several programming interviews with the Superintendent, Director of Special Education, and building Principal to document the number, type, and location of each special education space. The first set of programming interviews focused on understanding the nature of each special education program including staffing and spatial requirements. Later programming sessions focused on spatial relationships to other special education spaces and general education spaces within the building plan. The most recent programming sessions focused on developing an understanding of the internal layout of each special education space with an emphasis on documenting the required fixtures, furnishings, and equipment. During the Schematic Design process, Dore & Whittier developed two and three-dimensional illustrations of each special education space for final review by the Superintendent, the Director of Special Education, the Hillside Special Education staff, and the building Principal.

Spatial Relationships

Needham Public Schools administrators, Hillside Elementary School School administrators, the School Committee, and the Permanent Public Building Committee agreed to organize the building into six grade-level teams. Each team was to contain four grade-level classrooms. Each pair of teams was to contain a special education presence, two shared small group rooms, two shared and conjoined extended learning spaces, and one special (Art, STEAM, or Spanish). Dore & Whittier arranged spaces in such a manner to embed special education spaces within the teams and not clustered together in an isolated area of the building. Several presentations were made to special education administrative staff, the School Committee, and the Permanent Public Building Committee to ensure that spatial relationships of all special education spaces aligned with the District's goals and intent. The illustrations that follow depict the spatial location of each of the special education spaces within the building. Larger versions of these illustrations are provided later in this section.

Grade Configuration

Needham Public Schools currently operates five elementary schools, a 6th grade center, a 7th-8th middle school, and a high school on a K-5, 6, 7-8, 9-12 grade configuration. The District also operates a Pre-Kindergarten program housed at Newman Elementary School.

Specialized Programs

Lunch Buddies

In addition to school-wide cafeteria dining, students participate in lunch groups of 6-10 students with an adult faculty member where they are able to practice social skills in a safe environment. All students, K-5, participate in these small lunch groups through a rotating schedule throughout the school year (total students: 467). Multiple groups per grade level meet one to two times each week. Trained guidance counselors and support staff provide facilitated opportunities for students to work on social emotional competencies identified through the District's social emotional learning (SEL) curriculum. Currently, the lunch groups are held in three to four locations depending on the day and typically in a guidance counselor's office. The proposed project subdivides the cafeteria into break out areas that are acoustically separate but visually connected to the more traditional dining experience so that they can accommodate these small lunch groups without being completely removed from the overall dining experience. These spaces may also provide a more inclusive dining experience for students who benefit from or require this type of environmental accommodation. Additionally, these cafeteria spaces would free up the guidance office, which could then be used for students with disabilities who require social skills instruction through their Individual Education Programs (IEPs), in a more clinical and discrete environment. Currently, 22 students participate in lunch groups designed to target IEP goals.

<u>STEAM</u>

The STEAM program represents a unique contribution to the curriculum in the elementary schools in Needham. The program, as it is currently configured, is an approach to learning that integrates the design process with the knowledge from the various disciplines for students in grades one, two, and three. It is scheduled and delivered in a manner similar to the other specials: Art, Music, Library, Physical Education, and Spanish. First, second, and third graders receive 40 minutes of STEAM instruction once per week. It is taught through project-based experiences that also emphasize the 21st century skills of creativity, collaboration, cooperation and communication.

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<u>Spanish</u>

A community override in 2013-2014 enabled the District to restore and expand an elementary Spanish program that was lost nearly a decade ago because of a budget shortfall. A World Language Program review conducted by the District in 2011-2012 recommended that the elementary foreign language program be restored. When the override presented an opportunity of restoring the program, Spanish was the logical choice since that program previously existed. Now students in grades 1-5 are learning how to speak and understand Spanish. In 2015-2016 they are building on what they learned last year in their first exposure to the language. Experiences in Spanish focus on listening and repeating new vocabulary used to talk about every day topics such as: greetings and introductions; colors, numbers zero to 100, calendar and weather, school, family, home, food, animals, clothing, body parts, and cultural connections. Students are also learning to: ask and respond to simple questions, show comprehension by following basic classroom instructions, use simple expressions and hold simple conversations. Teachers are incorporating an

awareness, curiosity and appreciation for different cultures in the places where Spanish is spoken.

ELA and Math Literacy

ELA and math Literacy instruction is provided in small-group settings to those students identified either through formal testing, informal assessment, or referral from a teacher. ELA Literacy instruction includes reinforcing skills and strategies associated with all forms of literacy: reading, writing, speaking, thinking, and listening. High-interest authentic literature is used to improve fluency and comprehension. Writing is incorporated into each class, so that each student becomes comfortable with writing and with communicating through writing. Students receive mathematics instruction based on their unique learning needs.

Collaboratives

The District is a member of the TEC Collaborative and ACCEPT Collaborative. Currently, 8 students attend TEC Collaborative Programs and 7 students attend ACCEPT Collaborative Programs. The District does not currently house collaborative programs due to space limitations in schools across the district. Additionally, most programs offered by TEC Collaborative and ACCEPT Collaborative are comparable to District programs already in existence. Collaborative programs were not discussed as options for the project because of the focus on the Elementary Learning Center and the District's ability to expand and house this program at Hillside. Any additional specialized programs at Hillside would impact instructional capacity for one school.

Alternative Education Program

The District neither provides nor participates in any alternative education programs.

Pre-Kindergarten and Early Childhood Programs

We have 5 fully integrated preschool classrooms located at the Newman Elementary School. The ratio of students without IEP services to those with IEP services is held at a 60/40 ratio. We have done a full program review in 2011 of all our special education programs. These services are not in the proposed project.

Other Public and Private Relationships

The District has no other public or private relationships that impact the District's Special Education programs.

EDUCATIONAL SPACE SUMMARY

Overview

The following pages contain the MSBA educational space summary. The summary reflects the current net and gross square footages as designed and delineates all spaces associated with Hillside Elementary School for both the existing and the proposed building.

Dore & Whittier's Schematic Design drawings and the space summary demonstrate the successful expression of MSBA's PSR comments. In general, all current program area categories are within 1% of the areas identified in the PSR. Deviations are due to minor adjustments resulting from design efforts, e.g. the accurate reflection of needed mechanical chases, structural framing, wall thicknesses, and plumbing chases. Deviations for each program area are described in detail following the space summaries.

Similarly, spatial relationships for major program elements remain unchanged from the PSR. Detailed descriptions of changes to functional relationships follow later in this section.

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Proposed Space Summary- Elementary Schools

| REVISED | 05.20.16 |
|---------|----------|
|---------|----------|

| REVISED 05.20.16 | | | | | | PROF | POSED | | | | | | | | | |
|---|--------------------------|-------------|-------------|--------------------------|-----------|-------------|--------------------------|--------------|----------------|-------------------|--------------------------------|------------------------------|--------------------------|------------|----------------|---|
| HILLSIDE ES | Exi | isting Cond | litions | | PSR Submi | ssion | Schema | tic Design | Submission | | | | (refer t | to MSBA Ed | | Guidelines gram & Space Standard Guidelines) |
| ROOM TYPE | ROOM NFA ¹ | # OF RMS | area totals | ROOM NFA ¹ | # OF RMS | area totals | ROOM NFA ¹ | # OF RMS | area totals | PSR Submission | Deviation From PSR (NFA) | Deviation From PSR (%) | ROOM NFA ¹ | # OF RMS | area totals | Comments |
| RE ACADEMIC SPACES | | | 15,916 | | | 30,750 | | | 30,750 | 30,750 | 0 | 0.00% | | 19 | 18,800 | |
| List classrooms of different sizes separately) Pre-Kindergarten w/ toilet | | | | | | | | | | | | | 1,200 | | - | 1,100 SF min - 1,300 SF max |
| Kindergarten w/ toilet | 4.040 | | 0.400 | 1,250 | 4 | 5,000 | | | | | | | 1,200 | 3 | 3,600 | 1,100 SF min - 1,300 SF max |
| Classroom 1, 2 Toilet - XX, XX, XX, XX | 1,210 24 | 2 4 | 2,420 96 | | _ | | | | | | | | | | | |
| RM - 124 & RM 124A RM - 125 & RM 125A | | | | | _ | | 1,262 1,262 | 1 | 1,262 1,262 | 1,250 1,250 | 12 12 | 0.96% 0.96% | | | | |
| RM - 126 & RM 126A RM - 127 & RM 127A | | | | | | | 1,257 1,262 | 1 | 1,257 1,262 | 1,250 1,250 | 7 12 | 0.56% 0.96% | | | | |
| General Classrooms - Grade 1-5 XX, XX, XX, XX, XX, XX, XX, | 850 | 6 | 5,100 | 950 | 20 | 19,000 | | | | | | | 950 | 16 | 15,200 | 900 SF min - 1,000 SF max |
| XX, | 830 | 10 | 8,300 | | | | 948 | 1 | 948 | 950 | -2 | -0.21% | | | | |
| RM - 102 RM - 103 RM - 104 | | | | | _ | | 948 948 | 1 | 948 948 | 950 950 | -2 | -0.21% -0.21% | | - | | |
| RM - 105 | | | | | | | 948 | 1 | 948 948 | 950 | -2 | -0.21% | | _ | | |
| RM - 202 RM - 203 | | | | | | | 948 948 | 1 | 948 | 950 950 | -2 -2 | -0.21% -0.21% | | _ | | |
| RM - 204 RM - 205 | | | | | | | 948 943 | 1 | 948 943 | 950 950 | -2 -7 | -0.21% -0.74% | | | | |
| RM - 224 RM - 225 | | | | | | | 948 956 | 1 | 948 956 | 950 950 | -2 6 | -0.21% 0.63% | | - | | |
| RM - 226 RM - 227 | | | | | | | 947 953 | 1 | 947 953 | 950 950 | -3 3 | -0.32% 0.32% | | - | _ | |
| RM - 302 | | | | | _ | | 948 948 | 1 | 948 948 | 950 950 | -2 -2 | -0.21% | | - | | |
| RM - 303 RM - 304 | | | | | _ | | 948 | 1 | 948 | 950 | -2 | -0.21% | | | | |
| RM - 305 RM - 324 | | | | | | | 948 949 | 1 | 948 949 | 950 950 | -2 -1 | -0.21% -0.11% | | | | |
| RM - 325 RM - 326 | | | | | | | 954 947 | 1 | 954 947 | 950 950 | 4 -3 | 0.42% -0.32% | | _ | | |
| RM - 327 | | | | | _ | | 953 | 1 | 953 | 950 | 3 | 0.32% | - | - | | |
| Spanish Classroom | | | | 900 | 1 | 900 | | | 007 | 000 | | 0.0001 | | | | |
| RM - 311 Extended Learning Area | | | | 600 | 6 | 3,600 | 897 | 1 | 897 | 900 | -3 | -0.33% | | | | |
| RM - 113 RM - 114 | | | | | | | 600 599 | 1 | 600 599 | 600 600 | 0 -1 | 0.00% -0.17% | | | | |
| RM - 213 RM - 214 | | | | | | | 598 598 | 1 | 598 598 | 600 600 | -2 -2 | -0.33% -0.33% | | | | |
| RM - 313 RM - 314 | | | | | - | | 600 598 | 1 | 600 598 | 600 600 | 0 | 0.00% | | _ | | |
| | | | | | | | 390 | | 550 | 000 | -2 | -0.00% | | | | |
| Small Group Rooms RM - 109 | | | | 125 | 6 | 750 | 126 | 1 | 126 | 125 | 1 | 0.80% | | | | |
| RM - 117 RM - 209 | | | | | | | 125 126 | 1 | 125 126 | 125 125 | 0 1 | 0.00% 0.80% | | | | |
| RM - 217 RM - 309 | | | | | | | 125 126 | 1 | 125 126 | 125 125 | 0 | 0.00% | | | | |
| RM - 317 | aller av Britty | | | | | | 125 | 1 | 125 | 125 | 0 | 0.00% | | | | |
| Book Room (NOT IN NET) | | | The second | 200 | 1 | | | | | | | | | | | |
| RM - 208 Project Materials Storage (NOT IN NET) | | | | 200 | 3 | | 244 | 1 | | 200 | 44 | 22.00% | | | | |
| RM - 211A STEAM Classroom | | | | 1,000 | 1 | 1,000 | 150 | 1 | | 200 | -50 | -25.00% | | - | | |
| RM - 211 | | | | | 2 | 500 | 998 | 1 | 998 | 1,000 | -2 | -0.20% | | _ | | |
| Teacher Collaborative RM - 108 | | | | 250 | 2 | 500 | 244 | 1 | 244 | 250 | -6 | -2.40% | | | | |
| RM - 308 | | | | | | | 244 | 1 | 244 | 250 | -6 | -2.40% | | | | |
| ECIAL EDUCATION (List rooms of different sizes separately) | 0. 2. 2 | 1 | 2,474 | | | 6,580 | 1 | | 6,594 | 6,580 | 14 | 0.21% | 1.14.15.54 | | 4,530 | |
| Self-Contained SPED (ELC) | 830 | 1 | 830 | 600 | 2 | 1,200 | | - | | | | | 950 | 3 | 2,850 | 8% of pop. In self-contained SPED |
| RM - 215 Rm - 315 | | | | | | | 595 595 | 1 | 595 595 | 600 600 | -5 -5 | -0.83% -0.83% | | | | |
| Self-contained SPED (ELC) RM - 115 | | | | 950 | 1 | 950 | 948 | 1 | 948 | 950 | -2 | -0.21% | | | | |
| Self-Contained SPED - toilet (ELC) RM - 215A | | | 1210151 | 50 | 2 | 100 | 60 | 1 | 60 | 50 | - 10 | 20.00% | 60 | 3 | 180 | Water Closet & Lav Only |
| RM - 315A | | | | 120 | 1 | 130 | 60 | 1 | 60 | 50 | 10 | 20.00% | | | | |
| Self-Contained SPED - toilet RM - 115A | | | | 130 | | Pa | 120 | 1 | 120 | 130 | -10 | -7.69% | | | | Water Closet, Lav, Shower & Changing Table |
| Resource Room (ELL) Rm - 331 | | | | 500 | 1 | 500 | 504 | 1 | 504 | 500 | 4 | 0.80% | 500 | 2 | | 1/2 size Geni. Cirm. |
| Small Group Room / Reading XX | 192 | 1 | 192 | 0 | 0 | - | | | | · · | | | 500 | 1 | 500 | 1/2 size Genl. Cirm. |
| XX OT/PT | 54 189 | 1 | 54 189 | 600 | 1 | 600 | | | | | | | | - 4 T | | |
| RM - 129 OT/PT Storage | | | | 150 | 1 | 150 | 600 | 1 | 600 | 600 | 0 | 0.00% | | | | |
| RM - 129A | | | | | | | 149 | 1 | 149 | 150 | -1 | -0.67% | | | | |
| Adaptive PE RM - 134 | | | | 600 | 1 | 600 | 613 | 1 | 613 | 600 | 13 | 2.17% | | | | |
| Speech & Language Office RM - 219 | | | | 175 | 1 | 175 | 178 | 1 | 178 | 175 | 3 | 1.71% | | | | - |
| SPED Liaison Office Liaison | 489 | 1 | 489 | 175 | 3 | 525 | | - | | | | | | - | | |
| Liaison | 524 | 1 | 524 | | | | 174 | 1 | 174 | 175 | -1 | 0 57% | | | | |
| RM - 101 RM - 201 | | | | - | - | A COLOR | 174 | 1 | 174 174 | 175 175 | -1 | -0.57% -0.57% | | | | |
| RM - 301 SPED Conference Room | | | | 300 | 1 | 300 | 174 | 1 | 174 | 175 | -1 | -0.57% | | | | |
| RM - 250 De-escalation (ELC) | | | | 150 | 4 | 600 | 306 | 1 | 306 | 300 | 6 | 2.00% | | | | |
| RM - 116 RM - 216 | | | | | | | 154 150 | 1 | 154 150 | 150 150 | 4 0 | 2.67% 0.00% | | | | |
| RM - 255 RM - 316 | | | | | | | 146 | 1 | 146 150 | 150 | -4 0 | -2.67% | | | | |
| iteracy Coaches RM - 118 | 98 | 1 | 98 | 250 | 2 | 500 | 248 | and the fear | 248 | 250 | | -0.80% | | - | | |
| RM - 318 | | | | | | | 248 | 1 | 248 248 | 250 250 | -2 -2 | -0.80% -0.80% | | - | | |
| Nath Coach RM - 218 | 98 | 1 | 98 | 250 | 1 | 250 | 248 | 1 | 248 | 250 | -2 | -0.80% | | | | |
| T & MUSIC | 10000000 | | 813 | - | | 2,575 | | | 2,546 | 2,575 | -29 | -1.14% | | | 2,575 | |
| Art Classroom - 25 seats - 22 RM - 111 | 813 | 1 | 813 | 1,000 | 1 | 1,000 | 993 | 1 | 993 | 1,000 | -29 | -0.70% | 1,000 | 1 | | assumed schedule 2 times / week / student |
| Art Workroom w/ Storage & kiln | | | | 150 | 1 | 150 | | | | | | | 150 | 1 | 150 | |
| RM - 111A Music Classroom / Large Group - 25-50 seats | | | | 1,200 | 1 | 1,200 | | 1 | 155 | 150 | 5 | 3.33% | 1,200 | 1 | 1,200 | assumed schedule 2 times / week / student |
| RM - 233 Music Practice / Ensemble | | | | 0 | 0 | - | 1,177 | 1 | 1,177 | 1,200 | -23 | -1.92% | 75 | 3 | 225 | |
| RM - 234 Music Storage | | | | 225 | 1 | 225 | 96 | 1 | 96 | 0 | 96 | | | | | |
| RM - 233A | | | | | | | 125 | 1 | 125 | 225 | -100 | -44.44% | | | | |
| ALTH & PHYSICAL EDUCATION | 0.705 | | 2,823 | 0.000 | | 6,300 | 1.000 | | 6,300 | 6,300 | 0 | 0.00% | 0.000 | | 6,300 | |
| Symnasium RM - 141 | 2,705 | 1 | 2,705 | 6,000 | 1 | 6,000 | 6,000 | 1 | 6,000 | 6,000 | 0 | 0.00% | 6,000 | 1 | | 6000 SF Min. Size |
| Gym Storeroom RM - 142 | 118 | 1 | 118 | 150 | 1 | 150 | 150 | 1 | 150 | 150 | 0 | 0.00% | 150 | 1 | 150 | |
| Health Instructor's Office w/ Shower & Toilet Shower & Toilet (NOT IN NET) | | | | 0 75 | 0 | • | | | | - | | | 150 | 1 | 150 | |
| RM - 135 Health Instructor's Office | | | | 150 | 1 | 150 | 82 | 1 | | 75 | 7 | 9.33% | | | | |
| RM - 136 | | | | 150 | - | 150 | 150 | 1 | 150 | 150 | 0 | 0.00% | | | | |
| DIA CENTER | | | 2,374 | | | 2,605 | | | 2,605 | 2,605 | 0 | 0.00% | 1. A 1. A | | 2,605 | |
| Media Center / Reading Room RM - 229 + RM 329 | 2,182 | 1 | 2,182 | 2,355 | 1 | 2,355 | 2,354 | 1 | 2,354 | 2,355 | -1 | -0.04% | 2,605 | 1 | 2,605 | Will be subdivided in future interations |
| Media Specialist Office RM - 232 | 192 | 1 | 192 | 125 | 1 | 125 | | 1 | 131 | 125 | 6 | 4.80% | | | | |
| Instructional Tech Specialist Office | | | | 125 | 1 | 125 | | | | | | | | | | |
| RM - 231 | | | | | El Garage | | 120 | 1 | 120 | 125 | -5 | -4.00% | | | | |
| VING & FOOD SERVICE Cafeteria / Dining | | | 3,671 | 0 | 0 | 6,798 | | | 6,790 | 6,798 | -8 | -0.12% | 3,225 | 1 | 6,506 3,225 | 2 seatings - 15SF per seat |
| Larger Zone (Performance) RM - 260 | 2,190 | 1 | 2,190 | 2,225 | | 2,225 | 2,225 | 1 | 2,225 | 2,225 | 0 | 0.00% | | | | |
| | | | | 500 | 2 | 1,000 | | - | | - | | 5.0073 | | | | |

4.1.1-11

Version 11.24.2010

Elementary School Space Summary

Proposed Space Summary- Elementary Schools

| | - | | 1141 | | jan - | | | | | | | | | MSBA Guid | | | idelines |
|--|--------------------------|-------------|--------------|---------|--------------------------|-----------|--------------|--------------------------|------------|-------------|--|--------------------------------|------------------------------|--------------------------|----------|---------------------|--|
| HILLSIDE ES | Ex | isting Cond | ditions | | P | SR Submis | ssion | Schema | tic Design | Submission | mission (refer to MSBA Educational Program & Space | | | | | | |
| ROOM TYPE | ROOM NFA ¹ | # OF RMS | area totals | | ROOM NFA ¹ | # OF RMS | area totals | ROOM NFA ¹ | # OF RMS | area totals | PSR Submission | Deviation From PSR (NFA) | Deviation From PSR (%) | ROOM NFA ¹ | # OF RMS | area totals | Comments |
| RM - 262 RM - 263 | | | | | | | | 322 665 | 1 | 322 665 | 500 500 | -178 165 | -35.60% 33.00% | | | | |
| Stage | 514 | 1 | 514 | | 1,000 | 1 | 1,000 | | | | | | | 1,000 | 1 | 1,000 | |
| RM - 261 Chair / Table / Equipment Storage | | | | | 343 | 1 | 343 | 1,002 | 1 | 1,002 | 1,000 | 2 | 0.20% | 343 | 1 | 343 | |
| RM - 264 Kitchen | 682 | 1 | 682 | | 1,430 | 1 | 1,430 | 343 | 1 | 343 | 343 | 0 | 0.00% | 1,730 | | | 1600 SF for first 300 + 1 SF/student Add'l |
| RM - 265 | | | | | 1,430 | 1 | 1,430 | 1,438 | 1 | 1,438 | 1,430 | 8 | 0.56% | 1,730 | 1 | 1,730 | 1600 SF for first 300 + 1 SF/student Add1 |
| Scullery Food Storage | 122 | 1 | 122 163 | 1-5 J | 200 | 1 | 200 | | | | | | | | | | |
| RM - 266 Kitchen Office | | | | | 100 | 1 | 100 | 182 | 1 | 182 | 200 | -18 | -9.00% | | | | |
| RM - 267 | | | | | | | 100 | 99 | 1 | 99 | 100 | -1 | -1.00% | | | | |
| Male Toilet Room (NOT IN NET) RM - 268 | | | | - 11 | 50 | 1 | | 51 | 1 | | 50 | 1 | 2.00% | | | | |
| Female Toilet Room (NOT IN NET) RM - 269 | | | | | 50 | 1 | | 51 | 1 | | 50 | 1 | 2.00% | | | | |
| Staff Lunch Room | | | | | 500 | 1 | 500 | | | | | | | 208 | 1 | 208 | 20 SF/Occupant |
| RM - 253 | | | | | | | | 514 | 1 | 514 | 500 | 14 | 2.80% | | | | |
| EDICAL | | | 189 | | | | 510 | | | 510 | 510 | 0 | 0.00% | | | 510 | |
| Medical Suite Toilet RM - 236A | | | | | 60 | 1 | 60 | 60 | 1 | 60 | 60 | 0 | 0.00% | 60 | 1 | 60 | |
| Nurses' Office / Waiting Room RM - 236 | 189 | 1 | 189 | | 250 | 1 | 250 | 250 | 1 | 250 | 250 | 0 | 0.00% | 250 | 1 | 250 | |
| Examination Room / Resting | _ | | - | | 100 | 2 | 200 | - | | | | | | 100 | 2 | 200 | |
| RM - 237 RM - 238 | | | | | | | | 100 100 | 1 | 100 100 | 100 100 | 0 | 0.00% 0.00% | | | | |
| | | | | | | | | | | | | | | | | | |
| MINISTRATION & GUIDANCE | | | 1,793 | | | | 2,320 | | 1.1.1.1 | 2,320 | 2,320 | 0 | 0.00% | | | 2,145 | 2.320 |
| General Office / Waiting Room / Toilet RM - 240 | - | | | | 320 | 1 | 320 | 318 | 1 | 318 | 320 | -2 | -0.63% | 365 | 1 | 365 | |
| General Office / Waiting Room XX | 286 | 1 | 286 | | 0 | 1 | - | - | | | | | | | | | |
| Overflow | 236 | 1 | 236 | - 1 - 1 | | | | | | | | | | | | | |
| Admin Toilet Teachers' Mail and Time Room | | | | | 50 50 | 0 | - 50 | | | | | | | 100 | 1 | 100 | |
| RM - 242 | | | | | | | | 50 | 1 | 50 | 50 | 0 | 0.00% | | | | |
| Duplicating Room RM - 252 | | | | | 150 | 1 | 150 | 148 | 1 | 148 | 150 | -2 | -1.33% | 150 | 1 | 150 | |
| Records Room (MCAS Storage) RM - 249 | 156 | 1 | 156 | | 110 | 1 | 110 | 110 | 1 | 110 | 110 | 0 | 0.00% | 110 | 1 | 110 | |
| Principal's Office w/ Conference Area | 373 | 1 | 373 | | 250 | 1 | 250 | | | | | | | 375 | 1 | 375 | |
| RM - 243 Principal's Secretary / Waiting | | | | | 125 | 1 | 125 | 251 | 1 | 251 | 250 | 1 | 0.40% | 125 | 1 | 125 | |
| RM - 241 Lead Secretary | | | | | | | | 125 | 1 | 125 | 125 | 0 | 0.00% | | | | |
| Office Aide(s) - 2 | _ | | | | | | | | | | - | | | | | | |
| Secretary Assistant Principal's Office | | | | | 150 | 1 | 150 | | | | - | | | 120 | 0 | - | |
| RM - 119 Supervisory / Spare Office | | | | | 0 | 0 | 0 | 150 | 1 | 150 | 150 | 0 | 0.00% | 120 | 1 | 120 | |
| METCO Liaison Office | | | | | 175 | 1 | 175 | | | | | | | 120 | | 120 | - |
| RM - 319 Bookkeeper Office | | | | C | 125 | 1 | 125 | 175 | 1 | 175 | 175 | 0 | 0.00% | | | | |
| RM - 248 Conference Room | | | | | 250 | 1 | 250 | 125 | 1 | 125 | 125 | 0 | 0.00% | 250 | 1 | 250 | |
| RM - 247 | | | | | | | | 249 | 1 | 249 | 250 | -1 | -0.40% | | | | |
| Guidance Office RM - 244 | 256 | 1 | 256 | | 150 | 2 | 300 | 152 | 1 | 152 | 150 | 2 | 1.33% | 150 | 1 | 150 | |
| RM - 255 Guidance Storeroom | | | | | 0 | 0 | 0 | 152 | 1 | 152 | 150 | 2 | 1.33% | 35 | 1 | 35 | |
| Teachers' Work Room | 486 | 1 | 486 | | 315 | 1 | 315 | | | | | | | 365 | 1 | 365 | |
| RM - 251 School Psychologist Office | | | | | 150 | 0 | | 315 | 1 | 315 | 315 | 0 | 0.00% | | | | |
| JSTODIAL & MAINTENANCE | _ | | 4.005 | | | | 0.000 | | | 0.000 | 0.000 | | 0.05% | | | 0.000 | |
| Custodian's Office | 220 | 1 | 1,065 220 | | 150 | 1 | 2,030 150 | | | 2,029 | 2,030 | -1 | -0.05% | 150 | 1 | 2,030 150 | |
| RM - 271 Custodian's Workshop | | | | | 375 | 1 | 375 | 150 | 1 | 150 | 150 | 0 | 0.00% | 375 | 1 | 375 | |
| RM - 275 | | | | | | | | 375 | 1 | 375 | 375 | 0 | 0.00% | | | | |
| Custodian's Storage XX | 71 | 1 | 71 | | 375 | 1 | 375 | | | | - | | | 375 | 1 | 375 | |
| XX XX | 56 81 | 1 | 56 81 | | | | | | | | - | | | | | | - |
| RM - 275A | | | | | | | | 376 | 1 | 376 | 375 | 1 | 0.27% | | | | |
| Recycling Room / Trash RM - 277 | | | | | 400 | 1 | 400 | 401 | 1 | 401 | 400 | 1 | 0.25% | 400 | 1 | 400 | |
| Receiving and General Supply RM - 272 | | | | 1 | 243 | 1 | 243 | 243 | 1 | 243 | 243 | 0 | 0.00% | 243 | 1 | 243 | |
| Storeroom | _ | | | , | 287 | 1 | 287 | 240 | <u>'</u> | 240 | 273 | Ū | 0.0076 | 287 | 1 | 287 | |
| XX XX | 525 59 | 1 | 525 59 | | | | | | | | | | | | | | |
| XX RM - 276 | 53 | 1 | 53 | | | | | 287 | 1 | 287 | | 0 | 0.00% | | | | |
| Network / Telecom Room | | | | | 200 | 1 | 200 | | | | | | | 200 | 1 | 200 | |
| RM - 212 | | | | | | | | 197 | 1 | 197 | 200 | -3 | -1.50% | | | | |
| HER Other (crossifie) | | | 0 | | | | 0 | | | 0 | 0 | | | | | 0 | |
| Other (specify) | | | | | | | | | | | | | | | | | |
| Total Building Net Floor Area (NFA) | | | 31,118 | | | | 60,468 | | | 60,444 | | | | | | 46,001 | |
| | | | 31,110 | | | | 00,400 | | | 00,444 | 24 | | | | | | |
| Proposed Student Capacity / Enrollment | | | | | | | | | | | | | | | | 430 | 2 |
| Total Building Gross Floor Area (GFA) ² | | | 45,005 | | | | 90,702 | | | 90,702 | 0 | | | | | 70,878 | |
| Grossing factor (GFA/NFA) | | | 1.45 | | | | 1.50 | | | 1.50 | - | | | | | 1.54 | |
| Grossing lactor (GRAINFA) | | | 1.45 | | | | 1.50 | | | 1.50 | - | | | | | 1.54 | |

| 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 |
| 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: Dore & Whittier Arghitects, Inc |
| | Name of Principal Architect: Donald TM-Walter |
| | Signature of Principal Architect: |
| | Date: 5/20/2016 |
| | |
| | |
| | |

Space Summary Deviations

The table below communicates the evolution of the Hillside Elementary School space summary since its inception for the Preliminary Design Program. It contains the total NSF for each of the building's program areas. As previously mentioned, these totals deviate from those submitted for the PSR by approximately 1% on average due entirely to design efforts. Dore & Whittier has evolved its design processes to improve the level of accuracy of its schematic design drawings so that the owner and the MSBA can have a high level of confidence that designed spaces align with programmed spaces by including all mechanical, plumbing, and electrical chases; column enclosures; rain leader locations; and displacement ventilation chases.

| | PDP | Preferred Schematic Report | Schematic Design Report |
|-----------------------------|-----------|----------------------------------|-------------------------------|
| Program Area | TOTAL NSF | TOTAL NSF | TOTAL NSF |
| Core Academic | 30,650 | 30,750 | 30,750 |
| Special Education | 7,355 | 6,580 | 6,594 |
| Art & Music | 2,575 | 2,575 | 2,546 |
| Health & Physical Education | 6,500 | 6,450 | 6,300 |
| Media Center | 2,605 | 2,605 | 2,605 |
| Dining & Food Service | 7,331 | 6,798 | 6,790 |
| Medical | 510 | 510 | 510 |
| Administration & Guidance | 3,115 | 2,320 | 2,320 |
| Custodial & Maintenance | 2,030 | 2,030 | 2,029 |
| Other | 0 | 0 | 0 |
| TOTAL NSF | 62,671 | 60,468 | 60,444 |
| TOTAL GSF | 94,007 | 90,702 | 90,702 |

Core Academic Program Area

In total, the program area experienced a net zero change from the PSR to the Schematic Design. Only two individual spaces deviate from the PSR programming targets by more than the 1% tolerance mentioned above. Both Teacher Collaborative space deviate from the programmed targets by -6 NSF each (250 NSF, PSR vs 244 NSF, SD) due to the need for displacement ventilation cabinets, a deviation of -2.4 %.

Special Education Program Area

In total, the program area experienced an increase of 14 NSF, from 6,580 NSF in the PSR to 6,594 NSF in the Schematic Design, a deviation of .21%. The most significant deviations, in terms of a percentage of the individual space, occurred in small support spaces. In general, space where instruction and/or services are being delivered to students deviated less that 1% from the PSR submission. Specific SPED deviations by space are:

| | | PDP | Preferred Schematic Report | Schematic Design Report |
|--------------------------|---------------------------|-----------|----------------------------------|-------------------------------|
| Space Name | Floor Plan Designation | TOTAL NSF | TOTAL NSF | TOTAL NSF |
| Adpative PE | А | 1000 | 600 | 613 |
| OT/PT | В | 950 | 600 | 600 |
| OT/PT Storage | С | 150 | 150 | 149 |
| Literacy Coach | D | 250 | 250 | 248 |
| De-Escalation | E | 150 | 150 | 154 |
| Toilet | F | 130 | 130 | 120 |
| Self-Contained ELC | G | 950 | 950 | 948 |
| Liaison Office | Н | 175 | 175 | 174 |
| De-Escalation | I | 150 | 150 | 146 |
| Sped Conference | J | 300 | 300 | 306 |
| Speech & Language Office | К | 175 | 175 | 178 |
| Math Coach | L | 250 | 250 | 248 |
| Toilet | М | 50 | 50 | 60 |

MODULE 4 – SCHEMATIC DESIGN HILLSIDE SCHOOL

| De-Escalation | Ν | 150 | 150 | 150 |
|---------------------|---|-------|-------|-------|
| Self-contained ELC | 0 | 600 | 600 | 595 |
| Liaison Office | Р | 175 | 175 | 174 |
| Resource Room (ELL) | Q | 500 | 500 | 504 |
| Literacy Coach | R | 250 | 250 | 248 |
| Toilet | S | 50 | 50 | 60 |
| De-Escalation | Т | 150 | 150 | 150 |
| Self-Contained ELC | U | 600 | 600 | 595 |
| Liaison Office | V | 175 | 175 | 174 |
| TOTAL NSF | | 7,355 | 6,580 | 6,594 |

Art & Music Program Area

In total, the program area experienced a reduction of 29 NSF, from 2,575 NSF in the PSR to 2,546 NSF in the Schematic Design, approximately -1%. The bulk of this reduction is the result of an owner desire to house some of the music storage casework outside the Music suite in the corridor so that students have easy access to their instruments before and after school. One other deviation from the PSR exists. Upon further reflection, the owner indicated a desire for an enclosed practice room as part of the Music Room Suite. Square footage was reallocated from the Music Storage space to accommodate this request without exceeding the total NSF for Music.

Health & Physical Education Program Area

In total, the program area experienced a net zero change from the PSR to the Schematic Design. Each individual space in this program area has been designed to exactly match the PSR program targets.

Media Center Program Area

In total, the program area experienced a net zero change from the PSR to the Schematic Design. Individual spaces vary from the PSR targets by 6 NSF or less. In response to individual office needs, the Information Technology Office experienced a reduction of 5 NSF, a deviation of 4%. Similarly, the Media Specialist's Office experienced an increase of 6 NSF, a deviation of 4.8%. Finally, the main reading room and stacks are spread over two separate spaces. Together these spaces experienced a reduction of 1 NSF from the PSR.

Dining & Food Service Program Area

In total, the program area experienced a reduction of 8 NSF, from 6,798 NSF in the PSR to 6,790 NSF in the Schematic Design, approximately -1%. With two exceptions, this square footage is attributable to design progress. The two exceptions are the quiet cafes. The original program intent was for 1000 NSF of the total Cafeteria square footage to be allocated to two acoustically separate, but visually connected spaces in order to provide an inclusive dining experience for student with acoustical sensitivities. In the PSR, this concept was expressed as two equal spaces of 500 NSF each. In the Schematic Design, however, this concept is expressed as one 322 NSF space and one 665 NSF. The original program intent remains intact, including the total NSF allocation. The balance of the two spaces has been altered so that the experiences between the two enclosed quiet rooms are slightly different from one another and to help resolve the geometries of adjacent spaces.

Medical Program Area

In total, the program area experienced a net zero change from the PSR to the Schematic Design. Each individual space in this program area has been designed to exactly match the PSR program targets.

Administration & Guidance

In total, the program area experienced a net zero change from the PSR to the Schematic Design. Each individual space in this program area has been designed to within approximately 1% the PSR program targets.

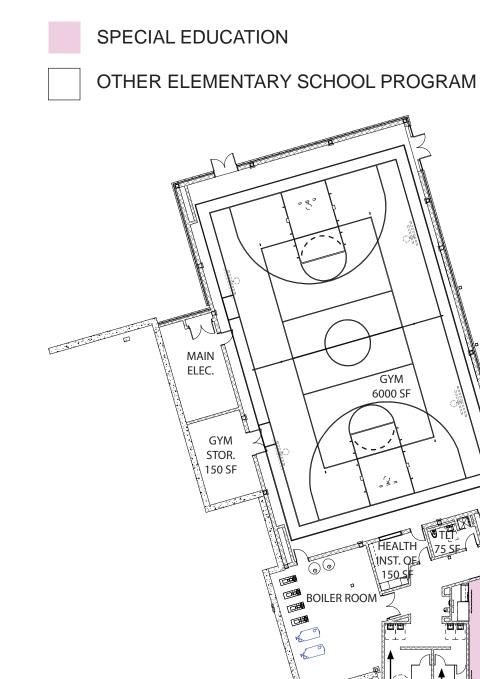
Custodial & Maintenance Program Area

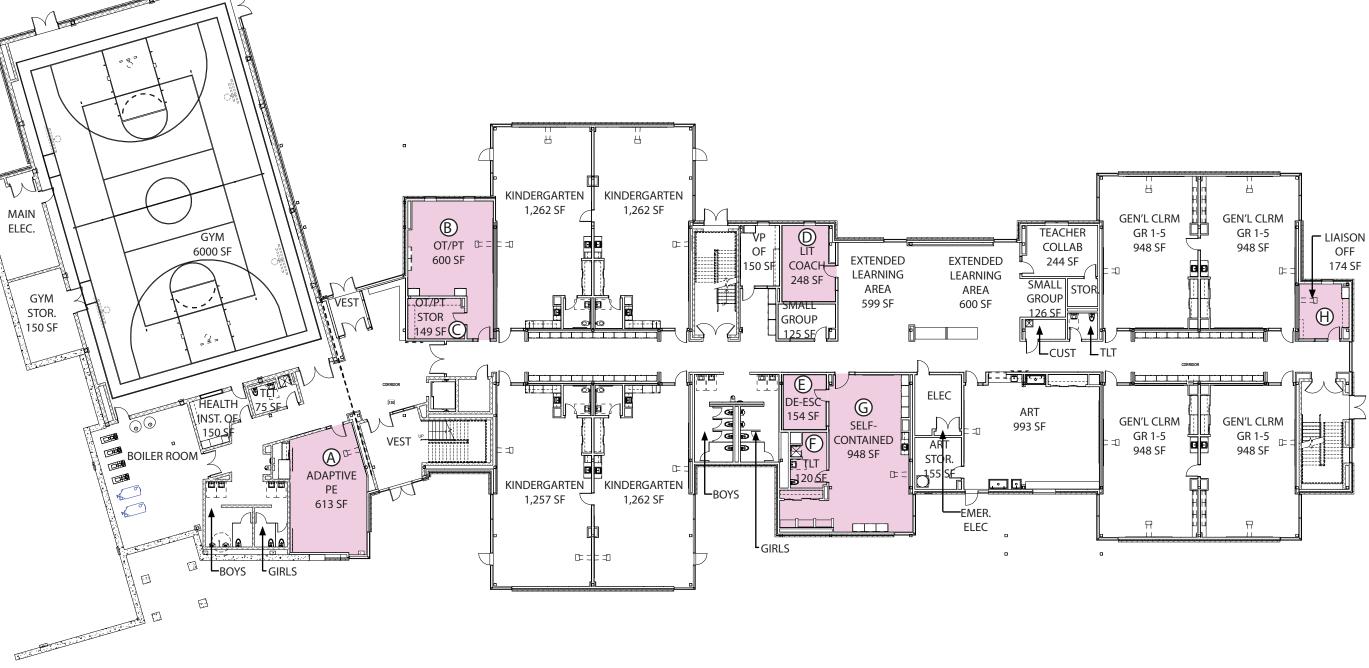
In total, the program area experienced a net zero change from the PSR to the Schematic Design. Each individual space in this program area has been designed to within approximately 1% the PSR program targets.

FLOOR PLANS

Please see following inserted pages for colored floor plans labeling Special Education spaces.

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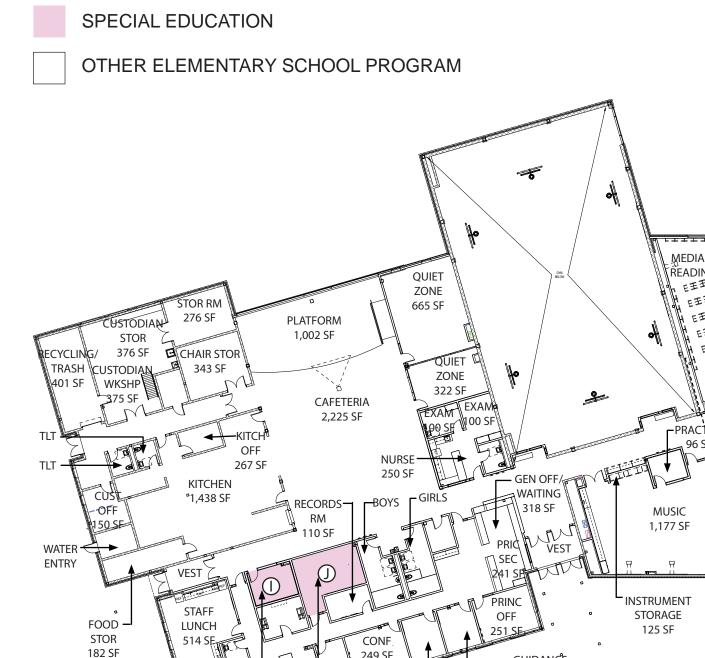


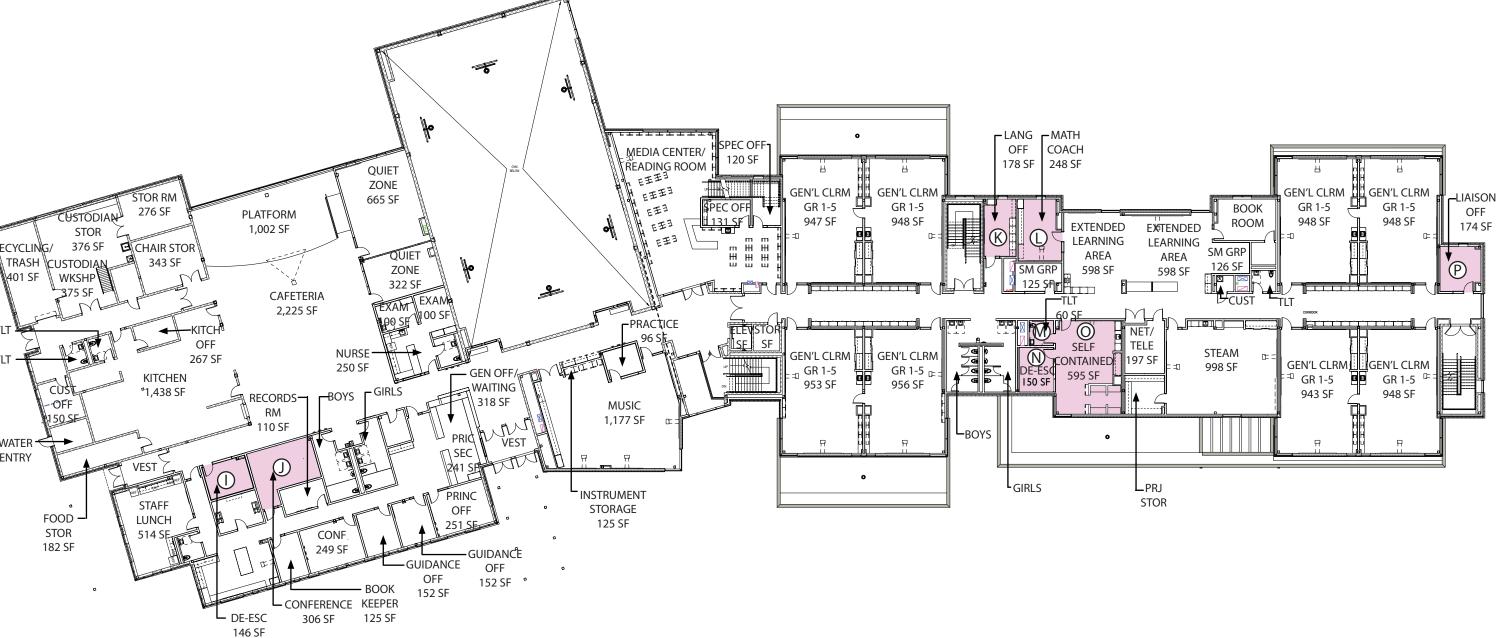


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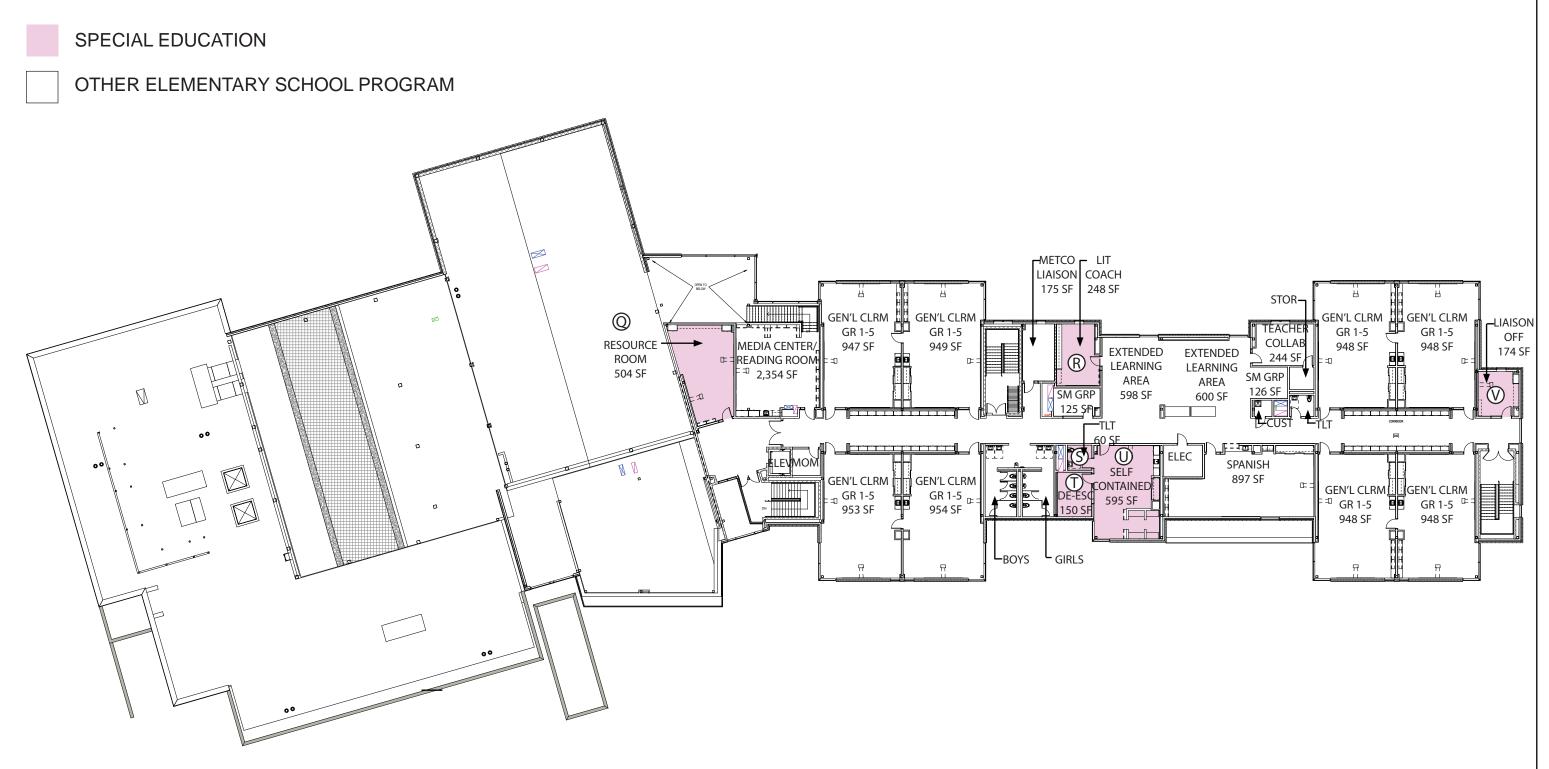


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SPECIAL EDUCATION ADJACENCY TABLE

Please see following inserted pages for the Special Education Adjacency Table.

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Needham Public Schools | Hillside Elementary School

| 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 | | | (R-2) | | |
| *Unique to District | Select SF | Adaptive PE | A | 613 | Intended as a dedicated space for Adaptive PE instruction. Outfitted as a mostly open floor space to provide maximum flexibility for instructional activities. Intended to be near OT/PT and the Gymnasium for ease of access to amenities in those spaces. |
| *Unique to District | Select SF | OT/PT | В | 600 | Intended to support Occupational and Physical Therapy sessions in a dedicated location. Room will be outfitted with structural supports for suspended therapy equipment. Intended to be near the Gymnasium and the Adaptive PE for ease of access to those amenities. |
| *Unique to District | Select SF | OT/PT Storage | с | 149 | Intended to be dedicated materials and equipment storage for Occupational and Physical Therapy in an effort to maximize instructional space in the OT/PT room. Intended to be immediately adjacent to, and accessed from within, the OT/PT room. |
| *Unique to District | Select SF | Literacy Coach | D | 248 | Intended to be both the home base for a Literacy specialist and a venue to provide pull-out services and testing to students. There are two in the project. To minimize travel distances, one should be centrally located on the lower level. One should be centrally located on the upper level of the project. |
| *Unique to District | Select SF | De-Escalation | E | 154 | Intended to be a highly flexible space without stigma, but primarily intended to be a calming space for students in crisis. Specific design features allow students to choose to be in this space when they desire sensory relief from other instructional spaces. Those features include magnetic dry erase surfaces on all walls, specialized interior glazing that can either allow views into the space from the adjacent space or obscure the view when a child is in crisis. Acoustical treatments will isolate sound within the room. Access to this De-escalation space is from within the K-1 ELC space, but located near the corridor should a student not in the ELC require use of the space. |
| Self-Contained Sped - Toilet | Select SF | Toilet | F | 120 | This toilet has been sized and outfitted to include a water closet, lavatory, and shower. Although not expected to be a need on opening day, the sizing of this room allows for the installation of a changing table should the special education programming change over the life cycle of the building. It is only accessible from within the K-1 Early Learning Center. |
| Self-Contained Sped | 950 | Self-Contained ELC | G | 948 | This space is intended to serve the K-1 Early Learning Center program. Its internal layout is zoned for a variety of instructional activities, but also includes four discrete trial zones for students who require sensory isolation when receiving one on one instruction. It has been geographically located between the Kindergarten and first grade teams and embedded in the core academic portion of the building. |
| *Unique to District | 950 | Liaison Office | Н | 174 | Intended to serve as the home base for Liaison specialists with the ability to deliver services to small groups of students when pull-out instruction is appropriate. |
| Floor 2 *Unique to District | Select SF | De-Escalation | 1 | 146 | Intended to be a highly flexible space without stigma, but primarily intended to be a calming space for students in crisis, especially for students experiencing crisis in the public zone of the building or in transitioning to school first thing in the morning. Specific design features allow students to choose to be in this space when they desire sensory relief from other instructional spaces. Those features include magnetic dry erase surfaces on all walls, specialized interior glazing that can either allow views into the space from the adjacent space or obscure the view when a child is in crisis. Acoustical treatments will isolate sound within the room. Ideally, this space would be located in close proximity to the administration suite, the bus entry, and the cafeteria in order to be in close proximity to spaces where students might experience crisis. |
| *Unique to District | Select SF | Sped Conference | J | 306 | Intended to be dedicated to special education meetings. The size of the space allows IEP, data, and other meetings of approximately 15-18 people. It should be located in the main administration suite. |
| *Unique to District | Select SF | Speech & Language Office | к | 178 | Intended to be both the home base for a Speech & Language specialist and a venue to provide pull-out services and testing to students. In order to minimize travel distances, this space should be centrally located on the main level of the building. |
| *Unique to District | Select SF | Math Coach | L | 248 | Intended to be both the home base for a Math specialist and a venue to provide pull-out services and testing to students. In order to minimize travel distances, this space should be centrally located on the main level of the building. |
| Self-Contained Sped - Toilet | Select SF | Toilet | м | 60 | This toilet has been sized and outfitted to include a water closet and lavatory only. It is only accessible from within the 2-3 Early Learning Center. |
| *Unique to District | Select SF | De-Escalation | N | 150 | Intended to be a highly flexible space without stigma, but primarily intended to be a calming space for students in crisis. Specific design features allow students to choose to be in this space when they desire sensory relief from other instructional spaces. Those features include magnetic dry erase surfaces on all walls, specialized interior glazing that can either allow views into the space from the adjacent space or obscure the view when a child is in crisis. Acoustical treatments will isolate sound within the room. Access to this De-escalation space is from within the 2-3 ELC space, but located near the corridor should a student not in the ELC require use of the space. |
| Self-Contained Sped | Select SF | Self-contained ELC | 0 | 595 | This space is intended to serve the 2-3 Early Learning Center program. Its internal layout is zoned for a variety of instructional activities, but also includes four discrete trial zones for students who require sensory isolation when receiving one on one instruction. It has been geographically located between the second and third grade teams and embedded in the core academic portion of the building. |
| *Unique to District | Select SF | Liaison Office | Р | 174 | Intended to serve as the home base for Liaison specialists with the ability to deliver services to small groups of students when pull-out instruction is appropriate. |
| Floor 3 Resource Room | | Resource Room (ELL) | Q | 504 | Although not technically a special education space, this space is intended to serve the English Language Learners program for general education students. It has been included in this program category because as a space type, it best aligns with a Resource Room. |

| *Unique to District | Literacy Coach | R | 248 | Intended to be both the home base for a Literacy specialist and a venue to provide pull-out services and testing to students. There are two in the project. To minimize travel distances, one should be centrally located on the lower level. One should be centrally located on the upper level of the project. |
|---------------------------------|--------------------|-------|-------|---|
| Self-Contained Sped - Toilet | Toilet | S | 60 | This toilet has been sized and outfitted to include a water closet and lavatory only. It is only accessible from within the 4-5 Early Learning Center. |
| *Unique to District | De-Escalation | Т | 150 | Intended to be a highly flexible space without stigma, but primarily intended to be a calming space for students in crisis. Specific design features allow students to choose to be in this space when they desire sensory relief from other instructional spaces. Those features include magnetic dry erase surfaces on all walls, specialized interior glazing that can either allow views into the space from the adjacent space or obscure the view when a child is in crisis. Acoustical treatments will isolate sound within the room. Access to this De-escalation space is from within the 4-5 ELC space, but located near the corridor should a student not in the ELC require use of the space. |
| Self-Contained Sped | Self-Contained ELC | U | 595 | This space is intended to serve the 4-5 Early Learning Center program. Its internal layout is zoned for a variety of instructional activities, but also includes four discrete trial zones for students who require sensory isolation when receiving one on one instruction. It has been geographically located between the second and third grade teams and embedded in the core academic portion of the building. |
| *Unique to District | Liaison Office | V | 174 | Intended to serve as the home base for Liaison specialists with the ability to deliver services to small groups of students when pull-out instruction is appropriate. |
| | | Total | 6,594 | |

Square Footage Summary: The proposed overall gross square footage of the new building is 90,702; Average square feet of General Classrooms is 950 MSBA guidelines include 4,530 net square feet of dedicated special education space. The proposed program is 2,064 nsf in excess of the guidelines. *Indicates that space is unique to District's program and does not appear in MSBA space guidelines.

FINAL DESIGN PROGRAM

The following sections describe the architectural and engineering characteristics of the final design, as well as the educational program.

Architectural Characteristics Narrative

The architectural character of the new Hillside Elementary School is influenced by the site characteristics, the history of the farm and wetlands that surround the site, and the residential scale of the surrounding neighborhoods. The design strives to create:

'A building of tomorrow strongly rooted to place and function.'

The major portion of the existing site is an open field that rolls from south to north and east to west toward natural and preserved wetlands. The topography of the site allowed the three story academic portions of the building to settle into the hill providing the perspective view of a two story building from many points along the street. This topography also provided the opportunity to create areas between the building and the parking that are nestled into the landscape which creates a sense of place and buffer the view of the parking area from the lower classrooms. These areas include a sensory garden, raised planting beds, an art patio, outdoor classroom space, and a small performance area. The open yet protected area is welcoming and serves as an entrance to the building for students, as well as, for after hours visitors who might be using the gym or other semi-public spaces in the building.

The building is comprised of strong horizontal banding of the roof and windows to emphasize the horizontal plane. The "box out" volumes of the classrooms were designed to provide a volumetric relationship to the surrounding residential buildings and break down the visual scale of the new school. The "tree house" like structure of the library on the west side of the building is a playful gesture that captures the views of the wetlands beyond and allows the user to feel the sense of stepping out into the wetlands. Building colors and materials of stone base and wood like exterior cladding were chosen to reflect the natural environment of the fields, wetlands and wooded areas that surround the school. The building's geometry and fenestration capture views of the natural landscape and provide opportunities to interact with the site in both macro and micro ways for educational and recreational purposes. These design principals helped to shape the design of the building and the landscape that surrounds it.

Signed Copies of the Educational Space Summary

Overview

The following pages contain the MSBA educational space summary. The summary reflects the current net and gross square footages as designed and delineates all spaces associated with Hillside Elementary School for both the existing and the proposed building.

Since the submission of the Preferred Schematic Report (PSR) that concluded the Feasibility Study, the target program remains intact and unchanged. Dore & Whittier's Schematic Design drawings and the space summary demonstrate the successful expression of MSBA's PSR comments. In general, all current program area categories are within 1% of the areas identified in the PSR. Deviations are due to minor adjustments resulting from design refinements such as the accurate reflection of needed mechanical chases, structural framing, wall thicknesses, and plumbing chases. Deviations for each program area are described in detail following the space summaries.

Similarly, spatial relationships for major program elements remain unchanged from the PSR. Detailed descriptions of changes to functional relationships follow later in this section.

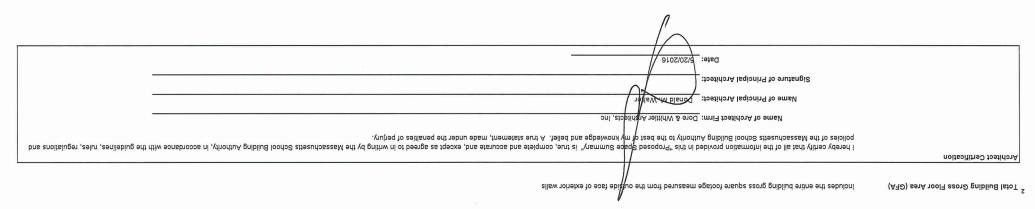
Proposed Space Summary- Elementary Schools

REVISED 05.20.16

| HILLSIDE ES | Fv | kisting Cond | litions | P | SR Submis | sion | Schema | tic Design | Submission | - | | | | | | Guidelines |
|--|------------------|--------------|----------------|------------------|-----------|-----------------------|-------------------|-------------|-------------------|-------------------|-----------------------|----------------------------|------------------|----------|-----------------------|--|
| ROOM TYPE | ROOM | # OF RMS | area totals | ROOM | # OF RMS | | ROOM | # OF RMS | | PSR | Deviation From PSR | Deviation From PSR | (refer ROOM | # OF RMS | lucational Prog | gram & Space Standard Guidelines) Comments |
| | NFA ¹ | # Of Allo | | NFA ¹ | # 01 1000 | | NFA ¹ | # OF RMS | | Submission | (NFA) | (%) | NFA ¹ | | | Comments |
| DRE ACADEMIC SPACES (List classrooms of different sizes separately) Pre-Kindergarten w/ toilet | | | 15,916 | | | 30,750 | | | 30,750 | 30,750 | 0 | 0.00% | 1,200 | 19 | 18,800 | 1,100 SF min - 1,300 SF max |
| Kindergarten w/ toilet Classroom 1, 2 | 1,210 | 2 | 2,420 | 1,250 | 4 | 5,000 | | | | - | | | 1,200 | 3 | 3,600 | 1,100 SF min - 1,300 SF max 1,100 SF min - 1,300 SF max |
| Toilet - XX, XX, XX, XX RM - 124 & RM 124A RM - 125 & RM 125A | 24 | 4 | 96 | | | | 1,262 1,262 | 1 | 1,262 | 1,250 | 12 12 | 0.96% 0.96% | | | | |
| RM - 126 & RM 126A RM - 127 & RM 127A | | | | | | | 1,257 | 1 | 1,257 | 1,250 | 7 12 | 0.56% | | | | |
| General Classrooms - Grade 1-5 XX, XX, XX, XX, XX, XX, XX, XX, XX, XX, | 850 830 | 6 10 | 5,100 | 950 | 20 | 19,000 | | | | - | | | 950 | 16 | 15,200 | 900 SF min - 1,000 SF max |
| RM - 102 RM - 103 | | 10 | 5,500 | | | | 948 948 | 1 | 948 948 | 950 950 | -2 -2 | -0.21% -0.21% | | - | | |
| RM - 104 RM - 105 RM - 202 | | | | | | | 948 948 948 | 1 1 1 | 948 948 948 | 950 950 | -2 -2 | -0.21% -0.21% | | | | |
| RM - 202 RM - 203 RM - 204 | | | | | | | 948 948 948 | 1 | 948 948 948 | 950 950 950 | -2 -2 -2 | -0.21% -0.21% -0.21% | | - | | |
| RM - 205 RM - 224 RM - 225 | | | | | | | 943 948 956 | 1 1 1 | 943 948 956 | 950 950 950 | -7 -2 6 | -0.74% -0.21% | | | | |
| RM - 226 RM - 227 | | | | | | | 947 953 | 1 | 947 953 | 950 950 950 | -3 3 | 0.63% -0.32% 0.32% | | - | | |
| RM - 302 RM - 303 RM - 304 | | | | | | | 948 948 948 | 1 | 948 948 948 | 950 950 950 | -2 -2 | -0.21% -0.21% | | | | |
| RM - 305 RM - 324 | | | | | | | 948 948 949 | 1 1 1 | 948 948 949 | 950 950 950 | -2 -2 -1 | -0.21% -0.21% -0.11% | | _ | | |
| RM - 325 RM - 326 | | | | | | | 954 947 | 1 | 954 947 | 950 950 | 4 -3 | 0.42% -0.32% | | | | |
| RM - 327 Spanish Classroom | | | | 900 | 1 | 900 | 953 | 1 | 953 | 950 | 3 | 0.32% | | - | | |
| RM - 311 Extended Learning Area | | | | 600 | 6 | 3,600 | 897 | 1 | 897 | 900 | -3 | -0.33% | | | | |
| RM - 113 RM - 114 RM - 213 | | | | 1 | | | 600 599 598 | 1 1 1 | 600 599 598 | 600 600 600 | 0 -1 -2 | 0.00% -0.17% -0.33% | | | | |
| RM - 214 RM - 313 | | | | | | | 598 600 | 1 | 598 600 | 600 600 | -2 0 | -0.33% 0.00% | | | | |
| RM - 314 Small Group Rooms | | | | 125 | 6 | 750 | 598 | 1 | 598 | 600 | -2 | -0.33% | | | | |
| RM - 109 RM - 117 | | | | | | | 126 125 | 1 1 | 126 125 | 125 125 | 1 0 | 0.80% 0.00% | | | | |
| RM - 209 RM - 217 RM - 309 | | | | | | | 126 125 126 | 1 1 1 | 126 125 126 | 125 125 125 | 1 0 1 | 0.80% 0.00% 0.80% | | | | |
| RM - 317 | | | | | | | 125 | 1 | 125 | 125 | 0 | 0.00% | | | | |
| Book Room (NOT IN NET) RM - 208 Project Materials Storage (NOT IN NET) | | | | 200 | 1 | | 244 | 1 | | 200 | 44 | 22.00% | | | | |
| RM - 211A STEAM Classroom | | | | 1,000 | 1 | 1,000 | 150 | 1 | | 200 | -50 | -25.00% | | | | |
| RM - 211 Teacher Collaborative RM - 108 | | | | 250 | 2 | 500 | 998 | 1 | 998 | 1,000 | -2 | -0.20% | | | | |
| RM - 308 | | | | | | | 244 244 | 1 | 244 244 | 250 250 | -6 -6 | -2.40% -2.40% | | | | |
| PECIAL EDUCATION (List rooms of different sizes separately) | | | 2,474 | | | 6,580 | | | 6,594 | 6,580 | 14 | 0.21% | | | 4,530 | |
| Self-Contained SPED (ELC) RM - 215 Rm - 315 | 830 | 1 | 830 | 600 | 2 | 1,200 | 595 | 1 | 595 | 600 | -5 | -0.83% | 950 | 3 | 2,850 | 8% of pop. in self-contained SPED |
| Self-contained SPED (ELC) RM - 115 | | | | 950 | 1 | 950 | 595 948 | 1 | 595 948 | 600 950 | -5 -2 | -0.83% | | | | |
| Self-Contained SPED - toilet (ELC) RM - 215A RM - 315A | | | | 50 | 2 | 100 | 60 | 1 | 60 | 50 | 10 | 20.00% | 60 | 3 | 180 | Water Closet & Lav Only |
| Self-Contained SPED - toilet RM - 115A | | | | 130 | 1 | 130 | 60 120 | 1 | 60 120 | 50 130 | 10 -10 | 20.00% -7.69% | | | | Water Closet, Lav, Shower & Changing Table |
| Resource Room (ELL) Rm - 331 | | | | 500 | 1 | 500 | 504 | 1 | 504 | 500 | 4 | 0.80% | 500 | 2 | 1,000 | 1/2 size Geni. Cirm. |
| Small Group Room / Reading XX XX | 192 54 | 1 | 192 54 | 0 | 0 | - | | | | - * | | | 500 | 1 | 500 | 1/2 size Genl. Cirm. |
| OT/PT RM - 129 | 189 | 1 | 189 | 600 | 1 | 600 | 600 | 1 | 600 | 600 | 0 | 0.00% | | | | |
| OT/PT Storage RM - 129A Adaptive PE | | | | 600 | 1 | 600 | 149 | 1 | 149 | 150 | -1 | -0.67% | | | | |
| RM - 134 Speech & Language Office | | | | 175 | 1 | 175 | 613 | 1 | 613 | 600 | 13 | 2.17% | | | | |
| RM - 219 SPED Liaison Office Liaison | 489 | 1 | 489 | 175 | 3 | 525 | 178 | 1 | 178 | 175 | 3 | 1.71% | | | | |
| Liaison RM - 101 | 524 | 1 | 524 | | | | 174 | 1 | 174 | 175 | -1 | -0.57% | | | | |
| RM - 201 RM - 301 SPED Conference Room | | | | 300 | 1 | 300 | 174 174 | 1 | 174 174 | 175 175 | -1 -1 | -0.57% -0.57% | | | | |
| RM - 250 De-escalation (ELC) | | | | 150 | 4 | 600 | 306 | 1 | 306 | 300 | 6 | 2.00% | | | | |
| RM - 116 RM - 216 RM - 255 | | | | | | | 154 150 146 | 1 1 1 | 154 150 146 | 150 150 150 | 4 0 -4 | 2.67% 0.00% | | | | |
| RM - 316 Literacy Coaches | 98 | 1 | 98 | 250 | 2 | 500 | 150 | 1 | 150 | 150 | 0 | -2.67% 0.00% | | | | |
| RM - 118 RM - 318 Math Coach | 98 | 1 | 98 | 250 | 1 | 250 | 248 248 | 1 | 248 248 | 250 250 | -2 -2 | -0.80% -0.80% | | | | |
| RM - 218 | | | | | 1 | 200 | 248 | 1 | 248 | 250 | -2 | -0.80% | | | | |
| RT & MUSIC Art Classroom - 25 seats - 22 RM - 111 | 813 | 1 | 813 813 | 1,000 | 1 | 2,575 1,000 | 000 | 4 | 2,546 | 2,575 | -29 | -1.14% | 1,000 | 1 | 2,575 1,000 | assumed schedule 2 times / week / student |
| Art Workroom w/ Storage & kiln RM - 111A | | | | 150 | 1 | 150 | 993 | 1 | 993 | 1,000 150 | -7 5 | -0.70% 3.33% | 150 | 1 | 150 | |
| Music Classroom / Large Group - 25-50 seats RM - 233 Music Practice / Ensemble | | | | 1,200 | 1 | 1,200 | 1,177 | 1 | 1,177 | 1,200 | -23 | -1.92% | 1,200 | 1 | | assumed schedule 2 times / week / student |
| Music Practice / Ensemble RM - 234 Music Storage | | | | 0 225 | 0 | - 225 | 96 | 1 | 96 | o | 96 | | 75 | 3 | 225 | |
| RM - 233A | | | | | | | 125 | 1 | 125 | 225 | -100 | -44.44% | | | | |
| ALTH & PHYSICAL EDUCATION Gymnasium RM - 141 | 2,705 | 1 | 2,823 2,705 | 6,000 | 1 | 6,300 6,000 | 6,000 | 1 | 6,300 | 6,300 | 0 | 0.00% | 6,000 | 1 | 6,300 6,000 | 6000 SF Min. Size |
| Gym Storeroom RM - 142 | 118 | 1 | 118 | 150 | 1 | 150 | 150 | 1 | 150 | 6,000 150 | 0 | 0.00% | 150 | 1 | 150 | |
| Health Instructor's Office w/ Shower & Toilet Shower & Toilet (NOT IN NET) RM - 135 | | | | 0 75 | 0 | | 00 | 4 | | | | | 150 | 1 | 150 | |
| RM - 135 Health Instructor's Office RM - 136 | | | | 150 | 1 | 150 | 82 | 1 | 150 | 75 150 | 7 | 9.33% 0.00% | | | | |
| DIA CENTER | | | 2,374 | | | 2,605 | | | 2,605 | 2,605 | 0 | 0.00% | 1 | | 2,605 | |
| Media Center / Reading Room RM - 229 + RM 329 Media Specialist Office | 2,182 | 1 | 2,182 | 2,355 | 1 | 2,355 | 2,354 | 1 | 2,354 | 2,355 | -1 | -0.04% | 2,605 | 1 | | Will be subdivided in future interations |
| RM - 232 Instructional Tech Specialist Office | 172 | | 192 | 125 | 1 | 125 | 131 | 1 | 131 | 125 | 6 | 4.80% | | | | |
| RM - 231 NING & FOOD SERVICE | | | | | | | 120 | 1 | 120 | 125 | -5 | -4.00% | | | | |
| VING & FOOD SERVICE Cafeteria / Dining Larger Zone (Performance) | 2,190 | 1 | 3,671 | 0 2,225 | 0 | 6,798 - 2,225 | | | 6,790 | 6,798 | -8 | -0.12% | 3,225 | 1 | 6,506 3,225 | 2 seatings - 15SF per seat |
| RM - 260 Smaller Zones (Quieter) | | | | 500 | 2 | 1,000 | 2,225 | 1 | 2,225 | 2,225 | 0 | 0.00% | | | | |

Version 11.24.2010

Elementary School Space Summary



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. 1 Individual Room Net Floor Area (NFA)

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| | 1200 1 3262 1 3262 1 3200 1 1200 1 1200 0 1200 1 1200 1 1000 1 1000 1 1000 1000 | %00.0 %00.0 %00.0 %04.0- %04.0- %04.0- %04.0- %00.0 %00.0 %00.0 %00.0 | L- 0 2 2 2 4 4 0 0 0 0 0 0 1 | 25,030 2150 7150 7155 7156 7156 7156 7156 7156 7156 7156 | 155 155 155 155 155 155 155 155 155 155 | | 322 120 120 120 120 120 120 120 120 120 1 | 400 400 312 312 312 312 312 312 312 312 | 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 | 543 400 312 312 120 312 0 312 0 312 0 312 0 120 0 122 122 122 | 250 48€ 57 58 58 586 586 586 586 586 586 | | 230 520 520 520 520 | - 243 - 243 = 24 = 24 = 24 = 24 METOD Liston Office RM - 215 RM - 275 RM - 275 RM - 275 = 247 = 247 = 247 = 247 = 247 = 247 = 248 RM - 219 = 247 = 248 RM - 219 = 247 = 248 RM - 219 = 247 = 248 RM - 219 = 248 = 2 |
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| matrix matrix | L 091 | %00'0 %00'0 %07'0- %07'0- %00'0 %00'0 | L- 0 2 2 L- 0 0 | 315 315 315 315 315 315 | 175 155 155 155 155 155 155 155 155 150 150 | L L L L L L L | 315 152 152 152 152 152 152 152 152 152 1 | 400 319 319 319 319 319 319 319 319 319 319 | | 543 400 322 322 120 122 122 122 122 122 | 84 28 28 20 20 20 486 486 | | 250 520 520 | - 119 - 119 - 272 - 119 - 277 - 276 - |
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| 2 3 | | | | | 120 | | 375 150 | 400 375 375 | | 343 400 312 312 | 81 82 84 84 84 84 84 84 84 84 84 84 84 84 84 | | 99 | ازهانه و Mice - 271 - 275 - 2 |
| 2 2 3 | | %00.0 | 0 | 091 | | | 928 | 575 275 | L L | 543 400 312 | 18 99 | L | 99 | ilan's Workshop lian's Storage XX XX RM - 275A RM - 275A RM - 275A RM - 275A P - 277 - 277 |
| $ \frac{1}{2} = 1$ | L 9/8 | | | 240 | | 1 | | 400 | L L | 543 | 18 99 | L | 99 | ilan's Storage XX XX XX XX Ing and General Supply - 277 - 272 - 275 - 27 |
| 2 3 3 4 4 | 1 SZE | %00'0 | n | G/S | 6/5 | | | | ŀ | 543 | 18 99 | L | 99 | XX - 272 ing Room / Trash ing and General Supply XX XX XX |
| 2 3 3 4 5 | | _ | | | | | | | ŀ | 543 | | | 10 | RM - 275A Ing Room / Trash - 277 - 272 - 272 - 272 |
| 2 3 | | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | L | 375 | 928 | L | 928 | | ŀ | 543 | 929 | | | - 277 ing and General Supply - 272 |
| XX < | | 0.25% | ٢ | 400 | 401 | L | 401 | 247 | | | aca | | | - 272 |
| XX XX< | | %00.0 | 0 | 543 | 543 | F | 543 | 280 | 1 | 107 | 828 | | | |
| XX XX XX | 1 /07 | | | | | | | 107 | | | | | | XX |
| 304 / Telecom Room 300 / T | | %00'0 | 0 | 782 | 782 | • | 282 | | | | 23 | | | XX |
| γ | 1 002 | | | | | | | 500 | L | 500 | | | | rk / Telecom Room |
| Building Net Floor Area (NFA) 31,118 46,048 46,044 | | | | 0 | 0 | | | 0 | | | 0 | | | |
| csed Student Capacity / Enrollment csed Student Capacity / Enrollment csed Student Capacity / Enrollment | | | | | | | | | | | | | | (Ajioeds) |
| | | | | -24 | 09' 444 | | | 897'09 | | | 811,15 | | | Suilding Net Floor Area (NFA) |
| Building Gross Floor Area (GFA) ² 45,005 0 90,702 0 90,702 0 70,878 | | _ | | | | | | | | | | | | sed Student Capacity / Enrollment |
| | | | | 0 | Z02'06 | | | | | | 45,005 | | | |
| 75.1 | | 543 J 543 J 400 J | 0.00% 200 1 0.25% 243 1 0.00% 287 1 0.00% 7 0.00% 7 | 0 0'00% 582 1 0 0'00% 582 1 1 0'28% 743 1 | -54 -54 500 -3 -1'20% 592 0 0'00% 592 1 0'52% 592 1 0'52% 593 1 593 1 5 | 0 0 0 0 197 200 -3 -1.50% 243 0 0.00% 243 243 243 0 0 197 200 -3 -1.50% 243 243 0 0.00% 243 0 0.00% | 1 401 400 3 -1'20% <td>100 -3 -1.20% 100 -3 -1.20% 100 -3 -1.20% 100 -3 -1.20% 100 -3 -1.20% 100 -3 -1.20% 100 -3 -1.20% 100 -3 -1.20%</td> <td>0 0 0 100 100 3 -1'20%</td> <td>1 10 0 0 0 1 10 0 0 0 1 10 0 0</td> <td></td> <td>282 1 283 1 284 1 284 0 0 1 282 1 284 1 134 134 0 1 1 282 1 284 1 134 134 0 1 1 282 1 284 0 0'00% 1 1 1 282 1 284 0 0'00% 1 1</td> <td>1 1<td>$\begin{array}{ c c c c c c c c c c c c c c c c c c c$</td></td> | 100 -3 -1.20% 100 -3 -1.20% 100 -3 -1.20% 100 -3 -1.20% 100 -3 -1.20% 100 -3 -1.20% 100 -3 -1.20% 100 -3 -1.20% | 0 0 0 100 100 3 -1'20% | 1 10 0 0 0 1 10 0 0 0 1 10 0 0 | | 282 1 283 1 284 1 284 0 0 1 282 1 284 1 134 134 0 1 1 282 1 284 1 134 134 0 1 1 282 1 284 0 0'00% 1 1 1 282 1 284 0 0'00% 1 1 | 1 1 <td>$\begin{array}{ c c c c c c c c c c c c c c c c c c c$</td> | $ \begin{array}{ c c c c c c c c c c c c c c c c c c c$ |

| | 0S.r | | | 1.50 | | |
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| 0 | 207,08 | | | Z07,00 | | |
| | | | | | | |
| -24 | 60,444 | | | 897'09 | | |
| 0 | 0 | | | 0 | | |
| 500 | 261 | L | 26L | | | |
| 782 | 782 | ŀ | 782 | 500 | ŀ | 500 |
| | | | | | | |
| | | | | 282 | ŀ | 782 |
| 243 | 543 | L | 543 | 543 | F | 543 |
| 400 | 104 | L | 401 | 400 | F | 400 |
| 375 | 928 | L | 928 | | | |
| | | | | | | |
| 975 | 928 | ŀ | 975 | 928 | L | 375 |
| 120 | 091 | ŀ | 091 | 92E | L | 375 |
| 5'030 | 5'028 | | | 120 5'030 | ŀ | 120 |
| 0000 | | | | | | |
| 315 | 315 | L | 312 | | 0 | 120 |
| | | | | 312 | L 0 | 312 0 |
| 091 091 | 162 | L L | 122 | | | |
| 520 | 549 | L | 549 | 300 | 2 | 120 |
| 125 | 152 | L | 152 | 520 | L | 550 |
| SZL | 924 | L | 921 | 126 | L | 125 |
| 227 | JEF | | 227 | 921 | L | 924 |
| 091 | 091 | L | 120 | 0 | 0 | 0 |
| | | | | 051 | L | 120 |
| | | | | | | |
| 152 | 152 | L | 126 | 125 | L | 152 |
| 092 | 551 | L | 521 | 520 | L | 520 |
| 011 | 011 | L | 011 | 011 | L | 011 |
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| 5'350 | 5,320 | | | 350 5'350 | ŀ | 320 |
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| ABA Guidelines SBA Educational Program & Space Standar | l of 1919) | | | | noissimdu | s ngisəū ə | Schemat | noia | simdu2 A | Sd | suoit | ibno ጋ p nita | iхЭ | SE ER |
|---|------------|------------------------------|--------------------------------|-------------------|----------------|------------|--------------------------|----------------|----------|--------------------------|----------------|----------------------|--------------------------|--|
| OF RMS area totals Commo | ROOM | Deviation From PSR (%) | Deviation From PSR (NFA) | RS9 noissimdu2 | area totals | SMR FO # | мооя [°] АЭИ | sletot e916 | SMR 90 # | мооя ^Г АЭИ | slei totals | SMA TO # | мооя ^Г АЗИ | ROOM TYPE |
| | | 33'00% -32'90% | 991 821- | 200 200 | 992 355 | L L | 999 355 | | | | | | | КМ - 263 КМ - 262 |
| 000'L L | 000'1 | %02.0 | 2 | 000'L | 200,r | ŀ | 1,002 | 000'L | L | 000'L | 514 514 | L | 214 | КМ - 261 де |
| 1 343 | 343 | %00'0 | 0 | 343 | 343 | ŀ | 343 | 343 | L | 343 | | | | air / Table / Equipment Storage RM - 264 |
| 7 1,730 1600 SF for first 300 + 1 SF/stu | 0£7,1 | %99'0 | 8 | 1'430 | 1'438 | ŀ | 1,438 | 1'430 | ŀ | 1'#30 | 288 | L | 289 | Zenijev KW - Se5 spen |
| | | %00`6- | 81- | 200 | 182 | L | 182 | 500 | L | 500 | 163 | L | 163 | RM - 266 Food Storage RM - 266 |
| | | %00°L- | L- 01- | 001 | 66 | | 66 | 001 | F | 001 | | | | Kitchen Office Kitchen Office |
| | | 2.00% | L I- | 20 | | L. | 19 | | L | 09 | | | | Male Toilet Room (NOT IN NET) RAM - 268 |
| | | 2.00% | L | 90 | | L | 19 | | L | 09 | | | | Female Toilet Room (NOT IN NET) RM - 269 |
| 1 208 20 5F/Occupant | 802 | 2.80% | 14 | 009 | 71S | ŀ | 514 | 009 | L | 200 | | | | КМ - 253 34 Гилсh Коот |
| 015 | | %00'0 | 0 | 013 | 015 | | | OLS | | | 681 | | | CAL |
| 09 L | 09 | %00'0 | 0 | 09 | 09 | F | 09 | 09 | 4 | 09 | | | | idical Suite Toilet RM - 236A |
| 4 SEO | 520 | %00'0 | 0 | 520 | 520 | L | 520 | 500 | د د | 520 | 681 | L | 681 | rses' Office / Waiting Room RM - 236 Amination Room / Resting |
| 5 500 | 001 | %00'0 | 0 | 001 | 001 | L L | 001 | 500 | 2 | 100 | | | | amination Room / Resting RM - 237 RM - 238 |
| | | %00'0 | 0 | 001 | 001 | ŀ | 001 | | | | | | | 007 - 1111 |
| 245,245 2,145 2,520 | 365 | %00'0 | 0 | 5'350 | 5,320 | | | 320 | F | 320 | 862'L | | | NISTRATION & GUIDANCE |
| | | %69.0- | -5 | 350 | 318 | L | 318 | - | L . | 0 | | | | RM - 240 RM - 240 |
| | | | | | | | | | | | 536 586 | 4 | 536 586 | XX Overflow |
| 001 1 | 001 | | 15) | | | | | 09 | L L | 09 09 | | | | min Toilet achers' Mail and Time Room |
| 150 | 120 | %00.0 | 0 | 090 | 09 | L | 09 | 190 | L | 091 | | | | RM - 252 Bilicating Room |
| 011 1 | 011 | %66.1- | -z- | 051 | 841 | L | 841 | 011 | L | 011 | 951 | ŀ | 991 | RM - 252 cords Room (MCAS Storage) RM - 249 |
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Proposed Space Summary- Elementary Schools

Space Summary Deviations

The table below communicates the evolution of the Hillside Elementary School program since its inception for the Preliminary Design Program. It contains the total NSF for each of the building's program areas. As previously mentioned, these totals deviate from those submitted for the PSR by approximately 1% on average due entirely to design refinement. Dore & Whittier has evolved its design processes to improve the level of accuracy of its schematic design drawings so that the owner and the MSBA can have a high level of confidence that designed spaces align with programmed spaces by including all mechanical, plumbing, and electrical chases; column enclosures; rain leader locations; and displacement ventilation chases.

| | Preliminary Design Program (PDP) | Preferred Schematic Report (PSR) | Schematic Design Report (SD) |
|-----------------------------|---|---|---------------------------------------|
| Program Area | TOTAL NSF | TOTAL NSF | TOTAL NSF |
| Core Academic | 30,650 | 30,750 | 30,750 |
| Special Education | 7,355 | 6,580 | 6,594 |
| Art & Music | 2,575 | 2,575 | 2,546 |
| Health & Physical Education | 6,500 | 6,450 | 6,300 |
| Media Center | 2,605 | 2,605 | 2,605 |
| Dining & Food Service | 7,331 | 6,798 | 6,790 |
| Medical | 510 | 510 | 510 |
| Administration & Guidance | 3,115 | 2,320 | 2,320 |
| Custodial & Maintenance | 2,030 | 2,030 | 2,029 |
| Other | 0 | 0 | 0 |
| TOTAL NSF | 62,671 | 60,468 | 60,444 |
| TOTAL GSF | 94,007 | 90,702 | 90,702 |

Core Academic Program Area

In total, the program area experienced a net zero change from the PSR to the Schematic Design. Only two individual spaces deviate from the PSR programming targets by more than the 1% tolerance mentioned above. Both Teacher Collaborative spaces deviate from the programmed targets by -6 NSF each (250 NSF, PSR vs 244 NSF, SD) due to the need for displacement ventilation cabinets, a deviation of -2.4 %.

Special Education Program Area

In total, the program area experienced an increase of 14 NSF, from 6,580 NSF in the PSR to 6,594 NSF in the Schematic Design, a deviation of .21%. The most significant deviations, in terms of a percentage of the individual space, occurred in small support spaces. In general, space where instruction and/or services are being delivered to students deviated less that 1% from the PSR submission.

Art & Music Program Area

In total, the program area experienced a reduction of 29 NSF, from 2,575 NSF in the PSR to 2,546 NSF in the Schematic Design, approximately -1%. The bulk of this reduction is the result of an owner desire to house some of the music storage casework outside the Music suite in the corridor so that students have easy access to their instruments before and after school without interrupting lessons or practice sessions. One other deviation from the PSR exists. Upon further reflection, the owner indicated a desire for an enclosed practice room as part of the Music Room Suite. Square footage was reallocated from the Music Storage space to accommodate this request without exceeding the total NSF for Music.

Health & Physical Education Program Area

In total, the program area experienced a net zero change from the PSR to the Schematic Design. Each individual space in this program area has been designed to exactly match the PSR program targets.

Media Center Program Area

In total, the program area experienced a net zero change from the PSR to the Schematic Design. Individual spaces vary from the PSR targets by 6 NSF or less. In response to individual office needs, the Information Technology Office experienced a reduction of 5 NSF, a deviation of 4%. Similarly, the Media Specialist's Office experienced an increase of 6 NSF, a deviation of 4.8%. Finally, the main reading room and stacks are spread over two separate spaces. Together these spaces experienced a reduction of 1 NSF from the PSR.

Dining & Food Service Program Area

In total, the program area experienced a reduction of 8 NSF, from 6,798 NSF in the PSR to 6,790 NSF in the Schematic Design, approximately -1%. With two exceptions, this square footage is attributable to design refinement. The two exceptions are the quiet cafes. The original program intent was for 1000 NSF of the total Cafeteria square footage to be allocated to two acoustically separate, but visually connected spaces. In the PSR, this concept was expressed as two equal spaces of 500 NSF each. In the Schematic Design, however, this concept is expressed as one 322 NSF space and one 665 NSF divided by a moveable partition for maximum flexibility. The original program intent remains intact, including the total NSF allocation. The balance of the two spaces has been altered so that the experiences are different.

Medical Program Area

In total, the program area experienced a net zero change from the PSR to the Schematic Design. Each individual space in this program area has been designed to exactly match the PSR program targets.

Administration & Guidance

In total, the program area experienced a net zero change from the PSR to the Schematic Design. Each individual space in this program area has been designed to within approximately 1% the PSR program targets.

Custodial & Maintenance Program Area

In total, the program area experienced a net zero change from the PSR to the Schematic Design. Each individual space in this program area has been designed to within approximately 1% the PSR program targets.

Space Measurement Analysis

Dore & Whittier uses Building Information Modelling (BIM) technology beginning with the feasibility study phase. This technology measures net square footage to the inside face of interior walls, to the exterior face of exterior walls for gross square footage and rounded to the nearest square foot. This data is then exported and translated into the Space Summary Template.

Our in house methodology measures exterior square footage according to instructions provided by the MSBA. Everything from the exterior face of exterior walls is included in the calculation for gross square footage including all wall thicknesses, mechanical and plumbing chases, the elevator shaft on every floor, boiler rooms, and all MEP closets. Our methodology includes the entire stair on the first floor but only to the edge of floor level landings at any other levels. Additionally, areas open to below of occupied spaces are excluded from the GSF calculation.

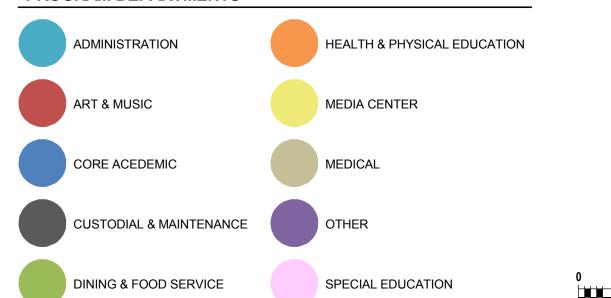
What follows are colored confirmation drawings similar to those provided in the DESE submission. These drawings communicate room usage and current square footages. These square footages align with the MSBA space summary provided above.

Dore & Whittier certifies that all programmed areas plus all other areas as described in the preceding methodology equals the total gross square footage.

Donald M. Walter, AIA, Principal

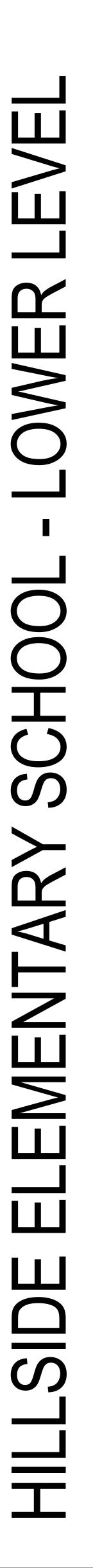


PROGRAM DEPARTMENTS

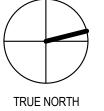


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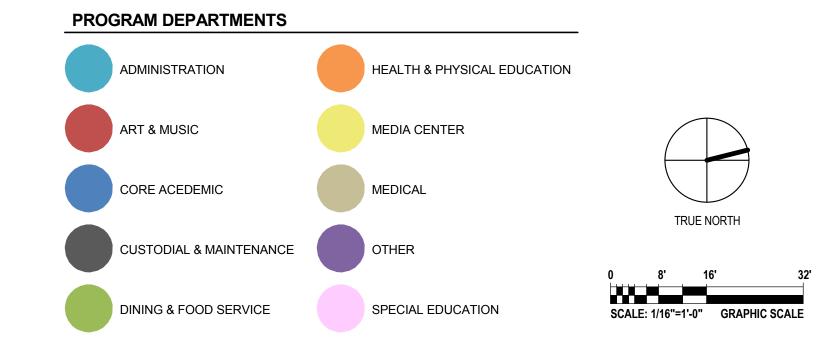


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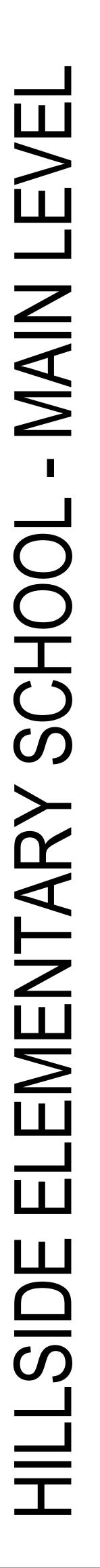












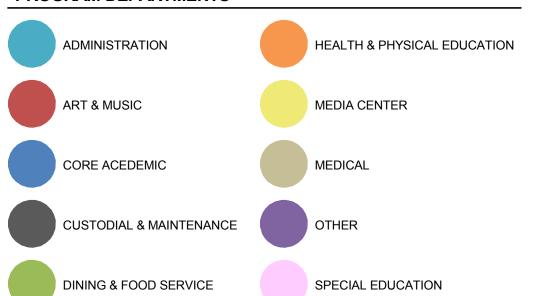


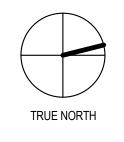






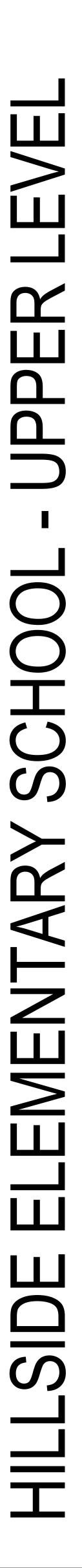
PROGRAM DEPARTMENTS





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Educational Program Narrative

The District's preferred solution aligns with their educational delivery methodology, is positioned geographically within the Town to NOT require redistricting, and has been designed to align with the guiding design principles established in the Feasibility Study. The narrative below highlights key guiding principles for design and articulates how the design supports the District's educational program.

Guiding Principles for Design

- Align with MSBA Guidelines
 - All spaces have been planned and designed with the MSBA guidelines in mind. No new deviations from the MSBA approved program at the PSR submission exist except for those associated with designing to a greater level of detail in the Schematic Design.
- Design enrollment to be 430 students
 - MSBA agreed to a four section per grade school. Design plans include only four sections of classrooms per grade level.
- Base classroom count based on the low end of the District's class size policy
 - This arithmetic was used to demonstrate the need for four sections per grade level. Individual classrooms are sized to meet MSBA guidelines.
- Allow for Full-day Kindergarten
 - Four sections of Kindergarten allows for full-day kindergarten.
- Flexibility of design to allow real-time, short-term, and long-term changes to educational activities and educational delivery methodologies.
 - The design includes highly flexible classrooms as well as small group rooms, extended learning spaces, specialty spaces like STEAM all with highly mobile furniture that will allow the District a high level of flexibility in real time, over the short term, and over the life cycle of the facility.
- Anticipate future change
 - The design includes an ability to absorb fluctuations in enrollment by having four sections per grade level.
 - The design includes a sub-division of the cafeteria dining area to accommodate children with acoustical sensitivities. In doing so, it is also positioned to anticipate future professional development needs.
 - The design includes all the appropriate spaces for professional specialists as identified by the District. The trajectory is such, however, that more and more of these adults may be necessary in the future. The design includes teacher planning

spaces, small group rooms, and conference rooms that could be converted to specialist offices or locations to deliver services in the long-term future, which accommodates future change much better than the District's current conditions of converting hallways, toilet rooms, and storage closets to accommodate these functions.

- School to be organized into public and private zones
 - The design expresses this very clearly with public functions housed on the south side of the project, while private functions are located to the north. Security doors at the joint between the two zones allow the facility to be secured for after-hours activities or in a crisis event.
- Grade-level based learning communities with shared extended learning spaces
 - Each pair of teams shares two conjoined extended learning spaces with celebratory views of the wetlands and Wellesley water resource area.
- 4 sections per grade
 - The design includes four classrooms for each of the grade level teams.
- Minimize barrier between special education and regular education
 - Special education spaces are embedded within the academic portion of the building and adjacent to grade level classrooms.
 - Specialists' offices are positioned to minimize travel distances for students and staff.
 - Break-out spaces for pull-out services are located to minimize travel distances from classrooms
 - Break-out spaces have been designed for all students to use in efforts to remove sense of stigma from any space
- Building should serve the student population and the community
 - The design allows community use of the facility after-hours by positioning Cafeteria, Gymnasium, and Media Center in the public zone.
 - Site features not only serve as supplemental learning areas for students, but play areas, access to natural resources via a walking path, and gardens will all be attractive for community use.
- Safety and Security
 - o Minimize exterior access
 - The building design limited the number of exterior doors without compromising the safety of occupants.
 - o Traffic flow
 - The design separates the traffic patterns of buses, parent vehicles, service vehicles and pedestrians.
 - Visual observation of parking and approach

- The main administrative area is immediately adjacent to the main entry and has sweeping views of the parking lot and approach to the building.
- o Evacuation and shelter in place
 - The building has been designed to support the principles of an "ALICE" training recently attended by District personnel.
 - The building has been designed in collaboration with local public safety officials.
- Entire campus as a learning environment
 - The landscape features designed into the project support using the out-of-doors as supplemental learning environments.
 - Design includes a small amphitheater, raised planting beds, an arts plaza, a sensory garden, and pedestrian access to the existing water features on site.
- Sustainability, LEED Silver
 - The building has been designed with energy-efficient systems, an energy efficient envelope with a fenestration pattern to maximize high-quality daylight, and with the possibility for future PV array on the roof.
- Technology-rich and ubiquitous
 - The design aims to make technology available to all students and professionals.
 The typical classroom has been designed with multiple digital display surfaces in recognition that multiple activities may be occurring simultaneously.
 - Supplemental learning areas like the Extended Learning Areas, the Library/Media Center, and small group rooms have all been designed with digital display technology.
 - Wireless access will be available throughout the facility and robust enough to accommodate increases in the number of devices and equipment.
- Balance between safety and openness/ welcoming environment
 - Design includes interior glazing strategically located and sized so that there is a sense of learning on display but with the ability to easily obscure the view into learning spaces in a crisis event.
 - The entry sequence is designed to be light-filled and welcoming, but also require a check-in point within a secured vestibule before access is granted to the entire building.
- No student cubbies to be located in the classroom
 - $\circ\;$ All student cubbies are accommodated immediately outside classrooms in the corridor.

- Plan for minimum of 90 parking spaces, attempt to meet zoning target of 118 spaces
 - The site design that includes parcel 609 Central Ave includes 100 parking spaces, there are 96 spaces if parcel 609 Central Ave is not included.

Instructional Technology Narrative

Current

Technology instruction occurs as part of the general classroom instruction, library/ media instruction, and as part of Hillside's elementary STEAM curriculum. Currently, the facility contains an integrated computer lab within the library that serves both the technology program and the technology portion of the STEAM program. Its current configuration as a traditional computer lab open to the library prevents simultaneous use of the library and computer lab for instructional activity.

Proposed

When teachers in classrooms have ready access to the technology needed for both whole class and small group instruction, the District sees a diminished need for a traditional computer lab and an increased need for a dedicated space to serve STEAM instruction (engineering and technology/robotics), as well as a production room for extended science curriculum activities.

Technology will play a significant role in the future of the District's educational programming. The increasing educational value offered by technology allows instantaneous access to information, collaboration within and beyond the school's walls, and individualized learning instruction. The application of technology is expected in nearly all fields of our children's future education, work and learning and will be fundamental in the school's daily program.

With today's information explosion, it is essential that students are taught to understand a range of strategies to cross-reference and to understand who controls the information that they find. Technology has the power to shift the culture of learning to a place where students assume much more responsibility for managing their own learning and are able to share their new knowledge with others. Students will have a sense of owning the problem rather than seeing it as an assignment from the teacher. A technology-rich educational program requires adequate infrastructure that enables the District to continuously incorporate future technologies into instruction and learning.

To that end, the District is currently in the process of re-envisioning the educational technology program at the elementary level. The District sees the new digital classroom as having teaching and learning supported by technology that is flexible, mobile, accessible wherever and whenever needed, ubiquitously connected to online resources, and reflective of the devices now used

pervasively by teachers and students in their daily lives. Our profile for the digital learning environment at the elementary level consists of the following:

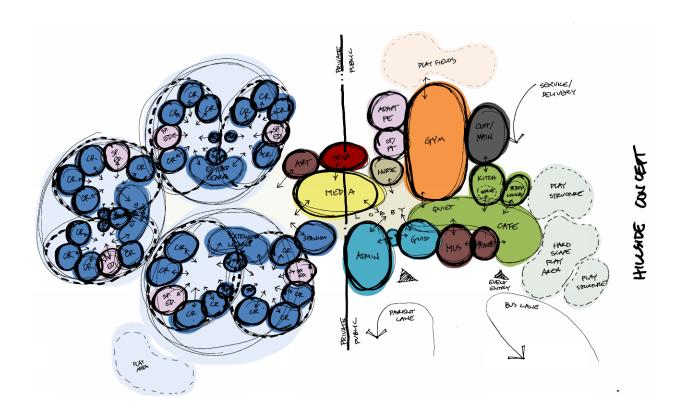
- Teachers have laptops connected to an interactive whiteboard (or other projection device)
- Students have shared in-class access to three mobile digital learning devices (DLDs)
- Teachers at each grade level share access to one cart of DLD devices
- Classrooms also have access to 1-2 laptop carts/school
- WIFI is ubiquitous for on-demand access to online resources needed for teaching and learning
- Curriculum and teaching activities and student production are stored and accessed electronically

Functional Relationship Narrative

The narratives that follow are excerpts from the PSR submission.

Functional and spatial relationships and adjacencies as well as the way interior and exterior program elements relate to one another help shape how the educational program functions. During predesign, successfully articulating these relationships permits efficient use of spaces, empowers users to be their most productive, and encourages pride and ownership of the facility. Failure to express these relationships can impair educational delivery, create unsafe and insecure environments, and establish a sense of ill will in occupants toward the facility.

Overall, the District desires to organize the building into two major zones. One zone accommodates spaces for core functions that might be considered "public" such as the cafeteria, gymnasium, media center, and administration as well as accompanying support spaces. These are the spaces that will be accessed regularly by members of the general public. The second, "private" zone accommodates core academic functions such as classrooms, special education spaces, and some specials. Some specials want to straddle the line between the public and private zone so that they can be accessible to the community while maintaining important adjacencies with programs located in the private zone. Please see the spatial relationship diagram below for a graphic representation of important functional and spatial relationships and key programmatic adjacencies.



Within the public zone, design alternatives should express the following:

- Administrative suite adjacent to the main entry of the facility with direct visual access to the building approach and the main entry
- Triangulated administration, guidance, and nursing with a line of sight to each function; Guidance should have a relationship to the cafeteria to facilitate lunch groups
- Gymnasium and playgrounds in close proximity to the nurse's suite
- Cafeteria/ stage near music such that the music room can be used as green room setting during large assemblies or performances held in the cafeteria
- *Kitchen located adjacent to bulk of cafeteria with separate, accessible site service entry if possible*
- Programmed custodial and maintenance spaces located near kitchen and site service entry
- Media center between public and private zone with areas accessible to the public

Within the private zone, design alternatives should express the following:

• Organized into six, semi-distinct grade level learning communities, each with an extended learning area

- Kindergarten and grade one teams should have access to an outdoor learning environment
- Special education should be distributed throughout all grade level teams
- The literacy and math coaches should be accessible to all students

The schematic design expresses these functional relationships with a few exceptions.

- Triangulated administration, guidance, and nursing with a line of sight to each function; Guidance should have a relationship to the cafeteria to facilitate lunch groups
- Gymnasium and playgrounds in close proximity to the nurse's suite

The design was not able to achieve the second of these two functional relationships for the Nurse due to the tight site conditions. In discussions with the Nurse, the Principal, and other District officials, the priority was to triangulate the relationship between the administration offices, the nurse and the guidance counselors – which was achieved.

• Cafeteria/ stage near music such that the music room can be used as green room setting during large assemblies or performances held in the cafeteria

The design was not about to locate the Music room adjacent to the stage due to site constraints and other functional relationships. The Music Room is near the Cafeteria for ease of use, but will be unable to function as a green room for the platform. In order to provide a green room feature, however, the design does position the quiet areas of the Cafeteria immediately adjacent to the platform.



Figure 1 - Lower Level Floor Plan



Figure 2 - Main Level Floor Plan





Figure 3 - Upper Level Floor Plan

Security and Visual Access Requirements Narrative

The Design Team has met with and will continue to be advised by Needham Public Safety officials. These meetings have reviewed topics such as access to the site, entry points to the building, glazing ("bullet proof", safety glazing, tempered, high strength vs the need for entry), operable windows, card readers, safe areas of shelter and the ALICE protocol. The Town's recent adoption of the 'ALICE Safety Protocol' (Alert, Lockdown, Inform, Counter, Evacuate) for the Needham Public Schools has informed the building design. Security and visual access for the proposed facility will require a multi layered system approach. Technology such as cameras, intercoms, and automatic locking devices will be incorporated into the design as well as passive design elements where the building design is a tool for improved security. These building design features include:

- Direct visual access from the main administrative area to both the main entry and any approaches to the building from parking areas;
- A secured main entry sequence consisting of a controlled vestibule with check in window and intercom for visitor verification prior to entry into the building;
- Intentional limiting of exterior doors while still meeting code egress requirements;
- Exterior doors with automatic locking hardware and card reader access;
- Separation of the public use spaces such as gymnasium and cafeteria from the more private spaces such as classrooms where the bulk of instruction occurs;
- Spatial relationship strategies that allow portions of the building to be secured independently and automatically in a lock-down or crisis situation and provides communication and administrative personnel on both sides of the lock-down areas;
- Egress planning that both meets the building code requirements and permits effective evacuation protocols including connected classrooms and dedicated stairwells on the academic side of the building;
- Classroom lockset hardware that allows doors to be locked from the inside quickly;
- Strategically placed interior glazing to foster an interdisciplinary educational delivery methodology while still permitting effective shelter-in-place protocols. Such a strategy will include shading devices to limit visual connectivity in a crisis events;
- Placement of moveable furniture for blocking of doors or other access points per ALICE protocol;
- Vehicular access to the perimeter of facility that would allow for afterhours monitoring by public safety personnel and provide multiple locations for safety or first responders to access the building;

The proposed facility will be a fully secure building, while at the same time have a welcoming, community feel that is not compromised but rather enhanced by the additional security features.

Site Development Requirements Narrative

Site Access, Vehicular and Pedestrian Circulation

Main access to site is on Central Avenue. The south side of the site provides access for cars and vans. Upon entering the site cars will turn to the right and move in a northerly direction for the length of the site then loop to the south where a designated drop off zone will allow passengers to exit the vehicles along the sidewalk. The drive aisle along this area is two cars wide allowing cars to by-pass stopped vehicles and move to the exit. The long loop provides an extended area for cars to queue on site in an effort to reduce the impact of traffic on Central Avenue. This is especially important at pick-up times when the queue lines do not move as quickly.

Vans will enter the site in the same location as the cars and after turning to the right will turn left into a shorter loop that will cross over to a designated van drop off zone. The van zone is designed for five vans to be parked along the curb, if needed vans can stack in the short loop out of the way of the parent pick up loop.

In the base design buses will enter and exit the site via Sunset Road which is connected to Central Ave by Cefalo Road. The bus loop will provide space for up to six buses in the loop area. The property of 609 Central Ave is under a purchase and sale agreement and will be added to the project site. Funding was approved for purchase at Special Town Meeting on May 9, 2016. The Town expects to own the property by August 2016. This addition will provide land for a designated bus entrance from Central Ave (south of the proposed main entrance) buses will proceed single file to the drop off area and then exit the site via Sunset Road. This entrance area provides queue space for seven buses to align single file and the ability for additional buses to park side by side within the bus drive if needed.

In addition to both the main entrance to the site and the bus entrance / exit a gated emergency access point is provided at the north end of the site along Central Ave. Emergency vehicles have access to the entire length of the front of the building along the parking area, and to the south side by the bus loop or access drive. A 20' wide pedestrian walkway sweeps from the north edge of the parking area around to the west side of the building providing emergency access to approximately 75% of the west side of the building, the playgrounds and playfields. A large hardscape play area allows for staging, outriggers or vehicle turnaround.

The Hillside School's walk / bike to school program began in 2009 when the school joined the District's Safe Routes to School program. Their mission is to inspire students to walk or bike to school and to educate the community about the benefits of reducing carbon emissions, fitness, and strengthening the community. Awards are given to classes and students who walk or bike the most, and every Friday as well as special days each month are designated days for biking or walking to school to bring greater awareness to their goals. The school has developed a Safe Route to School map to help students and parents choose paths that provide proper sidewalks, crosswalks, curb cuts, traffic lights and crossing guards. As part of the Schematic Design study the town has begun to develop the Safe Route to school map, reviewed the condition of existing sidewalks, curb cuts, crosswalks and traffic lights and proposed additional school zone signs, crosswalks and improved sidewalks within this route.

Crosswalks with flashing lights will be provided both at the north and south ends of the school site to assist students crossing Central Avenue. A crossing guard will be stationed near the south entrance to provide additional safety during school arrival and dismissal times. Once on school property sidewalks are provided to allow for students to safely access the front door, bus drop off area, lower student entrance, or rear playground space without crossing the parking area or drive aisles.

Facility Service and Delivery

Service access to the site is from Central Avenue. With the acquisition of 609 Central Ave delivery and service vehicles will use the school bus access drive, entering from Central Ave and exiting via Sunset Road. A dedicated service area allows trucks to back in for deliveries and to access trash and recycling bins outside the bus lane. Prior design iterations without 609 Central Ave accommodated delivery access through the bus circle. Town Meeting's decision to purchase the additional site (609 Central Ave.) enhanced and improved service, traffic flow and operations on the site.

Parking

Site development for the new Hillside School will require a minimum of 90 parking spaces to meet the visitor and staff needs as outlined by the school. Although the Town of Needham does not define the parking needs of a school within the zoning by-laws a goal of 1.5 x full time equivalent (FTE) staff, or 117 spaces has been set based on precedent set by other school projects in the Town. This range of 90-117 parking spaces falls within the suggested range of parking spaces noted for schools in the Massachusetts Smart Growth / Smart Energy Tool Kit Bylaw. The proposed base plan includes 96 marked parking spaces, including three handicap accessible spaces. With the inclusion of the 609 Central Avenue site the number of spaces will increase to 100 parking spaces.

Overflow or event parking can be achieved along the drive aisle, drop off zone and within the dedicated bus loop or access drive. The addition of these spaces will provide an additional 36 – 44 parking spaces and will serve to reduce the impact of the school special event parking on the adjacent neighborhoods and meet the goals set by the District for on-site parking.

Outdoor Classrooms

The development of outdoor classrooms and learning spaces has been a focused goal of this project. The project site provides many opportunities for environmental learning given its proximity to the wetlands and wooded uplands. Additionally, a manmade pond exists on site which is planned to be included in the science curriculum. The Design Team has worked with the District educational leaders to incorporate landscape features that support or enhance the curriculum. This includes the addition of specific trees and plantings coordinated with the elementary school Life Science programs, a dedicated area for planting and gardening, the development of trails and pathways that lead to the wetlands and wooded areas, a designated art courtyard for working and displaying art, a small performance area that encourages both organized and impromptu performing art, and small gathering areas with natural writable surfaces and benches where children and teachers can gather.

Aesthetic Focal Point Narrative

The building is designed to be viewed as a whole, set in the landscape and context of the neighborhood. The cohesive nature of the design allows the building to stand as the focal point of its site. The strong horizontal bands of the roof lines, windows, and base material de-emphasize the building height and ground it to the site. Elements emerge from the whole in layers. On the eastern elevation, the main entrance is expressed as an elevated platform and glazed tower. The lower level entrance is similarly expressed as a vertical element that signals not only the student/event entry, but also as the boundary between public and private functions. Finally, and as a secondary focus, the classroom volumes are celebrated by being pulled from the building spine in a rhythm that reflects their functional use and the residential neighborhood.



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INTRODUCTION

Summary of Preferred Solution Narrative

On January 27, 2016 the Massachusetts School Board Authority voted to approve the "Town of Needham, as part of its invitation for Feasibility Study, to proceed into Schematic Design to replace the existing Hillside Elementary School with a new K-5 facility on the Central Avenue site. The approval is conditional upon the Town's full ownership, control and exclusive use of the entire proposed project site, or a combination of ownership and, as to that portion of the proposed project site now owned by an adjacent town, a lease that assures exclusive jurisdictional and control of that land for the anticipated useful life of the approved project" (see Appendix X-01 for site plan). The Town of Needham has made a strategic investment in property on Central Ave for the new elementary school. This includes purchase of the Owen's Poultry Farm site and adjacent residential properties in early March 2016. The Deeds for these seven parcels are included in Appendix X-02. These properties were then designated for educational purposes at Annual Town Meeting- May 2, 2016- Article#33. The Town is in the process of acquiring one additional parcel for educational purposes at 609 Central Ave which is under agreement, and funding was appropriated at Special Town Meeting May 9, 2016 – Article #7. A closing date is set for early August 2016. These documents are all included in Appendix X-02. The License Agreement that allows the Town of Needham to construct and maintain a multipurpose playing field and nature trails on the land adjacent to the Project Site that is located in the Town of Needham but owned by the Town of Wellesley is included in Appendix X-03.

The preferred solution, submitted to the Board and approved on January 27, 2016, includes a K-5 school with a three story academic wing. There are four sections per grade, dedicated spaces for art, music, Spanish and technology, extended learning areas on each floor, a library with separate teaching zones, several special education teaching areas located throughout the facility, a gymnasium, adaptive physical education room, OT/PT teaching space, an administrative suite with conference rooms and teachers work room, and a cafeteria with a performance platform and separated quite dining spaces for student use.

The design efforts documented with in the Schematic Design Report address the space challenges and educational programing needs identified in the Feasibility Study. The building design has been developed and incorporates the comments, considerations, and concerns identified by the School Department Working Group, the Permanent Public Building Committee (PPBC), Development Review Team, Design Review Board, the Planning Board, Conservation Commission, Public Safety Officials, other town committees, the MSBA, and the general public with whom we have met with several times

throughout the design process. Meeting dates are listed below and meeting minutes can be found in Appendix X-04 of this report.

Overview of the Process

The preferred solution submitted in the PSR was a design option that proposed the construction of a new K-5 school on a 10.5 acre parcel of land. The project site, now referred to as the 'Central Avenue Site', includes the former Owen's Poultry farm and several adjacent residential properties. The properties were purchased by the Town in March of 2016 for the purpose of constructing a new elementary school on this site. One of the benefits of the project site is its location within the existing Hillside Elementary School catchment district. This location reduces the need for major redistricting of the Town's five elementary schools and resolves several of the site issues and concerns that are inherent with the existing Hillside School site. Issues with the current Hillside School site include the soil and ground water contamination, inadequate parking, poor site circulation, and limited buildable area. Since the purchase of the original properties the town has had the opportunity to purchase an additional adjacent site, 609 Central Avenue. The benefits of this additional site include the reduction of school traffic on the adjacent neighborhood, additional parking spaces, the ability to create a larger playground space and a landscape buffer between the school property and the adjacent residential properties along the southern edge. Funding for this site has been approved and the site is currently under contract. The Town expects to close on the property in early August 2016. The addition of this site does not change the building design or its location on the site. The bus and service area access is enhanced with the additional property.

The Central Ave site location and proposed design provides separated bus and parent drop off zones and parking for 96 to 100 cars (the latter is based on the inclusion of the 609 Central Avenue property) plus overflow parking capability. The dedicated delivery and service access does not interrupt the student play space, as it does at the existing school site, which provides more flexible delivery and recess times. The proposed site design provides areas for playgrounds, playfields, hardscape play, gardening and outdoor learning zones including an art courtyard and performance area, a science pond, nature trails to surrounding vegetative wetlands, and wooded uplands.

The new school is designed to meet the MSBA target enrollment of 430 K-5 students and provides four sections per grade. The four sections of kindergarten will accommodate a full day kindergarten program and allow the district to implement this long standing need across all five elementary schools. In addition to the base elementary and special education programs the new Hillside School will provide students with the space needed to offer the educational programs that are provided at the other elementary schools in Needham. These programs include Spanish, STEAM, and technology. Additionally, Extended Learning Areas have been incorporated into the design to provide space for collaborative, flexible learning environments and the opportunity for project based learning.

The cafeteria in the new facility has been zoned to provided spaces for both large group and smaller group, quite dining experiences. The smaller group dining spaces are available for choice by students who prefer or need a quieter dining experience and will also serve as a space for the Lunch Buddies program. This program is part of the District's social emotional learning curriculum (SEL) and focuses on the SE growth of each student by connecting students with a small group of peers and a trained guidance counselor to share lunch and conversation. Currently these lunch meetings, which occur on a daily basis, take place in guidance counselor's offices, the assistant principal's office, or in the hallway. The quite dining area will also be available for impromptu conference space for staff when not being used for dining.

The building and site are designed to provide spaces that can be shared with the community when not in use by the school. These areas include the gym, cafeteria / performance space, the library, playgrounds, and walking trails. As part of designing a building for shared use it is important to also consider the security requirements in areas of the school where the public access needs to be limited. To accomplish this the building has been designed to provide a separation between the public and private sections. Lockable doors separate the three story academic wing from the more public spaces of the gym, cafeteria / performance space and library. The facility design includes passive security measures as a means of providing a high level of security that is not evident or obvious to the building users. These methods include the location of administration offices along the front entrance path, large windows in the principal's office with direct view of the main entrance, vestibules at entrance doors, a view from the administrative desk into the main entrance vestibule, and windows from classrooms along the lower entrance path and at the rear of the building. In addition to the passive security methods technology driven security measures such as cameras, locks, and alarms will be in place. The security system will include lock down technology for the classroom doors and the classroom wing. Cameras and audio systems tied to the front office and exterior doors that will be operable by a FOB or card reading devices have been included in the design. Emergency access for the police and fire departments has been provided for approximately 75% of the exterior ground area of the building. Emergency vehicles can access the site from both the north or south side of the parking area along Central Ave or from Sunset Road located on the south side of the site. Access to the rear of the building is provided by a 20 ft. wide hardscaped path that leads from the north end of the parking area to the back of the site where a hardscape play area has been designed to meet the 80' turning radius of the fire departments' emergency vehicles.

Community Outreach

After the completion and delivery of the PSR to the MSBA on December 1, 2015, the project team held several User Group meetings. These meetings included current teachers, department heads, district curriculum developers, members of the Parent Teacher Council (PTC) and members of the Working Group. The goal of the User Group meetings was to hear and see firsthand how teachers and administrators were using existing spaces, and how they envisioned using the teaching spaces in the new building. They were asked what changes in teaching methods they could foresee and how spaces might be designed to support those methods. These User Group meetings where held both as large group meetings to talk about general building and site use and as small group meetings to talk about the specific room layout and data sheets. Through the course of several weeks the design team, which included both the educational programmer and the interior designer, met with each user group several times to arrive at the room design layouts for each of the spaces within the building.

Throughout the Schematic Design process the Design Team continued to meet with the Working Group and to make presentations to the Permanent Public Building Committee (PPBC) who serve as the School Building Committee for this project. Presentations and informative meetings were also held with the School committee, Development Review Team, Public Safety (police & fire departments), the Design Review Board, the Needham Council on Disabilities, the Conservation Commission, and the Needham Planning Board. Recommendations from these groups have guided the development of the design from the PSR stage to its current status.

A Notice of Intent (NOI) was submitted to the Conservation Commission in March 2016 to allow for the removal of contaminated soils (turkey grease) and non-conforming fill that had been placed on the property by the previous Owner. A public presentation was given to the Conservation Commission where neighborhood and community concerns were addressed. The NOI for the removal of soils was approved on March 24, 2016. Completion of this work is scheduled for late June or early July 2016. The second phase of work will include the removal of hazardous material in the existing buildings and the demolition of the structures including the houses, barns and sheds. This second phase of Work is scheduled to be complete prior to the end of the year, 2016.

The following is a list of major meetings between the Design Team and the Owner, meetings marked in **Bold** print indicate meetings that were open to the public:

| January 11 | РРВС | -project update to the PPBC |
|-------------|--------------------------------|---|
| February 8 | User Group Meeting | -kick off meeting to review upcoming goals |
| February 9 | User Group Meeting | Building use diagrams / general classrooms / media center, technology, gymnasium, Spanish, kindergarten, & nurse room data and plan review |
| February 17 | User Group Meeting | - Special Education / Kitchen / Back of house |
| February 18 | User Group Meeting | - Art, Music, Performance, Extend. Learning |
| February 22 | User Group Meeting | - Focus on exterior play and learning |
| February 22 | User Group Meeting | -Exterior imagery exercise |
| February 22 | User Group Meeting | -District heads review |
| February 22 | РРВС | -project update to the PPBC |
| February 23 | Development Review Team | review of proposed site and building |
| March 01 | User Group | update of project design direction |
| March 02 | Working Group | -tour of elementary schools |
| March 04 | Public Safety | -presentation to police and fire |
| March 07 | User Group | -final review of room layout |
| March 09 | User Group | -final review of library / art / outdoor spaces |
| March 09 | School Council | -presentation of plans to school council |
| March 10 | Working Group | -school admin. & school council members |
| March 14 | Working Group | -presentation of user group outcomes |
| March 17 | User Group | -nurse suite, library space review |
| March 18 | User Group | kitchen and back of house space review |
| March 21 | Design Review Board | -presentation to the Design Review Board |
| March 21 | РРВС | -presentation of updated plans to the PPBC |
| March 24 | Conservation Commission | -presentation to the conservation comm. |
| March 29 | Planning Board | -informal planning board review |
| April 12 | Working Group | -presentation of exterior imagery |
| April 19 | Council on Disabilities | -presentation for accessibility compliance |
| April 26 | School Committee | -presentation of plans and exterior image |
| April 27 | РРВС | -presentation of plans and exterior image |
| May 10 | РРВС | -presentation of SD cost estimates |
| May 17 | School Committee | -presentation of SD for final approval |
| May 24 | PPBC & Board of Selectman | -presentation of SD for final approval |

Total Project Budget Narrative

The estimated Building Construction and Site Cost is \$45,200,000 (rounded) which includes Base Construction, General Conditions and General Requirements, Bonds and Insurance, Overhead of the General Contractor, Fee Escalation and Design and Pricing Contingency. The estimated Total Project Cost is \$66,460,000 (rounded) and includes the Building Construction, Site Costs, Purchase of Land, and demolition of existing buildings listed above as well as: Architecture and Engineering Fees, Project Management Costs, Extra Services, Miscellaneous Costs, Owner Cost including student relocation costs, and estimated Fixtures, Furnishings, Equipment, and Technology Cost. The Town will appropriate \$460,000 for the design and construction of the playing field and nature trails as an independent but parallel project. The overall project budget is shown in the MSBA Form 3011 format and is included in Section 4.1.2.14. This cost estimate and budget is based on the delivery method of Mass General Law (MGL) chapter 149; design, bid, build with a general contractor. The decision to pursue the project delivery method of MGL chapter 149 over MGL chapter 149A, CM at Risk, was made by the PPBC and based on the belief that the potential cost savings under chapter 149 outweighed the schedule and coordination advantages the project would expect with a CM at Risk, chapter 149A, delivery method. The Town is anticipating a base reimbursement rate of 31% of Eligible Costs and is planning to obtain an additional 2% for Sustainability (LEED for Schools - Silver) and 1.72% based on the MSBA review of district provided materials regarding routine and capital maintenance programs for a total of 34.72% reimbursement.

Two independent cost estimates were prepared for the project, one by the Architect's cost estimator and one by the OPM. The two cost estimates have been reconciled and are provided in Section 4.1.215 & 4.1.216 respectively.

Pending MSBA approval in July 2016, the Town is planning a Town Meeting in October 2016 and a Ballot vote in November 2016 to authorize the funding for the project.

List of Alternates:

The project budget has included the following deduct alternates

- Concrete unit masonry veneer stone in lieu of natural stone veneer
- EPDM roofing in lieu of built-up roofing system
- 609 Central Ave Additional Property

The first two deduct alternates are listed as part of a bid strategy to be considered if bid come in over budget. The third item will be eliminated from consideration after the 609 property is purchased.

The project budget has identified the following add alternates

• Nature Walk and Play Field*

*This alternate will be independently funded from the main project.

Steps to Secure Local Funding Narrative

Town of Needham's steps to secure local funding for the new Hillside Elementary School at Central Ave started in 2015. This involved the study and purchase of the Owen's Poultry Farm (OPF) site at 585 Central Ave plus the abutting house properties at 559, 567,579, 597 and 603 Central Ave as well as 45 Sunset Rd from the Owen's family. This process took several steps including:

- Signing a Purchase & Sale Agreement for the above properties,
- Securing \$45,000 of additional Feasibility Study Funding STM- 11/2/2015- Article #12,
- Appropriating \$7,000,000 for the funding for the purchase STM- 11/2/2016- Article#13,
- Approving the Preferred Schematic Report (PSR) with the selection of the Central Ave site as the preferred location for the new school and submission to MSBA on 12/1/2015
- Approval of the Hillside School PSR by MSBA Board on 1/27/16 with authorization for the Town to proceed into Schematic Design,
- Closing the purchase of the OPF 10.5 acre property on 3/7/2016.

During the PSR process the Town also identified many advantages for purchasing an additional property at 609 Central Ave. The addition of this property will help to lessen the traffic impact of the new school on the adjacent neighborhood (Sunset Road), enhance the planted buffer along the southern boundary between the school property and the adjacent residential property, increase the school parking to 100 cars, separate bus and service traffic from the car traffic and increase the size of the upper playground. The steps taken to date to securing this property included:

- Signing an Intent to Purchase Agreement with owner of 609 Central Ave, contingent on funding,
- Appropriating \$762,500 to fund the purchase of 609 Central Ave STM- 5/9/2016 Article#7,
- Signing a Purchase and Sale Agreement for 609 Central Ave in process,
- Anticipated closing date on 609 Central Ave is 8/1/2016.

The Town of Needham has also entered into a License Agreement (dated 2/9/2016) with the Town of Wellesley for the use a portion of the adjacent land which is owned by the Town of Wellesley but is

located within the Town of Needham to the west of the Central Ave site. The Wellesley Water Board owns an 80+ acre parcel, which is mainly wetlands, surrounding the Rosemary Brook that acts as a buffer to their water supply wells. The License Agreement will allow for Needham to construct a playing field, and nature trails on farm fields and uplands which are bisected by the property line on the western side of the school. The Town of Needham will secure the funding for the design and construction of the playing field and nature trails as a parallel project in November 2016.

The proposition 2 ½ override vote for the funding of the balance of the design and construction funds for the new school is scheduled to occur at the fall - Special Town Meeting (STM) on 10/24/2016, and in a ballot question on 11/8/2016 at the same time as the national presidential election.

The anticipated 2016 reimbursement rate for the Hillside Elementary School project is **34.72%** as noted in the following MSBA Reimbursement Rate Calculation. The Town of Needham will only receive the base points of 31.00% before Incentives because the "Property Wealth Factor" has dropped to 0% from 1.47% since the 2014 Feasibility Study Agreement. The Maintenance Incentive points of 1.72% were noted by the MSBA in and email from the Project Manager on 10/28/2015. The 2% Energy Efficiency – "Green Schools" incentive points are targeted for the project by designing it to <u>LEED – Silver</u> standards, as noted within the Schematic Design Documents.

| Needham | | |
|---|-------|-----------|
| Hillside Elementary School - Schematic Design | | |
| MSBA Reimbursement Rate Calculation | | |
| Base Points | 31.00 | |
| Income Factor | 0 | |
| Property Wealth Factor | 0 | |
| Poverty Factor | 0 | |
| Subtotal : Reimbursement Rate Before Incentives | 31.00 | 2016 rate |
| | | |
| Incentive Points | | |
| Maintenance (0-2) | 1.72 | |
| CM at Risk (0-1) | 0 | |
| Newly Formed Regional District (0-6) | 0 | |
| Major Reconstruction or Reno / Reuse (0-5) | 0 | |
| Overlay Zoning 40R & 40S (0-1) | 0 | |
| Overlay Zoning 100 units or 50% of units for 1,2 or | | |
| 3 | | |
| family structures (0-0.5) | 0 | |
| Energy Efficiency - "Green Schools" (0-2) | 2.00 | |
| Model Schools (5) | 0 | |
| Total Incentive Points | 3.72 | |
| Anticipated MSBA Reimbursement Rate | 34.72 | |

Updated Project Description Narrative

The proposed new Hillside Elementary School to be located on Central Avenue in Needham, Massachusetts will serve 430 students in grades K-5. The 90,702 sq.ft. facility is situated on a 10.5 acre parcel of land that consists of rolling topography, wooded areas, and wetlands. The project site is an aggregate of the former Owen's Poultry Farm and adjacent residential properties. The existing site includes several barns, sheds, a retail facility, homes, driveways, fences, and retaining walls. These existing building features are depicted in the existing conditions drawing attached. The existing buildings, driveways, and other site structures will be demolished to accommodate the new school building and site development.

The new school has been designed to provide both interior and exterior learning spaces and to meet the educational program documented in the Educational Program Narrative and MSBA Space Summary. Providing a connection between the interior and exterior spaces with framed views from strategic learning areas such as the library and the extended learning areas and direct connections from other spaces such as the art room gives students the opportunity to connect and interact with their surroundings. The building materials have been chosen to reflect and compliment the natural environment. Materials that resemble wood and stone are used to ground the building to the site while the shape and forms reflect the residential context of the neighborhood.

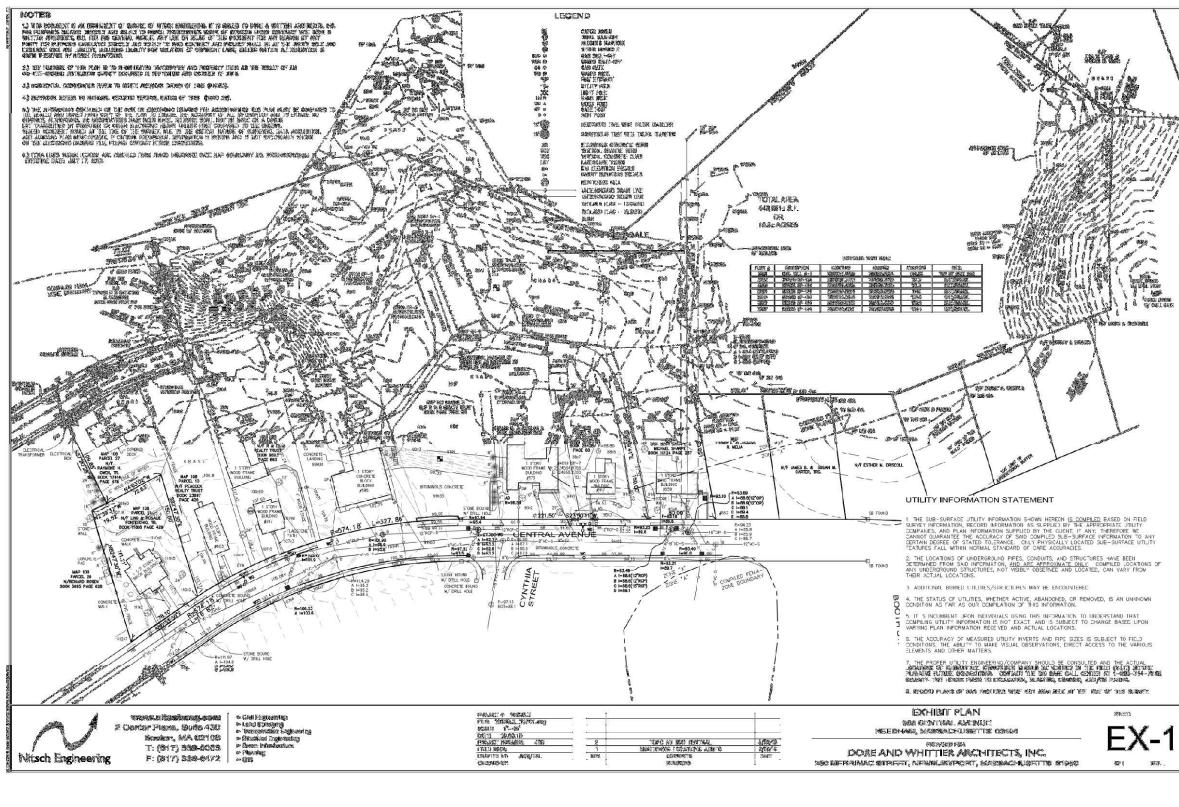
The following illustrations have been included to assist in communicating design concepts and intent.

- Existing site plan
- Rendered Site Plan(s)
- Colored Floor Plans*
- Exterior Elevation Perspectives

*The plans are colored by the program area categories in coordination with the MSBA Space Summary.

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project site





Rendered Site Plan

(without 609 Central Ave)



Dore & Whittier Architects

Rendered Site Plan

(with 609 Central Ave)



Dore & Whittier Architects

Hillside Elementary School



HINES SCHICHT GANTES SCHICHT GANTES SCHICHT GANTES SCHICHT GANTES SCHICHT GANTES SCHICHT GANTES

765

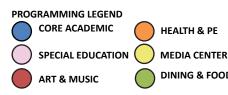
ELC.SWW0
 POTTINUTERLE
 ARTIDRACE

TAISED CANDENS

- EVENDENCE ACCERS
- MEADOW

DUTDOOR CLASSROOM

Lower Level Floor Plan





- HEALTH & PE
- DINING & FOOD SERVICE

ADMINISTRATION & GUIDANCE

CUSTODIAL & MAINTENANCE





Hillside Elementary School 4.1.2-15

Main Level Floor Plan





- HEALTH & PE
- MEDIA CENTER
- DINING & FOOD SERVICE

ADMINISTRATION & GUIDANCE

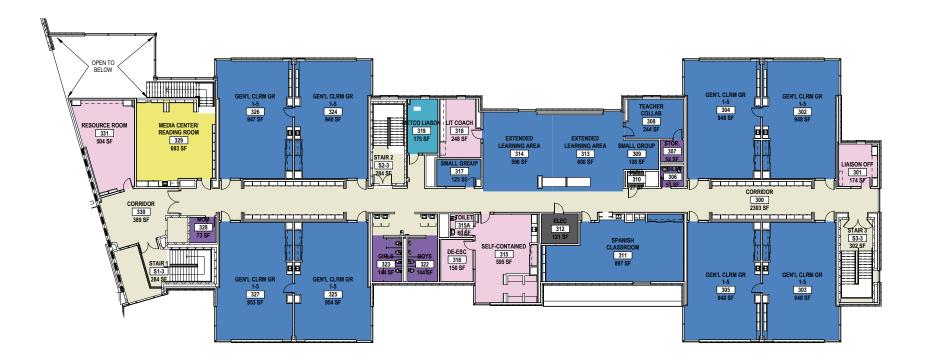
CUSTODIAL & MAINTENANCE



Hillside Elementary School4.1.2-16

Upper Level Floor Plan



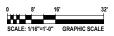


- HEALTH & PE
- MEDIA CENTER
- DINING & FOOD SERVICE

ADMINISTRATION & GUIDANCE

CUSTODIAL & MAINTENANCE





Hillside Elementary School4.1.2-17

Perspective Looking North

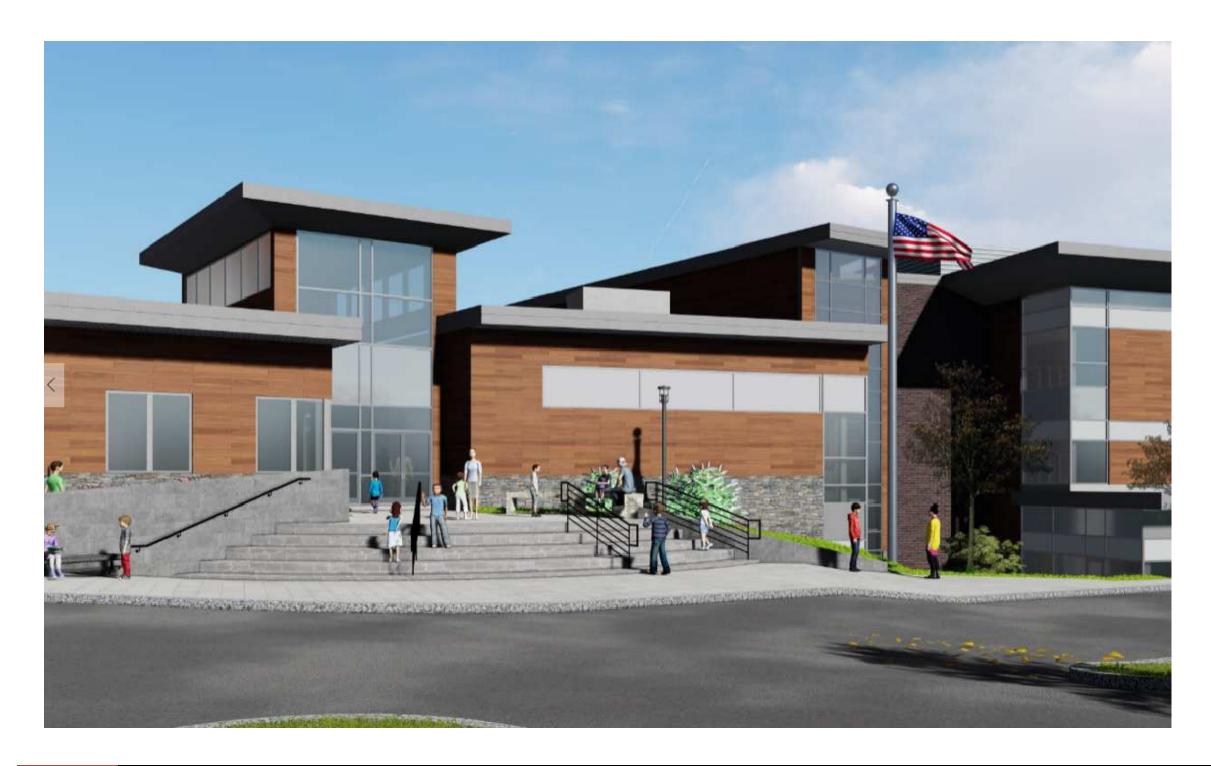


Dore & Whittier Architects



Perspective

Main Entrance



Dore & Whittier Architects

Perspective Looking South



Dore & Whittier Architects

Hillside Elementary School4.1.2-19

Perspective Lower Path





Dore & Whittier Architects

Perspective Lower Entrance



Perspective Rear Elevation



Dore & Whittier Architects

Perspective Building & Site



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Response to MSBA Comments on Preferred Schematic Report

The following attachment is a copy of the MSBA Preferred Schematic Report review and corresponding District response.

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HILLSIDE ELEMENTARY SCHOOL

TOWN OF NEEDHAM NEEDHAM, MASSACHUSETTS



PSR RESPONSE TO COMMENTS JANUARY 14, 2016



260 Merrimac St. Bldg 7, 2nd Flr •Newburyport•Massachusetts Phone: 978-499-2999 • Fax: 978-499-2944 1795 Williston Road, Suite 5 •South Burlington• Vermont Phone: 802.863.1428 • Fax: 802.863.6955

Response to MSBA Module 3 PSR Review Comments HILLSIDE SCHOOL NEEDHAM, MA

January X, 2016

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| | Appendices | |
| | Copy of Jan. 4, 2016 | |
| | Code Letter issued to MSBA | X-A |
| | Updated Geotechnical Report | |
| | (Appendix to Report not included) | X-B |
| | Updated PSR "Project Permitting | |
| | Schedule" | X-C |
| | Revised Preliminary Design Pricing Chart | X-D |

Wellesley License Agreement

X-E

1

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The following comments are in response the MSBA Review Comments of Module 3 Preferred Schematic Report for the Town of Needham Hillside Elementary School submitted to the MSBA on December 1, 2015. The goal of this response is to provide the MSBA with the most current and thorough information available at this time. OPM and Architect responses are noted in **Bold** type following the comments

3.3.0 Items Requiring Immediate Action:

The OPM and Design Team must review the project schedule and verify that the code analysis and all design parameters used for this project are based on the correct edition of the building code that will be in effect when the project is submitted for building permit. Be advised that the MA Department of Public Safety and Board of Buildings, Regulations & Standards have approved a draft 9th edition of the MA Building Code (including an updated "Stretch Energy" code), which is currently scheduled to be in full effect in July 2016.

An immediate response was requested regarding the project design based on the building codes that will be in effect at the time of permitting. A copy of the response letter noting Dore & Whittier's awareness of the proposed code changes was issued to the MSBA on January 4, 2016 can be found in Appendix A of this document.

3.3 **Preferred Schematic Report**

Preferred Schematic Report shall include the following:

- OPM certification of completeness & conformity *Complete*.
- Table of Contents *Complete*.
- Introduction Complete. Refer to comments shown in italics.
- Evaluation of Existing Conditions *Complete. Refer to comments shown in italics.*
- Final Evaluation of Alternatives *Complete. Refer to comments shown in italics.*
- Preferred Solution Complete. Refer to comments shown in italics.
- Local Actions and Approval Certification *Complete*.

3.3.1 Introduction

- 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 – *Provided with no further review comments.*
- Summary of updated project schedule, including:
 - Projected MSBA Board of Directors Meeting for approval of Project Scope and Budget Agreement – *Provided*
 - Projected Town/City vote for Project Scope and Budget Agreement *Provided.*
 - Anticipated start of construction *Provided*.
 - Target move in date *Provided*.
- Summary of the final evaluation of existing conditions *—It is noted that the Public Permanent Building Committee "has approved further funds to conduct additional testing of soils and ground water, to complete the interview and research process to complete a robust Phase I environmental study." Please confirm that the full report was included in the Preliminary Design Program submittal and no additional information is expected. Additionally, see comment below regarding floodplain designation.*

A complete Phase 1, per MSBA requirements, was included in the Preliminary Design Program. Additional studies have been conducted on the proposed Central Ave site and an updated report and cover letter from the Designer's consultant dated 12/16/15 are attached to this document (Appendix X-B). Per the attached report Extractable Petroleum Hydrocarbons (EPH) were detected in groundwater at the toe of the fill slope on the south side of the property in one of the four test wells. The test indicated slightly elevated levels of EPH and of volatile organic compounds (VOC) indicative of residue fuel oil, diesel fuel or motor oil. Due to the site's location and proximity to the Wellesley water supply the area of the testing is designated Zone II which will require notification and remediation of the contaminates. The Town will conduct assessment activities to determine the nature and extent of EPH in soil, groundwater, sediment, etc. Testing will also be done to verify that volatile petroleum hydrocarbon (VPH) does not exist in the soil or groundwater. As

noted in the attached report "if the site were outside of the Zone II, there would be no reportable condition based upon the GP-2 results because concentrations of oil in the soil and groundwater would not pose a significant risk to human health regardless of the site use, including a school." Further testing in the southwest corner of the site, to define the extent of contamination, and to develop a Release Abatement Measure (RAM) plan to remove or treat the contaminated soil and treat the groundwater will be conducted. However, other response actions that would involve removal and disposal or treatment of contaminated media cannot occur until the release has been reported and a plan describing the response actions to be undertaken is prepared by an LSP and submitted to DEP. The testing is scheduled for early January 2016 with reports due mid to late January. The town of Needham has dealt with similar levels of contamination on other construction projects and understands the process needed for reporting and development of a removal plan. Further testing will clearly define scope of soils to be removed. As noted in the HML report land transactions often "...escrow the money needed for clean-up costs from the sale proceeds..." to resolve this type of issue. Further testing will define anticipated scope and costs and allow the town to include the removal in the project schedule. While adding another step in the land purchase it is not now anticipated to affect overall project start or completion schedule. The Town is coordinating this additional testing with the current land owner.

- Summary of final evaluation of alternatives *Provided with no further review comments.*
- Summary of District's preferred solution *Provided with no further review comments.*
- A copy of the MSBA Preliminary Design Program project review and corresponding District response *Provided with no further review comments.*

3.3.2 **Evaluation of Existing Conditions**

 Describe 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. 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. – The evaluation of the Central Avenue site indicates that "a Letter of Mapping Amendment (LOMA) has been started. The LOMA includes the identification of elevation 85, the Town accepted flood plain, and the FEMA Flood Zone, as well as, a compiling of historical flood data and proposed mitigation of volumetric flood storage in areas where cut and fill is proposed at elevation 85 or less. This information is presented to FEMA with a request to accept elevation 85 as the FEMA Flood Zone". As the proposed building overlaps the current FEMA floodplain (corrected to be flood zone) please indicate what the proposed contingency plans are should FEMA not accept the proposed floodplain (corrected to be flood zone) elevation decreased 85 feet.

The Central Avenue project site is in FEMA flood Zone A, this zone does not have a flood elevation level associated with it and appears on the map as a line that crosses multiple contours and grade elevations. The goal of the LOMA plan is arrive at an accepted flood elevation for the site. The Town of Needham has assisted dozens of similar LOMA approvals over the past several years. One of those approved Letter of Map Amendments was for a property at the southern end of Sunset Rd, where FEMA recognized elevation 85 as the accepted flood plain. Since the new school site abuts the same wetland area, the Town Engineer has noted that he would be able to reference this prior approval and similar background material in support of the LOMA Application for the Central Avenue site. Should FEMA not accept the proposed flood elevation of 85 feet the Town will purchase flood insurance for the building. The Design Team will implement floodplain design measures to reduce the insurance rate.

• The MSBA understands that a Project Notification Form has been submitted to the Massachusetts Historical Commission ("MHC"). Please include in the schedule submitted with the schematic design, the timeline associated with filing and obtaining MHC approval prior to construction bids. The District should keep the MSBA informed of any decisions and / or proposed actions and should confirm that the proposed project is in conformance with Massachusetts General Law 950, CRM 71.00

The District has submitted the MHC form and is anticipating a response by the end of January 2016. The information has been added to the attached updated PSR "Project Permitting Schedule" (Appendix X-C). The District agrees to keep the MSBA informed of any decisions and / or proposed actions and will confirm

that the proposed project is in conformance with Massachusetts General Law 950, CRM 71.00.

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:
 - An analysis of each prospective site including natural site limitation, building footprint(s), athletic fields, parking areas, and drives, bus and parent drop-off areas, site access, and surrounding site features For the new construction options on alternate sites where the exiting building would remain, please describe the District's plans for the facility once the new building is operational.

In the 2014 Facilities Master Plan the District notes that the existing Hillside School building, if not used for the new school, could be used for temporary swing space for future school and town projects. The Town plans to continue to invest maintenance funds into the building so that it can provide future swing space for other construction projects but does not intend to do any major upgrades or renovations to the existing building.

- Evaluation of the potential impact that construction of each option will have on students and measures recommended to mitigate impact *Provided with no further review comments.*
- Conceptual architectural and site drawings that satisfy the requirements of the education program *Provided with no further review comments.*
- An outline of the major building structural systems *Provided with no further review comments.*
- The source capacitates, and method of obtaining all utilities 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 submittal. Additionally, confirm that a hydrant flow test will be completed prior to the Schematic Design submittal.

The designers will work with their consultants and with the town to provide the source and capacity of all utilities including a hydrant flow test to verify that existing capacity of the utilities will be sufficient for the

project. All testing will be complete prior to the Schematic Design submittal.

- A narrative of the major building systems *Provided with no further review comments.*
- 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) – *Provided with no further review comments*
- Permitting requirements and associated approval schedule It is noted that all sites would be subject to Planning Board for Site Plan Review, in addition to the Conservation Commission review and FEMA review of the Letter of Map Amendment ("LOMA"). Please incorporate a general timeline associated with the application and approval process of all applicable permits, including these reviews and Massachusetts Historical Commission ("MHC"), into the project work plan and schedule.

The "Project Permitting Schedule" included in Appendix X-C has been updated to include the anticipated submission, review and approval dates for the MHC and FEMA approval process; DEP testing / RAM plan / closure; and demolition.

- Proposed project design and construction schedule including consideration of phasing systems *Provided with no further review comments.*
- Completed Table 1 MSBA Summary of Preliminary Design Pricing spreadsheet An initial Preliminary Design Pricing spreadsheet was provided in the Preferred Schematic Report submittal. MSBA staff has reviewed and requested additional clarification from the project team via email.

The Preliminary Design Pricing spreadsheet has been revised and is included in Appendix X-D of this document.

3.3.4 **Preferred Solution**

- Educational Program
 - Summary of key components and how the preferred solution fulfills the educational program – The District provided an updated educational program that addressed the MSBA's Preliminary Design Program comments. One of

the 'Guiding Principles for Design' was to establish the entire campus as a learning environment. Please describe how the preferred solution satisfies this requirement.

The narrative below which defines the desired outdoor learning opportunities was included in the PSR submission. In general terms, the proposed design intends to take advantage of existing site features and new site features to position the site, itself, as a learning tool rather than a static landscape.

> "Should opportunities exist on prospective sites to utilize the outdoor environment for learning purposes, the District would like to be able to provide the following types of learning activities:

- Collection, examination, and identification of native plant, animal, and insect species;
- Collection, examination, and analysis of soil, water, and plant samples;
- Drawing and painting of the natural environment;
- Presentation of dramatic and/or informational presentations to a class-sized audience;
- Construction of gardens;
- Planting, maintenance, and harvesting of agricultural produce;
- Physical education exercise, games, dance, and general movement activities including running and hiking;
- Morning mingle (a before-school social/emotional learning opportunity that occurs after students arrive on site but before the official start of the school day)".

The site design of the preferred option on the Central Avenue site responds to all of these desires, which are illustrated in the site plan below.

- The design intent is to take full advantage of the existing wetlands, and bordering vegetated woodlands for instructional purposes. All students will have opportunities to engage the water's edge and the habitats that exist there for the collection, examination, and identification of native plant, animal, and inspect species; the collection, examination, and plant samples.
- The Art room is positioned in such a way as to allow an arts plaza immediately outside that space for the drawing and

painting of the natural environment. In addition, hardscaped areas west of the building are well positioned for students to draw and paint the natural environment by providing sweeping panoramic views of the neighboring water resource area and wetlands.

- The natural topography sets up an opportunity to create a main entry at the mid-level of the building and an event entry on the lower level, both on the east site of the proposed building. The proposed design takes advantage of this topographic transition to create an outdoor learning space, an amphitheater for the presentation of dramatic and/or informational presentations to a class-sized audience.
- As a former farm, the construction of raised vegetable gardens as an outdoor learning environment for students seemed to be a natural fit. They also respond to programmatic elements that currently exist at the Hillside site. In the current design, these gardens are positioned in the green space between the paved play area and the wetlands west of the proposed building.
- The proposed design positions the gymnasium, occupational therapy, and adaptive PE spaces on the lowest level and in close proximity to outdoor areas west of the building. Those outdoor areas include a paved play area capable of supporting outdoor basketball, four square, hopscotch, and other general physical education exercise, games, dance, and general movement activities. In addition to this paved play area, the proposed site design includes approximately the same open, general purpose green play area as the existing Hillside site. A portion of this has been depicted as a lined U8 soccer field.
- The proposed site design positions the school's administration with several options for 'morning mingle'. The amphitheater located as a transition between the main entry and the event entry is a natural gathering place that could serve 'Morning Mingle'. Although not likely large enough to serve all students during morning mingle, the event entry has been designed to be a clean pass-through connection to the paved play area west of the building to accommodate the remainder of the students. In addition to this scenario, the site design is expected to be iterated in schematic design to allow the hardscaped bus loop and the upper playground located on the southern edge of the site to serve as a potential location for morning mingle.



 \circ Additionally, please describe how the District collects and utilizes data to

Literacy:

monitor student progress

The district expects teachers to use ongoing and multiple forms of educationally relevant formative and summative assessments to monitor student literacy learning. Teacher observations of reading behaviors, conferring notes, running records and readers' notebooks are examples of the types of assessments that teachers are using.

In addition, *The Fountas and Pinnell Benchmark* Assessment is administered district-wide in the fall and spring each year. Students who have not met the grade level benchmark in the spring are re-tested in May/June. The calendar for administering this assessment is as follows:

| LIT | ERACY | | | |
|-------------------|--------------|--|--|--|
| Fall | | | | |
| SEPT 15 - OCT 16 | Grades 1-5 | | | |
| SEPT 28 - OCT 16 | Kindergarten | | | |
| | pring | | | |
| FEB 22 - MARCH 18 | Grades 3-5 | | | |
| FEB 29 - MARCH 24 | Grades 1 & 2 | | | |
| FEB 29 - MARCH 18 | Kindergarten | | | |
| Spri | ng Retest | | | |
| MAY 16 - JUNE 8 | Grades 1-5 | | | |

Each teacher is provided with a spreadsheet containing their students' information along with previous test results. Teachers are required to use the spreadsheet to record the test results for each student. Spreadsheets are collected electronically, data for all students is stored centrally, and results are collated and analyzed across the district by grade level and within each school by grade levels. This analysis is shared with principals and literacy coaches who work with teacher teams at each grade level during common planning times to examine this initial analysis of the grade level school and district data. Using this analysis as well as individual student data, grade level teams delve deeper into individual and collective student needs at a respective classroom or grade level. Teachers use the individual student data to set learning goals and to plan for small group reading instruction.

At grades K-3, the unit assessments from our Wilson-based phonics program, *FUNDATIONS*, also provide grade level teams with common data on a smaller scale to monitor student progress and help determine when or if "double dose" instruction is necessary.

To ensure consistency of practice, each year the district provides professional development for teachers who are new to the district with grade level instruction on how to administer *The Fountas and Pinnell Benchmark* Assessment and how to teach phonics and monitor student progress using the *FUNDATIONS* program.

Math:

An online benchmark assessment, *aMath*, is administered three times each year (September, January and June) in grades 2-5 and twice per year

(January and June) in grade 1. Kindergarten students are assessed in the fall and spring each year using a district-developed assessment. The process for collecting and analyzing kindergarten data at the district level is similar to process described above for *The Fountas and Pinnell Benchmark* Assessment. The calendar for administering this assessment is as follows:

| MATH Fall | | | | |
|-------------------|--------------|--|--|--|
| | | | | |
| OCT 19 - NOV 20 | Kindergarten | | | |
| 1 | Winter | | | |
| JAN 4 22 | Grades 3-5 | | | |
| JAN 12 - 28 | Grades 1-2 | | | |
| | Spring | | | |
| APRIL 25 - MAY 13 | Kindergarten | | | |
| MAY 9-19 | Grades 1 & 2 | | | |
| MAY 31 - JUNE 10 | Grades 3 - 5 | | | |

The Data from the online *aMath* assessment is readily available to each teacher and to grade level teams once all students have completed the test. Principals, school math coaches and the district math curriculum leader also have access to this data simultaneously. Math coaches, principals and the district math curriculum leader work with teachers and grade level teams during collaborative planning time to analyze individual, class, and grade level data from the assessment. During these grade level data meetings they delve deeper into individual student data, examine whole class and small group instructional implications. They identify students and develop plans for individual math interventions/extensions and plan for small group math instruction.

At all grade levels, common unit assessments from our THINK MATH program also provide grade level teams with data to monitor student progress on a smaller scale and help determine when or if additional/alternative instruction is necessary.

MCAS:

A third major source of data for the school based grade level teams comes from the MCAS tests. The district provides each school with a common set of MCAS English/Language Arts, Math, and Science/Technology MCAS achievement and growth reports. Principals use these reports to work with

their math and literacy coaches to plan for data meetings with their respective grade level teams. Teams examine item analysis, standards analysis, and individual students' achievement and growth reports to determine how well existing curriculum and instructional practices are meeting expectations for individual learning. The results are then used in conjunction with those from the The Fountas and Pinnell Benchmark and aMath assessments to delve deeper into data regarding individual student successes and challenges. The team's analysis then helps to determine implications for whole class and small group instruction as well as to identify students and develop plans for individual interventions/extensions.

 Please provide more detail on how the STEAM program differs from delivery of common core and supplemental subjects, and what specific infrastructure should be included in the proposed STEAM Classroom to support the program.

The STEAM program, offered in grades 1-3, is configured as a special area program. In addition to enhancing the academic program, it provides contractual preparation and collaboration time for classroom teachers. Similar to other special area programs (i.e. art, music, physical education); the STEAM program needs to have a space that is designed to enable the program to be delivered as intended. Common core subjects (i.e. ELA and Mathematics) are delivered in standard classrooms within flexible student grouping arrangements that occur as part of the instructional process. Although the STEAM program is an extension of the common core curriculum that happens in the classroom, it differs from the delivery of the classroom common core program in that it requires that students use various common items to design and produce a product (e.g. a speedy sail boat, a musical instrument that plays 3 pitches, etc.) or to program a robot to complete various tasks. All aspects of this program require space that is flexible and open. It has to have large tables to accommodate group project development as well as large and open floor spaces for testing and demonstration of the products developed. Easy access to technology and a sink with water for cleanup is also a must. The room should have storage that can accommodate and organize for easy access the extensive and varied kinds of materials that the units of study require. Since student product development occurs over the course of a number of weeks, storage space for their projects is also extremely important.

PLEASE NOTE: THE FOLLOWING INFORMATION REGARDING STEAM WAS PROVIDED IN THE DISTRICT'S INITIAL RESPONSE TO THE QUESTIONS RAISED THIS FALL

The STEAM program represents a unique contribution to the curriculum in the elementary schools in Needham. The STEAM program as it is configured is not so much a program, but rather a philosophical approach to learning that integrates the design process with the knowledge from the various disciplines. It is taught through project-based experiences that also emphasize the 21st century skills of collaboration, cooperation and communication. These skills extend and build upon the social/emotional skills that students develop as part of our classroom based social/emotional programming. The STEAM experience is divided into four 9-week segments (Engineering, Technology, Art & Music), with each component focusing on a common grade level theme such as "Earth", "Sound" and "Air & Weather," and how the engineering design process is applied within that discipline. An elementary engineering teacher (who spends an afternoon at each school in the district) along with the school's instructional technology specialist, art and music teachers staff the program.

- In the Arts portion of STEAM, students use skills and concepts learned in visual art and music to reinforce, express, practice and demonstrate knowledge and skills in other academic areas such as science or math. Examples of topics include: how patterns occur in music, using drama to better visualize and determine approaches to solving math problems, how patterns and symmetry in math are used in artistic design, and the role that length, width and depth play in sculptural form. Emphasis is placed on strengthening connections between the Arts and the other STEAM components via the over-arching themes mentioned above, a common STEAM design process, and common vocabulary that is drawn from the classroom based Science and Math Curriculum.
- For the engineering component of the program, students are engaged in project based engineering activities. As in all of the other STEAM rotations, students experience the engineering design process (ask, imagine, plan, create, improve and share) to solve a problem. Activities in the engineering class are extensions/reinforcements of the science

and engineering standards for each grade and are based on the common grade level themes. First graders design sails and windmills, second graders explore the properties of sound to design musical instruments and third graders engineer model buildings that are earthquake resistant.

 In the Technology segment of STEAM, students are introduced to computer programming and robotics via sites such as Botlogic, Code.org, and MIT's Scratch. In the process they are developing the basic computer and navigation skills needed to support general computer use as well as their programming activities. They explore programing through the use of robotic devices (BeeBots, Lego WeDos, and MakeyMakey) to make hands on connections with these concepts. Through this experience, students are exposed to a new literacy, have an opportunity to develop their critical and logical thinking skills, and begin to develop an understanding of the relationship between programming and the technologies that are part of their everyday lives.

All aspects of this program require spaces that are flexible and open. There is a need to accommodate group project development (large tables), testing and demonstration of the products developed, (large open floor spaces) and easy access to technology. Given that there are an extensive and varied number of materials associated with executing this program and that student product development occurs over the course of a number of weeks, storage space is also extremely important.

Spaces currently used for STEAM programming are inadequate to carry out instructional activities for the engineering and technology components of the program. For example:

 The engineering instruction occurs in a grade level classroom that is not occupied by a teacher because he/she has collaboration time or a planning period. Materials are brought in, distributed, and collected for each class. Student projects are often dismantled at the end of a class because there is no place to store them from one week to the next. This lack of storage for student products limits the kinds of learning experiences that can be incorporated in the program. The engineering teacher will often have to set up and break down materials in three different classrooms over the course of one afternoon of teaching at the Hillside school which curtails instruction time. Additionally, existing classroom spaces are not conducive to building and testing student projects.

 The Technology component of the STEAM rotation occurs in the computer lab that is located in the library of the Hillside School. This limits the principal's ability to schedule the library program and limits access to the technology lab for all other classes. The library/computer lab facility itself also restricts the kind of products and project that can be carried out with students for many of the same reasons previously mentioned with respect to the engineering component of the program.

The art and music components of the STEAM program are scheduled into the existing art and music rooms at the school. These spaces accommodate the types of activities that the STEAM program design requires. The current overcrowding limits the complete implementation of the STEAM program.

- Proposed variances to, and benefits of, any changes to the current grade configuration (if any) and a related transition plan *Not applicable*.
- Preferred Solutions Space Summary
 - Updated MSBA Space Summary spreadsheet *Provided. Refer to detailed comments in 'Attachment B'.*
 - Itemization and explanation of variations from the initial space summary (and MSBA review) included in the Preliminary Design Program – *Provided*. *Refer to detailed comments in 'Attachment B'*.

A response to the Preferred Solution Space Summary is provided in Attachment B.

- Preliminary NE-CHPS or LEED-S scorecard
 - Completed scorecard and a statement from the Designer certifying Please note that the MSBA requires that the project achieve at minimum, LEED for Schools Certification (50 points), the District currently indicates only 37 points in the 'yes' column with 38 points in the 'maybe' column. Please confirm that the scope necessary to achieve the District's stated goal of LEED Silver will be determined as stated and included in the Schematic Design Submittal.

The Design Team including the consultant to the design team, The Green Engineer, will work closely with the Owner to determine the scope necessary to achieve the District's goal of LEED Silver and will present an updated score care with the Schematic Design Submittal.

Building Plans

Provide conceptual floor plans of the preferred solution, in color that are clearly labeled to identify educational spaces. The 600 nsf Extended Learning Areas envisioned to be "shared by general education classrooms within a learning community", have been combined into one 1,200 nsf contiguous space between two clusters. As a result of this combination, the space is no longer immediately adjacent to the general classrooms. It is the MSBA's concern that these spaces will no longer be able to function as the spontaneous break-out space described in the District's Educational Program. Describe how this space is to be supervised and scheduled. Please describe how this change impacts the Educational Program for this project.

The following is a list of the educational programing and activities that would best be served by having two extended learning areas next to each other which will give us the flexibility of having all four sections of a grade level together in the same space. Most of these are very interactive and are done in very specific age-appropriate manner which would not work with a whole school audience in a larger space such as the cafeteria.

- Child Assault Prevention Program (CAPP) is delivered each year in grades 1, 3 and 5
- The new safety protocol training ALICE (Alert, Lockdown, Inform, Confront, Evacuate) will be done by police and faculty yearly at every grade level.
- Yearly anti-bullying training at each grade level.
- Our Understanding Differing Abilities (UDA) also at every grade level.
- The "Let's Build" program which presents each grade with an engineering challenge fitted to that grade level curriculum meets twice a year at each grade level.
- Grade level specific guest speakers and programing such as:
 - Meteorologists from local news stations (grades1 and 5)
 - Primary Source programing from Plimoth Plantation,
 Paul Revere House (grade 3)
 - History programming from Lowell Technology Center (grade 5)
 - Animal Rescue League (grade 1)
 - Speakers from Massachusetts Water Resources Authority (MWRA) and local transfer station for UNICEF

Water Project and Hillside's Green Team (grade 2, 4 and 5)

- First Lego League Team presentations (grades 4 and 5)
- Story Teller, David Coffin (multiple grade levels)
- Authors/Poets-in-residence (multiple grade levels)

As goal of the "least restrictive environment" program dictates that many lessons are begun for all students in their main classroom with follow-up accommodations and/or modifications provided by support staff. Some of these supports may occur in support staff offices, but most are best offered as near to classroom as possible to facilitate continuity with the regular education teacher and, when necessary, the regathering of the whole group at end of lesson. The following are a list of school staff and other adults who would likely break out into small group with students after a whole class mini-lesson occurs in the classroom: Teaching Assistants, ESL teachers, Math and Literacy Coaches, Lesley Interns and Parent and Community Volunteers.

In addition, all classes are paired with a buddy class for bi-monthly activities which will likely spill out to extended learning areas. Extended learning areas will also serve as supplemental areas for the STEAM program. Portions of that program will require more open floor area than a STEAM classroom could provide for activities like the Rube/Goldberg competition and the testing of robots.

For all of the activities described, these extended learning areas will not have students in them without the presence of an adult. As a result, the current design configuration will not prevent them from functioning as spontaneous break out spaces. While passive supervision will be provided via interior glazing to STEAM, Spanish, Art, and the other adjacent support spaces like Math Coaches, Literacy Coach offices, and Liaison Offices there is not a specific need for these spaces to be passively supervised from classrooms.

Finally, the goal of pairing two grade-level extended learning areas was developed early in the feasibility study process. Most of the options explored expressed this idea, although not all were able to achieve this as successfully as the preferred option. These illustrations below depict some of the design exploration of how pairing two extended learning areas makes them more flexible for the activities described above.

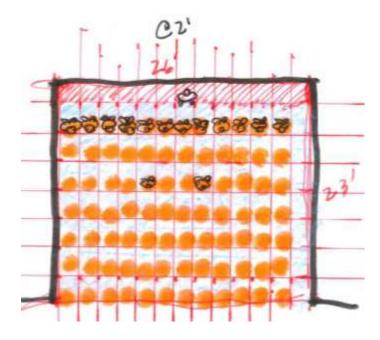


Figure 1 - 600 NSF for One Grade Level

At 600 NSF, a stand-alone extended learning area could support the activities for a grade level with students sitting on the floor, but would be feel crowded and not allow any furnishings or differentiation of space within for other break-out activities. Additionally the circulation within the space when at capacity would make it difficult to have students move easily and quickly to the front of the space for participation or presentation.

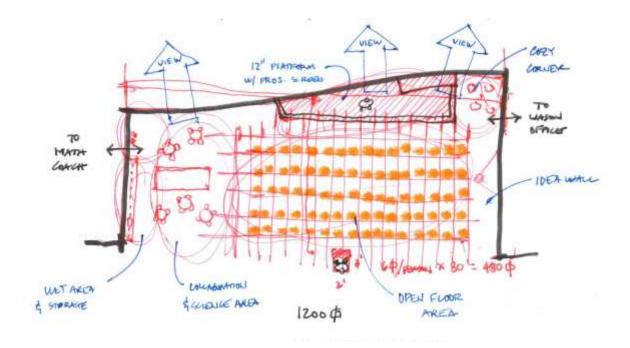


Figure 2 - (2) 600 NSF Paired

Two 600 NSF extended learning areas, paired, will allow for gradelevel programming with students sitting on the floor. It may also allow for a small platform to elevate guest speakers and the differentiation of the space into sub-zones for other activities. By being geographically located between two teams, travel distances to these resources are as short as possible. This design provides flexible space for speakers, presentations, project based learning, small group projects, and breakout sessions. Visual monitoring of students will occur within the space by teachers, aids, and presenters as well as by the adults in the adjacent office spaces.

- Site Plans Provide clearly labeled site plans of the preferred solution including, but not limited to:
 - Structures and boundaries *Provided with no further review comments.*
 - Site access and circulation The bus drop-off area is located off of the residential Sunset Road and Cefalo Street, the traffic analysis provided does not address these streets. Please provide additional information

regarding the ability of these streets and their intersections to support the proposed bus traffic.

The residential roads abutting the site are designed to town residential street standards. Buses drive on similar residential roads throughout the district on a daily basis. The bus circle geometry proposed for the new school is similar to the bus drop off circle at the back of the Broadmeadow School that operates effectively through similar size residential streets.

The separation of bus traffic from parent drop-off and pick-up traffic will be an important improvement over current conditions at the existing Hillside school. The District has conducted a bus driving test run on Cefalo Rd and Sunset Rd with no issue. Once the bus turnaround is constructed at the northerly end of Sunset Rd. access to the school site will be similar to many other schools in town. If issues arise no-parking signs can be installed on one or both sides of those streets following normal town parking signage approval processes. Additional traffic analysis will be conducted for the Schematic Design.

• Parking and paving – Provided. Please describe the drop-off / pick up procedures for the proposed site plan, specifically methods to control vehicular circulation.

Drop Off Procedures:

The parking lot traffic flow is designed to function as a one-way loop in a counterclockwise layout with a short-cut loop for van traffic. Parents and vans entering the site for morning drop procedures will turn right and proceed to the north with cars keeping to the right and stacking if necessary. Vans will pass any stacked cars on the left and use the first turning area to access the Van Aisle zone. Once unloaded vans will exit the site and typically turn right on Central Ave. Parents drop off (shown in orange in the below diagram) will enter the site and keep to the right. Cars will be single file and proceed to the north turning west and stopping at point "A" marked on the plan. Access to the Parent Drop Off Zone will be controlled at this point by Hillside School Staff. Parents will be allowed to enter the drop zone 12 vehicles at a time. Older students and teachers will be stationed along the curbside of the Drop Off Zone to assist younger students out of their car. Students unloading from this area will follow the sidewalk to the lower entrance of the building, pass through the building's lower lobby (not shown here) and join their classmates on the west side of the building for "Morning Mingle". Once a car is unloaded it will move into the left lane and proceed south,

stopping at point "B" before moving past the van drop off and proceed to the exit. A crossing guard will be stationed at the new Central Ave crosswalk adjacent to the driveway entrance. This guard will assist the safe direction of both pedestrian and vehicular traffic at the start and end of each school day.





Pickup Procedures:

In the afternoon students will stage for pickup either in the gym or lower entrance area. The afternoon pick up traffic flow is the same as the morning's however the afternoon will include an additional staff member(s) stationed at point "C" will communicate the arrival of parents for pick up to the staff located where the children are staged. Staff at point "C" will also direct cars for double stacking when needed to avoid cars backing up on Central Ave. As in the morning older students and teachers will be on deck in the loading zone to assist younger students into cars. Cars will move into the left lane to pass the vans parked in the 'van loading area'.

- Zoning setbacks and limitations *Provided with no further review comments.*
- Easements and environmental buffers *Provided. See comment above regarding permitting and the FEMA floodplain.*

• Emergency vehicle access – Provided. Please confirm that first responding emergency representatives have reviewed the site plan and do not require an access road that encircles the proposed building completely.

The site design provides emergency access to over 75% of the new building perimeter. Two points of access are provided along Central Ave, and one from Sunset Rd. In the AHJ meetings held to date both the fire chief and chief of police have agreed that this layout meets their requirements and that an access road that encircles the entire building is not required. A gated emergency entrance at the north end of the parking lot leads to a wide pedestrian path that can also function as an emergency access road to the north and west sides of the building. The hard scape play area on the west side of the building will be designed to allow emergency vehicles a turn around. This dimension is based on the vehicle sizes provided to the design group from the fire department. Grade changes on the southwest corner of the site restrict the design of a complete perimeter road around the building.

• Utilities – General location not indicated on plans. Please provide the anticipated proximity to building tie-in.

Utility tie-in is anticipated from Central Ave to the utility room in the center of the building on the lower level. Details will be refined during Schematic Design.

 Athletic fields and outdoor educational spaces (existing and proposed) – The Summary of District's preferred option indicates that the District "is in the process of finalizing a License Agreement with the Town of Wellesley, whose land borders the west side of the Central Ave site, for the use of abutting lands to supplement the play space and outdoor learning area." Please provide an update on the status of these discussions and confirm that 'Option J3' remains the preferred option and that the educational program will be satisfied regardless of the inclusion of this additional area. Additionally, please note that the MSBA will not issue a Project Funding Agreement until the District has full control and use of the proposed site.

> A copy of the License Agreement between the towns of Wellesley and Needham is attached in Appendix X-E. It identifies three areas where the new school can utilize Wellesley owned lands for passive and active recreation, A) Field Area, B) Upland Trail Area, and C) Pond Area. The pond area that is located on the proposed school site will be restored wetlands as part of the school building project and can be used as part of the school science studies. The play field will be developed as part of the school building project as well and

will be approximately the size of a U8 soccer field. This space will be used as part of the physical education program for the school and be available for Town youth sports programs after school hours. The upland trail area will be developed under separate project funding and may or may not be congruent with the school construction project. This area will be available to the school for use as part of general classroom education or as part of the physical education program. The potential hiking trails will also be available to the Town residents. The Town anticipates executing the License Agreement by February 2016. This additional outdoor area will supplement and enhance the outdoor play and learning areas of the preferred school site. However, the K-5 education program including physical education can be satisfied regardless of the inclusion of this additional area.

• Site orientation – Provided. In response to these comments please indicate how solar orientation has been integrated into the design of the proposed project.

To begin, the design recognizes that access to natural daylight is critical to the experience of all the building's occupants. In the current design, all instructional spaces and all professional office spaces have direct access to natural daylight.

Solar orientation on the site, however, is a challenge. The natural geometries of the site position its long axis North/South, which tends to lead to classroom orientations facing East/West. In order to maximize high quality daylight, classroom geometries have been designed to allow for North/South exposure. While fenestration patterns will evolve through schematic design, the intent is to consider glazing strategies that minimize harsh East/West daylight and maximize North/South daylight. The design is also considering formal solutions for providing high quality daylight. Explorations are underway to test a variety of massing strategies that will shade glazed areas.

- **Budget** Provide an overview of the Total Project Budget and local funding including the following:
 - Estimated total construction cost *Provided with no further review comments.*
 - Estimated total project cost *Provided. Please note that all costs associated with the acquisition of property are categorically ineligible for MSBA reimbursement.*

The District understands that all costs associated with the acquisition of property are ineligible for MSBA reimbursement.

- Estimated funding capacity *Provided with no further review comments.*
- List of other municipal projects currently planned or in progress *Provided with no further review comments.*
- District's not-to-exceed Total Project Budget *Provided with no further review comments.*
- Brief description of the local process for authorization and funding of the proposed project *Provided with no further review comments.*
- Estimated impact to local property tax, if applicable *Provided with no further review comments.*
- Completed MSBA Budget Statement *Provided with no further review comments.*
- **Schedule** Provide an updated project schedule including the following projected dates:
 - Massachusetts Historical Commission Project Notification Form As noted above, please incorporate a general timeline associated with the application and approval process of all applicable permits, including Massachusetts Historical Commission ("MHC"), into the project work plan and schedule.

The MHC response is anticipated by the end of January 2016. An updated Project Permitting Schedule is attached.

- MSBA Board of Directors meeting for approval to proceed into Schematic Design *Provided with no further review comments.*
- MSBA Board of Directors meeting for approval of project scope and budget agreement and project funding agreement *Provided with no further review comments.*
- Town/City vote for project scope and budget agreement *Provided* with no further review comments.
- Design Development submittal date *Provided with no further review comments.*

- MSBA Design Development Submittal Review (include required 21day duration) – *Provided with no further review comments.*
- 60% Construction Documents submittal date *Provided with no further review comments.*
- MSBA 60% Construction Documents Submittal Review (include required 21-day duration) *Provided with no further review comments.*
- 90% Construction Documents submittal date *Provided with no further review comments.*
- MSBA 90% Construction Documents Submittal Review (include required 21-day duration) *Provided with no further review comments.*
- Anticipated bid date/GMP execution date *Provided with no further review comments.*
- Construction start Provided with no further review comments.
- Move-in date *Provided with no further review comments.*
- Substantial completion *Provided with no further review comments.*

3.3.5 Local Actions and Approvals to include:

- 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 *Provided with no further review comments*.
- Signed Local Actions and Approvals Certification(s):
 - Submittal approval certificate *Provided with no further review comments.*
 - Grade reconfiguration and/or redistricting approval certificate *Not applicable.*

Attachment-B

Response to Attachment B – Module 3 Preferred Schematic Space Summary Review

Core Academic – The District is proposing to provide a total of 30,750 net square feet (NSF) which exceeds the MSBA guidelines by 11,950 NSF. The proposed area in this category has decreased by 500 NSF since the Preliminary Design Program submittal. The MSBA agrees to support a project that includes 4 classrooms per grade level to align with the District's stated class size policy. As mentioned in the Preliminary Design Program ("PDP") review comments, the MSBA will require additional information to understand how the 'Extended Learning Area' spaces are to be scheduled in conjunction with the proposed General Classrooms and STEAM classroom. Please provide additional scheduling and projected utilization rates of these spaces. Please refer to comments in Attachment A; Building Plans for additional comments.

Please refer to the narrative under Preferred Solution above.

Special Education – The District is proposing to provide a total of 6,580 net square feet (nsf) which exceeds the MSBA guidelines by 2,050 nsf. 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.

The District will provide the Special Education program with the submission of the Schematic Design Submittal to the DESE for formal approval. The District understands that the DESE approval is a prerequisite for executing a Project Funding Agreement with the MSBA.

- Art and Music– The District is proposing to provide a combined total of 9,025 nsf which meets the MSBA guidelines. No further action required.
- Health and Physical Education The District is proposing to provide a total of 6,450 nsf which exceeds the MSBA guidelines by 150 nsf. As noted in the MSBA's PDP review comments, the MSBA does not accept this variation to the guidelines for additional gym storage. Adjustments should be made to bring the Health and Physical Education category to within the MSBA guidelines.

The Design team will attempt to incorporate the District's request for the additional gym storage space with the gross building area and not the net building area of the program.

- **Media Center** The District is proposing to provide a total of 2,605 nsf which meets the MSBA guidelines. No further action required.
- **Dining and Food Service** The District is proposing to provide a total of 6,798 nsf which exceeds the MSBA guidelines by 292 nsf. As noted in the MSBA's PDP review comments, the MSBA does not accept this variation to the guidelines for additional square footage in the staff dining area.

Please confirm that the District has considered combining this space with other teacher planning or administration spaces.

With respect to the Staff Dining Area the district disagrees with the MSBA assertion that 208sf is sufficient space for the Hillside school Teachers and staff. Using the MSBA metric of 20sf per person this size room would only accommodate 11 staff at a time or 22 staff over two lunch periods. The district's requested size of the room in the PSR submission was 500sf. At 20sf / person this room will accommodate 25 staff or 50 staff over two lunch periods. The number of teachers at the Hillside exceeds 50, and the total staff exceeds 70 as noted in the PSR. The School Department collective bargaining agreement with the teachers and staff requires a separate lunch room for staff. A 208sf lunch room would not provide adequate space to meet this agreement.

The room will also be used in morning and late afternoon for:

- Small staff meetings with parents
- Principal and PTC meetings,
- Special Education Parent Advisory Committee (SEPAC) Meetings with the principal an staff
- Health and safety meetings with principal and staff.
- **Medical** The District is proposing to provide a total of 510 nsf which meets the MSBA guidelines. No further action required.
- Administration and Guidance The District is proposing to provide a total of 2,320 nsf which exceeds the MSBA guidelines by 175 nsf. The overage in this category is due to the inclusion of a METCO office. The MSBA accepts this variation to the guidelines. No further action required.
- **Custodial and Maintenance** The District is proposing to provide a total of 2,030 nsf which meets the MSBA guidelines. No further action required.
- Total Building Net Floor Area The District is proposing to provide a total of 60,618 nsf which exceeds the MSBA guidelines by 14,617 nsf. Based on the comments provided above, adjustments to multiple categories will impact the overall proposed net square footage. The MSBA expects to receive an updated space summary with the District's responses to the above comments at which time MSBA may provide additional feedback and/or accept the proposed square footage as the District proceeds into schematic design.
- Total Building Gross Floor Area The District is proposing to provide a total of 90,927 gsf which exceeds the MSBA guidelines by 20,049 gsf. Based on the comments provided above, adjustments to multiple categories may impact the overall proposed gross square footage. The MSBA expects to receive an updated space summary with the District's responses to the above comments at which time MSBA may provide additional feedback and/or accept the proposed square footage as the District proceeds into schematic design.

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.

The Designer, District and Town acknowledge the statement and MSBA procedures noted above.

Proposed Space Summary- Elementary Schools

ROOM

NFA¹

1,250

125 200

1,000

1,000

1,200

225

2,355 125 125

2,225 500 1,000 343 1,430

250 100

0

50

Assumes Full Day Kindergarten **REVISED 01.13.16**

PROPOSED

New

OF RMS

6

1

| HILLSIDE ES | Existing Conditions | | | | | |
|--|---|---|---|--|--|--|
| ROOM TYPE | ROOM NFA ¹ | # OF RMS | area totals | | | |
| CORE ACADEMIC SPACES | | | 15,916 | | | |
| (List classrooms of different sizes separately) Pre-Kindergarten w/ toilet | | | · · · · | | | |
| Kindergarten w/ toilet | | | | | | |
| Classroom 1, 2 Toilet - XX, XX, XX, XX | 1,210 24 | 2 4 | 2,420 96 | | | |
| General Classrooms - Grade 1-5 | 24 | 4 | 90 | | | |
| XX, XX, XX, XX, XX, XX, XX, | 850 | 6 | 5,100 | | | |
| XX, | 830 | 10 | 8,300 | | | |
| Extended Learning Area | | | | | | |
| Small Group Rooms Book Room (NOT IN NET) | | | | | | |
| Project Materials Storage (NOT IN NET) | | | | | | |
| STEAM Classroom Teacher Collaborative | | | | | | |
| | | | | | | |
| SPECIAL EDUCATION (List rooms of different sizes separately) | | | 2,474 | | | |
| Self-Contained SPED (ELC) | 830 | 1 | 830 | | | |
| Self-contained SPED (ELC) | | | | | | |
| Self-Contained SPED - toilet (ELC) Self-Contained SPED - toilet | | | | | | |
| Resource Room (ELL) | | | | | | |
| Small Group Room / Reading XX | 192 | 1 | 192 | | | |
| XX | 54 | 1 | 54 | | | |
| OT/PT OT/PT Storage | 189 | 1 | 189 | | | |
| Adaptive PE | | | | | | |
| Speech & Language Office SPED Liaison Office | | | | | | |
| Liaison | 489 | 1 | 489 | | | |
| Liaison SPED Conference Room | 524 | 1 | 524 | | | |
| De-escalation (ELC) | | | | | | |
| Literacy Coaches | 98 | 1 | 98 | | | |
| Math Coach | 98 | 1 | 98 | | | |
| ART & MUSIC | | | 813 | | | |
| Art Classroom - 25 seats - 22 Art Workroom w/ Storage & kiln Music Classroom / Large Group - 25-50 seats Music Practice / Ensemble Music Storage | 813 | 1 | 813 | | | |
| | | | 2 0 2 2 | | | |
| IEALTH & PHYSICAL EDUCATION | | | 2,823 | | | |
| Gymnasium | 2,705 | 1 | 2,705 | | | |
| Gymnasium Gym Storeroom Health Instructor's Office w/ Shower & Toilet | 2,705 118 | 1 1 | | | | |
| Gymnasium Gym Storeroom | | | 2,705 | | | |
| Gymnasium Gym Storeroom Health Instructor's Office w/ Shower & Toilet Shower & Toilet (NOT IN NET) Health Instructor's Office | | | 2,705 | | | |
| Gymnasium Gym Storeroom Health Instructor's Office w/ Shower & Toilet Shower & Toilet (NOT IN NET) Health Instructor's Office MEDIA CENTER Media Center / Reading Room | | | 2,705 | | | |
| Gymnasium Gym Storeroom Health Instructor's Office w/ Shower & Toilet Shower & Toilet (NOT IN NET) Health Instructor's Office MEDIA CENTER Media Center / Reading Room Media Specialist Office | 118 | 1 | 2,705 118 2,374 | | | |
| Gymnasium Gym Storeroom Health Instructor's Office w/ Shower & Toilet Shower & Toilet (NOT IN NET) Health Instructor's Office MEDIA CENTER Media Center / Reading Room | 2,182 | 1 | 2,705 118 2,374 2,182 | | | |
| Gymnasium Gym Storeroom Health Instructor's Office w/ Shower & Toilet Shower & Toilet (NOT IN NET) Health Instructor's Office MEDIA CENTER Media Center / Reading Room Media Specialist Office Instructional Tech Specialist Office DINING & FOOD SERVICE | 2,182 | 1 | 2,705 118 2,374 2,182 | | | |
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| Gymnasium Gym Storeroom Health Instructor's Office w/ Shower & Toilet Shower & Toilet (NOT IN NET) Health Instructor's Office MEDIA CENTER Media Center / Reading Room Media Specialist Office Instructional Tech Specialist Office DINING & FOOD SERVICE Cafeteria / Dining Larger Zone (Performance) Smaller Zones (Quieter) Stage Chair / Table / Equipment Storage Kitchen | 118 2,182 192 2,190 514 682 | | 2,705 118 2,374 2,182 192 3,671 2,190 514 682 | | | |
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| Gymnasium Gym Storeroom Health Instructor's Office w/ Shower & Toilet Shower & Toilet (NOT IN NET) Health Instructor's Office | 118 2,182 192 2,190 514 682 122 163 189 189 286 236 286 236 156 | | 2,705 118 2,374 2,182 192 3,671 2,190 514 682 122 163 189 189 189 189 189 286 236 236 | | | |
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| Gymnasium Gym Storeroom Health Instructor's Office w/ Shower & Toilet Shower & Toilet (NOT IN NET) Health Instructor's Office | 118 2,182 192 2,190 514 682 122 163 189 189 286 236 286 236 156 | | 2,705 118 2,374 2,182 192 3,671 2,190 514 682 122 163 189 189 189 189 189 286 236 236 | | | |

| (refer to MSBA Educational Program & Space Standard Guidel area totals ROOM NFA ¹ # 0F RMS area totals Comments 30,750 11,900 1.200 - 1,000 SF min - 1,300 SF max 5,000 1,200 - 1,000 SF min - 1,300 SF max - 19,000 950 16 15,200 900 SF min - 1,300 SF max - 900 3,600 1,000 SF min - 1,300 SF max - - - 900 16 15,200 900 SF min - 1,000 SF max - - 900 - - - - - - 900 1 - | |
|---|------|
| area totals NFA1 # 0 F RMS area totals Comments 30,750 11,950 19 18,800 1.00 SF mm - 1.300 SF max 5,000 1,200 3 3.600 1.00 SF mm - 1.300 SF max 19,000 950 16 15,200 900 SF min - 1.000 SF max 9000 3.600 1.00 SF min - 1.000 SF max 1.00 SF min - 1.000 SF max 19,000 950 16 15,200 900 SF min - 1.000 SF max 10,000 760 1 1 1 1 10,000 760 1 1 1 1 10,000 1 1 1 1 1 1 10,000 1 | |
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| 3.800 750 1.000 500 5.580 2,050 4.530 4,530 1.200 950 3 950 3 2,850 800 100 100 100 100 128 ker Closet & Lav Only 100 128 ker Closet & Lav Only Water Closet & Lav Shower & Changing T 500 1 500 128 ker Closet & Lav Shower & Changing T 500 1 500 128 ker Closet & Lav Shower & Changing T 600 128 ker Closet & Lav Shower & Changing T 128 ker Closet & Lav Shower & Changing T 500 1 500 128 ker Closet & Lav Shower & Changing T 600 128 ker Closet & Lav Shower & Changing T 128 ker Closet & Lav Shower & Changing T 500 2 1000 128 ker Closet & Lav Shower & Changing T 600 1 128 ker Closet & Lav Shower & Changing T 75 2 125 1000 1 1000 128 ker Closet & Lav Shower & Changing T 1000 1290 2,575 | |
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| 6,580 2,050 4,530 1,200 950 3 2,850 8% of pap. in self-contained SPED 950 3 2,850 8% of pap. in self-contained SPED 950 3 120 Water Closet & Lav Only 130 500 2 1,000 1/2 size Geni. Clm. 500 1 500 1/2 size Geni. Clm. 1/2 size Geni. Clm. 600 500 1 500 1/2 size Geni. Clm. 600 1 500 1/2 size Geni. Clm. 600 1 1/2 size Geni. Clm. 1/2 size Geni. Clm. 75 1 1/2 size Geni. Clm. 1/2 size Geni. Clm. 600 1 1/2 size Geni. Clm. 1/2 size Geni. Clm. 75 1/2 size Geni. Clm. 1/2 size Geni. Clm. 1/2 size Geni. Clm. 1000 1/1,000 1,000 assumed schedule 2 times / week / stude 1/2 size Geni. Clm. 11,000 1 1,000 assumed schedule 2 times / week / stude 1/2 size Geni. Clm. 1200 1 1,000 1/ | |
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| 1,000 1 1,000 assumed schedule 2 times / week / stude 1,200 1 1,200 assumed schedule 2 times / week / stude - 75 3 225 225 - - - 6,300 6,000 1 6,000 6,000 150 1 150 - - 0 6,000 1 6,000 6000 SF Min. Size 150 1 150 1 150 - - - - - 150 1 150 - - 150 1 150 - - 150 1 150 - - 150 1 150 - - 2,605 1 2,605 - - 2,605 1 2,605 - - 292 6,506 - - - 3,225 1 3,225 2 seatings - 15SF per seat - 1,000 - - - - - | |
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| - 75 3 225 225 0 6,300 6,300 6,000 1 6,000 6,000 150 1 150 1 150 1 150 1 150 1 150 1 150 1 150 1 2,605 2,605 2,605 1 2,605 1 2,605 Will be subdivided in future interations 2,605 1 2,605 1 2,605 1 2,605 1 2,605 1 2,605 1 2,605 1 3,225 1 3,225 1 3,225 2 seatings - 15SF per seat 2,225 1 3,225 2 seatings - 15SF per seat 1,000 1,000 1 1,000 343 1 343 343 | nt |
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| | |
| 1,430 1,730 1 1,730 1600 SF for first 300 + 1 SF/student Add' | |
| 200 100 | |
| 500 208 1 208 20 SF/Occupant | |
| 510 0 510 | |
| 60 60 1 60 250 250 1 250 | |
| 200 100 2 200 | |
| 2,320 0 2,145 2,320 320 365 1 365 | |
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| 150 150 1 150 110 110 1 110 | |
| 250 375 1 375 125 125 1 125 | |
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| 150 <u>120 0 -</u> 0 <u>120 1 120</u> | |
| 175 125 | |
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| 110 | 1 | 110 |
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| 0 | 0 | 0 |
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| 150 | 2 | 300 |
| 0 | 0 | 0 |
| 315 | 1 | 315 |
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Proposed Space Summary- Elementary Schools Assumes Full Day Kindergarten

PROPOSED

REVISED 01.13.16

| Custodians Office 220 1 220 Custodians Office 1 | HILLSIDE ES | Ex | isting Cond | litions | | | New | | | (refer | to MSBA Ec | | Guidelines Iram & Space Standard Guidelines) |
|---|--|-------------------------------|-----------------|-----------------|------------------|----------|----------------|------------------|---------------------|-----------------|--------------|--------------------|---|
| Catolating Office Catolating Office Catolating Office Catolating Office Catolating Office Catolating Storage 71 1 1 73 1 50 1 50 1 50 1 50 1 50 1 50 1 50 1 5 | ROOM TYPE | | # OF RMS | area totals | | | # OF RMS | area totals | | | # OF RMS | area totals | Comments |
| Catolating Office Catolating Office Catolating Office Catolating Office Catolating Office Catolating Storage 71 1 1 73 1 50 1 50 1 50 1 50 1 50 1 50 1 50 1 5 | USTODIAL & MAINTENANCE | | | 1,065 | | | | 2,030 | 0 | | | 2,030 | |
| Custoding Storage 71 1 71 1 71 1 71 1 71 1 71 1 71 1 71 | Custodian's Office | 220 | 1 | 220 | 1 | 50 | 1 | 150 | | 150 | 1 | 150 | |
| Xx Yi Yi <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td>1</td><td></td><td></td><td></td><td>1</td><td></td><td></td></th<> | | | | | | | 1 | | | | 1 | | |
| XX S6 1 S6 XX 81 1 56 Recycling Room / Trash 81 1 1 Storecom 525 523 523 XX 56 1 525 Y 1 200 1 200 1 200 1 200 1 200 1 1 66,468 1 1 46,001 1 1 1 66,468 1 1 20 1 200 1 200 1 200 1 200 1 200 1 200 1 200 1 200 1 200 | | | | | 3 | 75 | 1 | 375 | | 375 | 1 | 375 | |
| XX 81 1 81 1 81 1 81 1 81 1 87 88 1 88 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 1 1 1 1 1 1 1 | | | | | | | | | | | | | |
| Recycling Room / Treah Recycling Room / Treah Storeroom XX XX XX XX S9 1 Storeroom XX XX S9 1 Storeroom XX XX S9 1 S525 T XX S9 1 S52 S9 1 S 1 S | | | | | | | | | | | | | |
| Receiving and General Supply XX XX 525 XX 53 1 525 53 1 525 53 1 525 53 1 53 Keward, Telecom Room FRE Total Building Net Floor Area (NFA) Total Building Gross 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 Total Building Gross 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 Total Building Gross Floor Area (NFA) Includes the entire building gross square footage measured from the outside face of exterior walls Total Building Gross Floor Area (GFA) Total Building Gross Floor Area (GFA) Total Building Gross Floor Area (GFA) Includes the entire building gross square footage measured from the inside face of exterior walls Total Building Gross Floor Area (GFA) Total Building Gross Floor Area (GFA) Includes the entire building gross square footage measured from the outside face of exterior walls Total Building Gross Floor Area (GFA) Includes the entire building gross square footage measured from the inside face of exterior walls Architect Certification Includes the entire building gross square footage measured from the outside face of exterior walls Includes the entire building gross square footage measured from the subtide face of exterior walls Includes the entire building architect: | | 81 | 1 | 81 | | 00 | 1 | 400 | | 400 | 1 | 400 | |
| Store room 287 1 287 | | | | | | | | | | | • | | |
| XX 525 1 526 XX 53 1 527 XX 53 1 528 XX 53 1 53 Mexork / Telecom Room | | | | | | | | | | | | | |
| XX 59 1 59 Network / Telecom Room 1 59 1 59 Network / Telecom Room 200 1 200 1 200 MER 0 0 0 0 0 0 Other (specify) 0 0 0 0 0 0 Total Building Net Floor Area (NFA) 31,118 60,468 14,467 46,001 0 Total Building Gross Floor Area (OFA) 31,118 60,468 14,467 46,001 0 Grossing factor (GFA/NFA) 31,138 90,702 19,824 70,878 0 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 Individual Room Net Floor Area (NFA) Includes the entire building gross square footage measured from the outside face of exterior walls Includes the entire building gross square footage measured from the outside face of exterior walls Architect Certification Includes the entire building gross square footage measured from the outside face of exterior walls Includes the entire building authority, in accordance with the guidelines, rules, regulations and policies of the Massachuset | | 525 | 1 | 525 | | 01 | - | 207 | | 201 | 1 | 207 | |
| XX 53 1 633 1 633 1 633 1 633 1 633 1 633 1 633 1 633 1 633 1 633 1 633 1 633 1 633 1 633 1 60 1 200 1 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>+ +</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> | | | | | | | + + | | | | | | |
| Network / Telecom Room Image: Comparison of the factor of Principal Architect: Image: Comparison of Principal Architect: Index of Principal Architect: Image: Comparison of Principal Architect: Image: Comparison of Principal Architect: | | | | | | | - | | | | | | |
| HER Image: Control of the specify in the specific spaces assigned to a particular program area including such spaces Individual Room Net Floor Area (NFA) Includes the entre building gross space footage measured from the inside face of the perimeter walls and includes all specific spaces assigned to a particular program area including such spaces Total Building Gross Floor Area (NFA) Includes the entre building gross 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 Total Building Gross Floor Area (GFA) Includes the entre building gross square footage measured from the outside face of exterior walls 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 Scho Building Authority to the best of my knowledge and belief. A true Name of Architect Firm: Name of Architect: Name of Principal Architect: Name of Principal Architect: | | | | | 2 | 00 | 1 | 200 | | 200 | 1 | 200 | |
| Other (specify) Image: Constraint 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 to the best of my knowledge and belief. A true Other (specify) Image: Constraint 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 to the best of my knowledge and belief. A true Name of Principal Architect: Signature of Principal Architect: | | | | | | | | | | | | | |
| Other (specify) Image: Constraint 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 to the best of my knowledge and belief. A true Other (specify) Image: Constraint 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 to the best of my knowledge and belief. A true Name of Principal Architect: Signature of Principal Architect: | THER | | | 0 | | | | 0 | 0 | | | 0 | |
| Total Building Net Floor Area (NFA) 31,118 Proposed Student Capacity / Enrollment 1 Total Building Gross Floor Area (GFA) ² 45,005 Grossing factor (GFA/NFA) 14,467 Individual Room Net Floor Area (NFA) 14,467 Individual Room Net Floor Area (NFA) 11,45 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 Total Building Gross Floor Area (NFA) Includes the net square footage measured from the outside face of exterior walls Architect Certification Includes the entire building gross square footage measured from the outside face of the Massachusetts School Building Authority to the best of my knowledge and belief. A true Name of Architect Firm: | | | | Ţ | | | | | Ũ | | | , | |
| Proposed Student Capacity / Enrollment Image: Capacity / Enrollm | | | | | | | | | | | | | |
| Total Building Gross Floor Area (GFA) ² description description <thdescription< th=""> <thdescription< th=""></thdescription<></thdescription<> | Total Building Net Floor Area (NFA) | | | 31,118 | | | | 60,468 | 14,467 | | | 46,001 | |
| Total Building Gross Floor Area (GFA) ² description description <thdescription< th=""> <thdescription< th=""></thdescription<></thdescription<> | Proposed Student Capacity / Enrollmont | | | | | | | | | | | 430 | |
| Grossing factor (GFA/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 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 Total Building Gross Floor Area (GFA) Includes the entire building gross square footage measured from the outside face of exterior walls 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 to the best of my knowledge and belief. A true Name of Principal Architect: Name of Principal Architect: Signature of Principal Architect: Signature of Principal Architect: | Froposed Student Capacity / Enrollment | | | | | | | | | | | 430 | |
| Grossing factor (GFA/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 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 Total Building Gross Floor Area (GFA) Includes the entire building gross square footage measured from the outside face of exterior walls 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 to the best of my knowledge and belief. A true Name of Principal Architect: Name of Principal Architect: Signature of Principal Architect: Signature of Principal Architect: | Total Building Gross Floor Area (GFA) ² | | | 45 005 | | | | 90 702 | 19 824 | | | 70 878 | |
| 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 Total Building Gross Floor Area (GFA) Includes the entire building gross square footage measured from the outside face of exterior walls 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 Sch 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 Name of Principal Architect: Signature of Principal Architect: | | | | 40,000 | | | | 50,702 | 10,024 | | | 10,010 | |
| Total Building Gross Floor Area (GFA) Includes the entire building gross square footage measured from the outside face of exterior walls 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 Sch 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 Name of Architect Firm: | Grossing factor (GFA/NFA) | | | 1.45 | | | | 1.50 | | | | 1.54 | |
| 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 Sch 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 Name of Architect Firm: Name of Principal Architect: Signature of Principal Architect: | Individual Room Net Floor Area (NFA) | Includes the | net square f | footage measure | ed from the insi | de face | of the perim | eter walls and | includes | all specific sp | baces assigr | ned to a particula | ar program area including such spaces a |
| 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 Sch 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 Name of Architect Firm: Name of Principal Architect: Signature of Principal Architect: | Total Building Gross Floor Area (GFA) | Includes the | entire buildi | ng gross square | footage meas | ured fro | om the outside | e face of exteri | or walls | | | | |
| Name of Architect Firm: Name of Principal Architect: Signature of Principal Architect: | Architect Certification | l hereby cert Building Aut | ify that all of | the information | provided in this | s "Propo | osed Space S | Summary" is tr | ue, comp Massach | plete and acc | urate and, e | xcept as agreed | to in writing by the Massachusetts Scho |
| Name of Principal Architect: | | 24 | - | | - | - | | - | | | - | - | |
| Signature of Principal Architect: | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
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The following comments are in response to the Sarah Blache's email of 1/7/2016 and the questions that arose from the MSBA Facilities Assessment Subcommittee (FAS) meeting held on 1/6/2016. As requested in that email this response is supplemental to the District's response to PSR comments. OPM, Designer and District responses are consolidated and noted in **Bold** type following the comment.

• Circulation related specifically to the proposed extended learning areas and how they will be further developed in Schematic Design;

The above PSR response elaborated on the anticipated use, programming, size, flexibility and purpose of the extended learning areas. Conceptual sketches were added to demonstrate the most recent ideas of how the extended learning spaces on each of the three levels will be developed during the schematic design; these can be found in the body of the text above. The schematic design process will include the development of a room program for the space(s); identify teaching walls, fixed and movable furniture, storage and finishes; refine day-lighting and artificial needs; and explore multiple room set-ups. Design ideas will be reviewed with the school department, principal, and teachers who are part of the working group for this project. These extended learning areas are parallel to the corridors interconnecting the classrooms and surrounded by special education and specialty rooms. The size and flexibility allows the space to be used for many educational programs, both now and in the future. The centralized location, at the heart of each classroom wing, creates an extended learning area proximate to the classrooms, a place for grade level gatherings for specialty programs, project based learning experiments, group activities, team meetings or individualized learning.

• Access and use of the Town of Wellesley's property for play fields associated with the District's preferred solution, and how it relates to scope, budget, and schedule; and

The draft License Agreement between the Town of Needham and the Town of Wellesley for the use of the land is attached to the PSR response (Appendix X-E). The scope for the access and use by the school is divided into the three different zones noted in the license and includes:

- A) <u>Playing Field</u> The U-8 soccer field will be designed as part of the school project to take advantage of the open field on the west side of the new school while respecting the wetlands setbacks that surround it on three sides. The property line diagonally bisects the playing field.
- B) <u>Upland Trails</u> An accessible hiking trail will be designed as a separately funded project and potentially include a loop around the knoll of land abutting the western edge of the playing field. Similar to the "Eastman Trail" behind the Newman Elementary School, the path may include a combination of wooden walkways and stone-dust paths through the woods with views to the surrounding wetlands and Rosemary Brook. The majority of the trail is on Wellesley land and included in the License Agreement.

C) <u>Pond</u> – The existing farm pond is a man-made water body about 65-feet in diameter. The majority of the pond is within the Needham site boundary, but the inlet to the adjacent wetlands is on Wellesley-owned property. A comprehensive plan for the pond will be developed for the Notice of Intent to the Needham Conservation Commission for permitting of the school project. The Design will likely include the restoration of native plants within the 25ft "Do Not Disturb" buffer. The designers will look for opportunities to create educational spaces that can access the pond as a part of the outdoor learning program similar to that developed by the Needham Science Center at the Newman School.

The two towns anticipate finalizing and signing the License Agreement by February 2016. To facilitate Wellesley's approval of the designs for these areas it was agreed that the Town of Wellesley DPW Director, Mike Pakstis, will be invited to future milestone project meetings. This will include: Development Review Team (DRT), Conservation Commission, and Planning Board informal presentations as well as the formal hearings on the project. As an abutter to the school land The Town of Wellesley will also be formally noticed of the permit applications and meetings. The informal meetings will allow opportunity for feedback during the development of the design and facilitate formal administrative approvals by Wellesley.

The License Agreement has no rental cost for use of the land to the project. The insurance is the standard amount that is carried for all Needham Schools. The construction funding for the fields and pond improvements will be incorporated into the school project funding. The Town of Needham anticipates a separate and parallel funding for the hiking trail which may be eligible for Community Preservation Commission (CPC) funding. The District is in discussions with the Needham Park & Recreation Department, who oversaw the Eastman Trail project near Newman School, for the proposed development of the hiking trails.

• District's further development of building and site elevations related to the floodplain.

As discussed during the FAS meeting, the LOMA identifies elevation 85 as the new floodplain which is noted as a blue line on the Conceptual Site Plan. The current FEMA flood plain line is not based on current contour information and clearly crosses many contours noted in the existing conditions site plan. FEMA has already approved a LOMA for a property at the southern end of Sunset Rd which acknowledges elevation 85 as the flood plain. Formal FEMA approval of the LOMA for the preferred school site should take about four months and is noted on the updated Project Permitting Schedule (Appendix X-C). During Schematic Design the Schematic Site Plan will re-grade some of the playing field area using both cut and fill to adapt the farming field to the new school play field. These designs will follow standard planning and FEMA guidelines to off-set any fill with compensatory cut at a similar elevation.

The ground floor of the new school building is currently proposed at elevation 90, five feet above the floodplain elevation 85. This 5ft tolerance allows ample grade differential to accommodate site drainage sloping away from the building.

The Rosemary Brook is controlled by a weir in Wellesley where the brook crosses downstream beneath Wellesley Ave. The storage capacity of the 80 + acre Rosemary Brook basin is very large, and the Town of Needham has never observed water elevations above elevation 85 during 100-year flooding events and it is not likely to occur over the next 100 years. . Portions of the playing fields may be within the floodplain similar to several other schools in the district. As noted above the ground floor elevation is conservatively placed at elevation 90 well above the floodplain elevation 85. The Schematic Site Plan will develop a preliminary grading and site drainage plan that will integrate the building and site.



Jan. 4, 2016 Code Letter – Appendix X-A



January 4, 2016

Ms. Mary Pichetti Director of Capital Planning MSBA 40 Broad Street Suite 500 Boston, MA 02109

Project: Town of Needham, Hillside Elementary School

Subject: Response to Items Requiring Immediate Action

Dear Ms. Pichetti;

Per the letter dated December 21, 2015 an immediate response was requested for the following statement:

The OPM and Design Team must review the project schedule and verify that the code analysis and all design parameters used for this project are based on the correct edition of the building code that will be in effect when the project is submitted for building permit. Be advised that the MA Department of Public Safety and Board of Buildings, Regulations & Standards have approved a draft 9th edition of the MA Building Code (including an updated "Stretch Energy" code), which is currently scheduled to be in full effect in July 2016.

The Design Team response is as follows:

The OPM and Design Team note that given the current project schedule, the project will most likely be required to comply with the 9th edition of 780 CMR, which includes as part of the base building code the 2015 International Building Code with Massachusetts Amendments. The attached updated code review has been revised to reflect the proposed 9th edition code and associated references, including the November 15, 2015 Draft Amendments. No revisions to the use group classification, construction type classification, or arrangement and size of the means of egress system - which are the primary focus of the PSR code evaluation - are anticipated as a result of this change. The Town of Needham is not a STRETCH community, and the building will be designed to comply with the base code 2015 International Energy Conservation Code with Massachusetts Amendments when these are made available.

ARCHITECTS PROJECT MANAGERS

260 Merrimac Street Bldg 7 Newburyport, MA 01950 978.499.2999 ph 978.499.2944 fax

212 Battery Street Burlington, VT 05401 802.863.1428 ph 802.863.6955 Page 2

Should you have any further questions regarding the code analysis for the proposed school please do not hesitate to contact Dore & Whittier.

Best regards,

Ki

Michele Barbaro-Rogers, Project Manager DORE & WHITTIER ARCHITECTS, INC.

Cc: CL, LD D&W dist. File



ARCHITECTS, INC.

Summary of Requirements Massachusetts State Building Code Preferred Schematic Report – 11/19/2015

Revised 12/22/2015

| PROJECT NAME : | Needham Hillside Elementary School - Option J3C |
|----------------------|--|
| PROJECT NO.: | 15-0704 |
| APPLICABLE CODES: | Massachusetts State Building Code (780 CMR), 9th Edition (2015 IBC and draft amendments approved November 15th, 2015) Uniform Sate Plumbing Code (248 CMR 10.00) |
| PREPARED BY: | Dore & Whittier Architects |

The Needham Hillside Elementary School - Option J3C (the Project) includes the construction of a new elementary school serving grades Kindergarten through grade 5. This summary is intended to convey compliance of the completed school building project with the 9th Edition of the Massachusetts State Building Code (CMR 780) which is anticipated to be effective when the project is eligible for construction permitting.

Occupancy Characteristics

The completed project will contain classrooms for grades K through 5, administrative offices, a cafeteria (including a performance platform) and commercial kitchen, a gymnasium, and associated support spaces (mechanical, electrical, and storage spaces).

The occupancy of the complex will be generally classified as Use Group E (Educational) as defined in Section 305 with specific functions and occupancies defined as follows:

| Level | Function | Use Group |
|-------|-------------------------|-----------|
| | Classrooms | E |
| 1 | Gymnasium | E (1) |
| 1 | Storage | S-1 (2) |
| | Utility & Miscellaneous | U (2)(3) |
| | Classrooms | E |
| | Offices | B (2) |
| | Cafeteria | E (1) |
| 2 | Kitchen | E (1) |
| | Media Center | E (1) |
| | Storage | S-1 (2) |
| | Utility & Miscellaneous | U (2)(3) |
| 3 | Classrooms | E |
| 3 | Utility & Miscellaneous | U (2)(3) |

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260 Merrimac Street Bldg 7 Newburyport, MA 01950 978.499.2999 ph 978.499.2944 fax

212 Battery Street Burlington, VT 05401 802.863.1428 ph 802.863.6955

www.doreandwhittier.com

Note 1: Assembly areas that are accessory to Group E occupancies are not considered separate occupancies (§303.1.3).

Note 2: Accessory occupancies are not required to be separated from the main occupancy (§508.2.4)

Note 3: Incidental Accessory Occupancies shall be separated from the main occupancy as described in Table 509

Physical Characteristics

The total building area of the project is identified in Figures 1, 2, and 3 and is described as follows:

| Level | Total (SF) |
|---------------|---------------|
| 1 | 31,780 |
| 2 - Classroom | 39,570 |
| 3 | 19,577 |
| Totals | 90,927 |

The building heights from the average grade to highest portion of the flat roof can be characterized as follows:

| Stories | Building Area |
|-------------|-----------------------------|
| One Story | 28' (Gymnasium) |
| One-Story | 20'-0" (Cafeteria Platform) |
| Three-Story | 45'-0 (Classroom) |

Construction Type, Allowable Height, and Allowable Area

To satisfy the design intent with the least restrictive construction type, the school is classified as Type II B construction.

The allowable tabular building height in feet as described in table 504.3 for Type II B, Group E in a building equipped with an automatic sprinkler system is **75 feet**.

The allowable tabular building height in stories as described in table 504.4 for Type II B, Group E in a building equipped with an automatic sprinkler system is **3 stories**.

The allowable tabular area in square feet as described in table 506.2 for Type II B, Group E in a multistory building equipped with an automatic sprinkler system is **43,500 square feet**.

The frontage increase provisions of Section 506.3 are not considered as part of this evaluation since the project already complies with the allowable area with no additional increases.

Fire Resistance Rating of Building Elements:

Fire resistance rating of building elements for type IIB construction are based on the requirements of Table 601 or by other code provisions as described below. Refer to Means of Egress section of this Summary for rating of egress components.

Primary Structural Elements

None required.

Bearing Walls

None required.

Other Exterior Walls

The building is significantly separated from any other building and therefore exterior walls are not subject to the fire resistive rating requirements based on separation distance in Table 602.

Exterior walls may be required to be rated in close proximity to exit enclosures in accordance with Section 1023.7. Final configuration of stair towers will determine to what extent this section applies to the project.

Interior Walls & Partitions

No requirement per Table 601. Interior walls and partitions shall be rated based on the specific conditions outlined in the Occupancy Separations and Mixed Use, Building Separations, or Special Use & Occupancy Considerations sections of this Code Summary. Additional interior wall & partition ratings may also be required by other sections of the code and are described elsewhere in this Summary.

Barrier walls enclosing incidental occupancies indicated on table 509 do not require protection of the supporting construction per section 707.5.1, Ex. 2.

Floor Construction and Secondary Members:

None required.

Roof Construction and Secondary Members:

None required.

Means of Egress

Occupant Loads, including Assembly Spaces without fixed seating will be calculated based on Table 1004.1.2, by actual seat count for spaces with fixed seating (1004.4), or by the design occupant load where this value exceeds the tabular values in accordance with Section 1004.2. Occupant loads for individual spaces can be found on the Code Plan Diagrams. For the sake of these calculations, General Classrooms and other instructional spaces intended to contain only loose furniture are calculated as "Classroom area" (20 net square feet per occupant), Art Studios, Music Classrooms, and other vocational spaces intended to contain large amounts of fixed casework and/or equipment are calculated as "Shops and other vocational areas" (50 net square feet per occupant).

The number of required exits per story and the total egress capacity required and provided are summarized on the Code Plan Diagrams.

Two exits or exit access doorways shall be provided from all spaces with a maximum occupant load larger than 49 per Table 1006.2.1; this requirement is applicable to all classrooms with a net square footage over 1000 SF unless an alternative means of calculating the occupant load is reviewed and accepted by the Authority Having Jurisdiction.

Three exits shall be provided from spaces with an occupant load of 501 to 1,000 occupants, and four exits shall be provided from spaces with an occupant load greater than 1,000 occupants (1006.2.1.1). Exits shall be arranged in accordance with section 1007.1.1.

At the boiler room, largest piece of fuel fired equipment exceeds 400,000 BTU input capacity, and two exit access doorways will be required (1006.2.2.1).

The maximum length of exit access travel distance shall not exceed 250 feet in accordance with Table 1017.2.

Corridors are not required to be rated per Table 1020.1.

Corridors with a required Educational occupancy of 100 or more shall not be less than 72" wide in accordance with Table 1020.2, or not less than 44" for all other portions of the building.

Dead end corridors shall not be greater than 50' in length (1020.4 Ex. 2)

Interior exit stairways shall be enclosed with fire barriers and / or horizontal assemblies with a rating of not less than 1 hour (1023.2).

Plumbing Fixtures

The required plumbing fixture types and counts have been calculated based on the anticipated occupancy of the building in accordance with 248 CMR 10.00: Uniform State Plumbing Code, Table 1, and distributed throughout the buildings as indicated below:

| | ints | 248 CMR | | | | | | | |
|--------------|-----------|--|----------|----------|-------------|----------|--------|----------|----------------|
| | Occupants | Table 1: From 248 CMR, Table 1 | Female | Ma | le | Total | | Drinking | Jan. |
| | ŏ | | toilets | toilets | urinals | Lavs | Shower | Fountain | Sink |
| | | | | | | | | | 1 per |
| | 72 | Kindergarten (See notes 1, 2,) | 1 per 20 | 1 per 20 | N/AA | 1 per 20 | | 1 per 75 | floor |
| | | Min. Required (10.10 (18) section h) | 2 | 2 | 0 | 4 | | 1 | |
| μ | | 1st Floor | 4(Լ |)) | 0 | 4 | | | |
| Inh | | Total in project | 4(L | 1) | 0 | 4 | | | |
| | | | | | | | | | |
| | 430 | Elementary | 1 per 30 | 1 per 60 | 1 per 60 | 1 per 60 | | 1 per 75 | 1 per floor |
| | | Min. Required (10.10 (18) section <i>h</i>) | 8 | 4 | 4 | 8 | | 6 | |
| בארם בארם | | 1st Floor - Classroom Wing | 4 | 2 | 2 | 4 | | 2 | |
| | | 2nd Floor - Classroom Wing | 4 | 2 | 2 | 4 | | 2 | |
| נחום | | 3rd Floor - Classroom Wing | 4 | 2 | 2 | 4 | | 2 | |
| | | Total in project | 12 | 6 | 6 | 12 | | 6 | |
| | 1 | | | | | | | | |
| auu | 70 | MS Education (Staff) | 1 per 20 | 1 per 25 | 33% | 1 per 40 | | | |
| 5 | | Min. Required (10.10 (18) section h) | 2 | 2 | 1 | 2 | | 1 | |
| ל ב | | 1st Floor (note 3) | 1 | 1 (U) | n/a | 2 | | | |
| | | 2nd Floor | 0 | 1 | n/a | 1 | | | |
| ň | | 3rd Floor | 1 | 0 | n/a | 1 | | | |
| | 1 | | | | | | | 1 | |

| d aff | 8 | Kitchen Staff | 1 per 20 | 1 per 25 | 33% | 1 per 40 | | |
|--------------|---|--------------------------------------|----------|----------|-----|----------|--|---|
| cate n St | | Min. Required (10:10 (18) section i) | 1 | 1 | 0 | 1 | | |
| ~ ~ ~ | | | | | | | | |
| Dec Kitch | | 1st Floor | 1 | 1 | | 2 | | 1 |

| | Educational spaces used for community service per 10.10(18)(h)3 | 1 per 200 | 1 per 600 | 1 per 200 | 1 per 200 | 1 per 1000 | |
|-----|--|-----------|--------------|--------------|--------------|---------------|--|
| | | | | | | | |
| 520 | Level 1 - Gymnasium | 2 | 1 | 2 | 3 | 1 | |

| | (Within 300 feet of assemly space) (Wort Case Scenario of Cafeteria + Gymnasium at full occupancy considered) | | | | | | | | |
|-----|--|----|------|---|-----|---|---|---|---|
| | Level 1 - Area B Fixtures Provided | 3 | | 2 | 1 | 6 | 2 | 2 | 1 |
| | Additional Unisex toilet / shower room for staff use (not required) | 1(| 1(U) | | n/a | 1 | | | |
| 285 | Level 2 - Cafeteria & Platform | | 1 | 1 | 1 | 1 | | | |
| | (Within 300 feet of assemly space) (Adult Community occupants may use staff toilets at levels 1 & 2; Children may use childrens toilets at level 2) | | 2 | 1 | 1 | 4 | | 2 | |

Notes: 1. Fixtures noted with post script (U) shall be designated as Unisex Toilets pending Varience process.

2. Unisex toilets permitted per 10.10(18)(h)(2).

3. Unisext toilet permitted by 10.10(18)(m) 3.a have been counted only once toward the required male fixture count. 4. In addition to the minum toilet facilities for educational use, (2) additional unisex toilets are provided in self-contained Special Education Classrooms and (1) additional unisex toilet and shower are provided in the Nurse's suite.

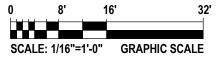




SCALE: 1/16"=1'-0" GRAPHIC SCALE







Geotechnical Report – Appendix X-B

PHASE I – INITIAL SITE INVESTIGATION 559, 567, 573, 585, 597 and 603 Central Avenue 45 Sunset Road Needham, Massachusetts

PREPARED BY:

HML Associates 19 Rockwood Road Hingham, MA 20243

PREPARED FOR:

Dore & Whittier, Architects, 260 Merrimac Street Newburyport, MA 01950

Town of Needham

December 30, 2015 Project No. 15009

HML ASSOCIATES

Geotechnical and Civil Engineers

19 Rockwood Road Hingham, MA 02032 (Phone/Fax) 781-740-9999

December 30, 2015

Ms. Michele Rogers Dore & Whittier, Architects 260 Merrimac Street Newburyport, MA 01950

RE: Phase I – Initial Site Investigation 559, 567, 573, 585, 597 and 603 Central Avenue and 45 Sunset Road Needham, Massachusetts

Dear Ms. Rogers

HML Associates has completed a Phase I - Initial Site Investigation in accordance with 963 CMR 2.00, Massachusetts School Building Authority. This report has been conducted in accordance with 310 CMR 40.000, Massachusetts Contingency Plan (MCP) as applicable under the guidance of a Licensed Site Professional.

The following is a summary of our findings:

- The Site includes properties at 559, 567, 573, 585, 597 and 603 Central Avenue and 45 Sunset Road.
- The properties at 559, 567, 573 and 603 Central Avenue and 45 Sunset Road have been in residential use initially as owner occupied, but more recently as rentals except for 559 Central Avenue. The Owen family lived at 597 Central Avenue and ran a family farm at that location, subdividing the farm (585 Central Avenue) from the house in 1986. There are currently no farming or poultry raising activities at 585 Central Avenue, having ceases over 10 years ago. Current uses at 585 Central Avenue include the Owen Poultry Farm store, a landscape contractor business located behind 597 Central Avenue and a site contractor's yard behind 567 and 573 Central Avenue.
- Known storage and use of No. 2 fuel oil is to heat the homes at 559, 567, 597 and 603 Central Avenue as well as a storage building at 585 Central Avenue. No. 2 fuel oil is stored in 275 gallon steel aboveground tanks. There is an empty tank at 573 Central Avenue as the heating system was converted to gas. Electric heat is in use at 45 Sunset Road. Other storage/uses include fuel for lawn mowers, grass trimers, leaf blowers, snow blowers, etc. The landscape contractor stores gasoline and motor oil in 5 gallon containers at the garage at 597 Central Avenue.
- We did not observe any use, storage or disposal of hazardous substances at the Site nor is there a history of use, storage or disposal of hazardous substances.

- Central Auto Salvage formerly located at 568-638 Central Avenue is the only Disposal Site within 0.25 mile of then Site. Automobile salvage and demolition took place between about 1945 to 1984 resulting in the generation of soil impacted by PCBs and petroleum. A Class A-2 Response Action Outcome was filed with the DEP in 2005. The site has since been developed for single family homes.
- In July and November 2015, HML Associates excavated 8 test pits and drilled 8 test borings and 7 Geoprobes. Monitoring wells were installed in 5 Geoprobes. Soil samples from the test pits and Geoprobes were screened for volatile compounds and no were detected. No visual or olfactory evidence of a release of oil or hazardous materials such as stained or discolored soils or soils with an oily or chemical odor were encountered in the test borings and test pits.
- A composite soil sample of the fill material from the test pits at 585 Central Avenue was submitted for laboratory testing for RCRA 8 metal, PCBs and extractable petroleum hydrocarbons (EPH). Extractable petroleum hydrocarbon analyses is used to detect the presence of No. 2, 4 and 6 fuel oil, diesel fuel and motor oil. A second composite soil sample from Test Pits 4, 5 and 7 was submitted for laboratory testing for herbicides, pesticides and EPH as this area was historically in agricultural use according to the landowner. Groundwater samples were analyzed for volatile organic compounds and EPH.
- The metals detected in the composite fill sample from TP 1, 2 and 6 are well below RCS-1 and appear consistent with levels to be found in natural soil. EPH compounds C8-C18 Aliphatics and C11 -C 22 Aromatics were also found in the soil samples but again below RCS-1. PCBs were not detected. EPH, herbicides and pesticides were not detected in the soil from TP 4, 5 and 7.
- VOCs and EPH were not detected in groundwater except for EPH compounds C8-C18 Aliphatics and C11- C 22 Aromatics at concentrations above the RCGW-1 category as shown on Table 4. Based on our knowledge of the Site and the nature of the release, it is our opinion that the release requires notification be submitted to the DEP within 120 days of the site owner gaining knowledge as required by 310 CMR 40.0315 and 0331.
- The presence of EPH in groundwater in GP-2 which is just downgradient of fill area and the presence of the same compounds in soil in the fill suggests that the source is the fill itself or a release in the that area. Additional assessment of soil and groundwater and possibly surface water is needed to determine nature and extent.

If there are any questions, please contact the undersigned.

Sincerely, HML Associates

Nicholos Or. Lawren

Nicholas A. Lanney, P.E. Principal

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]

1.0 INTRODUCTION

HML Associates has completed this Phase I-Initial Site Investigation in accordance with 963 CMR 2.00, Massachusetts School Building Authority. This report has been conducted in accordance with 310 CMR 40.000, Massachusetts Contingency Plan (MCP) as applicable under the guidance of a Licensed Site Professional.

The scope of work performed for this assessment included the following:

- 1. HML Associates' personnel conducted a surficial field inspection of the Site and adjacent properties on October and November, 2015.
- 2. The Needham Assessors' Office, Building Department and the Norfolk County Registry of Deeds were visited to obtain information regarding past Site usage and current and previous ownership. Sanborn Maps, aerial photographs, city directories and historical topographic maps were also reviewed to obtain information on past site history and usage.
- 3. The Needham Clerk's Office, Fire Department, Building Department, Engineering Department, Conservation Commission and Board of Health were visited to obtain information regarding the storage or possible release of oil or hazardous materials and the location of potentially sensitive environmental receptors on or in the vicinity of the Site.
- 4. The Massachusetts Department of Environmental Protection (DEP) Databases were reviewed for information regarding past releases of oil or hazardous materials at the Site or on properties in the vicinity of the Site.
- 5. EPA's NPL and Resource Conservation and Recovery Act (RCRA) Treatment, Storage, and/or Disposal (TSD) Facilities List were also reviewed for the Site and properties within a 1-mile radius of the Site. The Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) was reviewed for the Site and properties within a 0.5-mile radius of the Site. Information concerning NPL Sites or CERCLIS Sites, if any, was reviewed at the EPA Region I Records Center. The RCRA List, EPA Region I Facility Index System (EPA FINDS) and Emergency Response Notification System (ERNS) were reviewed for the Site and adjacent properties.
- 6. Subsurface investigations were conducted in July and November 2015, and soil and groundwater samples were collected from 585 Central Avenue and analyzed for oil and hazardous material.

7. As determined by the above investigations, the conditions of the Site were evaluated using the relevant criteria set forth in the Massachusetts Contingency Plan (310 CMR 40.0000).

2.0 SITE DESCRIPTION

The "Site" is defined as the properties located at 559, 567, 573, 585, 597 and 603 Central Avenue and 45 Sunset Road in Needham, Massachusetts and covers about 10.3 acres, the northern portion of which is vegetated wetlands as shown on Figure 2. The Owen's Poultry Farm retail store is located at 585 Central Avenue. The remaining properties are occupied by single family homes, either owner occupied or rentals all of which are owned by members of the Owen family except for 559 Central Avenue. A Site Locus Map and a Topographic/Existing Conditions Plan are provided for reference as Figures 1 and 2, respectively. Site photographs are included in Appendix 1.

2.1 Site Parameters

| Assessors' | | | | | | | |
|--------------|---|---|--|--|--|--|--|
| Designation: | The Site includes Assessor's Map 108, Lot 5 (559 Central Avenue), Lot 6 (567 Central Avenue), Lot 7 (573 Central Avenue), Lot 9 (597 Central Avenue), Lot 10 (603 Central Avenue) and Lot 27 (45 Sunset Road) and Map 310, Lot 0 for 585 Central Avenue. Up and until 1986, 585 Central Avenue was part of 597. | | | | | | |
| Zoning: | and 45 Sunset Road are in the Sin | cording to the zoning map, 559, 567, 573 and 603 Central Avenue d 45 Sunset Road are in the Single Residence B District and 585 and 7 Central Avenue are in the Single Residence A District. | | | | | |
| Acreage: | According to the Needham Asses 10.3 acres. | ssors' office, the Site covers approximately | | | | | |
| Coordinates: | Latitude 42° 17' 59" N UTM 4,685,295 meters N | Longitude 71° 14' 50" W UTM 314, 750 meters E (Zone 19) | | | | | |
| Ownership: | Site Ownership is summarized in | Table 1. | | | | | |
| Structures: | single family homes built betwee Central Avenue where there is a rear of the house that was reporte for storage by the store. There is | he remaining properties are occupied by n about 1915 and 1970 except for 597 one story wood framed building to the edly used as a hen house but is now used a large abandoned hen house at the rear eken coop and a wood framed storage tore. | | | | | |

| Occupancy & Use: | Owen's Poultry Farm retail store occupies 585 Central Avenue. Poultry for sale to the public is not raised at the farm. The portion of the 585 Central Avenue to the rear of 567 and 573 Central Avenue is used by a local contractor to store crushed stone, sand and salt and equipment such as small dump trucks and a front end loader. A landscape contractor stores gasoline and motor oil and equipment at 597 Central Avenue as well as 585 Central Avenue. The remaining properties are owner occupied or rented single family homes. |
|---------------------------|--|
| Utilities: | All locations within the Site are currently serviced by municipal sewer and water, Verizon/ATT telephone and National Grid electric. 585 and 573 Central Avenue are heated by gas, 45 Sunset Road is heated by electricity and the remaining locations are heated by oil stored in 275 gallon above ground storage tanks located in the basement of each house. Owen's Poultry Farm retail building was heated by propane stored in a 1000 gallon above ground tank between 1986 and 2005 and converted to gas in 2005. |
| Waste Disposal: | Sanitary wastewater is disposed via the municipal sewer system although there is an inactive (?) cesspool at the rear of 567 Central Avenue as shown on Figure 2. There is a dumpster at 585 Central Avenue that is maintained by Republic Waste Disposal. Solid waste from the houses is picked up by a private company or brought to the transfer station by the homeowner or tenant. |
| Site Access/ Barriers: | The Site can be accessed from Central Avenue on foot and by vehicles. There are no barriers to Site access by foot. |
| Vegetation: | The majority of the upland portion of the site is grass covered with landscaping around the homes. Trees are scattered throughout the Site. |
| Surface Water: | There is a small man made pond at the west end of the Site. A large wetland area which is part of Rosemary Brook occupies the north end of the Site and borders the west side of the Site as well. |
| 2.2 Adjacent P | roperties |

Properties adjacent to the Site are described below and depicted on Figure 2.

North: The Site is bounded on the north by single family homes.

East: The Site is bounded on the east by Central Avenue and single family homes.

South: The Site is bounded on the south by single family homes.

West: The Site is bounded on the west by an extensive wetlands.

3.0 SITE HISTORY

3.1 Owner and Operations History

Records reviewed at the Town of Needham Assessors' Office, Building Department and Engineering Department as well as client provided plans were used to establish Site ownership. The history of site ownership is summarized in Table 1. The properties that comprise the Site are now owned by members of the Owen family except for 559 Central Avenue. The properties at 585 and 597 Central Avenue have been in the control of members of the Owen family as back as 1915, and 573 Central Avenue since 1951. The Owen family raised chickens and eggs as well as vegetables for sale to the public. Egg production stopped about 2005. It is not known when vegetables were no longer grown on the Site. The original store which was built in 1956 with an addition in 1974 is now used to prepare meals for sale to the public. The large hen house was built in 1956 in response to neighbors' complaints about chickens roaming in the open fields. Members of the Owen family lived at 559, 573 and 597 Central Avenue in the past.

The remaining properties have been owner occupied single family homes until purchased by member(s) of the Owen family except for 559 Central Avenue which is owned by Michael Sharp.

HML Associates Environmental Questionnaire was completed for the properties that compromise the Site by the respective land owners and are included in Appendix 7. The Environmental Questionnaire addresses four main categories: 1) past and present property use pertaining to the Site and adjoining properties, 2) past and present evidence of oil/and hazardous materials being stored, used, or disposed on the Site and adjoining properties, 3) past and present "environmental" activities, such as governmental notifications or legal actions pertaining to the Site and adjoining properties and, 4) the existence of any properties on various state and federal database systems within specified area ranges from the Site. The response of "NO" was given to each question.

Aerial Photographs

HML Associates also reviewed available aerial photographs from 1938, 1955, 1957, 1969, 1970, 1980, 1986, 1995, 2006, 2010 and 2012 and historical topographic maps from 1888, 1893, 1945, 1949, 1960, 1973 and 1984.

In the 1938 aerial, much of the area is undeveloped or in agricultural use with dwellings present at 597 and 603 Central Avenue. The north end of the Site appears to be a field.

In the 1955 aerial we have houses at 567, 597 and 603 Central Avenue and what appears to be the start of the foundation for the large hen house as well as several small out buildings which may be chicken coops. In the 1957 aerial, we have houses at 567, 597 and 603 Central Avenue, the original retail store for Owen's Poultry Farm, the small hen house

behind 597 Central Avenue, the large hen house and several small out buildings, possibly chicken coops at what is now 585 Central Avenue. In both photos there are wetlands to the west and homes and open field to the east and north. The Central Auto Salvage is visible in both photographs to the southeast on the opposite side of Central Avenue. In subsequent photos, the other single family homes at the Site are present. The surrounding area shows on going residential development. Central Auto Salvage is present as late at 1986, but single family homes at that location in the 1995 photo.

In the 2006, 2010 and 2012 color aerials, conditions appear to be very similar to current conditions. We did not recognize any area of land disturbance or excavation in the aerial photographs at the Site.

The historic topographic maps show similar site history and conditions

City Directories

City directories with listings between 1971 and 2013 were provided by Environmental Data Resources. The listings are summarized in Table 2. Copies of the city directories are included in Appendix 2. Owens Poultry Farm is listed at 597 Central Avenue until 1985 and at its current address thereafter. Historically, the homes appear to have been owner occupied, but more recently rented. LaValle Painting is listed at 597 Central Avenue between 1992 and 2003. We also reviewed listing on the opposite side of Central Avenue and the only listing of concern was Central Auto Salvage at 628 between 1971 and 1985. Other listings suggest single family residence versus business listings.

Sanborn Maps

Sanborn Maps from 1937, 1948 and 1962 were provided by Environmental Data Resources. The 1937 and 1948 maps show a 2 story dwelling and former hen house/garage at 597 and the single story dwelling at 603 Central Avenue. No structures are shown on the remainder of the Site. Dwellings are shown on the opposite side of Central Avenue. In the1962 map, we now have dwellings at 559, 567 and 573 Central Avenue and a store (smaller footprint that current store) as well as three "Coops" at 597. The "Coops" are no longer on the property. No tanks are noted on the maps. No environmental concerns were identified as a result of our review of the Sanborn Maps. Copies of the maps are included in Appendix 3.

In summary, according to the research conducted, there is no history of site use other than single family residential and small scale "family" farm and retail store. **3.2 Release History**

Based on research at the Town of Needham Fire Department, Town Clerk and the Massachusetts Department of Environmental Protection database, interviews and field observations we did not identify any reportable releases of oil or hazardous materials to the environment at the Site or any abutting properties. The closest reportable release (500 feet southeast) is the former Central Auto Salvage located to the southeast and on the opposite side of Central Avenue from the Site. PCB contaminated soil was removed from the site under a Release Abatement Measures Plan. A Class A-2 Response Action Outcome was filed in March of 2003 and the land has since been redeveloped for single family homes.

3.3 Oil and Hazardous Material Use and Storage

No. 2 heating oil is stored in the aboveground tanks at 559, 567, 585, 597 and 603 Central Avenue. Household cleaning products, lawn care products, paints, motor oil and <2 gallon containers of gasoline were observed at the properties that constitute the site. Containers were observed to be in good condition. Motor oil and gasoline are being stored in plastic and steel containers, respectively on pavement behind 597 Central Avenue. They are the property of the landscape contractor that also stores his equipment at this location. Minor localized staining of the pavement in the vicinity of the containers was observed during our site visits.

3.3.1 Hazardous Substances Use, Storage and Disposal

We did not observe any use, storage or disposal of hazardous substances at the Site nor is there a history of use, storage or disposal of hazardous substances.

3.3.2 Underground Storage Tanks

There are no records of underground storage tanks (USTs) at any of the properties that constitute the site found at the fire department or town clerk. There are no registered underground storage tanks at any of the properties that constitute the Site, any abutting properties or properties on the other side of Central Avenue

The Town Clerk's office had no record of flammable storage permits being issued at any of the properties that comprise the site except for a 1000 aboveground propane tank between 1984 and 2005 for 585 Central Street.

3.3.3 Aboveground Storage Tanks

Two hundred and seventy five gallon steel aboveground tanks (AST) used to store heating oil were observed in the basements of 559, 567, 573, 597 and 603 Central Avenue as well as the wood framed building at Owen's Poultry Farm. The tanks were in good condition and only minor to no staining was observed on the concrete floor below the tanks. The 275 gallon aboveground tanks located in the former hen house/garage at 597 Central Avenue and in the basement at 573 Central Avenue are out of service and empty. There is an empty propane tank located on the south side of the house at 573 Central Avenue.

3.3.4 Polychlorinated Biphenyls (PCBs)

There are pole mounted transformers in the sidewalk in front of 559 and 585 Central Avenue as well as behind the store at 585 Central Avenue. There is a single transformer at each location. No staining was observed on the transformers or ground below the transformers.

3.3.5 Nonhazardous Solid Waste

Non-hazardous solid waste is picked up by private contractors or brought to the transfer station by the residents. Republic Waste maintains the dumpster at 585 Central Avenue.

3.3.6 Wastewater

Sanitary wastewater discharges into the Town of Needham sewer system without pretreatment, except at Owens Poultry Farm, where grease from the food preparation area is collected in a grease trap at the lower level of the building before discharging to the sewer system.

3.3.7 Pits, Ponds and Lagoons

No waste lagoons, pits and ponds were observed on the Site during our site inspection except for a man made pond at the west end of 585 Central Avenue. There are no records of any dry wells on the Site. No evidence of waste lagoons, pits and ponds was found on aerial photographs. However, there is cesspool behind 567 Central Avenue and according to the land owner an abandoned dry well connected to the floor drain in the lower level of the former hen house at 597 Central Avenue. Chickens were reportedly slaughtered and cleaned at this location over 25 years ago.

3.3.8 Sumps and Floor Drains

A floor drain was observed in the lower level of the former hen house at 597 Central Avenue. According to Doug Owen, at one time chickens were processed at this location (slaughtered, gutted and cleaned) and liquid waste flowed to the floor drain and then into a drywell. These activities have not taken place at this location for over 25 years.

3.3.9 Septic System

There are no active septic systems or cesspools. There is a reported inactive cesspool at the rear of 567 Central Avenue and according to the Owner a cesspool at the rear of 603 Central Avenue.

3.3.10 Stormwater Management

Stormwater runoff either infiltrates into the ground or follows the slope of the land surface to the wetlands to the west. There is a storm drain from Central Avenue that runs beneath the house at 567 Central Avenue and discharge to the wetlands.

3.3.11 Wells

According to the Needham Board of Health, there were no drinking water wells at the site. There are no municipal water supplies within a half-mile of the site. No monitoring wells were observed during the site inspections except for those installed by HML Associates. According to Doug Owen, there is a dug well used for irrigation at 585 Central Avenue. See Figure 2.

4.0 Environmental Permits and Compliance History

We did not identify any existing documented non-compliance items for the Site except for filling in the 100 foot buffer zone to the Bordering Vegetated Wetlands without obtaining an Order of Condition from the Needham Conservation Commission at 585 Central Avenue. There was a letter dated August 25, 1999 from the Board of Health to Raymond Owen regarding the dumping of building and construction waste including cinder block, concrete slab, asphalt and metal of concrete at 567 Central Avenue. The Board of Health directed Owen to remove the material, but no follow up was found in the Board of Health, Conservation Commission, or Building Department files.

5.0 RECORDS REVIEW

5.1 Local Agency Review

The Town of Needham's Assessors' Office, Clerk's Office, Engineering Department, Fire Department, Health Department, and Conservation Commission were visited or contacted to obtain pertinent information regarding the Site and in the immediate vicinity of the Site.

Needham Assessors' Office- October 29, 2015

The Site includes Assessor's Map 108, Lot 5 (559 Central Avenue), Lot 6 (567 Central Avenue), Lot 7 (573 Central Avenue), Lot 9 (597 Central Avenue), Lot 10 (603 Central Avenue) and Lot 27 (45 Sunset Road), Map 310, Lot 0 for 585 Central Avenue. We were provided copies of the Assessors' card for each lot which contained chain of title, photo of the structure(s) and limited information on improvements. The chain of title determined from the information obtained from the Building Department and the Assessors' Office is summarized in Table 1.

Needham Clerk's Office - October 29, 2015

Personnel at the Town Clerk's office were contacted regarding records of USTs and bulk storage of oil and hazardous materials at the Site. There are no current flammable storage permits issued for the Site or abutting properties. Permits were issued for 585 Central Avenue for a 1000 gallon propane tank between 1986 and 2005.

Needham Building Department- October 29, 2015

Files at the Building Department provided information regarding when the house/buildings were first constructed and the dates and nature of improvements/ addition/renovations. This information is summarized in Table 1.

There were letters in the file regarding filling of the floodplain and dumping of construction debris at 567 Central Avenue in 1999 from the Board of Health as well as a letter dated September 12, 2002 from Barbara Owen Tripp, daughter of the original owners, Walter and Elizabeth Tripp, objecting to a special permit to construct an accessory storage building at 585 Central Avenue. In her letter, she states that her parents established the farm in 1935. She also states in her letter that she was concerned about filling the yard at 567 Central Avenue and making a driveway behind 567 and 573 Central Street and between 559 and 567 Central Avenue.

We also reviewed plans from 1986 showing conditions at 585 Central Avenue similar to current conditions except that the storage building is absent, a 2002 plan with the proposed storage building and turkey pen and a 2004 wetlands filling plan.

Needham Fire Prevention Department - November 11, 2015

The Needham Fire Prevention Department was contacted regarding records of ASTs and USTs and releases of hazardous materials for the Site and abutting properties and were provided the following information.

There were no storage or removal permits for USTs for the Site. There were no incident reports involving the release of oil or hazardous material in the vicinity of the Site along Central Avenue, Sunset Road or Cynthia Road. There are records for the installation of 275 gallon aboveground steel tanks for No. 2 fuel oil at 559 Central Avenue in 1961, 567 in 1950, for 573 in 1962, 597 in 1945 and 603 in 1953. There were no records for 585 Central Avenue and 45 Sunset Road which have been historically heated by gas and electric, respectively.

Needham Board of Health- October 29, 2015

There are no files at the Board of Health regarding the releases of hazardous materials at or the vicinity of the site except at the former Central Auto Savage. There are no records of any reported private water supply wells within 500 feet of the Site. The Board provided HML copies for its file on Central Auto Salvage.

There was a letter dated August 25, 1999 from the Board of Health to Raymond Owen regarding the dumping of building and construction waste including cinder block, concrete slab, asphalt and metal at 567 Central Avenue. The Board of Health directed Owen to remove the material, but no follow up was found in the Board of Health, Conservation Commission, or Building Department files.

Needham Conservation Commission - October 29, 2015

The Conservation Commission provided HML with a letter to Douglas Owen dated May 8, 2000 to remove fill that was placed within the 100 foot buffer zon in the southwest corner of 585 Central Avenue. It is our understanding that the fill has not been removed and that fill was encountered in the test pits and test borings conducted by HML at 585 Central Avenue as shown on Figure 2.

5.2 State Agency Review

An environmental database search was performed for HML Associates by Environmental Data Resources, Inc. (EDR) to identify state and federally listed properties in the vicinity of the Site. HML also reviewed DEP on-line database of Disposal Sites. Files for properties identified in the immediate vicinity of the Site that are likely to have an impact on the environmental quality of the Site were reviewed at the appropriate state or federal agency to obtain detailed information. Information contained in the database is included in the following sections. The EDR Report is included for reference as Appendix 4.

DEP Sites Database

The DEP's database of Massachusetts Contingency Plan (310 CMR 40.0000) Reportable Releases and Disposal Sites was reviewed. Central Auto Salvage (Release Tracking Number 3-0000390) formerly located at 568-638 Central Avenue is the only Disposal Site within 0.25 mile of then Site. Automobile salvage and demolition took place between about 1945 to 1984 resulting in the generation of a significant volume of soil impacted by PCBs and petroleum. Site remediation (soil removal) took place in the late 1980s; however, the remediation was not completed because the owner did not have the financial resources to complete the work. It is our understanding the owner was able to secure the financing to complete the soil remediation to the satisfaction of the EPA and the MCP. A Class A-2 Response Action Outcome was filed with the DEP in 2003. The Response Action Outcome was audited by the DEP, resulting in a request for additional information from the LSP which was subsequently submitted to the DEP. The DEP issued a letter dated June 5, 2005 stating that the requested information had been provided and no further action was required. The site has since been developed for single family homes. We also reviewed Disposal Sites from between $\frac{1}{4}$ and $\frac{1}{2}$ mile from the Site and based on their regulatory status, distance and orientation from the Site and hydrogeologic considerations, we concluded that they do not pose a risk to site soil and groundwater quality.

Underground Storage Tanks

According to the EDR Report and Fire Department records, there are no active registered USTs within 0.5-mile radius of the Site. There are no leaking USTs within 0.5 mile of the Site.

Aboveground Storage Tanks

According to the EDR Report, there is one registered aboveground 1000 gallon double walled diesel storage tank within 0.25 miles of the site located at the Wellesley Avenue Water Treatment Plant located at 429 Wellesley Avenue. There are three reported leaking aboveground tanks between 0.25 and 0.5 miles of the Site at 88 Pine Grove, 33 Fenton Street and 54-56 Jarvis Circle. All three releases were from 275 gallon No. 2 fuel oil tanks at residences. The releases were reported to the Mass DEP and Class A-2 Response Action Outcomes were achieved at the three properties.

Landfills

According to the MASS GIS 21E Priority Resource Map (Figure 3) and the EDR report, there are no known solid waste landfills within 0.75 miles of the Site.

MASS GIS Priority Resource Map

The MASS GIS 21E Priority Resource Map for the Site area was reviewed (Figure 3). The Site lies within the Zone II of a public water supply. The Site does not lie within an Area of Critical Environmental Concern or NHESP Estimated Habitat of Rare Wildlife in Wetland Areas. Freshwater wetlands are shown at the north end of the Site. There are no solid waste landfills shown within 0.5 miles of the Site.

5.3 Federal Agency Review

EDR searched the Federal databases listed in ASTM E1527-13. No listed properties were identified within the prescribed search distances except for Microwave Development. Microwave Development is both a CERCLIS site and a RCRA small quantity generator and is located at 135 Crescent Street, about 0.5 mil ESE from the Site. Release(s) of chlorinated solvent to the environment have occurred at Microwave Development and the site is currently undergoing remediation under the Mass Contingency Plan. Microwave is not considered a Recognized Environmental Concern because of its physical distance from the Site and the presence of Rosemary Brook between Microwave and the Site.

6.0 SITE INSPECTIONS

HML Associates personnel conducted a visual inspection of the properties to determine and establish current site use(s), type(s) and volumes of oil or hazardous substances used or stored at each property and for any evidence of a release of oil or hazardous materials to the environment. Such evidence would include areas of dying or stressed vegetation; discolored or stained surfaces including pavement or bare ground; rusted drums or pails; pits; ponds; lagoons and unexplained mounds or depressions. Photographs taken during the interior and exterior of the property are included in Appendix 1.

The properties at 559, 567, 573, 597 and 603 Central Avenue and 45 Sunset Road are single family residences. Oil storage includes heating oil in aboveground tanks in the basement of each house at 559, 567, 573, 597 and 603 Central Avenue, although at 573 the heat is now provided by gas and the empty tank is still in place. The floor below the tanks is concrete and only minor staining was observed on the floor. No staining was observed around the exterior fill pipes. Electric heat is used at 45 Sunset Road.

Storage and use of oil and hazardous substances observed during our site inspections included fuel and lubricants for lawn mowers and snow blowers, paints, brush cleaners, insecticides and pesticides for lawns and gardens care, etc. We observed that the

containers were intact and stored inside the houses or sheds and out of the weather. We also observed typical household cleaning products. The shed at the rear of 597 Central Avenue is used by a landscape contractor to store gasoline in 5 gallon metal containers and motor oil in 5 gallon plastic pails. The containers sit on pavement. Minor staining of the pavement was observed in the immediate vicinity of the containers.

There is a manhole cover at the rear of 567 Central Avenue. We removed the cover and observed a cesspool below. There was standing water in the cesspool, and a septic odor. No sheen was observed on the water surface. It was questionable if the cesspool had recently received any sanitary wastewater.

We did not observe any evidence of a release of oil or hazardous materials to the environment during our exterior inspection. Such evidence would include areas of dying or stressed vegetation; discolored or stained surfaces including pavement or bare ground; rusted drums or pails; pits; ponds; lagoons and unexplained mounds or depressions.

The property at 585 Central Avenue which is the Owen Poultry Farm represents the majority of the land area of the Site and is occupied a two story retail store (1954/74), the abandoned hen house (1956), a two story storage building (2003) and a small wooden shed. The retail building has a sales area in the front and food preparation, cleanup and refrigerated storage in the rear of the first floor and compressor for the refrigerators, refrigerated storage and dry goods storage in the basement. A dumpster serviced by Republic Waste is located off the southwest corner of the building. The hen house and small shed are empty. The storage building is used for dry goods and packing storage. There is a dug well used for irrigation to the west of the storage building.

The retail store is heated by gas and prior to that by propane and the storage building by oil stored a 275 gallon aboveground tank. The hen house was never heated.

A local landscape contractor stores trucks and a wood chipper in the southwest corner of the property behind 597 Central Avenue. The ground in and around the equipment is covered with crushed stone and on minor staining was observed on the ground. To the west there is several hundred yards of washed stone which Doug Owen reportedly sells to landscaped contractor. This is the same area where fill was placed in 2000. An area of black stained soil and dying vegetation was observed on the side of the fill slope. The material appeared to be solidified grease fats. When we questioned Doug Owen, he indicate that it was fat/grease from retail food operation that was disposed at that location. A second contractor stores equipment and material (stone, sand salt) to the rear of 567 and 573 Central Avenue.

The remainder of the property is grassed fields with scattered mature trees except for a large wetlands area at the north end. No stressed or dying vegetation was observed. There is a man-made pond to the west of the hen house. No sheen was observed on the surface of the pond.

7.0 SUBSURFACE INVESTIGATIONS

7.1 Test Borings

New England Boring Contractor of Brockton, Massachusetts drilled 8 test borings within the footprint of the proposed school building under the full time supervision of Mr. Stephen Reynolds of HML Associates on July 17 and 20, 2015. Borings B-1 and B-2 were advanced using 4 inch casing and the drive and wash method. The remaining borings were advanced using hollow stem augers. The boring locations are shown on Figure 2 and boring logs are included in Appendix 5.

7.2 Geoprobes

On November 23, 2015, HML Associates oversaw the advancement of 7 geoprobe soil borings (designated GP-1 through GP-7) at the Site, at the locations shown in Figure 2. The Geoprobe locations were selected to obtain soil and groundwater samples at the downgradient or western end of the Site and areas where fill may have place in the past HML's subcontractor, Harvey Associates, Inc. of Hingham, Massachusetts, performed all subsurface drilling activities in accordance with standard protocols using the direct push method with a truck mounted Geoprobe System® rig. One inch diameter PVC groundwater monitoring wells were installed at GP-1, 2, 3, 4 and 7.

The geoprobes were advanced to depths ranging from 4 to 12 feet below grade. HML Associates collected soil samples continuously from each of the soil borings in dedicated disposable polyethylene sleeves. Soils at the Site were fine to medium grained sand and gravel underlain by glacial till. Geoprobe logs are included in Appendix 6.

7.3 Test Pits

Eight test pits were excavated by the Needham DPW under the supervision of Mr. Steve Reynolds of HML Associates on November 23, 2015. Test pits 1, 2 and 6 were excavated in the previously placed fill material at 585 Central Avenue. The remaining test pits are located in the field to the north of the hen house which historically was used to raise vegetables and at the toe of the slope below the parking lot. Test pit logs are included in Appendix 7.

7.4 Field Screening

Representative soil samples collected from the Geoprobe borings and test pits were placed in clean, tightly sealed glass jars with aluminum foil cover liners for in-field screening of volatile compounds using a Photovac PID with a 10.7 eV lamp. Headspace procedures were performed in accordance with DEP Policy WSC 94-400. No headspace volatile compounds were detected above the instrument detection limit in the soil samples. No odors or stained or discolored soil were noted in any of the soil samples.

7.5 Soil Sampling and Analyses

No headspace volatile compounds were detected above the instrument detection limit. Nevertheless, a composite soil sample of the fill material from the Test Pits 1, 2 and 6 at 585 Central Avenue was submitted for laboratory testing for RCRA 8 metal, PCBs and extractable petroleum hydrocarbons (EPH). Extractable petroleum hydrocarbon analyses is used to detect the presence of No. 2, 4 and 6 fuel oil, diesel fuel and motor oil. A second composite soil sample from Test Pits 4, 5 and 7 was submitted for laboratory testing for herbicides, pesticides and EPH as this area was historically in agricultural use according to the landowner. Soil samples were placed in laboratory supplied containers, preserved with ice and shipped by courier to Alpha Analytical located in Westboro, Massachusetts for analysis. The laboratory report is included in Appendix 8. Sample results are summarized in Table 3.

7.6 Groundwater Sampling and Analyses

On November 23, 20015, the four wells were developed. On November 24, 2015, HML collected groundwater samples using a peristaltic pump and disposable polyethylene tubing via a modified low-flow methodology, in accordance with standard protocols. HML gauged each well, and then purged it of three to five well volumes prior to sampling. HML submitted groundwater samples to *Alpha Analytical* for analysis for volatile organic compounds and EPH. Measured depths to groundwater ranged from approximately 2.7 to 6.7 feet below grade in the sampled wells. Volatile organic compounds and extractable petroleum hydrocarbon were not detected in any of the samples except for EPH at GP-2. The laboratory report is included in Appendix 8. Sample results are summarized in Table 4.

7.7 Topography and Drainage

The Site sits on the northwest flank of a small hill that is surrounded by wetlands that are drained by Rosemary Brook. The site slopes to the northwest from a high of el. 108 feet on the south side of 603 Central Avenue down to el 83 feet along the western Site boundary as shown on Figure 2. The northern end of the site is vegetated wetlands except for an isolated uplands area at the northeast end of the Site.

We did not observe any catch basins on the Site during site visits. Stormwater runoff either infiltrates into the ground or discharges to the surrounding wetlands via overland flow. Stormwater runoff from Central Avenue in the vicinity of the Site is captured by the street drainage system and piped under 559 Central Avenue and discharges into the wetlands

According to the FEMA Flood Insurance Rate Map for the Town of Needham, Map 25021C00036E, dated July 17, 2012, the Site falls within Zone A and X as shown on Figure 2.

7.6 Site Geology and Hydrogeology

The Site is underlain by glacial outwash sand and gravel which is in turn underlain by glacial till. Surficial deposits consist of topsoil and subsoil with fill encountered at the southwest corner of 585 Central Avenue and south side of the hen house.

Groundwater was encountered between 14 feet below grade at the completion of test borings B-3 and B-4, , at 5.5 feet below grade at TP-8 and at 2.7, 6.5, 6.6 and 6.5 feet below grade at GP-1, 2, 3 and 4 respectively 24 hour after the wells were installed. The inferred direction of groundwater is west toward the wetlands and Rosemary Brook.

8.0 IDENTIFICATION OF SOIL AND GROUNDWATER CATEGORIES

In the event of a release of oil or hazardous materials to the environment, the DEP has established soil and groundwater reporting categories pursuant to the Massachusetts Contingency Plan as found in 310 CMR 40.0311 through 0315. The categories are based on the time frame within which the DEP has to be notified and the nature of the release or threat of a release and the type of potential receptors.

The reporting category for oil or hazardous material in soil is RCS-1 because the release is located within a residential zone area. The reporting category for oil or hazardous material in groundwater is RCGW-1 because the release located within a Current Drinking Water Source by virtue of being in a Zone II as shown on Figure 3.

The metals detected in the composite soil sample for TP 1, 2 and 6 are well below RCS-1 and appear consistent with levels to be found in natural soil. EPH compounds C8-C18 Aliphatics and C11 and C 22 Aromatics were also found in the soil samples but again below RCS-1. PCBs were not detected. EPH, herbicides and pesticides were not detected in the soil from TP 4, 5 and 7.

VOCs and EPH were not detected in groundwater except for EPH compounds C8-C18 Aliphatics and C11 - C 22 Aromatics at concentrations above the RCGW-1 category as shown on Table 4.

9.0 NATURE AND EXTENT OF RELEASE

The presence of EPH in groundwater in GP-2 which is just downgradient of the fill area and the presence of the same compounds in soil in the fill suggests that the source is the fill itself or a release in the that area. Additional assessment of soil and groundwater and possibly surface water depending the extent of groundwater migration into the wetlands is needed to assess nature and extent.

10.0 MIGRATION PATHWAYS AND EXPOSURE POTENTIAL

Migration pathways are the means by which oil or hazardous materials from a release move through the environment. Migration pathways may include groundwater flow, subsurface utilities or utility corridors, vapor migration, surface water or sediment.

Exposure potential assesses how a receptor may come into contact with oil or hazardous materials. Exposure pathways include dermal contact with soil or groundwater, ingestion of soil or groundwater and inhalation of vapors. Due to the lack of information, an evaluation of migration pathways and exposure potential cannot be made.

11.0 SUMMARY OF FINDINGS

HML Associates has completed a Phase I - Initial Site Investigation in accordance with 963 CMR 2.00, Massachusetts School Building Authority. This report has been conducted in accordance with 310 CMR 40.000, Massachusetts Contingency Plan (MCP) as applicable under the guidance of a Licensed Site Professional.

The following is a summary of our findings:

- The Site includes 559, 567, 573, 585, 597 and 603 Central Avenue and 45 Sunset Road.
- The properties at 559, 567, 573 and 603 Central Avenue and 45 Sunset Road have always been in residential use initially as owner occupied, but more recently as rentals except for 559 Central Avenue. The Owen family lived at 597 Central Avenue and ran a family farm at that location, subdividing the farm (585 Central Avenue) from the house in 1986. There are currently no farming or poultry raising activities at 585 Central Avenue having ceases over 10 years ago. Uses at 585 Central Avenue include the Owen Poultry Farm store, a landscape business located behind 597 Central Avenue and a contractor's yard behind 567 and 573 Central Avenue.
- Known storage and use of No. 2 fuel oil is to heat the house at 559, 567, 597 and 603 Central Avenue as well as a storage building at 585 Central Avenue. No. 2 fuel oil is stored in 275gallon steel aboveground tanks. There is an empty tank at 573 Central Avenue as the heating system was converted to gas. Electric heat is in use at 45 Sunset Road. Other storage/uses include fuel for lawn mowers, grass trimers, leaf blowers, snow blowers, etc. The landscape contractor stores gasoline and motor oil in 5 gallon containers at the garage at 597 Central Avenue.
- We did not observe any use, storage or disposal of hazardous substances at the Site nor is there a history of use, storage or disposal of hazardous substances.

- Historical filling has occurred at 585 Central Avenue to the rear of 567 and 573 and opposite the storage building. The source and nature of the fill is unknown.
- Central Auto Salvage formerly located at 568-638 Central Avenue is the only Disposal Site within 0.25 mile of then Site. Automobile salvage and demolition took place between about 1945 to 1984 resulting in the generation of soil impacted by PCBs and petroleum. A Class A-2 Response Action Outcome was filed with the DEP in 2003. The Response Action Outcome was audited by the DEP resulting in a request for additional information from the LSP which was subsequently submitted to the DEP. The DEP issued a letter dated June 5, 2005 stating that the requested information had been provided and no further action was required. The site has since been developed for single family homes.
- In July and November 2015, HML Associates excavated 8 test pits and drilled 8 test borings and 7 Geoprobes. Monitoring wells were installed in 5 Geoprobes. Soil samples from the test pits and Geoprobes were screened for volatile compounds and no were detected. No visual or olfactory evidence of a release of oil or hazardous materials such as stained or discolored soils or soils with an oily or chemical odor were encountered in the test borings and test pits.
- A composite soil sample of the fill material from the test pits at 585 Central Avenue was submitted for laboratory testing for RCRA 8 metal, PCBs and extractable petroleum hydrocarbons (EPH). Extractable petroleum hydrocarbon analyses is used to detect the presence of No. 2, 4 and 6 fuel oil, diesel fuel and motor oil. A second composite soil sample from Test Pits 4, 5 and 7 was submitted for laboratory testing for herbicides, pesticides and EPH as this area was historically in agricultural use according to the landowner. Groundwater samples were analyzed for volatile organic compounds and EPH.
- The metals detected in the composite fill soil sample from TP 1, 2 and 6 are well below RCS-1 and appear consistent with levels to be found in natural soil. EPH compounds C8-C18 Aliphatics and C11 -C 22 Aromatics were also found in the soil samples but again below RCS-1. PCBs were not detected. EPH, herbicides and pesticides were not detected in the soil from TP 4, 5 and 7.
- VOCs and EPH were not detected in groundwater except for EPH compounds C8-C18 Aliphatics and C11-C 22 Aromatics at concentration above the RCGW-1 category as shown on Table 4. Based on our knowledge of the Site and the nature of the release, it is our opinion that the release requires notification be submitted to the DEP within 120 days of the site owner gaining knowledge as required by 310 CMR 40.0315 and 0331.
- The presence of EPH in groundwater in GP-2 which is just downgradient of fill area and the presence of the same compounds in soil in the fill suggests that the source is the fill itself or a release in the that area. Additional assessment of soil and groundwater and possibly surface water depending the extent of groundwater migration into the wetland is needed to assess nature and extent.

12.0 LIMITATIONS

The conclusions expressed by HML Associates in this report are based on the work performed, data gathered and references cited. Observations were made under the conditions stated. Information provided by federal, state, and local agencies contacted was relied upon as accurate and complete. The purpose of this study was to establish via a specific scope of work whether there is evidence that a release of oil or hazardous materials has occurred at the Site or that a threat of such release exists. This report represents HML Associate's opinion relative to such evidence. Unless otherwise specified in the scope of work, HML Associates accepts no responsibility for client performance of recommendations as may be offered in this report. No attempt was made to investigate Site owner or operator compliance with federal, state, or local laws and regulations in connection with Site usage.

Should additional information become available concerning this Site or neighboring properties in the future, that information should be made available to HML Associates for review so that the conclusions presented in this report may be modified as necessary.

This report shall not be relied upon in reaching any conclusion or opinion regarding any other real property, their proximity to the subject property, notwithstanding.

The opinions and conclusions stated in this report are based upon professional expertise; no other warranty is expressed or implied herein.

Assessment of the Site for the presence of lead based paints and asbestos-containing material was beyond the scope for this report.

13.0 References

EDR Radius Map Report, October 1, 2015 EDR Aerial Photographs, Topographic Maps, Sanborn Maps and City Directories Town of Needham Assessors' Office, Clerk's Office , Engineering Department, Board of Health, Conservation Commission, Fire Department and Building Department Norfolk County Registry of Deeds MASS GIS Priority Resource Map

| | Та | ble 1 Site Ownership | |
|-----------------------|---------------------------------|---------------------------------|---|
| | Owner | Dates of Ownership | Building Dept. Records |
| 559 Central Avenue | Waverly Construction | April 1948 to March 1951 | |
| | Walter and Elizabeth Owen | March 1951 to September 1959 | |
| | Gerry and Barbara Tripp | September 1959 to March 1977 | House Built 1960. Sewer/water connection in 1961 Pool constructed in 1965, removed in 1969, Converted garage to bedroom |
| | Barbara Tripp Realty Trust | March 1977 to 1980 | Remodeled 1979 |
| | Barbara Woodman Realty Trust | 1980 to July 2002 | |
| | Barbara Tripp | July 2002 to June 2003 | |
| | Michael Sharp | June 2003 to the present | Kitchen Remodel 2004 |
| 567 Central Avenue | Waverly Construction | April 1948 to September 1949 | |
| | Roland Stowe | September 1949 to June 1950 | House Built in 1949. Water connection in 1949 |
| | John MacPherson | June 1950 to June 1999 | Added 12' by 12' room off rear of house in 1957. Sewer connection in 1962 |
| | Raymond Owen | June 1999 to March 2009 | |
| | Peacock Realty Trust | March 2009 to present | |
| 573 Central Avenue | Waverly Construction | April 1948 to March 1951 | |
| | Walter and Elizabeth Owen | March 1951 to January 1962 | House built in 1961/62 Sewer and water connections in 1962 |
| | Raymond and Elizabeth Owen | January 1962 to March 2009 | Deck added in 1989 |
| | Douglas C. Owen Realty Trust | March 2009 to present | Converted from oil to gas heat in 2012 |

| | Table 1 Site Ownership | | | | | | | |
|-----------------------|---|------------------------------------|---|--|--|--|--|--|
| | Owner | Dates of Ownership | Building Dept. Records | | | | | |
| 597 Central Avenue | Elizabeth Owen | May 1916 to March 1951 | House and garage prior to 1938 | | | | | |
| | Amos Shepardson | March 1951 to March 1951 | | | | | | |
| | Walter and Elizabeth Owen | March 1951 to April 1973 | Permit for store in 1954, poultry house in 1956 | | | | | |
| | Owen Family Trust | April 1973 to January 1990 | | | | | | |
| | R&D Realty Trust | December 1990 to present | | | | | | |
| 585 Central Street | Elizabeth Owen | August 1948 to March 1951 | | | | | | |
| Succi | Amos Shepardson | March 1951 to March 1951 | | | | | | |
| | Walter & Elizabeth Owen | March 1951 to April 1973 | | | | | | |
| | Owen Family Trust | April 1973 to September 1985 | | | | | | |
| | R&D Realty Trust and Barbara Woodman | September 1985 to November 1995 | Subdivided in 1987 | | | | | |
| | R&D Realty Trust | November 1995 to present | Storage building and turkey pen in 2002 | | | | | |
| (02.0 1 | | | | | | | | |
| 603 Central Avenue | George Winkle | September 1916 to February 1951 | | | | | | |
| | John and Catherine O'Connor | February 1951to November 1995 | Addition in 1956 | | | | | |
| | Jayne O 'Connor | November 1995 to November 2006 | Renovation in 1978 | | | | | |
| | Peacock Realty Trust, Douglas Owen, Trustee | November 2006 to the present | | | | | | |
| 45 Sunset Road | Wendell and Elizabeth Spencer | May 1950 to August 1951 | | | | | | |
| | John and Catherine O'Connor | August 1951 to October 1967 | | | | | | |
| | Old Colony Homes | October 1967 to May 1970 | Building Permit 1970. Sewer and water connection 1970 | | | | | |
| | John Chandler | May 1970 to July 1972 | | | | | | |
| | Dennis and Beverly Jedlinsky | July 1972 to December 1981 | | | | | | |
| | Wendell and Eileen Clark | December 1981 to April 1983 | | | | | | |
| | Paul Lopez | April 1983 to December 1986 | | | | | | |
| | Roberta Baskom | December 1986 to October 2002 | | | | | | |
| | R&D Realty Trust, | October 2002 to present | | | | | | |

| | Table 2- City Directories | | | | | | | | |
|------|---------------------------|---------------------|---------------------|---|--|-------------|-------------------------|--|--|
| Date | 559 Central | 567 Central | 573 Central | 585 Central | 597 Central | 603 Central | 628 Central | | |
| 1971 | Gerry Tripp | J. MacPherson | Raymond Owen | No listing | Owens Poultry Farm/Mrs.Walter Owen | J. O'Connor | Central Auto Salvage | | |
| 1975 | Gerry Tripp | J. MacPherson | Raymond Owen | No listing | Owens Poultry Farm/Mrs.Walter Owen | J. O'Connor | Central Auto Salvage | | |
| 1985 | B. Woodman | J. MacPherson | Raymond Owen | No listing | Owens Poultry Farm/Mrs.Walter Owen | J. O'Connor | Central Auto Salvage | | |
| 1989 | B. Woodman | J. MacPherson | A. Hahn | Owens Poultry Farm | Barbara Woodman | J. O'Connor | | | |
| 1992 | B. Woodman | J. MacPherson | Francis Martin | Owens Poultry Farm | Don LaValle Painting | J. O'Connor | | | |
| 1995 | B. Woodman | J. MacPherson | No listing | Owens Poultry Farm | Don LaValle Painting | J. O'Connor | | | |
| 1999 | B. Woodman | No listing | C. Taylor | Owens Poultry Farm | Don LaValle Painting | No listing | | | |
| 2003 | B. Woodman | L. Rusco | C. Taylor | No listing | George LaValle Painting | No listing | | | |
| 2008 | M. Sharpe | E. Distasio | Ronald Tocci | C. Owen | David Chen LaValle Painting | No listing | | | |
| 2013 | M. Sharpe | Occupant unknown | Occupant unknown | Owens Poultry Farm/D. Owens/Locks & Lockout Service's | Occupant unknown | J. Hurley | | | |

| Table 3 - Sam | ple Results | Compar | ison witl | n MCP RCS- | -1 Cri | teria. | |
|-----------------------------------|------------------|--------|-----------|-------------|--------|-------------|------|
| | _ | | | | | | |
| CLIENT SAMPLE ID | | | | TP 4,5,7 | | TP 1,2,6 | |
| SAMPLING DATE | | | | 23-NOV-15 | | 23-NOV-15 | |
| LAB SAMPLE ID | | | | L1531048-01 | | L1531048-02 | |
| | CAS Number | RCS-1 | Units | | Qual | | Qual |
| General Chemistry - Westborough I | ⊿ab | | | | | | |
| Solids, Total | | | % | 95.5 | | 86.2 | |
| MCP Total Metals - Westborough L | ab | | | | | | |
| Arsenic, Total | 7440-38-2 | 20 | mg/kg | | | 4.4 | |
| Barium, Total | 7440-39-3 | 1000 | mg/kg | | | 28 | |
| Cadmium, Total | 7440-43-9 | 70 | mg/kg | | | 0.46 | U |
| Chromium, Total | 7440-47-3 | 100 | mg/kg | | | 10 | |
| Lead, Total | 7439-92-1 | 200 | mg/kg | | | 110 | |
| Mercury, Total | 7439-97-6 | 20 | mg/kg | | | 0.073 | U |
| Selenium, Total | 7782-49-2 | 400 | mg/kg | | | 2.3 | U |
| Silver, Total | 7440-22-4 | 100 | mg/kg | | | 0.46 | U |
| Extractable Petroleum Hydrocarbo | 18 - Westborough | Lab | | | | | |
| | | | | | | | |
| C11-C22 Aromatics | 1-C22-ALPHA- | ·UJ | mg/kg | 6.95 | U | 27.2 | |
| C11-C22 Aromatics, Adjusted | 11-C22-ALPHA | 1000 | mg/kg | 6.95 | U | 20.7 | |
| C19-C36 Aliphatics | 9-C36-ALPHA- | 3000 | mg/kg | 6.95 | U | 8.29 | |
| C9-C18 Aliphatics | -C18-ALPHA- | 1000 | mg/kg | 6.95 | U | 7.61 | U |
| | | | | | | | |
| | | | L | 1 | | | 1 |

| Table 4 Sample Results Summary with MCP RCGW-1 Criteria. | | | | | | | | | | |
|--|---------------|--------|-------|-------------|------|-------------|------|-------------|------|-------------|
| | | | | | | | | | | |
| CLIENT SAMPLE ID | | | | GP 4 | | GP 3 | | GP 1 | | GP 2 |
| SAMPLING DATE | | | | 24-NOV-15 | | 24-NOV-15 | | 24-NOV-15 | | 24-NOV-15 |
| LAB SAMPLE ID | | | | L1531048-03 | | L1531048-04 | | L1531048-05 | | L1531048-06 |
| | CAS Number | RCGW-1 | Units | | Qual | | Qual | | Qual | |
| Extractable Petroleum Hydrocarbons | | | | | | | | | | |
| C11-C22 Aromatics, Adjusted | C11-C22-ALPHA | 200 | ug/l | 100 | U | 100 | U | 100 | U | 728 |
| C9-C18 Aliphatics | C9-C18-ALPHA | 700 | ug/l | 100 | U | 100 | U | 100 | U | 915 |

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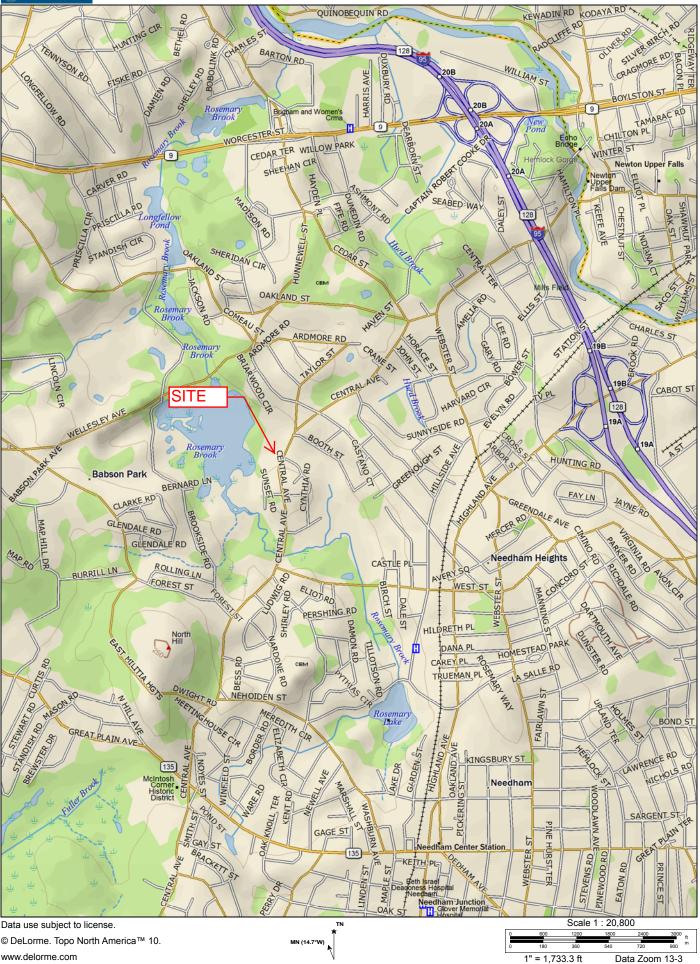
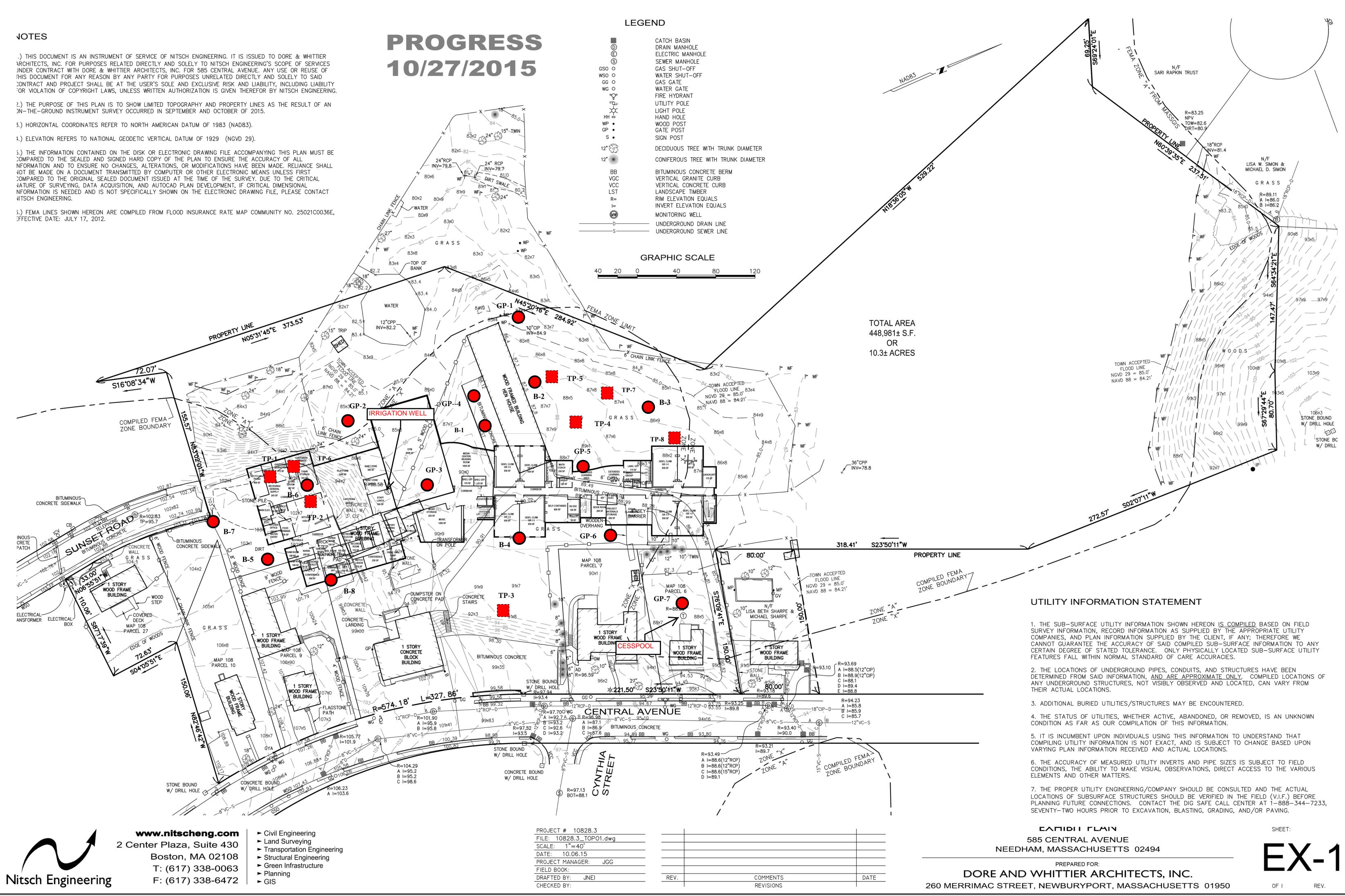
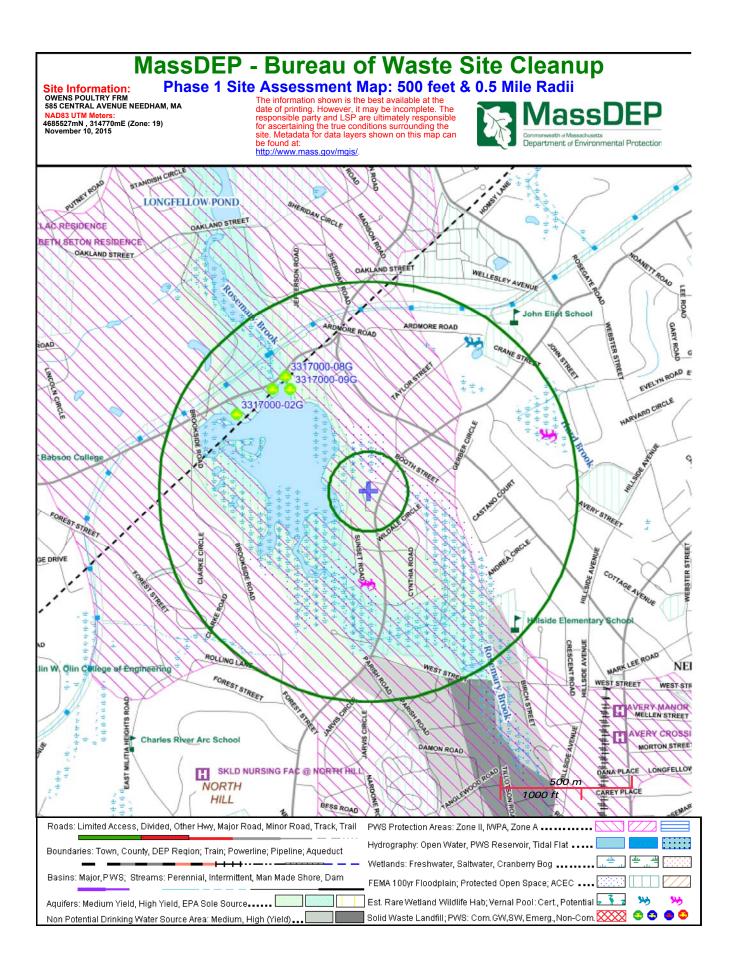


FIGURE 1 SITE LOCUS MAP

ARCHITECTS, INC. FOR PURPOSES RELATED DIRECTLY AND SOLELY TO NITSCH ENGINEERING'S SCOPE OF SERVICES JNDER CONTRACT WITH DORE & WHITTIER ARCHITECTS, INC. FOR 585 CENTRAL AVENUE. ANY USE OR REUSE OF THIS DOCUMENT FOR ANY REASON BY ANY PARTY FOR PURPOSES UNRELATED DIRECTLY AND SOLELY TO SAID CONTRACT AND PROJECT SHALL BE AT THE USER'S SOLE AND EXCLUSIVE RISK AND LIABILITY, INCLUDING LIABILITY OR VIOLATION OF COPYRIGHT LAWS, UNLESS WRITTEN AUTHORIZATION IS GIVEN THEREFOR BY NITSCH ENGINEERING.





Project Permitting Schedule – Appendix X-C

| PREFERRED SCHEMATIC REPO | RT PROJECT SO | | |
|---|------------------------------------|---------------------|--|
| | Project Pern | | , |
| Public Facilities - Construction | РГОЈЕСТ РЕП | | |
| Needham, MA | | opuale - | |
| Calendar Year Fiscal Year | | + | 2015 2016 2017 2018 2019 2020 FY15 FY16 FY17 FY18 FY19 FY20 FY21 |
| | Start Finish | Duration | |
| New Elementary School at Central Ave (| Option J3) | | |
| Designer Selection | | 3 months | DSB |
| Feasibility Study / Schematic | Apr-15 Jun-16 | | |
| Preliminary Design Program (PDP) Development Review Team (DRT) review | 3/11/15 9/3/15 | 6 months | |
| Planning Board (Informal) | | | |
| Conservation Commission (Informal) Preferred Schematic Report (PSR) | 9/3/15 12/1/16 | 3 months | |
| Facilities Assessment Sub-Comm | 12/16/15 1/13/16 | | |
| Address MSBA PSR comments | | | |
| MSBA Board Meeting Schematic Design (SD) | 12/1/16 1/27/16 1/28/15 | 7 weeks 5 months | |
| Mass Historical Commission | 12/28/15 1/28/16 | | |
| Letter of Map Agreement (LOMA) - FEMA review | 1/29/16 5/29/16 | | FEMA - LOMA |
| DRT review Planning Board (Informal) | 2/15/16 2/23/16 3/8/16 3/8/16 | | |
| Conservation Commission (Demo NOI)) | 3/10/16 3/10/16 | | |
| DEP - Notification & RAM plan | 1 11 1 11 11 | | DEP - RAM Plan DEP - RAM Pla |
| LSP Mitigation / monitoring / Testing LSP - Closure & DEP Filing | 7/1/16 11/30/16 12/1/16 1/30/17 | | Image: Note #1 & 2) Mitigation & testing Image: Note #1 & 2) Close Image: Note #1 & 2) |
| Purchase Property | 3/1/16 3/1/16 | | |
| Demolition Planning / Bidding Demolition - Permits | | | Plan / Bid (Note #2) |
| Existing Building Demolition | | | |
| DESE Review | | | |
| MSBA review of DESE submittal DESE Review and Approval | 4/18/16 4/25/16 4/25/16 6/3/16 | | |
| Schematic Design Submittal to MSBA | | | |
| Facilities Assessment Sub-Comm | 6/22/16 7/13/16 | | |
| MSBA Board Meeting Preparation for Ballot question | 6/10/16 7/27/16 7/28/16 11/1/16 | | 27 Approve PS&B |
| Special Town Meeting | 10/30/16 10/31/16 | | |
| Override Ballot Question Project Funding Agreement | 11/8/16 11/8/16 | | 8 Local ballot with National Election 0 |
| Design Development | 11/2/16 11/30/16 | 5 months | |
| Development Review Team review | | твс | |
| Design Review Board (DRB) Planning Board (Informal) | 1/16/17 1/16/17 1/10/17 1/24/17 | | |
| Conservation Commission - (informal) | 1/12/17 1/26/17 | | |
| Design Development Submission to MSBA | | TBC | |
| MSBA Review Address MSBA Review Comments | | | |
| Construction Documents | 5,25,17 0,0,17 | 8 months | |
| 60% Submittal to MSBA | | | |
| MSBA 60% review Address MSBA Review Comments | | | |
| Prequalification of General Contractors | 9/18/17 11/17/17 | 2 months | |
| Prequalification of Filed Subcontractors 60% Documents (Basis for Permits) | 9/18/17 11/17/17 | 2 months | FSB FOR THE FORME FOR THE FOR THE FORME FOR THE FO |
| Design Review Board (DRB) | 9/18/17 10/2/17 | TBC | |
| Planning Application | | | |
| Conservation Commission -NOI 90% Submittal to MSBA | | | |
| MSBA review of 90% | | | |
| Address MSBA Review Comments | | | |
| Completion of Construction Docs Budget Reconciliation | | | |
| Bidding Documents / Procurement | | 2 months | Bids |
| Filed Sub-Bids | | | |
| GC Bids MSBA Agreement | 2/21/18 3/28/18 4/9/18 4/27/18 | | |
| Contract Award | | 1 week | |
| Construction Substantial Completion | E/1/19 6/1/20 | 27 months | |
| Substantial Completion Commissioning | | | |
| Move into new School | 7/15/20 8/15/20 | 4 weeks | |
| Teacher setup classrooms Start of School | 8/17/20 8/31/20 9/2/20 | | |
| Notes: | 9/2/20 | | |
| 1) DEP filing, RAM plan, mitigation and closure | | | |
| 2) Land Purchase, Building Demolition and DE | P filing are funded in p | arallel to MSE | A project funds. (Special Town Meeting -(STM-11/2/2015 - Article#13) |

Prliminary Design Pricing Chart – Appendix X-D

| SUMMARY OF PRELIMINARY DESIGN PRICING | | | | | | Revised 01/05/2016 -2 | | |
|---|---|------------------------------|-------------------------------------|--|--|--|--|---|
| OPTION | TOTAL GROSS SQ.FT | SQ. FT OF RENOVATED SPACE | SQ. FT OF NEW CONSTRUCTION | SITE, BUILDING DEMOLITION, HAZ-MAT COST* | ESTIMATED TOTAL CONSTRUCTION COST** | ESTIMATED TOTAL PROJECT COST | | NOTES |
| | | (COST* / SQ.FT.) | (COST* / SQ.FT.) | | | | | |
| OPTTION A | 45,005 SQ. FT. | 45005 SQ. FT. | | 64 aca 700 | \$8,246,634 | | \$12,989,000.00 | 1) No swing space has been included in |
| CAPITAL IMPROVEMENTS ONLY | does not incl. exist. Modular classrooms | \$ 155.16 /sq.ft. | NA | \$1,263,793 | \$183.24 /sq.ft. | No Swing Space Included | \$288.61 / sq.ft. | this estimate. Escalation includes four years to the mid-point of construction |
| OPTTION B1 | 101,400 SQ. FT. | 10,980 sq. ft. | 90,420 sq. ft. | \$5,955,012 | \$50,504,935 | \$71,738,909 \$707.48 / sq.ft. project not including swing space | \$91,016,000 | 1) Haz / Mat Cost include building demolition and site remediation |
| ADDITION AND RENOVATION | 101,400 | \$446.72 / sq.ft. | \$438.45 / sq.ft. | includes site remediation | \$498.08 / sq.ft. | \$19,277,564 \$342.43 / sq.ft. modular school project | \$897.60 / sq.ft. incl. swing space and moving expence | |
| OPTTION C3 NEW SCHOOL ON EXISTING SITE requires purchase of additional property | 90,927 sq. ft. | NA | 90,927 sq. FT. \$431.62 / sq.ft. | \$6,718,211 includes site remediation | \$45,963,957 \$505.50 / sq.ft. | \$55,976,000 \$615.61 / sq.ft. project not including swing space \$19,277,564 \$342.43 / sq.ft. modular school project | \$85,259,058 \$937.66 / sq.ft. incl. swing space and moving expence | 1) Does not incl. add property purchase required for this option |
| OPTTION E1A NEW K-5 SCHOOL AT DEFAZIO SITE | 90,927 SQ. FT. | NA | 90,927 sq. гт. \$423.42 / sq.ft. | \$5,878,034 | \$44,378,560 \$488.00 / sq.ft. | Swing Space Not Required | \$62,177,521 \$ 683.82 / sq.ft. | 1) Does not incl. renovation to play field or relocation of DPW storage yards |
| OPTTION E2A + H3 | | | 96,444 SQ. FT. | | \$47,250,863 | \$63,800,393 | | |
| E2A: NEW G6 SCHOOL AT DEFAZIO SITE | 96,444 SQ. FT. | NA | \$426.69 / sq.ft. | \$6,099,187 | \$489.93 / sq.ft. | \$661.53 / sq.ft. | \$82,114,393 | 1) H3 Total Building is 81.000. 16,278 |
| H3: REONVATIONS TO EXISTING HIGH ROCK SCHOOL FOR K-5 | 32,278 SQ. FT. (add / reno) | 16,278 SQ. FT. | 16,000 SQ. FT. | 61 457 264 | \$12,254,769 | \$18,314,000 | | Renovation; 16,000 New; 48,822 Existing to Remain |
| | 81,100 SQ. FT. (total w/ add) | \$258 / sq.ft. | \$431 / sq.ft. | \$1,157,264 | \$379.66 / sq.ft. | \$ 379.66 / sq.ft. | \$637.92 / sq.ft. | |
| OPTTION J3*** NEW BUILDING ON CENTRAL AVE SITE | 90,927 SQ. FT. | NA | 90,927 SQ. FT. | \$6,109,065 | \$46,198,535 | Swing Space Not Required | \$62,369,698 \$685.93 / sq.ft. | 1) Does not Include the Demolition of Existing Buildings or The Purchase Cost o Property (\$7 million apprioated for this |

* Marked Up Construction Cost

** Does Not Include Construction Contingency

*** District's Preferred Solution

Wellesley License Agreement – Appendix X-E

LICENSE AGREEMENT

License Agreement entered into this _____ day of _____, 2016, by and between the Town of Wellesley, a municipal corporation, 20 Municipal Way, Wellesley, Massachusetts, 02481, acting through its Board of Public Works ("Licensor)", and the Town of Needham, Massachusetts, a municipal corporation, acting through its Town Manager ("Licensee").

In consideration of the full and faithful performance by Licensee of all covenants and agreements contained herein and subject to the following terms and conditions, the Licensor grants to Licensee and Licensee takes from the Licensor the right to use specified areas owned by the Town of Wellesley in the Town of Needham for passive and active recreation in conjunction with the construction of a new elementary school on or about 585 Central Avenue in Needham (the "Premises"), as shown on a plan entitled "CONCEPTUAL SITE PLAN" and attached here to as Exhibit A.

- 1. The Licensee shall have the exclusive right to enter upon the Premises and to make the Premises available to the staff and students at the proposed elementary school and to the general public for passive and active recreation, as described herein.
- 2. The term of the Agreement shall be January 1, 2016 through December 31, 2025.
- 3. The Licensee is authorized to construct, maintain and use a multi-purpose playing field (Area A approximately 150 feet by 75 feet) all or a portion of which will be located on land owned by the Licensor (as shown on Attachment X). No such improvements shall be made unless and until the plan for such improvements (to include a description of materials to be used in construction and an operation and maintenance plan) is approved by vote of the Licensor. Licensee shall ensure that it complies with all laws, including, but not limited to, the Wetlands Protection Act and any local wetland bylaws when making such improvements.
- 4. The Licensee is authorized to make and maintain improvements such as regrading, fencing, planting, and/or wetlands replication to the small pond (Area C), a portion of which is on land owned by the Licensor as identified on the attached plan. No such improvements shall be made unless and until the plan for such improvements (to include a description of materials to be used in construction and an operation and maintenance plan) is approved by vote of the Licensor. Licensee shall ensure that it complies with all laws, including, but not limited to, the Wetlands Protection Act and any local wetland bylaws when making such improvements.
- 5. The Licensee is authorized to construct, maintain and use a trail and / or walkway on land owned by the Licensor (Area B Uplands), a portion of

which will be accessible to individuals with limited mobility on land owned by the Licensor. No such trail and/or walkway shall be constructed unless and until the plan for such construction (to include a description of materials to be used in construction and an operation and maintenance plan) is approved by vote to the Licensor.

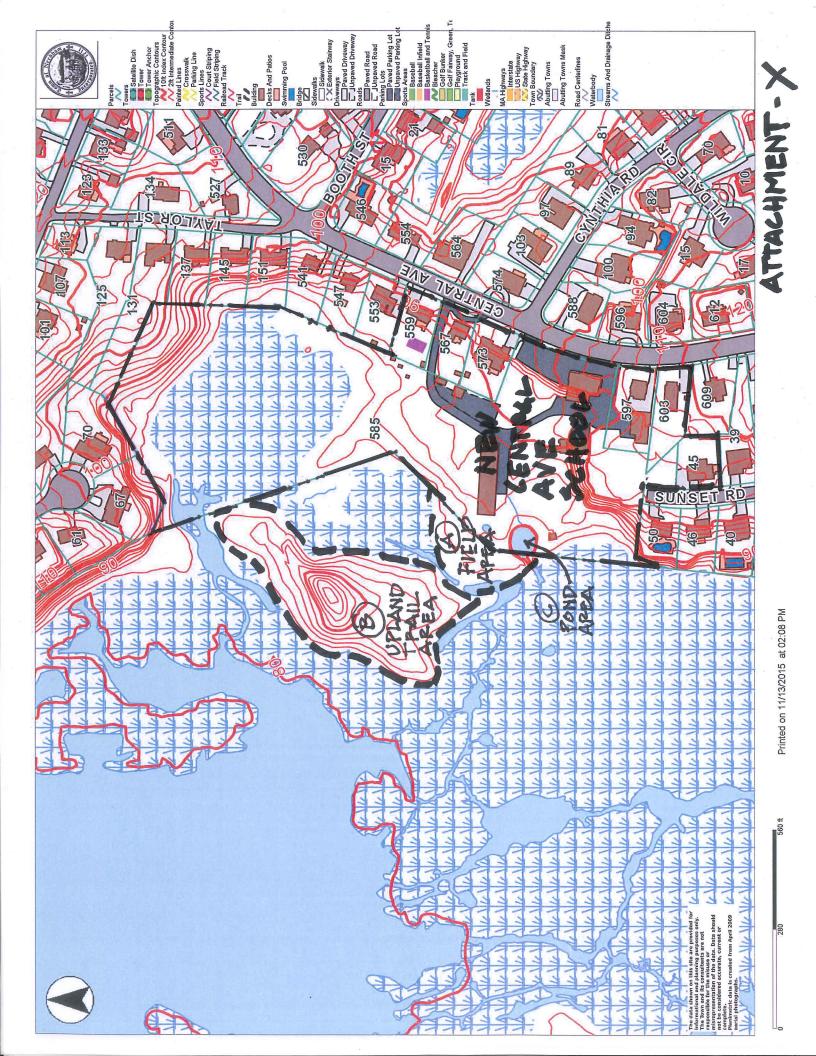
- 6. The Licensee shall indemnify the Licensor from all claims by all parties arising at any time on or adjacent to, and related in any way to the use of the Licensor's property for educational use up to \$100,000 per claim, unless such claim is a result of the negligence or conduct of the Licensor, its agents, servants, employees, members or their guests.
- 7. It is agreed that the above described property is and shall remain the property of the Licensor and the Licensee shall not make any improvements, alter or remove any of it without the Licensor's express prior written consent, except as provided for in this License.
- 8. Licensee shall procure and maintain, during the term of this License Agreement, comprehensive general liability insurance naming the Licensor as an additional named insured, subject to a combined single limit of at least \$1,000,000 each occurrence and \$3,000,000 in the aggregate for bodily injury and \$1,000,000 property damage. The Licensee shall provide the Licensor with a certificate of insurance.
- 9. Licensee shall not assign this License Agreement or any rights hereunder without the prior written consent of the Licensor.
- 10. It is agreed that this License is subject to termination by either party upon ninety (90) days written notice. The Licensor's notice shall be delivered by leaving a copy thereof with the Town Manager, 1471 Highland Avenue, Needham, Massachusetts. The Licensee's notice shall be delivered by mailing a copy to the Licensor at 20 Municipal Way, Wellesley, MA 02481.
- 11. All the terms and provisions of this License Agreement shall be binding upon and inure to the benefit of and be enforceable by and against the parties hereto, and their respective successors and assigns. This License Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Massachusetts; sets forth the entire understanding between the parties with respect to the Town of Needham's permitted use of the Licensed premises; and shall not be modified or amended except by written instrument signed by both parties hereto.
- 12. The parties hereby submit to the jurisdiction of the courts of the Commonwealth of Massachusetts and the United States District Court of Massachusetts for the resolution of any disputes relative to this License Agreement. Each of the parties hereto represents that this License Agreement

has been signed and sealed by its duly authorized representatives, and agrees that this License Agreement shall take effect as a sealed instrument

15. The Licensor agrees that it shall commence and litigate all actions or proceedings arising in connection with this Agreement exclusively in the Dedham District Court or in the Norfolk Superior Court, both of which are located in the County of Norfolk, Commonwealth of Massachusetts. The aforementioned choice of venue is intended to be mandatory and not permissive in nature, thereby precluding the possibility of the Licensor commencing or prosecuting any litigation against the Licensee, with respect to or arising out of this Agreement, in any court or forum other than those specified in this paragraph.

| EXECUTED under seal on this | | day of | , 2016. |
|-----------------------------|-------|-----------------------|----------|
| | | | |
| | | | |
| | The 7 | Fown of Needham (Li | censee) |
| | By: | | |
| | Its: | Town Manager | |
| | The 7 | Fown of Wellesley (Li | icensor) |
| | By: | | |
| | Its: | | |
| | 100 | Hereunto duly auth | orized |
| | | | |
| | | | |
| | | | |





TRAFFIC ANALYSIS REPORT

Nitsch Engineering was retained by Dore & Whittier to conduct a traffic study of the existing and proposed Hillside School sites. The attached report uses the existing Hillside School traffic volume data to inform or project the traffic impact of a new elementary school on the Central Avenue site.

Evaluation of Traffic Patterns

On Site

The existing Hillside School on site traffic patterns were studied to determine the traffic flow and number of cars that queue for both morning and afternoon pick up and drop off, the impact that the cars have on the adjacent neighborhoods and main streets, and the number of buses and vans that arrive daily. On the day of our study, Wednesday, September 9, 2015, 76 cars entered the site for parent drop off in the morning and 49 parent pick-ups were observed in the afternoon. The Hillside School staff indicated that this volume of traffic was average or slightly above average for a typical day. The traffic study counted up to fifty cars in the queue at any given time. The average pick-up or dropoff time occurs within a thirty minute window with the heaviest time lasting approximately fifteen minutes. Due to the current site constraints the car queue line tends to backup into the adjacent neighborhood and impact traffic on West Street. To reduce the onsite traffic congestion and the impact of the school on the Central Avenue traffic flow the new site has been designed to have a car queue line for fifty or more cars. This has been done by creating a long loop for passenger vehicles and a longer drop off zone so that as many as ten cars can be loading or unloading at any given time. Additionally, the loop is two cars wide this allows for an additional 20 cars to 'double up' when necessary to prevent the need for cars to queue off site. Buses and vans are given dedicated drive aisles and can circulate onsite without interfering with the passenger vehicles.

Off Site

Central Avenue runs north / south and is a 'rural major connector' that connects the west side of Needham to Worcester Street (Route 9)or Highland Ave. which lead to the Interstate 95 on ramps. The project site is located 1/10th of a mile south of the Central Ave. / Hunnewell Street intersection. The vehicular entrance to the site is on Central Ave at the south end of the site. This entrance point has been located based on the Stopping Sight Distance (SSD) and the Intersection Sight Distance (ISD). The entrance location exceeds the SSD in both the north and southbound directions by 150 ft and 350 ft respectfully and the ISD minimum in both the north and south bound directions by 30 ft and 590 ft respectfully.

The report indicates an approximate increase of 202 entering and existing trips on the site during the weekday morning drop off (7:20 – 8:20 am), and 192 entering and exiting trips in the afternoon (between 2:30 - 3:30 pm). The impact of these additional trips on Central Avenue in the area of the project site, as well as at the intersections of West Street and Hunnewell Street are noted in the report.

A Signal Warrant Analysis for the West Street / Central Avenue intersection and the Central Ave / Hunnewell Street intersection was conducted, as well as, an analysis for the project site entrance drive. All three sites met the criteria for the Peak Hour Warrant, however based on engineering judgement, the peak hour warrant is generally not accepted unless accompanied by an additional warrant.

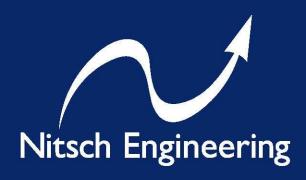
Recommendations

Based on the study Nitsch Engineering provided the following recommendations:

- Designate the area as a School Zone under State and local statue, install appropriate School Zone signs
- Improve pedestrian experience along Central Ave including improving sidewalks to accommodate safe walks to school and provide advanced warning sings of school entering and exiting traffic
- Install ADA accessible crosswalks
- Evaluate installing exclusive turning lanes at Central Avenue for school traffic
- Provide Safety Awareness community outreach through social media and other parent outreach

Based on the recommendations the Town of Needham has begun a review of the existing sidewalks that are within the 'walk to school' zone. Sidewalk improvements including ADA accessible curb cuts and crosswalks will become part of the Town wide sidewalk improvement plan that is currently underway. The project budget has included the installation of two crosswalks, one on the north and one on the south, that will allow children to cross safely onto school property. The project budget has included flashing crossing signage for each side of the road at both of the proposed crosswalks. School Zone signage with flashing speed limit signage has been included in the project budget as well as associated school zone traffic signs. Also included in the project budget is the scope of work required to create a left turn only lane that will allow traffic to move past passenger cars entering the site from the south. The district understands that cost associated with off-site work will not be eligible for reimbursement.

The following Traffic Report dated April 20, 2016 has been prepared by Nitsch Engineering for this project.



Hillside Elementary School Needham, MA

Transportation Feasibility Study

April 20, 2016

Prepared for:

Dore & Whittier Architects, Inc. 260 Merrimac Street, Building 7 Newburyport, MA 01950

Submitted by:

Nitsch Engineering 2 Center Plaza, Suite 430 Boston, MA 02108

Nitsch Project #10828.2

Building better communities with you.

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1 INTRODUCTION

Nitsch Engineering has been retained by Dore & Whittier Architects, Inc. to prepare a qualitative assessment of safety, traffic circulation, and traffic access/egress, associated with the feasibility study and schematic design for the Hillside Elementary School project in Needham, Massachusetts. Two options are considered for the reconstruction. The first option would be to construct a new Hillside Elementary School building and grounds on the site of the existing school, located at 28 Glen Gary Road in Needham, Massachusetts. The second option would be to construct a new elementary school building and grounds on an existing site located off Central Avenue, approximately ³/₄ of a mile west of the existing Hillside Elementary School site.

This report will outline the existing and proposed traffic volumes, operations, and safety of the adjacent surrounding roadways and intersections; traffic patterns of the existing Hillside Elementary School, including site access/egress, parent and bus pick-up/drop-off, traffic circulation, and parking supply/demand. The report will use this information to project future conditions for both the Hillside Elementary School option and the Central Avenue option.

The Locus Map of the study area is shown in Figure 1, a map of the existing Hillside Elementary School site is shown in Figure 2, and a map of the Central Avenue Site is shown in Figure 3.

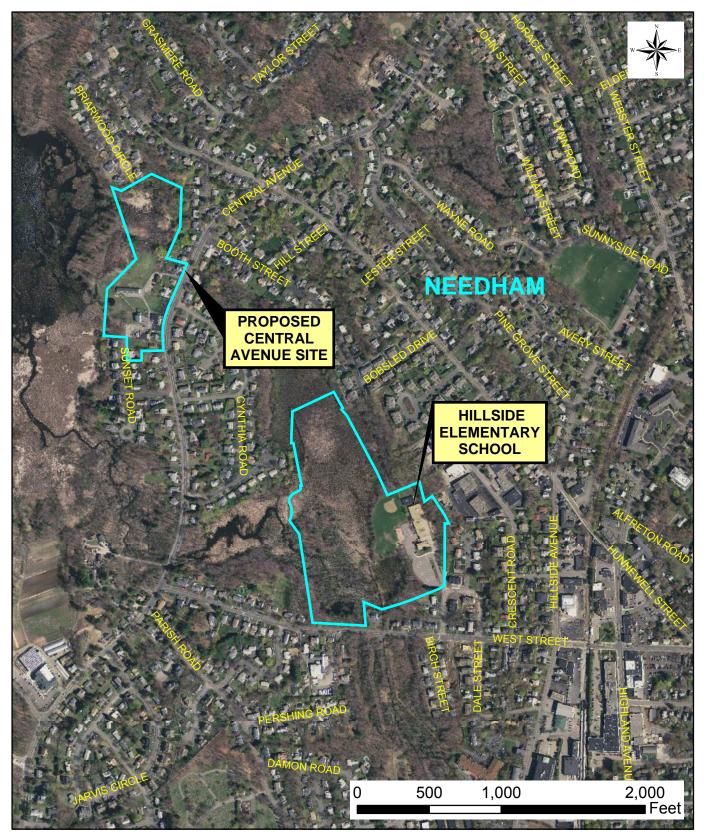


Figure 1: Locus Map Hillside Elementary School Needham, Massachusetts



Data Source: MassGIS Nitsch Project #10828



Figure 2: Hillside Elementary School Hillside Elementary School Needham, Massachusetts



Data Source: MassGIS Nitsch Project #10828

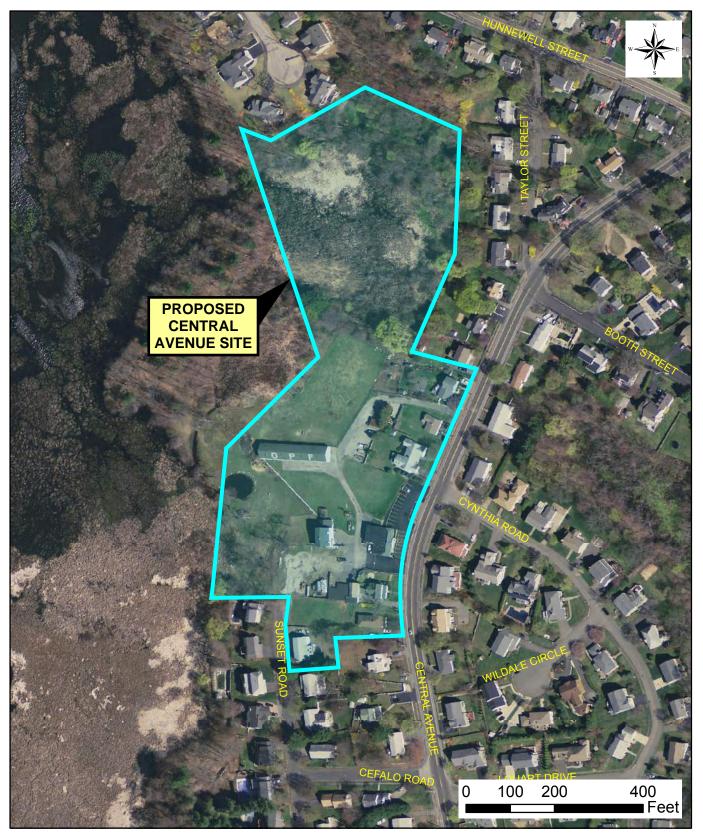


Figure 3: Central Avenue Site Hillside Elementary School Needham, Massachusetts



Data Source: MassGIS Nitsch Project #10828

2 EXISTING CONDITIONS

2.1 Study Area Roadways

To examine the existing conditions, we studied and collected data at the following roadways:

- 1. West Street; and
- 2. Central Avenue

West Street

West Street is classified by the Massachusetts Department of Transportation (MassDOT) as a local road and runs in the east-west directions between Webster Street and Central Avenue in Needham. The posted speed limit along the roadway is 30 miles per hour, except within the vicinity of the Hillside Elementary School, where the speed gets reduced to 20 miles per hour. The land use along West Street is primarily residential. The roadway is within the jurisdiction of the Town of Needham.

Central Avenue

Central Avenue is classified by MassDOT as a rural major connector or urban minor arterial and runs in the northeast-southwest directions. Central Avenue is present between Centre Street/Central Avenue Bridge over Charles River in the Town of Dover at its southwest terminus and Eliot Street/Central Avenue Bridge over the Charles River at its northeast terminus near the City of Newton. The posted speed limit along the roadway is 35 miles per hour. The land use along Central Avenue is primarily residential or open space. The roadway is within the jurisdiction of the Town of Needham.

2.2 Study Area Intersections

To examine the existing conditions, we included the following intersections in the study area. The intersection locations are shown in Figure 4.

- 1. West Street at Central Avenue;
- 2. Central Avenue at Booth Street/Taylor Street; and
- 3. Central Avenue at Hunnewell Street (signalized)

West Street at Central Avenue

West Street and Central Avenue intersect as a three-way "T"-type unsignalized intersection with West Street approaching from the east, and Central Avenue from north and south. Central Avenue operates freely with no control and West Street operates under "STOP" control. One crosswalk is present at the intersection crossing West Street.

From the north and south, Central Avenue is approximately 38 feet wide and contains one travel lane in each direction. From the east, West Street is approximately 30 feet wide and contains one travel lane in each direction. Continuous bituminous concrete sidewalks are present on both sides of the roadways at the intersection.

Central Avenue at Booth Street/Taylor Street

Central Avenue, Booth Street, and Taylor Street intersect as a four-way unsignalized intersection, with Central Avenue approaching from the north and south, Booth Street approaching from the east, and Taylor Street approaching from the northwest. Central Avenue operates freely with no control. Taylor Street is a one-way approach and operates under "YIELD" control. Booth Street is a Private Way with no control. There are no crosswalks present at the intersection.

At the intersection, Central Avenue is approximately 38 feet wide and contains one travel lane in each direction. Taylor Street is approximately 14 feet wide and contains one one-way travel lane approaching the intersection. Booth Street is approximately 38 feet wide and contains one travel lane in each direction. Continuous bituminous concrete sidewalks are present on both sides of Central Avenue. There are no sidewalks present on Booth Street and Taylor Street.

Central Avenue at Hunnewell Street

Central Avenue and Hunnewell Street intersect as a four-way signalized intersection with Central Avenue approaching from the southwest and northeast, and Hunnewell Street approaching from northwest and southeast. Crosswalks are present at all approaches.

From the southwest, Central Avenue is a two-way roadway with one lane in each direction, separated by a double yellow centerline. The approach to the intersection consists of two lanes. The left lane permits a left turn only movement that transitions to the northwest on Hunnewell Street, and the right lane permits a through movement and a right turn that transitions to the southeast onto Hunnewell Street. Central Avenue is approximately 32 feet wide at the intersection. Bituminous concrete sidewalks are present on both sides of Central Avenue.

From the northeast, Central Avenue is a two-way roadway with one lane in each direction, separated by a double yellow centerline. The approach to the intersection consists of one lane to permit through, left, and right movements that transition to the southwest on Central Avenue and northwest and southeast on Hunnewell Street. Central Avenue is approximately 32 feet wide at the intersection. Bituminous concrete sidewalks are present on both sides of Central Avenue.

From the northwest, Hunnewell Street is a two-way roadway with one lane in each direction, separated by a double yellow centerline. The approach to the intersection consists of one lane to permit through, left, and right movements that transition to the southeast on Hunnewell Street and northeast and southwest on Central Avenue. Hunnewell Street is approximately 26 feet wide at the intersection. Bituminous concrete sidewalks are present on both sides of Hunnewell Street.

From the southeast, Hunnewell Street is a two-way roadway with one lane in each direction, separated by a double yellow centerline. The approach to the intersection consists of one lane to permit through, left, and right movements that transition to the northwest on Hunnewell Street and southwest and northeast on Central Avenue. Hunnewell Street is approximately 26 feet wide at the intersection. Bituminous concrete sidewalks are present on both sides of Hunnewell Street.

The fully actuated traffic signal operates in four phases. The following movements are permitted or protected, as noted, during each of the phases.

First phase:

- Central Avenue southbound; and
- Central Avenue northbound, permitted phase for left-turn onto Hunnewell Street.

Second phase:

• Central Avenue northbound, permitted phase for left-turn onto Hunnewell Street.

Third phase (if actuated):

• Exclusive pedestrian phase for crossing Central Avenue northbound, Central Avenue southbound, Hunnewell Street northbound, and Hunnewell Street southbound.

Fourth phase:

- Hunnewell Street northbound; and
- Hunnewell Street southbound.

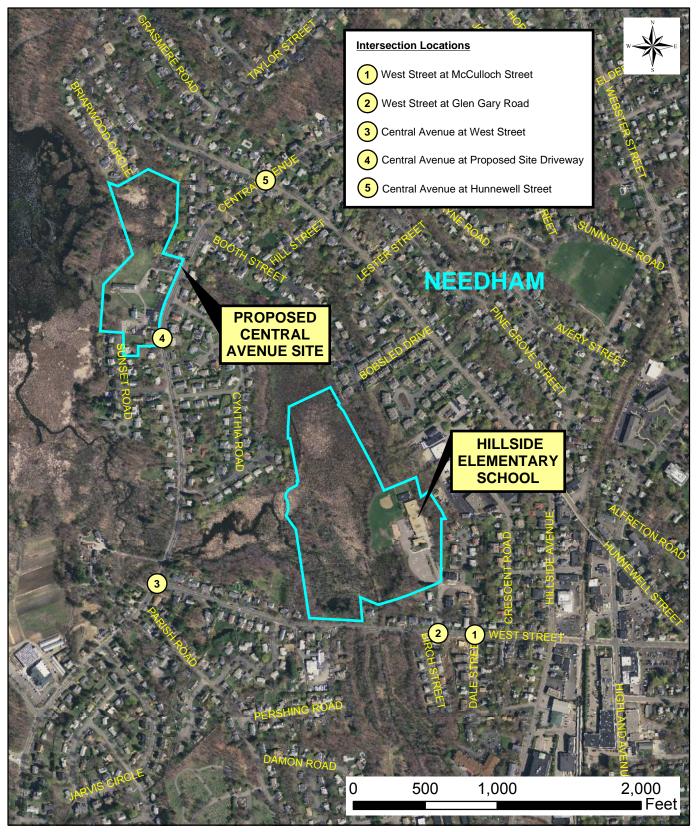


Figure 4: Intersection Locations Hillside Elementary School Needham, Massachusetts



2.3 Hillside Elementary School Site Visit

Nitsch Engineering conducted a site visit on Wednesday, September 9, 2015 to observe the site circulation associated with the weekday morning drop-off, weekday afternoon pick-up, and general queue lengths around the school site; and quantified the general traffic circulation at Hillside Elementary School. The weekday morning drop-off observation occurred during clear and sunny conditions with a temperature of 88 degrees Fahrenheit. The weekday afternoon pick-up activity occurred during clear and sunny conditions with a temperature of 91 degrees Fahrenheit. The Site Circulation is shown in Figure 5.

2.4 Hillside Elementary School Site Access and Egress

Hillside Elementary School is located to the north of West Street. The single access and egress driveway to Hillside Elementary School exists south of the school at the intersection of Castle Place and Glen Gary Road. Pedestrian access to the school is also present north of Hillside Elementary School via a paved path to Booth Street. The driveway to Hillside Elementary School is a two-way two lane driveway. This driveway is the southern leg of a semi-circular driveway in front of Hillside Elementary School, with the northern leg located approximately 200 feet north of the southern leg. Sidewalks are present on both sides of Castle Place and Glen Gary Road, which connect to the sidewalks along the school driveway providing pedestrian access to Hillside Elementary School. A crosswalk exists crossing the school driveway at the intersection of Castle Place and Glen Gary Road.

2.5 Hillside Elementary School Traffic Circulation and Pick-up/Drop-off

Existing Morning Drop-off Circulation

Buses and vehicles drop off students via the driveway at the intersection of Castle Place and Glen Gary Road. The Hillside Elementary School traffic arrives at West Street from 8:05 AM through 8:30 AM. Parents arrive from West Street and enter McCulloch Street to arrive at the school through Castle Place, and drop-off their children either at the parking lot or in the front. The Principal and a couple of the teachers are waiting along the curbside to greet the children. A total of 76 parental drop-offs were observed during the morning. Buses enter and exit the site from Glen Gary Road. A total of six buses and one minibus drop off students at the school. Even though the arrival times are outside the normal morning peak hour of 7:00 AM to 8:00 AM, we observed that traffic conditions on West Street become relatively congested due to the school traffic. A police detail/crossing guard is employed to assist parents and children cross West Street, as well as direct traffic in and out of Glen Gary Road. 99 vehicles entering the site were travelling northbound on West Street while 40 vehicles were traveling southbound.

Existing Afternoon Pick-up Circulation

The afternoon pick-up period occurs approximately from 2:30 PM to 3:00 PM. Parents arrive around 2:30 PM and queue up at the school driveway to wait for their children. The live lane at the school driveway can accommodate only six vehicles. The additional vehicles queue on Castle Place, McCulloch Street, and West Street and wait their turn. The School Principal directs this operation. Once they have collected their children they leave via Glen Gary Road, and normal traffic returns around 3:15 PM. A total of 49 parental pick-up vehicles were observed during afternoon dismissal. Buses enter and exit the site from Glen Gary Road. A total of six buses and one minibus pick up students at the school.

Table 1 quantifies the parent and bus drop-off/pick-up totals for the school.

| Туре | Parent | | Bus | | |
|-------------|------------------|----|----------|---------|--|
| Time | Drop-Off Pick-Up | | Drop-Off | Pick-Up | |
| 8:00 - 8:15 | 43 | | 4 * | | |
| 8:15- 8:30 | 33 | | 3 | | |
| 2:30 - 2:45 | | 10 | | 4 * | |
| 2:45 - 3:00 | | 39 | | 3 | |
| Total | 76 | 49 | 6 | 6 | |

Table 1 – Hillside Elementary School Pick-Up/Drop-Off Quantity

* One of the buses is a Mini-Bus

2.6 Hillside Elementary School Parking Supply and Demand

Nitsch Engineering performed a parking supply and demand count on September 9, 2015. The utilization of the lot was taken at 9:30 AM. Figure 6 shows an overview of the Hillside Elementary School parking lot, the total parking spaces, parking space type, and lot utilization.

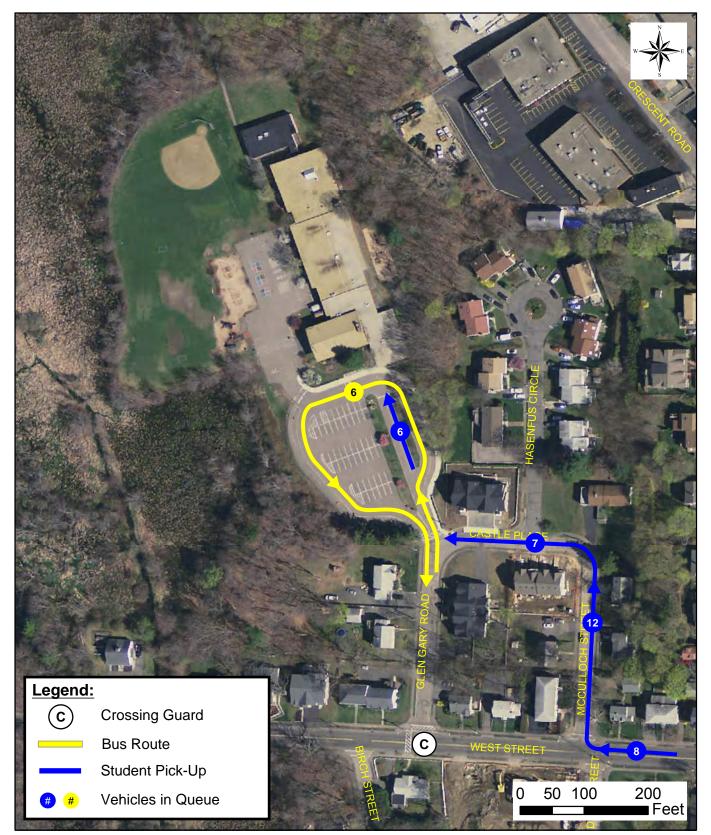


Figure 5: Site Circulation Hillside Elementary School Needham, Massachusetts

Nitsch Engineering

Data Source: MassGIS Nitsch Project #10828



Figure 6: Parking Lot Overview Hillside Elementary School Needham, Massachusetts



As can be seen from Figure 6, a total of 50 parking spaces were counted within the Hillside Elementary School, including two of which being accessible spaces. This meets the Architectural Access Board (AAB) Code of Massachusetts Regulations (521 CMR) for the required number of handicapped parking spaces. In addition to the parking spaces, ten vehicles were parked within the isles and the outside perimeter of the parking lot due to parking space shortage. The two accessible spaces were not utilized. The overall lot utilization was 116%.

3 SAFETY ANALYSIS

3.1 Crash Data

Nitsch Engineering reviewed the crash data available from MassDOT for the three most recent years available -2011 to 2013 – for the study intersections. A summary of the crashes, including the severity, and the manner of collision are shown in Table 2.

| | Nu | mber of Cra | ashes | | Sev | erity | | | Manı | ner of Co | ollision | | Perce | ent During |
|--|------|------------------|---------|-----|-----|-------|----------------|----|-----------------|-----------------|--------------------|------------------------------------|----------------------------|-----------------------|
| Location | Year | Total Crashes | Average | PDª | PI⁵ | NR° | F ^d | Ae | RE ^f | HO ^g | Other ^h | Incl. Ped- Bike ^j | Peak Hours ^k | Wet/Icy Conditions |
| | 2011 | 4 | | 4 | 0 | 0 | 0 | 2 | 1 | 0 | 1 | 0 | 50% | 25% |
| Central Ave at West St | 2012 | 1 | 2.0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0% | 100% |
| | 2013 | 1 | | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0% | 0% |
| Central Ave | 2011 | 2 | | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 50% | 0% |
| at Hunnewell | 2012 | 1 | 1.0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0% | 100% |
| St | 2013 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0% | 0% |
| Central Ave | 2011 | 1 | | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 100% | 0% |
| at Booth St and Taylor | 2012 | 0 | 0.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0% | 0% |
| St | 2013 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0% | 0% |
| Total | ALL | 10 | 1.1 | 9 | 1 | 0 | 0 | 7 | 2 | 0 | 1 | 0 | 40% | 30% |
| ^a Property Damag same direction, s | | | | | | | | | | | | | | n; sideswipe, |

A total of ten crashes were reported within the study areas for the three locations from 2011 to 2013. In terms of severity, nine of the crashes involved property damage and one reported personal injury. In terms of manner of collision, seven of the crashes were angle collisions, two were rear-end, and one was of other type. None of the crashes involved a pedestrian. Approximately 40% of the crashes occurred during the peak hours of 7:00 to 9:00 AM or 4:00 to 6:00 PM and 30% occurred during wet/icy conditions. Analyzing the crash data, as most crashes were of angle or rear-end type, the crashes were most likely caused by driver carelessness or inattentiveness.

3.2 Intersection Crash Rates

The intersection crash rate is recognized as an effective tool to measure the safety of intersections. For intersections, crash rates are expressed by the number of crashes per million entering vehicles (MEV). As of January 2013, the average statewide crash rate for unsignalized intersections is 0.60 per MEV and 0.80 for signalized intersections. For District 6, which includes the Town of Needham, the rate for unsignalized intersections is 0.58 crashes per MEV and 0.76 for signalized intersections.

The intersection of Central Avenue and West Street experienced a crash rate of 0.29 per MEV, which is below both the District 6 and statewide averages for unsignalized intersections.

The intersection of Central Avenue at Booth Street and Taylor Street experienced a crash rate of 0.06 per MEV

which is far below both the District 6 and statewide averages for unsignalized intersections.

The intersection of Central Avenue at Hunnewell Street experienced a crash rate of 0.15 per MEV, which is below both the District 6 and statewide averages for signalized intersections.

Intersection crash rate worksheets can be found in Appendix A-3.

4 **EXISTING TRAFFIC CONDITIONS**

4.1 2015 Traffic Count Data

Automatic Traffic Recorder (ATR) Data

Nitsch Engineering retained Precision Data Industries, LLC (PDI) of Berlin, Massachusetts to conduct 24-hour Automatic Traffic Recorder (ATR) vehicle traffic counts throughout the study area, on Wednesday, September 9, 2015. Table 3 summarizes the ATR data. A copy of the raw traffic count data is included in Appendix A-1.

| | | ADT ^a | | | P | | | | |
|---|---------|-------------------------------|-------------------|----|--------------------|-------------------------------|-------------------|----------|--------------------------|
| LOCATION | PERIOD | VOLUMES (vpd) ^b | DIRECT DISTRIE | | PERIOD | VOLUMES (vph) ^c | DIRECT DISTRIE | | K factor ^d |
| Central Avenue north of Cefalo Road | Weekday | 15,034 | 52% | NB | Morning Evening | 1,204 1,249 | 75% 68% | NB SB | 0.08 0.08 |
| West Street west | Weekday | 6,785 | 53% | EB | Morning | 560 | 58% | EB | 0.08 |
| of Glen Gary Road | | | | | Evening | 522 | 54% | EB | 0.08 |

Table 3 - Automatic Traffic Recorder (ATR) Summary

^o Vehicles per day; ^c Vehicles per hour; ^d Percent of daily traffic Average Daily Traffic;

Turning Movement Count (TMC) Data

PDI collected Turning Movement Counts (TMC) data for the study area intersections outside of the Hillside Elementary School access and egress points on Wednesday, September 9, 2015 from 6:00 AM to 8:00 AM and 1:30 PM to 3:30 PM to capture both the school morning and afternoon peak periods. The TMC data included bicycle and pedestrian counts.

Nitsch Engineering conducted TMC data at the school access and egress points during the Site Visits at the intersections of West Street at Gary Glen Road, and West Street at McCulloch Street. We collected weekday morning and afternoon data on September 9, 2015. Nitsch Engineering did not collect bicycle and pedestrian data at the Hillside Elementary School access and egress points.

The peak hours within the study area were established as 7:45 AM to 8:45 AM during the weekday morning period and 2:15 PM to 3:15 PM during the afternoon period. The 2015 existing traffic volumes are shown in Figure 7.

Vehicle Travel Speeds

PDI measured vehicle travel speeds at the ATR locations at the time of the traffic count. The 85th percentile speed, meaning the speed at which 85% of the vehicles are at or below, is noted because of its importance in determining appropriate roadway speed limits and for calculating required sight distance. The speed data is shown in Table 4.

| INTERSECTION | POSTED SPEED (MPHª) | 85th PERCENTILE SPEED (MPH ^a) |
|--|---------------------------|--|
| Central Avenue north of Cefalo Road | | |
| Northbound | 35 | 35 |
| Southbound | Not Posted | 35 |
| West Street between Birch Street and Glen Gary Road | | |
| Eastbound | Not Posted | 38 |
| Westbound | 30 | 40 |
| a = Miles per hour Note: 85th Percentile Speeds were averaged between the full two days of da | ita collected | |

Table 4 - Vehicle Travel Speeds

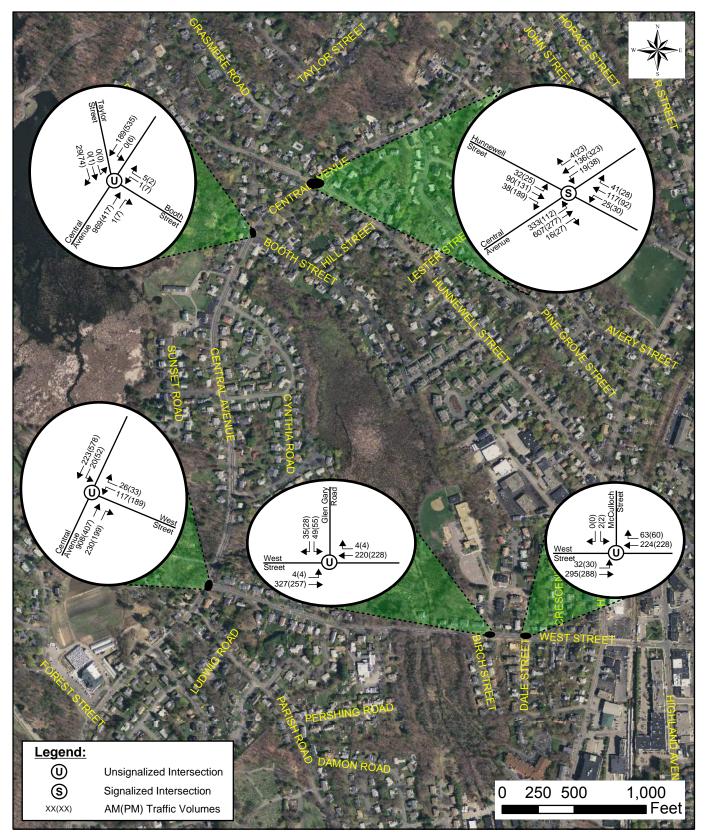


Figure 7: 2015 Existing Traffic Volumes Hillside Elementary School

Needham, Massachusetts



4.2 Seasonal Adjustment

Nitsch Engineering researched data from MassDOT to establish if any seasonal adjustment to the traffic counts was necessary. We researched and used the MassDOT's 2007 Weekday Seasonal Adjustment Factors, which is the latest data set available. The data compares monthly traffic volumes from different types of roadways across the Commonwealth to compare the traffic volumes from each individual month to the annual average. During the month of September on urban arterials and collectors, traffic volumes are approximately 8% higher than an average month. Additionally, the counts were performed while school was in full session, so the traffic counts represent the average condition with respect to traffic within the study area. Therefore, we made no adjustment to the collected volumes. The Weekday Seasonal Adjustment Factors are included in Appendix A-2.

5 FUTURE NO-BUILD TRAFFIC CONDITIONS

5.1 Background Growth

Consistent with recent MassDOT projects in eastern Massachusetts, we used an annual background traffic growth factor of 0.5%.

5.2 No-Build Traffic Volumes

The 2020 No-Build Traffic Volumes are shown in Figure 8 and are derived by applying the traffic growth rate of 0.5% per year over the five-year design horizon to project the 2020 traffic counts.

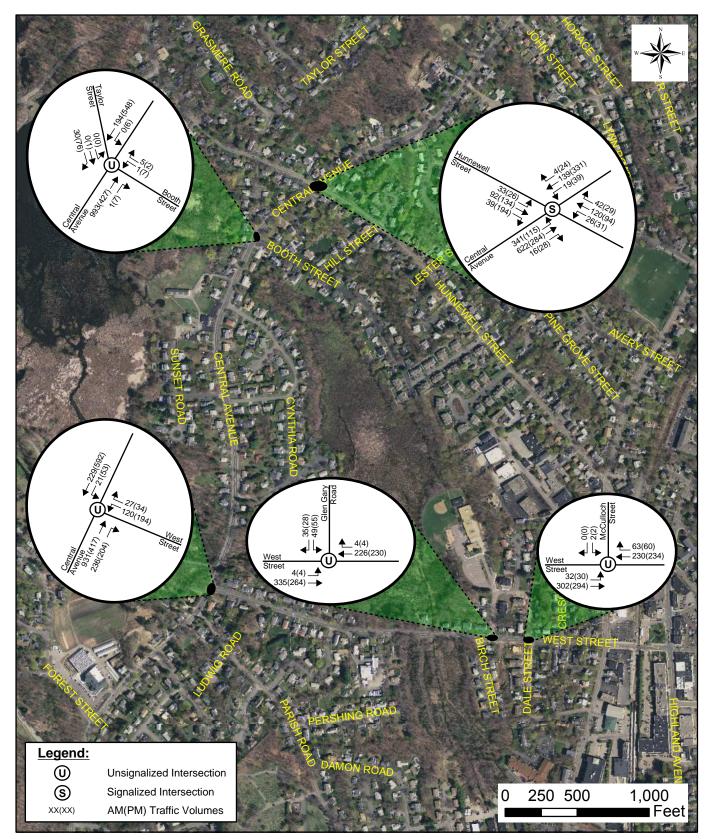


Figure 8: 2020 No-Build Traffic Volumes

Hillside Elementary School Needham, Massachusetts



6 FUTURE CONDITIONS

We examined the proposed future conditions with respect to the feasibility of constructing a new Hillside Elementary School building and grounds on the Central Avenue site.

6.1 **Proposed Trip Generation**

The increase in traffic volumes at Central Avenue due to the new site for the school during the weekday morning drop-off and weekday afternoon pick-up, are outlined in Table 5.

| TRIP DIRECTION/TYPE | Weekday Morning Peak ^b | Weekday Evening Peak ^b |
|---|--------------------------------------|--------------------------------------|
| Entering | АМ | РМ |
| Central Avenue | 101 | 96 |
| | | |
| Exiting | AM | РМ |
| Central Avenue | 101 | 96 |
| Total Future | 202 | 192 |
| ^a Morning Peak Hour, 7:00 - 8:00 AM; ^b Af | ternoon Peak Hour, 2:30- | 3:30 PM |

As shown in Table 5, the proposed Hillside Elementary School at Central Avenue site would result in approximately 202 additional entering and exiting trips during the weekday morning drop-off and approximately 192 additional entering and exiting trips during the weekday afternoon pick-up. The increase also accounts for vehicular traffic associated with teachers and staff at the new school, as well as the additional student drop-off and pick-up during adverse weather.

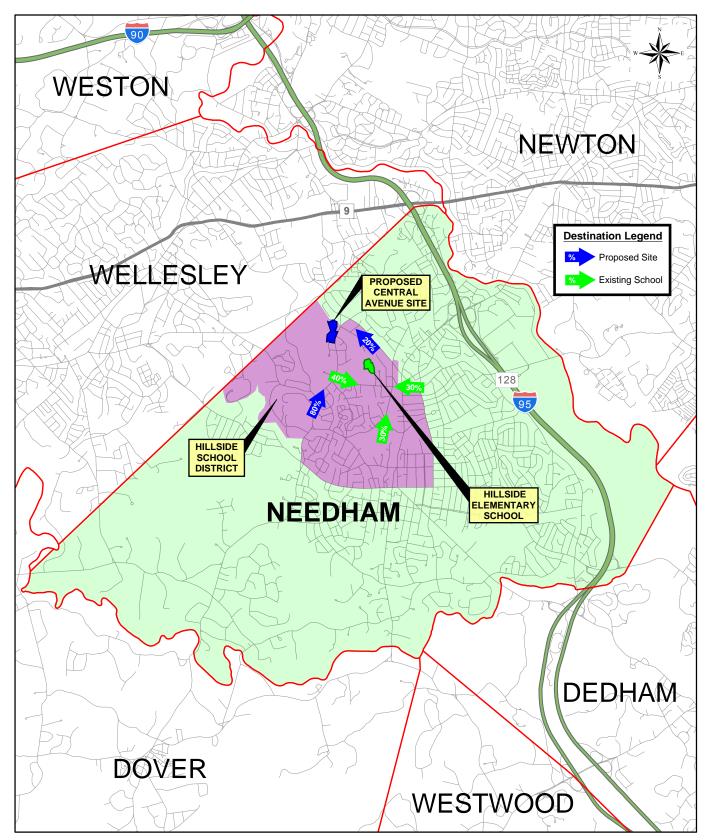


Figure 9: Regional Trip Distribution

Hillside Elementary School Needham, Massachusetts



6.2 Proposed Hillside Elementary School on Central Avenue Site

A sketch plan of the redevelopment of Hillside Elementary School on the Central Avenue Site is shown in Appendix A-4. The sketch plan shows the proposed driveway location of the school on an existing base map with the site location and outline.

Site Layout

For the construction of the new Hillside Elementary School building and grounds on the Central Avenue site, the building would be constructed orientated north-south on the west side of Central Avenue, opposite Cynthia Road, located approximately one tenth of a mile south of the intersection of Central Avenue at Hunnewell Street.

Parking

Parking would be provided onsite east of the proposed school building. In all, 100 parking spaces are proposed.

Sight Distance

Stopping Sight Distance (SSD) is the length of the roadway ahead that is visible to the driver and should be sufficiently long to enable a vehicle traveling at or near the design speed to stop before reaching a stationary object in its path. Stopping sight distance is the sum of the distance traversed by the vehicle from the instant the driver sights an object necessitating a stop to the instant the brakes are applied and the distance needed to stop the vehicle from the instant brake application begins.

Intersection Sight Distance (ISD) is the length of the leg of the departure sight triangle along the major road in both directions for a vehicle stopped on the minor road waiting to depart. The critical departure sight triangles for the Hillside Elementary School driveway are for traffic approaching from either the left or right for left turns from the driveways onto the main road. The methods for determining the sight distances needed by drivers approaching intersections are based on the same principles as stopping sight distance, but incorporate modified assumptions based on observed driver behavior at intersections.

The SSD and ISD values associated with a given design speed are shown in Table 6. The proposed site driveway is highlighted in Figure 10. The site distance evaluations for the Central Avenue Site are shown in Table 7.

| DESIGN SPEED | DESIGN STOPPING SIGHT DISTANCE VALUE ¹ (SSD) | RECOMMENDED INTERSECTION SIGHT DISTANCE VALUE ² (ISD) |
|---|---|--|
| (MPH) | (FT) | (FT) |
| 15 | 80 | 170 |
| 20 | 115 | 225 |
| 25 | 155 | 280 |
| 30 | 200 | 335 |
| 35 | 250 | 390 |
| 40 | 305 | 445 |
| 45 | 360 | 500 |
| 50 | 425 | 555 |
| 55 | 495 | 610 |
| 60 | 570 | 665 |
| 65 | 645 | 720 |
| 70 | 730 | 775 |
| 75 | 820 | 830 |
| 80 | 910 | 885 |
| <u>Source:</u> A Polic Washington DC | cy on Geometric Design of Highway: C (2011) | s and Streets, AASHTO, |
| | based on a grade of less than 3%, a conds and a deceleration rate of 11. | brake reaction distance predicted on 2 ft/s ² |
| | d value based on Case B1 - a stoppe ay with no median and grades 3% or | |

Table 6 – Sight Distance Criteria

The higher of the posted or 85th percentile speed was used to calculate the minimum sight distance to be conservative.

At Central Avenue at Proposed Hillside Elementary School Driveway the SSD's exceed the minimum values as well as the ISD for right turning vehicles onto Central Avenue. It should be noted that the 85th percentile speed of 35 miles per hour was used to calculate the minimum SSD and ISD values.

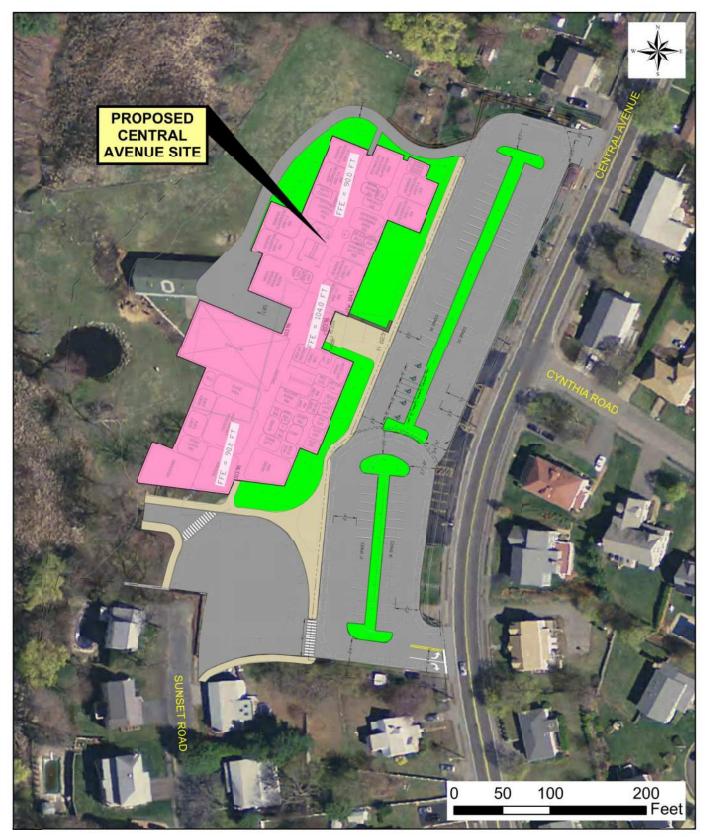


Figure 10: Proposed Site Driveway Hillside Elementary School Needham, Massachusetts



Data Source: MassGIS Nitsch Project #10828

| INTERSECTION | POSTED SPEED (MPH) | 85th PERCENTILE SPEED (MPH) | MINIMUM (FEET) ^{1,2} | MEASURED (FEET) | OBSTRUCTION |
|--|--------------------------|--------------------------------------|----------------------------------|--------------------|---|
| Central Avenue at Potential Site Driveway | | | | | |
| Stopping Sight Distance: | | | | | |
| Central Avenue Northbound | 35 | 35 | 250 | 400 | Vertical curve |
| Central Avenue Southbound | Not Posted | 35 | 250 | 600 | Horizontal curve |
| Intersection Sight Distance: Looking to the right from Potential Site | | | | | |
| Driveway Looking to the left from Potential Site | 35 | 35 | 390 | 420 | Vertical curve Horizontal curve, utility |
| Driveway | Not Posted | 35 | 390 | 625 | pole |
| Source: A Policy on Geometric Design of High | - | ets, AASHTO, Wa | ashington DC | C (2011) | <u> </u> |
| ² Table 9-6. Design Intersection Sight Distance | - Case B1, Let | t Turn from Stop | | | |

-29-

Vehicle Access/Egress, Circulation, Bus and Parent Pick-Up/Drop-Off

Vehicle access and egress will be provided by two curb cuts:

- One located on the south side of the proposed school site on Central Avenue, approximately 200 feet south of the intersection of Central Avenue and Cynthia Road providing both access and egress.
- One located on the north side of the proposed school site on Central Avenue, approximately 150 feet north of the intersection of Central Avenue and Cynthia Road providing emergency access.

The south side curb cut will provide direct access to the school parking lot, and a one-way counter-clockwise parent pick-up/drop-off loop around it.

The bus pick-up/drop-off will occur at the designated bus loop located west of the school. The access to the bus loop will be off of Central Avenue via Cefalo Street and Sunset Road.

Trip Distribution, Diversion, and Assignment

The trips to/from the Central Avenue Site will be distributed and assigned based on the exiting travel patterns and logical travel routes, which are based on the existing roadway network both within the Town of Needham and the surrounding region.

In order to properly assess the effect of trips to the Central Avenue Site, drop-off and pick-up trips at the existing Hillside Elementary School must be assigned to the Central Avenue Site. The Trip Distribution Percentages specific to the Central Avenue Site are shown in Figure 9.

The resultant trip assignment volumes for both the weekday morning and weekday afternoon peak hours were calculated by multiplying the trip distribution by the trip generation from Table 5, and are shown in Figure 12 for the weekday morning and the weekday afternoon peak hours.

Proposed 2020 Build Volumes

For the Central Avenue Site, the corresponding trip assignment volumes were added to the 2020 No-Build Volumes to yield the 2020 Build Volumes. The 2020 Build Volumes for the Central Avenue Site are shown in Figure 13.

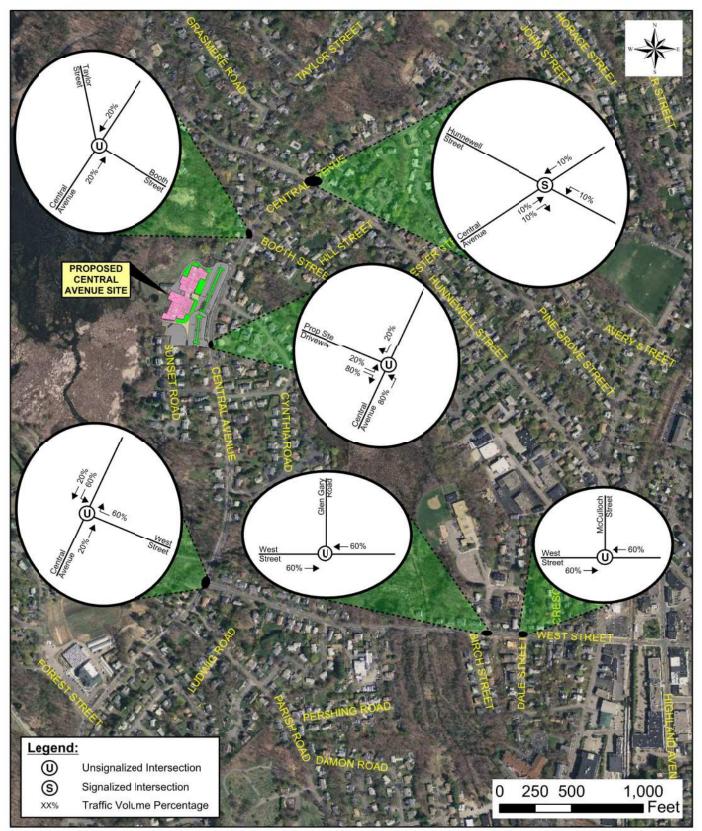


Figure 11: Trip Distribution Hillside Elementary School Needham, Massachusetts

Nitsch Engineering

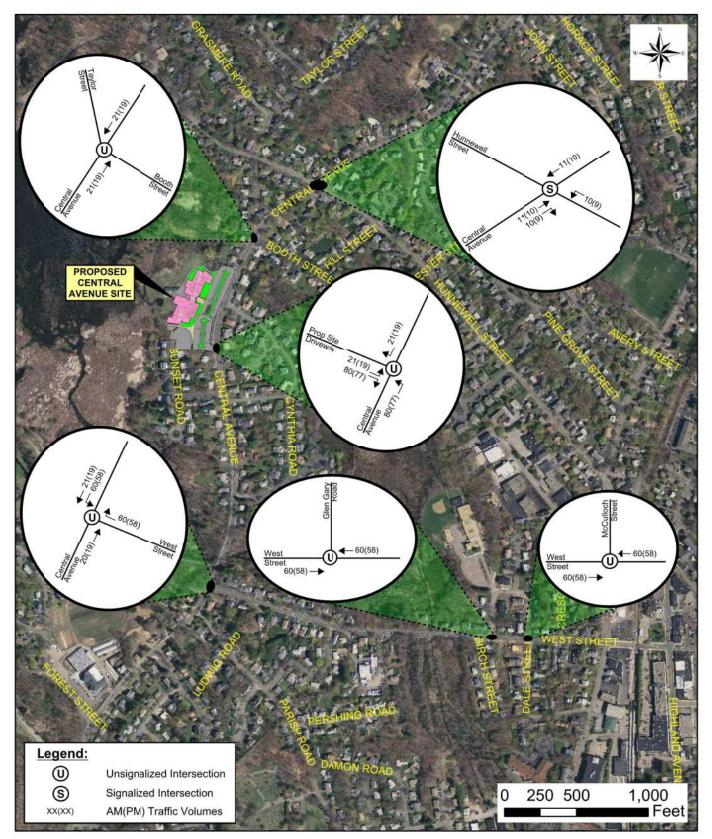


Figure 12: Trip Assignment Hillside Elementary School

Needham, Massachusetts

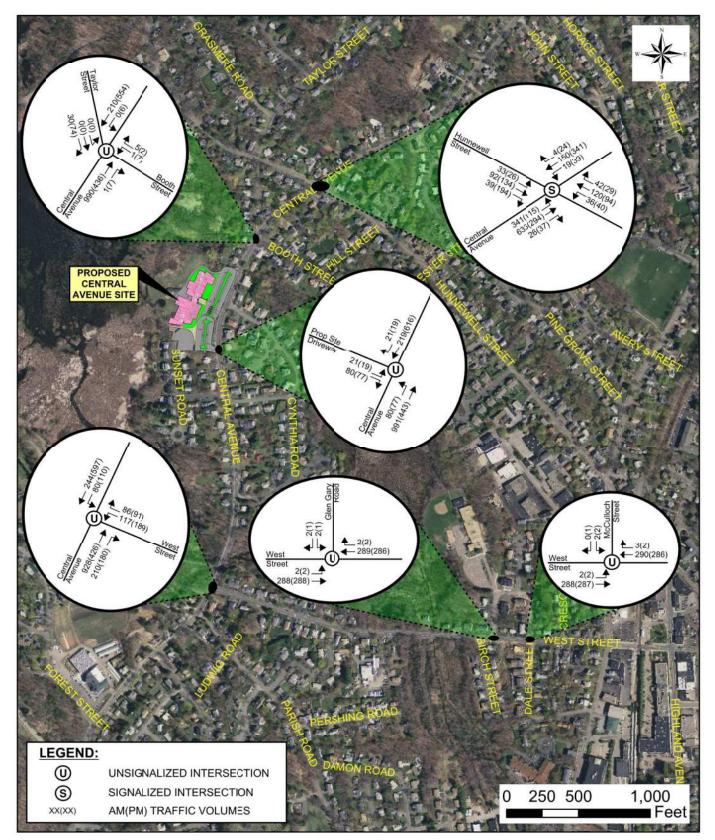


Figure 13: 2020 Future Build Traffic Volumes

Hillside Elementary School Needham, Massachusetts



7 OPERATIONS ANALYSIS

7.1 Level of Service Criteria

Level of Service (LOS) is a qualitative measure describing operational conditions within a traffic stream. Six LOS criteria are used to describe the quality of traffic flow for any type of facility controls. LOS A represents the best operating conditions and LOS-F represents the worst operating conditions. Nitsch Engineering analyzed the levels of service for the intersections using Synchro 8 software, which is based on the traffic operational analysis methodology of the Highway Capacity Manual¹ (HCM). The methodology for signalized intersections assesses the effects of signal type, timing, phasing, progression, vehicle mix, and geometrics on control delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Table 8 summarizes the relationship between LOS and average control delay for signalized and unsignalized intersections.

| SIGNA | LIZED INTERSECTIONS | UNSIGNALIZED INTERSECTIONS | | | | |
|------------------|---------------------------------|----------------------------|---------------------------------|---------------------------------|--|--|
| Level of Service | Control Delay (seconds/vehicle) | Volume-to | Service by Capacity Ratio | Control Delay (seconds/vehicle) | | |
| | | v/c ≤ 1.0 | v/c > 1.0 | | | |
| А | 0 to 10 | А | F | 0 to 10 | | |
| В | >10 to 20 | В | F | >10 to 15 | | |
| С | >20 to 35 | С | F | >15 to 25 | | |
| D | >35 to 55 | D | F | >25 to 35 | | |
| E | >55 to 80 | E | F | >35 to 50 | | |
| F | >80 | F | F | >50 | | |

| Table 8 - Level of Service Criteria |
|-------------------------------------|
|-------------------------------------|

7.2 Capacity Analysis

Nitsch Engineering performed traffic analyses to evaluate traffic operations for the 2015 Existing Conditions, 2020 No-Build Conditions, and 2020 Build Conditions – Hillside Elementary School at Central Avenue Site during the weekday morning and weekday afternoon peak hours at the study intersections. The analyses depict the volume-to-capacity (v/c) ratio, vehicle delay, LOS, and the 50th/95th percentile vehicle queues.

7.3 2015 Existing Capacity Analysis

Nitsch Engineering analyzed the 2015 Existing Conditions traffic operations at the study intersections based on the existing traffic counts performed by PDI and Nitsch Engineering in September 2015. The Level of Service Summary is shown in Table 9. The analysis worksheets are provided in Appendix A-6.

¹ Highway Capacity Manual, 2010 Edition, Transportation Research Board (TRB), Washington, D.C.

| INTERSECTION | MOVEMENT | WEEKDAY MORNING PEAK HOUR | | | | | WEEKDAY EVENING PEAK HOUR | | | | | |
|--|-------------------------|---------------------------|--------------------|------------------|-------------------------|------------|---------------------------|--------------------|------------------|-------------------------|------------|--|
| | | V/C ¹ | DELAY ² | LOS ³ | <mark>50th</mark> Q⁴ | 95th Q⁵ | V/C ¹ | DELAY ² | LOS ³ | <mark>50th</mark> Q⁴ | 95th Q⁵ | |
| | West St EB - LT | 0.03 | 1.0 | А | - | 2 | 0.03 | 1.0 | A | - | 2 | |
| West St at | West St WB - TR | 0.18 | 0 | A | - | 0 | 0.19 | 0 | A | - | 0 | |
| McColluch | McColluch - LR | 0.01 | 13.8 | В | - | 0 | 0.01 | 13.7 | В | - | 0 | |
| | Overall | 0.18 | 0.6 | А | | | 0.19 | 0.6 | A | | | |
| | West St EB - LT | 0.0 | 0.1 | A | - | 0 | 0.0 | 0.1 | A | - | 0 | |
| West St at Glen | West St WB - TR | 0.14 | 0 | А | - | 0 | 0.15 | 0 | A | - | 0 | |
| Gary | Glen Gary -LR | 0.16 | 12.7 | В | - | 15 | 0.16 | 12.5 | В | - | 14 | |
| | Overall | 0.16 | 1.7 | А | | | 0.16 | 1.9 | А | | | |
| | Central Ave NB - TR | 0.73 | 0 | A | - | 0 | 0.39 | 0 | A | - | 0 | |
| West Street at | Central Ave SB - LT | 0.04 | 1.4 | А | - | 3 | 0.06 | 1.6 | А | - | 5 | |
| Central Ave | West St WB- LR | 0.96 | 117.9 | F | - | 182 | 1.28 | 210.6 | F | - | 335 | |
| | Overall | 0.96 | 11.3 | В | | | 1.28 | 32.7 | D | | | |
| Central Ave at Hunnewell St | Central Ave NB - L | 0.47 | 18.0 | В | 143 | 209 | 0.21 | 14.6 | В | 40 | 70 | |
| | Central Ave NB - TR | 0.63 | 19.5 | В | 336 | 470 | 0.32 | 14.0 | В | 120 | 178 | |
| | Central Ave SB - LTR | 0.36 | 29.8 | С | 97 | 161 | 0.69 | 39.1 | D | 261 | 379 | |
| | Hunnewell St EB-LTR | 0.78 | 66.5 | E | 117 | #220 | 1.15 | 135.2 | F | ~297 | #490 | |
| | Hunnewell St WB -LTR | 0.77 | 63.4 | E | 136 | #238 | 0.89 | 88.0 | F | 113 | #244 | |
| | Overall | 0.78 | 30.9 | С | | | 1.15 | 62.3 | E | | | |
| ¹ Volume to Capacity Ratio; ² Vehicle Delay, measured in seconds; ³ Level Of Service; ⁴ 50 th Percentile Queue (in feet); ⁵ 95th Percentile Queue (in feet) based upon 22 feet per vehicle; * = Defacto Left Lane; # = volume exceeds capacity, queue may be longer; m = 95th percentile queue is metered by upstream signal; ~ = Volume exceeds capacity, queue is theoretically infinite | | | | | | | | | | | | |

Table 9 – Level of Service Summary - 2015 Existing Conditions

7.4 2020 No-Build Capacity Analysis

Nitsch Engineering analyzed the 2020 No-Build Conditions traffic operations at the study intersections. The 2020 No-Build Condition represents the 2015 Existing Conditions and projects a traffic increase at the rate of 0.5% per year between 2015 and 2020. The Level of Service Summary is shown in Table 10. The analysis worksheets are provided in Appendix A-6.

7.5 2020 Build Capacity Analysis

Nitsch Engineering analyzed the 2020 Build Conditions traffic operations at the study intersections for the reconstruction of a new Hillside Elementary School on the Central Avenue site. The 2020 Build Conditions represents the 2020 No-Build Conditions traffic volumes with added Trip Assignment Volumes for the Hillside Elementary School on the Central Avenue Site. The Level of Service Summary is shown in Table 11. The analysis worksheets are provided in Appendix A-6.

7.6 Traffic Signal Warrant Methodology

To quantify if additional mitigation would be necessary at the Hillside Elementary School on the Central Avenue Site, based on the expanded student population, or at the access and egress points to the Central Avenue Site, we performed a Traffic Signal Warrant Analyses.

We performed the warrants based on the procedures outlined in the *Manual on Uniform Traffic Control Devices*² (MUTCD), 2009 edition. The MUTCD indicates nine separate conditions under which a traffic signal warrant can be met, and they are shown below.

- 1. Warrant 1: Eight-Hour Vehicular Volume;
- 2. Warrant 2: Four-Hour Vehicular Volume;
- 3. Warrant 3: Peak Hour;
- 4. Warrant 4: Pedestrian Volume;
- 5. Warrant 5: School Crossing;
- 6. Warrant 6: Coordinated Signal System;
- 7. Warrant 7: Crash Experience;
- 8. Warrant 8: Roadway Network; and
- 9. Warrant 9: Intersection Near A Grade Crossing.

² Manual on Uniform Traffic Control Devices for Streets and Highways, 2009 Edition, Federal Highway Administration

| INTERSECTION | MOVEMENT | WEE | | WEE | | | PEAK H | IOUR | | | |
|--------------------------------|-------------------------|------------------|--------------------|------------------|-------------------------|-------------------------|------------------|--------------------|------------------|-------------------------|-------------------------|
| | | V/C ¹ | DELAY ² | LOS ³ | <mark>50th</mark> Q⁴ | <mark>95th</mark> Q⁵ | V/C ¹ | DELAY ² | LOS ³ | <mark>50th</mark> Q⁴ | <mark>95th</mark> Q⁵ |
| West St at McColluch | West St EB - LT | 0.03 | 1.0 | А | - | 2 | 0.03 | 1.0 | А | - | 2 |
| | West St WB - TR | 0.19 | 0 | А | - | 0 | 0.19 | 0 | А | - | 0 |
| | McColluch - LR | 0.01 | 14.0 | В | - | 0 | 0.01 | 13.8 | В | - | 0 |
| | Overall | 0.19 | 0.6 | А | | | 0.19 | 0.6 | А | | |
| West St at Glen Gary | West St EB - LT | 0.0 | 0.1 | A | - | 0 | 0.0 | 0.1 | A | - | 0 |
| | West St WB - TR | 0.15 | 0 | А | - | 0 | 0.15 | 0 | А | - | 0 |
| | Glen Gary -LR | 0.17 | 12.9 | В | - | 15 | 0.16 | 12.6 | В | - | 14 |
| | Overall | 0.17 | 1.7 | А | | | 0.16 | 1.8 | А | | |
| West Street at Central Ave | Central Ave NB - TR | 0.75 | 0 | А | - | 0 | 0.40 | 0 | А | - | 0 |
| | Central Ave SB - LT | 0.04 | 1.5 | А | - | 3 | 0.06 | 1.6 | А | - | 5 |
| | West St WB- LR | 1.04 | 144.0 | F | - | 204 | 1.38 | 249.4 | F | - | 369 |
| | Overall | 1.04 | 13.8 | В | | | 1.38 | 38.8 | E | | |
| Central Ave at Hunnewell St | Central Ave NB - L | 0.49 | 18.5 | В | 143 | 209 | 0.22 | 14.8 | В | 41 | 71 |
| | Central Ave NB - TR | 0.65 | 20.1 | С | 336 | 470 | 0.43 | 15.8 | В | 178 | 255 |
| | Central Ave SB - LTR | 0.38 | 30.5 | С | 97 | 161 | 0.77 | 43.6 | D | 278 | 406 |
| | Hunnewell St EB-LTR | 0.79 | 67.5 | E | 117 | #220 | 1.19 | 149.8 | F | ~315 | #510 |
| | Hunnewell St WB -LTR | 0.78 | 64.3 | E | 136 | #238 | 0.92 | 94.6 | F | 118 | #254 |
| | Overall | 0.79 | 31.6 | С | | | 1.19 | 65.1 | E | | |

Table 10 – Level of Service Summary - 2020 No-Build Conditions

¹ Volume to Capacity Ratio; ² Vehicle Delay, measured in seconds; ³ Level Of Service; ⁴ 50^m Percentile Queue (in feet); ⁵ 95th Percentile Queue feet) based upon 22 feet per vehicle; * = Defacto Left Lane; # = volume exceeds capacity, queue may be longer; m = 95th percentile queue is metered by upstream signal; ~ = Volume exceeds capacity, queue is theoretically infinite

| INTERSECTION | MOVEMENT | WEEKDAY MORNING PEAK HOUR | | | | | WEEKDAY EVENING PEAK HOUR | | | | | |
|---|---------------------------------|---------------------------|--------------------|------------------|------------|------------|---------------------------|--------------------|------------------|------------|------------|--|
| | | V/C ¹ | DELAY ² | LOS ³ | 50th Q⁴ | 95th Q⁵ | V/C ¹ | DELAY ² | LOS ³ | 50th Q⁴ | 95th Q⁵ | |
| | West St EB - LT | 0.0 | 0.1 | А | - | 0 | 0.03 | 0.1 | А | - | 0 | |
| West St at | West St WB - TR | 0.19 | 0 | A | - | 0 | 0.18 | 0 | A | - | 0 | |
| McColluch | McColluch - LR | 0.0 | 13.2 | В | - | 0 | 0.01 | 12.1 | В | - | 0 | |
| | Overall | 0.19 | 0.1 | А | | | 0.18 | 0.1 | А | | | |
| | West St EB - LT | 0.0 | 0.1 | A | - | 0 | 0.0 | 0.1 | A | - | 0 | |
| West St at Glen | West St WB - TR | 0.19 | 0 | А | - | 0 | 0.18 | 0 | А | - | 0 | |
| Gary | Glen Gary -LR | 0.01 | 11.6 | В | - | 1 | 0.0 | 11.5 | В | - | 0 | |
| | Overall | 0.19 | 0.1 | А | | | 0.18 | 0.1 | А | | | |
| West Street at Central Ave | Central Ave NB - TR | 0.73 | 0 | А | - | 0 | 0.39 | 0 | A | - | 0 | |
| | Central Ave SB - LT | 0.15 | 4.8 | А | - | 14 | 0.13 | 3.1 | А | - | 11 | |
| | West St WB- LR | 1.59 | 356.2 | F | - | 390 | 1.19 | 176.9 | F | - | 288 | |
| | Overall | 1.59 | 44.4 | E | | | 1.19 | 25.1 | D | | | |
| | Proposed Driveway EB - LR | 0.29 | 18.5 | С | - | 30 | 0.32 | 21.1 | С | - | 33 | |
| Central Ave at | Central Ave NB - LT | 0.07 | 1.9 | A | - | 5 | 0.09 | 2.4 | А | - | 8 | |
| Proposed School Driveway | Central Ave NB - TR | 0.15 | 0 | A | - | 0 | 0.41 | 0 | A | - | 0 | |
| | Overall | 0.15 | 2.8 | A | | | 0.41 | 2.6 | А | | | |
| Central Ave at Hunnewell St | Central Ave NB - L | 0.54 | 24.4 | С | 168 | 242 | 0.23 | 18.2 | В | 48 | 82 | |
| | Central Ave NB - TR | 0.72 | 26.8 | С | 416 | 573 | 0.36 | 17.2 | В | 157 | 227 | |
| | Central Ave SB - LTR | 0.57 | 42.1 | D | 122 | 205 | 0.76 | 46.4 | D | 311 | 443 | |
| | Hunnewell St EB-LTR | 0.59 | 52.9 | D | 123 | 200 | 1.29 | 189.8 | F | ~342 | #540 | |
| | Hunnewell St WB -LTR | 0.82 | 72.0 | Е | 159 | #281 | 0.80 | 73.3 | Е | 129 | #231 | |
| | Overall | 0.82 | 36.6 | D | | | 1.29 | 77.3 | E | | | |
| ¹ Volume to Capacity Ratio; ² Vehicle Delay, measured in seconds; ³ Level Of Service; ⁴ 50 th Percentile Queue (in feet); ⁵ 95th Percentile Queue (in | | | | | | | | | ue (in | | | |

Table 11 – Level of Service Summary - 2020 Build Conditions

¹ Volume to Capacity Ratio; ² Vehicle Delay, measured in seconds; ³ Level Of Service; ⁴ 50th Percentile Queue (in feet); ⁵ 95th Percentile Queue (in feet) based upon 22 feet per vehicle; * = Defacto Left Lane; # = volume exceeds capacity, queue may be longer; m = 95th percentile queue is metered by upstream signal; ~ = Volume exceeds capacity, queue is theoretically infinite

7.7 Traffic Signal Warrant

We performed the Signal Warrant Analysis for West Street at Central Avenue, Central Avenue at the Potential Site Driveway, and Central Avenue at Hunnewell Street.

Given the criteria set forth in the MUTCD and the assumptions above, the Peak Hour Warrant for all three intersections the Central Avenue at West Street traffic signal warrant was met. However, based on engineering judgement, the peak hour warrant is generally not accepted unless accompanied by an additional warrant. We believe that the recommendations outlined in Section 8.2 would represent the best return on investment with regards to handling the estimated traffic to and from the Central Avenue Site. The Traffic Signal Warrant Analysis is included in Appendix A-5.

8 CONCLUSIONS AND RECOMMENDATIONS

8.1 Conclusions

Nitsch Engineering has been retained by Dore & Whittier Architects, Inc. to prepare a qualitative assessment of safety, traffic circulation, and traffic access/egress, associated with the feasibility study and schematic design for the Hillside Elementary School project in Needham, Massachusetts. Two options are considered for the reconstruction. The first option would be to construct a new Hillside Elementary School building and grounds on the site of the existing school, located at 28 Glen Gary Road Needham, Massachusetts. The second option would be to construct a new elementary school building and grounds on an existing site located off Central Avenue, approximately ³/₄ of a mile west of the existing Hillside Elementary School site.

We examined the future conditions, as well as site circulation with respect to the projected student drop-off and pick-up at the new Hillside Elementary School at the Central Avenue site. This would result in an increase in traffic volumes within the study area during the weekday morning drop-off and weekday afternoon pick-up, totaling approximately 202 additional trips (entering and exiting) during the weekday morning drop-off, and approximately 192 additional trips (entering and exiting) during the weekday afternoon pick-up. The parking lot will contain 100 spaces, and the curb at the car loop can accommodate approximately 57 vehicles.

We anticipate that the following summarizes the vehicular circulation at the Central Avenue school site during morning drop-off and afternoon pick-up periods:

- During the morning drop-off, the parents (approximately 101 vehicles) will arrive between 7:30 and 8:00 AM. They will drop-off their children at the car loop and exit the school. Our analysis indicate that during the morning drop-off, the 95th Percentile Queue length on the School driveway for the left and right turns to Central Avenue will be 30 feet (approximately two vehicles), and the 95th Percentile Queue length on Central Avenue for the left turn to the School driveway will be five feet (approximately one vehicle).
- During the afternoon pick-up, the parents (approximately 96) will start arriving between 2:00 and 2:30 PM. The parking lot can accommodate approximately 80 vehicles to park along the car loop curb line without spilling out of the car loop and blocking the driveway. Once the parents have picked up their children, they will proceed to exit the parking lot and the school. Our analysis indicate that during the afternoon pick-up, the 95th Percentile Queue length on the School driveway for the left and right turn to Central Avenue will be 33 feet (approximately two vehicles), and the 95th Percentile Queue length on Central Avenue for the left turn to the School driveway will be eight feet (approximately one vehicle).

The existing roadway network contains heavy traffic volumes and delays during the weekday morning peak hours, as the Hillside Elementary School pick-up and drop-off traffic overlaps slightly with the peak hour of the commuter traffic, as well as two other schools in the vicinity. Relocating the Hillside Elementary School to the Central Avenue site location may add impacts to the off-site intersections. To mitigate the impacts, minor geometric improvements and signal optimization may be necessary. Nitsch Engineering has outlined recommendations to improve traffic conditions based on the estimated increase in traffic volumes due to the Hillside Elementary School relocation.

8.2 Recommendations

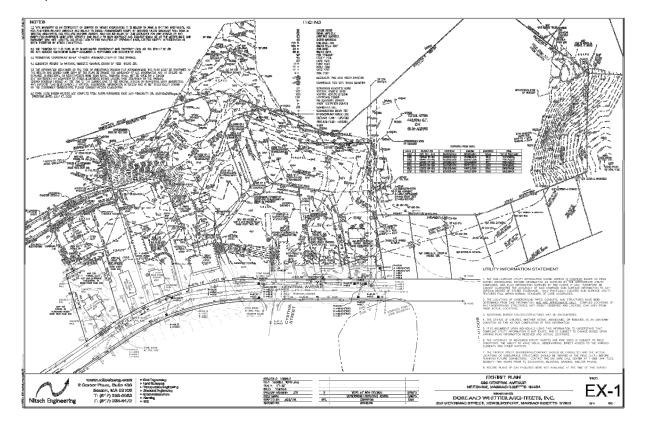
Based on the proposed Hillside Elementary School at Central Avenue Site, Nitsch Engineering offers the following recommendations:

- Designate the area as a School Zone under State and local statute, and install the appropriate School Zone signs, which can also act as traffic calming devices.
- Improve pedestrian experience along Central Avenue, including improving the sidewalks on both sides of the roadway to accommodate safe walks to school and provide advanced warning signing of school entering and exiting traffic.
- Install ADA accessible crosswalks.
- Evaluate installing exclusive turning lanes at Central Avenue for school traffic.
- Reach out to parents via social media to increase safety awareness.

ENVIRONMENTAL AND EXISTING BUILDING ASSESSMENT NARRATIVE

With the selection and acceptance of the Central Ave site as the Preferred Solution, the Design Team shifted focus. Additional Town funding enabled additional testing and exploration of the preferred project site. The environmental conditions of the existing Hillside School on Glen Gary Road are well documented as the site is in Phase IV of an environmental remediation plan, as noted in the PDP and PSR submissions to the MSBA.

The Project Site, located on Central Avenue includes several parcels of land with existing building structures. Buildings include single family homes, sheds, barns, a former chicken coop and a retail facility.



A hazardous materials assessment and report was conducted on each of the existing buildings and structures on the project site. The following reports indicated the collection of 185 bulk samples taken on the main project site and an additional 49 samples collected on the 609 Central Avenue property. Cost estimates for the removal and remediation are included in the reports. The report also includes a radon assessment. It is the intension of this project that all existing buildings and structures including

foundations will be demolished in their entirety and that hazardous materials will be removed from each of the buildings and the site in accordance with all local and state laws.

The following Hazardous Materials Determination Surveys dated November 10-11 & 17, 2015 and April 11, 2016 have been prepared by Universal Environmental Consultants for this project.

REPORT FOR HAZARDOUS MATERIALS DETERMINATION SURVEY AT CENTRAL AVENUE PROPERTIES NEEDHAM, MASSACHUSETTS

PROJECT NO: 215 411.00

Survey Dates: November 10-11 & 17, 2015

SURVEY CONDUCTED BY:

UNIVERSAL ENVIRONMENTAL CONSULTANTS 12 BREWSTER ROAD FRAMINGHAM, MA 01702

1.0 INTRODUCTION:

UEC has been providing comprehensive asbestos services since 2001 and has completed projects throughout New England. We have completed projects for a variety of clients including commercial, industrial, municipal, and public and private schools. We maintain appropriate asbestos licenses and staff with a minimum of twenty years of experience.

As part of the proposed demolition project, UEC was contracted by Dore & Whittier Architects to conduct the following services at the Central Avenue Properties, Needham, MA:

- Inspection and Testing for Asbestos Containing Materials (ACM);
- Inspection for Polychlorinated Biphenyls (PCB's)-Electrical Equipment and Light Fixtures;
- Inspection for PCB's-Caulking;
- Inspection for Lead Based Paint (LBP);
- Testing for Radon;

The scope of work included the inspection of accessible ACM, collection of bulk samples from materials suspected to contain asbestos, determination of types of ACM found and cost estimates for remediation. Bulk samples analyses for asbestos were performed using the standard Polarized Light Microscopy (PLM) in accordance with EPA standard. Bulk samples were collected by a Massachusetts licensed asbestos inspector Mr. Leonard J. Busa (AI-030673) and analyzed by a Massachusetts licensed laboratory Asbestos Identification Laboratory, Woburn, MA.

Radon samples were analyzed by an EPA licensed laboratory AccuStar, Medway, MA.

Refer to samples results.

2.0 FINDINGS:

Asbestos Containing Materials (ACM):

The regulations for asbestos inspection are based on representative sampling. It would be impractical and costly to sample all materials in all areas. Therefore, representative samples of each homogenous area were collected and analyzed or assumed.

All suspect materials were grouped into homogenous areas. By definition a homogenous area is one in which the materials are evenly mixed and similar in appearance and texture throughout. A homogeneous area shall be determined to contain asbestos based on findings that the results of at least one sample collected from that area shows that asbestos is present in an amount greater than 1 percent in accordance with EPA regulations.

All suspect materials that contain any amount of asbestos must be considered asbestos if it is scheduled to be removed per the Department of Environmental Protection (DEP) regulations.

Number of Samples Collected

One hundred eighty five (185) bulk samples were collected from the following materials suspected of containing asbestos:

Type and Location of Material

603 Central Avenue:

1. Wall plaster at bedroom I

- 2. Wall plaster at bedroom II
- 3. Wall plaster at kitchen
- 4. Wall plaster at entrance
- 5. Wall plaster at living room
- 6. Ceiling plaster at bedroom II
- 7. Ceiling plaster at living room
- 8. Linoleum floor covering type I at kitchen
- 9. Adhesive for linoleum floor covering type I at kitchen
- 10. Linoleum floor covering type I at kitchen
- 11. Adhesive for linoleum floor covering type I at kitchen
- 12. Linoleum floor covering type II at basement
- 13. Linoleum floor covering type II at basement
- 14. Wall joint compound at basement
- 15. Wall joint compound at basement
- 16. Sink damproofing at kitchen
- 17. Sink damproofing at kitchen
- 18. Mud at face of old boiler at basement
- 19. Mud at face of old boiler at basement
- 20. Black glue in fiberglass batting insulation at attic
- 21. Black glue in fiberglass batting insulation at attic
- 22. Rosin paper under hardwood floor from basement
- 23. Rosin paper under hardwood floor from basement
- 24. Black paper under hardwood floor from basement
- 25. Black paper under hardwood floor from basement
- 26. Exterior black paper behind wood shingle siding
- 27. Exterior black paper behind wood shingle siding
- 28. Exterior damproofing on foundation wall at addition
- 29. Exterior damproofing on foundation wall at addition
- 30. Exterior glazing caulking for old basement window
- 31. Exterior glazing caulking for old basement window

45 Sunset Road:

- 32. Vinyl floor tile at first floor bathroom
- 33. Adhesive for vinyl floor tile at first floor bathroom
- 34. Vinyl floor tile at first floor bathroom
- 35. Adhesive for vinyl floor tile at first floor bathroom
- 36. Wall joint compound at first floor bathroom
- 37. Wall joint compound at basement
- 38. Brown vinyl floor tile at basement closet
- 39. Mastic for brown vinyl floor tile at basement closet
- 40. Brown vinyl floor tile at basement closet
- 41. Mastic for brown vinyl floor tile at basement closet
- 42. Rough finish on ceiling at first floor hallway
- 43. Rough finish on wall at kitchen closet
- 44. Rough finish on wall at laundry
- 45. Rough finish on ceiling at garage
- 46. Rough finish on ceiling at basement
- 47. Exterior caulking between chimney and wood siding
- 48. Exterior caulking between chimney and wood siding

573 Central Avenue:

- 49. Wall joint compound at first floor hallway
- 50. Wall joint compound at first floor stairs down to basement

- 51. Ceiling joint compound at kitchen
- 52. Wall joint compound at first floor bedroom
- 53. 9" x 9" Vinyl floor tile type I at first floor bathroom
- 54. 9" x 9" Vinyl floor tile at type I first floor bathroom
- 55. Foil behind radiator at first floor bathroom
- 56. Foil behind radiator at first floor bathroom
- 57. 9" x 9" Vinyl floor tile type II at basement bathroom
- 58. Mastic for 9" x 9" vinyl floor tile type II at basement bathroom
- 59. 9" x 9" Vinyl floor tile type II at basement bathroom
- 60. Mastic for 9" x 9" vinyl floor tile type II at basement bathroom
- 61. Brown floor tile under carpet at basement TV room
- 62. Mastic for brown floor tile under carpet at basement TV room
- 63. Pebble floor tile at basement bar
- 64. Mastic for pebble floor tile at basement bar
- 65. Mastic for pebble floor tile at kitchen closet
- 66. Pebble floor tile at upper TV room
- 67. Mastic for pebble floor tile at upper TV room
- 68. Blown-in insulation above ceiling at basement
- 69. Blown-in insulation above ceiling at basement
- 70. Rough ceiling plaster at basement
- 71. Rough ceiling plaster at basement bedroom
- 72. Rough ceiling plaster at basement kitchen
- 73. Rough ceiling plaster at basement bar
- 74. Rough ceiling plaster at basement closet
- 75. Incubator pipe insulation at basement work room
- 76. Exterior black paper behind wood siding
- 77. Exterior black paper behind wood siding
- 78. Exterior soft grey glazing caulking at lower level
- 79. Exterior soft grey glazing caulking at lower level

597 Central Avenue:

- 80. Wall plaster at living room
- 81. Wall plaster at stairs up to attic
- 82. Ceiling plaster at first floor hallway
- 83. Ceiling plaster at stairs up to attic
- 84. Wall plaster at first floor closet
- 85. Linoleum floor covering type I at kitchen
- 86. Linoleum floor covering type I at kitchen
- 87. Wall plaster at stairs up to second floor
- 88. Ceiling plaster over water heater
- 89. Debris in soil at crawl space
- 90. Debris on metal pipe at basement
- 91. Linoleum floor covering type II at back porch
- 92. Adhesive for linoleum floor covering type II at back porch
- 93. Linoleum floor covering type II at back porch
- 94. Adhesive for linoleum floor covering type II at back porch
- 95. Black floor tile under linoleum floor covering type II at back porch
- 96. Black floor tile under linoleum floor covering type II at back porch
- 97. Exterior window glazing caulking
- 98. Exterior window glazing caulking
- 99. Wall panel at upper barn
- 100. Ceiling panel at upper barn
- 101. Black glue in wall batting insulation at upper barn
- 102. Black glue in wall batting insulation at upper barn

- 103. Rough wall plaster at upper barn
- 104. Rough wall plaster at upper barn
- 105. Rough wall plaster at upper barn
- 106. Exterior damproofing on foundation wall at lower barn
- 107. Exterior damproofing on foundation wall at lower barn
- 108. Exterior damproofing on wood ceiling deck beam at lower barn
- 109. Exterior damproofing on wood ceiling deck beam at lower barn
- 110. Exterior paper on wood ceiling deck beam at lower barn
- 111. Exterior paper on wood ceiling deck beam at lower barn
- 112. Hard wall plaster at lower barn
- 113. Hard ceiling plaster at lower barn
- 114. Hard ceiling plaster at lower barn

559 Central Avenue:

- 115. Wall joint compound at lower TV room
- 116. Wall joint compound at lower TV room
- 117. Ceiling plaster at stairs
- 118. Ceiling plaster at storage heating room
- 119. Ceiling plaster at lower bedroom closet
- 120. Wall plaster at first floor bedroom closet
- 121. Wall plaster at first floor entrance

567 Central Avenue:

- 122. Black wool insulation at attic
- 123. Black wool insulation at attic
- 124. Ceiling plaster at basement
- 125. Wall plaster at stairs down to basement
- 126. Wall plaster at kitchen
- 127. Wall plaster at living room
- 128. Ceiling plaster at kitchen
- 129. Joint compound finish ceiling at living room
- 130. Joint compound finish ceiling at bedroom
- 131. Black paper under hardwood floor at first floor
- 132. Black paper under hardwood floor at first floor
- 133. Vinyl floor tile under carpet at first floor porch
- 134. Mastic for vinyl floor tile under carpet at first floor porch
- 135. Vinyl floor tile under carpet at first floor porch
- 136. Mastic for vinyl floor tile under carpet at first floor porch
- 137. Vinyl floor tile type II at basement
- 138. Mastic for vinyl floor tile type II at basement
- 139. Vinyl floor tile type II at basement
- 140. Mastic for vinyl floor tile type II at basement
- 141. Linoleum floor covering at kitchen
- 142. Adhesive for linoleum floor covering at kitchen
- 143. Linoleum floor covering at kitchen
- 144. Adhesive for linoleum floor covering at kitchen
- 145. Acoustical ceiling tile type I at first floor bathroom
- 146. Acoustical ceiling tile type I at first floor bathroom
- 147. Acoustical ceiling tile type II at basement
- 148. Acoustical ceiling tile type II at basement
- 149. Exterior damproofing on foundation wall
- 150. Exterior damproofing on foundation wall
- 151. Exterior damproofing on foundation wall

152. Exterior transite under aluminum siding

153. Exterior transite under aluminum siding

Large Barn:

154. Ceiling joint compound at first floor

- 155. Wall joint compound at first floor
- 156. Ceiling joint compound at first floor

585 Central Avenue:

- 157. Adhesive on freezer panel
- 158. Adhesive on freezer panel
- 159. Green vinyl floor tile at first floor
- 160. Green vinyl floor tile at first floor

Large Hen House:

- 161. Exterior window glazing caulking
- 162. Exterior window glazing caulking
- 163. Exterior window glazing caulking
- 164. Exterior black paper behind wood siding
- 165. Exterior black paper behind wood siding
- 166. Thick sidewall paper lining
- 167. Thick sidewall paper lining
- 168. Thick sidewall paper lining

Small Shed behind Barn:

169. Old roofing shingle

- 170. Black mastic for old roofing shingle
- 171. Old roofing shingle
- 172. Black mastic for old roofing shingle

585 Central Avenue:

- 173. Green 12" x 12" vinyl floor tile
- 174. Yellow mastic for green 12" x 12" vinyl floor tile
- 175. Yellow mastic for green 12" x 12" vinyl floor tile
- 176. Second layer under green 12" x 12" vinyl floor tile
- 177. Adhesive for second layer under green 12" x 12" vinyl floor tile
- 178. Second layer under green 12" x 12" vinyl floor tile
- 179. Adhesive for second layer under green 12" x 12" vinyl floor tile
- 180. Exterior window framing caulking
- 181. Exterior window framing caulking

Large Hen House:

- 182. Roofing shingle
- 183. Mastic for roofing shingle Roofing shingle
- 184. Roofing shingle
- 185. Mastic for roofing shingle Roofing shingle

Samples Results

Type and Location of Material

603 Central Avenue:

- 1. Wall plaster at bedroom I
- 2. Wall plaster at bedroom II
- 3. Wall plaster at kitchen
- 4. Wall plaster at entrance
- 5. Wall plaster at living room
- 6. Ceiling plaster at bedroom II
- 7. Ceiling plaster at living room
- 8. Linoleum floor covering type I at kitchen
- 9. Adhesive for linoleum floor covering type I at kitchen
- 10. Linoleum floor covering type I at kitchen
- 11. Adhesive for linoleum floor covering type I at kitchen
- 12. Linoleum floor covering type II at basement
- 13. Linoleum floor covering type II at basement
- 14. Wall joint compound at basement
- 15. Wall joint compound at basement
- 16. Sink damproofing at kitchen
- 17. Sink damproofing at kitchen
- 18. Mud at face of old boiler at basement
- 19. Mud at face of old boiler at basement
- 20. Black glue in fiberglass batting insulation at attic
- 21. Black glue in fiberglass batting insulation at attic
- 22. Rosin paper under hardwood floor from basement
- 23. Rosin paper under hardwood floor from basement
- 24. Black paper under hardwood floor from basement
- 25. Black paper under hardwood floor from basement
- 26. Exterior black paper behind wood shingle siding
- 27. Exterior black paper behind wood shingle siding
- 28. Exterior damproofing on foundation wall at addition
- 29. Exterior damproofing on foundation wall at addition
- 30. Exterior glazing caulking for old basement window
- 31. Exterior glazing caulking for old basement window

45 Sunset Road:

- 32. Vinyl floor tile at first floor bathroom
- 33. Adhesive for vinyl floor tile at first floor bathroom
- 34. Vinyl floor tile at first floor bathroom
- 35. Adhesive for vinyl floor tile at first floor bathroom
- 36. Wall joint compound at first floor bathroom
- 37. Wall joint compound at basement
- 38. Brown vinyl floor tile at basement closet
- 39. Mastic for brown vinyl floor tile at basement closet
- 40. Brown vinyl floor tile at basement closet
- 41. Mastic for brown vinyl floor tile at basement closet
- 42. Rough finish on ceiling at first floor hallway
- 43. Rough finish on wall at kitchen closet
- 44. Rough finish on wall at laundry
- 45. Rough finish on ceiling at garage
- 46. Rough finish on ceiling at basement

Sample Result

No Asbestos Detected 25% Asbestos No Asbestos Detected 25% Asbestos 2% Asbestos No Asbestos Detected No Asbestos Detected No Asbestos Detected No Asbestos Detected 20% Asbestos 20% Asbestos No Asbestos Detected 2% Asbestos 2% Asbestos

No Asbestos Detected S% Asbestos No Asbestos Detected 5% Asbestos No Asbestos Detected No Asbestos Detected

No Asbestos Detected

No Asbestos Detected

- 47. Exterior caulking between chimney and wood siding
- 48. Exterior caulking between chimney and wood siding

573 Central Avenue:

- 49. Wall joint compound at first floor hallway
- 50. Wall joint compound at first floor stairs down to basement
- 51. Ceiling joint compound at kitchen
- 52. Wall joint compound at first floor bedroom
- 53. 9" x 9" Vinyl floor tile type I at first floor bathroom
- 54. 9" x 9" Vinyl floor tile at type I first floor bathroom
- 55. Foil behind radiator at first floor bathroom
- 56. Foil behind radiator at first floor bathroom
- 57. 9" x 9" Vinyl floor tile type II at basement bathroom
- 58. Mastic for 9" x 9" vinyl floor tile type II at basement bathroom
- 59. 9" x 9" Vinyl floor tile type II at basement bathroom
- 60. Mastic for 9" x 9" vinyl floor tile type II at basement bathroom
- 61. Brown floor tile under carpet at basement TV room
- 62. Mastic for brown floor tile under carpet at basement TV room
- 63. Pebble floor tile at basement bar
- 64. Mastic for pebble floor tile at basement bar
- 65. Mastic for pebble floor tile at kitchen closet
- 66. Pebble floor tile at upper TV room
- 67. Mastic for pebble floor tile at upper TV room
- 68. Blown-in insulation above ceiling at basement
- 69. Blown-in insulation above ceiling at basement
- 70. Rough ceiling plaster at basement
- 71. Rough ceiling plaster at basement bedroom
- 72. Rough ceiling plaster at basement kitchen
- 73. Rough ceiling plaster at basement bar
- 74. Rough ceiling plaster at basement closet
- 75. Incubator pipe insulation at basement work room
- 76. Exterior black paper behind wood siding
- 77. Exterior black paper behind wood siding
- 78. Exterior soft grey glazing caulking at lower level
- 79. Exterior soft grey glazing caulking at lower level

597 Central Avenue:

- 80. Wall plaster at living room 81. Wall plaster at stairs up to attic 82. Ceiling plaster at first floor hallway 83. Ceiling plaster at stairs up to attic 84. Wall plaster at first floor closet 85. Linoleum floor covering type I at kitchen 86. Linoleum floor covering type I at kitchen 87. Wall plaster at stairs up to second floor 88. Ceiling plaster over water heater 89. Debris in soil at crawl space 90. Debris on metal pipe at basement 91. Linoleum floor covering type II at back porch 92. Adhesive for linoleum floor covering type II at back porch 93. Linoleum floor covering type II at back porch 94. Adhesive for linoleum floor covering type II at back porch
- 95. Black floor tile under linoleum floor covering type II at back porch

No Asbestos Detected 5% Asbestos No Asbestos Detected 5% Asbestos No Asbestos Detected 10% Asbestos 15% Asbestos 10% Asbestos 20% Asbestos 20% Asbestos 10% Asbestos 20% Asbestos No Asbestos Detected 60% Asbestos No Asbestos Detected No Asbestos Detected No Asbestos Detected No Asbestos Detected

No Asbestos Detected No Asbestos Detected No Asbestos Detected No Asbestos Detected No Asbestos Detected 35% Asbestos 75% Asbestos No Asbestos Detected No Asbestos Detected 60% Asbestos 80% Asbestos No Asbestos Detected 2% Asbestos No Asbestos Detected 2% Asbestos 10% Asbestos

- 96. Black floor tile under linoleum floor covering type II at back porch
- 97. Exterior window glazing caulking
- 98. Exterior window glazing caulking
- 99. Wall panel at upper barn
- 100. Ceiling panel at upper barn
- 101. Black glue in wall batting insulation at upper barn
- 102. Black glue in wall batting insulation at upper barn
- 103. Rough wall plaster at upper barn
- 104. Rough wall plaster at upper barn
- 105. Rough wall plaster at upper barn
- 106. Exterior damproofing on foundation wall at lower barn
- 107. Exterior damproofing on foundation wall at lower barn
- 108. Exterior damproofing on wood ceiling deck beam at lower barn
- 109. Exterior damproofing on wood ceiling deck beam at lower barn
- 110. Exterior paper on wood ceiling deck beam at lower barn
- 111. Exterior paper on wood ceiling deck beam at lower barn
- 112. Hard wall plaster at lower barn
- 113. Hard ceiling plaster at lower barn
- 114. Hard ceiling plaster at lower barn

559 Central Avenue:

- 115. Wall joint compound at lower TV room
- 116. Wall joint compound at lower TV room
- 117. Ceiling plaster at stairs
- 118. Ceiling plaster at storage heating room
- 119. Ceiling plaster at lower bedroom closet
- 120. Wall plaster at first floor bedroom closet
- 121. Wall plaster at first floor entrance

567 Central Avenue:

- 122. Black wool insulation at attic
- 123. Black wool insulation at attic
- 124. Ceiling plaster at basement
- 125. Wall plaster at stairs down to basement
- 126. Wall plaster at kitchen
- 127. Wall plaster at living room
- 128. Ceiling plaster at kitchen
- 129. Joint compound finish ceiling at living room
- 130. Joint compound finish ceiling at bedroom
- 131. Black paper under hardwood floor at first floor
- 132. Black paper under hardwood floor at first floor
- 133. Vinyl floor tile under carpet at first floor porch
- 134. Mastic for vinyl floor tile under carpet at first floor porch
- 135. Vinyl floor tile under carpet at first floor porch
- 136. Mastic for vinyl floor tile under carpet at first floor porch
- 137. Vinyl floor tile type II at basement
- 138. Mastic for vinyl floor tile type II at basement
- 139. Vinyl floor tile type II at basement
- 140. Mastic for vinyl floor tile type II at basement
- 141. Linoleum floor covering at kitchen
- 142. Adhesive for linoleum floor covering at kitchen
- 143. Linoleum floor covering at kitchen
- 144. Adhesive for linoleum floor covering at kitchen

10% Asbestos No Asbestos Detected No Asbestos Detected

No Asbestos Detected No Asbestos Detected No Asbestos Detected No Asbestos Detected No Asbestos Detected No Asbestos Detected No Asbestos Detected

No Asbestos Detected No Asbestos Detected No Asbestos Detected No Asbestos Detected No Asbestos Detected No Asbestos Detected No Asbestos Detected No Asbestos Detected No Asbestos Detected No Asbestos Detected <1% Asbestos 2% Asbestos No Asbestos Detected 2% Asbestos No Asbestos Detected 145. Acoustical ceiling tile type I at first floor bathroom
146. Acoustical ceiling tile type I at first floor bathroom
147. Acoustical ceiling tile type II at basement
148. Acoustical ceiling tile type II at basement
149. Exterior damproofing on foundation wall
150. Exterior damproofing on foundation wall
151. Exterior damproofing on foundation wall
152. Exterior transite under aluminum siding
153. Exterior transite under aluminum siding

Large Barn:

154. Ceiling joint compound at first floor155. Wall joint compound at first floor156. Ceiling joint compound at first floor

585 Central Avenue:

157. Adhesive on freezer panel158. Adhesive on freezer panel159. Green vinyl floor tile at first floor160. Green vinyl floor tile at first floor

Large Hen House:

161. Exterior window glazing caulking
162. Exterior window glazing caulking
163. Exterior window glazing caulking
164. Exterior black paper behind wood siding
165. Exterior black paper behind wood siding
166. Thick sidewall paper lining
167. Thick sidewall paper lining

168. Thick sidewall paper lining

Small Shed behind Barn:

169. Old roofing shingle170. Black mastic for old roofing shingle171. Old roofing shingle172. Black mastic for old roofing shingle

585 Central Avenue:

173. Green 12" x 12" vinyl floor tile
174. Yellow mastic for green 12" x 12" vinyl floor tile
175. Yellow mastic for green 12" x 12" vinyl floor tile
176. Second layer under green 12" x 12" vinyl floor tile
177. Adhesive for second layer under green 12" x 12" vinyl floor tile
178. Second layer under green 12" x 12" vinyl floor tile
179. Adhesive for second layer under green 12" x 12" vinyl floor tile
179. Adhesive for second layer under green 12" x 12" vinyl floor tile
180. Exterior window framing caulking
181. Exterior window framing caulking

No Asbestos Detected 20% Asbestos 20% Asbestos

No Asbestos Detected No Asbestos Detected No Asbestos Detected

No Asbestos Detected No Asbestos Detected No Asbestos Detected No Asbestos Detected

No Asbestos Detected No Asbestos Detected <1% Asbestos No Asbestos Detected No Asbestos Detected No Asbestos Detected No Asbestos Detected No Asbestos Detected

No Asbestos Detected No Asbestos Detected No Asbestos Detected No Asbestos Detected

No Asbestos Detected No Asbestos Detected 2% Asbestos No Asbestos Detected 2% Asbestos No Asbestos Detected 10% Asbestos 10% Asbestos

Large Hen House:

182. Roofing shingle183. Mastic for roofing shingle Roofing shingle184. Roofing shingle

185. Mastic for roofing shingle Roofing shingle

Observations and Conclusions:

The condition of ACM is very important. ACM in good condition does not present a health issue unless it is disturbed. Therefore, it is not necessary to remediate ACM in good condition unless it will be disturbed through renovation, demolition or other activity.

603 Central Avenue:

- 1. Linoleum floor covering type I was found to contain asbestos.
- 2. Adhesive for linoleum floor covering type I was found to contain asbestos.
- 3. Sink damproofing was found to contain asbestos.
- 4. Exterior glazing caulking for old basement window was found to contain asbestos.
- 5. Insulation and rope inside old boiler was assumed to contain asbestos.
- 6. All other suspect materials were found not to contain asbestos. Hidden ACM may be found during demolition activities.

45 Sunset Road:

- 1. Brown vinyl floor tile was found to contain asbestos.
- 2. All other suspect materials were found not to contain asbestos. Hidden ACM may be found during demolition activities.

573 Central Avenue:

- 1. 9" x 9" Vinyl floor tile type II was found to contain asbestos.
- 2. Brown floor tile under carpet was found to contain asbestos.
- 3. Mastic for brown floor tile under carpet was found to contain asbestos.
- 4. Pebble floor tile was found to contain asbestos.
- 5. Mastic for pebble floor tile was found to contain asbestos.
- 6. Incubator pipe insulation was found to contain asbestos.
- 7. All other suspect materials were found not to contain asbestos. Hidden ACM may be found during demolition activities.

597 Central Avenue:

- 1. Linoleum floor covering type I was found to contain asbestos.
- 2. Debris in soil at crawl space was found to contain asbestos.
- 3. Debris on metal pipe was found to contain asbestos.
- 4. Adhesive for linoleum floor covering type II was found to contain asbestos.
- 5. Black floor tile under linoleum floor covering type II was found to contain asbestos.
- 6. Pipe insulation was assumed to contain asbestos.
- 7. All other suspect materials were found not to contain asbestos. Hidden ACM may be found during demolition activities.

559 Central Avenue:

1. All suspect materials were found not to contain asbestos. Hidden ACM may be found during demolition activities.

No Asbestos Detected No Asbestos Detected No Asbestos Detected No Asbestos Detected

567 Central Avenue:

- 1. Black paper under hardwood floor was found to contain <1% asbestos. Per DEP the paper would have to be disposed as asbestos.
- 2. Vinyl floor tile under carpet was found to contain asbestos.
- 3. Exterior transite under aluminum siding was found to contain asbestos.
- 4. All other suspect materials were found not to contain asbestos. Hidden ACM may be found during demolition activities.

Large Barn:

1. All suspect materials were found not to contain asbestos. Hidden ACM may be found during demolition activities.

585 Central Avenue:

- 1. Second layer under green 12" x 12" vinyl floor tile was found to contain asbestos.
- 2. Exterior window framing caulking was found to contain asbestos.
- 3. All other suspect materials were found not to contain asbestos. Hidden ACM may be found during demolition activities.

Large Hen House:

- 1. Exterior window glazing caulking was found to contain <1% asbestos. Per DEP the windows would have to be disposed as asbestos.
- 2. All other suspect materials were found not to contain asbestos. Hidden ACM may be found during demolition activities.

Small Shed behind Barn:

1. All suspect materials were found not to contain asbestos. Hidden ACM may be found during demolition activities.

Polychlorinated Biphenyls (PCB's)-Electrical Equipment and Light Fixtures: *Observations and Conclusions*

Visual inspection of various equipments such as light fixtures, thermostats, exit signs and switches was performed for the presence of PCB's and mercury. Ballasts in light fixtures were assumed not to contain PCB's since there were labels indicating that "No PCB's" was found. Tubes in light fixtures, thermostats, signs and switches were assumed to contain mercury. It would be very costly to test those equipments and dismantling would be required to access. Therefore, the above mentioned equipments should be disposed in an EPA approved landfill as part of the demolition project.

PCB's in Caulking:

Observations and Conclusions

Old caulking was assumed to contain PCB's.

Lead Based Paint (LBP):

Observations and Conclusions

LBP was assumed to exit on painted surfaces. A building scheduled for demolition is not considered a regulated facility. All LBP activities performed, including waste disposal, should be in accordance with applicable Federal, State, or local laws, ordinances, codes or regulations governing evaluation and hazard reduction. In the event of discrepancies, the most protective requirements prevail. These requirements can be found in OSHA 29 CFR 1926-Construction Industry Standards, 29 CFR 1926.62-Construction Industry Lead Standards, 29 CFR 1910.1200-Hazards Communication, 40 CFR 261-EPA Regulations. According to OSHA, any amount of LBP triggers compliance.

Sample Result

Radon:

Number of Samples Collected

Ten (10) air samples were collected at the following locations:

Location of Sample

- 1. 603 Central Avenue Basement
- 2. 45 Sunset Road Basement
- 3. 573 Central Avenue Basement
- 4. 573 Central Avenue Bedroom Closet
- 5. 597 Central Avenue Basement
- 6. 597 Central Avenue Basement
- 7. 559 Central Avenue Basement
- 8. 567 Central Avenue Basement
- 9. Barn Basement
- 10. 585 Central Avenue Basement

Location of Sample

1. 603 Central Avenue Basement 3.9 pCi/L 2. 45 Sunset Road Basement 1.4 pCi/L 3. 573 Central Avenue Basement 1.4 pCi/L 4. 573 Central Avenue Bedroom Closet 1.4 pCi/L 5. 597 Central Avenue Basement 2.8 pCi/L 6. 597 Central Avenue Basement 1.5 pCi/L 7. 559 Central Avenue Basement 1.2 pCi/L 8. 567 Central Avenue Basement 0.9 pCi/L 9. Barn Basement 4.3 pCi/L 10. 585 Central Avenue Basement <0.4 pCi/L

Observations and Conclusions:

The measured radon concentrations of the samples were found to be mostly lower than the EPA guideline of 4 picoCuris of radon per liter of air (pCi/L). One sample collected in the barn (4.3 pCi/L) was found to exceed EPA limit of (4.0 pCi/L). One sample collected in 603 Central Avenue (3.9 pCi/L) was found to be slightly lower than EPA limit of (4.0 pCi/L). It is recommended that a mitigation system be installed during construction of the new school.

COST ESTIMATES:

The cost includes removal and disposal of all accessible ACM, other hazardous materials and an allowance for removal and disposal of inaccessible or hidden ACM that may be found during the demolition.

| Location | Material | Approximate Quantity | Cost Estimate (\$) |
|---------------------|--|----------------------|--------------------|
| 603 Central Avenue: | | | |
| First Floor Kitchen | Linoleum Floor Covering and Adhesiv Sinks | e 275 SF 2 Total | 2,750.00 250.00 |
| Various Locations | Miscellaneous Hazardous Materials | Unknown | 1,000.00 |
| Basement | Old Boiler | 1 Total | 1,500.00 |
| Exterior | Old Windows | 6 Total | 1,200.00 |

| Location | Material | Approximate Quantity | Cost Estimate (\$) |
|-------------------------|---|----------------------|----------------------|
| 45 Sunset Road: | | | |
| Basement Storage Closet | Brown Vinyl Floor Tile | 15 SF | 1,200.00 |
| Various Locations | Miscellaneous Hazardous Materials | Unknown | 1,000.00 |
| 573 Central Avenue: | | | |
| Basement Work Room | Pipe Insulation | 3 LF | 300.00 |
| Basement Bathroom | 9" x 9" Vinyl Floor Tile | 30 SF | 900.00 |
| Basement under Carpet | Pebble Vinyl Floor Tile and Mastic | 200 SF | 2,000.00 |
| First Floor | Pebble Vinyl Floor Tile and Mastic | 850 SF | 5,100.00 |
| Various Locations | Miscellaneous Hazardous Materials | Unknown | 1,000.00 |
| 597 Central Avenue: | | | |
| Kitchen | Linoleum Floor Covering | 160 SF | 1,600.00 |
| Basement/Crawl Space | Pipe and Hard Joint Insulation Debris/Soil | 250 LF 250 SF | 2,500.00 1,000.00 |
| Back Porch | Multiple Layers of Flooring | 140 SF | 2,800.00 |
| Various Locations | Miscellaneous Hazardous Materials | Unknown | 1,000.00 |
| 567 Central Avenue: | | | |
| First Floor | Black Paper under Hardwood Floorin | ng 1,100 SF | 7,700.00 |
| Porch | Floor Tile under Carpet | 120 SF | 1,200.00 |
| Various Locations | Miscellaneous Hazardous Materials | Unknown | 1,000.00 |
| Exterior | Transite Siding under Aluminum Sidi | ng 1,300 SF | 13,000.00 |
| 585 Central Avenue: | | | |
| First Floor | Multiple Layers of Flooring | 750 SF | 4,500.00 |
| Various Locations | Miscellaneous Hazardous Materials | Unknown | 1,000.00 |
| Exterior | Windows | 14 Total | 2,800.00 |
| | | | |

| Location | Material | Approximate Quantity | Cost Estimate (\$) |
|---------------------------------|-----------------------------------|----------------------|--------------------|
| Large Hen House: | | | |
| Exterior | Old Windows | 23 Total | 2,300.00 |
| Interior | Stored Old Windows | 25 Total | 2,500.00 |
| Various Locations | Miscellaneous Hazardous Materials | Unknown | 1,000.00 |
| Radon Mitigation Systems | | 2 Total | 7,500.00 |
| Site | Transite Sewer Pipes | Unknown | 25,000.00 |
| Estimated costs for Design, Con | Services | 29,400.00 | |
| | | Total: | 125,000.00 |

4.0 DESCRIPTION OF SURVEY METHODS AND LABORATORY ANALYSES:

Asbestos:

Asbestos samples were collected using a method that prevents fiber release. Homogeneous sample areas were determined by criteria outlined in EPA document 560/5-85-030a.

Bulk material samples were analyzed using PLM and dispersion staining techniques with EPA method 600/M4-82-020.

Radon:

Radon samples were analyzed by an EPA licensed laboratory AccuStar, Medway, MA.

Inspected By:

nand Busa

Leonard J. Busa Asbestos Inspector (AI-030673)

5.0 LIMITATIONS AND CONDITIONS:

This report has been completed based on visual and physical observations made and information available at the time of the site visits, as well as an interview with the Owner's representatives. This report is intended to be used as a summary of available information on existing conditions with conclusions based on a reasonable and knowledgeable review of evidence found in accordance with normally accepted industry standards, state and federal protocols, and within the scope and budget established by the client. Any additional data obtained by further review must be reviewed by UEC and the conclusions presented herein may be modified accordingly.

This report and attachments, prepared for the exclusive use of Owner for use in an environmental evaluation of the subject site, are an integral part of the inspections and opinions should not be formulated without reading the report in its entirety. No part of this report may be altered, used, copied or relied upon without prior written permission from UEC, except that this report may be conveyed in its entirety to parties associated with Owner for this subject study.

Asbestos Identification Laboratory

165 New Boston St., Ste 271 Woburn, MA 01801 781-932-9600

Web: www.asbestosidentificationlab.com Email: mikemanning@asbestosidentificationlab.com



November 23, 2015

Ammar Dieb Universal Environmental Consultants 12 Brewster Road Framingham, MA 01702

Project Number: Project Name: Needham- Multiple Locations

 Date Sampled:
 2015-11-17

 Work Received:
 2015-11-18

Analysis Method: BULK PLM ANALYSIS EPA/600/R-93/116

Dear Ammar Dieb,

Asbestos Identification Laboratory has completed the analysys of the samples from your office for the above referenced project

The information and analysis contained in this report have been generated using the EPA /600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials. Materials or products that contain more than 1% of any kind or combination of asbestos are considered an asbestos containing building material as determined by the EPA. This Polarized Light Microscope (PLM) technique may be performed either by visual estimation or point counting. Point counting provides a determination of the area percentage of asbestos in a sample. If the asbestos is estimated to be less than 10% by visual estimation of friable material, the determination may be repeated using the point counting technique. The results of the point counting supersede visual PLM results. Results in this report only relate to the items tested. This report may not be used by the customer to claim product endorsement by NVLAP or any other U.S. Government Agency.

Laboratory results represent the analysis of samples as submitted by the customer. Information regarding sample location, description, area, volume, etc., was provided by the customer. Asbestos Identification Laboratory is not responsible for sample collection activities or analytical method limitations. Unless notified in writing to return samples, Asbestos Identification Laboratory discards customer samples after 30 days. This report shall not be reproduced, except in full, without the written consent of Asbestos Identification Laboratory.

- NVLAP Lab Code: 200919-0
- Massachusetts Certification License: AA000208
- State of Connecticut, Department of Public Health Approved Environmental Laboratory Registration Number: PH-0142
- State of Maine, Department of Environmental Protection Asbestos Analytical Laboratory License Number: LB-0078(Bulk) LA-0087(Air)
- State of Rhode Island and Providence Plantations Department of Health Certification: AAL-121

Thank you Ammar Dieb for your business.

Michael Thank

Michael Manning Owner/Director

Ammar Dieb Universal Environmental Consultants 12 Brewster Road Framingham, MA 01702

Project Name: Needham- Multiple Locations

Date Sampled: 2015-11-17 Work Received: 2015-11-18

Project Number:

BULK PLM ANALYSIS EPA/600/R-93/116 Analysis Method:

| Fiel | dID | Material | Location | Color | Non-Asbestos | s % Asbestos % |
|------|-------------|----------------------|------------------------------------|--------|--------------------------|--------------------------------|
| | LabID | | | | | |
| 1 | | Wall Plaster (WP) | Bedrm-I | multi | Non-Fibrous | 100 None Detected |
| | 107650 | | | | | |
| 2 | | WP | Bedrm-II | multi | Non-Fibrous | 100 None Detected |
| | 107651 | | | | | |
| 3 | | WP | Kitchen | white | Non-Fibrous | 100 None Detected |
| | 107652 | | | | | |
| 4 | | WP | Entrance | white | Non-Fibrous | 100 None Detected |
| | 107653 | | | | | |
| 5 | | WP | Liv Rm | white | Non-Fibrous | 100 None Detected |
| | 107654 | | | | | |
| 6 | | Ceiling Plaster (CP) | Bedrm-II | multi | Non-Fibrous | 100 None Detected |
| | 107655 | | | | | |
| 7 | | CP | Liv Rm | white | Non-Fibrous | 100 None Detected |
| | 107656 | | | | | |
| 8 | | Lino-l | Kitchen | multi | Cellulose Non-Fibrous | 5 Detected 70 Chrysotile 25 |
| | 107657 | | | | | , 0 - |
| 9 | | Adh #8 | Kitchen | yellow | Non-Fibrous | 100 None Detected |
| | 107658 | | | | | |
| 10 | | Lino-I | Kitchen | multi | Cellulose Non-Fibrous | 5 Detected 70 Chrysotile 25 |
| | 107659 | | | | NOII-FIDEOUS | /0 |
| 11 | | Adh #10 | Kitchen | tan | Non-Fibrous | 98 Detected Chrysotile 2 |
| | 107660 | | | | | - |
| 12 | | Lin-II | Bsmt | white | Cellulose Non-Fibrous | 35 None Detected 65 |
| | 107661 | | | | Non Pibrous | |
| 13 | | Lino-II | Bsmt | white | Cellulose Non-Fibrous | 50 None Detected |
| | 107662 | | | | SUOTA-F-110M | 50 |
| 14 | | Joint Compound (JC) | Bsmt Finished Floor Area @ Door | white | Non-Fibrous | 100 None Detected |
| | 107663 | | ÷ · · | | | |
| Mon | day 23 Nove | ember | | | | Page 1 of 11 |

| Fiel | dID | Material | Location | Color | Non-Asbestos | % | Asbestos % | |
|------|-------------|---|--------------------------|-------|--------------------------|----------|--------------|----------|
| | LabID | | | | | | | |
| 15 | | JC | Bsmt Finished Floor Area | white | Non-Fibrous | 100 | None Detecte | ed |
| | 107664 | | @ Window | | | | | _ |
| 6 | | DP Sink | Kitchen | pink | Non-Fibrous | 80 | Detected | |
| | 107665 | | | | | | Chrysotile | 20 |
| 17 | | DP Sink | Kitchen | pink | Non-Fibrous | 80 | Detected | |
| | 107666 | | | | | | Chrysotile | 20 |
| 18 | | Mud @ Face of Old Boiler | Bsmt | tan | Non-Fibrous | 100 | None Detecte | d |
| | 107667 | | | | | | | |
| 19 | 107007 | Mud Within Face of Old | Bsmt | tan | Mineral Wool | 40 | None Detecte | d |
| | 107668 | — Boiler | | | Non-Fibrous | 60 | | |
| 20 | 10/008 | Black in FG Batt | Attic | black | Cellulose | 30 | None Detecte | ed |
| | | | | | Non-Fibrous | 70 | | |
| 21 | 107669 | Black in FG Batt | Attic | black | Cellulose | 30 | None Detecte | d |
| | | | | | Non-Fibrous | 70 | | |
| 22 | 107670 | Rosin, Hdwd FL | From Bsmt | tan | Cellulose | 100 | None Detecte | <u>d</u> |
| | | | | tan | CETTATODE | 100 | | |
| 23 | 107671 | Rosin, Hdwd FL | From Bsmt | tan | Cellulose | 100 | None Detecte | |
| | | | riom Dame | tan | Cerrarose | TOO | None Detecte | .u |
| 24 | 107672 | | From Domt | blook | 0-11-1 | 6.0 | None Detecte | |
| | | Black, Hdwd FL | From Bsmt | black | Cellulose Non-Fibrous | 40 | | :u |
| | 107673 | | | | | | | |
| 25 | | Black, Hdwd FL | From Bsmt | black | Cellulose Non-Fibrous | 60 40 | None Detecte | a |
| | 107674 | | | | | | | |
| 26 | | Black Paper Behind Wood — Shingle Siding | Exterior | black | Cellulose Non-Fibrous | 40 60 | None Detecte | ed. |
| | 107675 | | | | | | | |
| 27 | | Black Paper Behind Wood — Shingle Siding | Exterior | black | Cellulose Non-Fibrous | 40 60 | None Detecte | ed. |
| | 107676 | Chingle Claing | | | Non Piblous | 00 | | |
| 28 | | DP on Foundation | Addition-2, Exterior | black | Non-Fibrous | 100 | None Detecte | ed. |
| | 107677 | | | | | | | |
| 29 | | DP on Foundation | Addition-2, Exterior | black | Non-Fibrous | 100 | None Detecte | ed |
| | 107678 | | | | | | | |
| 30 | | Glazing for Old Bsmt | Exterior | tan | Non-Fibrous | 98 | Detected | |
| | 107679 | — Window | | | | | Chrysotile | 2 |
| 31 | | GL for Old Bsmt Window | Exterior | tan | Non-Fibrous | 98 | Detected | |
| | 107680 | | | | | | Chrysotile | 2 |
| 32 | | VT-I | 1st FL Bathrm | white | Non-Fibrous | 100 | None Detecte | d |
| | 107681 | | | | | | | |
| Mon | day 23 Nove | ember | | | | Р | age 2 of 11 | |

| Field | dID | Material | Location | Color | Non-Asbestos | s % Asbestos % | |
|-------|-------------|------------------------|---------------------------|-------|--------------|---------------------------|---|
| | LabID | _ | | | | | |
| 33 | | Adj #32 | 1st FL Bathrm | multi | Non-Fibrous | 100 None Detected | ł |
| | 107682 | | | | | | |
| 34 | | VT-I | 1st FL Bathrm | white | Non-Fibrous | 100 None Detected | ł |
| | 107683 | | | | | | |
| 35 | | Adh #34 | 1st FL Bathrm | multi | Non-Fibrous | 100 None Detected | ł |
| | 107684 | | | | | | |
| 36 | | JC Wall | 1st FL Bathrm | white | Non-Fibrous | 100 None Detected | I |
| | 107685 | | | | | | |
| 37 | | JC Wall | Bsmt TV Rm | white | Non-Fibrous | 100 None Detected | 1 |
| | 107686 | | | | | | |
| 38 | | Brown VT | Bsmt Closet by Stairs | multi | Non-Fibrous | 95 Detected Chrysotile | 5 |
| | 107687 | | | | | | |
| 39 | | Mastic #38 | Bsmt Closet by Stairs | black | Non-Fibrous | 100 None Detected | 1 |
| | 107688 | | | | | | |
| 40 | | Brown VT | Bsmt Closet by Stairs | multi | Non-Fibrous | 95 Detected Chrysotile | 5 |
| | 107689 | | | | | | |
| 41 | | Mastic #40 | Bsmt Closet by Stairs | black | Non-Fibrous | 100 None Detected | ł |
| | 107690 | | | | | | |
| 42 | | Rough Finished on Clg | 1st FL Hall | white | Non-Fibrous | 100 None Detected | ł |
| | 107691 | | | | | | |
| 43 | | Rough Finished on Wall | Kitchen Closet | white | Non-Fibrous | 100 None Detected | ł |
| | 107692 | | | | | | |
| 44 | | Rough Finished on Wall | Laundry | white | Non-Fibrous | 100 None Detected | ł |
| | 107693 | | | | | | |
| 45 | | Rough Finished on Clg | Garage | white | Non-Fibrous | 100 None Detected | ł |
| | 107694 | | | | | | |
| 46 | | Rough Finished on Clg | Bsmt TV Rm | white | Non-Fibrous | 100 None Detected | i |
| | 107695 | | | | | | |
| 47 | | Caulk Betwix Chimney & | Exterior | white | Non-Fibrous | 100 None Detected | ł |
| | 107696 | — Wood Siding | | | | | _ |
| 48 | | Caulk Betwix Chimney & | Exterior | white | Non-Fibrous | 100 None Detected | ł |
| | 107697 | Wood Siding | | | | | |
| 49 | | Jc Wall | Hall, 1st FL by 1st Bedrm | white | Non-Fibrous | 100 None Detected | ł |
| | 107698 | | | | | | |
| 50 | | Jc Wall | 1st FL by Stairs DN to | white | Non-Fibrous | 100 None Detected | ł |
| | 107699 | _ | Bsmt | | | | |
| | day 23 Nove | | | | | Page 3 of 11 | |

| Fiel | dID | Material | Location | Color | Non-Asbestos | s % Asbestos % |
|------|-------------|-------------------------|---------------------|--------|--------------------------|------------------------------|
| | LabID | | | | | |
| 51 | | JC Clg | Kitchen | white | Non-Fibrous | 100 None Detected |
| | 107700 | | | | | |
| 52 | | JC | 1st FL Bedrm-2 | white | Non-Fibrous | 100 None Detected |
| | 107701 | | | | | |
| 53 | | 9" VT | 1st FL Bathrm | gray | Non-Fibrous | 100 None Detected |
| | 107702 | | | | | |
| 54 | | 9" VT | 1st FL Bathrm | gray | Non-Fibrous | 100 None Detected |
| | 107703 | | | | | |
| 55 | | Foil Behind CI Radiator | 1st FL Bathrm | silver | Cellulose Non-Fibrous | 20 None Detected |
| | 107704 | | | | NOU-LTDTORP | 80 |
| 56 | | Foil Behind CI Radiator | 1st FL Bathrm | silver | Cellulose Non-Fibrous | 20 None Detected 80 |
| | 107705 | | | | NON-Fibrous | 80 |
| 57 | | 9" VT-II | Bsmt Bathrm | multi | Non-Fibrous | 95 Detected Chrysotile 5 |
| | 107706 | | | | | |
| 58 | | Mastic #52 | Bsmt Bathrm | black | Non-Fibrous | 100 None Detected |
| | 107707 | | | | | |
| 59 | | 9" VT-II | Bsmt Bathrm | multi | Non-Fibrous | 95 Detected Chrysotile 5 |
| | 107708 | | | | | |
| 60 | | Mastic #59 | Bsmt Bathrm | black | Non-Fibrous | 100 None Detected |
| | 107709 | | | | | |
| 61 | | Brown VT Under Carpet | Bsmt Lower TV Rm | black | Non-Fibrous | 90 Detected Chrysotile 10 |
| | 107710 | | | | | |
| 62 | | Mastic #61 | Bsmt Lower TV Rm | black | Non-Fibrous | 85 Detected Chrysotile 15 |
| | 107711 | | | | | |
| 63 | | Pebble | Bsmt Bar | multi | Non-Fibrous | 90 Detected Chrysotile 10 |
| | 107712 | | | | | |
| 64 | | Mastic #63 | Bsmt Bar | black | Non-Fibrous | 80 Detected Chrysotile 20 |
| | 107713 | | | | | |
| 65 | | Mastic From Pebble VT | Bsmt Kitchen Closet | black | Non-Fibrous | 80 Detected Chrysotile 20 |
| | 107714 | | | | | |
| 66 | | Pebble VT | Bsmt Upper TV Rm | tan | Non-Fibrous | 90 Detected Chrysotile 10 |
| | 107715 | | | | | |
| 67 | | Mastic #66 | Bsmt Upper TV Rm | black | Non-Fibrous | 80 Detected Chrysotile 20 |
| | 107716 | | | | | |
| 68 | | Blown-In Insul | AC- Bsmt by Bar | tan | Cellulose | 95 None Detected |
| | 107717 | | | | Non-Fibrous | 5 |
| Mon | day 23 Nove | ember | | | | Page 4 of 11 |

| Field | dID | Material | Location | Color | Non-Asbestos % Asbes | stos % |
|-------|-----------------------|----------------------|----------------------|-------|------------------------|----------|
| | LabID | | | | | |
| 69 | | Blown-In Insul | AC- Bsmt @ Closet | tan | | Detected |
| | 107718 | | | | Non-Fibrous 5 | |
| 70 | | Rough CP | Over Wtr Htr, Bsmt | white | Non-Fibrous 100 None I | Detected |
| | 107719 | _ | | | | |
| 71 | | Rough CP | Bedrm, Bsmt | multi | Non-Fibrous 100 None I | Detected |
| | 107720 | | | | | |
| 72 | | Rough CP | Kitchen, Bsmt | multi | Non-Fibrous 100 None I | Detected |
| | 107721 | | | | | |
| 73 | | Rough CP | Bar, Bsmt | white | Non-Fibrous 100 None I | Detected |
| | 107722 | | | | | |
| 74 | | Rough CP | Closet-II, Bsmt | multi | Non-Fibrous 100 None I | Detected |
| | 107723 | | | | | |
| 75 | | Incubator Pipe Insul | Bsmt Work Rm | white | Cellulose 20 Detect | |
| | 107724 | _ | | | Non-Fibrous 20 Chryso | otile 60 |
| 76 | | BL Paper Behind Wood | Bsmt Work Rm | black | | Detected |
| | 107725 | Siding | | | Non-Fibrous 50 | |
| 77 | | BL paper Beh Wood | Bsmt Work Rm | black | | Detected |
| | 107726 | Siding | | | Non-Fibrous 50 | |
| 78 | | Soft Grey GL | Lower Level Exterior | gray | Non-Fibrous 100 None I | Detected |
| | 107727 | _ | Window | | | |
| 79 | | Soft Grey GL | Lower Level Exterior | gray | Non-Fibrous 100 None I | Detected |
| | 107728 | _ | Window | | | |
| 80 | | Wall Paper WP | Living Room | white | Non-Fibrous 100 None I | Detected |
| | 107729 | _ | | | | |
| 81 | | WP | Stairs Up to Attic | white | Hair < 1 None I | Detected |
| | 107730 | | | | Non-Fibrous 100 | |
| 82 | | Ceiling (Cp) | 1st FL Hall | white | | Detected |
| | 107731 | | | | Non-Fibrous 98 | |
| 83 | | СР | Stairs to Attic | white | Hair < 1 None I | Detected |
| | 107732 | — | | | Non-Fibrous 100 | |
| 84 | 101122 | WP | 1st FL Closet | white | Hair < 1 None I | Detected |
| | 107733 | | | | Non-Fibrous 100 | |
| 85 | | Lino-I | Kitchen | tan | Non-Fibrous 65 Detect | |
| | 107734 | — | | | Chryso | otile 35 |
| 86 | TOLIZI | Lino-I | | white | Non-Fibrous 25 Detect | |
| | | _ | | | Chryso | otile 75 |
| | 107735 day 23 Nove | ombor | | | Page 5 of | - 11 |

| Field | dID | Material | Location | Color | Non-Asbestos | % Asbestos % |
|-------|--------|----------------------------|----------------------------|---------------------------------------|--------------------------|-----------------------------|
| | LabID | — | | | | |
| 87 | | WP | 1st FL Stairs Up to 2nd FL | white | Hair | 10 None Detected |
| | 107736 | | | | Non-Fibrous | 90 |
| 88 | | CP | Over Wtr Htr | gray | Non-Fibrous | 100 None Detected |
| | 107737 | | | | | |
| 89 | 107757 | TSI Debris in Soil | Crawl Space | gray | Cellulose | 20 Detected |
| | 107738 | | | | Non-Fibrous | 20 Chrysotile 60 |
| 90 | 107738 | TSI Debris on Metal Pipe | Bsmt | white | Non-Fibrous | 20 Detected |
| | | | | | | Chrysotile 80 |
| 91 | 107739 | Lino-II | Back Porch | multi | Cellulose | 35 None Detected |
| | | | | i i i i i i i i i i i i i i i i i i i | Synthetic | 5 |
| | 107740 | | | | Non-Fibrous | 60 |
| 92 | | Adh #91 | Back Porch | tan | Non-Fibrous | 98 Detected Chrysotile 2 |
| | 107741 | | | | | |
| 93 | | Lino-II | Back Porch | multi | Cellulose Synthetic | 35 None Detected 5 |
| | 107742 | | | | Non-Fibrous | 60 |
| 94 | | Adh #93 | Back Porch | tan | Non-Fibrous | 98 Detected |
| | 107743 | | | | | Chrysotile 2 |
| 95 | | Black Floor Tile Under #91 | Back Porch | black | Non-Fibrous | 90 Detected |
| | 107744 | | | | | Chrysotile 10 |
| 96 | 107744 | Black Floor Tile Under #93 | Back Porch | black | Non-Fibrous | 90 Detected |
| | 100045 | | | | | Chrysotile 10 |
| 97 | 107745 | Win GL | Bsmt, Exterior | white | Non-Fibrous | 100 None Detected |
| | | | | | | |
| 98 | 107746 | Win GL | Bsmt, Exterior | white | Non-Fibrous | 100 None Detected |
| | | | | | | 200 |
| 99 | 107747 | PW Wall Panel | Barn- Upper | multi | Cellulose | 80 None Detected |
| | | | | man | Non-Fibrous | 20 |
| 100 | 107748 | DW/Cla Donal | Porn Linner | multi | Gallulaga | None Detected |
| 100 | | PW Clg Panel | Barn- Upper | multi | Cellulose Non-Fibrous | 80 None Detected 20 |
| | 107749 | | | | | |
| 101 | | Black in Wall Batt | 597 Central, Barn- Upper | multi | Cellulose Non-Fibrous | 50 None Detected 50 |
| | 107750 | | | | | |
| 102 | | Black in Wall Batt | 597 Central, Barn- Upper | multi | Cellulose | 50 None Detected |
| | 107751 | | | | Non-Fibrous | 50 |
| 103 | | Rough WP | 597 Central, Barn- Upper | multi | Cellulose | 2 None Detected |
| | 107752 | | | | Non-Fibrous | 98 |
| 104 | 201104 | Rough WP | 597 Central, Barn- Upper | multi | Non-Fibrous | 100 None Detected |
| | 100000 | _ | | | | |
| | 107753 | | | | | |

| Field | lid | Material | Location | Color | Non-Asbestos | % Asbe | estos % |
|----------|--------|------------------------|--|-------|--------------------------|---------------|----------|
| | LabID | | | | | | |
| 05 | | Rough WP | 597 Central, Barn- Upper | multi | Non-Fibrous | 100 None | Detected |
| | 107754 | _ | | | | | |
| 06 | | DP on Foundation Wall | 597 Central, Barn, Lower- | black | Non-Fibrous | 100 None | Detected |
| | 107755 | _ | Former Htg Room | | | | |
| 107 | 10 | DP on Foundation Wall | 597 Central, Barn, Lower- | black | Non-Fibrous | 100 None | Detected |
| | 107756 | — | Former Htg Room | | | | |
| 108 | | DP? on Wood Beam Clg | 597 Central, Barn, Lower- | black | Non-Fibrous | 100 None | Detected |
| | 107757 | — Deck | Former Htg Room | | | | |
| 109 | 10//5/ | DP? on Wood Beam Clg | 597 Central, Barn, Lower- | black | Non-Fibrous | 100 None | Detected |
| | | — Deck | Former Htg Room | | | | |
| 110 | 107758 | Paper on Wood Beam Clg | 597 Central, Barn, Lower- | brown | Cellulose | 60 None | Detected |
| | | — Deck | Former Htg Room | 010 | Non-Fibrous | 40 | |
| 111 | 107759 | Perer on Wood Ream Cla | 597 Central, Barn, Lower- | brown | Cellulose | < None | Detected |
| <u> </u> | | — Deck | Former Htg Room | brown | Cellulose Non-Fibrous | 60 None 40 | Delecica |
| | 107760 | | | 14* | | | |
| 112 | | Hard Wall/CP | 597 Central, Barn, Lower- Former Htg Room | multi | Non-Fibrous | 100 None | Detected |
| | 107761 | | - | | | | |
| 113 | | Hard Wall/CP | 597 Central, Barn, Lower- Former Htg Room | multi | Non-Fibrous | 100 None | Detected |
| | 107762 | | | | | | |
| 114 | | Hard Wall/CP | 597 Central, Barn, Lower- | multi | Non-Fibrous | 100 None | Detected |
| | 107763 | _ | Former Htg Room | | | | |
| 115 | | JC | Column- TV Rm Lower | white | Non-Fibrous | 100 None | Detected |
| | 107764 | _ | | | | | |
| 116 | | JC | Wall- TV Rm Lower | white | Non-Fibrous | 100 None | Detected |
| | 107765 | _ | | | | | |
| 117 | 10//02 | СР | Stairs DN to Lower | multi | Non-Fibrous | 100 None | Detected |
| | | — | | | | | |
| 118 | 107766 | СР | Storage/Htg Rm | multi | Non-Fibrous | 100 None | Detected |
| | | _ | | | | | |
| 119 | 107767 | СР | Bedrm Closet, Lower | multi | Non-Fibrous | 100 None | Detected |
| | | — | | man | NOIL FIDEOUS | 100 100 | Dececter |
| 120 | 107768 | WP | Act EL Bodrm Closof | | | 100 Nono | Dotoatod |
| 120 | | | 1st FL Bedrm Closet | multi | Non-Fibrous | TOO NOTIE | Detected |
| | 107769 | | | | | | |
| 121 | | WP | 1st FL @ Entrance, 559 Central | multi | Non-Fibrous | 100 None | Detected |
| | 107770 | | | | | | |
| 122 | | Balsam Wool/Black | Attic Floor, 561 Central | multi | Cellulose | | Detected |
| | 107771 | | | | Non-Fibrous | 50 | |

| Field | dip | Material | Location | Color | Non-Asbestos | s % Asbestos % |
|-------|--------|------------------------|---------------------------|-------|------------------------|----------------------------------|
| | LabID | | | | | |
| 123 | | Balsam Wool/Black | Attic Floor, 561 Central | multi | Cellulose | 50 None Detected |
| | 107772 | | | | Non-Fibrous | 50 |
| 124 | - | CP | Bsmt, 561 Central | white | Non-Fibrous | 100 None Detected |
| | 107773 | | | | | |
| 125 | 107770 | WP | Stairs DN to Bsmt, 561 | multi | Non-Fibrous | 100 None Detected |
| | 107774 | | Central | | | |
| 126 | 10///1 | WP | Kitchen, 561 Central | gray | Non-Fibrous | 100 None Detected |
| | 107775 | | | | | |
| 127 | 10///5 | WP | Living Rm, 561 Central | multi | Non-Fibrous | 100 None Detected |
| | 10000 | _ | - | | | |
| 128 | 107776 | СР | Kitchen, 561 Central | multi | Non-Fibrous | 100 None Detected |
| | | | | | | |
| 129 | 107777 | JC Finish Clg | Living Rm, 561 Central | white | Non-Fibrous | 100 None Detected |
| | | | 3 , | | | |
| 130 | 107778 | JC Finish Clg | Bedrm, 561 Central | white | Non-Fibrous | 100 None Detected |
| | | | Doarni, oo'r Constal | | | |
| 131 | 107779 | Black Paper Under Bdwd | 1st FL~ Ctr, 561 Central | black | Cellulose | 40 None Detected |
| | | | | DIACK | Synthetic | 10 |
| | 107780 | | | | Non-Fibrous | 50 |
| 132 | | Black Paper Under Bdwd | 1st FL~ End, 561 Central | black | Cellulose Synthetic | 40 Detected 10 Chrysotile < 1 |
| | 107781 | | | | Non-Fibrous | 50 |
| 133 | | VT Under Carpet | 1st FL Porch, 561 Central | tan | Non-Fibrous | 98 Detected Chrysotile 2 |
| | 107782 | | | | | |
| 134 | | Mastic #133 | 1st FL Porch, 561 Central | black | Non-Fibrous | 100 None Detected |
| | 107783 | | | | | |
| 135 | | VT Under Carp | 1st FL Porch, 561 Central | tan | Non-Fibrous | 98 Detected |
| | 107784 | | | | | Chrysotile 2 |
| 136 | | Mastic #135 | 1st FL Porch, 561 Central | black | Non-Fibrous | 100 None Detected |
| | 107785 | | | | | |
| 137 | | VT-II | Bsmt, 561 Central | tan | Non-Fibrous | 100 None Detected |
| | 107786 | | | | | |
| 138 | 107700 | M #137 | Bsmt, 561 Central | multi | Non-Fibrous | 100 None Detected |
| | 107707 | | | | | |
| 139 | 107787 | VT-II | Bsmt, 561 Central | tan | Non-Fibrous | 100 None Detected |
| | 107700 | | | | | |
| 140 | 107788 | M #139 | Bsmt, 561 Central | multi | Non-Fibrous | 100 None Detected |
| | | | , | | | |
| | 107789 | | | | | |

| Field | lid | Material | Location | Color | Non-Asbestos | % Asbestos % |
|-------|-------------|---------------------------|----------------------------|--------|--------------|-------------------|
| | LabID | | | | | |
| 141 | | Lino | Kitchen, 567 Central | tan | Cellulose | 35 None Detected |
| | 107790 | | | | Non-Fibrous | 65 |
| 142 | | Adh #141 | Kitchen, 567 Central | multi | Non-Fibrous | 100 None Detected |
| | 107791 | | | | | |
| 143 | | Lino | Kitchen, 567 Central | tan | Cellulose | 35 None Detected |
| | 107792 | | | | Non-Fibrous | 65 |
| 144 | | Adh #143 | Kitchen, 567 Central | multi | Non-Fibrous | 100 None Detected |
| | 107793 | | | | | |
| 145 | | AT-I | 1st FL Bathrm, 567 Central | multi | Cellulose | 75 None Detected |
| | 107794 | | | | Non-Fibrous | 25 |
| 146 | | AT-I | 1st FL Bathrm, 567 Central | multi | Cellulose | 65 None Detected |
| | 107795 | | | | Non-Fibrous | 35 |
| 147 | | AT-II | Bsmt, 567 Central | multi | Cellulose | 95 None Detected |
| | 107796 | | | | Non-Fibrous | 5 |
| 148 | | AT-II | Bsmt, 567 Central | multi | Cellulose | 95 None Detected |
| | 107797 | | | | Non-Fibrous | 5 |
| 149 | | DP on Exterior Foundation | Exterior, 567 Central | black | Non-Fibrous | 100 None Detected |
| | 107798 | | | | | |
| 150 | | DP on Exterior Foundation | Exterior, 567 Central | black | Non-Fibrous | 100 None Detected |
| | 107799 | | | | | |
| 151 | | DP on Exterior Foundation | Exterior, 567 Central | black | Non-Fibrous | 100 None Detected |
| | 107800 | | | | | |
| 152 | | Transite? Under Aluminum | Exterior, 567 Central | gray | Non-Fibrous | 80 Detected |
| | 107801 | — Siding | | | | Chrysotile 20 |
| 153 | | Transite? Under Aluminum | Exterior, 567 Central | gray | Non-Fibrous | 80 Detected |
| | 107802 | — Siding | | | | Chrysotile 20 |
| 154 | | JC Clg | 1st FL Conference Rm, | white | Non-Fibrous | 100 None Detected |
| | 107803 | | Barn Behind Store | | | |
| 155 | | JC Wall | 1st FL Conference Rm, | white | Non-Fibrous | 100 None Detected |
| | 107804 | | Barn Behind Store | | | |
| 156 | | JC Clg | 1st FL Conference Rm, | white | Non-Fibrous | 100 None Detected |
| | 107805 | | Barn Behind Store | | | |
| 157 | | Adhesive @ Freezer | 585 Central, Bsmt, Upper | yellow | Non-Fibrous | 100 None Detected |
| | 107806 | — Panels | Unit | | | |
| 158 | | Adhesive @ Freezer | 585 Central, Bsmt, Upper | yellow | Non-Fibrous | 100 None Detected |
| | 107807 | Panels | Unit | | | |
| Monc | lay 23 Nove | ember | | | | Page 9 of 11 |

| Field | JID | Material | Location | Color | Non-Asbestos | s % Asbestos % |
|-------|-------------|--|-----------------------------|--------|--------------------------|--------------------------------|
| | LabID | | | | | |
| 159 | | Green VT | 585 Central, Store, 1st FL | green | Non-Fibrous | 100 None Detected |
| | 107808 | | | | | |
| 160 | 107000 | Green VT | 585 Central, Store, 1st FL | green | Non-Fibrous | 100 None Detected |
| | | | | | | |
| 161 | 107809 | Window GL | Large Henhouse | multi | Non-Fibrous | 100 None Detected |
| | | | | | | |
| 162 | 107810 | Win GL | Large Henhouse | multi | Non-Fibrous | 100 None Detected |
| | | | Large Hermouse | man | Non-Fibrous | 100 None Detected |
| 400 | 107811 | | | | | |
| 163 | | Win GL | Large Henhouse | multi | Non-Fibrous | 100 Detected Chrysotile < 1 |
| | 107812 | | | | | |
| 164 | | BL Paper Behind Wood — Siding | Large Henhouse | black | Cellulose Non-Fibrous | 50 None Detected 50 |
| | 107813 | Sidility | | | NOII-FIDEOUS | 50 |
| 165 | | BL Paper Behind Wood | Large Henhouse | black | Cellulose | 50 None Detected |
| | 107814 | Siding | | | Non-Fibrous | 50 |
| 166 | 107011 | Thick Paper? Lining Side | 2nd FL, Large Henhouse | multi | Cellulose | 25 None Detected |
| | | Wall of Mosting Area | | | Synthetic | 2 |
| 167 | 107815 | Thick Depart Lining Side | and EL Lorgo Hanhouse | multi | Non-Fibrous | 73 |
| 107 | | Thick Paper? Lining Side — Wall of Mosting Area | 2nd FL, Large Henhouse | multi | Cellulose Synthetic | 25 None Detected 2 |
| | 107816 | | | | Non-Fibrous | 73 |
| 168 | | Thick Paper Lining Side | 1st FL, Large Henhouse | multi | Cellulose | 25 None Detected |
| | 107817 | — Wall of Mosting Area | | | Non-Fibrous | 75 |
| 169 | | Old Roof Shingle | Shed Behind Barn | multi | Cellulose | 25 None Detected |
| | | | | | Synthetic Non-Fibrous | 2 73 |
| 170 | 107818 | BL Mastic #169 | Shed Behind Barn | black | Non-Fibrous | 100 None Detected |
| | | | | DIACK | Non Fibrous | 100 None Decected |
| 474 | 107819 | | | | ~ | of News, Deterring |
| 171 | | Old Roof Shingle | Shed Behind Barn | multi | Cellulose Synthetic | 25 None Detected 2 |
| | 107820 | | | | Non-Fibrous | 73 |
| 172 | | BL Mastic #171 | Shed Behind Barn | black | Non-Fibrous | 100 None Detected |
| | 107821 | | | | | |
| 173 | | 12" Green VT | 585 Central Ave (The | green | Non-Fibrous | 100 None Detected |
| | 107000 | | Store) | | | |
| 174 | 107822 | Yellow Mastic #173 | 585 Central Ave (The | yellow | Non-Fibrous | 100 None Detected |
| | | | Store) | | | |
| 175 | 107823 | Yellow Mastic for 12" | 585 Central Ave (The | yellow | Non-Fibrous | 100 None Detected |
| | | Green VT | 585 Central Ave (The Store) | yenow | 1011-L TDLORS | TOO NOME DECECTED |
| | 107824 | | | | | |
| 176 | | 2nd Layer VT Under 12" — Green VT | 585 Central Ave (The Store) | green | Non-Fibrous | 98 Detected Chrysotile 2 |
| | 107825 | | | | | |
| Mono | day 23 Nove | ember | | | | Page 10 of 11 |

| Field | JID | Material | Location | Color | Non-Asbestos | s % Asbestos % |
|-------|-------------|--------------------------------------|-------------------------------------|--------|--------------|------------------------------|
| | LabID | | | | | |
| 177 | | Adh #176 | 585 Central Ave (The Store) | yellow | Non-Fibrous | 100 None Detected |
| | 107826 | | | | | |
| 178 | | 2nd Layer VT Under 12" — Green VT | 585 Central Ave (The Store) | green | Non-Fibrous | 98 Detected Chrysotile 2 |
| | 107827 | | , | | | |
| 179 | | Adh #178 | 585 Central Ave (The Store) | yellow | Non-Fibrous | 100 None Detected |
| | 107828 | | 0.0.0, | | | |
| 180 | | Win Frame Caulk | 585 Central Ave, Exterior Window | multi | Non-Fibrous | 90 Detected Chrysotile 10 |
| | 107829 | | | | | |
| 181 | | Win Fr Caulk | 585 Central Ave, Exterior Window | multi | Non-Fibrous | 90 Detected Chrysotile 10 |
| | 107830 | | | | | |
| 182 | | Roof Shingle | Large Henhouse | multi | Fiberglass | 10 None Detected |
| | | | | | Non-Fibrous | 90 |
| | 107831 | | | | | |
| 183 | | Mastic #182 | Large Henhouse | black | Non-Fibrous | 100 None Detected |
| | 107832 | | | | | |
| 184 | | Roof Shingle | Large Henhouse | multi | Fiberglass | 10 None Detected |
| | | | C C | | Non-Fibrous | 90 |
| | 107833 | | | | | |
| 185 | | Mastic #184 | Large Henhouse | black | Non-Fibrous | 100 None Detected |
| | 107834 | | | | | |
| Mono | day 23 Nove | ember Muchael The | End of Report | | | Page 11 of 11 |
| Analy | /zed by: | Inumaer the | Batch: 9955 | | | |
| | | | / | | | |

| Universal E | #/22 | $\begin{array}{c} \textbf{FCUSIODY} \\ -153 \\ 567 \text{ Central} \end{array} \xrightarrow{432} \xrightarrow{448} \xrightarrow{445} \\ 567 \text{ Central} \end{array}$ |
|---------------|------------------------------|--|
| 12 Brewster I | Road | $567 \text{ (antial} \qquad -77 \longrightarrow 19 - 373$ |
| Framingham, | | # 00 |
| | 8-5486 - Fax: (508) 628-5488 | #80 - 5970 #114 #115 - 121 - 5390 |
| adieb@uec- | | |
| own/City: | Need ham, 1919 Building | Name 603 Contine Ave |
| ample Re | sult Description of Material | Sample Location |
| 1 | WALL plaster (wp) | 1 Bedim-I |
| 2 | up | Bedrm-I |
| 3 | wp | Kitchen |
| 4 | wP | ENTIBALC. |
| 5 | UP | Liv in |
| 6 | CEILING plaster 1 | |
| 7 | ch | Liven |
| 8 | Cino-I | Kitcher |
| 9 | Adh. ±8 | |
| 10 | Lino + | |
| 11 | Adh. #10 | |
| 51 | Give - I | Bsint |
| 13 | Lino-II | Bent |
| 14 | Joist Compound (| ICI Bant Finished Floor Arca |
| 15 | JC | the second Cali |
| 16 | do sink | Kitchen |
| 17 | do sink | , Kitchen |
| 18 | mud offace of Boil | er Bent |
| 19 | mud within face of | Boler Bent |
| 20 | BLACK INFG BAT | |

Zo

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| • | Unive | rsal Envir | onmental | Consultants |
|---|-------|------------|----------|-------------|
| | 4.4. | | - | |

12 Brewster Road

Framingham, MA 01702

Tel: (508) 628-5486 - Fax: (508) 628-5488

adieb@uec-env.com

Town/City: - Leedham, Ma Building Name 603 Central Aver 45 Suset

| Sample | Result Description of Material | Sample Location |
|----------|--------------------------------|------------------------------------|
| 21 | Blackin Flor BATT | ATTIC |
| 25 | rosin, bdudtl. | Frombsmt |
| _23_ | rosin, hendfl | |
| 24 | Black, hdudfl | |
| 25 | Black, bdwd fl | / |
| 26 | Blackpaper behind u | and shingle siding ExTErion |
| 27 | | , , , |
| 28 | de ou foundation | Addition-2 |
| . 29 | do ons found Ations | addition-2 |
| _30 | glazing for old ban | + window |
| 31 | gl for old bent a | indow t |
| 32 | VT-I | 1st El bathin |
| 33 | Adh # 32 | |
| 34 | VT-I | |
| 35 | Adh#34 | t t |
| 36 | UC wall | 1st Fl bathim |
| 37 | UC as All | Bent Turm |
| 38 | Brown UT | Bant closet by sapirs |
| . 39 | mastic#38 | |
| 40 | Brown VT | |
| Reported | | <u>12 15</u> Due Date: <u>12hr</u> |
| · | | |
| Received | By: Date: | |

| | sal Environmental Consultants | · · |
|------------|--------------------------------------|-----------------------------|
| | vster Road Iham, MA 01702 | |
| | 8) 628-5486 - Fax: (508) 628-5488 | |
| | uec-env.com | |
| | r: <u>Redham, ma</u> Building Name - | 45 5 4/ 202 (1 1 |
| Town/City | /: | TO JUSET J 310 CENTIAL |
| Sample | Result Description of Material | Sample Location |
| 41 | mASTIC # 40 | P. I I I I |
| 42 | | |
| | rough finish on cly | 1ST FL BALL |
| 43 | roughtinish on wall | Kitchen closet |
| .44 | rough firish on wall | Laundry |
| 45 | rough finish on ely | GAIAGE |
| 46 | rough finish on cly | BSMT T.V. rm |
| 47 | cault betwix chimney : wood | siding Experior |
| 48 | | 11 11 |
| . 49 | JC wall hall | 1ST El by 1ST Bedrm |
| 50 | JC wAll | 1ST FL by STAIRS do to Bent |
| 51 | UCaly | Kitchen |
| 52 | JC | 1st Fl bedin - 2 |
| 53 | 9" VT | jst FL bothim |
| 54 | 9" VT | 1ST FL bathen |
| 55 | Foil behind C.I. radio | |
| 56 | Foil " " | |
| 57 | 9" vT-TL | Bant bathen |
| 58 | mastic # 57 | |
| 59 | 9" UT-I | |
| 60 | mairie #59 | V L |
| Reported | ~ 112 | 17 15 771 |
| roportigat | By: Date: | 17 15 Due Date: <u>22hr</u> |
| Received I | Зу: Date: | |
| | | |

| . | | |
|------------|-------------------------------------|-----------------------------|
| | al Environmental Consultants | |
| | ster Road ham, MA 01702 | |
| | 8) 628-5486 - Fax: (508) 628-5488 | |
| | vec-env.com | |
| | | |
| Town/City | : <u>Aleedham, ma</u> Building Name | 573 Central 597 Central |
| | | |
| Sample | Result Description of Material | Sample Location |
| 61 | Brown ut under carpet | BEMET Course TV im |
| 62 | mastic #61 | 11 27 11 |
| 63 | Pebble vr | Bent Bar |
| 64 | m-25710#63 | j 51 |
| 65 | mastic for Pebble ut | Kitchen closet |
| 66 | Pebble vi | upper TV im |
| 67 | mastic # 66 | |
| 68 | Blown-in insul | AC-BENt by Bar |
| . 69 | 11 86 Ic | AC-Bant e closet |
| 70 | rough cp | over wir bit Bant |
| 71 | roysh cp | Bedin 1 |
| 72 | rough cp | Ritchen |
| 73 | rough cp | Bar |
| 74 | rough cp | closet-IT |
| 25 | incubator pipe insul | Bent worken |
| 76 | BL paper behind wood. | |
| 77 | Blpaper beb wood sid | |
| 78 | soft grey al | Lower Level Exterior wind |
| .79 | soffgrey of | Cower level exterior window |
| 80 | wall plaster up | Living them |
| Reported E | W: Jun Ban Date: | 17 15 Due Date: 72-hr |
| Received E | By: Date: | |

| Universal Environmental Consultants |
|---|
| 12 Brewster Road |
| Framingham, MA 01702 |
| Tel: (508) 628-5486 - Fax: (508) 628-5488 |
| adieb@uec-env.com |

Town/City: deadham, ma Building Name 597 Centeral Ave

| | | · · |
|------------|--------------------------------|------------------------------|
| Sample | Result Description of Material | Sample Location |
| 81 | | STAIRS up to ATTIC |
| 82 | CEILING PLASTER (C.P) | 1ST FL hall |
| 83 | col | STAIRS Upto ATTE |
| 84 | wP | 1ST FL aboset |
| 85 | Cino - I | Kitchen |
| 86 | Caro-I | Kitchen |
| 87 | wP | 1ST EL STAILS up to Edepl |
| 88 | CP | over wir htr |
| . 89 | TSI debris in soil | CTAULSPACE |
| 90 | 15T debris on meta | Ipipe bent |
| 91 | Cine - IL | Back porch |
| 92 | Adh #91 | i |
| 93 | Cinto on I | |
| 94 | Adh #93 | |
| 95 | Black Floor Tile Ju | der #92 |
| 96 | BLACK Floor Tile und | |
| 97 | win gl | bent exterior |
| 98 | en a gl | Bint |
| . 49 | più wall panel | BARN -upper |
| 100 | pus cly panel | BARN-Upper |
| Reported B | V. Cherrel Bar Date: | 12 15 Due Date: <u>72 hr</u> |
| Received B | y: Date: | |

| Univers | al Environ | mental Consultants | • |
|------------|--------------|-------------------------|--------------------------------|
| 1 | ster Road | | |
| - X. | iham, MA (| | |
| <u>`</u> | | 6 - Fax: (508) 628-5488 | |
| | uec-env.co | | |
| Town/City | <u>, Nee</u> | Building Name - | 597 Central 559 Central |
| Sample | Result | Description of Material | Sample Location |
| 101 | | Black in wall batt | 597 Central, Barn-upper |
| 102 | | BLACKIN WALL hATT. | |
| 103 | | rough to wp | |
| 104 | | sough wo | |
| 105 | | rough wp | |
| 106 | | do on Foundation wall | 597 Central, Barn, Jower, room |
| 107 | | 16 10 11 | |
| 108 | | dn? on wood beam cla | deck |
| . 109 | | do? an wood beam cly | dec.M |
| 110 | | paper " " Yi | |
| <u>ill</u> | | paper " " " | |
| 112 | · · · | hard wall for | |
| //3 | | hard wall co | |
| 114 | · · | bardwall/cp | V V |
| 115 | | JC | column - TV rm lover |
| 116 | | SC | WALL-TVrm Lower |
| 117 | | CP | STAIRS die to Lower |
| 118 | | CP | STORAge /htgm |
| 119 | | CP | Bedin closet, lower |
| 120 | | wp. | 1ST FL bedrn closet |
| Reported | By: Tes | <u>J.J.m.</u> Date: | 2.15 Due Date: <u>72-hr</u> |
| Received | By: | Date: | |

| | al Environmental Consultants | |
|------------|-------------------------------------|-----------------------------|
| | ster Road | |
| | ham, MA_01702 | |
| | 3) 628-5486 - Fax: (508) 628-5488 | |
| | uec-env.com | 1 |
| Town/City | : <u>Aleedham, nA</u> Building Name | 559 Central 567 Central |
| Sample | Result Description of Material | Sample Location |
| 151 | _ wp | 157 PLC ENTIANCE 559 CENTRA |
| 122 | Balsamwool Black | ATTIC Floor 561 Centin |
| 123 | it et te | 11 1. |
| 124 | CP | Bsmt |
| 125 | wP | STAIRS dal to BSmt |
| 126 | wp | Kitcher |
| 127 | wP | Living on |
| 128 | CP | Kitchen |
| 129 | JC Finish alg | Living on |
| Bo | ell Firish al | Beden |
| 131 | Blackpaper under hourd | 1ST FL ACTS |
| 132 | Black paper under bland | 1ST FL 3 Est |
| 133 | VT under apport | ISTFL porch |
| 134 | mastic#133 | |
| 135 | VT UNDERCAID | |
| 136 | mostic # 135 | |
| 137 | VT-T | Bsmt |
| 138 | (m) # 137 | 1 |
| 139 | JT-TL | |
| 140 | m # 139 | V |
| Reported I | W: Jamer Date: Date: | 12 15 Due Date: <u>72hr</u> |
| Received I | Зу: Date: | |

Z. 10

8, **CHAIN OF CUSTODY** BARN Behind STORE 15:4 -> 156 Universal Environmental Consultants 12 Brewster Road 585 Central (Thestore) 157-160 Framingham, MA 01702 Tel: (508) 628-5486 - Fax: (508) 628-5488 adieb@uec-env.com Town/City: Seed ham, MA Building Name 567 Central Born Behind STORE Description of Material Sample Location Sample Result 141 ino Kitchen 567 Cent 1 Adh#140 141 48 40 4B 145 444 STPL AT-T bothm 46 AT-I IÎ. 46 Ben 147 AT-IL 43 Ber 48 149 exterior foundation <u>1017542</u> 150 cremor foundatio 47 151 exterior foundati 15] under Alutinum sidin < **A** Transite ? under ALUMINUM BARN Behi 154 JCcla ST F/ resterence STOR 155 JA1 ST FL 156 ST FI 57 resive & Freezer panels 585 Central him DOPP UNIT 158 Adhesive a Freezerpanels joen . 158 Green VT STFL STORE 160 Green VT ST FC STUTE Reported By: Date: ______ 12___15 Due Date: 72 hr Received By: Date:

90 **CHAIN OF CUSTODY** Henhase 161 -168 Universal Environmental Consultants 12 Brewster Road 169 -> 12 shed behind BArn Framingham, MA 01702 Tel: (508) 628-5486 - Fax: (508) 628-5488 173 -> 181 585 Central (The STORE) adieb@uec-env.com Town/City: Needham, MA Building Name The Havilouse / 585 Central Ave Description of Material Sample Location Sample Result 161 windowel Large Henhouse 162 163 164 saper behind wood Ш£ BLOADE behild wood ct Thick paper? Lining sidewall of mosting area 166 Thick paper? Lining sideuro 167 PARETINE AREA 168 1 mine sidewall - nostic AR. STEL roof shingle 169 hehind barn ched 170 #169 bohind harn shed roof shingle 171 172 mASTIR #17 585 Central Ave Phesore 12" Green IT 173 174 Hellow mastic. #173 175 yellow MASTIC FOR 12" Green VY CLAYER VT UNDER 12 Green VT 176 177 178 2nd Layor under 12" Green Adh # 178 179 wintrame coult 180 Exterior window Reported By Due Date: 22.hr Date: -4/_12_ Received By: Date:

| 12 Brew Framing Tel: (50 adieb@ | vster Road gham, MA (0 8) 628-5486 guec-env.co |) - Fax: (508) 628-5488 m | 182-185 Lg Henhouse Building Name -585 Central Ave / Lg Menhouse | | | | |
|--|---|---------------------------------------|---|---------------------------------------|---------------------------------------|------------|--|
| Sample | Result | | - | , | | | |
| | Result | Description of Materia | L | Sample Lo | | | |
| | 1 | | | | Entral Are | | |
| 182 | | roofshily k | - · | LAGE | Hen House | 2 | |
| 183 | | mASTICA 192 | | <u>├</u> / | <u> </u> | | |
| 184 | | rastshiple | | | | | |
| 185 | | m 4872 \$ 184 | | B . | | | |
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| <u>I</u> | | B | j | . / | | | |
| Reported | BY: Jan | Dusa | - Date: | 7/15 | Due D | Date: 72hr | |
| Received | Ву: | | Date: | | | | |
| | | | • | | | | |

LOCATIONS Needham MASTER LIST Chain of Custody #1 ~ # 31. 603 Central Auc #322 + 48 45 Sunset Road #49~ # 79 523 Cestin Asc #80~ *114 597 Central Auc 359 Central Auc ×115 -- * 121 122 ~ 4153 567 Cestral Auc BARN (Behind Store) 154 ~ ±156 157 ~ ± 160 585 Central Auc (The Store) #161~ #168 OPF Large Hestause 169 - +172 small shed behind Barn #173 ~ # 181 585 Central Ave (The Store) #182 ~ *185 OPE Large Hershouse



NELAC NY 11769 NRPP 101193 AL NRSB ARL0017

Laboratory Report for:

Radon in Air

EPA Method #402-R-92-004 Liquid Scintillation NRPP Device Code 8088 NRSB Device Code 12193

Property Tested: Project # 215411-00

Universal Environmental Consultant 12 Brewster Road Framingham MA 01702

Owens Poultry Farm Needham MA 02492

| Log Number | Device Number | Test Exposure Duration: | | Area Tested | Result (pCi/L) |
|---------------|------------------|-------------------------|--------------------|---|----------------|
| 1861204 | 3068938 | 11/11/2015 9:00 am | 11/13/2015 4:48 pm | 597 Central Avenue Basement Shelf | 2.8 |
| 1861205 | 3068940 | 11/11/2015 11:17 am | 11/13/2015 5:02 pm | 597 Central Avenue Basement Fmr. Heating Ro | on 1.5 |
| 1861206 | 3068944 | 11/11/2015 1:00 pm | 11/13/2015 5:19 pm | 559 Central Avenue Basement Storage/Htg Roc | im 1.2 |
| 1861207 | 3068954 | 11/11/2015 9:35 am | 11/13/2015 5:12 pm | 567 Central Avenue Basement General Area | 0.9 |
| 1861208 | 3068920 | 11/11/2015 12:02 pm | 11/13/2015 4:45 pm | Barn, Behind Store Basement Sublevel | 4.3 |
| 1861209 | 3068958 | 11/11/2015 1:18 pm | 11/13/2015 4:40 pm | 585 Central Store Basement Rampdown @ Wal | < 0.4 |
| | | | | | |

Comment: Universal Environmental Consultant was emailed a copy of this report.

Test Performed By: Leonard J. Busa

Distributed by: Universal Environmental Consultant

Date Received: 11/17/2015 Date Logged: 11/17/2015 Date Analyzed: 11/18/2015

Date Reported: 11/18/2015

Report Reviewed By: M. Shay Report Approved By: Causty K. All

Carolyn K. Affen, President, AccuStar Labs The uncertainty of this radon measurement is ~+/- 10 %. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon concentrations, sample collection techniques and operation of the dwelling. Interference with test conditions may influence the test results.

This report may only be transferred to a third party in its entirety. Analytical results relate to the samples AS RECEIVED BY THE LABORATORY. Results shown on this report represent levels of radon gas measured between the dates shown in the room or area of the site identified above as "Property Tested". Incorrect information will affect results. The results may not be construed as either predictive or supportive of measurements conducted in any area of this structure at any other time. AccuStar Labs, its employees and agents are not responsible for the consequences of any action taken or not taken based upon the results reported or any verbal or written interpretation of the results.

Disclaimer:



Radon in Air

NELAC NY 11769 NRPP 101193 AL NRSB ARL0017

Laboratory Report for:

EPA Method #402-R-92-004 Liquid Scintillation NRPP Device Code 8088 NRSB Device Code 12193

Property Tested: Project # 215411.00

Universal Environmental Consultant 12 Brewster Road Framingham MA 01702

Owens Poultry Farm Needham MA 02492

| Log Number | Device Number | Test Exposu | re Duration: | Area Tested | Result (pCi/L) |
|---------------|------------------|---------------------|--------------------|---|----------------|
| 1861210 | 3068957 | 11/10/2015 9:35 am | 11/13/2015 4:57 pm | 603 Central Avenue Basement Desk | 3.9 |
| 1861211 | 3068950 | 11/10/2015 12:05 pm | 11/13/2015 4:52 pm | 45 Sunset Basement Left Closet to Garage | 1.4 |
| 1861212 | 3068948 | 11/10/2015 3:10 pm | 11/13/2015 5:07 pm | 573 Central Avenue Basement TV Room Hutch | 1.4 |
| 1861213 | 3068947 | 11/10/2015 3:12 pm | 11/13/2015 5:06 pm | 573 Central Avenue Bedroom Closet | 1.4 |
| 1001213 | 3066947 | 11/10/2015 3:12 pm | 11/13/2015 5:06 pm | 573 Central Avenue Bedroom Closet | 1. |

Comment: Devices placed in closet areas do not comply with EPA 402-R-92-004 testing protocol. Universal Environmental Consultant was emailed a copy of this report.

Test Performed By: Leonard J. Busa

Distributed by: Universal Environmental Consultant

Date Received: 11/17/2015 Date Logged: 11/17/2015 Date Analyzed: 11/18/2015 Date Reported: 11/18/2015

Disclaimer:

Report Reviewed By: M. Chay_____ Report Approved By: Cauly K. dea

Carolyn K. Allen, President, AccuStar Labs

The uncertainty of this radon measurement is ~+/- 10 %. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon concentrations, sample collection techniques and operation of the dwelling. Interference with test conditions may influence the test results.

This report may only be transferred to a third party in its entirety. Analytical results relate to the samples AS RECEIVED BY THE LABORATORY. Results shown on this report represent levels of radon gas measured between the dates shown in the room or area of the site identified above as "Property Tested". Incorrect information will affect results. The results may not be construed as either predictive or supportive of measurements conducted in any area of this structure at any other time. AccuStar Labs, its employees and agents are not responsible for the consequences of any action taken or not taken based upon the results reported or any verbal or written interpretation of the results.

REPORT FOR HAZARDOUS MATERIALS DETERMINATION SURVEY AT 609 CENTRAL AVENUE NEEDHAM, MASSACHUSETTS

PROJECT NO: 216 176.00

Survey Date: April 11, 2016

SURVEY CONDUCTED BY:

UNIVERSAL ENVIRONMENTAL CONSULTANTS 12 BREWSTER ROAD FRAMINGHAM, MA 01702

1.0 INTRODUCTION:

UEC has been providing comprehensive asbestos services since 2001 and has completed projects throughout New England. We have completed projects for a variety of clients including commercial, industrial, municipal, and public and private schools. We maintain appropriate asbestos licenses and staff with a minimum of twenty years of experience.

As part of the proposed demolition project, UEC was contracted by Dore & Whittier Architects to conduct the following services at the 609 Central Avenue, Needham, MA:

- Inspection and Testing for Asbestos Containing Materials (ACM);
- Inspection for Polychlorinated Biphenyls (PCB's)-Electrical Equipment and Light Fixtures;
- Inspection for PCB's-Caulking;
- Inspection for Lead Based Paint (LBP);

The scope of work included the inspection of accessible ACM, collection of bulk samples from materials suspected to contain asbestos, determination of types of ACM found and cost estimates for remediation. Bulk samples analyses for asbestos were performed using the standard Polarized Light Microscopy (PLM) in accordance with EPA standard. Bulk samples were collected by a Massachusetts licensed asbestos inspector Mr. Leonard J. Busa (AI-030673) and analyzed by a Massachusetts licensed laboratory Asbestos Identification Laboratory, Woburn, MA.

Refer to samples results.

2.0 FINDINGS:

Asbestos Containing Materials (ACM):

The regulations for asbestos inspection are based on representative sampling. It would be impractical and costly to sample all materials in all areas. Therefore, representative samples of each homogenous area were collected and analyzed or assumed.

All suspect materials were grouped into homogenous areas. By definition a homogenous area is one in which the materials are evenly mixed and similar in appearance and texture throughout. A homogeneous area shall be determined to contain asbestos based on findings that the results of at least one sample collected from that area shows that asbestos is present in an amount greater than 1 percent in accordance with EPA regulations.

All suspect materials that contain any amount of asbestos must be considered asbestos if it is scheduled to be removed per the Department of Environmental Protection (DEP) regulations.

Number of Samples Collected

Forty nine (49) bulk samples were collected from the following materials suspected of containing asbestos:

Type and Location of Material

- 1. Wall plaster at first floor bedroom
- 2. Wall plaster at first floor living room closet
- 3. Wall plaster at first floor kitchen
- 4. Ceiling plaster at first floor bedroom
- 5. Ceiling plaster at first floor living room
- 6. Ceiling plaster type II at basement
- 7. Ceiling plaster type II at basement

- 8. Ceiling plaster type II at basement
- 9. Ceiling plaster type II at basement
- 10. Ceiling plaster type II at basement
- 11. Ceiling plaster type III at garage
- 12. Ceiling plaster type III at garage
- 13. Ceiling plaster type III at garage
- 14. Joint compound at second floor bedroom
- 15. Joint compound at second floor kitchen
- 16. Cement for chimney flue at basement oil tank room
- 17. Cement for chimney flue at basement oil tank room
- 18. Sink damproofing at first floor kitchen
- 19. Sink damproofing at first floor kitchen
- 20. Grout for glazed wall tile at second floor bathroom
- 21. Grout for glazed wall tile at second floor bathroom
- 22. 15" Floor tile at first floor kitchen
- 23. Second layer blue floor tile at first floor kitchen
- 24. Paper/mastic for second layer blue floor tile at first floor kitchen
- 25. 15" Floor tile at first floor kitchen
- 26. Second layer blue floor tile at first floor kitchen
- 27. Paper/mastic for second layer blue floor tile at first floor kitchen
- 28. Black glue in wall batting insulation at second floor
- 29. Mineral wool in wall batting insulation at second floor
- 30. Black glue in wall batting insulation at second floor
- 31. Mineral wool in wall batting insulation at second floor
- 32. Exterior damproofing on brick
- 33. Exterior damproofing on brick
- 34. Exterior damproofing on brick
- 35. Exterior window framing caulking
- 36. Exterior window framing caulking
- 37. Exterior black material behind old wood window framing
- 38. Exterior caulking in lintel over new window
- 39. Exterior caulking in lintel over new window
- 40. Top layer roof shingle
- 41. Adhesive for top layer roof shingle
- 42. Bottom layer roof shingle
- 43. Adhesive/paper for bottom layer roof shingle
- 44. Top layer roof shingle
- 45. Bottom layer roof shingle
- 46. Adhesive/paper for bottom layer roof shingle
- 47. Adhesive/paper for top layer roof shingle
- 48. Caulking between shingle and brick at small roof
- 49. Caulking between shingle and brick at small roof

Samples Results

Type and Location of Material

- 1. Wall plaster at first floor bedroom
- 2. Wall plaster at first floor living room closet
- 3. Wall plaster at first floor kitchen
- 4. Ceiling plaster at first floor bedroom
- 5. Ceiling plaster at first floor living room
- 6. Ceiling plaster type II at basement
- 7. Ceiling plaster type II at basement
- 8. Ceiling plaster type II at basement

Sample Result

No Asbestos Detected No Asbestos Detected

No Asbestos Detected

<1% Asbestos

9. Ceiling plaster type II at basement 10. Ceiling plaster type II at basement 11. Ceiling plaster type III at garage 12. Ceiling plaster type III at garage 13. Ceiling plaster type III at garage 14. Joint compound at second floor bedroom 15. Joint compound at second floor kitchen 16. Cement for chimney flue at basement oil tank room 17. Cement for chimney flue at basement oil tank room 18. Sink damproofing at first floor kitchen 19. Sink damproofing at first floor kitchen 20. Grout for glazed wall tile at second floor bathroom 21. Grout for glazed wall tile at second floor bathroom 22. 15" Floor tile at first floor kitchen 23. Second layer blue floor tile at first floor kitchen 24. Paper/mastic for second layer blue floor tile at first floor kitchen 25. 15" Floor tile at first floor kitchen 26. Second laver blue floor tile at first floor kitchen 27. Paper/mastic for second layer blue floor tile at first floor kitchen 28. Black glue in wall batting insulation at second floor 29. Mineral wool in wall batting insulation at second floor 30. Black glue in wall batting insulation at second floor 31. Mineral wool in wall batting insulation at second floor 32. Exterior damproofing on brick 33. Exterior damproofing on brick 34. Exterior damproofing on brick 35. Exterior window framing caulking 36. Exterior window framing caulking 37. Exterior black material behind old wood window framing 38. Exterior caulking in lintel over new window 39. Exterior caulking in lintel over new window 40. Top layer roof shingle 41. Adhesive for top layer roof shingle 42. Bottom layer roof shingle 43. Adhesive/paper for bottom layer roof shingle 44. Top layer roof shingle 45. Bottom layer roof shingle 46. Adhesive/paper for bottom layer roof shingle 47. Adhesive/paper for top layer roof shingle 48. Caulking between shingle and brick at small roof

49. Caulking between shingle and brick at small roof

Observations and Conclusions:

The condition of ACM is very important. ACM in good condition does not present a health issue unless it is disturbed. Therefore, it is not necessary to remediate ACM in good condition unless it will be disturbed through renovation, demolition or other activity.

- 1. Ceiling plaster type II was found to contain <1% asbestos. Per DEP the plaster would have to be disposed as asbestos.
- 2. Joint compound was found to contain asbestos.
- 3. Paper/mastic for second layer blue floor tile was found to contain <1% asbestos. Per DEP the paper would have to be disposed as asbestos.
- 4. Exterior black material behind old wood window framing was found to contain asbestos.
- 5. Exterior caulking in lintel over new window was found to contain asbestos.
- 6. Caulking between shingle and brick was found to contain asbestos.

No Asbestos Detected No Asbestos Detected No Asbestos Detected 2% Asbestos No Asbestos Detected <1% Asbestos No Asbestos Detected <1% Asbestos No Asbestos Detected No Asbestos Detected <1% Asbestos No Asbestos Detected 10% Asbestos 10% Asbestos 10% Asbestos No Asbestos Detected 15% Asbestos 10% Asbestos 7. All other suspect materials were found not to contain asbestos. Hidden ACM may be found during demolition activities.

Polychlorinated Biphenyls (PCB's)-Electrical Equipment and Light Fixtures: *Observations and Conclusions*

Visual inspection of various equipments such as light fixtures, thermostats, exit signs and switches was performed for the presence of PCB's and mercury. Ballasts in light fixtures were assumed not to contain PCB's since there were labels indicating that "No PCB's" was found. Tubes in light fixtures, thermostats, signs and switches were assumed to contain mercury. It would be very costly to test those equipments and dismantling would be required to access. Therefore, the above mentioned equipments should be disposed in an EPA approved landfill as part of the demolition project.

PCB's in Caulking: Observations and Conclusions

Old caulking was assumed to contain PCB's.

Lead Based Paint (LBP):

Observations and Conclusions

LBP was assumed to exit on painted surfaces. A building scheduled for demolition is not considered a regulated facility. All LBP activities performed, including waste disposal, should be in accordance with applicable Federal, State, or local laws, ordinances, codes or regulations governing evaluation and hazard reduction. In the event of discrepancies, the most protective requirements prevail. These requirements can be found in OSHA 29 CFR 1926-Construction Industry Standards, 29 CFR 1926.62-Construction Industry Lead Standards, 29 CFR 1910.1200-Hazards Communication, 40 CFR 261-EPA Regulations. According to OSHA, any amount of LBP triggers compliance.

3.0 COST ESTIMATES:

The cost includes removal and disposal of all accessible ACM, other hazardous materials and an allowance for removal and disposal of inaccessible or hidden ACM that may be found during the demolition.

| Location | Material | Approximate Quantity | Cost Estimate (\$) |
|-----------------------------|---|----------------------|---------------------|
| First Floor Kitchen | Flooring Materials/Paper | 130 SF | 1,300.00 |
| Second Floor Kitchen | Flooring Materials/Paper | 130 SF | 1,300.00 |
| Throughout | Joint Compound Miscellaneous Hazardous Materials | 2,700 SF Unknown | 10,800.00 500.00 |
| Basement | Ceiling Plaster | 1,300 SF | 7,800.00 |
| Exterior | Windows Caulking On Roof | 54 Total 30 LF | 5,400.00 600.00 |
| Estimated costs for Constru | ction Monitoring and Air Sampling Service | S | 4,300.00 |
| | | Total: | 32,000.00 |

4.0 DESCRIPTION OF SURVEY METHODS AND LABORATORY ANALYSES:

Asbestos samples were collected using a method that prevents fiber release. Homogeneous sample areas were determined by criteria outlined in EPA document 560/5-85-030a.

Bulk material samples were analyzed using PLM and dispersion staining techniques with EPA method 600/M4-82-020.

Inspected By:

coman Busa

Leonard J. Busa Asbestos Inspector (AI-030673)

5.0 LIMITATIONS AND CONDITIONS:

This report has been completed based on visual and physical observations made and information available at the time of the site visits, as well as an interview with the Owner's representatives. This report is intended to be used as a summary of available information on existing conditions with conclusions based on a reasonable and knowledgeable review of evidence found in accordance with normally accepted industry standards, state and federal protocols, and within the scope and budget established by the client. Any additional data obtained by further review must be reviewed by UEC and the conclusions presented herein may be modified accordingly.

This report and attachments, prepared for the exclusive use of Owner for use in an environmental evaluation of the subject site, are an integral part of the inspections and opinions should not be formulated without reading the report in its entirety. No part of this report may be altered, used, copied or relied upon without prior written permission from UEC, except that this report may be conveyed in its entirety to parties associated with Owner for this subject study.

Asbestos Identification Laboratory



165 New Boston St., Ste 271 Woburn, MA 01801 781-932-9600

Web: www.asbestosidentificationlab.com Email: mikemanning@asbestosidentificationlab.com



April 14, 2016

Ammar Dieb Universal Environmental Consultants 12 Brewster Road Framingham, MA 01702

Project Number: Project Name: 609 Central Ave, Needham, MA

 Date Sampled:
 2016-04-11

 Work Received:
 2016-04-12

Analysis Method: BULK PLM ANALYSIS EPA/600/R-93/116

Dear Ammar Dieb,

Asbestos Identification Laboratory has completed the analysys of the samples from your office for the above referenced project

The information and analysis contained in this report have been generated using the EPA /600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials. Materials or products that contain more than 1% of any kind or combination of asbestos are considered an asbestos containing building material as determined by the EPA. This Polarized Light Microscope (PLM) technique may be performed either by visual estimation or point counting. Point counting provides a determination of the area percentage of asbestos in a sample. If the asbestos is estimated to be less than 10% by visual estimation of friable material, the determination may be repeated using the point counting technique. The results of the point counting supersede visual PLM results. Results in this report only relate to the items tested. This report may not be used by the customer to claim product endorsement by NVLAP or any other U.S. Government Agency.

Laboratory results represent the analysis of samples as submitted by the customer. Information regarding sample location, description, area, volume, etc., was provided by the customer. Asbestos Identification Laboratory is not responsible for sample collection activities or analytical method limitations. Unless notified in writing to return samples, Asbestos Identification Laboratory discards customer samples after 30 days. This report shall not be reproduced, except in full, without the written consent of Asbestos Identification Laboratory.

- NVLAP Lab Code: 200919-0
- Massachusetts Certification License: AA000208
- State of Connecticut, Department of Public Health Approved Environmental Laboratory Registration Number: PH-0142
- State of Maine, Department of Environmental Protection Asbestos Analytical Laboratory License Number: LB-0078(Bulk) LA-0087(Air)
- State of Rhode Island and Providence Plantations Department of Health Certification: AAL-121

Thank you Ammar Dieb for your business.

Michael Thank

Michael Manning Owner/Director

Ammar Dieb Universal Environmental Consultants 12 Brewster Road Framingham, MA 01702

Project Name: 609 Central Ave, Needham, MA

 Date Sampled:
 2016-04-11

 Work Received:
 2016-04-12

Project Number:

Analysis Method: BULK PLM ANALYSIS EPA/600/R-93/116

| Fiel | dID | Material | Location | Color | Non-Asbestos % Asbestos % |
|------|---------------|----------------------|-------------------------|-------|---|
| | LabID | | | | |
| 1 | | Wall Plaster (WP) | 1st FL Bedrm100 | multi | Non-Fibrous 100 None Detected |
| | 137967 | _ | | | |
| 2 | | WP | 1st FL Liv Rm Closet100 | multi | Non-Fibrous 100 None Detected |
| | 137968 | | | | |
| 3 | | WP | 1st FL Kitchen100 | white | Non-Fibrous 100 None Detected |
| | 137969 | _ | | | |
| 4 | | Ceiling Plaster (CP) | 1st FL Bedrm-I | white | Non-Fibrous 100 None Detected |
| | 137970 | | | | |
| 5 | | СР | 1st FL Liv Rm/Dining Rm | white | Non-Fibrous 100 None Detected |
| | 137971 | | | | |
| 6 | | CP-II | Bsmt~ Random | gray | Non-Fibrous 100 None Detected |
| | 137972 | | | | |
| 7 | | CP-II | Bsmt~ Random | gray | Non-Fibrous 100 None Detected |
| | 137973 | | | | |
| 8 | | CP-II | Bsmt~ Random | gray | Non-Fibrous 100 None Detected |
| | 137974 | | | | |
| 9 | | CP-II | Bsmt~ Random | multi | Non-Fibrous 100 Detected Chrysotile < 1 |
| | 137975 | | | | |
| 10 | | CP-II | Bsmt~ Random | gray | Non-Fibrous 100 None Detected |
| | 137976 | | | | |
| 11 | | CP-III | Garage~ Random | gray | Cellulose 2 None Detected Non-Fibrous 98 |
| | 137977 | | | | Non-Fibious 98 |
| 12 | | CP-III | Garage~ Random | gray | Non-Fibrous 100 None Detected |
| | 137978 | | | | |
| 13 | | CP-III | Garage~ Random | green | Cellulose < 1 None Detected |
| | 137979 | | | | Non-Fibrous 100 |
| 14 | | Joint Compound (JC) | 2nd FL Bedrm | tan | Non-Fibrous 98 Detected Chrysotile |
| | 137980 | | | | |
| Thu | sdav 14 April | | | | Page 1 of 4 |

Thursday 14 April

| Field | DIK | Material | Location | Color | Non-Asbestos % A | Asbestos % |
|-------|--------|---------------------------|--|-------|--------------------|--------------------------|
| | LabID | | | | | |
| 15 | | JC | 2nd FL Kitchen | white | Non-Fibrous 100 N | Ione Detected |
| | 137981 | — | | | | |
| 16 | | Cement for Flue @ | Bsmt, Oil Tank Rm | multi | | Detected |
| | 137982 | Chimney | | | Non-Fibrous 95 C | hrysotile < 1 |
| 17 | | Cement for Flue @ | Bsmt, Oil Tank Rm | gray | Other 10 N | Ione Detected |
| | 137983 | Chimney | | | Non-Fibrous 90 | |
| 18 | 13/303 | Sink DP | 1st FL Kitchen | tan | Cellulose 30 N | Ione Detected |
| | | _ | | | Non-Fibrous 70 | |
| 19 | 137984 | Sink DP | 1st FL Kitchen | tan | Cellulose 30 N | Ione Detected |
| | | | | lan | Non-Fibrous 70 | |
| 20 | 137985 | | | | | |
| 20 | | Grout for GL Wall Tile | 2nd FL Bathrm | white | Non-Fibrous 100 N | Ione Detected |
| | 137986 | | | | | |
| 21 | | Grout for FL Wall Tile | 2nd FL Bathrm | white | Non-Fibrous 100 N | Ione Detected |
| | 137987 | | | | | |
| 22 | | 15" Floor Tile | 1st FL Kitchen | tan | | Ione Detected |
| | 137988 | — | | | Non-Fibrous 10 | |
| 23 | | 2nd Layer Blue Floor Tile | 1st FL Kitchen | blue | Non-Fibrous 100 N | Ione Detected |
| | 137989 | — | | | | |
| 24 | 131302 | Paper #23 | 1st FL Kitchen | black | Cellulose 50 D | etected |
| | | <u> </u> | | | | hrysotile < 1 |
| 25 | 137990 | 15" Floor Tile | 1st FL Kitchen | tan | Cellulose 90 N | Ione Detected |
| | | | | lan | Non-Fibrous 10 | |
| 26 | 137991 | 2 - Lever Dive Floor Tile | | | -'1 | - <u>Detectod</u> |
| 20 | | 2nd Layer Blue Floor Tile | 1St FL Kitchen | blue | Non-Fibrous 100 N | Ione Detected |
| | 137992 | | | | | |
| 27 | | Paper #36 | 1st FL Kitchen | black | | etected hrysotile < 1 |
| | 137993 | | | | | - |
| 28 | | Black in Wall Batt | Front Caves @ 2nd FL | black | Non-Fibrous 100 N | Ione Detected |
| | 137994 | | | | | |
| 29 | | Mineral Wool #28 | Front Caves @ 2nd FL | white | Mineral Wool 100 N | Ione Detected |
| | 137995 | _ | | | | |
| 30 | | Black in Wall Batt | Front Caves @ 2nd FL | black | Non-Fibrous 100 N | Ione Detected |
| | | _ | | | | |
| 31 | 137996 | Mineral Wool #30 | Front Caves @ 2nd FL | white | Mineral Wool 100 N | Ione Detected |
| | | | | Winte | | |
| 20 | 137997 | Down Droofing on Briek | | | New Tibucuta 100 N | Detected |
| 32 | | Damp Proofing on Brick | From 2nd FL Coves (Exterior Brick Wall) | black | Non-Fibrous 100 N | Ione Detected |
| | 137998 | | | | | |

| Field | IID | Material | Location | Color | Non-Asbestos | s % Asbestos % |
|-------|--------|---|--|----------|---------------------------|------------------------------|
| | LabID | | | | | |
| 33 | | DP on Brick | From 2nd FL Coves (Exterior Brick Wall) | black | Non-Fibrous | 100 None Detected |
| 34 | 137999 | DP on Brick | From 2nd FL Coves | black | Non-Fibrous | 100 None Detected |
| | 138000 | | (Exterior Brick Wall) | | | |
| 35 | | Win Fr New Win | Exterior From 2nd FL | white | Non-Fibrous | 100 None Detected |
| 36 | 138001 | Win Fr New Win | Exterior From 2nd FL | white | | 100 None Detected |
| | | | Exterior From 2nd FL | white | Non-Fibrous | 100 None Detected |
| | 138002 | | | | | |
| 37 | 120002 | Black Material | Behind Old Wood Fr Behind #36 | black | Non-Fibrous | 90 Detected Chrysotile 10 |
| 38 | 138003 | Caulking in Lintel Over — New Window | Exterior, Left Side | multi | Non-Fibrous | 90 Detected Chrysotile 10 |
| _ | 138004 | | | | | |
| 39 | | Caulking in Lintel Over — New Window | Exterior, Left Side | multi | Non-Fibrous | 90 Detected Chrysotile 10 |
| 40 | 138005 | Tap Lavar Doof Chingle | Futarian Front | blask | | - None Detected |
| 40 | 138006 | Top Layer Roof Shingle | Exterior- Front | black | Fiberglass Non-Fibrous | 5 None Detected 95 |
| 41 | 138000 | Adhesive #40 | Exterior- Front | black | Non-Fibrous | 100 None Detected |
| | 138007 | | | | | |
| 42 | | Bottomost Shingle Under — #40 | Exterior- Front | black | Fiberglass Non-Fibrous | 5 None Detected 95 |
| 43 | 138008 | Adh/Donor #42 | Exterior Front | blook | Gallulara | 20 None Detected |
| 43 | 120000 | Adh/Paper #42 — | Exterior- Front | black | Cellulose Non-Fibrous | 20 None Detected 80 |
| 44 | 138009 | Top Layer Roof Shingle | Exterior- Front | multi | Fiberglass | 5 None Detected |
| | 138010 | | | | Non-Fibrous | 95 |
| 45 | | Bottomost Shingle Under | Exterior- Front | multi | Cellulose | 25 None Detected |
| | 138011 | #44 | | | Synthetic Non-Fibrous | 5 70 |
| 46 | 138011 | NO SAMPLE | NO SAMPLE | null | | Not Analyzed |
| | 138012 | | | | | |
| 47 | | Adh #44 | Exterior- Front | black | Non-Fibrous | 100 None Detected |
| 40 | 138013 | Osulla Datura en Obierala 8 | | h la al- | | |
| 48 | 120014 | Caulk Between Shingle & — Brick | Small Roof for Stairs Up to 2nd FL | DIACK | Non-Fibrous | 85 Detected Chrysotile 15 |
| 49 | 138014 | Caulk Betwix Shingle & | Small Roof @ Front | black | Cellulose | 10 Detected |
| | | -Brick | Entrance | | Non-Fibrous | 80 Chrysotile 10 |
| 24.1 | 138015 | Mastic #23 | 1st FL Kitchen | brown | Non-Fibrous | 100 None Detected |
| | 138016 | | | | | |

Thursday 14 April

| FieldID | Material | Locatio | n | Color | Non-Asbestos | s % Asbestos % |
|-------------------|-------------|-----------|---------------|-------|--------------|-------------------|
| LabID | | | | | | |
| 27.1 | Mastic #26 | 1st FL Ki | itchen | brown | Non-Fibrous | 100 None Detected |
| 138017 | _ | | | | | |
| Thursday 14 April | Michael Vh | 1 | End of Report | | | Page 4 of 4 |
| Analyzed by: | , worker th | anny | Batch: 12764 | | | |

CHAIN OF CUSTODY

103

| Universal | Environm | ental Consultants | |
|------------|------------|--------------------------|-------------------------|
| 12 Brewst | | | |
| Framingha | am, MA 01 | 702 | |
| | | Fax: (508) 628-5488 | - |
| adieb@ue | ec-env.con | | |
| Town/Citv: | NEEC | ham, Ma Building Name | 09 Cential Are |
| | | | |
| Sample | Result | Description of Material | Sample Location |
| | | wall plaster (wp) | 1ST Fl hedra |
| 2 | | WP | 1st pl liven closet |
| 3 | | wp | 15 pl Kitcher |
| 4 | | CEILING PLASTER (CP) | 15 FL hedron - I |
| | | CP | 18 FL Liven / Diving on |
| | | CP-IL | Bent ~ random |
| 6 | | CP-IL | Bent (|
| 7 | | · · · · · · | Bent |
| 8 | | CP-TI- | |
| . 9 | | CP.T | Bent |
| 10 | | CP-TE | Bent |
| 11 | | CP-TTT_ | Garage ~random |
| 12 | | CP-TTL | Garage (|
| 13 | - | CP-TTL | Gainge + |
| 14 | | Joint Compound (JC) | 2"C Pl. Bedim |
| - 12- | | L. | 2ª pl Kitchen |
| 16 | | coment for the c chin | yes Bent oil tank im |
| 17 | | compart for Flue & chim | |
| 18 | | sink do | J JST El Kitchen |
| | | sink ap | 11 61 |
| 19 | | SINA RE | 2 El Bothim |
| 20_ | | Grout tor ge whit one | Due Date: <u>48-hr</u> |
| Reported | By: | encol & use Date: - 4/10 | Due Date: |
| Received | l By: | Date: Date: | |

CHAIN OF CUSTODY

| 12 Brewster Road Framingham, MA Tel: (508) 628-548 adieb@uec-env.c | <u>6 - Fax: (508) 628-5488</u> om edham, <u>14</u> Building Name - | :09 Cestral Ave |
|---|--|---------------------------------|
| Sample Result | Description of Material | Sample Location |
| 21 | growt for glwall tile | 2" FL bathim |
| 22 | 15" Floor tile | 1st Fl. Kitcher |
| 23 | Zud Laver Blue Floor tile | |
| 24 | mastic # 23 | |
| 25 | 15" Floor Tile | |
| | 2nd Lanes Blue Floor til | |
| 26 | | 4 4 |
| - 15 | mastic paper #26 | From eques e 2nd pl |
| | Black in wall Barr | From EAWES E C FC |
| . 29 | miseral wool #28 | |
| 30 | BLACK in WALL BATT | |
| 3/ | mineral wool + 30 | exterior |
| 32. | damproofing on Brick | From 2" FL CAVES BRICK All |
| 33 | do an Brick | |
| . 34 | 10 on Brick | |
| 35 | ein to for sew win | Exterior from 2nd FL |
| 36 | winter for new win | / |
| 37 | Black material | behind old wood for behind # 36 |
| 38 | coulting in listel over | |
| 39 | | en window " " |
| 40 | Ton Carer roof shingle | |
| | | <u> </u> |
| Reported By: | Date: | |
| Received By: | Date: | |

2.3

CHAIN OF CUSTODY

| | ironmental Consultants | |
|---------------|-----------------------------|----------------------------------|
| 12 Brewster R | | |
| Framingham, I | | |
| ndieb@uec-ei | 5486 - Fax: (508) 628-5488 | |
| | | |
| wn/City: | Alecoham Building Name | 609 Central Ave |
| mple Resi | ult Description of Material | Sample Location |
| <u> </u> | Adhesive #40 | Exterior - Front |
| 42 | Bottomost shingle #40 | |
| 43 | adh/paper # 42 | |
| 44 | Top lager rast shingle | |
| 45 | Bottomost shindle suder t | tyy |
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| 48 | CAULK hetween shingle is | brick small roof for stairs 2000 |
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| eceived By: | Date: | |
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GEOTECHNICAL AND GEO- ENVIRONMENTAL ANALYSIS REPORT

As noted in the PSR submitted to the MSBA on December 1, 2015 the PPBC had approved funds to conduct additional testing of soils and groundwater, to complete the interview and research process to provide a robust Phase 1 environmental study of the Central Avenue proposed project site. This testing was conducted as part of the due diligence required by the Town prior to the purchase of the property and included collection and analysis of soil and groundwater samples. The report and additional testing was conducted in November, 2015 and is attached. Initial testing indicated non identified EPH (extractable petroleum hydrocarbons) in one of the four test wells and in one soil sample. Several metals were also detected in the soils but did not appear to be the result of any release to the environment.

In January 2016 additional soil and groundwater samples were collected and analyzed not only for EPH but also PAHs including naphthalene and 2-methylnaphtalene, compounds associated with fuel oil. EPH and PAHs were not detected in any of the groundwater samples including the groundwater from the well where it was found in December. Shallow soil samples collected in an area where known turkey grease was being disposed of were also analyzed for EPH/PAHs. Turkey grease / fat was identified as the EPH that was found in the test pit and groundwater samples. The analytical laboratory confirmed that the EPH was not the result of fuel oil. Due to the site's location in a Zone II groundwater protection area the soils and groundwater contained what is believed to be reportable concentrations of the animal oil (grease / fat) and require remediation (removal and off site disposal).

The property study confirmed an open Order of Conditions with the DEP for non-compliant fill that placed on the south west portion of the site (at the end of Sunset Road). As part of the permitting process for a new building on this site this non-conforming fill would need to be removed and this OOC be closed.

The purchase of the property was completed in March 2016 and an escrow account was established to provide funding for the soil remediation and for the removal and stabilization of the area of non-compliant fill. The soil remediation of the site began with the site mobilization in mid May 2016 and will be completed in June 2016. A Certificate of Compliance for the Order of Conditions (DEP file #234-451) was filed so that a new OOC could be recognized as a method of for removing the "non-compliant" fill from the site. This was filed on April 11, 2016 with the Norfolk County Registry of Deeds, MA DEP File #234-754.

In October 2015 the Geo-environmental report noted 8 test borings within the proposed building footprint. Groundwater was encounter between 14 and 17 feet below grade in two of the test borings. Based on the subsurface condition encountered in the test borings HML recommended that the proposed building be placed on conventional shallow foundations consisting of continuous wall and / spread footings bearing on the naturally occurring glacial till with slab on grade. The net allowable bearing pressure for footings bearing on till is 3 TSF. The site soils are not considered susceptible to liquefaction. In early May 2016 additional depth to ground water readings were collected and elevations showed similar to those collected in early April. The proposed lowest slap on grade will be at elevation 90. Water was encountered below elevation 82 within the building footprint resulting in minimal dewatering needed during construction.

The final round of borings will be conducted during the DD phase of the project, there are no known geo-environmental concerns.



Massachusetts Department of Environmental Protection Bureau of Resource Protection - Wetlands WPA Form 5 – Order of Conditions Provided by MassDEP: 234-754 MassDEP File #

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

eDEP Transaction # Needham City/Town

A. General Information

| Please note: | | Needham | | | | |
|---|----------------|------------------------------|---|-------------------------|--------------|-------------|
| this form has been modified | 1. From: | Conservation Commission | on | | | |
| with added space to accommodate | | ssuance is for k one): | a. 🖾 Order of Conditions b. 🗌 Amended Order of Conditions | | | Conditions |
| the Registry of Deeds Requirements | 3. To : | Applicant: | | | | |
| | Ste | | | Popper | | |
| Important: | •••••• | rst Name | | b. Last Name | | |
| When filling | Тои | n of Needham Public Fa | acilities De | partment - Construction | Division | |
| out forms on | с. Oı | ganization | | | | |
| the | 500 | Dedham Avenue | | | | |
| computer, use only the | d. M | ailing Address | | | | |
| tab key to | Nee | edham | | MA | |)2492 |
| move your | e. Ci | ty/Town | | f. State | ç | i. Zip Code |
| cursor - do not use the return key. | 4. Prope | erty Owner (if different fro | om applica | nt): | | |
| | See | Exhibit A | | | | |
| | a. Fi | rst Name | | b. Last Name | | |
| return | c. O | ganization | | | | |
| <u> (</u>) | d. M | ailing Address | | | | |
| | e. Ci | ty/Town | | f. State | ç | . Zip Code |
| | 5. Proje | ct Location: | | | | |
| | See | e Exhibit A | | Needham | ····· | |
| | a. St | reet Address | | b. City/Town | | |
| | See | e Exhibit A | | | | |
| | c. As | ssessors Map/Plat Number | | d. Parcel/Lot Nun | | |
| | Lati | tude and Longitude, if kr | 10WD. | 42d17m59.6616sN | -71d14m50 |).8704sW |
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Provided by MassDEP: 234 - 754MassDEP File #

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

eDEP Transaction # Needham City/Town

A. General Information (cont.)

Property recorded at the Registry of Deeds for (attach additional information if more than 6. one parcel):

| Nortolk | | | |
|-----------|--------------------------------|-------------------------------|---------------------|
| a. County | | b. Certificate Number (if re | egistered land) |
| See Exhil | oit A | | |
| c. Book | | d. Page | |
| | March 10, 2016 | March 24, 2016 | March 25, 2016 |
| Dates: | a. Date Notice of Intent Filed | b. Date Public Hearing Closed | c. Date of Issuance |
| | | | |

8. Final Approved Plans and Other Documents (attach additional plan or document references as needed):

| see Exhibit A a. Plan Title | |
|--------------------------------------|--------------------------|
| b. Prepared By | c. Signed and Stamped by |
| d. Final Revision Date | e. Scale |
| see Exhibit A | |
| f. Additional Plan or Document Title | g. Date |

B. Findings

1. Findings pursuant to the Massachusetts Wetlands Protection Act:

Following the review of the above-referenced Notice of Intent and based on the information provided in this application and presented at the public hearing, this Commission finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act (the Act). Check all that apply: ..

| a. | Public Water Supply | b. | Land Containing Shellfish | C. | Prevention of Pollution |
|----|----------------------|----|---------------------------|----|-----------------------------------|
| d. | Private Water Supply | e. | Fisheries | f. | Protection of Wildlife Habitat |
| g. | Groundwater Supply | h. | Storm Damage Prevention | i. | S Flood Control |

This Commission hereby finds the project, as proposed, is: (check one of the following boxes) 2.

Approved subject to:

the following conditions which are necessary in accordance with the performance a. standards set forth in the wetlands regulations. This Commission orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.



Provided by MassDEP: 234-754 MassDEP File #

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

eDEP Transaction # Needham City/Town

B. Findings (cont.)

Denied because:

- b. I the proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect the interests of the Act, and a final Order of Conditions is issued. A description of the performance standards which the proposed work cannot meet is attached to this Order.
- c. I the information submitted by the applicant is not sufficient to describe the site, the work, or the effect of the work on the interests identified in the Wetlands Protection Act. Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the Act's interests, and a final Order of Conditions is issued. A description of the specific information which is lacking and why it is necessary is attached to this Order as per 310 CMR 10.05(6)(c).
- 3. Buffer Zone Impacts: Shortest distance between limit of project 10 disturbance and the wetland resource area specified in 310 CMR 10.02(1)(a) a. linear feet

Inland Resource Area Impacts: Check all that apply below. (For Approvals Only)

| Resource Area | Proposed Alteration | Permitted Alteration | Proposed Replacement | Permitted Replacement |
|------------------------------|------------------------|-------------------------|-------------------------|--------------------------|
| 4. 🗌 Bank | a. linear feet | b. linear feet | c. linear feet | d. linear feet |
| 5. 🗌 Bordering | ······ | | | |
| Vegetated Wetland 6. | a. square feet | b. square feet | c. square feet | d. square feet |
| Waterbodies and Waterways | a. square feet | b. square feet | c. square feet | d. square feet |
| - | e. c/y dredged | f. c/y dredged | | |
| 7. 🛛 Bordering Land | 5,475 | 5,475 | NA | NA |
| Subject to Flooding | a. square feet | b. square feet | c. square feet | d. square feet |
| | 0 | 0 | NA | NA |
| Cubic Feet Flood Storage | e. cubic feet | f. cubic feet | g. cubic feet | h. cubic feet |
| 8. Solated Land | | | | |
| Subject to Flooding | a. square feet | b. square feet | | |
| Cubic Feet Flood Storage | c. cubic feet | d. cubic feet | e. cubic feet | f. cubic feet |
| 9. 🗌 Riverfront Area | a. total sq. feet | b. total sq. feet | | |
| Sq ft within 100 ft | c. square feet | d. square feet | e. square feet | f. square feet |
| Sq ft between 100- | | | | |
| 200 ft | g. square feet | h. square feet | i. square feet | j. square feet |



Massachusetts Department of Environmental Protection Bureau of Resource Protection - Wetlands WPA Form 5 – Order of Conditions Massachusetts Wetlands Protection Act M.G.L. c. 131, §40 Provided by MassDEP: 234-754 MassDEP File #

eDEP Transaction # Needham City/Town

B. Findings (cont.)

Coastal Resource Area impacts: Check all that apply below. (For Approvals Only)

| _ | Proposed Alteration | Permitted Alteration | Proposed Replacement | Permitted Replacement |
|--|--|------------------------------------|------------------------------------|----------------------------------|
| Designated Port Areas | Indicate size u | inder Land Unde | er the Ocean, bel | ow |
| 11. 🔲 Land Under the Ocean | a. square feet | b. square feet | | |
| 12. 🔲 Barrier Beaches | c. c/y dredged Indicate size u below | d. c/y dredged Inder Coastal Be | aches and/or Co | bastal Dunes |
| 13. 🗌 Coastal Beaches | a. square feet | b. square feet | cu yd c. nourishment | cu yd d. nourishment |
| 14. 🔲 Coastal Dunes | a. square feet | b. square feet | cu yd c. nourishment | d. nourishment |
| 15. 🔲 Coastal Banks 16. 🔲 Rocky Intertidal | a. linear feet | b. linear feet | | |
| Shores 17. Salt Marshes 18. Land Under Salt Ponds | a. square feet a. square feet a. square feet | b. square feet | c. square feet | d. square feet |
| 19. 🔲 Land Containing Shellfish | c. c/y dredged | d. c/y dredged | c. square feet | d. square feet |
| 20. 🔲 Fish Runs | | d/or inland Land | inks, Inland Banl Under Waterbo | |
| 21. 🔲 Land Subject to Coastal Storm Flowage | a. c/y dredged a. square feet | b. c/y dredged b. square feet | | |
| 22. Riverfront Area | a. total sq. feet | b. total sq. feet | | |
| Sq ft within 100 ft Sq ft between 100- 200 ft | c. square feet g. square feet | d. square feet h. square feet | e. square feet i. square feet | f. square feet j. square feet |



WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP: 234 - 754MassDEP File #

eDEP Transaction # Needham City/Town

B. Findings (cont.)

* #23 If the 23. Restoration/Enhancement *: project is for the purpose of restoring or enhancing a wetland resource area 24 in addition to the square footage that has been C entered in Section B.5.c (BVW) or B.17.c (Salt Marsh) above, 1 please enter the additional amount here. 2.

| | General Conditions Under Massach | usetts Wetlands Protection Act |
|----|-----------------------------------|---|
| | a. number of new stream crossings | b. number of replacement stream crossings |
| 4. | Stream Crossing(s): | |
| | a. square feet of BVW | b. square feet of salt marsh |

The following conditions are only applicable to Approved projects.

- Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.
- The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.
- 3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.
- 4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
 - a. The work is a maintenance dredging project as provided for in the Act; or
 - b. The time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.
 - c. If the work is for a Test Project, this Order of Conditions shall be valid for no more than one year.
- 5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order. An Order of Conditions for a Test Project may be extended for one additional year only upon written application by the applicant, subject to the provisions of 310 CMR 10.05(11)(f).
- 6. If this Order constitutes an Amended Order of Conditions, this Amended Order of Conditions does not extend the issuance date of the original Final Order of Conditions and the Order will expire on _____ unless extended in writing by the Department.
- 7. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.



Massachusetts Department of Environmental Protection Bureau of Resource Protection - Wetlands WPA Form 5 – Order of Conditions Provided by MassDEP: 234-754 MassDEP File #

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

eDEP Transaction # Needham City/Town

C. General Conditions Under Massachusetts Wetlands Protection Act

- 8. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed.
- 9. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to the Conservation Commission on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work.
- 10. A sign shall be displayed at the site not less then two square feet or more than three square feet in size bearing the words,

"Massachusetts Department of Environmental Protection" [or, "MassDEP"]

"File Number 234-754

- 11. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before MassDEP.
- 12. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Conservation Commission.
- 13. The work shall conform to the plans and special conditions referenced in this order.
- 14. Any change to the plans identified in Condition #13 above shall require the applicant to inquire of the Conservation Commission in writing whether the change is significant enough to require the filing of a new Notice of Intent.
- 15. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.
- 16. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.



Massachusetts Department of Environmental Protection Bureau of Resource Protection - Wetlands WPA Form 5 – Order of Conditions Provided by MassDEP: 234-754 MassDEP File #

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

eDEP Transaction # Needham City/Town

- C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)
- 17. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Conservation Commission.
- 18. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Conservation Commission, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.
- 19. The work associated with this Order (the "Project")
 - (1) is subject to the Massachusetts Stormwater Standards
 - (2) x is NOT subject to the Massachusetts Stormwater Standards

If the work is subject to the Stormwater Standards, then the project is subject to the following conditions:

a) All work, including site preparation, land disturbance, construction and redevelopment, shall be implemented in accordance with the construction period pollution prevention and erosion and sedimentation control plan and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Construction General Permit as required by Stormwater Condition 8. Construction period erosion, sedimentation and pollution control measures and best management practices (BMPs) shall remain in place until the site is fully stabilized.

b) No stormwater runoff may be discharged to the post-construction stormwater BMPs unless and until a Registered Professional Engineer provides a Certification that:

i. all construction period BMPs have been removed or will be removed by a date certain specified in the Certification. For any construction period BMPs intended to be converted to post construction operation for stormwater attenuation, recharge, and/or treatment, the conversion is allowed by the MassDEP Stormwater Handbook BMP specifications and that the BMP has been properly cleaned or prepared for post construction operation, including removal of all construction period sediment trapped in inlet and outlet control structures; *ii.* as-built final construction BMP plans are included, signed and stamped by a Registered Professional Engineer, certifying the site is fully stabilized;

iii. any illicit discharges to the stormwater management system have been removed, as per the requirements of Stormwater Standard 10;



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WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

eDEP Transaction # Needham City/Town

C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

iv. all post-construction stormwater BMPs are installed in accordance with the plans (including all planting plans) approved by the issuing authority, and have been inspected to ensure that they are not damaged and that they are in proper working condition;

v. any vegetation associated with post-construction BMPs is suitably established to withstand erosion.

c) The landowner is responsible for BMP maintenance until the issuing authority is notified that another party has legally assumed responsibility for BMP maintenance. Prior to requesting a Certificate of Compliance, or Partial Certificate of Compliance, the responsible party (defined in General Condition 18(e)) shall execute and submit to the issuing authority an Operation and Maintenance Compliance Statement ("O&M Statement) for the Stormwater BMPs identifying the party responsible for implementing the stormwater BMP Operation and Maintenance Plan ("O&M Plan") and certifying the following:

i.) the O&M Plan is complete and will be implemented upon receipt of the Certificate of Compliance, and

ii.) the future responsible parties shall be notified in writing of their ongoing legal responsibility to operate and maintain the stormwater management BMPs and implement the Stormwater Pollution Prevention Plan.

d) Post-construction pollution prevention and source control shall be implemented in accordance with the long-term pollution prevention plan section of the approved Stormwater Report and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Multi-Sector General Permit.

e) Unless and until another party accepts responsibility, the landowner, or owner of any drainage easement, assumes responsibility for maintaining each BMP. To overcome this presumption, the landowner of the property must submit to the issuing authority a legally binding agreement of record, acceptable to the issuing authority, evidencing that another entity has accepted responsibility for maintaining the BMP, and that the proposed responsible party shall be treated as a permittee for purposes of implementing the requirements of Conditions 18(f) through 18(k) with respect to that BMP. Any failure of the proposed responsible party to implement the requirements of Conditions 18(f) through 18(k) with respect to that BMP shall be a violation of the Order of Conditions or Certificate of Compliance. In the case of stormwater BMPs that are serving more than one lot, the legally binding agreement shall also identify the lots that will be serviced by the stormwater BMPs. A plan and easement deed that grants the responsible party access to perform the required operation and maintenance must be submitted along with the legally binding agreement.

f) The responsible party shall operate and maintain all stormwater BMPs in accordance with the design plans, the O&M Plan, and the requirements of the Massachusetts Stormwater Handbook.



WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP: 234-754 MassDEP File #

eDEP Transaction # Needham City/Town

C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

- g) The responsible party shall:
 - 1. Maintain an operation and maintenance log for the last three (3) consecutive calendar years of inspections, repairs, maintenance and/or replacement of the stormwater management system or any part thereof, and disposal (for disposal the log shall indicate the type of material and the disposal location);
 - 2. Make the maintenance log available to MassDEP and the Conservation Commission ("Commission") upon request; and
 - 3. Allow members and agents of the MassDEP and the Commission to enter and inspect the site to evaluate and ensure that the responsible party is in compliance with the requirements for each BMP established in the O&M Plan approved by the issuing authority.

h) All sediment or other contaminants removed from stormwater BMPs shall be disposed of in accordance with all applicable federal, state, and local laws and regulations.

i) Illicit discharges to the stormwater management system as defined in 310 CMR 10.04 are prohibited.

j) The stormwater management system approved in the Order of Conditions shall not be changed without the prior written approval of the issuing authority.

k) Areas designated as qualifying pervious areas for the purpose of the Low Impact Site Design Credit (as defined in the MassDEP Stormwater Handbook, Volume 3, Chapter 1, Low Impact Development Site Design Credits) shall not be altered without the prior written approval of the issuing authority.

I) Access for maintenance, repair, and/or replacement of BMPs shall not be withheld. Any fencing constructed around stormwater BMPs shall include access gates and shall be at least six inches above grade to allow for wildlife passage.

Special Conditions (if you need more space for additional conditions, please attach a text document):

See Exhibit A for Findings and Conditions adopted under the MA Wetlands

Protection Act (M/G/L. Ch. 131 S. 40) and the Needham Wetlands Protection Bylaw

(Article 6).

20. For Test Projects subject to 310 CMR 10.05(11), the applicant shall also implement the monitoring plan and the restoration plan submitted with the Notice of Intent. If the conservation commission or Department determines that the Test Project threatens the public health, safety or the environment, the applicant shall implement the removal plan submitted with the Notice of Intent or modify the project as directed by the conservation commission or the Department.



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D. Findings Under Municipal Wetlands Bylaw or Ordinance

| 1. | Is a municipal w | vetlands bylaw or | ordinance applicable? | 🖾 Yes | 🗌 No |
|----|------------------|-------------------|-----------------------|-------|------|
|----|------------------|-------------------|-----------------------|-------|------|

- hereby finds (check one that applies): The Needham 2. Conservation Commission
 - a. I that the proposed work cannot be conditioned to meet the standards set forth in a municipal ordinance or bylaw, specifically:

1. Municipal Ordinance or Bylaw

2. Citation

Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides measures which are adequate to meet these standards, and a final Order of Conditions is issued.

Ithat the following additional conditions are necessary to comply with a municipal b. ordinance or bylaw: ... ~ .

| Neednam vvetlands Protection Bylaw | Article 6 |
|------------------------------------|-------------|
| 1. Municipal Ordinance or Bylaw | 2. Citation |

The Commission orders that all work shall be performed in accordance with the following 3. conditions and with the Notice of Intent referenced above. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, the conditions shall control.

The special conditions relating to municipal ordinance or bylaw are as follows (if you need more space for additional conditions, attach a text document):

See Exhibit A for Findings and Conditions adopted under the MA Wetlands

Protection Act (M.G.L. Ch. 131 S. 40) and the Needham Wetlands Protection Bylaw

(Article 6).



Massachusetts Department of Environmental Protection Bureau of Resource Protection - Wetlands WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP: 234-754 MassDEP File #

eDEP Transaction # Needham City/Town

E. Signatures

This Order is valid for three years, unless otherwise specified as a special condition pursuant to General Conditions #4, from the date of issuance.

Please indicate the number of members who will sign this form.

3/25/2016 1. Date of Issuance 6 2. Number of Signers

This Order must be signed by a majority of the Conservation Commission.

The Order must be mailed by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate Department of Environmental Protection Regional Office, if not filing electronically, and the property owner, if different from applicant.

| Signatures: | Peter Oebikers |
|---|---|
| Janet Carter Bernardo | Cory Phoades |
| Artie Crocker | Altson Richardson |
| Stephen Farr by hand delivery on <u>3/25/2016</u> Date | Sharon Soltzberg by certified mail, return receipt requested, on Date |

F. Appeals

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate MassDEP Regional Office to issue a Superseding Order of Conditions. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Request for Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

Any appellants seeking to appeal the Department's Superseding Order associated with this appeal will be required to demonstrate prior participation in the review of this project. Previous participation in the permit proceeding means the submission of written information to the Conservation Commission prior to the close of the public hearing, requesting a Superseding Order, or providing written information to the Department prior to issuance of a Superseding Order.

The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40), and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal ordinance or bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.



WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP: 234-754 MassDEP File #

eDEP Transaction # Needham City/Town

G. Recording Information

Prior to commencement of work, this Order of Conditions must be recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land subject to the Order. In the case of registered land, this Order shall also be noted on the Land Court Certificate of Title of the owner of the land subject to the Order of Conditions. The recording information on this page shall be submitted to the Conservation Commission listed below.

| Neednam Conservation Commission | | |
|---|-----------------------------|---------------------------|
| Detach on dotted line, have stamped by the Regist Commission. | | ubmit to the Conservation |
| To: | | |
| Needham Conservation Commission | | |
| Please be advised that the Order of Conditions for | or the Project at: | |
| 559, 567, 573, 597 & 603 Central Avenue Project Location | 234-754 MassDEP File Nur | nber |
| Has been recorded at the Registry of Deeds of: | | |
| County | Book | Page |
| for: Property Owner | | |
| and has been noted in the chain of title of the affe | ected property in: | |
| Book | Page | |
| In accordance with the Order of Conditions issue | d on: | |
| Date | | |
| If recorded land, the instrument number identifyin | ng this transaction | is: |
| Instrument Number | | |
| If registered land, the document number identifying | ng this transactior | i is: |
| Document Number | | |
| Signature of Applicant | | |



Massachusetts Department of Environmental ProtectionBureau of Resource Protection - WetlandsRequest for Departmental Action FeeTransmittal FormMassachusetts Wetlands Protection Act M.G.L. c. 131, §40

A. Request Information

1. Location of Project

| | a. Street Address | b. City/Town, Zip | |
|----|---|--------------------------------|------------|
| | c. Check number | d. Fee amount | |
| 2. | Person or party making request (if appropriate, na | me the citizen group's represe | entative): |
| | Name | | |
| | Mailing Address | | |
| | City/Town | State | Zip Code |
| | Phone Number | Fax Number (if ap | plicable) |
| 3. | Applicant (as shown on Determination of Applicabi (Form 4B), Order of Conditions (Form 5), Restorat Non-Significance (Form 6)): | | |
| | Name | | |
| | Mailing Address | | |

State

Fax Number (if applicable)

| Iab | |
|--------|---|
| return | 凶 |

| Phone | Num | her |
|-------|-----|-----|

City/Town

4. DEP File Number:

B. Instructions

- 1. When the Departmental action request is for (check one):
 - Superseding Order of Conditions Fee: \$120.00 (single family house projects) or \$245 (all other projects)
 - Superseding Determination of Applicability Fee: \$120
 - Superseding Order of Resource Area Delineation Fee: \$120

Zip Code

DEP File Number:

Provided by DEP

| Important | t: |
|-----------|----|

When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Massachusetts Department of Environmental Protection Bureau of Resource Protection - Wetlands Request for Departmental Action Fee Transmittal Form Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Instructions (cont.)

DEP File Number:

Provided by DEP

Send this form and check or money order, payable to the Commonwealth of Massachusetts, to:

Department of Environmental Protection Box 4062 Boston, MA 02211

- On a separate sheet attached to this form, state clearly and concisely the objections to the Determination or Order which is being appealed. To the extent that the Determination or Order is based on a municipal bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.
- 3. Send a **copy** of this form and a **copy** of the check or money order with the Request for a Superseding Determination or Order by certified mail or hand delivery to the appropriate DEP Regional Office (see <u>http://www.mass.gov/eea/agencies/massdep/about/contacts/</u>).
- 4. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

ORDER OF CONDITIONS DEP FILE NO. 234-754 EXHIBIT A

- **Project:** The proposed project consists of the demolition of all buildings and structures within the project boundary, including the removal of two trees and existing utilities. The demolition work is in anticipation of the proposed Hillside School. Properties included in the application include 559, 567, 573, 585, 597, and 603 Central Avenue. In addition to the demolition and minor regrading work, this application addresses an outstanding enforcement issue from the previous owner pertaining to unauthorized fill within the 100-foot Buffer Zone. The fill removal will include removal and proper disposal of soil contaminated with illegally dumped animal fat by the previous owner. The Applicant is also requesting confirmation of the wetland boundaries as part of the approval. Portions of the proposed work are located within Bordering Land Subject to Flooding and the 100-foot Buffer Zone to Bordering Vegetated Wetlands.
- Applicant: Town of Needham Public Facilities Department Construction Division 500 Dedham Avenue Needham, MA 02492
- Owner: Town of Needham Public Facilities Department Construction Division 500 Dedham Avenue Needham, MA 02492 and Town of Wellesley Public Works Department P.O. Box 217 Wellesley, MA 02482

| Location: | Address | Мар | Lot | Book | Page | Owner |
|-----------|--------------------|-----|-----|-------|------|-------------------|
| | 559 Central Avenue | 108 | 5 | 33902 | 240 | Town of Needham |
| | 567 Central Avenue | 108 | 6 | 33902 | 243 | Town of Needham |
| | 573 Central Avenue | 108 | 7 | 33902 | 250 | Town of Needham |
| | 585 Central Avenue | 310 | 3 | 33902 | 224 | Town of Needham |
| | 597 Central Avenue | 108 | 9 | 33902 | 255 | Town of Needham |
| | 603 Central Avenue | 108 | 10 | 33902 | 258 | Town of Needham |
| | 0 Rosemary Meadow | 310 | 1 | 2159 | 85 | Town of Wellesley |

Documents of Record:

- □ WPA Form 3 Notice of Intent and supporting documents received March 10, 2016
- □ Needham Wetlands Protection Bylaw Application for Permit received March 10, 2016
- Plan entitled: "EX-1 Exhibit Plan 585 Central Avenue Needham, Massachusetts 02494," prepared by Nitsch Engineering, signed and stamped by Jamie G. Gayton, P.L.S. #49624, dated 10/6/2015 (revised 2/10/16).
- Plans entitled: "Hillside School Central Ave. Site Demo", Sheets C0.00, C1.00, C2.00, C3.00, C3.01, prepared by Nitsch Engineering, stamped and signed by Steven Ventresca, P.E. #46872, dated 3/9/2016.
- Plans entitled: "Hillside School Central Ave. Site Demo", Sheets C0.00, C1.00, C2.00, C3.00, C3.01, prepared by Nitsch Engineering, stamped and signed by Steven Ventresca, P.E. #46872, dated 3/18/2016.

FINDINGS OF FACT:

The Applicant proposes the demolition of all buildings and structures within the project boundary, including the removal of two trees and existing utilities. Properties included in the application include 559, 567, 573, 585, 597, and 603 Central Avenue and a small portion of 0 Rosemary Meadow. Upon completion of demolition activities, cellar holes and other open areas will be regraded to create an even surface and stabilized with vegetative cover.

This application addresses an outstanding enforcement issue from the previous owner pertaining to unauthorized fill within the 100-foot Buffer Zone. On 11/22/04, a Notice of Violation was issued to Owen's Poultry Farm for unauthorized placement of fill within the 100-foot Buffer Zone. Subsequently, a Notice of Intent was filed and an Order of Conditions (OOC; DEP File #234-451) issued for the removal of the fill. The Applicant subsequently appealed the WPA OOC to DEP and the Bylaw OOC in Superior Court. DEP issued a Superseding Order of Conditions (SOC) upholding the WPA OOC. On 5/20/15, the Owner filed a Request for Adjudicatory Hearing with DEP and appealed the Bylaw OOC to Superior Court. On 6/15/05, the Needham Conservation Commission filed a motion to stay the adjudicatory hearing process to allow Superior Court appeal (# NOCV 2005-00685) was dismissed. Upon dismissal of the appeal, the Bylaw OOC immediately went into effect. The Bylaw permit expired on 2/16/08 without the work commencing. No further action was taken to lift the stay of the adjudicatory hearing process. As such, the enforcement issue was never remediated.

On 3/9/2016, a letter was submitted to DEP withdrawing the SOC appeal. As of the issuance of this Order, no response has been received from DEP. It is presumed that upon acceptance of the withdrawal by DEP, the SOC would then become effective. In order to avoid two separate OOCs being in existence on the same project, the Town will either:

- 1. Submit a Request for Certificate of Compliance to DEP to close out the SOC and allow the work to be completed under the current NOI application. The fill removal will establish a 3:1 slope as required in the original OOC and will include removal of soil contaminated with illegally dumped animal fat by the previous owner. The regraded slope will then be revegetated with a native seed mix for permanent stabilization; or
- 2. Perform the remediation work under the existing SOC (DEP File #234-451). This OOC will serve as authorization to remove the unauthorized fill under the Bylaw only and the existing SOC will remain in full force and effect for the remediation activities.

The Applicant is also requesting confirmation of the wetland boundaries as part of the approval. Portions of the proposed work are located within Bordering Land Subject to Flooding and the 100-foot Buffer Zone. The proposed limit of work is approximately 10 feet from the limits of Bordering Vegetated Wetlands (for the demolition and removal of a shed). No new construction is proposed, nor approved, under this Order of Conditions.

The Commission finds that the pre-demolition site conditions (with regard to existing impervious surfaces) are acceptable to be used as base conditions for the future design of the site's stormwater management system.

All work is proposed within existing disturbed portions of the 100-foot Buffer Zone. Two (2) declining trees are proposed to be removed as part of the project. No mitigation for tree removal is proposed under this application. However, the Applicant has committed to providing an extensive planting and revegetation plan as part of a future Notice of Intent for the construction of the new Hillside School. At the closest point, an erosion control barrier will be installed at a minimum distance of 10 feet from the BVW.

The Commission voted to issue a Waiver for work within the 25-foot Buffer Zone under the Needham Wetlands Protection Bylaw. No mitigation is required as the work will result in an improvement to the Buffer Zone.

The Commission finds that the work can be conditioned to protect the Interests of the MA Wetlands Protection Act and the Needham Wetlands Protection Bylaw.

SPECIAL CONDITIONS:

GENERAL

- 1. Except where modified by the following conditions, all work shall be performed in accordance with the plans and the Notice of Intent referenced above.
- 2. The Needham Conservation Commission reserves the right to enter upon the premises to inspect the work for compliance with the Order of Conditions.
- 3. The Contractor and/or Applicant may be fined for any applicable non-compliance with the conditions contained herein. This may include a non-criminal penalty of up to \$200.00 per day, per violation issued under the Needham Wetlands Protection Bylaw.
- 4. If any change is intended to be made in the work permitted hereunder, the Applicant shall submit a written request to the Commission with plans that reflect the proposed changes. The Commission shall review said request and plans, and may require the applicant to submit a request for amendment to the Order of Conditions. No changes shall be made prior to said written request to the Commission and approval thereof. Failure to comply with this condition shall be deemed a violation of the Order and may result in the issuance of non-criminal penalties of up to \$200.00 per day.
- 5. If any change is made, altered or revised without prior approval of the Commission, or if erosion, siltation or other adverse impact to the Resource occurs, the Commission may impose additional conditions as necessary to protect the interests of the Wetlands Protection Act and the Town Wetlands Bylaw.
- 6. The boundaries of Bordering Vegetated Wetlands are approved, as shown on the approved plan set. This Order makes no determination on the limits of Bordering Land Subject to Flooding.

PRE-CONSTRUCTION

- 7. A copy of the approved plans, the Notice of Intent, and this Order of Conditions must be provided to the Contractor prior to the commencement of work.
- A sign shall be displayed at the site not less than two square feet or more than three square feet in size bearing the words "Massachusetts Department of Environmental Protection (or, "MassDEP") File Number 234-754."
- 9. The Owner must provide the Commission with the name, address, e-mail and telephone/fax number of the person responsible for site supervision and compliance with this Order.
- 10. Erosion controls shall consist of those specified on the approved plan set and shall be installed in locations as shown on the plan set, and in accordance with the manufacturer's instructions. Any substitute erosion control barrier must be approved by the Conservation Commission or their Agent prior to installation. No work may proceed until the Conservation Commission or their Agent has inspected and approved the installation of the erosion control barrier.
- 11. Prior to commencing any activity subject to this Order, the Applicant and contractor(s) shall meet with the Conservation Commission or their Agent at the project site to review this Order of Conditions. At (or prior to) this meeting the applicant shall submit evidence that this Order has been filed at the Registry of Deeds. At the meeting, the DEP file number sign and erosion control barrier will be available for inspection by the Conservation Commission or their Agent.
- 12. The Applicant shall notify the Conservation Office at least 3 business days before any work begins (781-455-7550 x248).

CONSTRUCTION

13. All demolition debris and contaminated soils shall be removed from the site and disposed of in accordance with applicable regulations. At no time shall any debris be buried or otherwise disposed of on the site.

- 14. Removal of contaminated soils shall be overseen by a qualified Licensed Site Professional. Copies of reports documenting removal of contaminated soils shall be provided to the Commission for their files.
- 15. The Contractor shall provide suitable protection of any inlets that drain to wetland resource areas and/or the Town drainage system. Particular attention shall be paid to the pipe that drains directly to the farm pond on the site.
- 16. The seed mix described on Sheet C3.01 is not acceptable for the areas proposed to be permanently stabilized and shall not be used. Prior to application, the Contractor shall submit specifications of a seed mix suitable for the conditions of the areas to be stabilized. The Commission or their designee shall approve the proposed seed mix prior to use.
- 17. No equipment is permitted beyond the limits of the erosion control barrier. If debris is to be removed from areas downgradient of the barrier, it shall be done by hand.
- 18. The Applicant shall remove all silt caught by the erosion control barrier periodically. In no event shall the silt be allowed to collect to a height greater than six inches.
- 19. The erosion control barrier must be regularly inspected by the Applicant and be continually maintained in good condition until all upgradient areas have been permanently stabilized with vegetation or crushed stone and all construction activities are completed. No erosion controls may be removed without the approval of the Commission or their Agent.
- 20. At no time shall silt or sediment be allowed to enter the resource area. The Commission must be notified within 24 hours if any silt or sediment enters the resource area.
- 21. No fueling or maintenance of vehicles shall be allowed within the Buffer Zone.
- 22. Any stockpiled soil or similar material must be enclosed within an erosion control barrier or covered by a secured tarp to prevent erosion or siltation into the Resource Area or undisturbed buffer zone.
- 23. No construction materials, debris, leaves, or other materials shall be deposited within the Resource Area or downgradient of the limit of work.
- 24. In the event that earthwork ceases for more than 30 days, all exposed soils must be stabilized with a temporary vegetative cover, straw mulch, or other method of erosion control accepted by the Massachusetts Department of Environmental Protection.

POST-CONSTRUCTION

- 25. A Certificate of Compliance Request shall be submitted in writing on WPA Form 8A. An As-Built plan showing the regraded area pertaining to the previous enforcement issue, signed and stamped by a Professional Engineer or Registered Land Surveyor, must be submitted to the Commission at the time a Certificate of Compliance is requested. This plan shall be accompanied by a separate certificate signed by a Registered Surveyor or Professional Engineer stating that all work has been completed strictly in accordance with the Order of Conditions. If such work has not been so completed, this Certificate must describe any deviations from the plans as approved by the Commission. All documents shall be submitted in hard copy and digital format.
- 26. It shall be presumed that any work or alteration, which includes, but is not limited to, building, grading, clearing, dumping of leaves or other landscaping debris or other materials, mowing or in any way disturbing the areas protected by the Act and By-law that is inconsistent with, or not specifically authorized by, this Order of Conditions shall require the filing of a new Notice of Intent, and the issuance of an Order of Conditions from the Conservation Commission. This condition shall survive the issuance of a Certificate of Compliance.

| | F | IML ASS | OCIATES | GEC | PROBE | LOG | |
|--------|--------------------|----------------|---|------------------------|----------------|--------------------|------------------------|
| PROJ | ECT: | 585 Central A | Avenue Owen's Poultry Farm | BORING NO. <u>GP-1</u> | | | |
| LOCA | ATION: | Needham, M | Ā | PAGE 1 OF | 1 | | |
| DRIL | LING CO: | Harvey Asso | ciates | DATE STARTED: | 11/2 | 11/23/15 | |
| EQUI | PMENT: | Geoprobe | | DATE FINISHED: | 11/2 | 23/15 | |
| DRIL | LED BY: | D. Harvey | | SURFACE ELEVATIO | N: | | |
| INSPI | ECTED BY: | N. Lanney | | | | | |
| | GROUND | WATER OBS | SERVATIONS | | | | CORE |
| | NOT ENC | OUNTERED: | Х | TYPE: | CASING | SAMPLER | |
| | DEPTH | STABILIZA | | SIZE ID: | Geoprobe 1" | Macro-core 2" | |
| | 2.7 | | 24/15 | PENETRATION: | 48" | 48" | |
| | | | SAMPLE DAT | A | | | |
| DEPTH | SAMPLING | | | | SAMPLE | PEN/ | HNU |
| (ft) | DEPTH FROM - TO | CHANGE (ft) | LITHOLOGY (Description | of materials) | ID | RECOV (in./in.) | (ppm) Lamp 10.7 eV. |
| | | | Topsoil | | GP-1 | 48/20 | 0 |
| | | 1.5 | | | | | |
| | | 1.5 | | | | | |
| | | + | Brown Sand and Gravel, trace silt | | | | |
| | | - | | | | | |
| | | 4 | | | GP-2 | 48/36 | 0 |
| 5.0 | | - | Gray Brown coarse to fine Sand, trace silt | | | | |
| | | ~ | | | | | |
| 505555 | | | | | | | |
| | | - | | | | | |
| | | - | | | GP-3 | 48/36 | 0 |
| anana | | 9 | | | | 10,50 | ~ |
| 10.0 | | | | | | | |
| 1010 | | - | Brown Sand and Gravel, trace silt | | | | |
| | | 11 | | | | | |
| | | 12 | Glacial Till: Gray brown Silt and Sand, trac | e gravel | • | | |
| | | + | Bottom of Geoprobe at 12 feet | | | | |
| | | - | | | | | |
| | | | | | | | |
| 15.0 | | - | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | - | | | | | |
| | | | | | | | |
| 20.0 | | - | | | | | |
| | GENERAL | REMARKS: | PID Background = 0.2 ppm | | | | |
| | | | *ND = Not Detected above instrument's detect Installed 1 inch PVC well at completion | ion limit of 0.2 ppm. | | | |
| | | | • | | | | |
| | | | | | | | |

| | H | IML ASS | OCIATES | GEO | PROBE | LOG | |
|--------|--------------------|----------------|---|-----------------------|----------------|--------------------|------------------------|
| PROJ | ECT: | 585 Central A | Avenue Owen's Poultry Farm | BORING NO. | GP-2 | | _ |
| LOCA | ATION: | Needham, MA | | PAGE 1 OF | 1 | | _ |
| DRIL | LING CO: | Harvey Asso | ciates | DATE STARTED: | 11/2 | 23/15 | _ |
| EQUI | PMENT: | Geoprobe | | DATE FINISHED: | 11/2 | 23/15 | |
| DRIL | LED BY: | D. Harvey | | SURFACE ELEVATIO | N: | | _ |
| INSPI | ECTED BY: | N. Lanney | | | | | _ |
| | GROUND | WATER OBS | SERVATIONS | | | | CORE |
| | NOT ENC | OUNTERED: | × | TVDE. | CASING | SAMPLER | |
| | DEPTH | STABILIZAT | X FION TIME | TYPE: SIZE ID: | Geoprobe 1" | Macro-core 2" | |
| | 6.5 | | 24/15 | PENETRATION: | 48" | 48" | |
| | | | SAMPLE DAT | A | | | |
| DEPTH | SAMPLING | STRATA | | | SAMPLE | PEN/ | HNU |
| (ft) | DEPTH FROM - TO | CHANGE (ft) | LITHOLOGY (Description | of materials) | ID | RECOV (in./in.) | (ppm) Lamp 10.7 eV. |
| | | 0.5 | Topsoil | | GP-1 | 48/10 | 0 |
| | | 1.5 | Gravelly Sand Fill | | | | |
| | | 2 | | | | | |
| | | | Topsoil | | - | | |
| | | | Gray Brown fine to medium Sand, trace silt | | | | |
| | | - | | | GP-2 | 48/42 | 0 |
| 5.0 | | v | | | GP-2 | 48/42 | U |
| | | | | | | | |
| Second | | | | | | | |
| | | - | | | | | |
| | | ł | | | | | |
| | | - - | | | GP-3 | 48/42 | 0 |
| ananar | | ~ | | | | | |
| 10.0 | | - | | | | | |
| | | 11 | | | | | |
| | | | | | | | |
| | | 12 | Glacial Till: Gray Silty Sand with some grav | vel | - | | |
| | | ł | Bottom of Geoprobe at 12 feet | | | | |
| | | - | 1 | | | | |
| | | | | | | | |
| 15.0 | | - | | | | | |
| | | | | | | | |
| | | - | | | | | |
| | | - | | | | | |
| | | ł | | | | | |
| | | - | | | | | |
| | | - | | | | | |
| 20.0 | | | | | | | |
| | GENERAL | REMARKS: | PID Background = 0.2 ppm *ND = Not Detected above instrument's detect Installed 1 inch PVC well at completion | ion limit of 0.2 ppm. | | | |

| | F | IML ASS | OCIATES | GEO | PROBE | LOG | |
|---------|--------------------|-------------------------|--|-----------------------|----------------|--------------------|------------------------|
| PROJ | ECT: | 585 Central A | Avenue Owen's Poultry Farm | BORING NO. GP-3 | | | |
| LOCA | ATION: Needham, MA | | PAGE 1 OF | GE 1 OF1 | | | |
| DRIL | LING CO: | Harvey Asso | ciates | DATE STARTED: | 11/2 | 23/15 | |
| EQUI | PMENT: | Geoprobe | | DATE FINISHED: | 11/2 | 23/15 | _ |
| DRIL | LED BY: | D. Harvey | | SURFACE ELEVATIO | N: | | _ |
| INSPI | ECTED BY: | | | | | | _ |
| | GROUND | WATER OBS | SERVATIONS | | | | CORE |
| | | | Y | TUDE | CASING | SAMPLER | |
| | DEPTH | OUNTERED: STABILIZAT | X FION TIME | TYPE: SIZE ID: | Geoprobe 1" | Macro-core 2" | |
| | 6.6 | | 24/15 | PENETRATION: | 48" | 48" | |
| | | | SAMPLE DAT | A | | | |
| DEPTH | SAMPLING | STRATA | | | SAMPLE | PEN/ | HNU |
| (ft) | DEPTH FROM - TO | CHANGE (ft) | LITHOLOGY (Description | of materials) | ID | RECOV (in./in.) | (ppm) Lamp 10.7 eV. |
| | | 0.5 | Topsoil | | GP-1 | 48/10 | 0 |
| | | 1.5 | Subsoil | | | | |
| | | 1.5 | | | | | |
| | | 1 | Brown coarse to fine Sand, trace silt and gr | avel | | | |
| 100000 | | | | | | | |
| | | - | | | GP-2 | 48/30 | 0 |
| 5.0 | | 5 | | | 01-2 | 48/30 | |
| | | v | | | | | |
| 50.00 M | | - | Gray Brown coarse to fine Sand and Gravel | , trace silt | | | |
| | | 7 | | | | | |
| | | - | Brown fine to medium Sand, trace silt | | | | |
| | | | brown line to meeting band, trace sit | | GP-3 | 48/36 | 0 |
| ananar | | - | | | | | |
| 10.0 | | 10.5 | | | | | |
| | | 1010 | | | | | |
| | | 12 | Glacial Till: Gray brown Silt and Sand, trac | e gravel | | | |
| | | | | | | | |
| | | - | Bottom of Geoprobe at 12 feet | | | | |
| | | - | | | | | |
| 15.0 | | | | | | | |
| | | - | | | | | |
| 10000 | | ~ | | | | | |
| | | - - | | | | | |
| | | ł | | | | | |
| | | - | | | | | |
| | | | | | | | |
| 20.0 | CENEDAL | DEMARKO | DID Deckground = 0.2 mm | | | | |
| | GENERAL | KEMAKKS: | PID Background = 0.2 ppm *ND = Not Detected above instrument's detect | ion limit of 0.2 ppm. | | | |
| | | | Installed 1 inch PVC well at completion | | | | |
| | | | | | | | |

| | H | IML ASS | OCIATES | GEO | PROBE | LOG | |
|--------|--------------------|-------------------------|---|-----------------------|----------------|--------------------|------------------------|
| PROJ | ECT: | 585 Central A | Avenue Owen's Poultry Farm | BORING NO. | GP-4 | | |
| LOCA | ATION: | ION: Needham, MA | | PAGE 1 OF | 1 | | |
| DRIL | LING CO: | Harvey Asso | ciates | DATE STARTED: | 11/2 | 23/15 | _ |
| EQUI | PMENT: | Geoprobe | | DATE FINISHED: | 11/2 | 23/15 | |
| DRIL | LED BY: | D. Harvey | | SURFACE ELEVATIO | N: | | _ |
| INSPI | ECTED BY: | | | | | | _ |
| | GROUND | WATER OBS | SERVATIONS | | | | CORE |
| | | | Y | TUDE | CASING | SAMPLER | |
| | DEPTH | OUNTERED: STABILIZAT | X TION TIME | TYPE: SIZE ID: | Geoprobe 1" | Macro-core 2" | |
| | 6.5 | | 5/2015 | PENETRATION: | 48" | 48" | |
| | | | SAMPLE DAT | A | | | |
| DEPTH | SAMPLING | STRATA | | | SAMPLE | PEN/ | HNU |
| (ft) | DEPTH FROM - TO | CHANGE (ft) | LITHOLOGY (Description | of materials) | ID | RECOV (in./in.) | (ppm) Lamp 10.7 eV. |
| | | 0.5 | Pavement | | GP-1 | 48/10 | 0 |
| | | - | Subsoil | | | | |
| | | 2 | | | | | |
| | | - | Gray brown coarse to fine Sand and Gravel | | | | |
| | | - | Gray brown coarse to fine Sand and Graver | | | | |
| | | 4 | | | CD 2 | 19/12 | 0 |
| 5.0 | | v | Gray brown medium to fine Sand, trace silt | | GP-2 | 48/42 | 0 |
| | | | | | | | |
| | | | | | | | |
| | | 7 | | | | | |
| | | + | | | | | |
| | | ~ | Gray Sand and Gravel | | GP-3 | 48/42 | 0 |
| ananar | | 9 | | | | | |
| 10.0 | | | | | | | |
| | | | Glacial Till: Gray brown Gravel and Sand, | little silt | | | |
| | | 12 | | | | | |
| | | 12 | | | | | |
| | | - | Bottom of Geoprobe at 12 feet | | | | |
| | | | | | | | |
| 15.0 | | - - | | | | | |
| 15.0 | | - | | | | | |
| - | | ~ | | | | | |
| | | - | | | | | |
| | | - | | | | | |
| | | | | | | | |
| | | | | | | | |
| 20.0 | | | | | | | |
| | GENERAL | REMARKS: | PID Background = 0.2 ppm *ND = Not Detected above instrument's detect | ion limit of 0.2 | | | |
| | | | *ND = Not Detected above instrument's detect Installed 1 inch PVC well at completion | ion limit of 0.2 ppm. | | | |
| | | | - | | | | |
| L | | | | | | | |

| | Η | ML ASS | OCIATES | GEC | PROBE | LOG | |
|--------------|-----------|-------------------------|---|------------------------|----------------|------------------|---------------|
| PROJE | CT: | 585 Central A | Avenue Owen's Poultry Farm | BORING NO. | GP-5 | | |
| LOCAT | FION: | Needham, M. | A | PAGE 1 OF | 1 | | |
| DRILL | ING CO: | Harvey Asso | ciates | DATE STARTED: | 11/2 | 23/15 | |
| EQUIP | MENT: | Geoprobe | | DATE FINISHED: | 11/2 | 23/15 | _ |
| | | D. Harvey | | SURFACE ELEVATIO | N: | | _ |
| INSPEC | | N. Lanney | | | | | _ |
| (| GROUNDV | WATER OBS | SERVATIONS | | | | CORE |
| | | | | | CASING | SAMPLER | |
| | NOT ENC | OUNTERED: STABILIZAT | | TYPE: SIZE ID: | Geoprobe 1" | Macro-core 2" | |
| | none | STABILIZA | | PENETRATION: | 48" | 48" | |
| | | | | | | | |
| DEPTH | SAMPLING | STRATA | SAMPLE DA | ГА | SAMPLE | PEN/ | HNU |
| (ft) | DEPTH | CHANGE | LITHOLOGY (Description | of materials) | ID | RECOV | (ppm) |
| | FROM - TO | (ft) | | | CD 1 | (in./in.) | Lamp 10.7 eV. |
| 4.00.0 | | 1 | Topsoil | | GP-1 | 48/30 | |
| | | 2 | Crow brown accurate to find Sound and Crown | 1 trans silt | | | |
| | | 2 | Gray brown coarse to fine Sand and Grave | i, trace sin | | | |
| | | | | | | | |
| | | 4 | | | | | |
| 5.0 | | | Bottom of Geoprobe at 4 feet. Refusal on | 3 tries | | | |
| 5.0 | | | | 5 4105 | | | |
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| anana kana | | | | | | | |
| 10.0 | | | | | | | |
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| and a second | | | | | | | |
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| | | | | | | | |
| 15.0 | | | | | | | |
| 5.00.0 | | | | | | | |
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| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| 20.0 | | | | | | | |
| | JENERAL | REMARKS: | PID Background = 0.2 ppm *ND = Not Detected above instrument's detection | tion limit of 0.2 ppm. | | | |
| | | | | 11 | | | |
| | | | | | | | |

| | H | IML ASS | OCIATES | GEC | PROBE | LOG | |
|-------|--------------------|----------------|---|------------------------|--------------------|-----------------------|------------------------|
| PROJ | ECT: | 585 Central A | Avenue Owen's Poultry Farm | BORING NO. <u>GP-6</u> | | | |
| LOCA | ATION: | Needham, M. | A | PAGE 1 OF | 1 | | |
| DRIL | LING CO: | Harvey Asso | ciates | DATE STARTED: | 11/23/15 | | |
| EQUI | PMENT: | Geoprobe | | DATE FINISHED: | 11/2 | 23/15 | |
| DRIL | LED BY: | D. Harvey | | SURFACE ELEVATIO | N: | | |
| INSPI | ECTED BY: | N. Lanney | | | | | |
| | GROUND | WATER OBS | SERVATIONS | | | | CORE |
| | NOT FNC | OUNTERED: | Х | TYPE: | CASING Geoprobe | SAMPLER Macro-core | |
| | DEPTH | STABILIZA | | SIZE ID: | 1" | 2" | |
| | none | | | PENETRATION: | 48" | 48" | |
| | | | SAMPLE DA' | l ľA | | | |
| DEPTH | SAMPLING | STRATA | | | SAMPLE | PEN/ | HNU |
| (ft) | DEPTH FROM - TO | CHANGE (ft) | LITHOLOGY (Description | of materials) | ID | RECOV (in./in.) | (ppm) Lamp 10.7 eV. |
| | | | Topsoil | | GP-1 | 48/30 | - |
| | | 1 | | | | | |
| | | 2 | Gray brown coarse to fine Sand and Grave | l, trace silt | | | |
| | | | | | | | |
| | | 4 | | | | | |
| | | | Detterm of Committee of A forth Defined on | 2 4-1 | | | |
| 5.0 | | | Bottom of Geoprobe at 4 feet. Refusal on | 3 tries | | | |
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| 10.0 | | | | | | | |
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| 15.0 | | ł | | | | | |
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| | | 1 | | | | | |
| | | | | | | | |
| | | - | | | | | |
| 20.0 | | | | | | | |
| 20.0 | GENERAL | REMARKS: | PID Background = 0.2 ppm | | | | |
| | | | *ND = Not Detected above instrument's detec | tion limit of 0.2 ppm. | | | |
| | | | | | | | |
| | | | | | | | |

| | H | IML ASS | OCIATES | GEO | PROBE | LOG | |
|---------|--------------------|---|---|------------------------|--------------------|-----------------------|------------------------|
| PROJ | ECT: | T: 585 Central Avenue Owen's Poultry Farm | | BORING NO. | | GP-7 | |
| LOCA | ATION: | : Needham, MA | | PAGE 1 OF | 1 | | |
| DRIL | LING CO: | Harvey Asso | ciates | DATE STARTED: | 11/2 | 23/15 | _ |
| EQUI | IPMENT: | Geoprobe | | DATE FINISHED: | 11/2 | 23/15 | _ |
| | | D. Harvey | | SURFACE ELEVATIO | N: | | _ |
| INSP | ECTED BY: | | | | | | _ |
| | | | SERVATIONS | | CACINIC | | CORE |
| | NOT ENC | OUNTERED: | Х | TYPE: | CASING Geoprobe | SAMPLER Macro-core | |
| | DEPTH | STABILIZA | | SIZE ID: | 1" | 2" | |
| | | | | PENETRATION: | 48" | 48" | |
| | | | SAMPLE DAT | P A | | | |
| DEPTH | SAMPLING | STRATA | | | SAMPLE | PEN/ | HNU |
| (ft) | DEPTH FROM - TO | CHANGE (ft) | LITHOLOGY (Description | of materials) | ID | RECOV (in./in.) | (ppm) Lamp 10.7 eV. |
| | | 1 | Topsoil | | GP-1 | 48/10 | 0 |
| | | 2 | Fill: Sand nad Gravel | | | | |
| | | | Topsoil | | | | |
| | | 4 | | | | | |
| | | | | 1 . 11 | GP-2 | 48/30 | 0 |
| 5.0 | | | Gray brown medium to coarse Sand and G | ravel, trace silt | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | - | | | | CD A | 40/24 | ~ |
| | | | | | GP-3 | 48/24 | 0 |
| .00.000 | | | | | | | |
| 10.0 | | | | | | | |
| | | | | | | | |
| | | 12 | | | | | |
| | | 12 | | | | | |
| | | | Bottom of Geoprobe at 12 feet | | | | |
| | | | | | | | |
| | | | | | | | |
| 15.0 | | | | | | | |
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| | | | | | | | |
| 20.0 | | | | | | | |
| | GENERAL | REMARKS: | PID Background = 0.2 ppm *ND = Not Detected above instrument's detect Installed 1 inch PVC well at completion | tion limit of 0.2 ppm. | _ | | |
| | | | | | | | |

CODE ANALYSIS NARRATIVE

The Needham Hillside Elementary School (the Project) includes the construction of a new elementary school serving grades Kindergarten through grade 5. This summary is intended to convey compliance of the completed school building project with the 9th Edition of the Massachusetts State Building Code (CMR 780) which is anticipated to be effective when the project is eligible for construction permitting.

Occupancy Characteristics

The completed project will contain classrooms for grades K through 5, administrative offices, a cafeteria (including a performance platform) and associated commercial kitchen, a gymnasium, and associated support spaces (mechanical, electrical, and storage spaces).

The occupancy of the complex will be generally classified as Use Group E (Educational) as defined in Section 305 with specific functions and occupancies defined as follows:

| Level | Function | Use Group |
|-------|-------------------------|-----------|
| | Classrooms | E |
| 1 | Gymnasium | E (1) |
| | Storage | S-1 (2) |
| | Utility & Miscellaneous | U (2)(3) |
| | Classrooms | E |
| | Offices | В (2) |
| 2 | Cafeteria | E (1) |
| | Kitchen | E (1) |
| | Media Center | E (1) |
| | Storage | S-1 (2) |

| | Utility & Miscellaneous | U (2)(3) |
|---|-------------------------|----------|
| 3 | Classrooms | E |
| | Utility & Miscellaneous | U (2)(3) |

Note 1: Assembly areas that are accessory to Group E occupancies are not considered separate occupancies (§303.1.3).

Note 2: Accessory occupancies are not required to be separated from the main occupancy (§508.2.4)

Note 3: Incidental Accessory Occupancies shall be separated from the main occupancy as described in Table 509

Physical Characteristics

The total building area of the project identified in the Code Plan Diagrams is described as follows:

| Level | Total |
|---------------|--------|
| | (SF) |
| 1 | 31,516 |
| 2 - Classroom | 39,090 |
| 3 | 19,761 |
| Totals | 90,367 |

The building heights from the grade plane to highest portion of the flat roof can be characterized as follows:

| Stories | Building Area |
|-----------|--------------------------|
| One-Story | 25' (Gymnasium) |
| | 25' (Cafeteria Platform) |

| Three-Story | 40' (Classroom) |
|-------------|-----------------|
| | |

Construction Type, Allowable Height, and Allowable Area

To satisfy the design intent with the least restrictive construction type, the school is classified as Type II B construction.

The allowable tabular building height in feet as described in table 504.3 for Type II B, Group E in a building equipped with an automatic sprinkler system is **75 feet.**

The allowable tabular building height in stories as described in table 504.4 for Type II B, Group E in a building equipped with an automatic sprinkler system is **3 stories**.

The allowable tabular area in square feet as described in table 506.2 for Type II B, Group E in a multistory building equipped with an automatic sprinkler system is **43,500 square feet**.

The frontage increase provisions of Section 506.3 are not considered as part of this evaluation since the project already complies with the allowable area with no additional increases.

Occupancy Separations & Mixed Uses

Following the calculations above for allowable area by floor of each building, individual areas of the building were classified according to their intended functions per Section 508.1 and the total aggregate areas for each use group described in "Occupancy Characteristics" above were tabulated.

At Levels 1 & 3, the aggregate area for all non-primary occupancy type do not exceed 10% of the floor area or the tabular value for the construction type, and as such, unseparated mixed uses is permitted for all occupancies included in the project in accordance with Section 508.2.

| Level 1 Occupancy Separation | | | | | | | | |
|------------------------------|-----------|--------|-------------------------------|--|--|--|--|--|
| Area | Use Group | SF | Compliance | | | | | |
| Building | | 31,516 | | | | | | |
| Primary Occupancy | E | 29,065 | | | | | | |
| Accessory | U | 1,424 | | | | | | |
| Accessory | В | 494 | | | | | | |
| Accessory | S-1 | 533 | | | | | | |
| Aggregate Accessory | | 2,451 | | | | | | |
| Accessory % | | 7.78% | Accessory Occupancies (508.2) | | | | | |

| Level 3 Occupancy Separation | | | | | | | | | |
|------------------------------|-----------|--------|-------------------------------|--|--|--|--|--|--|
| Area | Use Group | SF | Compliance | | | | | | |
| Building | | 19,761 | | | | | | | |
| Primary Occupancy | E | 19,187 | | | | | | | |
| Accessory | U | 148 | | | | | | | |
| Accessory | В | 372 | | | | | | | |
| Accessory | S-1 | 54 | | | | | | | |
| Aggregate Accessory | | 574 | | | | | | | |
| Accessory % | | 2.90% | Accessory Occupancies (508.2) | | | | | | |

At level 2, the aggregate area for all non-primary occupancy type *does* exceed 10% of the floor area or the tabular value for the construction type, requiring evaluation as separated mixed uses in accordance with Section 804. Because occupancy U has no separation requirement from occupancy E per Table 508.4, an evaluation considering U occupancies as separated indicates that level 2 can comply assuming U occupancies are separated and all other occupancies are accessory in accordance with Section 508.2.

| Level 2 Occupancy Separation | | | | | | | | | |
|------------------------------|-----------|--------|-----------------------------------|--|--|--|--|--|--|
| Area | Use Group | SF | Compliance | | | | | | |
| Building | | 39,090 | | | | | | | |
| Primary Occupancy | E | 32,459 | | | | | | | |
| Accessory | U | 2,969 | | | | | | | |
| Accessory | В | 3,358 | | | | | | | |
| Accessory | S-1 | 304 | | | | | | | |
| Aggregate Accessory | | 6,631 | | | | | | | |
| | | | Accessory Occupancies | | | | | | |
| Accessory % | | 16.96% | (Does not Comply-method not used) | | | | | | |
| Accessory % | | 9.37% | Separated U occupancy (508.4) | | | | | | |

Although U occupancies have no separation requirement from E occupancies, compliance with section 508.4.4.2 requires that the sum of the ratios of the actual building area divided by the allowable building area for each separated occupancy. As such, the

| Actual Building Area | Allowable building area | Occupancy | Ratio (Act:Allow) |
|----------------------|-------------------------|-----------|-------------------|
| 36,121 | 43,500 | E | 0.83 |
| 2,969 | 25,500 | U | 0.12 |
| | 0.95 | | |

The following Incidental Uses require separation and/or protection in accordance with Table 509:

| Incidental Use per Table 509 | Separation and/or Protection |
|---|---------------------------------|
| Furnace room where equipment is over 400,000 Btu per hour input | Automatic sprinkler system |
| Electrical rooms containing transformers over 112 1/2 Kva | 1 hour separation ¹ |
| Emergency Electrical rooms & closets | 2 hour separation ¹ |

Note 1: Separation based on NEC requirement, included for convenience

Fire Resistance Rating of Building Elements:

Fire resistance rating of building elements for type IIB construction are based on the requirements of Table 601 or by other code provisions as described below. Refer to Means of Egress section of this Summary for rating of egress components.

Primary Structural Elements

None required.

Bearing Walls

None required.

Other Exterior Walls

The building is significantly separated from any other building and therefore exterior walls are not subject to the fire resistive rating requirements based on separation distance in Table 602.

Exterior walls may be required to be rated in close proximity to exit enclosures in accordance with Section 1023.7.

Interior Walls & Partitions

No requirement per Table 601. Interior walls and partitions shall be rated based on the specific conditions outlined in the Occupancy Separations and Mixed Use, Building Separations, or Special Use & Occupancy Considerations sections of this Code Summary. Additional interior wall & partition ratings may also be required by other sections of the code and are described elsewhere in this Summary.

Barrier walls enclosing incidental occupancies indicated on table 509 do not require protection of the supporting construction per section 707.5.1, Ex. 2.

Floor Construction and Secondary Members:

None required.

Roof Construction and Secondary Members:

None required.

Means of Egress

Occupant Loads, including Assembly Spaces without fixed seating will be calculated based on Table 1004.1.2, by actual seat count for spaces with fixed seating (1004.4), or by the design occupant load where this value exceeds the tabular values in accordance with Section 1004.2. Occupant loads for individual spaces can be found on the Code Plan Diagrams.

For the sake of these calculations, General Classrooms and other instructional spaces intended to contain only loose furniture are calculated as "Classroom area" (20 net square feet per occupant). Art Studios, Music Classrooms, and other vocational or specialty instruction spaces intended to contain large amounts of fixed casework and/or equipment are calculated as "Shops and other vocational areas" (50 net square feet per occupant).

The number of required exits per story and the total egress capacity required and provided are summarized on the Code Plan Diagrams.

Two exits or exit access doorways shall be provided from all spaces with a maximum occupant load larger than 49 per Table 1006.2.1; this requirement is applicable to all general classrooms with a net

square footage over 1000 SF unless an alternative means of calculating the occupant load is reviewed and accepted by the Authority Having Jurisdiction.

Three exits shall be provided from spaces with an occupant load of 501 to 1,000 occupants, and four exits shall be provided from spaces with an occupant load greater than 1,000 occupants (1006.2.1.1). Exits shall be arranged in accordance with section 1007.1.1.

At the boiler room, largest piece of fuel fired equipment exceeds 400,000 BTU input capacity, and two exit access doorways will be required (1006.2.2.1).

The maximum length of exit access travel distance shall not exceed 250 feet in accordance with Table 1017.2.

Corridors are not required to be rated per Table 1020.1.

Corridors with a required Educational occupancy of 100 or more shall not be less than 72" wide in accordance with Table 1020.2, or not less than 44" for all other portions of the building.

Dead end corridors shall not be greater than 50' in length (1020.4 Ex. 2)

Interior exit stairways shall be enclosed with fire barriers and / or horizontal assemblies with a rating of not less than 1 hour (1023.2).

Special Occupancy & Use Considerations

Cafeteria with Performance Platform

The area identified on the plans as the Platform specifically meets the code definition of a Platform defined in section 202. Portions of section 410 related to stages, proscenium ratings, roof vents, egress from stairs, and rated separations are not applicable to the platform. The construction of the platform will comply with section 410.4.

Total occupant loads for the Cafeteria where calculated assuming concentrated seating segregated into seating "zones". The occupant load for the Platform was calculated using the 15 net square feet / occupant value from Table 1004.1.2.

The total occupant load for the Cafeteria and Platform is less than 500, and only two means of egress are required. Due to the configuration of this space exit access into the corridors is separated by at least 1/3 the total diagonal of the combined Platform plus Cafeteria area per section 1007.1.1, Ex. 2. This space will not have a designated Main Exit; however, each of the two means of egress will be sized to accommodate at least 1/2 of the occupant load in accordance with section 1029.2 such that the total width of egress will exceed 100 percent of the required width per section 1029.2 Exception.

Gymnasium

The occupant load of the gymnasium has been calculated using a conservative approach that assumes an event such as a town meeting where loose chairs are organized on the gymnasium floor. Refer to the Code Plan for total occupant load. Using this assumption, the gymnasium occupancy exceeds 500 occupants and 3 exits are required. One of these exits pass into corridors and two doors will discharge to the exterior.

Media Center

The occupant load for the Media Center has assumed portions of the space containing shelving will be classified as Stacks and the other portions will be classified as Reading Areas in accordance with table 1004.1.1.

Egress from the Spec. Office areas will be permitted to pass through the Media Center in accordance with section 1016.2, item 2.

Special Egress Considerations:

Stairways:

Stairways connecting less than 4 stories will be constructed as 1 hour fire barriers in accordance with Section 1023.2. Such stair enclosures shall be provided with 1 hour rated door assemblies as required by Table 716.5.

Where the exterior stair enclosure walls are not rated, the exterior walls that are less than 180 degrees from the unrated exterior wall of a stairway enclosure shall have a fire resistance rating of not less than 1 hour for a distance of 10 feet from the stair enclosure per section 1023.7. Openings within these walls will have a fire protection rating of $\frac{3}{4}$ hour.

The stair opening in the media center between level 2 and level 3 spaces does not connect more than 2 stories and as such complies with the provisions of Section 712.1.9.

Because the floor opening in the media center is already connecting levels 2 & 3, the level 1 cannot be open to level 2. As such, the walls surrounding the gymnasium will be constructed as a 1 hour fire barrier wall, as required by Section 713.4 for Shaft Enclosures. Openings through this wall will be protected in accordance with Section 716, specifically the requirements of Table 716.5 for "Other fire

barrier walls". Construction supporting any fire barrier walls will be protected in accordance with section 707.5.1.

Fire Protection Systems

Sprinkler systems will be provided in accordance with 903.3.2(1)(a). Such systems will be NFPA 13 systems as required by Section 903.3.1.1

Sprinklers will not be provided in the elevator machine room per Section 903.2 Exception 2. Specific areas exempted from fire protection under section 903.3.1.1.1 require the approval of the fire code official.

Alternative fire-extinguishing systems shall be provided for all Type I hoods in commercial kitchens per section 904.2.2.

Because no floor level is more than 30 feet above the lowest level of fire department vehicle access, no Class III standpipes are required due to building height per section 905.3.1

Per section 905.4, Class I standpipes will be provided to improve the fire fighting operations in the following locations:

- At mid level or floor level landings of all enclosed egress stairs.
- A roof hydrant will be provided adjacent to the standpipe at Stair 2.
- Additional standpipes may be located as directed by the fire code official where the most remote portion of a floor is more than 200 feet from a hose connection.

The new school will be provided with portable fire extinguishers in accordance with Section 906.1. In addition to general portable fire distribution, additional portable fire extinguishers will be provided in the following locations:

- Within 30 feet of commercial cooking equipment.
- In the elevator machine room.
- On each floor of structure *while under construction* (to be provided by the General Contractor).
- Where required by the International Fire Code sections on Table 906.1. (No such areas have been identified in the project).
- Special hazard areas such as Science Classrooms, Tech classrooms, or other locations required by the fire code official. (No such areas have been identified in the project).

Fire alarm and detection systems will be installed in accordance with Section 907. Refer to Fire Alarm drawings for additional information and requirements.

Emergency Power & Lighting

Emergency Power shall be provided by an on-site generator and in accordance with Chapter 27 to provide the illumination levels set forth in Section 1008. Refer to Electrical drawings for additional information related to generator and egress lighting.

Plumbing Fixtures

The required plumbing fixture types and counts have been calculated based on the anticipated occupancy of the building in accordance with 248 CMR 10.00: Uniform State Plumbing Code, Table 1, and distributed throughout the buildings as indicated below:

| ants | 248 CMR Table 1: | | | | | | | |
|-----------|--------------------------------------|----------|----------|-------------|----------|--------|----------|----------------|
| Occupants | From 248 CMR, Table 1 | Female | Male | | Total | | Drinking | Jan. |
| ŏ | | toilets | toilets | urinals | Lavs | Shower | Fountain | Sink |
| 72 | Kindergarten (See notes 1, 2,) | 1 per 20 | 1 per 20 | N/AA | 1 per 20 | | 1 per 75 | 1 per floor |
| | Min. Required (10.10 (18) section h) | 2 | 2 | 0 | 4 | | 1 | 1 |
| | 1st Floor | 4(U |) (r | 0 | 4 | | | |
| | Total in project | 4(1 | ר) | 0 | 4 | | | |
| 430 | Elementary | 1 per 30 | 1 per 60 | 1 per 60 | 1 per 60 | | 1 per 75 | 1 per floor |
| | Min. Required (10.10 (18) section h) | 8 | 4 | 4 | 8 | | 6 | 3 |
| | 1st Floor - Classroom Wing | 4 | 2 | 2 | 4 | | 2 | 1 |
| | 2nd Floor - Classroom Wing | 4 | 2 | 2 | 4 | | 2 | 1 |
| | 3rd Floor - Classroom Wing | 4 | 2 | 2 | 4 | | 2 | 1 |
| | Total in project | 12 | 6 | 6 | 12 | | 6 | 3 |
| 80 | Education (Staff) | 1 per 20 | 1 per 25 | 33% | 1 per 40 | | | |
| | Min. Required (10.10 (18) section h) | 2 | 2 | n/a | 2 | | | |
| | 1st Floor (note 3) | 1 | 1 (U) | n/a | 2 | | | |
| | 2nd Floor | 1(U) | 1 | n/a | 1 | | | |
| | 3rd Floor | 1 | 0 | n/a | 1 | | | |
| | Total in project | 3 | 2 | 0 | 4 | | | |

MODULE 4 – SCHEMATIC DESIGN HILLSIDE SCHOOL

| nen | 8 | Kitchen Staff | 1 per 20 | 1 per 25 | 33% | 1 per 40 | | |
|----------------------|---|--|----------|----------|-----|----------|--|---|
| ted Kitcher Staff | | Min. Required (10:10 (18) section <i>i</i>) | 1 | 1 | 0 | 1 | | |
| Dedicated Staf | | 1st Floor | 1 | 1 | | 2 | | 1 |

| | Educational spaces used for community service per 10.10(18)(h)3 | 1 per 200 | 1 per 600 | | 1 per 200 | 1 per 200 | | 1 per 1000 | |
|-----|---|-----------|--------------|---|--------------|--------------|-------------|---------------|--|
| | | | | | | | | | |
| 535 | Level 1 - Gymnasium | 2 | | 1 | 2 | 3 | Not req. | 1 | |
| | (Within 300 feet of assembly space) | | | | | | | | |
| | Level 1 - Area B Fixtures Provided | 2 | | 1 | 2 | 4 | 1 | 2 | |
| | Additional Unisex toilet / shower room for staff use (not required) | 1(l | (ר | | n/a | 1 | 1(5) | | |
| 285 | Level 2 - Cafeteria & Platform | | 1 | 1 | 1 | 2 | | | |
| | (Within 300 feet of assembly space) | | 2 | 1 | 1 | 4 | | 2 | |

Notes: 1. Fixtures noted with post script (U) shall be designated as Unisex Toilets.

2. Unisex toilets permitted per 10.10(18)(h)(2).

3. Unisex toilet permitted by 10.10(18)(m) 3.a have been counted only once toward the required male fixture count.

4. In addition to the minimum toilet facilities for educational use, (3) additional unisex toilets are provided in self-contained Special Education Classrooms and (1) additional unisex toilet is provided in the Nurse's suite.

5. In addition to the minimum toilet facilities for educational use, (2) showers are provided. (1) will be located at level 1 near the health instructors office and (1) will be located at level 1 in a self-contained special education classroom.

Energy Efficiency

The new school building will be designed in accordance with the 2015 International Energy Code with Massachusetts Amendments.

The Project will seek compliance through the performance requirements of Section C401.2(1), incorporating the requirements of ANSI/ASHRAE / IESNA Standard 90.1-2103 as modified by C401.2.2 and C406.1.

A solar-ready zone comprised of 50% of the roof area exclusive of mandatory access areas will be indicated on the drawings in accordance with the requirements of section C402.3. The required reserved electrical space stipulated in section C402.3.6 will be provided.

In addition to the compliance path described above, the Project will be required to comply with the mandatory requirements of Section C402.5 (Air Leakage), Section C403.2 (Provisions applicable to all mechanical systems), Section C404 (Service Water Heating), Section C405.1 (General Electrical Power and Lighting Systems), Section C405.2 (Lighting Controls).

The project is provided with (2) electric car charging stations meeting the mandatory requirements of Section C405.10 (Electrical Vehicle Service Equipment Capable).

Section C402.5 - Air Leakage Thermal Envelope

A continuous air barrier complying with Section C402.5.1 will be provided for the building envelope.

The air leakage of all fenestration will be specified in accordance with the limitations described in Table C402.5.

Building entrances shall be designed with Vestibules in accordance with Section C402.5.7. Exterior doors exempt from this requirement include:

- Egress doors at Stairs 2 & 3 and the egress doors from the exterior at the Gymnasium (Section C402.5.7, Ex. 2).
- Egress doors from Cafeteria and Art Classrooms (Section C402.5.7, Ex. 4)
- The Shipping / Receiving door and Water Entry Room door. (Section 502.4.7, Ex. 2).

UTILITIES & PERMITTING

The Town of Needham is proposing to construct a new Hillside Elementary School, including a parking area, play areas, and utility services, located at 585 Central Avenue in Needham.

This narrative outlines the proposed utility items as Nitsch Engineering understands them based on Schematic Design submitted to the Town of Needham.

Utility Infrastructure:

Water:

A new 8-inch cement line ductile iron water pipe will connect to the existing water main in Central Avenue. The proposed water line will provide water for an 8-inch fire protection water service and a 6-inch domestic water service to the new building. Two (2) new fire hydrants are proposed around the new school building.

A water test was performed on Wednesday, April 20, 2016 at approximately 9:00 PM. The test was performed to determine fire flow capacity for the proposed Hillside School to be located at 585 Central Avenue.

The flow test was performed using two hydrants located on the 12" water main in Central Avenue. Using standard fire protection engineering procedure, the flow was recorded at the hydrant located northeast of the proposed building, across the street from 574 Central Avenue and the intersection with Cynthia Street. Flow was maintained through two 1 ³/₄" calibrated nozzles with flow coefficients of 1.0. The static and residual pressures were measured at the hydrant located southeast of the proposed building, adjacent to 603 Central Avenue.

A hydrant flow test determined that there is adequate pressure in the existing water system and a fire pump is not required for the proposed building fire services.

Sanitary Sewer:

There is an existing 8-inch vitrified clay sewer main in Central Avenue.

The proposed sewer services for the site will connect to this 8-inch main with two new 8-inch PVC pipes from the new school building.

A grease trap will be provided to collect effluent from the kitchen. The size of the grease trap will be determined based on Title 5 requirements for grease traps. The grease trap is sized based on the number of seats in the cafeteria and not the number of lunch servings proposed during the school day.

PRELIMINARY PERMITTING CONSIDERATIONS

WETLANDS PROTECTION ACT (310 CMR 10.00)

The Wetlands Protection Act ensures the protection of Massachusetts' inland and coastal wetlands, tidelands, great ponds, rivers, and floodplains. It regulates activities in coastal and wetlands areas, and contributes to the protection of ground and surface water quality, the prevention of flooding and storm damage, and the protection of wildlife and aquatic habitat.

Wetlands flagging has occurred for the on-site wetlands system. The site also contains a floodplain.

Work performed within resource areas or buffer zones would require a filing of a Notice of Intent (NOI) with the local Conservation Commission and the Massachusetts Department of Environmental Protection.

SURFACE WATER SUPPLY PROTECTION (310 CMR 22.20) & DEP WELLHEAD PROTECTION AREAS

The Massachusetts Department of Environmental Protection (DEP) ensures the protection of surface waters used as sources of drinking water supply from contamination by regulating land use and activities within critical areas of surface water sources and tributaries and associated surface water bodies to these surface water sources. Wellhead protection areas protect recharge areas around public water supply groundwater surfaces.

The primary source of drinking water for Needham is three gravel packed wells. These wells are located in western Needham. Water from these wells is treated before being sent to the water distribution system. These wells supply 80-90% of the Town's water. The remaining water comes from a MWRA connection to the Metro West Tunnel. The site is adjacent to the Town of Wellesley water well. The Town of Wellesley gets its drinking water from seven wells located throughout the Town, as well as from the MWRA.

A review of the Massachusetts DEP resource layers available on the MassGIS indicates the School is located within a Zone II Wellhead Protection area associated with the Town of Wellesley water supply.

NATURAL HERITAGE & ENDANGERED SPECIES PROGRAM

A review of the 13th Edition of the Massachusetts Natural Heritage Atlas prepared by the Natural Heritage and Endangered Species Program (NHESP), dated October 1, 2008, indicates that the Elementary School site is NOT located within a Priority Habitat of Rare Species or an Estimated Habitat of Rare Wildlife and that there are no vernal pools on or adjacent to the site.

FLOOD PLAIN

Based on the FEMA Flood Insurance Rate Maps for Norfolk County (Community Panel Number 25021C0036E), a portion of the Project site is currently located in Zone A, areas of approximate flooding with no base flood elevation (BFE) determined. The current Federal Emergency Management Agency (FEMA) flood contour for these parcels does not follow the existing topography. In fact, the FEMA line crosses perpendicular to multiple contour elevations on these parcels. The Town of Needham has completed a flood zone analysis and has determined that the BFE is elevation 85.0 (NGVD29). The Town of Needham's Flood Elevation of 85.0 (NGVD29) is based on over 20 years of observation and measurement within the watershed area. The determination of the BFE to elevation 85.0 (NGVD29) removes the flood zone from the majority of the parcels.

A Letter of Map Amendment (LOMA) has been filed with the LOMC Clearinghouse to adjust the limit of the flood boundary on the site to match the Town of Needham's flood elevation of 85. The LOMA Application is currently under review by FEMA.

MASSACHUSETTS ENVIRONMENTAL PROTECTION ACT (MEPA)

Development of this site does not appear to trigger any MEPA thresholds and will likely not require an ENF or EIR to be filed with MEPA. Further evaluation is required as the project proceeds to the design development phase.

US EPA NPDES

Construction activities that disturb more than one acre are regulated under the United States Environmental Protection Agency's (EPA) National Pollution Discharge Elimination System (NPDES) Program. In Massachusetts, the USEPA issues NPDES permits to operators of regulated construction sites. Regulated projects are required to develop and implement stormwater pollution prevention plans in order to obtain permit coverage.

The project will disturb more than one (1) acre and is anticipated to require this permit.

SEWER CONNECTION PERMIT (314 CMR 7.00)

New connections to sanitary sewers, increases in flow to existing sanitary sewers, and discharges from businesses that are not considered to be "industrial wastewater" are subject to state requirements based on their expected discharge volume:

- Discharges ≤ 15,000 gallons per day (gpd) will need only local approvals (no approvals by MassDEP)
- Discharges >15,000 gpd but ≤ 50,000 gpd must file a one-time certification statement with MassDEP within 60 days after the connection starts to be used
- Discharges of > 50,000 gpd must obtain a MassDEP permit before construction

PERMITTING TABLE TIMELINE

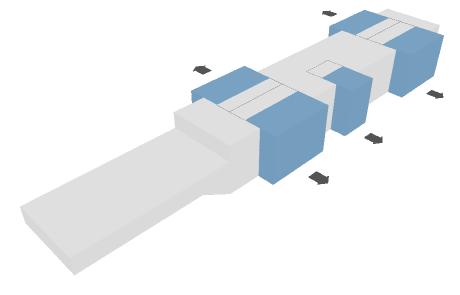
| Permit | Permitting Authority | Anticipated Filing Date | Anticipated Approval Date |
|---|--|----------------------------|---|
| Site Plan Review – Special Permit (includes drainage, utility review) | Town of Needham Planning Board | File after 100% DD | Up to 4+ months |
| National Pollutant Discharge Elimination System (NPDES) with EPA Notice of Intent (NOI) | Environmental Protection Agency (EPA) | After 100% CD | Once Submitted to EPA; Close NOI at end of Construction |
| Notice of Intent / Order of Conditions / Waiver for work in the 25-foot buffer | Town of Needham Conservation Commission | File after 100%DD | Up to 4+ months |
| Variance for Building Height | Zoning Board of Appeals | File after 100%DD | Up to 2+ months |
| Water and Sewer Approval | Town of Needham Public Works | File after 100%DD | Up to 3+ months |

MASSING STUDY

The building's massing has been designed to integrate into its surroundings and neighborhood in several key ways. First, the building's layout has been designed to take advantage of the site's existing topography. Portions of the building on the southern (higher elevations) are designed to minimize the building's height facing single family homes across Central Avenue to the East. The administration suite and the cafeteria beyond are massed as a single story and as a story and one half respectively to soften the impact of a 90,000 square foot educational building facing these abutters. The building's mass on the northern end which houses classrooms grows to three stories as the site slopes away to the wetlands resources on site. From the eastern vantage points, this sloping topography masks a portion of the building's three story mass so as to appear to be only two stories at the topographic transition and only two and one half stories at its peak.



In addition to leveraging the topography, the building's massing both breaks down the design's overall length and manages solar exposure by pulling pairs of classrooms out articulating them from the building's "spine". Doing so allows portions of the classrooms to face north/south for better solar orientation and casts shadows along the building's length to create visual interest, smaller scale, and rhythm to the building.



MODULE 4 – SCHEMATIC DESIGN HILLSIDE SCHOOL

Finally, the building's material palette has been selected to be sympathetic with and referential to the neighborhood's local vernacular, to be warm and welcoming, to further break down its scale in an effort to make the building child-friendly, and to reinforce its connection to its natural environment. A stone base is representative of many of the stone walls present in Needham and will be repeated as part of the landscape design. It is a tactile warm material that grounds the building in its agricultural heritage. A warm brick serves as the main body of the building's design. It is meant to be a contemporary expression of the classic New England building material. Finally, a modern composite rain screen material is representative of the wood clapboards visible on many Needham single family homes that surround the school site. This rain screen system is made from real wood coated with a highly resistant PVDF outer film which creates a maintenance free finish.



BUILDING SYSTEM NARRATIVES

The following sections from our consultant engineers describe the proposed building systems, sections include narratives for:

- Building Structure
- Plumbing
- HVAC
- HVAC Life Cycle Cost
- Fire Protection
- Electrical
- Technology Systems

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PROPOSED STRUCTURAL SCHEME

SUBSTRUCTURE

Foundations

Based on the recommendations of the Geotechnical Engineer, the building structure can be supported on shallow, reinforced concrete foundations. 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'-0" below grade. With the recommended bearing capacity of the soil of 3 tons/sf, a typical interior footing would be 9 ft. – 0 in. x 9 ft. - 0 in. x 24 in. deep in the three story areas and 6 ft. – 0 in. x 6 ft. – 0 in. x 18 in. deep in the single story high roof areas. 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.

The retaining wall separating the high slab-on-grade areas to the lower slab-on-grade areas would be a 2 ft. -0 in. thick reinforced concrete wall supported on 10 ft. -0 in. wide x 2 ft. -0 in. thick continuous reinforced concrete footings.

Slabs-on-Grade

Based on the recommendations of the Geotechnical Engineer, 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 $4 - \frac{1}{2}$ in. normal 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 3 in. deep, Type 'N' 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 units would be screened by a screen comprised of structural steel posts and beams. The weight of the structural steel for the roof framing is estimated to be 13 psf. The weight of structural steel for the roof screens is estimated to be 8 psf for the area of the screen.

Low Roof Structure

The roof would be a continuation of the adjacent second floor and would be similar to the typical floor construction of 4 - 1/2 in. normal 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.

Gymnasium and Cafeteria Roof Framing

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

Roof Overhangs

The roof overhangs would be a continuation of the roof construction (either concrete slabs at low roofs or metal deck at high roofs). The weight of structural steel framing for overhangs is estimated to be 15 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 proposed school structure will be divided into two parts separated by way of an expansion joint.

The lateral load resisting system for the portion housing the Gymnasium would be comprised of reinforced masonry shear walls.

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

PROPOSED PLUMBING SYSTEM

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 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, pressure reducing valve, 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 heaters, with separate storage tank. 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.
- 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.
- C. Furnish and install one duplex Natural Gas Booster System. The booster System shall be a Pre-packaged/Skid mounted Hermetic Natural Gas Boosting System as manufactured by The Spencer Turbine Company, or by Etter Engineering or approved equal. The booster system shall operate in an automatic fashion and without surge or undue vibration. It shall compress up to 5,400 ICFH of natural gas at differential (boost) pressure of 9.0 inches W.C. with inlet conditions of 70° F and 14.82 PSIA. The specific gravity of the gas is 0.6.

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.
 - <u>Water Closet</u>: High efficiency toilet, 1.28 gallon per flush, wall hung, vitreous china, siphon jet. Manually operated 1.28 gallon per flush-flush valve.
 - <u>Urinal</u>: High efficiency 0.13 gallon per flush urinal, wall hung, vitreous china. Manually operated 0.13 gallon per flush-flush valve.
 - <u>Lavatory</u>: Wall hung/countertop ADA lavatory with 0.5 GPM metering mixing faucet programmed for 10 second run-time cycle.
 - Sink: ADA stainless steel countertop sink with goosenck faucet and 0.5 GPM aerator.
 - <u>Drinking Fountain</u>: Hi-low wall mounted electric water cooler, stainless steel basin with bottle filling stations.

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 so as 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. SEWAGE EJECTORS

- A. Furnish and install one (1) complete duplex sewage ejector system for lower level plumbing fixtures. Include in this Section all materials and equipment including pumps, panels, and the fiberglass basin. Furnish and mount the pump control panel at the location shown on the Drawings. The incoming power sources to the panel, conduit from the panel to the basins, and all required conductors including power and controls between the basins and control panel are furnished under the Electrical Section. The Electrical Subcontractor will connect the pumps. Final connection of all control wiring, sequencing, and start up are to be furnished under Section 220000 and shall be performed by the pump supplier with factory trained technicians.
- B. Pump System shall be duplex, submersible, sewage ejector system complete with factory wired NEMA-1 duplex, double door, factory pre-wired control panel and mechanical float switch control system. Include stainless steel lifting cables. Pumps shall be submersible type pump for sewage service and each pump shall be rated to pump 150 GPM at 25 ft. TDH. The pump casing shall be one piece cast iron fitted with bronze impellers machined and balanced to provide the above flow characteristics. Each pump shall have removal rail system with stainless steel lifting rope. Pump motor shall be vertical, NEMA and not less than 3 HP, three (3) phase, 480 volts, 60 cycle, AC, 1750 RPM and of an air filled, hermetically sealed design. Motor shaft shall be 300 series stainless steel with keyway for positive positioning of impeller. Motor shall be UL explosion proof.
- C. System shall be furnished complete with a 48" dia. x 6' 0" deep, two-piece, fiberglass basin with anti-flotation collar, floor frame, manhole opening, and all required through floor connections. Cover shall be gasketed tight to the floor frame and shall include a separate 11'' x 15'' inspection manhole within the overall cover.

PROPOSED HVAC SYSTEM

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 9th edition 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 87 deg. F DB 74 deg. F WB

Inside: 68 deg. F +/- 2 deg F for heating, 75 deg. F +/- 2 deg F (55% RH) for cooling for areas with air conditioning. Unoccupied temperature setback will be provided.

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 gas-fired condensing boiler plant.

The new boiler plant shall be provided with (2) 1,900 MBH input boilers and (2) end suction base mounted pumps with a capacity of 380 gpm each 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.

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 plants 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 plants. 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.

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 separate double wall aluminized stainless steel (AL29-4C) vent system and shall discharge approximately 12 feet above the roof level. Final venting height will be depending 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, 25 ton outdoor, high-efficiency, air cooled chiller, primary and standby chilled water pumps with VFDs, each with a capacity of 44 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, STEAM, Spanish, 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 fully air-conditioned displacement ventilation system shall be provided to provide spatial air-conditioning and ventilation the Classroom areas.

New rooftop air handling units with 100% outside air economizer, supply and return air fans with VFDs, energy recovery wheels, gas-fired heating sections with modulating gas valve, DX cooling and hot gas reheat system and MERV 13 filtration will be provided to serve a new fully air-conditioned 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 400 and 500 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:

• (3) Three high efficiency packaged gas-fired heating, DX cooling energy recovery rooftop air handling units with a capacity of 10,200 CFM (34 Tons Cooling, 408

MBH Heating) serving the General Classrooms, Art, STEAM, Spanish, Team Commons, SPED, and Support areas.

D. Music and Adaptive P.E. Areas Heating, Ventilation, and Air-Conditioning: *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 fully air-conditioned displacement ventilation system shall be provided to provide spatial air-conditioning and ventilation the Music and Adaptive P.E. areas.

New rooftop air handling unit with 100% outside air economizer, supply and return air fans with VFDs, energy recovery wheels, gas-fired heating sections with modulating gas valve, DX cooling and hot gas reheat system and MERV 13 filtration will be provided to serve a new fully air-conditioned displacement ventilation system. Each room 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 room will be provided with two individual wall mounted displacement diffusing units between 600 and 800 CFM each (depending on room size). Return air will be drawn back to the units by ceiling return air registers located within the room 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 Music and Adaptive P.E. areas:

• A high efficiency packaged gas-fired heating, DX cooling energy recovery rooftop air handling unit with a capacity of 3,000 CFM (4 Tons Cooling, 48 MBH Heating) serving the Music areas.

E. Gymnasium: 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 area will be served by (1) one rooftop air handling unit of the recirculation design with 100% outside air economizer providing fully airconditioned displacement ventilation. The unit will be approximately 6,500 CFM and will include supply and return fans with VFDs, 260 MBH gas fired heating section with modulating capacity control, 22 ton DX cooling with hot-gas reheat, MERV 13 filtration, 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 radiant heating panels will be provided along exterior walls.

F. Administration, Nurse, Guidance 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 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, 60 MBH gas-fired heating section with modulating capacity control, MERV 13 filtration, 5 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.

G. Media Center and Reading Room 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 Media Center 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 3,500 CFM and will include supply and return fan with VFDs, 38 MBH gas-fired heating section with modulating capacity control, MERV 13 filtration, 4 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.

H. Cafeteria and Cafetria Quiet Zones, Platform, Teachers Dining: 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 fully air-conditioned displacement ventilation.

The unit will be approximately 7,000 CFM and will include supply and return fans with VFDs, 260 MBH gas fired heating section with modulating capacity control, 22 ton DX cooling with hot-gas reheat, MERV 13 filtration, 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.

I. 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 a new kitchen exhaust air fan and make-up air rooftop unit. Make-up air shall be provided by a 3,000 CFM roof mounted heating and ventilation air handling unit with modulating 200 MBH gas fired heating and and MERV 13 filtration. The exhaust fan will be sized at approximately 3,500 CFM.

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.

J. Kitchen and Custodial Support Areas: *LEED for Schools v4 Credit EA Minimum Energy Performance, Optimize Energy Performance; IEQ Minimum IAQ Performance, Minimum Acoustical Performance, Enhanced IAQ Strategies, Construction IAQ Management Plan, & IAQ Assessment*

Spatial heating and air-conditioning for the Kitchen and Custodial support areas will be served by (1) one rooftop air handling unit of the recirculation design with 100% outside air economizer. The unit will be approximately 3,500 CFM and will include supply and return fans with VFDs, 120 MBH gas fired heating section with modulating capacity control, 12 ton DX cooling with hot-gas reheat, MERV 13 filtration, and carbon dioxide controls which will reduce outside air as allowed maintaining a maximum of 800 PPM. Supply air ventilation will be provided to each space through new galvanized supply duct which will travel throughout each area to a series of ceiling mounted supply registers. Return air ductwork and air distribution devices shall be installed and shall be routed from each space to the air handling unit. 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.

K. 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 air conditioned by the displacement ventilation systems.

L. 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.

M. Testing, Adjusting, Balancing & Commissioning:

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

N. 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 project shall be commissioned per Section 018000 of the specifications.

9. NOTE 1:

During the schematic design phase, a building energy model and life cycle cost analysis shall be performed for the building HVAC system for the preferred building option. As part of the

lifecycle cost analysis, a minimum of three HVAC systems options shall be studied. The following alternate HVAC options will be studied as part of the lifecycle cost analysis:

Classrooms Requiring Full Air Conditioning:

Classrooms that require full air conditioning will be provided with supplemental cooling equipment, including high efficiency variable refrigerant AC systems.

HVAC Option 1 (Design System): Classroom Displacement (Full Air Conditioning): (with capacities described above)

Under this option, full air conditioning will be provided to the classrooms by the rooftop air handling units at described in the narrative above. It is estimated that the following rooftop air handling equipment will be required to serve the Classroom areas:

(3) Three high efficiency packaged gas-fired heating, DX cooling energy recovery rooftop air handling units with a capacity of 10,200 CFM (34 Tons Cooling, 408 MBH Heating) serving the General Classrooms, Team Commons, SPED, and Support areas

HVAC Option 2: Classroom Displacement (Dehumidification):

The displacement ventilation system for the classroom wings is 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 refrigeration equipment and hot gas reheat 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 which 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 discomfort, 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.

Each classroom will be provided with two individual wall mounted displacement diffusing units between 325 and 425 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:

(3) Three high efficiency packaged gas-fired heating, DX cooling energy recovery rooftop air handling units with a capacity of 7,500 CFM (20 Tons Dehumidification, 300 MBH Heating) serving the General Classrooms, Art & Music, Team Commons, SPED, and Support areas

The following "Engineering Economic Analysis For Hillside Elementary School" explains the Life Cycle Cost Analysis of the above noted proposed system.

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Engineering Economic Analysis For **Hillside Elementary School**

Needham, MA

March 29, 2016

Prepared for:

Prepared by:



Hillside Elementary School



EXECUTIVE SUMMARY

Section 1.0: Executive Summary

The goal of the mechanical lifecycle engineering economic analysis is to assess the performance of various mechanical systems in comparison to a baseline mechanical system.

Each option is compared to the baseline system to determine the lowest combined savings over a 30 year cycle to determine the most advantageous system considering electrical costs, gas costs, maintenance costs, and initial construction costs.

The classroom areas of the Baseline and Options 1 & 3 are simulated to maintain indoor air temperature conditions of 70°F DB for heating and 75°F DB with 55% RH for cooling. Option 2 studies a dehumidification displacement system serving the classroom areas, which will have a maximum cooling set point of 78°F DB with 55% RH. Unoccupied temperature setback of 60°F DB heating and 85°F DB cooling is provided for all options.

By comparison of each option to the baseline system, the option with the greatest total life-cycle savings is generally recommended. To further enhance controllability and overall system performance, additional options should be considered that will enhance year round temperature control and comfort at a possible marginal increase in capital cost.

Section 1.1: Mechanical System Analysis

1.1.A: Baseline Mechanical System – ASHRAE Baseline Packaged DX Cooling/Hot Water Coil Heating Rooftop Units with Variable Air Volume System

- Hot water coil heating/direct expansion cooling air handling units with energy recovery wheels with terminal variable air volume boxes with hot water reheat coils serving the classroom, adaptive P.E., administration, cafeteria, gymnasium, media center, and music room areas
- Overhead fiberglass insulated supply and return air ductwork distribution system
- Hot water coil heating/direct expansion cooling air handling unit with terminal variable air volume boxes with hot water reheat coils serving the kitchen and custodial areas
- 100% outside air hot water coil heating and ventilating make-up air handling unit and variable air volume exhaust air fan system serving the kitchen
- Limited use of radiant heating panels and unit heaters
- (2) 3,000 MBH standard-efficiency gas-fired boilers
- Hot water primary pumping with variable frequency drives
- Direct digital controls throughout

1.1.B: Mechanical System Option One – Packaged DX Cooling/Gas-Fired Heating Rooftop Units with Four-Pipe Induction Unit System

- Multiple four-pipe two coil heating and cooling induction units serving the administration areas, classrooms, and music classroom areas
- Primary air ducted directly to induction units

- 100% outside air gas-fired heating/direct expansion cooling air handling units with energy recovery wheels providing ventilation to the induction units of the administration, classroom, and media center areas
- Multiple low wall-mounted displacement diffusers located throughout the adaptive P.E., cafeteria, gymnasium, and music room areas
- Variable air volume boxes with demand ventilation control and temperature sensor to modulate airflow based on occupancy and space heating/cooling demand for the adaptive P.E., music room, and quite room areas
- Dedicated overhead galvanized ventilation distribution system feeding each displacement diffuser
- Variable air volume gas-fired heating/direct expansion cooling roof mounted air handling units with energy recovery wheels providing fully air conditioned displacement ventilation to the adaptive P.E., cafeteria, gymnasium, and music room areas
- Gas-fired heating/direct expansion cooling air handling unit serving the kitchen and custodial areas
- 100% outside air gas-fired heating and ventilating make-up air handling unit and variable air volume exhaust air fan system serving the kitchen
- Limited use of radiant heating panels and unit heaters serving non-academic areas
- Limited use of radiant heating panels and unit heaters
- (2) 1,900 MBH high-efficiency gas-fired condensing boilers power plant
- 120 ton high-efficiency air-cooled chiller plant
- Four-pipe heating/cooling piping system serving the induction units
- Two-pipe hot water distribution system serving radiant heating panels and unit heaters
- Chilled and hot water primary pumping with variable frequency drives
- Direct digital controls throughout

1.1.C: Mechanical System Option Two – Packaged DX Cooling/Gas-Fired Heating Rooftop Units with Dehumidification Displacement Ventilation System and Four-Pipe Induction Unit System

- Multiple low wall-mounted displacement diffusers at approximately 200-300 CFM (2 per classroom, 1 per support area) each for each classroom and support area
- Multiple low wall-mounted displacement diffusers located throughout the adaptive P.E., cafeteria, gymnasium, and music room areas
- Variable air volume boxes with demand ventilation control and temperature sensor to modulate airflow based on occupancy and space heating/cooling demand for each space

- Dedicated overhead galvanized ventilation distribution system feeding each displacement diffuser
- Variable air volume 100% outside air gas-fired heating/direct expansion cooling air handling units with energy recovery wheels providing dehumidified displacement ventilation to the classrooms and support areas
- Variable air volume gas-fired heating/direct expansion cooling air handling units with energy recovery wheels providing fully air conditioned displacement ventilation to the adaptive P.E., cafeteria, gymnasium, and music room areas
- Perimeter heating radiation located along exterior walls
- Multiple four-pipe two coil heating and cooling induction units serving the administration and media center areas
- Primary air ducted directly to induction units
- 100% outside air gas-fired heating/direct expansion cooling air handling units with energy recovery wheels providing ventilation to the induction units of the administration and media center areas
- Gas-fired heating/direct expansion cooling air handling unit serving the kitchen and custodial areas
- 100% outside air gas-fired heating and ventilating make-up air handling unit and variable air volume exhaust air fan system serving the kitchen
- Limited use of radiant heating panels and unit heaters serving non-academic areas
- (2) 1,900 MBH high-efficiency gas-fired condensing boilers power plant
- 25 ton high-efficiency air-cooled chiller plant
- Four-pipe heating/cooling piping system serving induction units
- Two-pipe hot water distribution system serving radiant heating panels and unit heaters
- Chilled and hot water primary pumping with variable frequency drives
- Direct digital controls throughout

1.1.D: Mechanical System Option Three – Packaged DX Cooling/Gas-Fired Heating Rooftop Units with Fully Air-Conditioned Displacement Ventilation System and Four-Pipe Induction Unit System

- Multiple low wall-mounted displacement diffusers at approximately 300-400 CFM (2 per classroom, 1 per support area) each for each classroom and support area
- Multiple low wall-mounted displacement diffusers located throughout the adaptive P.E., cafeteria, gymnasium, and music room areas
- Variable air volume boxes with demand ventilation control and temperature sensor to modulate airflow based on occupancy and space heating/cooling demand for each space

- Dedicated overhead galvanized ventilation distribution system feeding each displacement diffuser
- Variable air volume gas-fired heating/direct expansion cooling roof mounted air handling units with energy recovery wheels providing fully air conditioned displacement ventilation to the classroom, adaptive P.E., cafeteria, gymnasium, and music room areas
- Perimeter heating radiation located along exterior walls
- Multiple four-pipe two coil heating and cooling induction units serving the administration and media center areas
- Primary air ducted directly to induction units
- 100% outside air gas-fired heating/direct expansion cooling air handling units with energy recovery wheels providing ventilation to the induction units of the administration and media center areas
- Gas-fired heating/direct expansion cooling air handling unit serving the kitchen and custodial areas
- 100% outside air gas-fired heating and ventilating make-up air handling unit and variable air volume exhaust air fan system serving the kitchen
- Limited use of radiant heating panels and unit heaters serving non-academic areas
- (2) 1,900 MBH high-efficiency gas-fired condensing boilers power plant
- 25 ton high-efficiency air-cooled chiller plant
- Four-pipe heating/cooling piping system serving induction units
- Two-pipe hot water distribution system serving radiant heating panels and unit heaters
- Chilled and hot water primary pumping with variable frequency drives
- Direct digital controls throughout

Section 1.2: Mechanical System Analysis Conclusion

The variable air volume air handling unit system is selected as the baseline system since it is an ASHRAE Standard 90.1 baseline system that results in a low installed cost and relatively energy efficient system. Unfortunately, the selection results in overall ownership costs that in some cases are higher when compared to the alterative systems primarily relating to the increased annual operating and maintenance costs. The option comparison of each alternative system to the baseline assesses the benefits of improved systems with potentially reduced combined operating costs and improved thermal comfort with the goal of selecting the system with the highest ownership savings over the 30 year study period.

Annual electrical and gas consumption is calculated thru the results of a thermal dynamic heat transfer analysis utilizing Department of Energy (DOE-2)/eQuest software with all architectural data provided by Dore & Whittier, Inc.

The building envelope reflects Dore & Whittier's energy efficient design. The roof has R-30 continuous insulation and the walls have R-19.5 continuous insulation. Windows have a U-Value of 0.4 and a S.C. of 0.43 (S,E,W) & 0.53 (N).

Utility cost data for electricity was obtained from utility bills of the existing school provided by the town at an average of \$0.1891/kWh. Utility cost data for natural gas is based on typical rates from the local utility providers at \$1.30/therm.

The "Building Life-Cycle" analysis includes future worth of each system option considered using standard industry discount, inflation, and interest rates.

Our observations of the Mechanical System Payback Summary suggest that Option 2, a dehumidification displacement ventilation system, represents the lowest life cycle cost by yielding an approximate \$611,353 savings over the 30 year study period with an instant payback as it has the lowest installed cost of the options studied.

It should be noted that the classroom areas served by dehumidification displacement ventilation in Option 2 are simulated with a cooling setpoint of 78°F DB and 55% RH. If a full air conditioned system is desired for the classrooms that will maintain cooling setpoints of 75°F DB (max 55% RH) year round, a fully air-conditioned displacement ventilation system represented as Option 3 also results in an instant payback with an approximate \$362,908 savings over the 30 year study period.

Note:

The values indicated above are based on energy modelling performed for system comparison purposes only. Our office strongly recommends adding a 30% safety factor to the calculated values of this report for budgeting purposes to account for potential variances to the actual operation of the building. Per ASHRAE Standard 90.1-2010:

Neither the proposed building performance nor the baseline building performance are predictions of actual energy consumption or costs for the proposed design after construction. Actual experience will differ from these calculations due to variations such as occupancy, building operation and maintenance, weather, energy use not covered by this procedure, changes in energy rates between design of the building and occupancy, and the precision of the calculation tool.



Hillside 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/direct expansion cooling VAV RTU system with energy recovery wheels (where code required) with terminal VAV boxes with hot water reheat coils 2. Standard efficiency gas-fired boiler plant | \$3,419,500 | 456,370 | 2,659.9 | \$86,299 | \$34,578 | \$120,877 | \$1.31 | 45.8 | \$30,675 | \$151,552 | - | - | - |

| 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. Hot/chilled water coil induction units 2. Gas-fired heating/direct expansion cooling 100% O.A. ventilating units with energy recovery serving induction units 3. Gas-fired heating/direct expansion cooling VAV ventilating units with energy recovery with terminal VAV boxes with CO2/temperature/humidity controls providing full air-conditioning displacement ventilation 4. High efficiency gas-fired condensing boiler plant 5. High efficiency air-cooled chiller plant | \$3,510,950 | 458,610 | 2,232.1 | \$86,723 | \$29,018 | \$115,741 | \$1.26 | 41.3 | \$28,000 | \$143,741 | \$7,811 | \$105,335 | 13 |
| 2 | 1. <u>Dehumidification</u> displacement ventilation diffusers and perimeter hot water heating radiation 2. Gas-fired heating/dx cooling 100% O.A. VAV ventilating units with energy recovery with terminal VAV boxes with CO2/temperature/humidity controls providing dehumidification displacement ventilation 3. Gas-fired heating/dx cooling 100% O.A. ventilating units with energy recovery with terminal chilled/hot water coil induction units 4. High efficiency gas-fired condensing central boiler plant 5. High efficiency air-cooled chiller plant | \$3,134,400 | 437,070 | 2,078.7 | \$82,649 | \$27,023 | \$109,672 | \$1.19 | 38.8 | \$29,325 | \$138,997 | \$12,555 | \$611,353 | N/A**** |
| 3 | 1. <u>Full air-conditioning</u> displacement ventilation diffusers and perimeter hot water heating radiation 2. Gas-fired heating/direct expansion cooling VAV entilating units with energy recovery with terminal VAV boxes with CO2/temperature/humidity controls providing <u>full air-conditioning</u> displacement ventilation 3. Gas-fired heating/dx cooling 100% O.A. ventilating units with energy recovery with terminal chilled/hot water coil induction units 4. High efficiency gas-fired condensing central boiler plant 5. High efficiency air-cooled chiller plant | \$3,361,450 | 439,490 | 2,106.3 | \$83,107 | \$27,382 | \$110,489 | \$1.20 | 39.2 | \$29,325 | \$139,814 | \$11,738 | \$362,908 | N/A**** |

* Gross capital investment based upon in-house cost estimate utilizing cost data from similar past projects and industry standard estimating references. Costs have been estimated for system comparison purposes only and do not incorporate

Gross capital investment based upon in-house cost estimate utilizing cost data from similar past projects and industry standard estimating references. Costs have been all supplemental/independent HVAC systems, overhead and profit).
 *** Combined expense savings is the difference between the combined annual expense of the baseline and system in comparison.
 **** Total life-cycle savings is based on a 30 year study period.
 ***** Discounted payback years is based yon BLCCS Life Cycle Analysis.
 ********** Discounted payback never reached because system is more efficient and/or less expensive than baseline system.

LIFE CYCLE ANALYSES

NIST BLCC 5.3-15: Comparative Analysis

Consistent with Federal Life Cycle Cost Methodology in OMB Circular A-94

Base Case: Baseline - VAV

Alternative: Option 1 - Induction Units

General Information

| File Name: | C:\Users\keith_lane\BLCC 5\projects\Hillside Elementary School.xml |
|----------------------------|---|
| Date of Study: | Tue Mar 29 16:04:28 EDT 2016 |
| Project Name: | Hillside Elementary School |
| Project Location: | Massachusetts |
| Analysis Type: | OMB Analysis, Non-Energy Project |
| Analysis Purpose: | Public Investment or Regulatory Analysis |
| Analyst: | Keith Lane |
| Base Date: | September 1, 2018 |
| Service Date: | September 1, 2018 |
| Study Period: | 30 years 0 months(September 1, 2018 through August 31, 2048) |
| Discount Rate: | 4.3% |
| Discounting Convention: | End-of-Year |

Comparison of Present-Value Costs

PV Life-Cycle Cost

| | Base Case | Alternative | Savings from Alternative |
|---|--------------|-------------|-----------------------------|
| Initial Investment Costs: | | | |
| Capital Requirements as of Base Date | \$3,419,500 | \$3,510,950 | -\$91,450 |
| Future Costs: | | | |
| Energy Consumption Costs | \$3,143,695 | \$3,004,776 | \$138,919 |
| Energy Demand Charges | \$0 | \$0 | \$0 |
| Energy Utility Rebates | \$0 | \$0 | \$0 |
| Water Costs | \$0 | \$0 | \$0 |
| Recurring and Non-Recurring OM&R Costs | \$663,566 | \$605,700 | \$57,866 |
| Capital Replacements | \$0 | \$0 | \$0 |
| Residual Value at End of Study Period | \$0 | \$0 | \$0 |
| | | | |
| Subtotal (for Future Cost Items) | \$3,807,262 | \$3,610,476 | \$196,785 |
| | | | |
| Total PV Life-Cycle Cost | \$7,226,762 | \$7,121,426 | \$105,335 |

Net Savings from Alternative Compared with Base Case

| PV of Non-Investment Savings | \$196,785 |
|---------------------------------|-----------|
| - Increased Total Investment | \$91,450 |
| | |
| Net Savings | \$105,335 |

Savings-to-Investment Ratio (SIR)

SIR = 2.15

Adjusted Internal Rate of Return

AIRR = 7.00%

Payback Period

Estimated Years to Payback (from beginning of Service Period)

| Simple Payback occurs in year | 10 |
|-----------------------------------|----|
| Discounted Payback occurs in year | 13 |

Energy Savings Summary

Energy Savings Summary (in stated units)

| Energy | Average | Annual | Consumption | Life-Cycle |
|----------------|-------------------|-------------------|---------------|--------------------|
| Туре | Base Case | Alternative | Savings | Savings |
| Electricity | 456,370.0 kWh | 458,610.0 kWh | -2,240.0 kWh | -67,196.9 kWh |
| Natural Gas | 26,599.0 Therm | 22,321.0 Therm | 4,278.0 Therm | 128,334.1 Therm |

Energy Savings Summary (in MBtu)

| Energy | Average | Annual | Consumption | Life-Cycle |
|----------------|-----------------|-----------------|-------------|------------------|
| Туре | Base Case | Alternative | Savings | Savings |
| Electricity | 1,557.2 MBtu | 1,564.8 MBtu | -7.6 MBtu | -229.3 MBtu |
| Natural Gas | 2,659.9 MBtu | 2,232.1 MBtu | 427.8 MBtu | 12,833.5 MBtu |

Emissions Reduction Summary

| Energy | Average | Annual | Emissions | Life-Cycle |
|--------|-----------|-------------|-----------|------------|
| Туре | Base Case | Alternative | Reduction | Reduction |

BLCC Report

Electricity

| e e | | | | |
|----------------|------------------|------------------|--------------|------------------|
| CO2 | 281,003.48 kg | 282,382.73 kg | -1,379.25 kg | -41,375.58 kg |
| SO2 | 780.43 kg | 784.26 kg | -3.83 kg | -114.91 kg |
| NOx | 244.81 kg | 246.01 kg | -1.20 kg | -36.05 kg |
| Natural Gas | | | | |
| CO2 | 140,492.51 kg | 117,896.66 kg | 22,595.85 kg | 677,844.48 kg |
| SO2 | 1,133.82 kg | 951.46 kg | 182.36 kg | 5,470.42 kg |
| NOx | 117.87 kg | 35.33 kg | 82.55 kg | 2,476.26 kg |
| Total: | | | | |
| CO2 | 421,495.99 kg | 400,279.39 kg | 21,216.60 kg | 636,468.91 kg |
| SO2 | 1,914.25 kg | 1,735.72 kg | 178.53 kg | 5,355.51 kg |
| NOx | 362.68 kg | 281.34 kg | 81.34 kg | 2,440.21 kg |

NIST BLCC 5.3-15: Comparative Analysis

Consistent with Federal Life Cycle Cost Methodology in OMB Circular A-94

Base Case: Baseline - VAV

Alternative: Option 2 - Dehumidification VAV Displacement

General Information

| File Name: | C:\Users\keith_lane\BLCC 5\projects\Hillside Elementary School.xml |
|----------------------------|---|
| Date of Study: | Tue Mar 29 16:04:45 EDT 2016 |
| Project Name: | Hillside Elementary School |
| Project Location: | Massachusetts |
| Analysis Type: | OMB Analysis, Non-Energy Project |
| Analysis Purpose: | Public Investment or Regulatory Analysis |
| Analyst: | Keith Lane |
| Base Date: | September 1, 2018 |
| Service Date: | September 1, 2018 |
| Study Period: | 30 years 0 months(September 1, 2018 through August 31, 2048) |
| Discount Rate: | 4.3% |
| Discounting Convention: | End-of-Year |

Comparison of Present-Value Costs

PV Life-Cycle Cost

| | Base Case | Alternative | Savings from Alternative |
|---|--------------|-------------|-----------------------------|
| Initial Investment Costs: | | | |
| Capital Requirements as of Base Date | \$3,419,500 | \$3,134,400 | \$285,100 |
| Future Costs: | | | |
| Energy Consumption Costs | \$3,143,695 | \$2,846,645 | \$297,050 |
| Energy Demand Charges | \$0 | \$0 | \$0 |
| Energy Utility Rebates | \$0 | \$0 | \$0 |
| Water Costs | \$0 | \$0 | \$0 |
| Recurring and Non-Recurring OM&R Costs | \$663,566 | \$634,363 | \$29,203 |
| Capital Replacements | \$0 | \$0 | \$0 |
| Residual Value at End of Study Period | \$0 | \$0 | \$0 |
| | | | |
| Subtotal (for Future Cost Items) | \$3,807,262 | \$3,481,008 | \$326,253 |
| | | | |
| Total PV Life-Cycle Cost | \$7,226,762 | \$6,615,408 | \$611,353 |

Net Savings from Alternative Compared with Base Case

| PV of Non-Investment Savings | \$326,253 |
|---------------------------------|-----------|
| - Increased Total Investment | \$285,100 |
| | |
| | - |
| Net Savings | \$611,353 |

NOTE: Meaningful SIR, AIRR and Payback can not be computed unless incremental savings and total savings are both positive.

Energy Savings Summary

Energy Savings Summary (in stated units)

| Energy | Average | Annual | Consumption | Life-Cycle |
|----------------|-------------------|-------------------|---------------|--------------------|
| Туре | Base Case | Alternative | Savings | Savings |
| Electricity | 456,370.0 kWh | 437,070.0 kWh | 19,300.0 kWh | 578,973.6 kWh |
| Natural Gas | 26,599.0 Therm | 20,787.0 Therm | 5,812.0 Therm | 174,352.0 Therm |

Energy Savings Summary (in MBtu)

| Energy | Average | Annual | Consumption - | Life-Cycle |
|----------------|-----------------|-----------------|------------------|------------------|
| Туре | Base Case | Alternative | Savings | Savings |
| Electricity | 1,557.2 MBtu | 1,491.3 MBtu | 65.9 MBtu | 1,975.5 MBtu |
| Natural Gas | 2,659.9 MBtu | 2,078.7 MBtu | 581.2 MBtu | 17,435.3 MBtu |

Emissions Reduction Summary

| Energy | Average | Annual | Emissions - | Life-Cycle |
|----------------|------------------|------------------|----------------|---------------|
| Туре | Base Case | Alternative | Reduction | Reduction |
| Electricity | | | | |
| CO2 | 281,003.48 kg | 269,119.78 kg | 11,883.71 kg | 356,494.93 kg |
| SO2 | 780.43 kg | 747.42 kg | 33.00 kg | 990.09 kg |
| NOx | 244.81 kg | 234.46 kg | 10.35 kg | 310.58 kg |
| Natural Gas | | | | |
| CO2 | 140,492.51 kg | 109,794.27 kg | 30,698.24 kg | 920,905.13 kg |
| SO2 | 1,133.82 kg | 886.07 kg | 247.74 kg | 7,432.00 kg |
| NOx | 117.87 kg | 32.90 kg | 84.97 kg | 2,549.09 kg |

BLCC Report

Total:

| CO2 | 421,495.99 kg | 378,914.04 kg | 42,581.95 kg | 1,277,400.06 kg |
|-----|------------------|------------------|--------------|--------------------|
| SO2 | 1,914.25 kg | 1,633.50 kg | 280.75 kg | 8,422.09 kg |
| NOx | 362.68 kg | 267.35 kg | 95.33 kg | 2,859.66 kg |

NIST BLCC 5.3-15: Comparative Analysis

Consistent with Federal Life Cycle Cost Methodology in OMB Circular A-94

Base Case: Baseline - VAV

Alternative: Option 3 - Full AC VAV Displacement

General Information

| File Name: | C:\Users\keith_lane\BLCC 5\projects\Hillside Elementary School.xml |
|----------------------------|---|
| Date of Study: | Tue Mar 29 16:05:05 EDT 2016 |
| Project Name: | Hillside Elementary School |
| Project Location: | Massachusetts |
| Analysis Type: | OMB Analysis, Non-Energy Project |
| Analysis Purpose: | Public Investment or Regulatory Analysis |
| Analyst: | Keith Lane |
| Base Date: | September 1, 2018 |
| Service Date: | September 1, 2018 |
| Study Period: | 30 years 0 months(September 1, 2018 through August 31, 2048) |
| Discount Rate: | 4.3% |
| Discounting Convention: | End-of-Year |

Comparison of Present-Value Costs

PV Life-Cycle Cost

| | Base Case | Alternative | Savings from Alternative |
|---|--------------|-------------|-----------------------------|
| Initial Investment Costs: | | | |
| Capital Requirements as of Base Date | \$3,419,500 | \$3,361,450 | \$58,050 |
| Future Costs: | | | |
| Energy Consumption Costs | \$3,143,695 | \$2,868,040 | \$275,655 |
| Energy Demand Charges | \$0 | \$0 | \$0 |
| Energy Utility Rebates | \$0 | \$0 | \$0 |
| Water Costs | \$0 | \$0 | \$0 |
| Recurring and Non-Recurring OM&R Costs | \$663,566 | \$634,363 | \$29,203 |
| Capital Replacements | \$0 | \$0 | \$0 |
| Residual Value at End of Study Period | \$0 | \$0 | \$0 |
| | | | |
| Subtotal (for Future Cost Items) | \$3,807,262 | \$3,502,403 | \$304,858 |
| | | | |
| Total PV Life-Cycle Cost | \$7,226,762 | \$6,863,853 | \$362,908 |

Net Savings from Alternative Compared with Base Case

| PV of Non-Investment Savings | \$304,858 |
|---------------------------------|-----------|
| - Increased Total Investment | -\$58,050 |
| | |
| Net Savings | \$362,908 |

NOTE: Meaningful SIR, AIRR and Payback can not be computed unless incremental savings and total savings are both positive.

Energy Savings Summary

Energy Savings Summary (in stated units)

| Energy | Average | Annual | Consumption - | Life-Cycle |
|----------------|-------------------|-------------------|------------------|--------------------|
| Туре | Base Case | Alternative | Savings | Savings |
| Electricity | 456,370.0 kWh | 439,490.0 kWh | 16,880.0 kWh | 506,376.9 kWh |
| Natural Gas | 26,599.0 Therm | 21,063.0 Therm | 5,536.0 Therm | 166,072.4 Therm |

Energy Savings Summary (in MBtu)

| Energy | Average | Annual | Consumption - | Life-Cycle |
|----------------|-----------------|-----------------|------------------|------------------|
| Туре | Base Case | Alternative | Savings | Savings |
| Electricity | 1,557.2 MBtu | 1,499.6 MBtu | 57.6 MBtu | 1,727.8 MBtu |
| Natural Gas | 2,659.9 MBtu | 2,106.3 MBtu | 553.6 MBtu | 16,607.3 MBtu |

Emissions Reduction Summary

| Energy | Average | Annual | Emissions | Life-Cycle |
|----------------|------------------|------------------|--------------|---------------|
| Туре | Base Case | Alternative | Reduction | Reduction |
| Electricity | | | | |
| CO2 | 281,003.48 kg | 270,609.86 kg | 10,393.63 kg | 311,794.53 kg |
| SO2 | 780.43 kg | 751.56 kg | 28.87 kg | 865.94 kg |
| NOx | 244.81 kg | 235.75 kg | 9.05 kg | 271.63 kg |
| Natural Gas | | | | |
| CO2 | 140,492.51 kg | 111,252.06 kg | 29,240.44 kg | 877,173.23 kg |
| SO2 | 1,133.82 kg | 897.84 kg | 235.98 kg | 7,079.06 kg |
| NOx | 117.87 kg | 33.34 kg | 84.54 kg | 2,535.98 kg |
| Total: | | | | |

BLCC Report

| CO2 | 421,495.99 kg | 381,861.92 kg | 39,634.07 kg | 1,188,967.76 kg |
|-----|------------------|------------------|--------------|--------------------|
| SO2 | 1,914.25 kg | 1,649.40 kg | 264.85 kg | 7,945.01 kg |
| NOx | 362.68 kg | 269.09 kg | 93.59 kg | 2,807.62 kg |

COST ESTIMATES

| | GARCIA • GALU | SKA • DESO U | | PROJECT: Hillside Elementary School | | | |
|--|--|---------------------|---|-------------------------------------|------------|------------------------------|--|
| 9(; | 3/U Faunce Corner Road, Dartmouth, MA U2/47-1217 | | JOB NO: 89406900 CLIENT: Dore & Whittier, Inc. | | | | |
| | | | | | , Inc. | | |
| Baseline - ASHRAE Standard DX Cooling/HW Coil Heating Rooftop Units with VAV System | | | DATE: | 3/29/2016 | BY: KL | | |
| ITEM C | DF WORK | NO. | UNIT PRICE | AREA | PRICE/S.F. | TOTAL | |
| VAV's w/ hot wate | er reheat coil | | | | | | |
| RTU-1: Classrooi | m \//\/.w/ ED\/ | 109 | \$1,500 | | | \$ 163,500.00 | |
| | | 15,000 CFM | \$13/CFM | | | \$ 195,000.00 | |
| RTU-2: Classrool | m VAV w/ ERV | 15,000 CFM | \$13/CFM | | | \$ 195,000.00 | |
| RTU-3: Classroo | m VAV w/ ERV | | | | | | |
| RTU-4: Music/P.E | E. VAV w/ ERV | 15,000 CFM | \$13/CFM | | | \$ 195,000.00 | |
| RTU-5: Gym VA\ | / w/ ERV | 5,000 CFM | \$14/CFM | | | \$ 70,000.00 | |
| RTU-6: Admin. V | AV w/ ERV | 7,500 CFM | \$13/CFM | | | \$ 97,500.00 | |
| RTU-7: Media Ce | enter VAV w/ ERV | 6,000 CFM | \$13/CFM | | | \$ 78,000.00 | |
| | | 5,000 CFM | \$14/CFM | | | \$ 70,000.00 | |
| RIU-8: Caté/Plat | form VAV w/ ERV | 7,000 CFM | \$13/CFM | | | \$ 91,000.00 | |
| RTU-9: Custodial | & Kitchen VAV AC | 3,500 CFM | \$12/CFM | | | \$ 42,000.00 | |
| MAU-1: Kitchen N | /lake-Up Air Unit | | | | | | |
| (2) 3,000 MBH St Gas-Fired Boilers | andard-Efficiency | 3,000 CFM | \$9/CFM \$36,000 | | | \$ 27,000.00 \$ 72,000.00 | |
| Pumps (HHW) in | cluding VFD's | 2 | \$5,500 | | | \$ 11,000.00 | |
| HHW Piping & In | sulation | £ | ψ0,000 | 92,000 | \$4.0 | \$ 368,000.00 | |
| Ductwork includir Dampers, & Gen Systems | | | | , | | | |
| Controls | | | | 92,000 | \$12.0 | \$ 1,104,000.00 | |
| Split System Duc | tless Cooling Units | | | 92,000 | \$6.5 | \$ 598,000.00 | |
| Exhaust Fans (M | isc. Areas) | 3 | \$7,500 | | | \$ 22,500.00 | |
| | | | | | | \$ 20,000.00 | |
| | | | | | TOTAL | \$ 3,419,500.00 | |
| TOTAL (\$/FT²) | | | | \$ 37.17 | | | |

Cost estimates have been derived for system comparison purposes only. Estimates do not necessarily include HVAC systems and equipment that would typically be required for all system options studied; example: supplemental cooling systems for elevator machine rooms, tel/data rooms, etc. and radiation heating for unoccupied areas such as storage rooms, corridors, vestibules, etc. Estimates do not include project general system costs; example: testing and balancing, commissioning, coordination, as built drawings, etc.

| 30 Fame Come Read, balaxies, M.XVV 197 CLIENT: Dor & Whittier, Inc. DATE: 329/2016 BY: KL DATE: 329/2016 BY: KL ITEM OF WORK NO. UNIT PRICE AREA PRICEIS.F. TOTAL Induction Unit System DATE: 329/2016 BY: KL INTEM OF WORK NO. UNIT PRICE AREA PRICEIS.F. TOTAL INTEM OF WORK NO. UNIT PRICE AREA PRICEIS.F. TOTAL INTEM OF WORK S 25,500 S 3.9,00 CLIENT: DOTAL S 25,500 CLIENT: DOTAL S 3.9,00 CLIENT: DOTAL DOTAL S 25,00 S 3.9,00 CLIENT: <th <="" colspan="2" th=""><th>GARCIA • GALU</th><th>ISKA • DESOL</th><th></th><th>PROJECT:</th><th>tary School</th></th> | <th>GARCIA • GALU</th> <th>ISKA • DESOL</th> <th></th> <th>PROJECT:</th> <th>tary School</th> | | GARCIA • GALU | ISKA • DESOL | | PROJECT: | tary School |
|---|--|-----------|---------------|------------------|-----------------------------|---------------|-------------|
| CLIENT: Dore & Whittier, Inc. Option 1 - DX Cooling/Gas-Fired Heating Rootog DATE: 3/29/2016 BY: KL DATE: 3/29/2016 BY: KL Induction Unit Switem 182 \$1,400 \$2,54,86 AC Displacement Diffuser 182 \$1,400 \$2,638 AC Displacement Diffuser 3 \$850 \$2,638 Assemblies 31 \$850 \$2,638 VAV Box with Demand Ventilation 6 \$1,500 \$3,9,00 RTU-1: Classroom DOAS w/ ERV \$3,9,00 \$3,9,00 \$3,9,00 RTU-2: Classroom DOAS w/ ERV \$3,000 CFM \$13/CFM \$3,9,00 RTU-3: Classroom DOAS w/ ERV \$3,000 CFM \$13/CFM \$3,9,00 RTU-4: Music/P.E. VAV AC 3,000 CFM \$13/CFM \$3,9,00 RTU-4: Music/P.E. VAV AC \$3,000 CFM \$13/CFM \$4,500 RTU-6: Qm VAV AC Displacement \$4,500 CFM \$13/CFM \$4,500 RTU-8: Admin. 100% O.A. DOAS w/ ENV \$3,600 CFM \$14/CFM \$4,500 RTU-8: Cade/Platform VAV AC \$3,600 CFM | GARCIA • GALUSKA • DESOUSA Consulting Engineers Inc. 370 Faunce Comer Road, Dartmouth, MA 02747-1217 | | | | | | |
| Units with Induction Unit System DATE: 3/29/2016 BY: KL ITEM OF WORK NO. UNIT PRICE AREA PRICE/S.F. TOTAL Induction Units 182 \$1.400 \$2.54.80 \$2.54.80 AC Displacement Diffuser Assembles 31 \$850 \$2.63.81 \$2.63.81 VAV Box with Demand Ventilation Controls 6 \$1.500 \$9.00 \$9.00 RTU-1: Classroom DOAS w/ ERV 7,500 CFM \$13/CFM \$9.7,50 \$9.7,50 RTU-3: Classroom DOAS w/ ERV 7,500 CFM \$13/CFM \$9.7,50 \$9.7,50 RTU-4: Musio/P.E. VAV AC Displacement wit ERV & CV \$9.00 \$9.7,50 \$9.7,50 RTU-4: Musio/P.E. VAV AC 0.000 CFM \$13/CFM \$9.7,50 \$9.7,50 RTU-3: Giasroom DOAS w/ ERV 7,500 CFM \$13/CFM \$9.7,50 \$9.7,50 RTU-4: Musio/P.E. VAV AC 0.000 CFM \$14/CFM \$9.7,50 \$9.7,50 RTU-4: Musio/P.E. VAV AC 0.500 CFM \$14/CFM \$9.00 \$9.00 RTU-5: Genofind YAV AC 0.000 CA \$ | | | | | | | |
| Induction Units 182 \$1,400 \$254,80 AC Displacement Diffuser Assembiles 31 \$850 \$26,35 VAV Box with Demand Ventilation Controls 6 \$1,500 \$9,00 RTU-1: Classroom DOAS w/ ERV 7,500 CFM \$13/CFM \$9,7,50 RTU-2: Classroom DOAS w/ ERV 7,500 CFM \$13/CFM \$9,7,50 RTU-3: Classroom DOAS w/ ERV 7,500 CFM \$13/CFM \$97,50 RTU-4: Musio/P.E. VAV AC 000 CFM \$13/CFM \$97,50 Displacement w/ ERV & DCV 3,000 CFM \$14/CFM \$97,50 RTU-3: Classroom DOAS w/ ERV 4,500 CFM \$14/CFM \$97,50 RTU-4: Musio/P.E. VAV AC 0,500 CFM \$14/CFM \$97,50 RTU-5: Gym VAV AC Displacement w/ ERV & DCV 3,000 CFM \$14/CFM \$94,50 RTU-8: Cafe/Platform VAV AC 3,500 CFM \$14/CFM \$94,50 DAS w/ ERV 3,500 CFM \$13/CFM \$91,00 RTU-8: Cafe/Platform VAV AC 3,500 CFM \$13/CFM \$91,00 DAL9: Cafe/Platform VAV AC 3,500 CFM \$13/CFM | | | DATE: | 3/29/2016 ВҮ: KL | | | |
| 182 \$1,400 \$2,54,80 AC Displacement Diffuser Assembles 31 \$850 \$2,6,30 VAV Box with Demand Ventilation Controls 6 \$1,500 \$9,00 RTU-1: Classroom DOAS w/ ERV 7,500 CFM \$13/CFM \$9,00 RTU-2: Classroom DOAS w/ ERV 7,500 CFM \$13/CFM \$9,750 RTU-3: Classroom DOAS w/ ERV 7,500 CFM \$13/CFM \$9,750 RTU-4: Musio/P.E. VAV AC 7,500 CFM \$13/CFM \$9,750 Displacement W ERV & DCV 3,000 CFM \$13/CFM \$9,750 RTU-4: Musio/P.E. VAV AC 0,500 CFM \$13/CFM \$9,750 Displacement W ERV & DCV 3,000 CFM \$13/CFM \$9,42,00 RTU-5: Media Center 100% O.A. DOAS W \$13/CFM \$9,42,00 \$9,00 RTU-7: Media Center 100% O.A. DOAS W \$14/CFM \$9,00 \$9,00 RTU-9: Custodial & Kitchen VAV AC 3,000 CFM \$13/CFM \$9,00 RTU-9: Custodial & Kitchen VAV AC 3,000 CFM \$13/CFM \$9,00 RTU-9: Custodial & Kitchen VAV AC \$13/CFM \$9,00 | | NO. | UNIT PRICE | AREA | PRICE/S.F. | TOTAL | |
| AC Displacement Diffuser Assemblies 31 \$850 \$ 26.35 VAV Box with Demand Ventilation 6 \$1,500 FM RTU-1: Classroom DOAS w/ ERV 7,500 CFM \$13/CFM \$ 97.50 RTU-2: Classroom DOAS w/ ERV 7,500 CFM \$13/CFM \$ 97.50 RTU-3: Classroom DOAS w/ ERV 7,500 CFM \$13/CFM \$ 97.50 RTU-3: Classroom DOAS w/ ERV 7,500 CFM \$13/CFM \$ 97.50 RTU-4: Music/P.E. VAV AC Displacement w/ ERV & DCV 3,000 CFM \$13/CFM \$ 97.50 RTU-5: Classroom DOAS w/ ERV 7,500 CFM \$13/CFM \$ 97.50 RTU-4: Music/P.E. VAV AC Displacement w/ ERV & DCV 3,000 CFM \$14/CFM \$ 42.00 RTU-6: Cgm VAV AC Displacement w/ ERV & DCV 6,500 CFM \$14/CFM \$ 8.42.00 RTU-6: Cate/Platform VAV AC Displacement w/ ERV 3,500 CFM \$14/CFM \$ 4.9.00 RTU-7: Media Center 100% O.A. DOAS w/ ERV RTU-8: Cate/Platform VAV AC Displacement w/ ERV 8 DCV 7,000 CFM \$14/CFM \$ 9.9.00 RTU-9: Custodial & Kitchen VAV AC Displacement w/ ERV 8, DCV 7,000 CFM \$12/CFM \$ 12/CFM RTU-9: Custodial & Kitchen VAV AC 2,1.900 MBH High-Efficiency Gas- Fried Condensing Boilers 2 S47,900 \$ 11,00 Pumps (CHW) including VFD's 2 Numps (CHW) including GRD's, Dampers, & General Exhaust Systems Controls | Induction Units | | | | | | |
| VAV Box with Demand Ventilation Controls 6 \$1,500 \$9,00 RTU-1: Classroom DOAS w/ ERV 7,500 CFM \$13/CFM \$9,00 RTU-2: Classroom DOAS w/ ERV 7,500 CFM \$13/CFM \$9,7,50 RTU-3: Classroom DOAS w/ ERV 7,500 CFM \$13/CFM \$9,7,50 RTU-3: Classroom DOAS w/ ERV 7,500 CFM \$13/CFM \$9,7,50 RTU-4: Music/P E: VAV AC 000 CFM \$13/CFM \$9,7,50 Displacement w/ ERV & DCV 3,000 CFM \$13/CFM \$9,7,50 RTU-5: Gym VAV AC Displacement w/ ERV & DCV 6,500 CFM \$13/CFM \$9,42,00 RTU-7: Media Center 100% O.A. DOAS w/ ERV \$9,00 \$14/CFM \$9,00 RTU-7: Media Center 100% O.A. DOAS w/ ERV \$14/CFM \$9,00 \$9,00 RTU-9: Custodial & Kitchen VAV AC 3,500 CFM \$14/CFM \$9,00 \$9,00 RTU-9: Custodial & Kitchen VAV AC 3,500 CFM \$12/CFM \$9,00 \$1,00 RTU-9: Custodial & Kitchen VAV AC \$9,00 \$1,200 \$9,00 \$1,00 \$1,00 (2) 1,900 MBH High-Efficien | | | | | | | |
| RTU-1: Classroom DOAS w/ ERV 7,500 CFM \$13/CFM \$97,50 RTU-2: Classroom DOAS w/ ERV 7,500 CFM \$13/CFM \$97,50 RTU-3: Classroom DOAS w/ ERV 7,500 CFM \$13/CFM \$97,50 RTU-3: Classroom DOAS w/ ERV 7,500 CFM \$13/CFM \$97,50 RTU-4: Music/P E, VAV AC 7,500 CFM \$13/CFM \$97,50 RTU-5: Gym VAV AC Displacement \$97,50 \$97,50 \$97,50 RTU-6: Admin. 100% O.A. DOAS w/ \$14/CFM \$98,60 \$98,60 RTU-7: Media Center 100% O.A. \$14/CFM \$98,60 \$91,00 RTU-8: Café/Platform VAV AC 3,500 CFM \$13/CFM \$91,00 RTU-9: Custodial & Kitchen VAV AC \$13/CFM \$91,00 \$91,00 RTU-9: Custodial & Kitchen VAV AC \$3,000 CFM \$13/CFM \$91,00 RTU-9: Custodial & Kitchen VAV AC \$900 CFM \$13/CFM \$92,000 \$92,000 (2) 1,900 MBH High-Efficiency Gas- Fred Condensing Boilers 2 \$55,500 \$11,00 120 Ton Air-Cooled Chiller 2 \$5,500 \$11,00 120 Ton Air-Cooled Chiller 2 \$5,500 \$11,00 | | | | | | | |
| RTU-2: Classroom DOAS w/ ERV 7,500 CFM \$13/CFM \$97,50 RTU-3: Classroom DOAS w/ ERV 7,500 CFM \$13/CFM \$97,50 RTU-4: Music/P.E. VAV AC 597,50 \$97,50 Displacement w/ ERV & DCV 3,000 CFM \$14/CFM \$42,00 RTU-5: Gym VAV AC Displacement w/ ERV & DCV \$13/CFM \$97,50 RTU-5: Gym VAV AC Displacement w/ ERV & DCV \$13/CFM \$94,50 RTU-7: Media Center 100% O.A. DOAS w/ \$14/CFM \$94,50 RTU-8: Café/Platform VAV AC \$14/CFM \$94,50 DoSay (ERV 3,500 CFM \$13/CFM \$91,00 RTU-9: Custodial & Kitchen VAV AC \$13/CFM \$91,00 \$91,00 RTU-9: Custodial & Kitchen VAV AC \$13/CFM \$91,00 \$91,00 (2) 1,900 MBH High-Efficiency Gas-Fired Condensing Boilers \$91,00 \$92,000 \$11,00 (2) 1,900 MBH High-Efficiency Gas-Fired Condensing Boilers \$92,000 \$11,00 \$92,000 \$11,00 120 Ton Air-Cooled Chiller 120 tons \$1,250/ton \$11,00 \$120,000 \$11,00 120 Ton Air-Cooled Chiller 2 \$5,500 \$11,00 \$120,000 \$10,00 | RTU-1: Classroom DOAS w/ ERV | | | | | | |
| RTU-3: Classroom DOAS w/ ERV 7,500 CFM \$13/CFM \$ 97,50 RTU-4: Music/P.E. VAV AC 3,000 CFM \$14/CFM \$ 42,00 RTU-5: Gym VAV AC Displacement \$ 5,000 CFM \$13/CFM \$ 84,50 RTU-6: Admin. 100% O.A. DOAS w/ ERV \$ 13/CFM \$ 84,50 \$ 63,00 RTU-7: Media Center 100% O.A. \$ 4,500 CFM \$ 14/CFM \$ 63,00 RTU-8: Café/Platform VAV AC \$ 3,500 CFM \$ 14/CFM \$ 91,00 RTU-9: Custodial & Kitchen VAV AC \$ 3,500 CFM \$ 13/CFM \$ 91,00 RTU-9: Custodial & Kitchen VAV AC \$ 3,500 CFM \$ 12/CFM \$ 42,00 MAU-1: Kitchen Make-Up Air Unit \$ 3,000 CFM \$ 91/CFM \$ 27,00 (2) 1,900 MBH High-Efficiency Gas- Fired Condensing Bollers \$ 2 \$ 47,900 \$ 95,80 Pumps (CHW) including VFD's \$ 2 \$ 5,500 \$ 11,00 120 Ton Air-Cooled Chiller \$ 2 \$ 5,500 \$ 11,00 Pumps (CHW) including VFD's \$ 2 \$ 5,500 \$ 11,00 120 Ton Air-Cooled Chiller \$ 2 \$ 368,00 \$ 368,00 CHW Piping & Insulation including \$ 92,000 \$ 3,000 \$ 368,00 <td>RTU-2: Classroom DOAS w/ ERV</td> <td>7,500 CFM</td> <td>\$13/CFM</td> <td></td> <td></td> <td>\$ 97,500.00</td> | RTU-2: Classroom DOAS w/ ERV | 7,500 CFM | \$13/CFM | | | \$ 97,500.00 | |
| RTU-4: Music/P.E. VAV AC 3,000 CFM \$14/CFM \$ 42,00 RTU-5: Gym VAV AC Displacement 6,500 CFM \$13/CFM \$ 84,50 RTU-6: Admin. 100% O.A. DOAS W/ 4,500 CFM \$13/CFM \$ 63,00 RTU-7: Media Center 100% O.A. 3,500 CFM \$14/CFM \$ 63,00 RTU-8: Café/Platform VAV AC 3,500 CFM \$14/CFM \$ 91,00 Displacement W ERV & DCV 7,000 CFM \$13/CFM \$ 91,00 RTU-9: Custodial & Kitchen VAV AC 3,500 CFM \$12/CFM \$ 42,00 MAU-1: Kitchen Make-Up Air Unit 3,000 CFM \$12/CFM \$ 27,00 (2) 1,900 MBH High-Efficiency Gas-Fired Condensing Boilers 2 \$47,900 \$ 95,80 Pumps (HHW) including VFD's 2 \$5,500 \$ 11,00 120 Ton Air-Cooled Chiller 2 \$5,500 \$ 11,00 Pumps (CHW) including VFD's 2 \$5,500 \$ 11,00 Pumps (CHW) including GRD's, Dampers, & General Exhaust Systems 92,000 \$10.0 \$ 920,00 Controls 92,000 \$7.0 \$ 644,00 92,000 \$7.0 \$ 644,00 | RTU-3: Classroom DOAS w/ ERV | 7,500 CFM | \$13/CFM | | | \$ 97,500.00 | |
| 3,000 CFM \$14/CFM \$ 42,00 RTU-5: Gym VAV AC Displacement W ERV & DCV 6,500 CFM \$13/CFM \$ 84,50 RTU-6: Admin. 100% O.A. DOAS W/ ERV 4,500 CFM \$14/CFM \$ 63,00 RTU-7: Media Center 100% O.A. DOAS W ERV 3,500 CFM \$14/CFM \$ 63,00 RTU-7: Media Center 100% O.A. DOAS W ERV 3,500 CFM \$14/CFM \$ 91,00 RTU-8: Café/Platform VAV AC Displacement W ERV & DCV 7,000 CFM \$13/CFM \$ 91,00 RTU-9: Custodial & Kitchen VAV AC 3,500 CFM \$12/CFM \$ 91,00 MAU-1: Kitchen Make-Up Air Unit 3,000 CFM \$12/CFM \$ 92,000 Y 1900 MBH High-Efficiency Gas- Fred Condensing Boilers \$ 95,500 \$ 11,00 Yumps (HHW) including VFD's \$ 2 \$ 55,500 \$ 11,00 Yumps (CHW) including VFD's \$ 2 \$ 5,500 \$ 11,00 Yumps (CHW) including VFD's \$ 2 \$ 5,500 \$ 11,00 Yumps (CHW) including VFD's \$ 2 \$ 5,500 \$ 11,00 Yumps (CHW) including GRD's, Dampers, & General Exhaust Systems \$ 92,000 \$ 4.0 \$ 368,00 | | 7,500 CFM | \$13/CFM | | | \$ 97,500.00 | |
| 6,500 CFM \$13/CFM \$ 84,50 RTU-6: Admin. 100% O.A. DOAS w/ ERV 4,500 CFM \$14/CFM \$ 63,00 RTU-7: Media Center 100% O.A. DOAS w/ ERV 3,500 CFM \$14/CFM \$ 49,00 RTU-8: Caté/Platform VAV AC Displacement w/ ERV & DCV 7,000 CFM \$13/CFM \$ 91,00 RTU-9: Custodial & Kitchen VAV AC 3,500 CFM \$12/CFM \$ 42,00 MAU-1: Kitchen Make-Up Air Unit 3,000 CFM \$9/CFM \$ 27,00 (2) 1,900 MBH High-Efficiency Gas- Fired Condensing Boilers 2 \$47,900 \$ 95,80 Pumps (HHW) including VFD's 2 \$5,500 \$ 11,00 120 tons \$11,250/ton \$ 150,00 \$ 11,00 Pumps (CHW) including VFD's 2 \$5,500 \$ 11,00 HHW Piping & Insulation including Terminal Heating Units 92,000 \$ 44,0 \$ 368,00 CHW Piping & Insulation and Condensate 92,000 \$ 44,0 \$ 368,00 Ductwork including GRD's, Dampers, & General Exhaust Systems 92,000 \$ 7,0 \$ 644,00 Sector 92,000 \$ 7,0 \$ 644,00 \$ 92,000 \$ | RTU-5: Gym VAV AC Displacement | 3,000 CFM | \$14/CFM | | | \$ 42,000.00 | |
| 4,500 CFM \$14/CFM \$ 63,00 RTU-7: Media Center 100% O.A. DOAS w/ ERV 3,500 CFM \$14/CFM \$ 49,00 RTU-8: Café/Platform VAV AC Displacement w/ ERV & DCV 7,000 CFM \$13/CFM \$ 91,00 RTU-9: Custodial & Kitchen VAV AC 3,500 CFM \$12/CFM \$ 42,00 MAU-1: Kitchen Make-Up Air Unit 3,500 CFM \$12/CFM \$ 42,00 MAU-1: Kitchen Make-Up Air Unit 3,000 CFM \$9/CFM \$ 27,00 (2) 1,900 MBH High-Efficiency Gas- Fired Condensing Boilers 2 \$47,900 \$ 95,80 Pumps (HHW) including VFD's 2 \$5,500 \$ 11,00 120 Ton Air-Cooled Chiller 2 \$5,500 \$ 11,00 Pumps (CHW) including VFD's 2 \$5,500 \$ 11,00 Pumps (CHW) including VFD's 2 \$5,500 \$ 11,00 HHW Piping & Insulation including Terminal Heating Units 92,000 \$4.0 \$ 368,00 CHW Piping & Insulation and Condensate 92,000 \$4.0 \$ 368,00 Ductwork including GRD's, Dampers, & General Exhaust Systems 92,000 \$10.0 \$ 920,00 | RTU-6: Admin. 100% O.A. DOAS w/ | 6,500 CFM | \$13/CFM | | | \$ 84,500.00 | |
| 3,500 CFM \$14/CFM \$ 49,00 RTU-8: Café/Platform VAV AC 7,000 CFM \$13/CFM \$ 91,00 Displacement w/ ERV & DCV 7,000 CFM \$13/CFM \$ 91,00 RTU-9: Custodial & Kitchen VAV AC 3,500 CFM \$12/CFM \$ 42,00 MAU-1: Kitchen Make-Up Air Unit 3,000 CFM \$9/CFM \$ 27,00 (2) 1,900 MBH High-Efficiency Gas-Fired Condensing Boilers 2 \$47,900 \$ 95,80 Pumps (HHW) including VFD's 2 \$5,500 \$ 11,00 120 Ton Air-Cooled Chiller 2 \$5,500 \$ 11,00 Pumps (CHW) including VFD's 2 \$5,500 \$ 11,00 Pumps (CHW) including VFD's 2 \$5,500 \$ 11,00 HHW Piping & Insulation including Terminal Heating Units 92,000 \$ 44.0 \$ 368,00 CHW Piping & Insulation and Condensate 92,000 \$ 41.0 \$ 300,00 \$ 5.5 \$ 330,00 Ductwork including GRD's, Dampers, & General Exhaust Systems 92,000 \$ 7.0 \$ 644,00 92,000 \$ 7.0 \$ 644,00 92,000 \$ 7.0 \$ 644,00 </td <td>RTU-7: Media Center 100% O.A.</td> <td>4,500 CFM</td> <td>\$14/CFM</td> <td></td> <td></td> <td>\$ 63,000.00</td> | RTU-7: Media Center 100% O.A. | 4,500 CFM | \$14/CFM | | | \$ 63,000.00 | |
| 7,000 CFM \$13/CFM \$ 91,00 RTU-9: Custodial & Kitchen VAV AC 3,500 CFM \$12/CFM \$ 42,00 MAU-1: Kitchen Make-Up Air Unit 3,000 CFM \$ 99/CFM \$ 27,00 (2) 1,900 MBH High-Efficiency Gas-Fired Condensing Boilers 2 \$47,900 \$ 95,80 Pumps (HHW) including VFD's 2 \$5,500 \$ 11,00 120 Ton Air-Cooled Chiller 2 \$5,500 \$ 11,00 Pumps (CHW) including VFD's 2 \$5,500 \$ 11,00 Pumps (CHW) including VFD's 2 \$5,500 \$ 11,00 Pumps (CHW) including VFD's 2 \$5,500 \$ 11,00 HHW Piping & Insulation including Terminal Heating Units 92,000 \$4.0 \$ 368,00 CHW Piping & Insulation and Condensate 92,000 \$4.0 \$ 368,00 Ductwork including GRD's, Dampers, & General Exhaust Systems 92,000 \$10.0 \$ 920,00 Controls 92,000 \$10.0 \$ 920,00 \$ 644,00 | | 3,500 CFM | \$14/CFM | | | \$ 49,000.00 | |
| MAU-1: Kitchen Make-Up Air Unit 3,000 CFM \$9/CFM \$27,00 (2) 1,900 MBH High-Efficiency Gas-Fired Condensing Boilers 2 \$47,900 \$95,80 Pumps (HHW) including VFD's 2 \$5,500 \$11,00 120 Ton Air-Cooled Chiller 120 tons \$1,250/ton \$150,00 Pumps (CHW) including VFD's 2 \$5,500 \$11,00 120 tons \$1,250/ton \$150,00 \$10,00 Pumps (CHW) including VFD's 2 \$5,500 \$11,00 Pumps (CHW) including VFD's 2 \$5,500 \$11,00 CHW Piping & Insulation including Terminal Heating Units 92,000 \$4.0 \$368,00 CHW Piping & Insulation and Condensate 92,000 \$4.0 \$368,00 Ductwork including GRD's, Dampers, & General Exhaust Systems 92,000 \$10.0 \$920,00 Controls 92,000 \$7.0 \$644,00 \$444,00 | • | 7,000 CFM | \$13/CFM | | | \$ 91,000.00 | |
| 3,000 CFM \$9/CFM \$27,00 (2) 1,900 MBH High-Efficiency Gas- Fired Condensing Boilers 2 \$47,900 \$95,80 Pumps (HHW) including VFD's 2 \$5,500 \$11,00 120 Ton Air-Cooled Chiller 2 \$5,500 \$11,00 120 tons \$1,250/ton \$150,00 Pumps (CHW) including VFD's 2 \$5,500 \$11,00 HHW Piping & Insulation including 92,000 \$4.0 \$368,00 CHW Piping & Insulation and 92,000 \$4.0 \$368,00 Condensate 92,000 \$10.0 \$92,000 Ductwork including GRD's, Dampers, & General Exhaust Systems 92,000 \$7.0 \$644,00 92,000 \$7.0 \$644,00 \$10,00 \$10,00 \$10,00 | MAI I-1: Kitchen Make-I In Air I Init | 3,500 CFM | \$12/CFM | | | \$ 42,000.00 | |
| Fired Condensing Boilers 2 \$47,900 \$95,80 Pumps (HHW) including VFD's 2 \$5,500 \$11,00 120 Ton Air-Cooled Chiller 120 tons \$1,250/ton \$150,00 Pumps (CHW) including VFD's 2 \$5,500 \$11,00 Pumps (CHW) including VFD's 2 \$5,500 \$11,00 Pumps (CHW) including VFD's 2 \$5,500 \$11,00 HHW Piping & Insulation including Terminal Heating Units 2 \$5,500 \$11,00 CHW Piping & Insulation and Condensate 92,000 \$4.0 \$368,00 Ductwork including GRD's, Dampers, & General Exhaust Systems 92,000 \$10.0 \$920,00 Controls 92,000 \$10.0 \$920,00 \$10.0 \$920,00 Controls 92,000 \$10.0 \$920,00 \$10.0 \$920,00 Controls 92,000 \$7.0 \$644,00 \$644,00 | | 3,000 CFM | \$9/CFM | | | \$ 27,000.00 | |
| 2 \$5,500 \$11,00 120 Ton Air-Cooled Chiller 120 tons \$1,250/ton \$150,00 Pumps (CHW) including VFD's 2 \$5,500 \$11,00 2 \$5,500 \$11,00 HHW Piping & Insulation including Terminal Heating Units 92,000 \$4.0 \$368,00 CHW Piping & Insulation and Condensate 92,000 \$4.0 \$368,00 Ductwork including GRD's, Dampers, & General Exhaust Systems 92,000 \$10.0 \$920,000 Controls 92,000 \$10.0 \$920,000 \$10.0 \$920,000 Controls 92,000 \$7.0 \$644,000 \$10,000 \$10,000 \$10,000 TOTAL 1 1 1 1 1 1 1 | Fired Condensing Boilers | 2 | \$47,900 | | | \$ 95,800.00 | |
| 120 tons \$1,250/ton \$ 150,00 Pumps (CHW) including VFD's 2 \$5,500 \$ 11,00 HHW Piping & Insulation including Terminal Heating Units 2 \$5,500 \$ 368,00 CHW Piping & Insulation and Condensate 92,000 \$4.0 \$ 368,00 Ductwork including GRD's, Dampers, & General Exhaust Systems 60,000 \$5.5 \$ 330,00 Controls 92,000 \$110,0 \$ 920,000 Controls 92,000 \$7.0 \$ 644,00 | | 2 | \$5,500 | | | \$ 11,000.00 | |
| 2 \$5,500 \$11,00 HHW Piping & Insulation including Terminal Heating Units 92,000 \$4.0 \$368,00 CHW Piping & Insulation and Condensate 60,000 \$5.5 \$330,00 Ductwork including GRD's, Dampers, & General Exhaust Systems 92,000 \$10.0 \$920,000 Controls 92,000 \$10.0 \$920,000 TOTAL TOTAL TOTAL | | 120 tons | \$1,250/ton | | | \$ 150,000.00 | |
| Terminal Heating Units 92,000 \$4.0 \$368,00 CHW Piping & Insulation and Condensate 60,000 \$5.5 \$330,00 Ductwork including GRD's, Dampers, & General Exhaust Systems 92,000 \$10.0 \$920,000 Controls 92,000 \$10.0 \$920,000 \$10.0 \$920,000 Controls 92,000 \$7.0 \$644,000 \$10.0 \$10.0 \$10.0 Controls 92,000 \$7.0 \$644,000 \$10.0 | Pumps (CHW) including VFD's | 2 | \$5,500 | | | \$ 11,000.00 | |
| CHW Piping & Insulation and Condensate 60,000 \$5.5 \$ 330,00 Ductwork including GRD's, Dampers, & General Exhaust Systems 92,000 \$10.0 \$ 920,00 Controls 92,000 \$7.0 \$ 644,00 TOTAI | | | | 92,000 | \$4.0 | \$ 368,000.00 | |
| Ductwork including GRD's, Dampers, & General Exhaust Systems Controls 92,000 \$10.0 \$ 920,00 92,000 \$7.0 \$ 644,00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | | | | 60.000 | \$5.5 | | |
| Controls 92,000 \$7.0 \$ 644,00 | | | | | | | |
| ТОТАІ | Controls | | | 92,000 | \$10.0 | \$ 920,000.00 | |
| | | | | 92,000 | \$7.0 | \$ 644,000.00 | |
| | | | | | TOTAL | | |
| \$ 3,510,95 | TOTAL (\$/FT²) | | | | \$ 3,510,950.00 \$ 38.16 | | |

Cost estimates have been derived for system comparison purposes only. Estimates do not necessarily include HVAC systems and equipment that would typically be required for all system options studied; example: supplemental cooling systems for elevator machine rooms, tel/data rooms, etc. and radiation heating for unoccupied areas such as storage rooms, corridors, vestibules, etc. Estimates do not include project general system costs; example: testing and balancing, commissioning, coordination, as built drawings, etc.

| GARCIA • GALUSKA • DESOUSA Consulting Engineers Inc. | | PROJECT: Hillside Elementary School | | | |
|--|-----------|-------------------------------------|---|----------------|-----------------|
| 370 Faunce Comer Road, Darlmouth, MA 02747-1217 Option 2 - DX Cooling/Gas-Fired Heating Rooftop Unit Dehumidification Displacement Ventilation | | | JOB NO: 89406900 CLIENT: Dore & Whittier, Inc. | | |
| | | | | | |
| ITEM OF WORK | NO. | UNIT PRICE | AREA | PRICE/S.F. | TOTAL |
| Dehumidification Displacement Diffuser Assemblies | 119 | \$600 | | | \$ 71,400.00 |
| AC Displacement Diffuser Assemblies | 22 | \$850 | | | \$ 18,700.00 |
| VAV Box with Demand Ventilation Controls | 75 | \$1,500 | | | \$ 112,500.00 |
| Induction Units | 40 | \$1,400 | | | \$ 56,000.00 |
| RTU-1: Classroom VAV Dehumid. Displacement w/ ERV & DCV | 7,500 CFM | \$13/CFM | | | \$ 97,500.00 |
| RTU-2: Classroom VAV Dehumid. Displacement w/ ERV & DCV | 7,500 CFM | \$13/CFM | | | \$ 97,500.00 |
| RTU-3: Classroom VAV Dehumid. Displacement w/ ERV & DCV | 7,500 CFM | \$13/CFM | | | \$ 97,500.00 |
| RTU-4: Music/P.E. VAV AC Displacement w/ ERV & DCV | 3,000 CFM | \$14/CFM | | | \$ 42,000.00 |
| RTU-5: Gym VAV AC Displacement w/ ERV & DCV | 6,500 CFM | \$13/CFM | | | \$ 84,500.00 |
| RTU-6: Admin. 100% O.A. DOAS w/ ERV | 4,500 CFM | \$14/CFM | | | \$ 63,000.00 |
| RTU-7: Media Center 100% O.A. DOAS w/ ERV | 3,500 CFM | \$14/CFM | | | \$ 49,000.00 |
| RTU-8: Café/Platform VAV AC Displacement w/ ERV & DCV | 7,000 CFM | \$13/CFM | | | \$ 91,000.00 |
| RTU-9: Custodial & Kitchen VAV AC | 3,500 CFM | \$12/CFM | | | \$ 42,000.00 |
| MAU-1: Kitchen Make-Up Air Unit | 3,000 CFM | \$9/CFM | | | \$ 27,000.00 |
| (2) 1,900 MBH High-Efficiency Gas- Fired Condensing Boilers | 2 | \$47,900 | | | \$ 95,800.00 |
| Pumps (HHW) including VFD's | 2 | \$5,500 | | | \$ 11,000.00 |
| 25 Ton Air-Cooled Chiller | 25 tons | \$1,500/ton | | | \$ 37,500.00 |
| Pumps (CHW) including VFD's | 2 | \$5,500 | | | \$ 11,000.00 |
| HHW Piping & Insulation including Terminal Heating Units | | | 92,000 | \$4.0 | \$ 368,000.00 |
| CHW Piping & Insulation and Condensate Piping | | | 10,000 | \$5.5 | \$ 55,000.00 |
| Ductwork including GRD's, Dampers, & General Exhaust Systems | | | 92,000 | \$10.5 | \$ 966,000.00 |
| Controls | | | 92,000 | \$6.5 | \$ 598,000.00 |
| Split System Ductless Cooling Units | 3 | \$7,500 | | | \$ 22,500.00 |
| Exhaust Fans (Misc. Areas) | | | | | \$ 20,000.00 |
| | | | | TOTAL | \$ 3,134,400.00 |
| | | | - | TOTAL (\$/FT²) | \$ 34.07 |

Cost estimates have been derived for system comparison purposes only. Estimates do not necessarily include HVAC systems and equipment that would typically be required for all system options studied; example: supplemental cooling systems for elevator machine rooms, tel/data rooms, etc. and radiation heating for unoccupied areas such as storage rooms, corridors, vestibules, etc. Estimates do not include project general system costs; example: testing and balancing, commissioning, coordination, as built drawings, etc.

| GARCIA • GALUSKA • DESOUSA Consulting Engineers Inc. | | PROJECT: Hillside Elementary School | | | |
|---|------------|-------------------------------------|------------------|---------------|-----------------|
| 370 Faunce Comer Road, Dartmouth, MA 02747-1217 | | | JOB NO: 89406900 | | |
| Option 3 - DX Cooling/Gas-Fired Heating | | CLIENT: Dore & Whittier, Inc. | | | |
| Rooftop Unit Full Air Conditioning Displacement Ventilation System | | DATE: | 3/29/2016 | BY: ĸ∟ | |
| ITEM OF WORK | NO. | UNIT PRICE | AREA | PRICE/S.F. | TOTAL |
| AC Displacement Diffuser Assemblies | 141 | \$850 | | | \$ 119,850.00 |
| VAV Box with Demand Ventilation Controls | 75 | \$1,500 | | | \$ 112,500.00 |
| Induction Units | 40 | \$1,400 | | | \$ 56,000.00 |
| RTU-1: Classroom VAV AC Displacement w/ ERV & DCV | 10,200 CFM | \$13/CFM | | | \$ 132,600.00 |
| RTU-2: Classroom VAV AC Displacement w/ ERV & DCV | 10,200 CFM | \$13/CFM | | | \$ 132,600.00 |
| RTU-3: Classroom VAV AC Displacement w/ ERV & DCV | 10,200 CFM | \$13/CFM | | | \$ 132,600.00 |
| RTU-4: Music/P.E. VAV AC Displacement w/ ERV & DCV | 3,000 CFM | \$14/CFM | | | \$ 42,000.00 |
| RTU-5: Gym VAV AC Displacement w/ ERV & DCV | 6,500 CFM | \$13/CFM | | | \$ 84,500.00 |
| RTU-6: Admin. 100% O.A. DOAS w/ ERV | 4,500 CFM | \$14/CFM | | | \$ 63,000.00 |
| RTU-7: Media Center 100% O.A. DOAS w/ ERV | 3,500 CFM | \$14/CFM | | | \$ 49,000.00 |
| RTU-8: Café/Platform VAV AC Displacement w/ ERV & DCV | 7,000 CFM | \$13/CFM | | | \$ 91,000.00 |
| RTU-9: Custodial & Kitchen VAV AC | 3,500 CFM | \$12/CFM | | | \$ 42,000.00 |
| MAU-1: Kitchen Make-Up Air Unit | 3,000 CFM | \$9/CFM | | | \$ 27,000.00 |
| (2) 1,900 MBH High-Efficiency Gas- Fired Condensing Boilers | 2 | \$47,900 | | | \$ 95,800.00 |
| Pumps (HHW) including VFD's | 2 | \$5,500 | | | \$ 11,000.00 |
| 25 Ton Air-Cooled Chiller | 25 tons | \$1,500/ton | | | \$ 37,500.00 |
| Pumps (CHW) including VFD's | 2 | \$5,500 | | | \$ 11,000.00 |
| HHW Piping & Insulation including Terminal Heating Units | | | 92,000 | \$4.0 | \$ 368,000.00 |
| CHW Piping & Insulation and Condensate Piping | | | 10,000 | \$5.5 | \$ 55,000.00 |
| Ductwork including GRD's, Dampers, & General Exhaust Systems | | | 92,000 | \$11.5 | \$ 1,058,000.00 |
| Controls | | | 92,000 | \$6.5 | \$ 598,000.00 |
| Split System Ductless Cooling Units | 3 | \$7,500 | | | \$ 22,500.00 |
| Exhaust Fans (Misc. Areas) | | | | | \$ 20,000.00 |
| | | 1 | 1 | TOTAL | \$ 3,361,450.00 |
| | | | T | OTAL (\$/FT²) | . , , |

Cost estimates have been derived for system comparison purposes only. Estimates do not necessarily include HVAC systems and equipment that would typically be required for all system options studied; example: supplemental cooling systems for elevator machine rooms, tel/data rooms, etc. and radiation heating for unoccupied areas such as storage rooms, corridors, vestibules etc. Estimates do not include project general system costs; example: testing and balancing, commissioning, coordination, as built drawings etc.



GARCIA • GALUSKA • DESOUSA Consulting Engineers Inc.

370 Faunce Corner Road, Dartmouth, MA 02747-1217

HILLSIDE ELEMENTARY SCHOOL - ANNUAL MAINTENANCE COSTS

BASELINE - VAV

| UNIT TYPE | QUANTITY | COST/UNIT | ANNUAL COST |
|--------------------------|----------|-----------|-------------|
| VAV Box w/ Reheat Coil | 109 | \$75 | \$8,175 |
| Large Packaged ERV RTU's | 6 | \$2,500 | \$15,000 |
| Small Packaged ERV RTU's | 3 | \$1,700 | \$5,100 |
| H&V's | 1 | \$1,200 | \$1,200 |
| Boiler Plant | 1 | \$1,200 | \$1,200 |
| <u> </u> | | TOTAL | \$30,675 |

OPTION 1 - INDUCTION UNITS

| UNIT TYPE | QUANTITY | COST/UNIT | ANNUAL COST |
|--------------------------|----------|-----------|-------------|
| Induction Units | 182 | \$25 | \$4,550 |
| VAV Box | 6 | \$75 | \$450 |
| Large Packaged ERV RTU's | 5 | \$2,500 | \$12,500 |
| Small Packaged ERV RTU's | 4 | \$1,700 | \$6,800 |
| H&V's | 1 | \$1,200 | \$1,200 |
| Boiler Plant | 1 | \$1,000 | \$1,000 |
| Chiller Plant | 1 | \$1,500 | \$1,500 |
| | | TOTAL | \$28,000 |

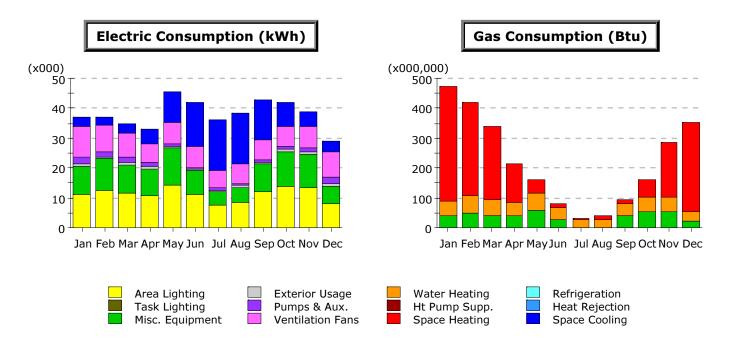
OPTION 2 - DEHUM. DISPLACEMENT

| UNIT TYPE | QUANTITY | COST/UNIT | ANNUAL COST |
|--------------------------|----------|-----------|-------------|
| VAV Box | 75 | \$75 | \$5,625 |
| Induction Units | 40 | \$25 | \$1,000 |
| Large Packaged ERV RTU's | 5 | \$2,500 | \$12,500 |
| Small Packaged ERV RTU's | 4 | \$1,700 | \$6,800 |
| H&V's | 1 | \$1,200 | \$1,200 |
| Boiler Plant | 1 | \$1,000 | \$1,000 |
| Chiller Plant | 1 | \$1,200 | \$1,200 |
| | | TOTAL | \$29,325 |

OPTION 3 - FULL AC DISPLACEMENT

| UNIT TYPE | QUANTITY | COST/UNIT | ANNUAL COST |
|--------------------------|----------|-----------|-------------|
| VAV Box | 75 | \$75 | \$5,625 |
| Induction Units | 40 | \$25 | \$1,000 |
| Large Packaged ERV RTU's | 5 | \$2,500 | \$12,500 |
| Small Packaged ERV RTU's | 4 | \$1,700 | \$6,800 |
| H&V's | 1 | \$1,200 | \$1,200 |
| Boiler Plant | 1 | \$1,000 | \$1,000 |
| Chiller Plant | 1 | \$1,200 | \$1,200 |
| | | TOTAL | \$29,325 |

ENERGY PROFILES



Electric Consumption (kWh x000)

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| Space Cool | 3.44 | 2.59 | 2.89 | 4.83 | 10.44 | 14.58 | 16.97 | 16.68 | 13.42 | 8.02 | 4.71 | 3.88 | 102.46 |
| Heat Reject. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Refrigeration | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Space Heat | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HP Supp. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Hot Water | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Vent. Fans | 10.01 | 8.73 | 8.40 | 6.57 | 7.00 | 7.00 | 6.07 | 6.58 | 6.58 | 6.43 | 7.23 | 8.51 | 89.11 |
| Pumps & Aux. | 2.17 | 1.81 | 1.77 | 1.36 | 0.93 | 0.80 | 0.74 | 0.79 | 0.78 | 0.98 | 1.45 | 1.96 | 15.53 |
| Ext. Usage | 0.88 | 0.68 | 0.75 | 0.73 | 0.52 | 0.50 | 0.52 | 0.84 | 0.82 | 0.84 | 0.85 | 0.88 | 8.82 |
| Misc. Equip. | 9.35 | 10.57 | 9.45 | 8.85 | 12.18 | 7.95 | 4.22 | 4.66 | 9.41 | 11.69 | 11.15 | 6.12 | 105.59 |
| Task Lights | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Area Lights | 11.33 | 12.55 | 11.52 | 10.77 | 14.43 | 11.04 | 7.77 | 8.62 | 11.86 | 13.87 | 13.24 | 7.86 | 134.86 |
| Total | 37.19 | 36.93 | 34.77 | 33.10 | 45.50 | 41.88 | 36.29 | 38.18 | 42.86 | 41.83 | 38.63 | 29.22 | 456.37 |

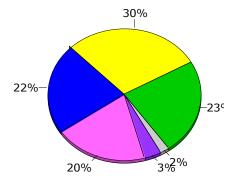
Gas Consumption (Btu x000,000)

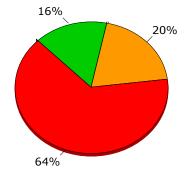
| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---------------|-------|-------|-------|-------|-------|------|------|------|------|-------|-------|-------|---------|
| Space Cool | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Heat Reject. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Refrigeration | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Space Heat | 384.1 | 313.3 | 247.9 | 130.1 | 45.3 | 15.5 | 6.5 | 12.4 | 14.1 | 57.6 | 184.0 | 299.7 | 1,710.4 |
| HP Supp. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Hot Water | 48.3 | 55.5 | 50.3 | 46.5 | 58.6 | 40.3 | 25.6 | 27.1 | 39.8 | 49.0 | 50.0 | 31.1 | 522.0 |
| Vent. Fans | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Pumps & Aux. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ext. Usage | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Misc. Equip. | 41.9 | 49.7 | 41.9 | 39.3 | 57.6 | 26.2 | 0.2 | 0.1 | 39.3 | 55.0 | 52.4 | 23.7 | 427.4 |
| Task Lights | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Area Lights | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total | 474.3 | 418.6 | 340.1 | 215.9 | 161.4 | 82.1 | 32.3 | 39.6 | 93.2 | 161.5 | 286.4 | 354.4 | 2,659.9 |

| | Electricity | Natural Gas | Steam | Chilled Water |
|---------------|-------------|-------------|-------|---------------|
| | kWh (x000) | MBtu | Btu | Btu |
| Space Cool | 102.46 | - | | |
| Heat Reject. | - | - | | |
| Refrigeration | - | - | | |
| Space Heat | - | 1,710.4 | | |
| HP Supp. | - | - | | |
| Hot Water | - | 522.0 | | |
| Vent. Fans | 89.11 | - | | |
| Pumps & Aux. | 15.53 | - | | |
| Ext. Usage | 8.82 | - | | |
| Misc. Equip. | 105.59 | 427.4 | | |
| Task Lights | - | - | | |
| Area Lights | 134.86 | - | | |
| Total | 456.37 | 2,659.9 | | |

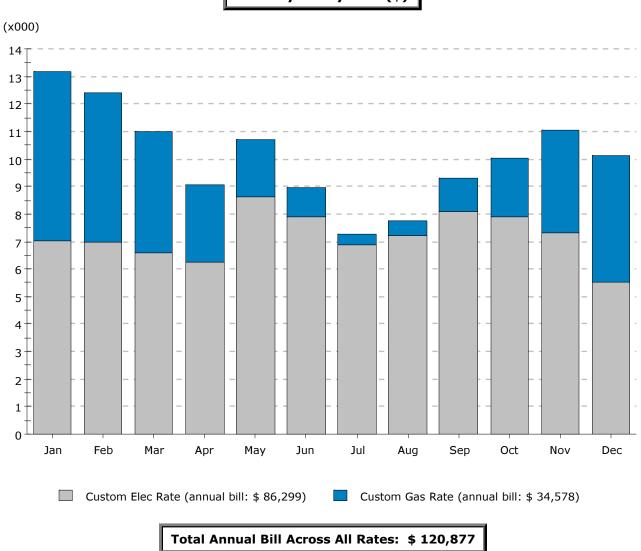
Annual Energy Consumption by Enduse



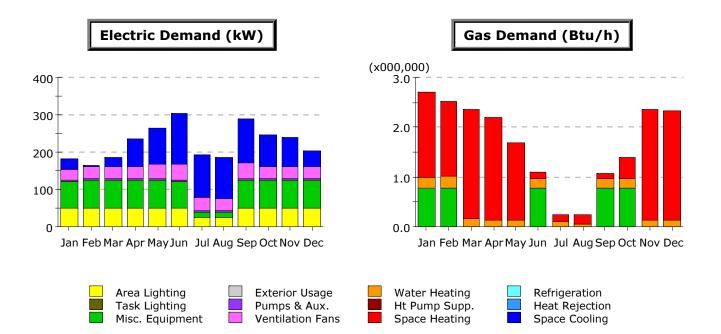




Electricity



Monthly Utility Bills (\$)

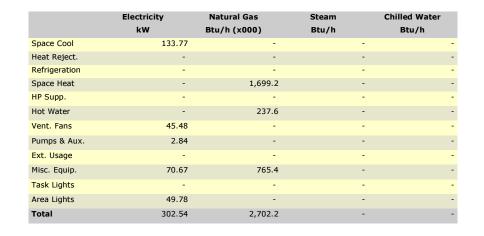


Electric Demand (kW)

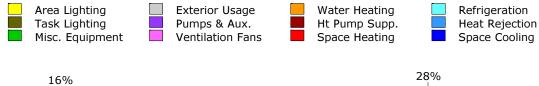
| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| Space Cool | 28.8 | 6.1 | 26.9 | 76.6 | 96.7 | 133.8 | 115.0 | 109.4 | 118.9 | 83.2 | 79.5 | 43.6 | 918.5 |
| Heat Reject. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Refrigeration | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Space Heat | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HP Supp. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Hot Water | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Vent. Fans | 30.3 | 30.3 | 30.4 | 31.5 | 38.2 | 45.5 | 35.4 | 33.9 | 41.9 | 33.6 | 30.5 | 30.5 | 412.0 |
| Pumps & Aux. | 3.2 | 3.8 | 3.1 | 2.9 | 2.9 | 2.8 | 2.8 | 2.7 | 2.8 | 2.8 | 3.0 | 3.1 | 36.1 |
| Ext. Usage | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Misc. Equip. | 70.7 | 75.7 | 75.7 | 75.7 | 75.7 | 70.7 | 13.8 | 13.8 | 75.7 | 75.7 | 75.7 | 75.7 | 774.5 |
| Task Lights | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Area Lights | 49.8 | 49.8 | 49.8 | 49.8 | 49.8 | 49.8 | 26.3 | 26.3 | 49.8 | 49.8 | 49.8 | 49.8 | 550.5 |
| Total | 182.7 | 165.7 | 185.9 | 236.5 | 263.2 | 302.5 | 193.4 | 186.2 | 289.2 | 245.0 | 238.6 | 202.7 | 2,691.6 |

Gas Demand (Btu/h x000,000)

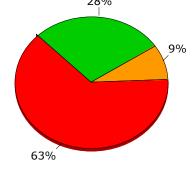
| | Jan | Feb | Mar | Apr | Мау | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| Space Cool | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Heat Reject. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Refrigeration | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Space Heat | 1.70 | 1.51 | 2.21 | 2.06 | 1.55 | 0.12 | 0.14 | 0.18 | 0.13 | 0.44 | 2.22 | 2.20 | 14.46 |
| HP Supp. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Hot Water | 0.24 | 0.25 | 0.14 | 0.14 | 0.13 | 0.21 | 0.09 | 0.05 | 0.19 | 0.19 | 0.12 | 0.13 | 1.88 |
| Vent. Fans | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Pumps & Aux. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ext. Usage | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Misc. Equip. | 0.77 | 0.77 | 0.01 | 0.01 | 0.01 | 0.77 | - | - | 0.77 | 0.77 | 0.01 | 0.01 | 3.87 |
| Task Lights | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Area Lights | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total | 2.70 | 2.52 | 2.36 | 2.21 | 1.69 | 1.10 | 0.23 | 0.23 | 1.08 | 1.40 | 2.35 | 2.34 | 20.20 |



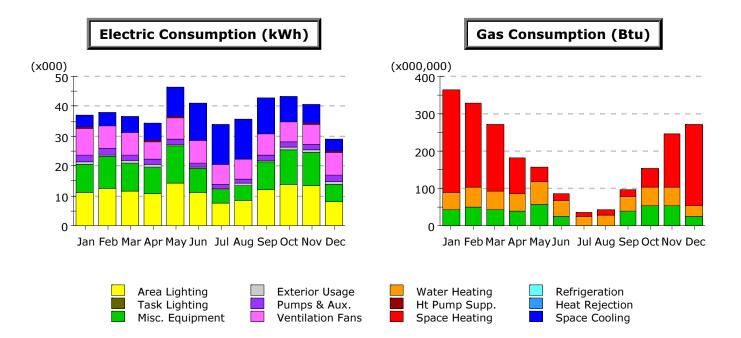
Annual Peak Demand by Enduse







Electricity



Electric Consumption (kWh x000)

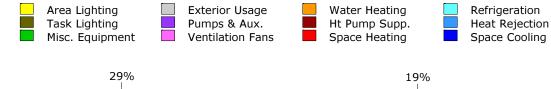
| | Jan | Feb | Mar | Apr | Мау | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| Space Cool | 4.09 | 4.19 | 4.99 | 6.01 | 10.06 | 12.60 | 13.61 | 13.08 | 11.82 | 8.36 | 6.26 | 4.08 | 99.14 |
| Heat Reject. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Refrigeration | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Space Heat | 0.45 | 0.35 | 0.33 | 0.23 | 0.10 | 0.06 | 0.03 | 0.05 | 0.05 | 0.12 | 0.24 | 0.39 | 2.40 |
| HP Supp. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Hot Water | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Vent. Fans | 8.75 | 7.58 | 7.41 | 6.16 | 7.52 | 7.47 | 6.47 | 6.76 | 7.22 | 6.74 | 6.86 | 7.43 | 86.37 |
| Pumps & Aux. | 2.31 | 1.97 | 2.01 | 1.77 | 1.71 | 1.58 | 1.42 | 1.49 | 1.47 | 1.69 | 1.88 | 2.12 | 21.42 |
| Ext. Usage | 0.88 | 0.68 | 0.75 | 0.73 | 0.52 | 0.50 | 0.52 | 0.84 | 0.82 | 0.84 | 0.85 | 0.88 | 8.82 |
| Misc. Equip. | 9.35 | 10.57 | 9.45 | 8.85 | 12.18 | 7.95 | 4.22 | 4.66 | 9.41 | 11.69 | 11.15 | 6.12 | 105.59 |
| Task Lights | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Area Lights | 11.33 | 12.55 | 11.52 | 10.77 | 14.43 | 11.04 | 7.77 | 8.62 | 11.86 | 13.87 | 13.24 | 7.86 | 134.86 |
| Total | 37.16 | 37.89 | 36.45 | 34.51 | 46.52 | 41.21 | 34.05 | 35.50 | 42.64 | 43.31 | 40.48 | 28.89 | 458.61 |

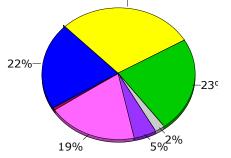
Gas Consumption (Btu x000,000)

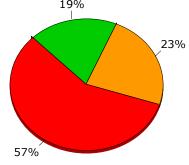
| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---------------|-------|-------|-------|-------|-------|------|------|------|------|-------|-------|-------|---------|
| Space Cool | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Heat Reject. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Refrigeration | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Space Heat | 273.5 | 224.5 | 177.6 | 97.7 | 40.6 | 18.6 | 10.6 | 14.2 | 15.6 | 49.3 | 145.7 | 215.1 | 1,283.2 |
| HP Supp. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Hot Water | 48.2 | 55.5 | 50.3 | 46.5 | 58.5 | 40.3 | 25.5 | 27.1 | 39.7 | 49.0 | 50.0 | 31.0 | 521.5 |
| Vent. Fans | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Pumps & Aux. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ext. Usage | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Misc. Equip. | 41.9 | 49.7 | 41.9 | 39.3 | 57.6 | 26.2 | 0.2 | 0.1 | 39.3 | 55.0 | 52.4 | 23.7 | 427.4 |
| Task Lights | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Area Lights | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total | 363.6 | 329.8 | 269.7 | 183.5 | 156.7 | 85.2 | 36.3 | 41.5 | 94.7 | 153.3 | 248.1 | 269.8 | 2,232.1 |

| | Electricity | Natural Gas | Steam | Chilled Water |
|---------------|-------------|-------------|-------|---------------|
| | kWh (x000) | MBtu | Btu | Btu |
| Space Cool | 99.14 | - | | |
| Heat Reject. | - | - | | |
| Refrigeration | - | - | | |
| Space Heat | 2.40 | 1,283.2 | | |
| HP Supp. | - | - | | |
| Hot Water | - | 521.5 | | |
| Vent. Fans | 86.37 | - | | |
| Pumps & Aux. | 21.42 | - | | |
| Ext. Usage | 8.82 | - | | |
| Misc. Equip. | 105.59 | 427.4 | | |
| Task Lights | - | - | | |
| Area Lights | 134.86 | - | | |
| Total | 458.61 | 2,232.1 | | |

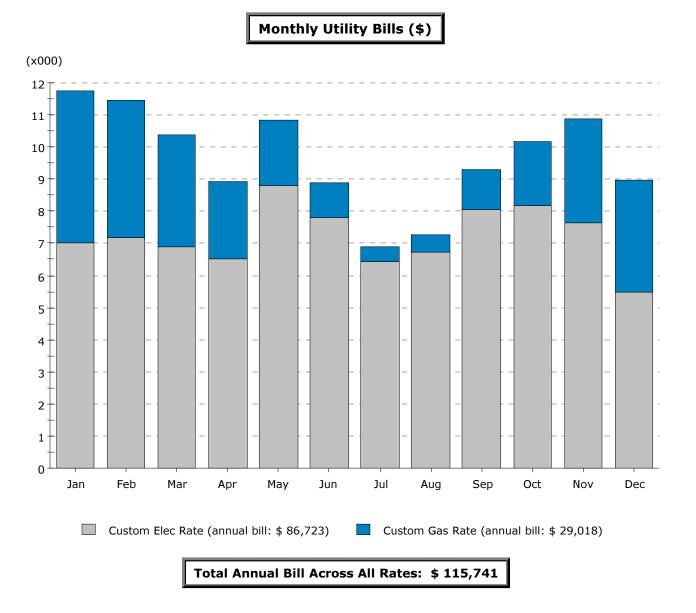
Annual Energy Consumption by Enduse

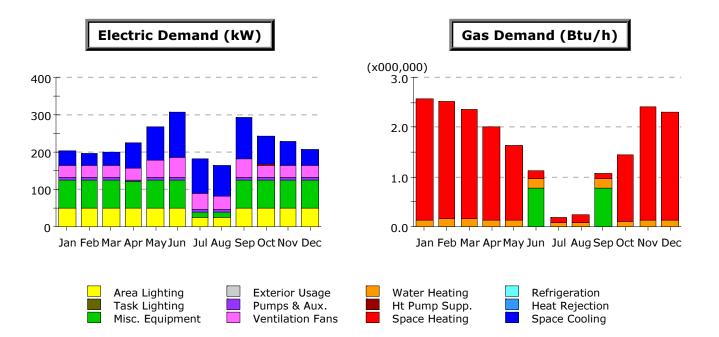






Electricity





Electric Demand (kW)

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| Space Cool | 37.5 | 34.1 | 36.3 | 66.3 | 89.4 | 122.5 | 92.7 | 84.2 | 111.2 | 77.9 | 63.6 | 42.5 | 858.1 |
| Heat Reject. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Refrigeration | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Space Heat | 0.8 | 0.8 | 0.7 | 0.4 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.4 | 0.7 | 0.7 | 5.6 |
| HP Supp. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Hot Water | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Vent. Fans | 32.0 | 31.0 | 31.3 | 32.1 | 45.3 | 53.0 | 44.8 | 35.9 | 50.9 | 35.4 | 31.5 | 31.6 | 454.9 |
| Pumps & Aux. | 6.1 | 6.4 | 6.0 | 5.2 | 6.4 | 6.3 | 5.2 | 4.9 | 5.8 | 5.1 | 5.9 | 6.1 | 69.4 |
| Ext. Usage | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Misc. Equip. | 75.7 | 75.7 | 75.7 | 70.7 | 75.7 | 75.7 | 13.8 | 13.8 | 75.7 | 75.7 | 75.7 | 75.7 | 779.6 |
| Task Lights | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Area Lights | 49.8 | 49.8 | 49.8 | 49.8 | 49.8 | 49.8 | 26.3 | 26.3 | 49.8 | 49.8 | 49.8 | 49.8 | 550.5 |
| Total | 201.9 | 197.9 | 199.8 | 224.6 | 266.9 | 307.5 | 183.0 | 165.3 | 293.6 | 244.2 | 227.2 | 206.4 | 2,718.2 |

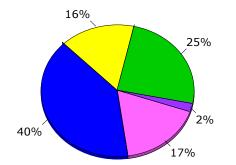
Gas Demand (Btu/h x000,000)

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| Space Cool | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Heat Reject. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Refrigeration | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Space Heat | 2.43 | 2.37 | 2.20 | 1.87 | 1.48 | 0.16 | 0.10 | 0.14 | 0.12 | 1.33 | 2.28 | 2.18 | 16.65 |
| HP Supp. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Hot Water | 0.14 | 0.14 | 0.14 | 0.14 | 0.13 | 0.21 | 0.09 | 0.09 | 0.19 | 0.11 | 0.12 | 0.13 | 1.62 |
| Vent. Fans | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Pumps & Aux. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ext. Usage | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Misc. Equip. | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.77 | - | - | 0.77 | 0.01 | 0.01 | 0.01 | 1.59 |
| Task Lights | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Area Lights | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total | 2.57 | 2.51 | 2.35 | 2.01 | 1.62 | 1.13 | 0.19 | 0.23 | 1.07 | 1.45 | 2.41 | 2.32 | 19.86 |

| | Electricity kW | Natural Gas Btu/h (x000) | Steam Btu/h | Chilled Water Btu/h |
|---------------|-------------------|-----------------------------|----------------|------------------------|
| . | | | Btu/II | |
| Space Cool | 122.51 | - | | |
| Heat Reject. | - | - | | |
| Refrigeration | - | - | | |
| Space Heat | 0.25 | 2,431.4 | | |
| HP Supp. | - | - | | |
| Hot Water | - | 135.6 | | |
| Vent. Fans | 52.96 | - | | |
| Pumps & Aux. | 6.26 | - | | |
| Ext. Usage | - | - | | |
| Misc. Equip. | 75.71 | 7.7 | | |
| Task Lights | - | - | | |
| Area Lights | 49.78 | - | | |
| Total | 307.47 | 2,574.7 | | |

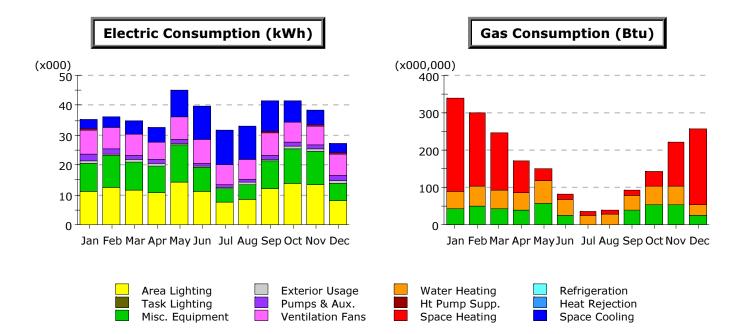
Annual Peak Demand by Enduse







Electricity



Electric Consumption (kWh x000)

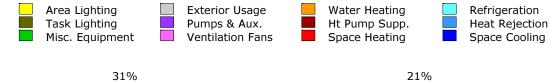
| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| Space Cool | 3.13 | 3.39 | 4.06 | 4.85 | 8.79 | 11.21 | 11.69 | 11.35 | 10.47 | 7.09 | 5.19 | 3.14 | 84.35 |
| Heat Reject. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Refrigeration | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Space Heat | 0.40 | 0.31 | 0.30 | 0.21 | 0.09 | 0.05 | 0.03 | 0.04 | 0.04 | 0.10 | 0.21 | 0.35 | 2.15 |
| HP Supp. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Hot Water | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Vent. Fans | 8.14 | 6.92 | 6.86 | 5.75 | 7.75 | 7.79 | 6.41 | 6.48 | 7.78 | 6.58 | 6.22 | 7.05 | 83.71 |
| Pumps & Aux. | 1.98 | 1.68 | 1.70 | 1.51 | 1.34 | 1.21 | 1.08 | 1.14 | 1.13 | 1.38 | 1.60 | 1.84 | 17.59 |
| Ext. Usage | 0.88 | 0.68 | 0.75 | 0.73 | 0.52 | 0.50 | 0.52 | 0.84 | 0.82 | 0.84 | 0.85 | 0.88 | 8.82 |
| Misc. Equip. | 9.35 | 10.57 | 9.45 | 8.85 | 12.18 | 7.95 | 4.22 | 4.66 | 9.41 | 11.69 | 11.15 | 6.12 | 105.59 |
| Task Lights | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Area Lights | 11.33 | 12.55 | 11.52 | 10.77 | 14.43 | 11.04 | 7.77 | 8.62 | 11.86 | 13.87 | 13.24 | 7.86 | 134.86 |
| Total | 35.21 | 36.10 | 34.62 | 32.65 | 45.09 | 39.76 | 31.73 | 33.12 | 41.51 | 41.55 | 38.47 | 27.25 | 437.07 |

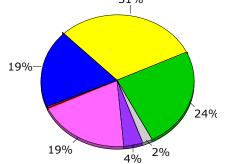
Gas Consumption (Btu x000,000)

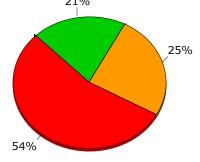
| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---------------|-------|-------|-------|-------|-------|------|------|------|------|-------|-------|-------|---------|
| Space Cool | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Heat Reject. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Refrigeration | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Space Heat | 250.8 | 196.5 | 153.7 | 84.5 | 34.2 | 16.0 | 10.0 | 11.1 | 13.2 | 39.3 | 118.0 | 202.5 | 1,129.7 |
| HP Supp. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Hot Water | 48.2 | 55.5 | 50.3 | 46.5 | 58.5 | 40.3 | 25.5 | 27.1 | 39.7 | 49.0 | 50.0 | 31.0 | 521.5 |
| Vent. Fans | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Pumps & Aux. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ext. Usage | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Misc. Equip. | 41.9 | 49.7 | 41.9 | 39.3 | 57.6 | 26.2 | 0.2 | 0.1 | 39.3 | 55.0 | 52.4 | 23.7 | 427.4 |
| Task Lights | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Area Lights | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total | 340.9 | 301.8 | 245.9 | 170.3 | 150.3 | 82.5 | 35.7 | 38.3 | 92.2 | 143.2 | 220.4 | 257.2 | 2,078.7 |

| | Electricity | Natural Gas | Steam | Chilled Water |
|---------------|-------------|-------------|-------|---------------|
| | kWh (x000) | MBtu | Btu | Btu |
| Space Cool | 84.35 | - | | - |
| Heat Reject. | - | - | | - |
| Refrigeration | - | - | | - |
| Space Heat | 2.15 | 1,129.7 | | - |
| HP Supp. | - | - | | - |
| Hot Water | - | 521.5 | | - |
| Vent. Fans | 83.71 | - | | - |
| Pumps & Aux. | 17.59 | - | | - |
| Ext. Usage | 8.82 | - | | - |
| Misc. Equip. | 105.59 | 427.4 | | - |
| Task Lights | - | - | | - |
| Area Lights | 134.86 | - | | - |
| Total | 437.07 | 2,078.7 | | - |

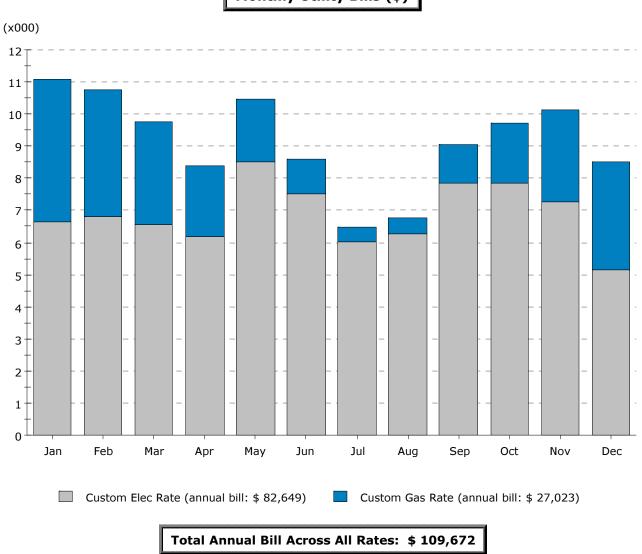
Annual Energy Consumption by Enduse



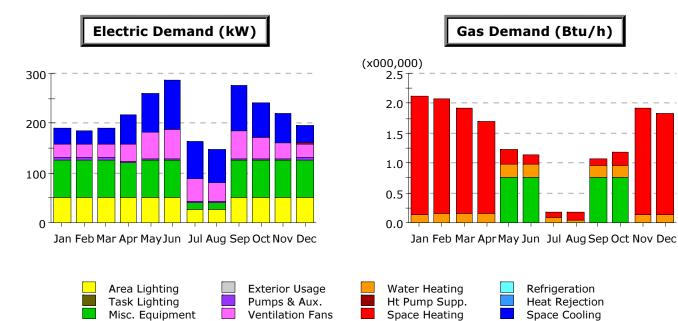




Electricity



Monthly Utility Bills (\$)



Electric Demand (kW)

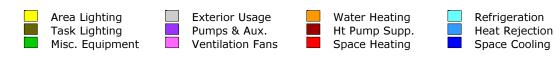
| | Jan | Feb | Mar | Apr | Мау | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| Space Cool | 31.6 | 27.1 | 31.5 | 57.0 | 78.0 | 98.5 | 76.3 | 69.2 | 91.9 | 70.0 | 58.3 | 37.3 | 726.6 |
| Heat Reject. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Refrigeration | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Space Heat | 0.6 | 0.7 | 0.6 | 0.4 | 0.3 | 0.2 | 0.1 | 0.1 | 0.2 | 0.3 | 0.5 | 0.6 | 4.8 |
| HP Supp. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Hot Water | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Vent. Fans | 27.8 | 27.8 | 28.1 | 34.1 | 51.7 | 57.0 | 44.1 | 35.4 | 55.6 | 42.0 | 29.9 | 28.7 | 462.2 |
| Pumps & Aux. | 4.9 | 4.9 | 4.8 | 4.0 | 4.2 | 4.1 | 3.9 | 3.6 | 4.0 | 3.6 | 4.4 | 4.7 | 51.1 |
| Ext. Usage | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Misc. Equip. | 75.7 | 75.7 | 75.7 | 70.7 | 75.7 | 75.7 | 13.8 | 13.8 | 75.7 | 75.7 | 75.7 | 75.7 | 779.6 |
| Task Lights | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Area Lights | 49.8 | 49.8 | 49.8 | 49.8 | 49.8 | 49.8 | 26.3 | 26.3 | 49.8 | 49.8 | 49.8 | 49.8 | 550.5 |
| Total | 190.5 | 186.0 | 190.4 | 216.0 | 259.7 | 285.3 | 164.6 | 148.4 | 277.2 | 241.4 | 218.6 | 196.7 | 2,574.8 |

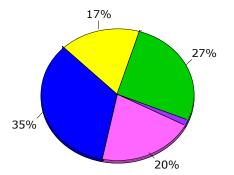
Gas Demand (Btu/h x000,000)

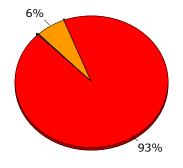
| | Jan | Feb | Mar | Apr | Мау | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| Space Cool | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Heat Reject. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Refrigeration | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Space Heat | 1.98 | 1.94 | 1.76 | 1.56 | 0.25 | 0.15 | 0.08 | 0.12 | 0.11 | 0.23 | 1.80 | 1.69 | 11.68 |
| HP Supp. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Hot Water | 0.14 | 0.14 | 0.14 | 0.14 | 0.23 | 0.21 | 0.09 | 0.05 | 0.19 | 0.19 | 0.12 | 0.13 | 1.77 |
| Vent. Fans | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Pumps & Aux. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ext. Usage | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Misc. Equip. | 0.01 | 0.01 | 0.01 | 0.01 | 0.77 | 0.77 | - | - | 0.77 | 0.77 | 0.01 | 0.01 | 3.11 |
| Task Lights | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Area Lights | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total | 2.13 | 2.08 | 1.91 | 1.71 | 1.24 | 1.13 | 0.18 | 0.18 | 1.06 | 1.19 | 1.93 | 1.82 | 16.55 |

| | Electricity kW | Natural Gas Btu/h (x000) | Steam Btu/h | Chilled Water Btu/h |
|---------------|-------------------|-----------------------------|----------------|------------------------|
| Space Cool | 98.53 | - | | |
| Heat Reject. | - | - | | |
| Refrigeration | - | - | | |
| Space Heat | 0.23 | 1,983.7 | | |
| HP Supp. | - | - | | |
| Hot Water | - | 135.6 | | |
| Vent. Fans | 56.98 | - | | |
| Pumps & Aux. | 4.11 | - | | |
| Ext. Usage | - | - | | |
| Misc. Equip. | 75.71 | 7.7 | | |
| Task Lights | - | - | | |
| Area Lights | 49.78 | - | | |
| Total | 285.34 | 2,126.9 | | |

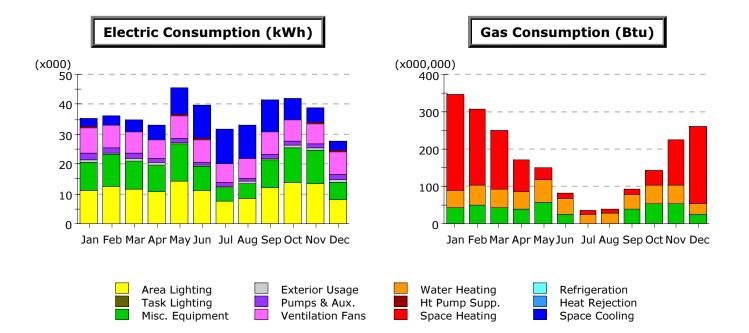
Annual Peak Demand by Enduse







Electricity



Electric Consumption (kWh x000)

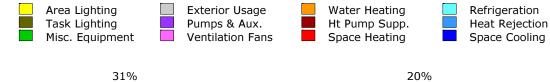
| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| Space Cool | 2.87 | 3.04 | 3.78 | 4.92 | 9.04 | 11.36 | 11.81 | 11.40 | 10.66 | 7.32 | 5.12 | 3.03 | 84.37 |
| Heat Reject. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Refrigeration | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Space Heat | 0.43 | 0.33 | 0.31 | 0.21 | 0.10 | 0.05 | 0.03 | 0.04 | 0.05 | 0.11 | 0.22 | 0.38 | 2.26 |
| HP Supp. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Hot Water | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Vent. Fans | 8.55 | 7.32 | 7.17 | 6.05 | 7.79 | 7.61 | 6.36 | 6.40 | 7.60 | 6.78 | 6.62 | 7.34 | 85.59 |
| Pumps & Aux. | 2.01 | 1.72 | 1.73 | 1.54 | 1.38 | 1.24 | 1.11 | 1.18 | 1.17 | 1.42 | 1.64 | 1.86 | 18.00 |
| Ext. Usage | 0.88 | 0.68 | 0.75 | 0.73 | 0.52 | 0.50 | 0.52 | 0.84 | 0.82 | 0.84 | 0.85 | 0.88 | 8.82 |
| Misc. Equip. | 9.35 | 10.57 | 9.45 | 8.85 | 12.18 | 7.95 | 4.22 | 4.66 | 9.41 | 11.69 | 11.15 | 6.12 | 105.59 |
| Task Lights | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Area Lights | 11.33 | 12.55 | 11.52 | 10.77 | 14.43 | 11.04 | 7.77 | 8.62 | 11.86 | 13.87 | 13.24 | 7.86 | 134.86 |
| Total | 35.42 | 36.21 | 34.71 | 33.07 | 45.44 | 39.76 | 31.83 | 33.14 | 41.57 | 42.03 | 38.85 | 27.47 | 439.49 |

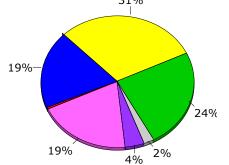
Gas Consumption (Btu x000,000)

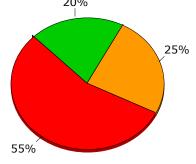
| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---------------|-------|-------|-------|-------|-------|------|------|------|------|-------|-------|-------|---------|
| Space Cool | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Heat Reject. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Refrigeration | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Space Heat | 256.1 | 202.9 | 158.5 | 86.0 | 34.9 | 16.6 | 10.3 | 11.5 | 14.0 | 40.4 | 121.4 | 204.7 | 1,157.3 |
| HP Supp. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Hot Water | 48.2 | 55.5 | 50.3 | 46.5 | 58.5 | 40.3 | 25.5 | 27.1 | 39.7 | 49.0 | 50.0 | 31.0 | 521.5 |
| Vent. Fans | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Pumps & Aux. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ext. Usage | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Misc. Equip. | 41.9 | 49.7 | 41.9 | 39.3 | 57.6 | 26.2 | 0.2 | 0.1 | 39.3 | 55.0 | 52.4 | 23.7 | 427.4 |
| Task Lights | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Area Lights | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total | 346.2 | 308.1 | 250.6 | 171.7 | 151.0 | 83.1 | 36.1 | 38.8 | 93.1 | 144.3 | 223.8 | 259.4 | 2,106.3 |

| | Electricity | Natural Gas | Steam | Chilled Wate | r |
|---------------|-------------|-------------|-------|--------------|---|
| | kWh (x000) | MBtu | Btu | Btu | |
| Space Cool | 84.37 | - | | - | - |
| Heat Reject. | - | - | | - | - |
| Refrigeration | - | - | | - | - |
| Space Heat | 2.26 | 1,157.3 | | - | - |
| HP Supp. | - | - | | - | - |
| Hot Water | - | 521.5 | | - | - |
| Vent. Fans | 85.59 | - | | - | - |
| Pumps & Aux. | 18.00 | - | | - | - |
| Ext. Usage | 8.82 | - | | - | - |
| Misc. Equip. | 105.59 | 427.4 | | - | - |
| Task Lights | - | - | | - | - |
| Area Lights | 134.86 | - | | - | - |
| Total | 439.49 | 2,106.3 | | - | - |

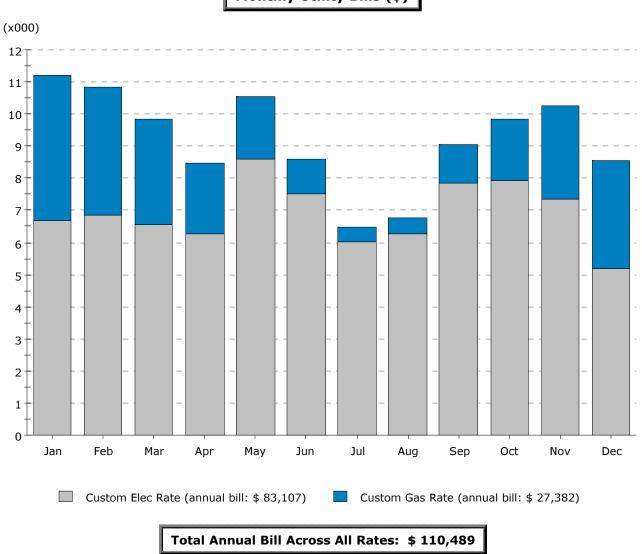
Annual Energy Consumption by Enduse



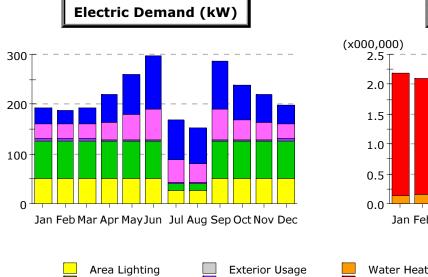


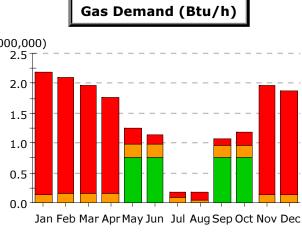


Electricity



Monthly Utility Bills (\$)





| Area Lighting | Exterior Usage | Water Heating | Refrigeration |
|-----------------|------------------|---------------|----------------|
| Task Lighting | Pumps & Aux. | Ht Pump Supp. | Heat Rejection |
| Misc. Equipment | Ventilation Fans | Space Heating | Space Cooling |

Electric Demand (kW)

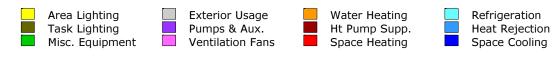
| | Jan | Feb | Mar | Apr | Мау | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| Space Cool | 31.7 | 25.4 | 31.5 | 54.9 | 80.3 | 106.5 | 79.7 | 71.7 | 98.8 | 70.0 | 57.6 | 37.7 | 745.8 |
| Heat Reject. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Refrigeration | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Space Heat | 0.7 | 0.7 | 0.7 | 0.4 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.6 | 0.7 | 5.2 |
| HP Supp. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Hot Water | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Vent. Fans | 30.3 | 30.3 | 30.5 | 34.1 | 50.7 | 61.6 | 45.1 | 36.1 | 59.3 | 38.9 | 32.3 | 31.0 | 480.2 |
| Pumps & Aux. | 5.0 | 5.0 | 4.8 | 4.1 | 4.3 | 4.2 | 4.0 | 3.7 | 4.1 | 3.6 | 4.4 | 4.7 | 51.9 |
| Ext. Usage | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Misc. Equip. | 75.7 | 75.7 | 75.7 | 75.7 | 75.7 | 75.7 | 13.8 | 13.8 | 75.7 | 75.7 | 75.7 | 75.7 | 784.6 |
| Task Lights | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Area Lights | 49.8 | 49.8 | 49.8 | 49.8 | 49.8 | 49.8 | 26.3 | 26.3 | 49.8 | 49.8 | 49.8 | 49.8 | 550.5 |
| Total | 193.2 | 186.9 | 193.0 | 219.0 | 261.0 | 297.9 | 169.1 | 151.8 | 287.8 | 238.4 | 220.4 | 199.5 | 2,618.1 |

Gas Demand (Btu/h x000,000)

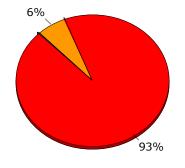
| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| Space Cool | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Heat Reject. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Refrigeration | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Space Heat | 2.03 | 1.95 | 1.81 | 1.61 | 0.25 | 0.16 | 0.09 | 0.13 | 0.11 | 0.23 | 1.85 | 1.74 | 11.95 |
| HP Supp. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Hot Water | 0.14 | 0.14 | 0.14 | 0.14 | 0.23 | 0.21 | 0.09 | 0.05 | 0.19 | 0.19 | 0.12 | 0.13 | 1.77 |
| Vent. Fans | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Pumps & Aux. | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ext. Usage | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Misc. Equip. | 0.01 | 0.01 | 0.01 | 0.01 | 0.77 | 0.77 | - | - | 0.77 | 0.77 | 0.01 | 0.01 | 3.11 |
| Task Lights | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Area Lights | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total | 2.18 | 2.09 | 1.96 | 1.75 | 1.24 | 1.13 | 0.18 | 0.18 | 1.07 | 1.19 | 1.97 | 1.87 | 16.83 |

| | Electricity | Natural Gas | Steam | Chilled Water |
|---------------|-------------|--------------|-------|---------------|
| | kW | Btu/h (x000) | Btu/h | Btu/h |
| Space Cool | 106.49 | - | | - |
| Heat Reject. | - | - | | - |
| Refrigeration | - | - | | - |
| Space Heat | 0.24 | 2,034.9 | | - |
| HP Supp. | - | - | | - |
| Hot Water | - | 135.6 | | - |
| Vent. Fans | 61.56 | - | | - |
| Pumps & Aux. | 4.17 | - | | - |
| Ext. Usage | - | - | | - |
| Misc. Equip. | 75.71 | 7.7 | | - |
| Task Lights | - | - | | - |
| Area Lights | 49.78 | - | | - |
| Total | 297.95 | 2,178.2 | | - |

Annual Peak Demand by Enduse







Electricity

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PROPOSED FIRE PROTECTION SYSTEM

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 8-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 a combined standpipe/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.
- C. Control valve assemblies shall consist of a supervised shutoff valve, check valve, flow switch and test connection with drain. Standpipes meeting the requirements of NFPA 14-2013 shall be provided in the egress stairwells.
- D. All areas of the building, including all finished and unfinished spaces, combustible concealed spaces, all electrical rooms and closets, except for the Elevator Machine Room will be sprinklered.
- E. 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, platform 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. |
| Sprinkler spacing (max.): | |
| Light Hazard Areas: | 225 s.f. |
| Ordinary Hazard Areas: | 130 s.f. |

D. A hydrant flow test was conducted on April 20, 2016 on Central Avenue with the following results: 99 PSI static, 95 PSI residual, 1,392 GPM flow, 6,970 GPM flow at 20 psi. There is adequate water to serve the project without a fire pump.

6. PIPING

C.

- 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

PROPOSED ELECTRICAL SYSTEM

The following is the Electrical system narrative, which defines the scope of work and capacities of the Power, Lighting and Security Systems as well as the Basis of Design. The electrical systems shall be designed and constructed in accordance with *LEED*.

1. CODES

All work installed under Division 26 shall comply with the Massachusetts State Building Code, IBC 2015 and all local, county, and federal codes, laws, statutes, and authorities having jurisdiction.

2. DESIGN INTENT

The work of Division 26 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. 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 shall be by automatic means such as an occupancy sensor in each classroom. The system will be interfaced with the DDC control system for scheduled functions. The controllability shall be in conformance with the Energy Code and LEED V4 Credit EQ Interior Lighting Option 1. The lighting controls shall have BacNet gateway for DDC input functions.
- B. Exterior lighting will be controlled by photocell "on" and "schedule" for "off" operation. The parking area lighting will be controlled by "zones" and will have dimmed level control.
- 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. Security lighting at vestibules will be provided.

4. DESCRIPTION OF THE SYSTEMS

- A. Electrical Distribution System:
 - 1. New construction service ratings are designed for a demand load of 10 watts/s.f. The service capacity will be sized for 1600 amperes with 100 percent rating at 277/480 volt, 3 phase, 4 wire. New lighting, power and mechanical

panels will be provided to accommodate respective loads. The equipment will be located in dedicated rooms or closets.

- B. Interior Lighting System:
 - 1. Lighting systems will be designed in conformance with LEED V4 Credit EA Energy Performance.
 - 2. Classroom lighting fixtures shall consist of pendant-mounted direct/indirect LED luminaries with integral fixture dimming drivers. The fixtures will be pre-wired for dimming control where natural daylight is available and also for multi-level switching. The classroom lighting power density will be targeted for less than 0.6 watts/sq. ft.
 - 3. Office lighting fixtures will consist of recessed indirect LED luminaries with integral fixture dimming drivers. Offices on the perimeter with windows shall have daylight dimming controls similar to classrooms. The classroom lighting power density will be targeted for less than 0.6 watts/sq. ft.
 - 4. In general lighting power density will be 30-40 percent less than IECC 2015 and LEED Credit EA Energy Performance.
 - 5. Lighting levels will be approximately 30 foot candles in classrooms and offices. The daylight dimming foot candle level will be in compliance with IESNA.
 - 6. Gymnasium lighting will be comprised of LED fixtures with up-light component and integral occupancy sensor and dimming driver. The fixtures will be provided with protective wire guards. The light level will be designed for approximately 50 foot candles.

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

- 7. Corridor lighting will be comprised of recessed lighting similar to offices. The corridor light level will be designed for approximately 15 foot candles. Corridor lighting will be on time clock control and only "on" during occupied hours. The corridor lighting can be dimmed and controlled by schedule on DDC system.
- Cafeteria lighting will be recessed linear LED fixtures with integral dimming drivers. The light levels will be designed for approximately 20 foot candles. Daylighting controls will be provided on perimeter light fixtures with 15 ft. of glazing

- 9. Platform theatrical lights with a dimming system will be provided for performances. House lighting in auditorium will be dimmable LED and controlled by theatrical house dimming system.
- 10. Kitchen and servery lighting will consist of recessed LED 2 ft. x 4 ft. acrylic lensed gasketed troffers with aluminum frame doors. Light levels will be approximately 50 foot candles.

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

Each area will be locally switched and designed for multi-level controls. Each classroom, office space and toilet room will have an occupancy sensor to turn lights off when unoccupied. Daylight sensors will be installed in each room where natural light is available for dimming of light fixtures.

- 11. The entire school will be controlled with an automatic addressable lighting control system. The lighting control system will be interfaced with the BMS system for schedules.
- C. Emergency Generator Power:
 - 1. An exterior 250 kw natural gas 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 and selected receptacles will be connected to the emergency generator.
 - 2. The generator will be sized to include life safety systems, fire safety systems, fire pump, boilers, circulating pumps, sewage ejector pumps, refrigeration equipment and communications systems, select air handling units will be on emergency power as directed by the Owner.
- D. Site Lighting System
 - 1. Fixtures for area lighting will be pole-mounted cut-off 'LED' luminaries in the parking area and roadways. Pole heights will be 20 ft. 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 is 0.5 foot candle minimum for parking areas in accordance with Illuminating Engineering Society. The site lighting system shall be in conformance with LEED V4 Credit SS Light Pollution Reduction to avoid light pollution and unnecessary lighting.

- 2. Building perimeter fixtures will be 'LED' wall-mounted, cut-off over exterior doors for exit discharge.
- E. Wiring Devices:
 - 1. Each classroom will have a minimum of two duplex receptacles per teaching wall and two 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 one duplex outlet per wall. At each workstation a double duplex receptacle will be provided.
 - 3. Corridors will have a cleaning receptacle at approximately 25 ft. 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 transient voltage surge suppressors will be provided for receptacle circuits.
 - 6. Plug load control will be provided per IECC 2015.
- F. Fire Alarm System:
 - 1. A fire alarm and detection system will be provided with 60 hour battery backup. 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.

- G. Uninterruptible Power Supply (UPS):
 - 1. One 24kw, three-phase centralized UPS systems will be provided with 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, communication systems, etc. during a prolonged power outage.
 - 3. The UPS systems will also be connected to the standby generator.

H. DISTRIBUTION ANTENNAE SYSTEM (DAS)

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 inbuilding public safety 2-way radio system communication.

I. TWO WAY COMMUNICATION CALL BOXES

Two way communication call boxes will be provided adjacent to each elevator that is above or below grade level. The base station will be located at a control point on the first floor.

5. TESTING REQUIREMENTS

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.

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 Electrical Contractor shall provide operation and maintenance manuals to the Owner.

7. RECORD DRAWINGS AND CONTROL DOCUMENTS:

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

8. COMMISSIONING

The project will be commissioned per Section 018100 of the specifications.

INFORMATION TECHNOLOGY & SECURYITY SYSTEM

Technology systems include those systems included as part of the construction phase of the project as well as the systems to be purchased and installed as part of Fixtures Furniture and Equipment phase of the project.

Technology Systems included in the Construction Phase:

Voice/Data Cabling System

Voice/data outlets shall be installed in all offices, library, classrooms, gym, Cafeteria, and conference rooms. Voice/data outlets shall be installed at every desk location in all offices.

Provide OM4 12 strand MM and 6 strand SM fiber optic cable and multi-pair voice riser cable between each IDF and the MDF. Provide fiber patch panels and voice cross-connect blocks.

Furnish and install nine data drops in each General Classroom, subject specific classroom (Art, Music, STEAM), Kindergarten Classroom, Self-Contained Classroom Extended Learning Area, two at the front of the room, two at each projector, two for wireless, and one for telephone.

Furnish and install two gang outlet box, plaster ring, 1¼" conduit to nearest accessible ceiling, insulating bushings and pull line for all voice/data outlet locations. If nearby accessible ceiling is not feasible extend conduits to nearest IDF closet.

Furnish and install a structured cabling system consisting of Cat 6A voice/data cable, modular jacks, patch panels, wiring blocks, racks, fiber optic cable, fiber patch panels, 2-post open equipment racks, devices plates, outlet boxes, conduit, etc. for a complete and fully functional voice/data/video system.

Each classroom, library and conference room shall be equipped with in wall conduit pathways and back boxes for cabling to support for wall mounted LCD ultra-short throw projectors, and or flat panel displays. Furnish and install required conduit and wire.

Provide 100% wireless coverage in the building. Provide wireless access point ceiling cabling and wall enclosures at designated locations throughout the building. Provide two Cat 6A data outlets for connection of a future Wireless Access Point to the building Local Area Network.

Provide telephone system cabling in the building to support telephones in all classrooms and at all teacher/staff workstations. The telephone system shall be capable of Voice over IP. Head end equipment including a voice mail system sized appropriately for the number of users shall be specified and procured during the FF&E phase of the project.

Digital Signage System

Seven 55" Digital Video Signage Displays shall be installed at a number of locations (Main Entrance, and other strategic locations, which will support the distribution and display of customized school information and content.

Furnish and install all Cat 6A cable, devices plates, outlet boxes, conduit, etc. for a complete and fully functional video distribution system.

Furnish and install two gang outlet box, plaster ring, 1¹/₄" conduit to nearest accessible ceiling, insulating bushings and pull line for all cable video outlet locations. If nearby accessible ceiling is not feasible extend conduits to nearest IDF closet.

Gymnasium Local Sound System

The sound system shall be furnished with an amplifier, compact disk player, iPad or Smartphone interface, wireless microphone transmitter, microphone outlets and an assistive listening system mounted in a sound system rack with a lockable door.

Speakers, microphone jacks and wiring shall be provided in the gymnasium.

The System will include both a program playback set of speakers at the Stage as well as ceiling mounted speakers for voice reinforcement and shall provide for the pickup and amplification of both voice and audios source inputs to the system to include compact disc player and interface for computer, tablet or Smartphone audio, and microphones. Audio interfaces to the local sound system will be provided within the space.

Cafeteria Local Sound System and Projector

The sound system shall be furnished with an amplifier, compact disk player, iPad or Smartphone connection, wireless microphone transmitter, microphone outlets and an assistive listening system mounted in a sound system rack with a lockable door. Provide speakers, microphone jacks and wiring in the café and stage.

The System will include both a program playback set of speakers at the Stage as well as ceiling mounted speakers for voice reinforcement and shall provide for the pickup and amplification of both voice and audios source inputs to the system to include compact disc player and interface for computer, tablet or Smartphone audio, and microphones. Various types of audio interfaces to the local sound system will be provided at a podium location.

A high lumen data projector shall be permanently mounted in the ceiling of the cafeteria that can be used with the electric screen mounted at the ceiling of the state. Audio and video connections at the stage will be provided for interfacing presentation equipment (laptop) to the projector and the local sound system.

Master and Central Sound System Clock

Provide a new master clock system in the building. Secondary clocks shall be installed in all classrooms, offices, administration areas, and in all common spaces such as conference rooms, library, gym and Cafeteria. The master clock shall be located in the MDF room.

Provide a central sound system with speakers in all classrooms, offices, admin, conference rooms, library, gym, Cafeteria, corridors, and selected areas outside the school. The Central Sound system equipment shall be located in the MDF room. System shall be accessed thru the telephone system via access codes. The Central Sound system shall be interfaced to the Master Clock system for scheduled bell tones.

Security System.

Furnish and install a complete security system including but limited to magnetic door contacts, motion detectors, sirens, keypad control panels, conduit and wire.

Furnish and install magnetic contacts on all exterior doors. Furnish and install motion detectors in gym, corridors, lobbies and all exterior window rooms.

Furnish and install a security camera system including server, color IP cameras with housings, conduit and cat 6A cabling. Furnish and install interior IP cameras at all egress doors and corridors. Furnish and install exterior cameras around the exterior of the building. Furnish and install Ethernet switches with Power over Ethernet (PoE) ports for all IP security cameras. Furnish and install a Network Video Recorder (NVR), Video Management software system, and Client software. The NVR shall be sized for thirty (30) days of image storage. Surveillance system head end equipment shall be located in the MDF. Provide a dedicated rack in the MDF for all video surveillance head end equipment to include the NVR, rack-mounted monitor, and a UPS system.

Furnish and install a video/audio door intercom system at the main entry doors to provide for verification of visitors and remote door release from the main office. The system shall include door stations, master stations, and all low voltage cabling and power supplies. Electronic door latch hardware shall be provided by the door vendor.

Furnish and install a Card/Proximity Access Control system at the designated door locations. The system shall include Card/Proximity Readers, all low voltage cabling and power supplies, a system server with Management Software system.

Electronic door latch hardware and Request to Exit devices shall be provided by the door hardware vendor.

Furnish and install a complete conduit system for the security system. Furnish and install all required conduits, outlet boxes, pull lines, plaster rings, junction boxes required for a complete security system.

Classroom Speech Reinforcement System

Provide a speech reinforcement system in all classrooms. System to consist of amplifier, ceiling mounted IR sensor, and ceiling mounted speaker(s), teacher microphone, and cabling.

Technology Systems procured and installed during the FFE phase of the project:

Telephone and Voicemail System

Voice over IP Telephone System including main controller with integrated auto attendant and voice mail features, including IP telephone handsets for all classrooms, administrative offices, Media Center, Cafeteria, and Gymnasium.

Instructional Video Presentation Equipment

Video presentation equipment at all teaching stations including classrooms, SPED rooms, Library, etc. Equipment shall include interactive ultra-short projectors and document cameras. Projectors shall be mounted to the wall with specialized cabling extending between the projector and a projector interface outlet on the teaching wall.

Building Wireless System

Building wireless system including wireless access points to provide coverage to 100% of the building, with implementation around current wireless equipment standards in the district at the time of purchase

Computer Network Equipment

Computer network equipment shall include but not be limited to local area network switches, servers, teacher and staff computers, teacher tablets, student computers and tablet carts, and printers in work rooms and specialized printer locations.

Portable Video Presentation System

High lumen projector with computer and video connections on a mobile cart for use in the Gym and/or other areas of the school

Point of Sale System

Electronic cash register comprised of a custom computer and monitor, specialized software, bar code scanner, and designed specifically for automating the food service checkout functions of the cafeteria.

SUSTAINABILITY OVERVIEW & DOCUMENTS

The following section includes a design narrative from our LEED consultant, The Green Engineer, Inc., a completed LEED for Schools V4 Scorecard indicating the necessary minimum six points in the Energy & Atmosphere (EA) credit "Optimize Energy Performance" to allow the 2% additional reimbursement points and achieve a minimum of "Silver" (50 points), and a signed letter indicating the Designer's acknowledgement of the District's goals.



The Green Engineer, Inc.

Sustainable Design Consulting

The Hillside Elementary School – Needham, MA Schematic Design Sustainability Narrative

Needham identified environmental sustainability as an important goal for this project. This goal is one that is shared by the members of the design team. The team is committed to meet the minimum MSBA Sustainable Requirements with a project team goal to qualify for the additional 2% reimbursement from the MSBA under the Green Schools Program.

Needham has decided to pursue certification under the LEED for Schools v4 rating system. Once the project is approved to proceed the project will be registered with the USGBC locking in the project under the LEED for School version 4 rating system.

The goals and targets for a sustainable project include designing an energy-efficient building with minimal environmental impact that actively serves as an educational tool, (interactive/hands-on in some cases) for its inhabitants, including staff, educators, students and visitors. Sustainable features will be further reviewed and refined as the design develops.

Making sustainable choices for the built environment requires the collaboration of all design disciplines in an integrated process. Sustainable design and energy efficiency decisions impact not only the building and grounds, but also the end users - students and educators, building visitors and those that will be responsible for operations and maintenance. The entire project team, including Needham representatives met multiple times to collectively review and discuss sustainable design, energy efficiency and the new LEED for Schools v4 rating system.

The meetings gave the team the opportunity to brainstorm ideas, and to create a shared set of sustainable goals and expectations for the project that are in alignment with the LEED for Schools v4 rating system, where applicable. The outcome of these meetings included a collectively agreed upon defined set of sustainability goals, as well as a refined LEED for Schools v4 scorecard. Additionally, the meetings were an important part of the Integrated Design Process and the results of the meetings will continue to inform the team's work moving forward into design development and beyond.

The project will actively promote environmental stewardship. The site of the project is a previously developed site that is bound by wetland areas to the west and north. The new School project will take advantage of the existing site conditions, specifically, the man-made pond on the property. The man-made pond & wetland area presents unique opportunities to address site issues such as building siting, stormwater management and preserving the natural landscape and open space while simultaneously lending itself to exciting educational opportunities tied to the K-5 science education program.

The building systems have been extensively studied by the design team and have been selected to maximize energy efficiency while providing essential heating, cooling and ventilation needs. Plumbing fixtures with low flush and flow rates and high efficiency commercial kitchen equipment will be specified to minimize the demand for potable water for sewage conveyance and process uses.

Materials and products used in the construction of the project will carry product disclosure declarations, have recycled content and be regionally obtained to the greatest extent possible. Finishes will be low VOC compliant to provide a healthy interior learning environment.



The interior layout reflects the schools curriculum and provides a highly collaborative learning environment while maximizing access to daylight and views.

The attached project LEED scorecard represents an assessment of the project against the LEED for Schools v4 requirements. The attached scorecard indicates **52 points as 'Yes; and 19 as 'Maybe'**. A project must earn a minimum of 50 points for Silver certification. The team has strong confidence that those points tracked as 'Yes' will be earned, however, some credits may prove unattainable due to unforeseen circumstances as design and construction progresses. A number of credits remain 'Maybe' at this point where final decisions or calculations have not be made. Provided that nearly all the 'Yes' points and a portion of the 'Maybe' credits are earned the project should be LEED Silver certified. Credit specific notes are embedded in the attached scorecard. Points that have shifted since our previous submission have been tracked.

It should be noted that while the project seeks to achieve Silver certification under LEED for Schools v4, our approach is not one of "point chasing" to maximize a LEED score. Rather the project team will endeavor to design and construct a building which minimizes its impact on the environment as well as its life-cycle and long term operating costs, while managing and reducing the burden the building will place on the local infrastructure. We will use LEED primarily as a validation tool and to check the project against the sustainable design goals. In general, the project team will not base design decisions strictly on achieving LEED certification.

| EF | | |
|-------|-------------------|-----------|
| ATA E | Project Scorecard | |
| | | General N |
| UNC | | |

U.S.C

| | | | LEED Goa | Peedham requiring team to hit Silver Certification per 4.5.16 call with DWA |
|---|--|----------|-------------|--|
| roject: HillIside School | | | Bldg Area | x 90,702 GSF per GGD 3.29.16 |
| Address: Needham, MA Postive point shift since Feasibility scorecard (highlight is original position) | | | Site Area | x 474,000sf full site, 278,000sf w/o northern wetland area |
| Date: 4.6.16 Negative point shift since Feasibility scorecard (highlight is original position) | | n) | Parking | x 95 (minimum of 90 - zoning target 118) |
| TOTAL | | _ | FTE | 78 per 3.18.16 email from DWA. Pending Needham confirmation |
| Yes ? No | | | Students | 3 432 per 3.29.16 action list (144>3rd + 288 <4th) |
| 52 19 39 Certified: 40-49 | points Silver: 50-59 points Gold: 60-79 points Platinum: 80+ points | | Visitors | 65 avg; 200 peak + 65daytime peak per 3.29.16 DWA. Pending Needham confirmation |
| Yes ? No | | | LEED Fees | Design Phase: \$0.04/sf Construction Phase: \$0.01/sf (subject to change) |
| 1 0 0 Integra | ative Process | 1 | Respons. | |
| 1 IPc1 Integra | tive Process | 1 | Team | The project is following the Integrative Design Process. DWA to perform "simple box" energy modeling (EM Sefaira tests) |
| <u>res ? No</u> 2 0 13 Locati | ion & Transportation | 15 | Respons. | |
| | or Neighborhood Development Location | 15 | Respons. | |
| | ve Land Protection | 1 | | |
| 2 LTc3 High Pr | | 2 | | |
| | nding Density and Diverse Uses | 5 | | |
| 4 LTc5 Access | to Quality Transit | 4 | | |
| 1 LTc6 Bicycle | Facilities | 1 | DWA/CW | Project will provide required bike storage & showers. <u>Bike Storage</u> : 5% for >3rd grade students and peak visitors. 15 per TGE prelim calcs. Storage will be COVERED. <u>Showers</u> : 1/100 for 100 + 1/150. 2 required per TGE prelim calcs. |
| 1 LTc7 Reduce | ed Parking Footprint | 1 | | |
| 1 LTc8 Green | | 1 | Needham | Preferred Green Vehicle parking for 5% or 5 for 95 AND EV Charging Stations for 2% or 2 for 95 will be provided |
| Yes ? No | | | | · · · · · · · · · · · · · · · · · · · |
| | inable Sites | 12 | Respons. | |
| | uction Activity Pollution Prevention | | Nitsch/GC | |
| | nmental Site Assessment | Required | HML Team | REQUIRED: Phase I ESA conducted. Site will be remediate to residential standards. Team to complete site assessment worksheet. |
| | | | | Iteration to compare site assessment worksheet. Intent is to meet 30% restoration requirement 3.30.16: Prelim calcs show design is close. Must protect 40% of total greenfield & either 1) restore 30% of prev. developed area OR 2.) |
| 2 SSc2 Site De | velopment - Protect or Restore Habitat | 2 | BS | pay\$0.40/sf of total site. Larger site=142.200sf or smaller=83,400sf |
| 1 SSc3 Open S | pace | 1 | BS | Believe all requirements are satisified. Need to confirm wetland slope. 3.30.16: Prelim calcs: Large boundary: If wetland area qualifies then 63.6% of site is open space, 73.7% of open sp is vegetated. IF it does NOT qualify, then larger boundary does not comply. Small boundary total open space (105,250 gsf) is 37.9% of site, and 24.8% of that open space is vegetated. |
| 2 1 SSc4 Rainwa | ter Management | 3 | Nitsch | Nitsch confirmed project will meet 95th%. 98th carried as 'Mavbe' pending soil boring results. |
| | land Reduction | 2 | | Pending design development, but looks unlikely. Prelim calcs show non-compliance: Assuming all walkways and non-painted concrete qualify as non-roof measures. Assuming entire roof |
| | | 2 | DWA/CW | mechanicals is 45,000sf. Total non-roof SR area = 27,174 sf. / 0.5 Total roof SRI area = 45,000 sf / 0.75. > Total site paving = 116,500 sf + Total roof area = 45,000 114,350 < 158,000 |
| | ollution Reduction | 1 | GGD | GGD confirmed design will meet option 1 requirements |
| 1 SSc7 Site Ma | ster Plan se of Facilities | 1 | Needham | DWA confirmed Gymnasium, Cafeteria, and Media Center will be available for use by the general public. |
| Yes ? No | se of l'acilities | | Neeunam | privicioninine di Griniasiuni, Caletena, and media Center win de available for use by the general public. |
| 6 1 5 Water | Efficiency | 12 | Respons. | |
| | or Water Use Reduction, 30% | Required | BS | REQUIRED: Confirmed no irrigation in design outside of playing field. |
| Y WEp2 Indoor | Water Use Reduction, 20% | Required | GGD | REQUIRED: Team confirmed process water & fixtures compliance. Preliminary fixtures include: WC:1.28gpf, U:0.125; Lav:0.5gpm manual meter; kitchen: 0.5gpm; shower: 1.5gpm |
| Y WEp3 Buildin | g-level Water Metering | Required | GGD | REQUIRED: GGD confirmed proper water meters will be included in design |
| 2 WEc1 Outdoo | r Water Use Reduction | 2 | BS | BS Confirmed no irrigation besides sports field |
| | Water Use Deduction 1 (25%) 2 (20%) 2 (25%) 4 (40%) | 7 | CCD | Goal to hit 35%. pending GGD review of 1.1gpf WCs. Prelim calculations=27.4%. Additional savings - 0.35 gpm LAV and 1.1 gpf WC. 0.35 LAV alone = 31.6%. 1.1 gpf WC alone = 35.1%. |
| | Water Use Reduction 1 (25%), 2 (30%),3 (35%),4 (40%) | | GGD | Together = 39.3%. All measures plus waterless urinals = 40.9%. |
| | g Tower Water Use | 2 | GGD | 3.23.16: Alt, compliance approach not possible. 10.28.15: Moved to 'No'. No cooling tower. Air-cooled system |
| 1 WEc4 Water N | Netering | 1 | GGD | GGD confirmed sumbetering on domestic hot water and heating boiler make-up water. |
| | y & Atmosphere | 152 | Respons. | |
| | nental Commissioning and Verification | Required | - | REQUIRED: MSBA mandates Cx that meet LEED requirements |
| | m Energy Performance | Required | | REQUIRED: Building will be full AC displacement per 3.11.16 GCD Systems Narrative |
| | g-level Energy Metering | Required | | REQUIRED: GGD confirmed whole energy meters will be included. |
| | nental Refrigerant Management | Required | GGD/CM | REQUIRED: GGD/CM confirmed no prohibited refrigerants. |
| | ced Commissioning | 6 | CxA | MSBA requires CxA scope to include building systems & envelope Cx. 10.28.15: Needham doesn't have monitoring-based equipment anywhere else in town. Will explore. |
| | ze Energy Performance | | | GGD confirmed current VAV AC or VAV dehumidification alt displacement ventilation system & design should achieve 6 points with 2 as maybe. Additional points moved to Yes' |
| Ý 6% | Improvement in Energy Performance | 1 | | |
| Y 8% | Improvement in Energy Performance 6 Improvement in Energy Performance* | 2 | | *minimum MSBA requirement |
| Y 129 | 6 Improvement in Energy Performance | 4 | | |
| Y 149 | 6 Improvement in Energy Performance 6 Improvement in Energy Performance** | 5 | | **required for 2% additional reimbursement points (Team target) |
| M 189 | 6 Improvement in Energy Performance | 7 | | Ledriner Loi 7 \u00e9 antirovier i quitori squiteti i houite i Legui (girde) |
| M 20% | 6 Improvement in Energy Performance | 8 | | 20% required for regional priority |
| 1 EAc3 Advanc | ced Energy Metering | 1 | GGD | Remains 'Maybe'. Currently not included in the design. Per GGD will require determining the end uses that use 10% or more of the total energy consumption and providing the sub-meterin |
| | | - | | system. Adds cost to the project. |
| 2 EAc4 Deman | | 2 | Needbar | Needham not interested in demand response program |
| | able Energy Production 1 (1%), <u>2 (5%)</u> ,3 (10%) | | | Team will rebuy RECs for production at municipal solar installation (3.7MW PV array on the capped landfill under a PPA). Production will be allocated to the school. Need to hit 5% threshol |
| 1 EAc6 Enhance | ed Refrigerant Management | 1 | | Weak 'Maybe' b/c of kitchen equipment. Pending equipment selection & refrigerant type. Team will rebuy RECs & offsets. |
| 2 EAc7 Green | Power and Carbon Offsets | | | |

| Yes | ? No | | | | | _ |
|------------------|---------------|-------|--|----------|----------|---|
| 6 | 2 5 | | Materials & Resources | 13 | Respons. | |
| DY | | MRp1 | Storage & Collection of Recyclables | Required | DWA | REQUIRED: SD progress shows 411 Recycling room. |
| CY | | MRp2 | Construction and Demolition Waste Management Planning | Required | DWA/GC | REQUIRED: Due to Massachusetts regulations, the project should not have any issues meeting this prerequisite |
| <mark>C</mark> 3 | 2 | MRc1 | Building Life-Cycle Impact Reduction | 5 | DWA | Project will conduct a full building LCA. |
| <mark>C</mark> 1 | 1 | MRc2 | Building Product Disclosure & Optimization-Environmental Product Declarations | t 2 | DWA/GC | Project attempting Option 1. Will require EPDs for >20 different products. Specification will have language for the CM to collect and track Environmental Product Declarations from materials and product manufacturers. |
| C | 1 1 | | Building Product Disclosure & Optimization-Sourcing of Raw Materials | 2 | DWA/GC | Project attempting credit via Option 2 for Leadership extraction practices. |
| С | 1 1 | MRc4 | Building Product Disclosure and Optimization-Material Ingredients | 2 | DWA/GC | Project will attempt credit via Option 1 Material Ingredient Reporting. |
| <mark>C</mark> 2 | | | Construction and Demolition Waste Management | 2 | DWA/GC | Project will meet criteria of 75% of 4 material streams or <2.5lbs/sf |
| | ? No 5 5 | | Indoor Environmental Quality | 19 | Respons. | Notes & Status |
| DY | | | | Required | GGD | REQUIRED: GGD confirmed project will meet ASHRAE 62.1-2010 requirements |
| DY | | · · | | Required | Nitsch | REQUIRED: Campus is non-smoking & signage will be provided. Proper signage will be included. |
| DY | | | | Required | Acentech | REQUIRED assumes minimum requirements will be met |
| | 1 | | Enhanced IAQ Strategies | 2 | DWA/GGD | Project will include compliant entryway systems, cross-contamination prevention & filtration. Needham decision on other strategies |
| С | | | Low-Emitting Materials | | DWA/GC | Moved points to 'Maybe//No' based on experience from other projects |
| | | | M Three of seven categories (or 4 w/ furniture) | 1 | | |
| | | | N Five of seven categories (or 6 w/ furniture) | 2 | | |
| | | | N Six of seven categories (or 7 w/ furniture) | 3 | | |
| C 1 | | IEQc3 | Construction IAQ Management Plan | 1 | DWA/GC | Project will develop and implement a compliant IAQ management plan for the construction and pre-occupancy phases of the project. |
| <mark>C</mark> 2 | | IEQc4 | IAQ Assessment | 2 | DWA/GC | Project will attempt credit via Option 2 undergo air quality testing prior to occupancy |
| D | 1 | IEQc5 | Thermal Comfort | 1 | GGD | Need to confirm strategy for teach work rooms & ASHRAE 55 compliance for kitchen & gym areas. |
| D 1 | 1 | IEQc6 | Interior Lighting | 2 | GGD | Project will have proper lighting controls for both private and multioccupant spaces. Team must research quality strategies |
| D | 3 | IEQc7 | Daylight | 3 | | Preliminary assessment shows non-compliance. |
| D 1 | | IEQc8 | Quality Views | 1 | DWA | DWA confirmed layout will meet views requirements |
| D | 1 | IEQc9 | Acoustic Performance | 1 | Acentech | Pending acoustical review. v3 credit proved expensive. |
| | ? No | | | | | |
| | 2 0 | | Innovation | 6 | Respons. | Notes & Status |
| D 1 | | | Innovation in Design: To be determined | 1 | Team | Team will work to satisfy a minimum of 3 ID points |
| D 1 | | - | Innovation in Design: To be determined | 1 | Team | Team will work to satisfy a minimum of 3 ID points |
| D 1 | | | Innovation in Design: To be determined | 1 | Team | Team will work to satisfy a minimum of 3 ID points |
| С | 1 | - | Innovation in Design: To be determined | 1 | Team | Pending ID path |
| С | 1 | - | Innovation in Design: To be determined | 1 | Team | Pending ID path |
| C 1 Yes | ? No | | LEED Accredited Professional | 1 | Team | Multiple Team members are LEED Apes |
| 3 | 1 0 | | Regional Priority - 02494 (credits have been underlined) | 4 | Respons. | |
| 1 | | RPc1 | LTc3, SSc4, WEc2 (40%), EAc2 (20%), EAc5 (5%), MRc1 | 1 | | Project attempting MRc1 LCA path |
| 1 | | RPc2 | LTc3, SSc4, WEc2 (40%), EAc2 (20%), EAc5 (5%), MRc1 | 1 | | Project attempting SSo4 path |
| 1 | | RPc3 | LTc3, SSc4, WEc2 (40%), EAc2 (20%), EAc5 (5%), MRc1 | 1 | | Project attempting EAc5 path |
| | | | LTc3, SSc4, WEc2 (40%), EAc2 (20%), EAc5 (5%), MRc1 | 1 | | WEc2 (40%), EAc2 (20%) and MRc1 carried as 'Maybe' |
| | ? No 19 39 | | Project Totals (Certification Estimates) | 440 | | |
| 52 | 19 39 | | Project lotals (Certification Estimates) | 110 | | |

Certified: 40-49 points, Silver: 50-59 points, Gold: 60-79 points, Platinum: 80+ points



May 22, 2016

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

Project: Hillside Elementary School, Needham MA

Subject: High Efficiency Green School Program

Dear Mary Pichetti;

This is an acknowledgement that the Needham Public Schools has identified a goal of 2% additional reimbursement from the MSBA High Efficiency Green School Program for the Hillside Elementary School project. As their designer, we have submitted a completed LEED V4 scorecard showing all prerequisites and 52 attempted points, which will meet that goal and achieve LEED Silver. As noted in the MSBA Sustainable Design Guidelines the 52 points includes 6 points in the Energy & Atmosphere category of Optimize Energy Performance.

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

Best regards,

Michele Barbaro-Rogers, Project Manager DORE & WHITTIER ARCHITECTS, INC.

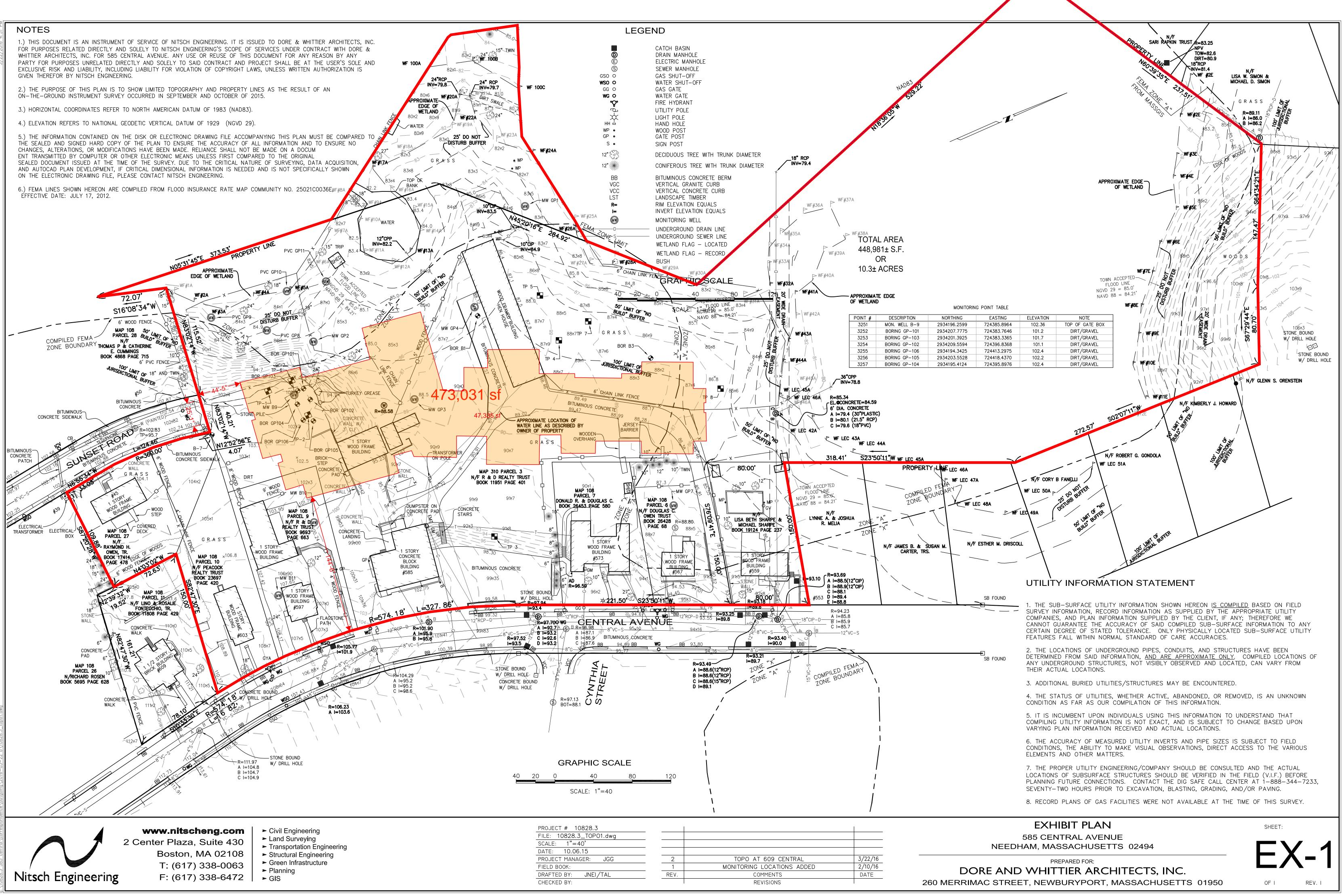
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> ARCHITECTS PROJECT MANAGERS

260 Merrimac Street Bldg 7 Newburyport, MA 01950 978.499.2999 ph 978.499.2944 fax

212 Battery Street Burlington, VT 05401 802.863.1428 ph 802.863.6955

www.doreandwhittier.com



ADA AND MAAB COMPLIANCE NARRATIVE

The Project will comply with the Massachusetts Architectural Access Board (MAAB) 521 CMR, or the 2010 Americans with Disability Act Standards for Accessible Design where it is more stringent than MAAB.

Because the School Project is new construction, it shall fully comply with CMR 521 (Section 3.2). Spaces accessed only by ladder, crawlspaces, catwalks, or non-passenger elevators are exempt (Section 3.12).

In educational facilities, only administrative areas, instructional spaces, and areas open to students or the general population are required to comply with 521 CMR (Section 12.1.1). Areas with restricted access intended for use only by staff (such as instructor toilets, toilets for kitchen staff, mechanical and other support spaces) are not required to comply with 521 CMR. Such staff-only toilet rooms or spaces will comply with ADA Standards.

Accessible Routes, General Site and Building Elements

An Accessible Route shall be provide from accessible parking, passenger loading sizes, and public streets or sidewalks to the accessible building entrance they serve and shall coincide with the route for the general public (Section 20.2). At least one accessible route shall connect the building with all facilities, elements, and spaces on the site and within the building (Section 20.2.1). The accessible route will comply with the provisions of Section 20.

All spaces required to be accessible will be provided with at least one accessible means of egress in accordance with Section 20.11.1.

Curb cuts complying with Section 21 shall be provided wherever an accessible route crosses a curb (Section 21.2).

Accessible parking spaces shall be provided in accordance with Table 23.2.1. One in every six, but not less than 1 accessible space shall be van accessible in accordance with ADA 208.2.4 (note this requirement is more stringent than MAAB Section 23.2.2). Accessible spaces will be located on the shortest accessible route from the parking to an accessible entrance (Section 23.3.1). Where an accessible space cannot be located within 200 feet of an accessible entrance, an accessible passenger drop-off shall be provided within 100 feet of the accessible entrance (23.3.3).

Accessible Parking Spaces, Accessible Van Spaces, and the associated access to the site Accessible Route will comply with Section 23.4

Plumbing Elements and Facilities

Single User Toilet Rooms intended for use by the students or general public or located in the Administrative Suite shall be accessible in accordance with 521 CMR. Toilet rooms with restricted access only by staff members shall be accessible in accordance with the 2010 ADA Standards.

Toilet fixture counts have been calculated based on 248 CMR (Massachusetts Fuel Gas and Plumbing Code) and distributed throughout the project based on the anticipated occupant load in each area.

Toilet rooms intended for use only by elementary school aged children (defined as grades K-6 per Section 30.1-b) shall be designed in accordance with Sections 30.14 through 30.20. This includes single user toilet rooms in Kindergarten Classrooms, single user toilet rooms in Special Education Classrooms, and gang toilet rooms in the 3 story classroom wing.

The gang toilet rooms adjacent to the gymnasium and cafeteria are intended to serve both the student population and adult populations for after hours events. As the gang and single user toilet rooms located in the classroom wing are designed specifically for the student population, the gang toilets near the cafeteria & gymnasium will be designed to accommodate adult populations, including an accessible stall with adult height fixtures and reach ranges.

Drinking fountains shall be located on each floor along the accessible route and installed in accordance with Section 36.

Special Occupancy Rooms and Features

The spaces or portions of the building described below require unique description and consideration with respect to accessibility.

Stairways and Elevators.

Stairs 1, 2, 3, and the communicating stair within the Media Center will be designed as accessible stairways in accordance with Section 27. Stairways intended only for use by service staff, including the roof access stairs, are not required to be accessible (Section 12.1.1).

The elevator will be designed in accordance with Section 28 and to accommodate the required gurney size described in 524 CRM (Massachusetts Elevator Regulations) Section 17.40-(1). As such, it will accommodate the dimensional requirements described in 521 CMR Section 28.

Gymnasium

No fixed seating will be provided in the Gymnasium, and the requirements for Number of Accessible Seats (Section 14.2) are not applicable to this space.

The Cafeteria and Gymnasium will be equipped with Assistive Listening Systems in accordance with Section 14.5.2.

Cafeteria with Platform

No fixed seating will be provided in the Cafeteria, and the requirements for Number of Accessible Seats (Section 14.2) are not applicable to this space.

Cafeteria tables will not be equipped with attached seating.

The raised platform (Stage) has an accessible route consisting of a ramp designed in accordance with Section 24 (Section 14.6.1-a.).

Media Center

The Media Center will be designed to accommodate the requirements for Libraries described in Section 12.2.

At least 5% of all reading and study areas, stacks, reference rooms, computer work stations, shall be accessible and designed to accommodate the requirements of Section 12.2.2.

At least one lane of the check-out area will have a counter a maximum of 36" in height (Section 12.2.3).

Security devices and Card Catalogs will not be provided for the facility.

Aisles between stacks will have a minimum clear width of 42" as the preferred dimension described in Section 12.2.6.

Built In Furnishings and Equipment

Per Section 12.4, a minimum of 1 type of each element in each classroom will comply with the following:

- Countertops and sinks will comply with Section 12.2.2-b, c, and d and consist of a Clear Floor Space with Knee Clearance and a counter top height of 28" to 34".
- At least 50% of shelf space in cabinets with comply with Sections 6.5 Forward Reach and 6.6 Side Reach.
- Controls and operating mechanisms shall comply with Section 39 Controls.

ROOM DATA SHEETS NARRATIVE

The Room Data sheets were developed in coordination with the Superintendent of Schools, the Principal of Hillside School, District wide department leaders, and the end users including teachers and staff. The information reflected in the Room Data Sheets includes the following:

- Functional Criteria: including program area, number of rooms, and anticipated occupant load
- Location Criteria: including anticipated users, desired adjacencies, orientation and views
- Technical Criteria: including floor, wall and ceiling finishes, MEP / FP and technology needs
- Fixtures and Furnishings: including anticipated furniture and proposed layout,

Room Data Sheet: Kindergarten Classroom w/ Toilet

Functional Criteria:

| Description: | Home base for Kindergarten instruction, including a toilet room. |
|---------------|--|
| Program Area: | 1262 sq. ft. |
| Quantity: | 4 |
| Occupant Load | 18 students, 1 teacher, 1 or more aides/specialists |

Location Criteria:

| Users: | Teachers, students, specialists, paraprofessionals |
|----------------------|--|
| Adjacency: | Within grade level team, ground floor, other kindergarten classrooms and |
| | special education spaces (ELC for grades K-1), central location, near shared |
| | extended learning area. Paired with another Kindergarten classroom with a |
| | communicating door. |
| Orientation / Views: | Exterior views |

Technical Criteria:

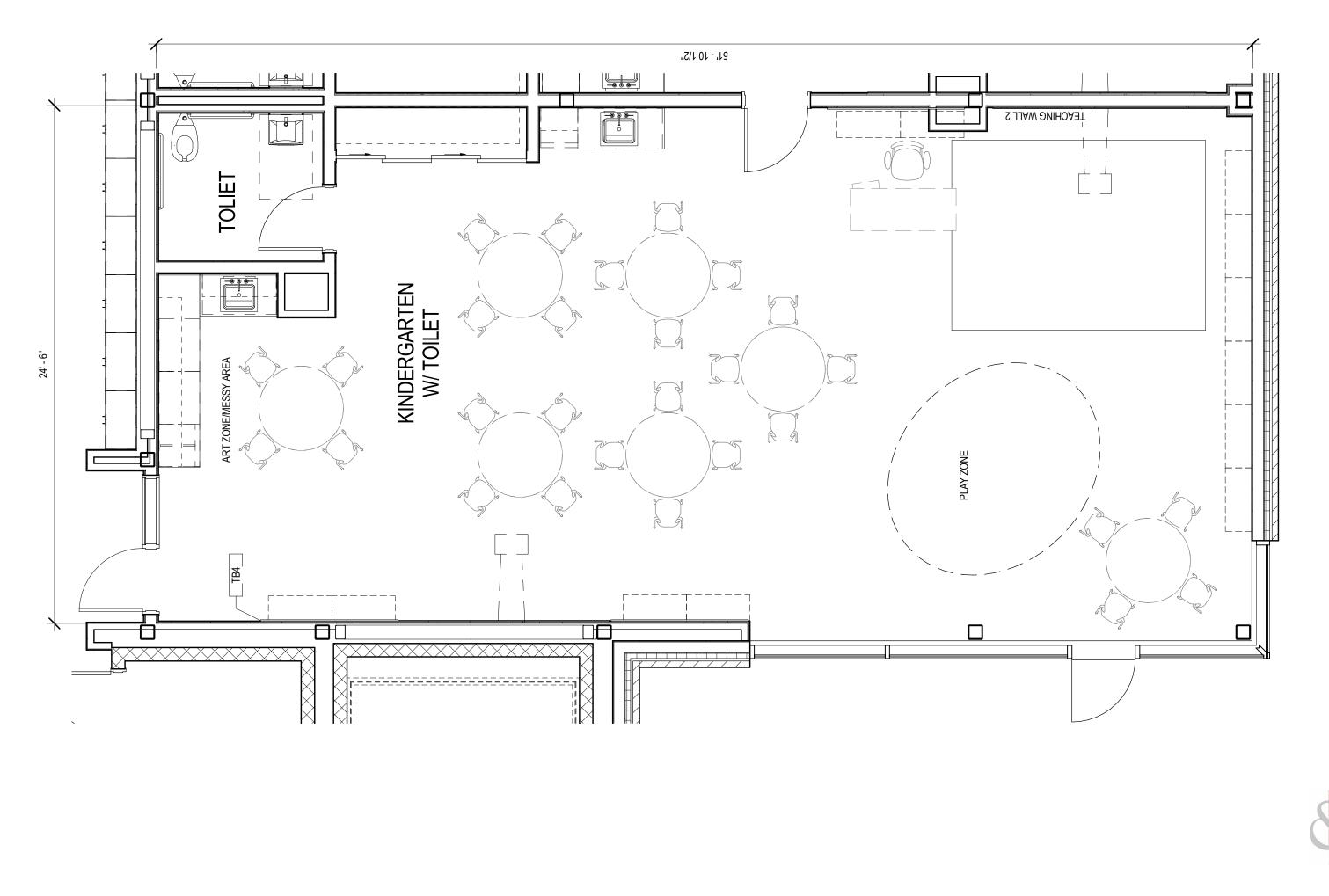
| Floor Finishes: | Linoleum sheet goods |
|-------------------|--|
| Wall Finishes: | Gypsum Wall Board, painted |
| | Projectable Magnetic writable surface at teaching wall location, floor to 7' for |
| | teacher and student use |
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits |
| Acoustical: | Meets or exceeds LEED prerequisite for acoustic performance |
| Windows: | Aluminum windows with vision glazing, room darkening shades |
| Doors: | Flush wood door, sidelight |
| | Horizontal mini blinds at vision panels |
| | Classroom hardware set |
| | Communicating door to adjacent Kindergarten classroom |
| HVAC: | Displacement Ventilation |
| | Radiant panels at perimeter for supplemental heating |
| | Alternate: Air Conditioning |
| Plumbing / FP: | Fully Sprinklered |
| | (2) Accessible stainless steel sinks, one with bubbler |
| | Self-contained toilet with kindergarten accessible fixtures |
| Lighting: | Linear pendant direct/indirect |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |
| | (2) Interactive projectors |
| | (2) Mobile Teachers station to coordinate with interactive projector (data & |
| | power) |
| | Voice amplification/ Sound field system |
| | |

Fixtures & Furnishings:

Casework /Specialties: Types & Configurations indicated in the attached room layout sheets (24) Student cubbies with closed faculty storage above, located immediately outside the classroom. Furnishings: (2) Loose 12'WX9'D Rug (7) Student tables (28) Student chairs (2) Adult chairs (1) Teachers Desk – mobile (2) Student Mail box units – mobile (90LF) open shelving/bookcases – mobile Equipment: Types & Configurations indicated in the attached room layout sheets Shelving / Storage: Types & Configurations indicated in the attached room layout sheets (1) 9' Long, full height millwork storage cabinet with sliding magnetic marker surface doors and internal height adjustable shelving.

Additional Requirements:

None





4.1.2.13-3

Room Data Sheet: General Classroom – Grades 1-5

Functional Criteria:

| Description: | Home base for grade level instruction |
|---------------|---|
| Program Area: | 948 SF (Average as designed) |
| Quantity: | 4 per grade level (20 Total) |
| Occupant Load | 24 students, 1 teacher, 1 or more aides/specialists |

Location Criteria:

| Users: | Teachers, students, specialists, paraprofessionals |
|----------------------|--|
| Adjacency: | Within grade level team and special education spaces, near shared extended |
| | learning area. Classrooms are grouped in pairs with a communicating door. |
| Orientation / Views: | Exterior views |

Technical Criteria:

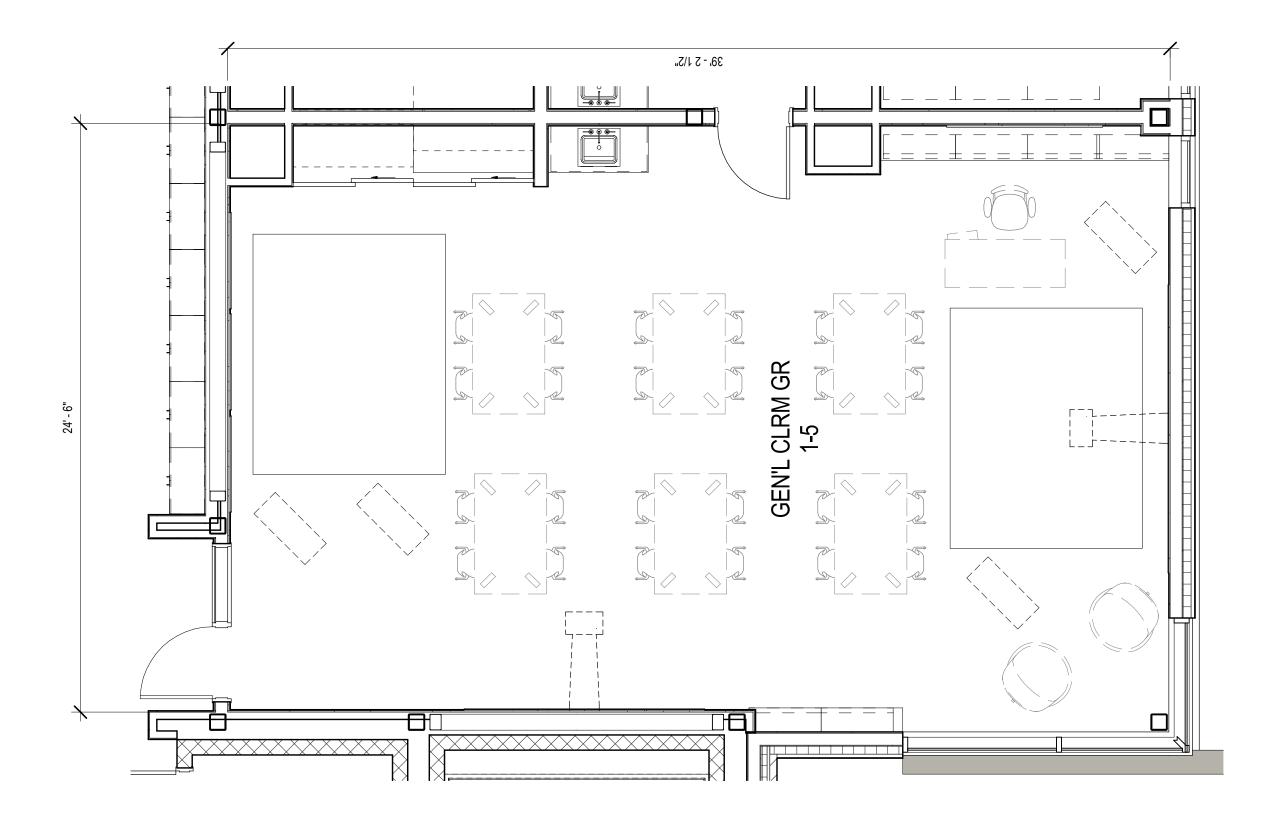
| Floor Finishes: | Linoleum sheet goods |
|-------------------|--|
| Wall Finishes: | Gypsum Wall Board, painted |
| | Projectable Magnetic writable surface at multiple teaching wall locations, floor |
| | to 7' for teacher and student use |
| | Tack surface near entry to room & throughout |
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits |
| Acoustical: | Meets or exceeds LEED prerequisite for acoustic performance |
| Windows: | Aluminum windows with vision glazing, room darkening shades |
| Doors: | Flush wood door, sidelight with shading. |
| | Horizontal mini blinds at vision panels |
| | Classroom hardware set |
| | Flush wood communicating door between classroom pairs |
| HVAC: | Displacement Ventilation |
| | Radiant panels at perimeter for supplemental heating |
| | Alternate: Air Conditioning |
| Plumbing / FP: | Fully Sprinklered |
| | Accessible stainless steel sink with bubbler |
| Lighting: | Linear pendant direct/indirect |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |
| | Two (2) Interactive projectors |
| | Teachers station to coordinate with interactive projector (data & power) |
| | Voice amplification/ Sound field system |
| | |

Fixtures & Furnishings:

| | 0 |
|------------------------|--|
| Casework /Specialties: | Types & Configurations indicated in the attached room layout sheets including: |
| | (24) Student cubbies, with closed faculty storage above, located immediately |
| | outside the classroom. |
| Furnishings: | (2) Lose 12'Wx9'D Rug |
| | (6) Rectangular tables |
| | (24) Student chairs |
| | (1) Adult chairs |
| | (4) Mobile book shelves |
| | Soft seating for "cozy corner" reading nook |
| Equipment: | Types & Configurations indicated in the attached room layout sheets |
| Shelving / Storage: | Types & Configurations indicated in the attached room layout sheets |
| | (1) 9' Long, full height millwork storage cabinet with sliding magnetic marker |
| | surface doors and internal height adjustable shelving. Internal counter with |
| | open space below of large bin storage. |
| | |

Additional Requirements:

None







Room Data Sheet: Spanish Classroom

Functional Criteria:

| Description: | Home base for Spanish language instruction |
|---------------|--|
| Program Area: | 897 SF |
| Quantity: | 1 |
| Occupant Load | 24 students, 1 teacher |

Location Criteria:

| Users: | Teachers, students, specialists, paraprofessionals |
|----------------------|---|
| Adjacency: | Within learning community, other classrooms and special education spaces. |
| | Ideally located with 4 th & 5 th grade teams. |
| Orientation / Views: | Exterior views |

Technical Criteria:

| | Linoleum sheet goods |
|----------------|---|
| Wall Finishes: | Gypsum Wall Board, painted |
| | Projectable Magnetic writable surface at teaching wall location, floor to 7' for |
| | teacher and student use |
| | Tack surface in alcove |
| - | Acoustical ceiling system, painted gypsum soffits |
| | Meets or exceeds LEED prerequisite for acoustic performance |
| Windows: | Aluminum windows with vision glazing, room darkening shades |
| Doors: | Flush wood door, sidelight with shading. |
| | Horizontal mini blinds at vision panels |
| | Classroom hardware set |
| | Flush wood communicating door between classroom pairs |
| HVAC: | Displacement Ventilation |
| | Radiant panels at perimeter for supplemental heating |
| | Alternate: Air Conditioning |
| Plumbing / FP: | Fully Sprinklered |
| | Accessible stainless steel sink w/ bubbler |
| Lighting: | Linear pendant |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |
| | (1) Interactive projector |
| | Mobile Teachers station to coordinate with interactive projector (data & |
| | power) |
| | (1) Flat panel display for video conference w/ HD web camera , speakers and microphones |
| | Voice amplification/ Sound field system |
| | |

Fixtures & Furnishings:

Casework /Specialties: Types & Configurations indicated in the attached room layout sheets including:

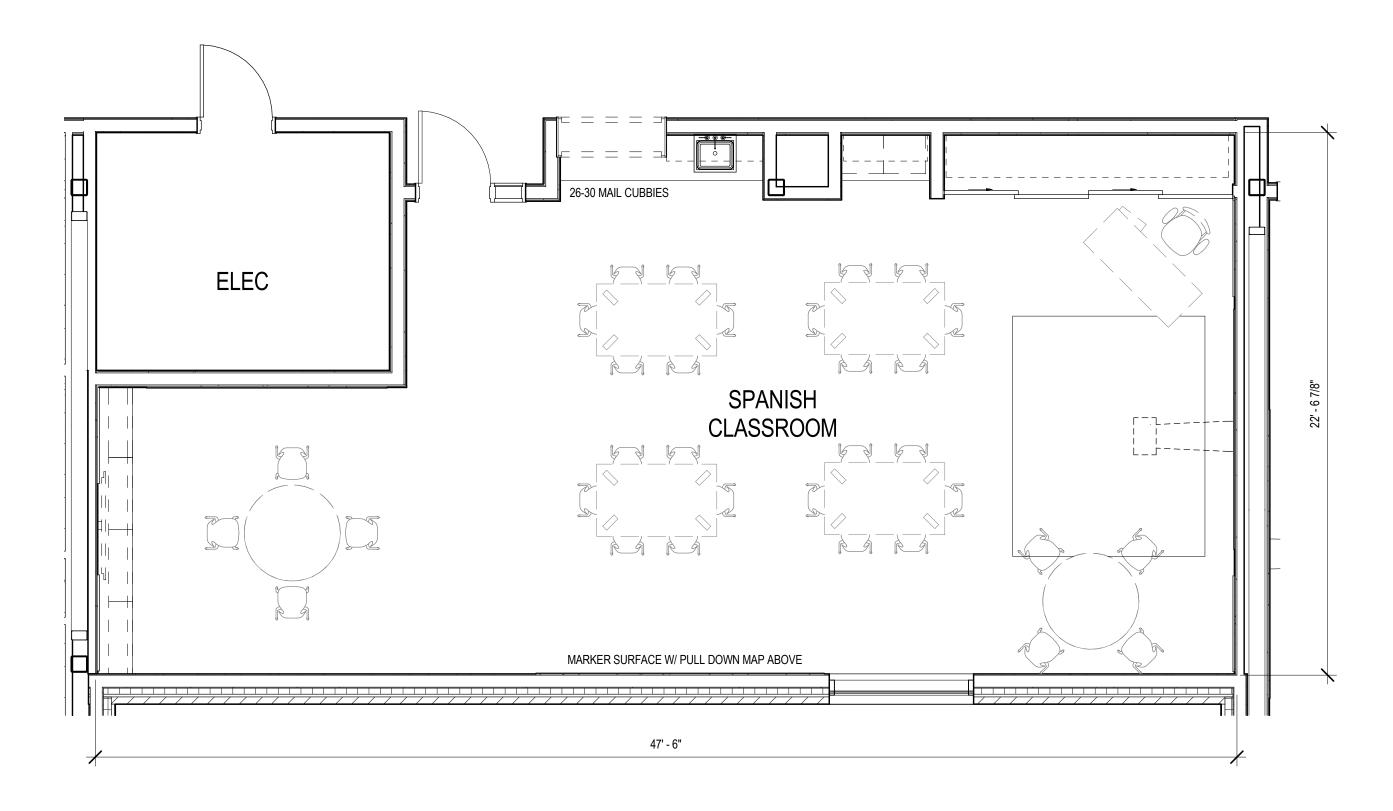
- 30 LF Open book shelf space
- (1) Visual display cabinet
- Furnishings: (1) Lose 12'Wx9'D Rug
 - (4) Rectangular tables
 - (2) Round tables
 - (28) Student chairs
 - (1) Adult chairs
 - (1) Mobile teaching station

Equipment: Types & Configurations indicated in the attached room layout sheets

- Shelving / Storage: Types & Configurations indicated in the attached room layout sheets
 - (1) 12' Long, full height millwork storage cabinet with sliding magnetic marker surface doors and internal height adjustable shelving.

Additional Requirements:

None



1 SPANISH CLASSROOM 1/4" = 1'-0"





Room Data Sheet: Extended Learning Area

Functional Criteria:

| Description: | Flexible break out area zoned to support supplemental learning activities, whole grade level programs, movement activities, and support the Science curriculum |
|---------------|--|
| Program Area: | 600 SF each conjoined into pairs |
| Quantity: | 6 |
| Occupant Load | 100 students, 4 teachers |

Location Criteria:

| Users: | Teachers, students, specialists, paraprofessionals, administrators, and guest speakers |
|----------------------|--|
| Adjacency: | Within learning communities, near classrooms, adjacent but open to the |
| Aujacency. | corridor. Extended learning areas to be grouped in pairs and conjoined to allow |
| | for flexibility in use. |
| Orientation / Views: | Exterior views required |

Technical Criteria:

| Floor Finishes: | Linoleum sheet goods |
|-------------------|--|
| Wall Finishes: | Gypsum Wall Board, painted |
| | Projectable Magnetic writable surface at teaching wall location, floor to 7' for |
| | teacher and student use |
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits |
| Acoustical: | Acoustical ceiling panels |
| Windows: | Aluminum windows with vision glazing, room darkening shades, blackout shades |
| Doors: | No Doors |
| HVAC: | Displacement Ventilation |
| | Radiant panels at perimeter for supplemental heating |
| | Alternate: Air Conditioning |
| Plumbing / FP: | Fully Sprinklered |
| | (1) Accessible stainless steel sink in science zone |
| Lighting: | Linear pendant, dimmable |
| | Lighting to be switched to allow for 2 separate activities to occur |
| | simultaneously. |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |
| | (2) Interactive projectors, one in each zone |
| | (2) Mobile Teachers stations to coordinate with interactive projector (data & power), one in each zone |
| | |

Fixtures & Furnishings:

| Cacowork /Spacialtias | Types & Configurations indicated in the attached room layout sheets |
|------------------------|--|
| Casework /Specialties: | |
| | Large asymmetrical millwork structure to house storage and create "reading |
| | nooks" |
| | Science zones have base cabinetry, wall cabinetry, and counter-top extension |
| | |
| | for seating. |
| Furnishings: | All furniture to be flexible: |
| | (0) Adult chairs |
| | (18) Student chairs |
| | (4) Round tables |
| | (4) Seating blocks |
| | (3) Lounge Chairs |
| Equipment: | Types & Configurations indicated in the attached room layout sheets |
| Shelving / Storage: | Types & Configurations indicated in the attached room layout sheets |
| Additional Poquira | monto |

Additional Requirements:

N/A

Room Data Sheet: Small Group Room - Enclosed

Functional Criteria:

| Description: | Drop-in break out areas for teachers and students. Intended to serve pull out |
|---------------|---|
| | services, testing, and small group work when acoustical separation is required. |
| Program Area: | 125 SF |
| Quantity: | 3 |
| Occupant Load | 6-8 |
| - | |

Location Criteria:

| Users: | Teachers, students, specialists, paraprofessionals |
|----------------------|--|
| Adjacency: | In learning communities adjacent to specialist offices & Extended Learning |
| | areas |
| Orientation / Views: | Passive supervision |

Technical Criteria:

| | Linoleum sheet goods Gypsum Wall Board, painted Magnetic writable surface at one wall, floor to 7' for teacher and student use |
|-------------------|--|
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits |
| Acoustical: | Meets or exceeds LEED prerequisite for acoustic performance |
| Windows: | None |
| Doors: | Flush wood door, wide sidelight |
| | Passage hardware set |
| HVAC: | Displacement Ventilation |
| | Alternate: Air Conditioning |
| Plumbing / FP: | Fully Sprinklered |
| Lighting: | Linear pendant |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |
| | |

Fixtures & Furnishings:

| Casework /Specialties: | N/A |
|------------------------|--|
| Furnishings: | (6) chairs |
| | (1) Rectangular conference table for 6 |
| Equipment: | N/A |
| Shelving / Storage: | N/A |
| | |

Additional Requirements:

N/A

Room Data Sheet: Small Group Room - Open

Functional Criteria:

| Description: | Open break out area for student collaboration |
|---------------|---|
| Program Area: | 125 SF |
| Quantity: | 3 |
| Occupant Load | 3-6 |

Location Criteria:

| Users: | Teachers, students, specialists, paraprofessionals |
|----------------------|--|
| Adjacency: | Adjacent to the Extended Learning areas |
| Orientation / Views: | None required |

Technical Criteria:

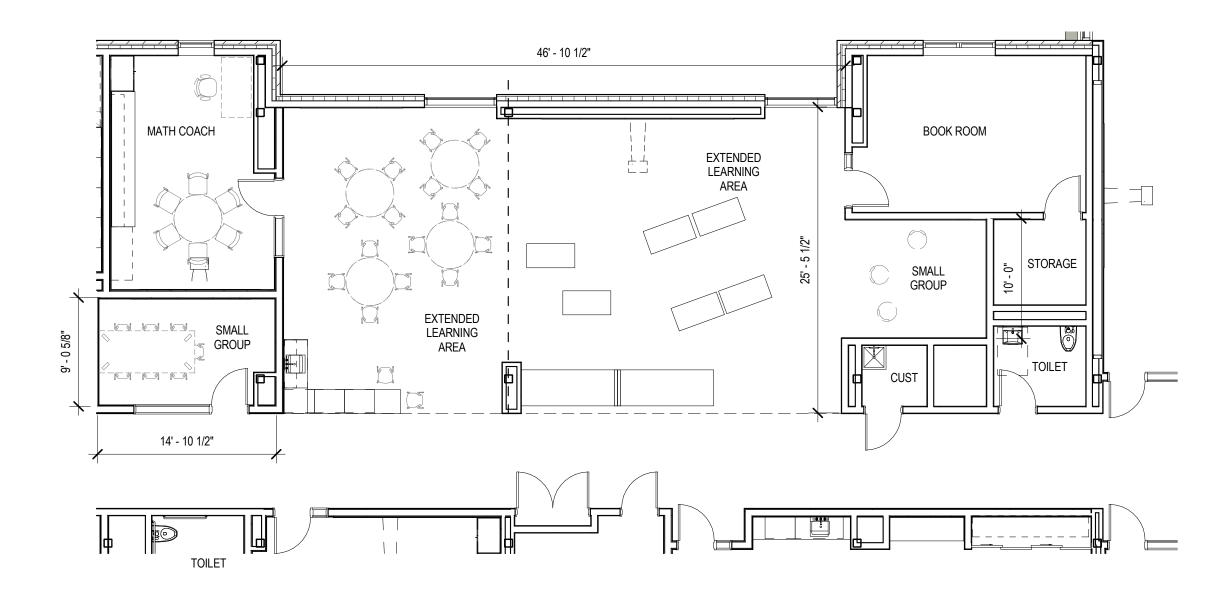
| | Linoleum sheet goods Gypsum Wall Board, painted Magnetic Marker surface on all walls from floor to 7' for teacher & Student use. One surface in 4 th -5 th Grade room to be green for green screen capabilities. |
|-------------------|--|
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits |
| Acoustical: | None |
| Windows: | None |
| Doors: | None |
| HVAC: | Displacement Ventilation |
| | Alternate: Air Conditioning |
| Plumbing / FP: | Fully Sprinklered |
| Lighting: | Linear pendant |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |

Fixtures & Furnishings:

Casework /Specialties: N/A Furnishings: (3) ottomans Equipment: N/A Shelving / Storage: N/A

Additional Requirements:

N/A



EXTENDED LEARNING / SMALL GROUP ROOMS



Room Data Sheet: STEAM CLASSROOM

Functional Criteria:

| Description: | Home base for Science, Technology, Engineering, Art, and Technology program |
|---------------|---|
| Program Area: | 998 SF (Including adjacent storage space) |
| Quantity: | 1 |
| Occupant Load | 28 students, 1 teacher |

Location Criteria:

| Users: | Teachers, students, specialists, paraprofessionals |
|----------------------|--|
| Adjacency: | Within learning community, other classrooms and extended learning area |
| Orientation / Views: | Exterior views |

Technical Criteria:

| Floor Finishes: | Linoleum sheet goods |
|-------------------|--|
| Wall Finishes: | Gypsum Wall Board, painted |
| | Projectable Magnetic writable surface at teaching wall location, floor to 7' for |
| | teacher and student use |
| | Green screen painted wall |
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits |
| Acoustical: | Meets or exceeds LEED prerequisite for acoustic performance |
| Windows: | Aluminum windows with vision glazing, room darkening shades |
| Doors: | Flush wood door, sidelight with shading. |
| | Horizontal mini blinds at vision panels |
| | Classroom hardware set |
| | |
| HVAC: | Displacement Ventilation |
| | Radiant panels at perimeter for supplemental heating |
| | Alternate: Air Conditioning |
| Plumbing / FP: | Fully Sprinklered |
| 1 1011101167 | (1) Accessible stainless steel sink |
| Lighting | Linear pendant direct/indirect |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |
| | Two (2) Interactive projectors |
| | Teachers station to coordinate with interactive projector (data & power) |
| | Hard wire connectability for 28 student computers, plus 2 additional |
| | Voice amplification/ Sound field system |
| | · · · |

Fixtures & Furnishings:

Casework /Specialties: Types & Configurations indicated in the attached room layout sheets

Furnishings: (1) 12' x 9' Area rug for instruction

(14) Mobile Rectangular tables w/ power/data capabilities, preferably at perimeter locations

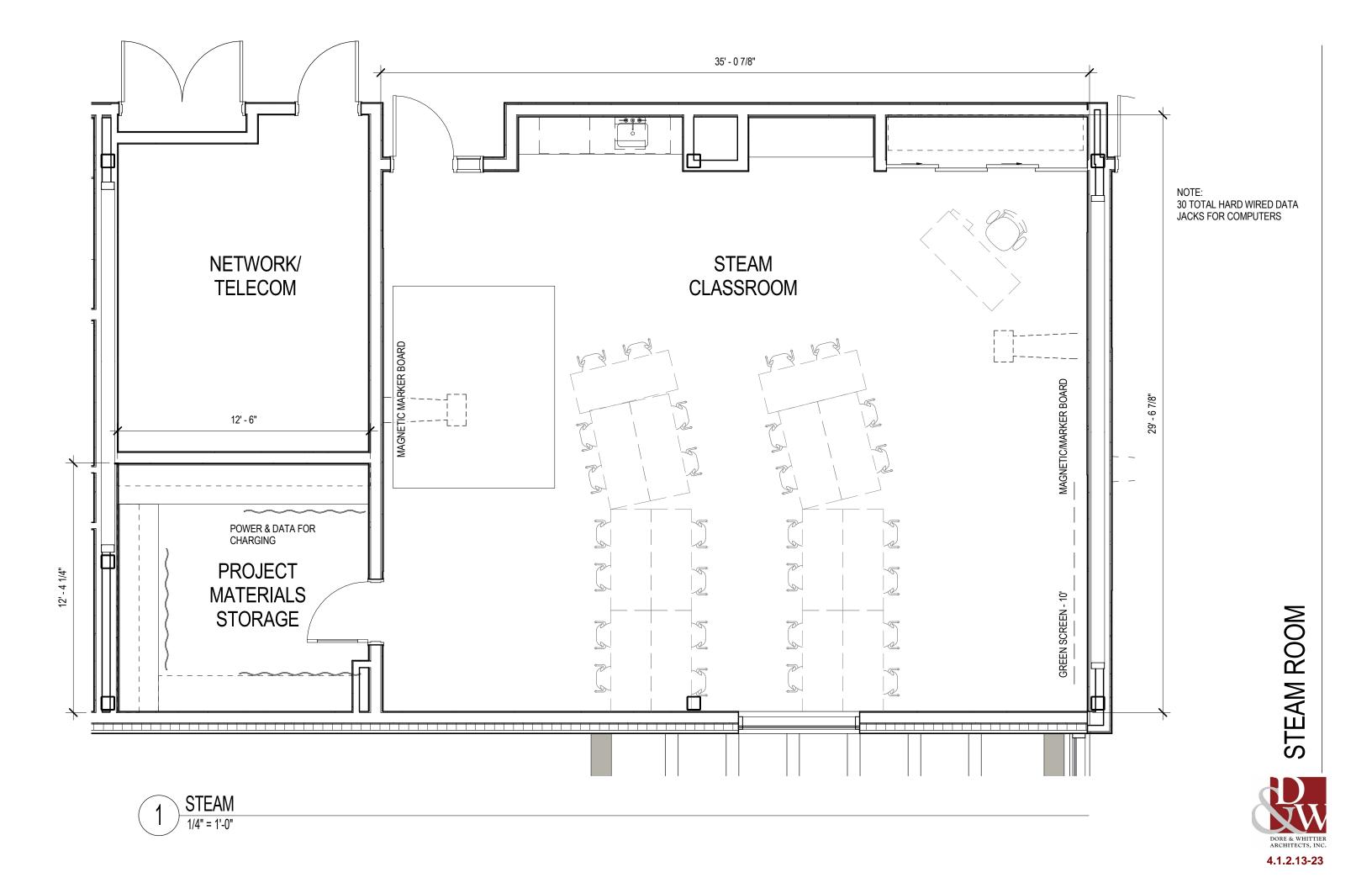
- (28) Mobile student chairs
- (1) Adult chairs
- (1) Teachers Station/desk

Equipment: Types & Configurations indicated in the attached room layout sheets Shelving / Storage: Types & Configurations indicated in the attached room layout sheets

(1) 10' Long, full height millwork storage cabinet with sliding magnetic marker surface doors and internal height adjustable shelving. Internal counter with open space below of large bin storage.

Additional Requirements:

None



Room Data Sheet: Teacher Collaboration Room

Functional Criteria:

| Description: | Collaboration and group planning rooms for teachers. Provide a space for duplication in the academic space |
|---------------|--|
| Program Area: | |
| Quantity: | 2 |
| Occupant Load | 8 |
| | |

Location Criteria:

| Users: | Teachers, specialists, paraprofessionals |
|----------------------|---|
| Adjacency: | In learning communities adjacent to Extended Learning areas |
| Orientation / Views: | Exterior views preferred |

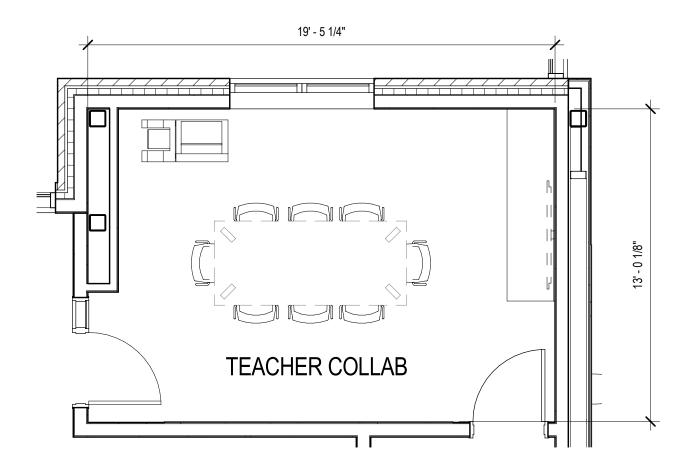
Technical Criteria:

| Floor Finishes: Wall Finishes: | Linoleum sheet goods Gypsum Wall Board, painted Magnetic writable surface at one wall |
|-----------------------------------|---|
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits |
| Acoustical: | Meets or exceeds LEED prerequisite for acoustic performance |
| Windows: | Aluminum windows with vision glazing, room darkening shades |
| Doors: | Flush wood door, sidelight |
| | Passage hardware set |
| HVAC: | Displacement Ventilation |
| | Alternate: Air Conditioning |
| Plumbing / FP: | Fully Sprinklered |
| Lighting: | Linear pendant |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |
| | Flat panel display |
| | |

Fixtures & Furnishings:

| Casework /Specialties: | N/A |
|------------------------|--|
| Furnishings: | (8) chairs |
| | (1) Rectangular conference table for 8 |
| Equipment: | Undercounted refrigerator |
| | Multi-functional copier/printer |
| Shelving / Storage: | 8' Counter w/ storage below. |

Additional Requirements:









Room Data Sheet: Self-Contained Special Education – Type 1

Functional Criteria:

| Description: | Self-Contained Special Education Classroom for 2 nd Grade through 5 th Grade |
|---------------|--|
| Program Area: | 595 SF |
| Quantity: | 2 |
| Occupant Load | 12 students, 4 teachers |

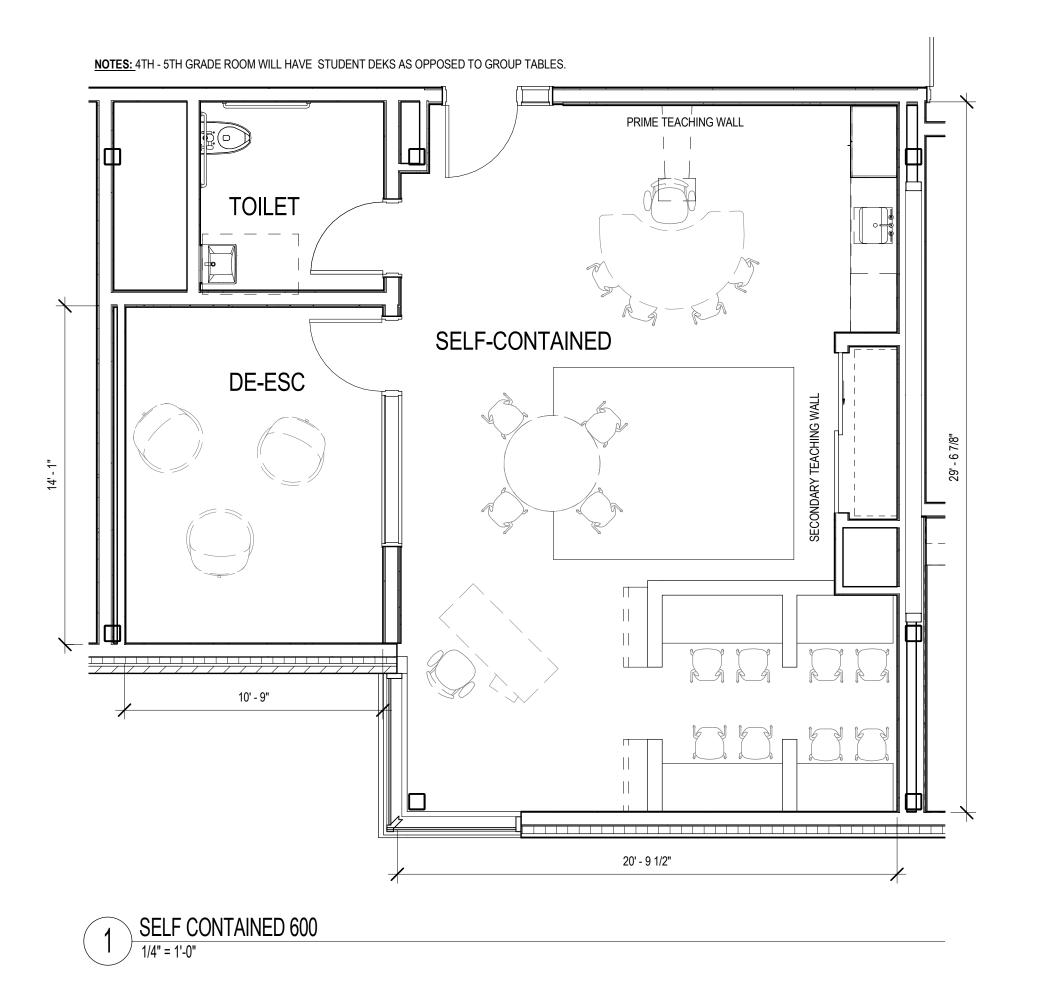
Location Criteria:

| Users: | Teachers, students, specialists, paraprofessionals |
|----------------------|--|
| Adjacency: | Within learning communities, and near classrooms |
| Orientation / Views: | Exterior views required |

| Floor Finishes: Wall Finishes: | Linoleum sheet goods Gypsum Wall Board, painted Magnetic Projectable Marker surface in 1 location |
|-----------------------------------|---|
| Ceiling Finishes: | |
| Acoustical: | Meets or exceeds LEED prerequisite for acoustic performance |
| Windows: | Aluminum windows with vision glazing, room darkening shades |
| Doors: | Flush wood door, sidelight & transom frame |
| | Horizontal mini blinds at vision panels |
| | Classroom hardware set |
| HVAC: | |
| | Radiant panels at perimeter for supplemental heating |
| _ | Alternate: Air Conditioning |
| Plumbing / FP: | |
| | (1) Accessible stainless steel sink |
| Lighting: | Linear pendants direct/indirect |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |
| | Interactive projector |
| | Teachers station to coordinate with interactive projector (data & power) |

| Casework /Specialties: | Types & Configurations indicated in the attached room layout sheets |
|------------------------|--|
| | (4) Built in Discrete Trial Zones for (1) student and (1) teacher designed for |
| | individual work. |
| Furnishings: | (4) Adult chairs |
| | (12) Student chairs |
| | (1) Kidney table |
| | (1) Round Tables |
| | (1) Teachers Desk w/ storage |
| | (1) 12'Wx9'D loose rug |
| Equipment: | Types & Configurations indicated in the attached room layout sheets |
| Shelving / Storage: | Types & Configurations indicated in the attached room layout sheets |
| | (1) 7' Long, full height millwork storage cabinet with sliding magnetic marker |
| | surface doors and internal height adjustable shelving. |

Additional Requirements:







4.1.2.13-31

Room Data Sheet: Self-Contained Special Education – Type 2

Functional Criteria:

Description:Self-Contained Special Education Classroom for Kindergarten and First gradeProgram Area:948 SFQuantity:1Occupant Load12 students, 4 teachers

Location Criteria:

| Users: | Teachers, students, specialists, paraprofessionals | |
|----------------------|--|--|
| Adjacency: | Within learning communities and near classrooms. Immediately adjacent to | |
| | dedicated toilet room and De-escalation space. | |
| Orientation / Views: | Exterior views required | |

| Floor Finishes | Linglour chast cools |
|-------------------|--|
| | Linoleum sheet goods |
| Wall Finishes: | |
| | Magnetic Projectable Marker surface in 1 location |
| | Magnetic Marker Surface in 1 location |
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits |
| Acoustical: | Meets or exceeds LEED prerequisite for acoustic performance |
| Windows: | Aluminum windows with vision glazing, room darkening shades |
| Doors: | Flush wood door, sidelight & transom frame |
| | Horizontal mini blinds at vision panels |
| | Classroom hardware set |
| HVAC: | Displacement Ventilation |
| | Radiant panels at perimeter for supplemental heating |
| | Alternate: Air Conditioning |
| Plumbing / FP: | Fully Sprinklered |
| | (1) Accessible stainless steel sink |
| Lighting: | Linear pendants indirect/direct |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |
| | Interactive projector |
| | Teachers station to coordinate with interactive projector (data & power) |
| | |

| | 0 |
|------------------------|---|
| Casework /Specialties: | Types & Configurations indicated in the attached room layout sheets |
| | (12) Student cubbies within the ELC room, with closed faculty storage above, |
| | located within the classroom. |
| | (4) Built in, Discrete Trial Zones for (1) student and (1) teacher designed for |
| | individual work. |
| Furnishings: | (4) Adult chairs |
| | (18) Student chairs |
| | (1) Kidney table |
| | (2) Round Tables |
| | (1) Rectangular Table |
| | (4) Stools |
| | (1) Teachers Desk w/ storage |
| | (2) 12'Wx9'D loose rug |
| Equipment: | Types & Configurations indicated in the attached room layout sheets |
| Shelving / Storage: | Types & Configurations indicated in the attached room layout sheets |
| | (1) 11' Long, full height millwork storage cabinet with sliding magnetic marker |
| | surface doors and internal height adjustable shelving. |
| | |

Additional Requirements:

Room Data Sheet: Self-Contained SPED - toilet

Functional Criteria:

Description:Dedicated toilet for students and staff use including accessible shower and
space for a changing tableProgram Area:12 SF
Quantity:Quantity:1Occupant Load2

Location Criteria:

| Users: | Students, teachers, aid |
|----------------------|--|
| Adjacency: | Internal to the Self-Contained classroom |
| Orientation / Views: | None |

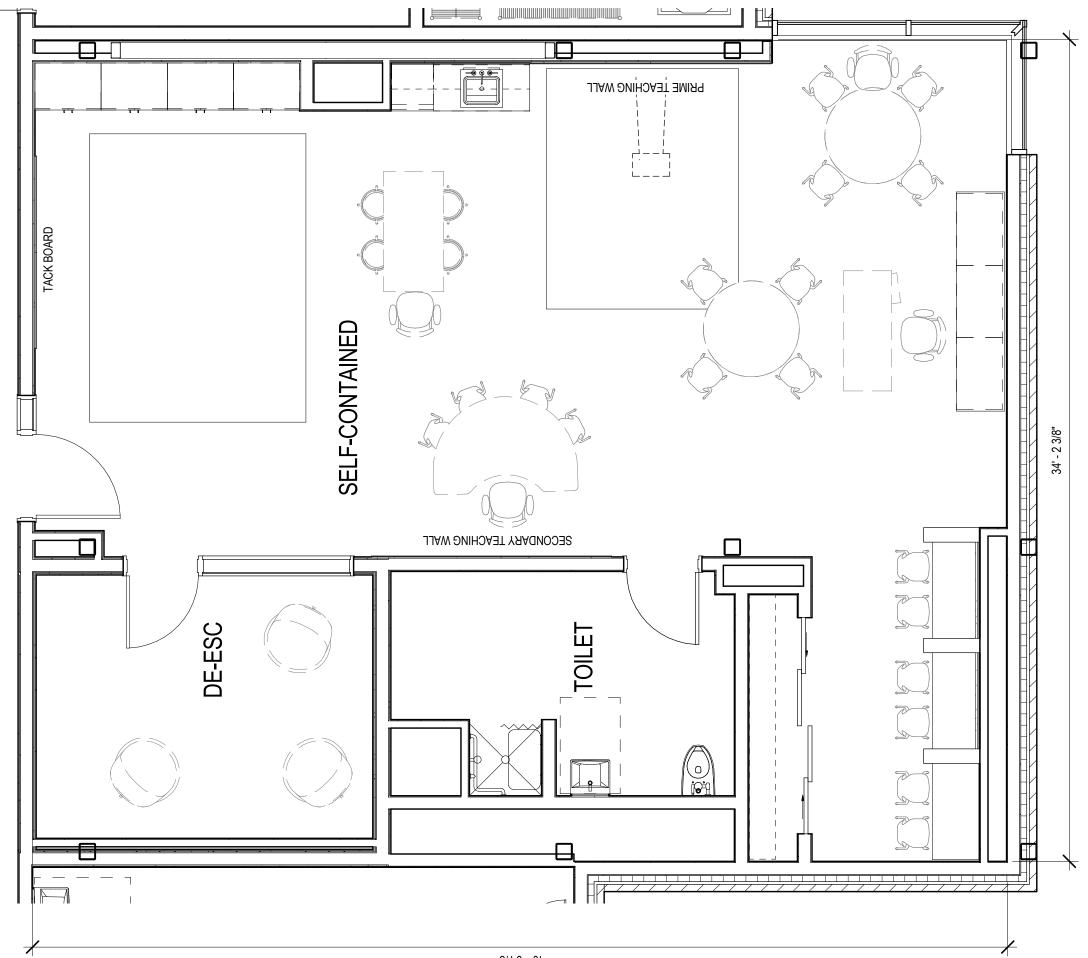
Technical Criteria:

| Floor Finishes: Wall Finishes: | Epoxy Ceramic tile |
|-----------------------------------|---|
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits |
| Acoustical: | None |
| Windows: | None |
| Doors: | Flush wood doors |
| | Office hardware set |
| HVAC: | Overhead distribution with air conditioning |
| Plumbing / FP: | Fully Sprinklered |
| | Sinks in configurations indicated in the attached room layout sheets |
| | Accessible shower stall |
| Lighting: | Lay-in fluorescent |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment Public Address system |

Fixtures & Furnishings:

Casework /Specialties:Types & Configurations indicated in the attached room layout sheetsFurnishings:NoneEquipment:Types & Configurations indicated in the attached room layout sheetsShelving / Storage:Types & Configurations indicated in the attached room layout sheets

Additional Requirements:







Room Data Sheet: Resource Room - ELL

Functional Criteria:

Description:Home base for English Language Learner specialists and pull-out instruction in
small groupsProgram Area:504 SF
Quantity:Quantity:1Occupant Load12 students, 2 teachers

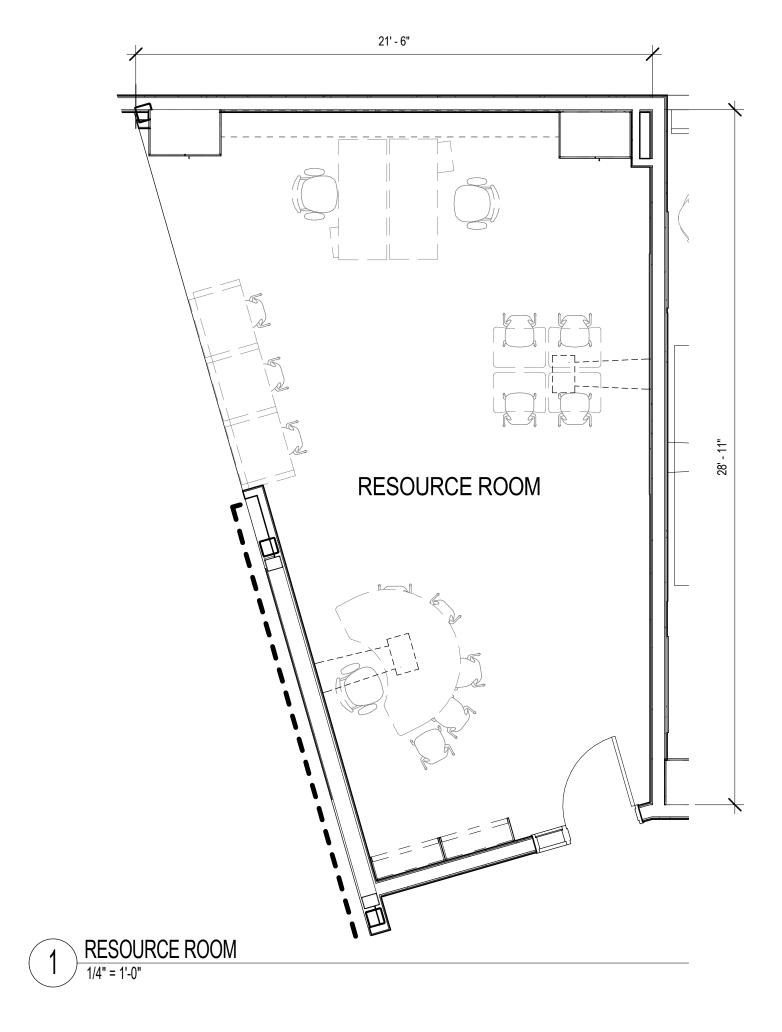
Location Criteria:

| Users: | Teachers, students, specialists, paraprofessionals |
|----------------------|--|
| Adjacency: | In learning communities |
| Orientation / Views: | Exterior views required |

| Floor Finishes: Wall Finishes: | Linoleum sheet goods Gypsum Wall Board, painted Magnetic Projectable Marker Surface on 2 walls |
|-----------------------------------|--|
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits |
| Acoustical: | Meets or exceeds LEED prerequisite for acoustic performance |
| Windows: | Aluminum windows with vision glazing, room darkening shades |
| Doors: | Flush wood door, sidelight & transom frame |
| | Horizontal mini blinds at vision panels |
| | Classroom hardware set |
| HVAC: | Displacement Ventilation |
| | Radiant panels at perimeter for supplemental heating |
| | Alternate: Air Conditioning |
| Plumbing / FP: | Fully Sprinklered |
| Lighting: | Linear pendant direct/indirect |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |
| | Two (2) Interactive projectors |
| | Teachers station to coordinate with interactive projector (data & power) |

Casework /Specialties: Types & Configurations indicated in the attached room layout sheets Furnishings: (2) Teacher desk (2) Adult chairs (12) Student chairs (2) 4-drawer filing cabinet (1) Kidney table for 6 (4) Student Desks (3) Private workstations for individual work or testing Equipment: Shelving / Storage: Types & Configurations indicated in the attached room layout sheets (28 LF) Open shelving

Additional Requirements:







Room Data Sheet: Occupational Therapy & Physical Therapy

Functional Criteria:

Description:Space dedicated to physical and occupational therapy servicesTarget Area:600 SFQuantity:1Occupant Load2-3 students, 2 therapists

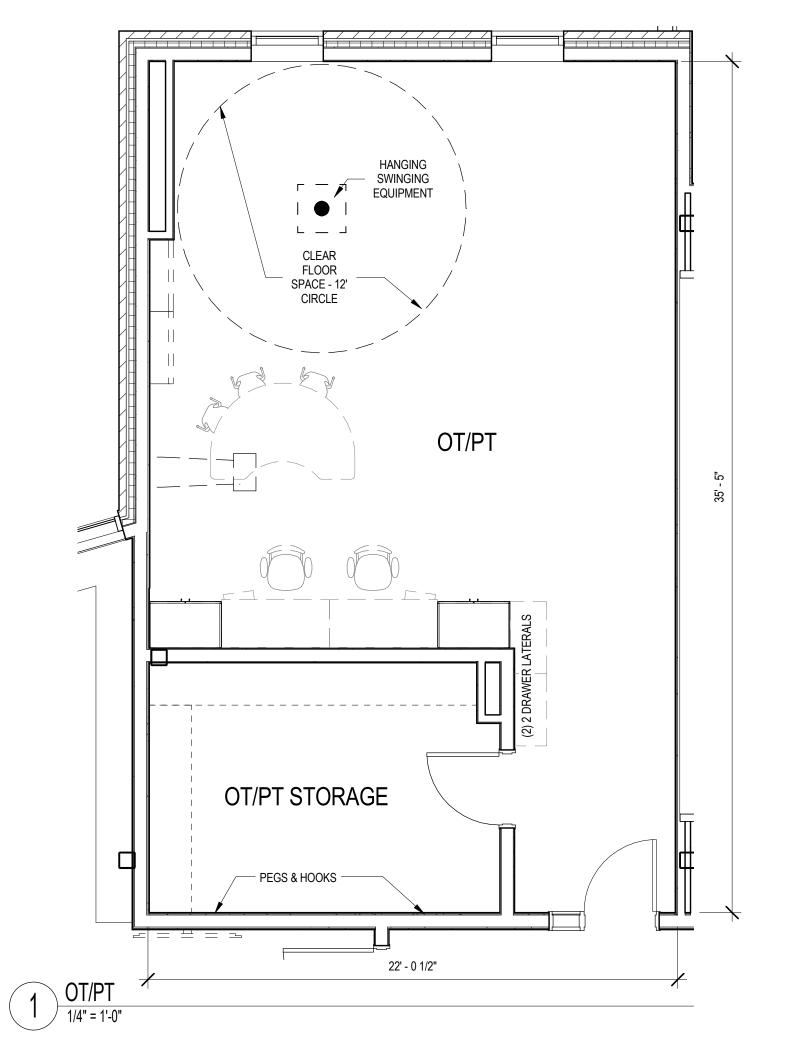
Location Criteria:

| Users: | Students, Therapists |
|----------------------|----------------------|
| Adjacency: | Near gymnasium |
| Orientation / Views: | Exterior views |

| Floor Finishes: | Rubberized surface |
|-------------------|--|
| Wall Finishes: | Concrete masonry unit, painted |
| | Projectable magnetic marker surface on 1 wall |
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits |
| Acoustical: | Meets or exceeds LEED prerequisite for acoustic performance |
| Windows: | Aluminum windows with vision glazing, room darkening shades |
| Doors: | Flush wood door, sidelight & transom frame |
| | Horizontal mini blinds at vision panels |
| | Classroom hardware set |
| HVAC: | Overhead distribution with air conditioning |
| | Radiant panels for supplemental heating |
| | Alternate: Air-conditioning |
| Plumbing / FP: | Fully Sprinklered |
| Lighting: | Linear pendant |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |
| | |

| | • |
|------------------------|---|
| Casework /Specialties: | Types & Configurations indicated in the attached room layout sheets |
| Furnishings: | (2) Teachers Desks |
| | (2) Teachers Chairs |
| | (1) Kidney Shaped Table |
| | (3) Student Chairs |
| | (2) 2-High lateral file |
| Equipment: | Types & Configurations indicated in the attached room layout sheets |
| | Appropriate structural reinforcement to support ceiling-mounted swing equipment |
| Shelving / Storage: | Types & Configurations indicated in the attached room layout sheets |
| | (2) 3-High book cases- Fixed |
| | |

Additional Requirements:





DORE & WHITTIER ARCHITECTS, INC. 4.1.2.13-45

Room Data Sheet: Adaptive PE

Functional Criteria:

| Description: | Space dedicated to physical therapy services and provide an alternate teaching area for Physical Education |
|---------------|--|
| Target Area: | 613 SF |
| Quantity: | 1 |
| Occupant Load | 2-3 students, 2 therapists for primary function. |
| | 24 students, 1 teacher in secondary function as alternative PE space |

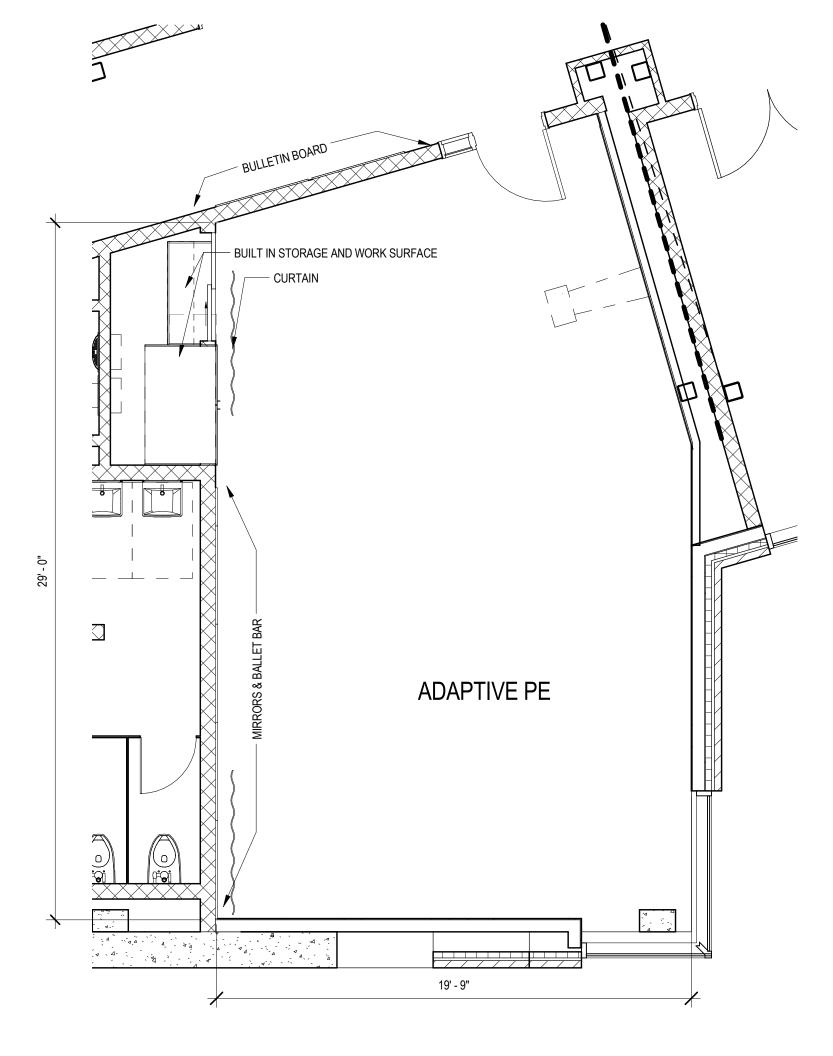
Location Criteria:

| Users: | Students, Therapists, PE teacher |
|----------------------|---|
| Adjacency: | Near gymnasium |
| Orientation / Views: | Exterior views but controlled views into the space from the outside |

| Projectable magnetic marker surface on (1) wall Full height mirror on (1) wall, with curtain for concealment | |
|---|---|
| Ceiling Finishes: Acoustical ceiling system, painted gypsum soffits | |
| Acoustical: Similar to classrooms | |
| Windows: Aluminum windows with vision glazing, room darkening shade | S |
| Doors: Flush wood door, sidelight & transom frame | |
| Horizontal mini blinds at vision panels | |
| Classroom hardware set | |
| HVAC: Overhead distribution with air conditioning | |
| Radiant panels for supplemental heating | |
| Plumbing / FP: Fully Sprinklered | |
| Lighting: Recessed lay-in fixtures | |
| Electrical & Typical perimeter power requirements. | |
| Technology: Additional power required to support specific room equipmen Public Address system | t |
| Clock System | |
| Wireless network access | |
| One (1) Interactive projector | |
| Audio playback system & speakers | |

| Casework /Specialties: | Types & Configurations indicated in the attached room layout sheets Ballet bar at mirror wall |
|------------------------|--|
| | |
| | (4) Fitness equipment wall anchors |
| Furnishings: | No Furnishings for room. Intent is to have a wide open space |
| Equipment: | Types & Configurations indicated in the attached room layout sheets |
| Shelving / Storage: | Types & Configurations indicated in the attached room layout sheets |
| | Large storage cabinet with deep shelving and concealed teachers station |
| | behind cabinet doors. |

Additional Requirements:







Room Data Sheet: Speech & Language/METCO Office

Functional Criteria:

Description:Home bases for Speech & Language Director and METCO Coordinator?Program Area:178 SFQuantity:2Occupant Load6 (4 Students, 1 Teacher)

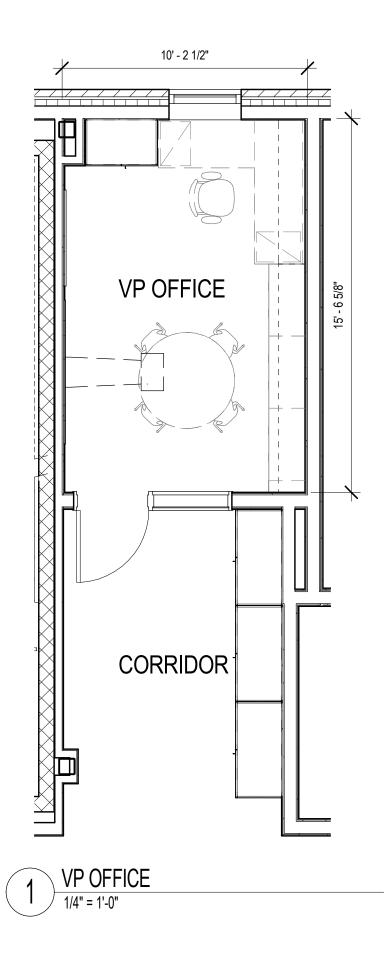
Location Criteria:

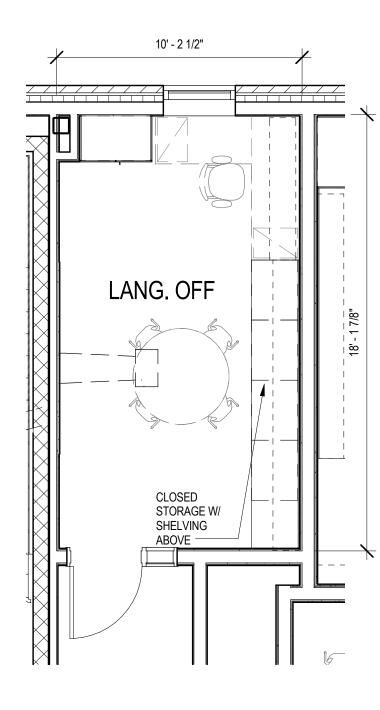
| Users: | Speech & Language Director, students, METCO Coordinator |
|----------------------|---|
| Adjacency: | In academic portion of the building centrally located between two grade level |
| | teams. |
| Orientation / Views: | Exterior views |

| Floor Finishes: Wall Finishes: | Linoleum sheet goods Gypsum Wall Board, painted Magnetic Projectable Marker board surface on (1) wall |
|-----------------------------------|---|
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits |
| Acoustical: | Similar to classrooms - work space appropriate. |
| Windows: | Aluminum windows with vision glazing, room darkening shades |
| Doors: | Flush wood door, sidelight |
| | Horizontal mini blinds at vision panels |
| | Office hardware set |
| HVAC: | Overhead distribution with air conditioning |
| | Radiant panels for supplemental heating |
| Plumbing / FP: | Fully Sprinklered |
| Lighting: | Linear pendant |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |
| | Interactive Projector |

| Casework /Specialties: | Types & Configurations indicated in the attached room layout sheets |
|------------------------|---|
| Furnishings: | (1) Administrator Desk |
| | (1) Office chair |
| | (1) Round student meeting table |
| | (4) Student chairs |
| Equipment: | Types & Configurations indicated in the attached room layout sheets |
| Shelving / Storage: | Types & Configurations indicated in the attached room layout sheets |
| (1) Teachers Wardrobe | |
| | (30 LF) Open shelving |
| | (12 LF) Closed cabinet storage |

Additional Requirements:











Room Data Sheet: Liaison Office

Functional Criteria:

| Description: | Home base for Special Education Liaison |
|---------------|---|
| Program Area: | 175SF |
| Quantity: | 3 |
| Occupant Load | 7 (6 Students, 1 Teacher) |

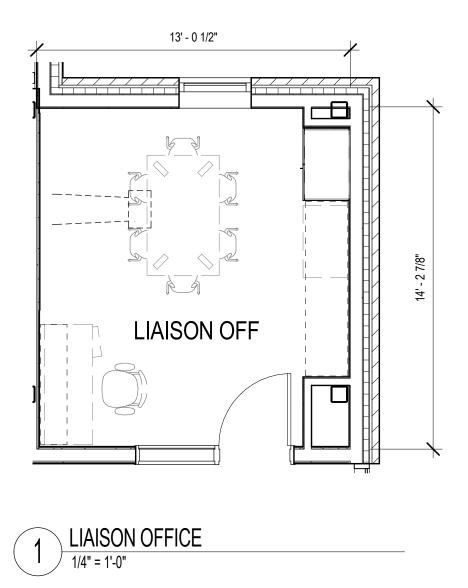
Location Criteria:

| Users: | Special Education Liaison, students |
|----------------------|--------------------------------------|
| Adjacency: | In academic portion of the building. |
| Orientation / Views: | Exterior views |

| Floor Finishes: | Linoleum sheet goods |
|-------------------|--|
| Wall Finishes: | Gypsum Wall Board, painted |
| | Magnetic Projectable Marker board surface on (1) wall |
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits |
| Acoustical: | Similar to classrooms - work space appropriate. |
| Windows: | Aluminum windows with vision glazing, room darkening shades |
| Doors: | Flush wood door, sidelight |
| | Horizontal mini blinds at vision panels |
| | Office hardware set |
| HVAC: | Displacement ventilation with air conditioning |
| | Radiant panels for supplemental heating |
| Plumbing / FP: | Fully Sprinklered |
| Lighting: | Linear pendant |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |
| | Interactive Projector |

Casework /Specialties: Types & Configurations indicated in the attached room layout sheets Furnishings: (1) Administrator Desk (1) Office chair (1) 2 Drawer lateral file (1) Rectangular student meeting table (6) Student chairs Equipment: Types & Configurations indicated in the attached room layout sheets Shelving / Storage: Types & Configurations indicated in the attached room layout sheets (1) Teachers Wardrobe (35 LF) Open shelving

Additional Requirements:







Room Data Sheet: Conference Room

Functional Criteria:

Description:Special Education Conference RoomProgram Area:306 SFQuantity:1Occupant Load12-18

Location Criteria:

| Users: | School staff, councilors, parents of students, and students |
|----------------------|---|
| Adjacency: | Component of central administrative suite |
| Orientation / Views: | None |

Technical Criteria:

| Wall Finishes: Gypsum Wall Board, painted Magnetic marker surface at multiple walls Ceiling Finishes: Acoustical ceiling system, painted gypsum soffits Acoustical: Similar to classrooms - work space appropriate. Windows: Aluminum windows with vision glazing, room darkening shades Doors: Flush wood door, sidelight Horizontal mini blinds at vision panels Office bardware set |
|--|
| Ceiling Finishes:Acoustical ceiling system, painted gypsum soffitsAcoustical:Similar to classrooms - work space appropriate.Windows:Aluminum windows with vision glazing, room darkening shadesDoors:Flush wood door, sidelightHorizontal mini blinds at vision panels |
| Acoustical: Similar to classrooms - work space appropriate. Windows: Aluminum windows with vision glazing, room darkening shades Doors: Flush wood door, sidelight Horizontal mini blinds at vision panels |
| Windows: Aluminum windows with vision glazing, room darkening shades Doors: Flush wood door, sidelight Horizontal mini blinds at vision panels |
| Doors: Flush wood door, sidelight Horizontal mini blinds at vision panels |
| Horizontal mini blinds at vision panels |
| • |
| Office handware est |
| Office hardware set |
| HVAC: Overhead distribution with air conditioning |
| Plumbing / FP: Fully Sprinklered |
| Lighting: Linear pendant |
| Electrical & Typical perimeter power requirements. |
| Technology: Additional power required to support specific room equipment |
| Public Address system |
| Clock System |
| Wireless network access |

Fixtures & Furnishings:

| Casework /Specialties: | Types & Configurations indicated in the attached room layout sheets |
|------------------------|---|
| Furnishings: | (5) Rectangular meeting tables, reconfigurable |
| | (18) Office chairs |
| | (1) Storage credenza |
| | (1) Workstation |
| | (1) Desk Chair |
| | (1) Coat hook rack for personal belongings of visitors/students |
| Equipment: | Types & Configurations indicated in the attached room layout sheets |
| Shelving / Storage: | Types & Configurations indicated in the attached room layout sheets |

Additional Requirements:

Room Data Sheet: De-escalation

Functional Criteria:

| Description: | De-escalation spaces serve multiple purposes. Primarily these are designed to be a choice destination for students in need of relief from sensory overstimulation. In addition, these spaces are designed to serve as a location where students may de-escalate from a tantrum in a dignified and safe location. |
|---------------|--|
| Program Area: | 150 SF |
| Quantity: | 4 |
| Occupant Load | 1-3 |

Location Criteria:

| Users: | Teachers, students, specialists, paraprofessionals | |
|----------------------|--|--|
| Adjacency: | cy: Distributed throughout building. (1) near administration and entry, (3) in | |
| | academic wing integrated into self-contained classrooms. | |
| Orientation / Views: | None required | |

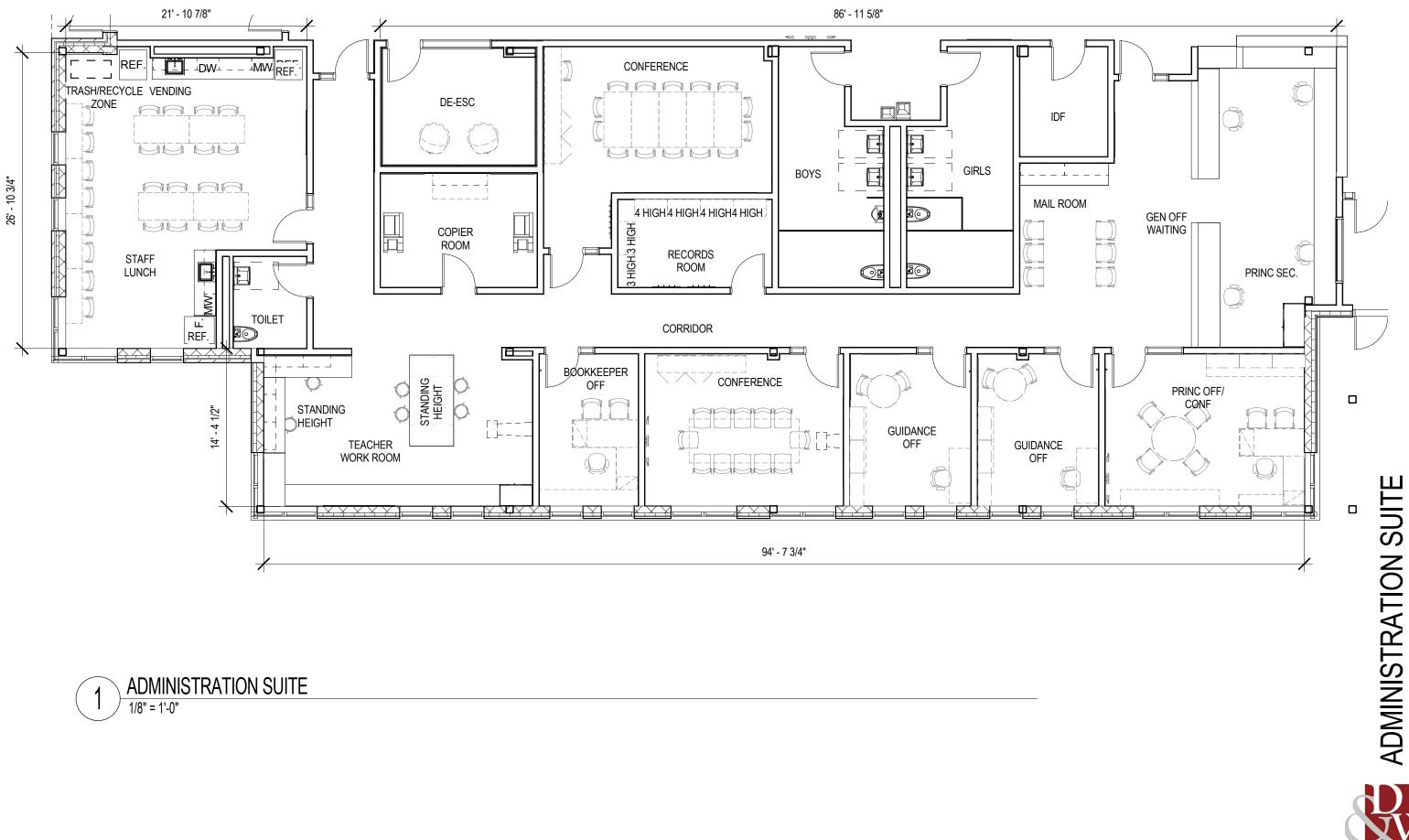
Technical Criteria:

| Floor Finishes: | Athletic rubber flooring | | |
|--------------------------|--|--|--|
| Wall Finishes: | s: Reinforced Gypsum Wall Board, painted | | |
| | Magnetic writable surface at one all walls, floor to 7' for teacher and student use as de-escalation method (only provided at main entry location) | | |
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits | | |
| Acoustical: | Meets or exceeds LEED prerequisite for acoustic performance | | |
| | Additional acoustic treatment required | | |
| Windows: | N/a | | |
| Doors: | Flush wood door, full sidelight and integrated shading in glass | | |
| | Classroom hardware set | | |
| HVAC: | Overhead distribution with air conditioning | | |
| Plumbing / FP: | Fully Sprinklered | | |
| Lighting: | Recessed lay-in fixtures | | |
| Electrical & | Typical perimeter power requirements. | | |
| Technology: | Additional power required to support specific room equipment | | |
| | Public Address system | | |
| | Wireless network access | | |

Fixtures & Furnishings:

Casework /Specialties: N/A Furnishings: (3) Soft Chairs – easily removable Equipment: N/A Shelving / Storage: N/A

Additional Requirements:



DORE & WHITTIER ARCHITECTS, INC. 4.1.2.13-63

Room Data Sheet: Literacy Offices

Functional Criteria:

Description:Home base for the Literacy Coaches with capability to deliver services to
students within spaceProgram Area:250SF
Quantity:Quantity:2Occupant Load7

Location Criteria:

| Users: | Literacy Coach, students, teachers and specialists | |
|----------------------|--|--|
| Adjacency: | In academic portion of the building, centrally located between grade level | |
| | teams. | |
| Orientation / Views: | Exterior views | |

| Floor Finishes: | Linoleum sheet goods |
|--------------------------|---|
| Wall Finishes: | Gypsum Wall Board, painted |
| | Magnetic Projectable Marker board surface on one wall |
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits |
| Acoustical: | Similar to classrooms - work space appropriate. Additional acoustical |
| | consideration given to demising wall between Literacy and Extended Learning |
| | Areas. |
| Windows: | Aluminum windows with vision glazing, room darkening shades |
| Doors: | Flush wood door, sidelight . Controlled views into the space from the interior. |
| | Consider translucent glazing at seated height to minimize student distractions. |
| | Horizontal mini blinds at vision panels |
| | Office hardware set |
| HVAC: | Overhead distribution with air conditioning |
| | Radiant panels as supplemental heating |
| Plumbing / FP: | Fully Sprinklered |
| Lighting: | Linear pendant |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |
| | Large-format flat panel monitor |
| | |

Casework /Specialties: Types & Configurations indicated in the attached room layout sheets

- (11 LF) of open counter
- Furnishings: (1) Administrator Desk
 - (1) Office chair
 - (1) Round student meeting table
 - (6) Student chairs
- Equipment: Types & Configurations indicated in the attached room layout sheets
- Shelving / Storage: Types & Configurations indicated in the attached room layout sheets
 - (1) 2-drawer filing cabinet
 - (1) Teachers Wardrobe
 - (42 LF) Open shelving

Additional Requirements:

Room Data Sheet: Math Office

Functional Criteria:

Description:Home base for the Math Coach with capability to deliver services to students
within spaceProgram Area:248SF
Quantity:Quantity:1Occupant Load7

Location Criteria:

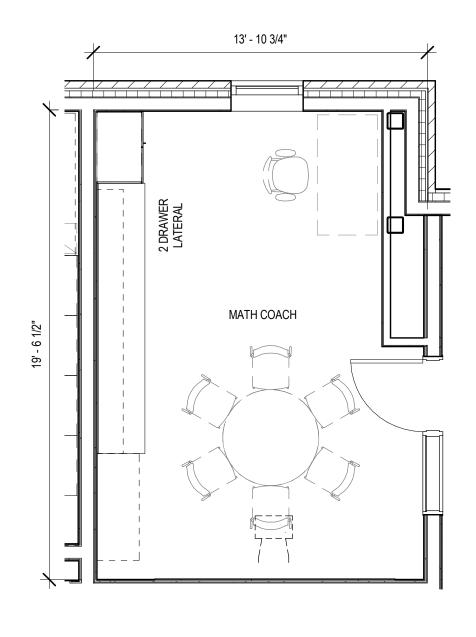
| Users: | Math Coach, students, teachers and specialists | |
|----------------------|--|--|
| Adjacency: | In academic portion of the building, centrally located between grade level | |
| | teams. | |
| Orientation / Views: | Exterior views | |

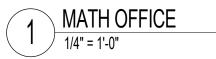
| Floor Finishes: | Linoleum sheet goods |
|-------------------|---|
| | Gypsum Wall Board, painted |
| | Magnetic Projectable Marker board surface on one wall |
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits |
| Acoustical: | Similar to classrooms - work space appropriate. Additional acoustical |
| | consideration given to demising wall between Literacy and Extended Learning |
| | Areas. |
| Windows: | Aluminum windows with vision glazing, room darkening shades |
| Doors: | Flush wood door, sidelight . Controlled views into the space from the interior. |
| | Consider translucent glazing at seated height to minimize student distractions. |
| | Horizontal mini blinds at vision panels |
| | Office hardware set |
| HVAC: | Overhead distribution with air conditioning |
| | Radiant panels as supplemental heating |
| • | Fully Sprinklered |
| | Linear pendant |
| | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |
| | Large-format flat panel monitor |
| | |

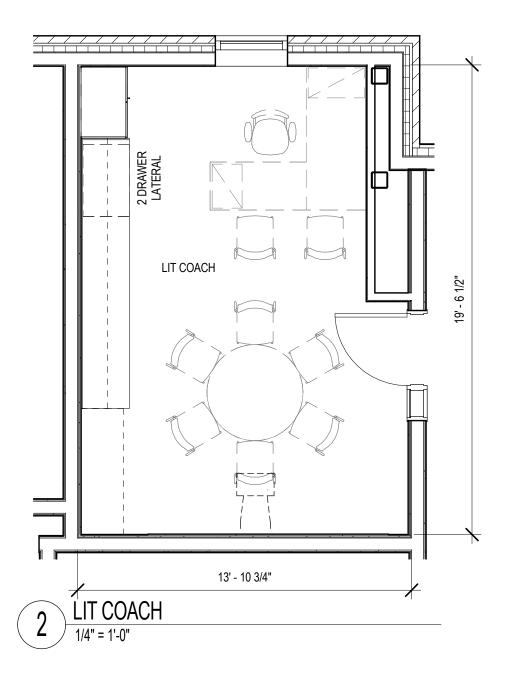
Casework /Specialties: Types & Configurations indicated in the attached room layout sheets

- (11 LF) of open counter
- Furnishings: (1) Administrator Desk
 - (1) Office chair
 - (1) Round student meeting table
 - (6) Student chairs
- Equipment: Types & Configurations indicated in the attached room layout sheets
- Shelving / Storage: Types & Configurations indicated in the attached room layout sheets
 - (1) 2-drawer filing cabinet
 - (1) Teachers Wardrobe
 - (42 LF) Open shelving

Additional Requirements:







MATH COACH OFFICE/LITERACY COACH OFFICE



4.1.2.13-69

Room Data Sheet: Art Classroom

Functional Criteria:

| Description: | Art Classroom |
|---------------|-------------------------------|
| Program Area: | 993 SF |
| Quantity: | 1 |
| Occupant Load | 25 students, 1 teacher, 1 aid |

Location Criteria:

| Users: | Teachers, students, specialists, paraprofessionals | |
|----------------------|--|--|
| Adjacency: | In academic portion of building, immediately adjacent to Art storage room, | |
| | access to the arts plaza as and outdoor learning space | |
| Orientation / Views: | Exterior views required | |

| Floor Finishes: | Linoleum sheet goods | | |
|-------------------|--|--|--|
| Wall Finishes: | Gypsum Wall Board, painted | | |
| | Full height tack wall for pin up display/critiques | | |
| | Projectable Magnetic writable surface at teaching wall location, floor to 7' for | | |
| | teacher and student use | | |
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits | | |
| Acoustical: | Meets or exceeds LEED prerequisite for acoustic performance | | |
| Windows: | Aluminum windows with vision glazing, room darkening shades | | |
| Doors: | Flush wood door, sidelight | | |
| | Horizontal mini blinds at vision panels | | |
| | Classroom hardware set | | |
| HVAC: | Displacement ventilation | | |
| | Radiant panels for supplemental heating | | |
| Plumbing / FP: | Fully Sprinklered | | |
| | (1) Accessible stainless steel sink | | |
| | (3) deep wash sinks | | |
| Lighting: | Linear pendant | | |
| | Specialty lighting at display wall | | |
| | Ceiling-mounted Light rack for adjustable spot lighting | | |
| Electrical & | Typical perimeter power requirements. | | |
| Technology: | Additional power required to support specific room equipment | | |
| | Public Address system | | |
| | Clock System | | |
| | Wireless network access | | |
| | Interactive projector | | |
| | Mobile Teachers station to coordinate with interactive projector (data $\&$ | | |
| | power) | | |
| | No additional power requirements for pottery wheels requested | | |
| | Voice amplification/ Sound field system | | |
| | | | |

| Casework /Specialties: Furnishings: | Types & Configurations indicated in the attached room layout sheets (1) Adult chair (1) Teachers workstation (6) Rectangular tables for 4-5 |
|--|---|
| Equipment: | (26) Student Chairs (2) Free-standing drying racks (1) Area Rug for student instruction Types & Configurations indicated in the attached room layout sheets |
| Shelving / Storage: | Types & Configurations indicated in the attached room layout sheets Types & Configurations indicated in the attached room layout sheets 9' Long, full height millwork storage cabinet with sliding magnetic marker surface doors and internal height adjustable shelving. |

Additional Requirements:

Room Data Sheet: Art Storage & Kiln Room

Functional Criteria:

Description:Storage of bulk art supplies, student works-in-progress, kiln roomProgram Area:155 SFQuantity:1Occupant Load0

Location Criteria:

| Users: | Teacher |
|----------------------|-------------------|
| Adjacency: | Art classroom |
| Orientation / Views: | No views required |

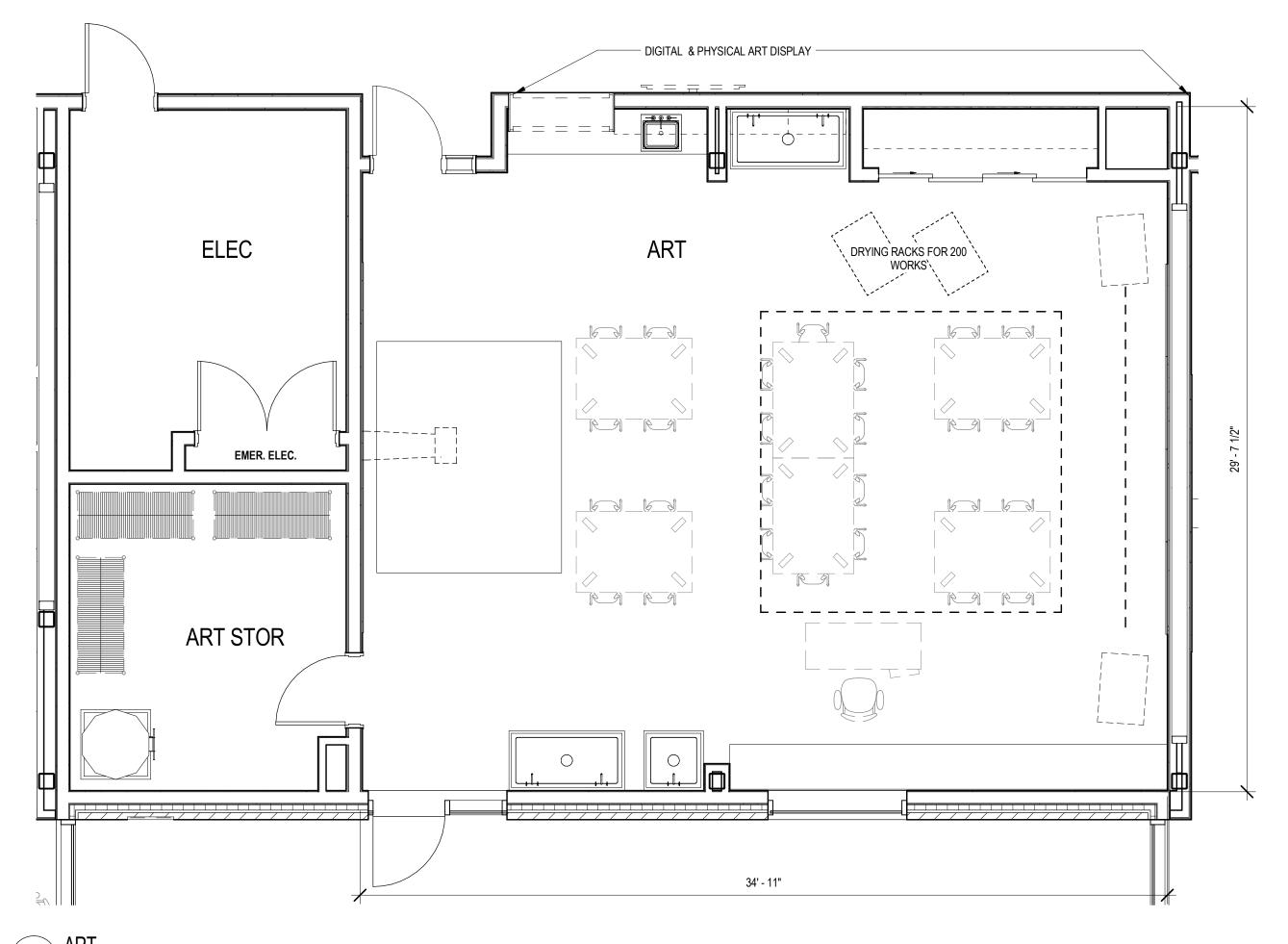
Technical Criteria:

| Floor Finishes: | Stained & sealed concrete |
|--------------------------|---|
| Wall Finishes: | Gypsum Wall Board, painted |
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits |
| Acoustical: | None |
| Windows: | None |
| Doors: | Wood door with vision glazing |
| | Passage hardware set |
| HVAC: | Overhead distribution with air conditioning |
| | Fin Tube Radiation supplemental heating |
| | Heat rejection hood at kiln |
| | Fume vent kit at kiln |
| Plumbing / FP: | Fully Sprinklered |
| Lighting: | Lay-in fluorescent |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support kiln and venting equipment |
| | Public Address system |

Fixtures & Furnishings:

Casework /Specialties:Types & Configurations indicated in the attached room layout sheetsFurnishings:TBDEquipment:Types & Configurations indicated in the attached room layout sheetsShelving / Storage:TBD

Additional Requirements:



1 ART

//4" = 1'-0"





Room Data Sheet: Music Classroom/ Music Storage

Functional Criteria:

| Description: | Music Classroom/Storage to serve as home base for vocal and instrumental |
|---------------|--|
| | instruction. Instrument instruction includes both band and orchestral |
| | instruments |
| Program Area: | 1177 SF – Music Classroom |
| | 125 SF – Music Storage |
| Quantity: | 1 |
| Occupant Load | 50-75 students, 1 teacher |

Location Criteria:

| Users: | Teachers, students, specialists, paraprofessionals |
|----------------------|---|
| Adjacency: | Music storage area, Music practice room. Near Cafeteria as a performance |
| | venue. In public area to allow for after-hours performance. Storage located |
| | partially in corridor for easy drop off/pick up of instruments. |
| Orientation / Views: | Exterior views required |

| Floor Finishes: | Linoleum sheet goods |
|-------------------|--|
| Wall Finishes: | Gypsum Wall Board, painted |
| | Projectable Magnetic writable surface at teaching wall location, floor to 7' for |
| | teacher and student use in two locations. |
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits |
| Acoustical: | Meets or exceeds LEED prerequisite for acoustic performance |
| | Additional acoustical measures required to control reverberation time and |
| | other acoustical characteristics. Desire is for space to be "a little live" |
| Windows: | Aluminum windows with vision glazing, room darkening shades, skylights |
| Doors: | Flush wood door, sidelight |
| | Horizontal mini blinds at vision panels |
| | Classroom hardware set |
| | Second egress is a double door, closest to the Cafeteria |
| HVAC: | Overhead distribution with air conditioning |
| | Radiant panels for supplemental heating |
| | Alternate: Air conditioning |
| Plumbing / FP: | Fully Sprinklered |
| | Accessible stainless steel sink with water fountain |
| Lighting: | Linear pendant |
| | Specialty theatrical lighting batten |
| | |

| Electrical & | Typical perimeter power requirements. Four quad power flush floor boxes. |
|--------------|---|
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |
| | (2) Interactive projector locations |
| | Mobile Teachers station to coordinate with interactive projector (data $\&$ |
| | power) |
| | Audio recording & playback system |

| Casework /Specialties: | Types & Configurations indicated in the attached room layout sheets |
|------------------------|---|
| Furnishings: | (75) loose chairs |
| | (1) Adult chair |
| | (1) Upright spinet piano |
| | (1) Music Stand Rack |
| | (1) Teachers station |
| | (1) Area rug |
| Equipment: | TBD |
| Shelving / Storage: | Types & Configurations indicated in the attached room layout sheets |

Additional Requirements:

Room Data Sheet: Practice Room

Functional Criteria:

Description:Practice room for individuals and small ensemblesProgram Area:96 SF – Practice RoomQuantity:1Occupant Load4

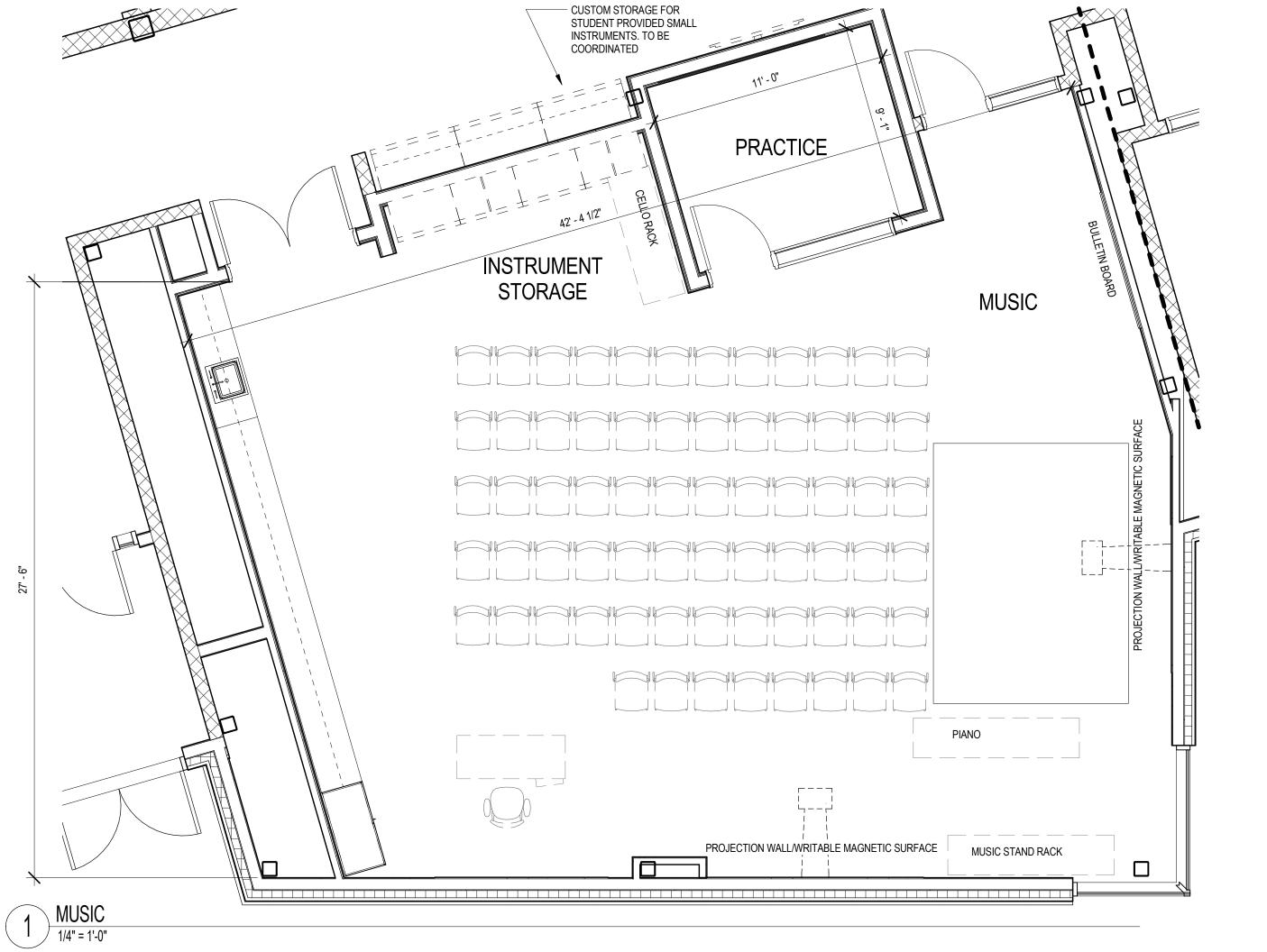
Location Criteria:

| Users: | Teachers, students, specialists, paraprofessionals |
|----------------------|--|
| Adjacency: | Music storage area, within the Music classroom. |
| Orientation / Views: | None |

| Floor Finishes: | Linoleum sheet goods |
|-------------------|--|
| Wall Finishes: | Gypsum Wall Board, painted |
| | Magnetic writable surface at (1) wall, floor to 7' for teacher and student use |
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits |
| Acoustical: | Meets or exceeds LEED prerequisite for acoustic performance |
| | Additional acoustical measures required. Sound absorptive materials based on |
| | recommendations from acoustical engineer |
| Windows: | None |
| Doors: | Flush wood door, large sidelight |
| | Horizontal mini blinds at vision panels |
| | Classroom hardware set |
| HVAC: | Overhead distribution with air conditioning |
| | Radiant panels for supplemental heating |
| | Alternate: Air conditioning |
| Plumbing / FP: | Fully Sprinklered |
| Lighting: | Linear pendant |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Wireless network access |
| | Audio recording & playback system |

Casework /Specialties: None Furnishings: TBD Equipment: TBD Shelving / Storage: None

Additional Requirements:







4.1.2.13-81

Room Data Sheet: Gymnasium

Functional Criteria:

| Description: | Home base for physical education instruction. Whole school gathering/ events. |
|---------------|---|
| | |
| Program Area: | 6000 SF |
| Quantity: | 1 |
| Occupant Load | 50 students, 2 teachers (typical instruction) |
| | Maximum 750 occupants for large community gathering |

Location Criteria:

| Users: | Teachers, students, specialists, paraprofessionals |
|----------------------|---|
| Adjacency: | Gym storeroom, Health instructor's office, Adaptive PE, exterior access. In the |
| | public zone for community access after hours. |
| Orientation / Views: | Natural lighting required. Exterior views preferred, not required. |

| Floor Finishes: | Resilient wood sports flooring |
|--------------------------|--|
| Wall Finishes: | CMU, painted. Portions acoustical block |
| | Magnetic writable surface at (2) teaching wall location, floor to 7' for teacher |
| | and student use. |
| Ceiling Finishes: | Type NCA acoustic deck, painted |
| Acoustical: | Additional acoustical measures required to control reverberation time |
| Windows: | Aluminum windows with vision glazing, Athletic glazing within impact zone. |
| Doors: | Vision glazing wood door (interior); Aluminum curtain wall (exterior) |
| | Classroom hardware set |
| HVAC: | Displacement Ventilation. Radiant panels for supplemental heating |
| Plumbing / FP: | Fully Sprinklered |
| Lighting: | High output fluorescent athletic lighting |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |
| | Large format motorized projection screen |
| | (2) Fixed projection screen |
| | AV system for large audience presentations |

| Casework /Specialties: | Types & Configurations indicated in the attached room layout sheets |
|------------------------|--|
| Furnishings: | None |
| Equipment: | (2) Ceiling mount retractable and height adjustable basketball backstops – motorized |
| | (4) Wall mount retractable basketball backstops – motorized |
| | (1) motorized room divider curtain |
| | NOTE: NO Perimeter wall pads are requested |
| Shelving / Storage: | Adjacent storage room to house shelving for storage of PE equipment |

Additional Requirements:

Room Data Sheet: Health Instructor Office

Functional Criteria:

Description: Home base for Health Instructor Program Area: 150 SF Quantity: 1 Occupant Load 2 staff, 2 visitors

Location Criteria:

| Users: | Health Instructor, Aid |
|----------------------|--|
| Adjacency: | Adjacent to the Gymnasium and accessible from the corridor. Visually |
| | connected to the Gymnasium. |
| Orientation / Views: | Exterior views not required |

Technical Criteria:

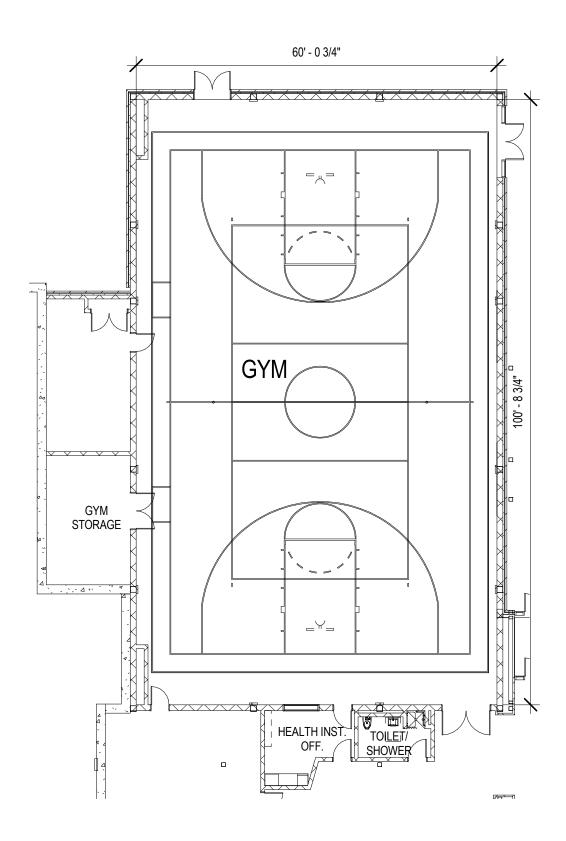
| Floor Finishes: Wall Finishes: | Linoleum sheet goods Gypsum Wall Board, painted |
|-----------------------------------|--|
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits |
| Acoustical: | Similar to classrooms - work space appropriate. |
| Windows: | None |
| Doors: | Flush wood door, sidelight |
| | Horizontal mini blinds at vision panels |
| | Office hardware set |
| HVAC: | Overhead distribution with air conditioning |
| | Radiant panels for supplemental heating |
| Plumbing / FP: | Fully Sprinklered |
| Lighting: | Lay-in |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |
| | |

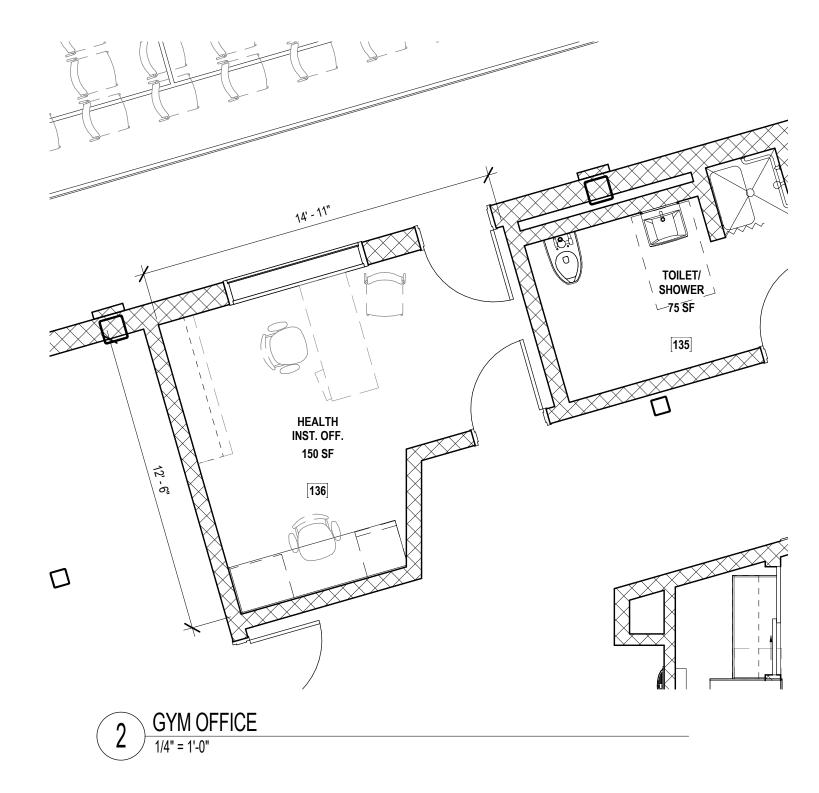
Fixtures & Furnishings:

| Casework /Specialties: | Types & Configurations indicated in room layout drawing |
|------------------------|---|
| Furnishings: | (2) Office chairs |
| | (2) Administration desk |
| | (1) Guest chairs |
| | (10LF) Open shelving |
| | (1) 2 High lateral file cabinet |
| Equipment: | Types & Configurations indicated in room layout drawing |
| Shelving / Storage: | Types & Configurations indicated in room layout drawing |
| | |

Additional Requirements:

None





1 GYM 1/16" = 1'-0" GYMNASIUM



4.1.2.13-87

Room Data Sheet: Media Center/Reading Room

Functional Criteria:

| Description: | School library area to house minimum of 16,000 volume book collection, provide space for instruction, presentation and exploration of literature. A separate table and chair instruction space on upper level to house professional collection. |
|---------------|---|
| Program Area: | 2354 SF |
| Quantity: | 1 |
| Occupant Load | Lower Level: 28 students on carpeted area, 2 faculty/staff Upper Level: 28 students at tables & chairs |

Location Criteria:

| Users: | Teachers, students, specialists, paraprofessionals, faculty & staff, visitors |
|----------------------|---|
| Adjacency: | Centrally located near classrooms and special education spaces. |
| | Accessible to public after hours |
| Orientation / Views: | Exterior views required |
| | |

| Floor Finishes: | Carpet, hard surface near sinks. |
|-------------------|--|
| Wall Finishes: | Gypsum Wall Board, painted |
| | Projectable Magnetic writable surface at teaching wall location, floor to 7' for |
| | teacher and student use |
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits, specialty ceilings |
| Acoustical: | Meets or exceeds LEED prerequisite for acoustic performance |
| Windows: | Aluminum windows with vision glazing, room darkening shades |
| Doors: | Aluminum storefront entry system - main entry |
| | Wood door with glass panel and sidelight. |
| | Horizontal mini blinds at vision panels |
| | Classroom hardware set |
| | Alarmed second egress door to corridor at main level and upper level |
| HVAC: | Overhead distribution with air conditioning |
| | Radiant panel supplemental heating at perimeter |
| Plumbing / FP: | Fully Sprinklered |
| | Hand washing sink located near circulation desk & on upper level |
| Lighting: | Linear pendant direct/indirect, specialty task lighting at reading & work areas. |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | (6) Reference Computers |
| | Wireless network access |
| | (2) Interactive projectors – 1 per level |
| | (2) Teachers station to coordinate with interactive projector (data & power) – 1 per level |
| | |

Casework /Specialties: Types & Configurations indicated in the attached room layout sheets Centrally located circulation desk. Millwork seating cubes Furnishings: Types & Configurations indicated in the attached room layout sheets Lower Level: 12' x 9' Area Rug (3) Round tables (12) Student Chairs (2) Adult Chairs (2) Lounge Chairs

> Upper Level: (4) Rectangular tables (28) Student Chairs (1) Adult Chairs (1) Teacher's Desk/Presentation station (2) Lounge Chairs

| Equipment: | Types & Configurations indicated in the attached room layout sheets |
|---------------------|---|
| Shelving / Storage: | Types & Configurations indicated in the attached room layout sheets |
| | 800 LN FT of shelving to house book collection |

Additional Requirements:

Room Data Sheet: Media Specialist Office

Functional Criteria:

Description: Home base for Media Specialist Program Area: 131 SF Quantity: 1 Occupant Load 1 staff, 2 visitors

Location Criteria:

| Users: | Media Specialist, administration |
|----------------------|--|
| Adjacency: | Within Media Center. Adjacent to the circulation desk and visible from the |
| | Media Center |
| Orientation / Views: | Exterior views |

| Floor Finishes: Wall Finishes: | Carpet Gypsum Wall Board, painted |
|-----------------------------------|--|
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits |
| Acoustical: | Similar to classrooms - work space appropriate. |
| Windows: | Aluminum windows with vision glazing, room darkening shades |
| Doors: | Flush wood door, sidelight |
| | Horizontal mini blinds at vision panels |
| | Office hardware set |
| HVAC: | Overhead distribution with air conditioning |
| | Radiant panel supplemental heating at perimeter |
| Plumbing / FP: | Fully Sprinklered |
| Lighting: | Lay-in |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |

Casework /Specialties: Types & Configurations indicated in room layout drawing including: (27 LF) Open shelving with counter Furnishings: (1) Office chair (1) Administration desk (1) Round conference table for two (2) Guest chairs Equipment: Types & Configurations indicated in room layout drawing Shelving / Storage: Types & Configurations indicated in room layout drawing

Additional Requirements:

None

Room Data Sheet: Tech Specialist Office

Functional Criteria:

Description: Home base for Technical Specialist Program Area: 120 SF Quantity: 1 Occupant Load 1 staff, 2 visitors

Location Criteria:

| Users: | Technical Specialist, administration |
|----------------------|--|
| Adjacency: | Within Media Center. Adjacent to the circulation desk and visible from the |
| | Media Center |
| Orientation / Views: | Exterior views |

| Floor Finishes: Wall Finishes: | Carpet Gypsum Wall Board, painted |
|-----------------------------------|--|
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits |
| Acoustical: | Similar to classrooms - work space appropriate. |
| Windows: | Aluminum windows with vision glazing, room darkening shades |
| Doors: | Flush wood door, sidelight |
| | Horizontal mini blinds at vision panels |
| | Office hardware set |
| HVAC: | Overhead distribution with air conditioning |
| | Radiant panel supplemental heating at perimeter |
| Plumbing / FP: | Fully Sprinklered |
| Lighting: | Lay-in |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |

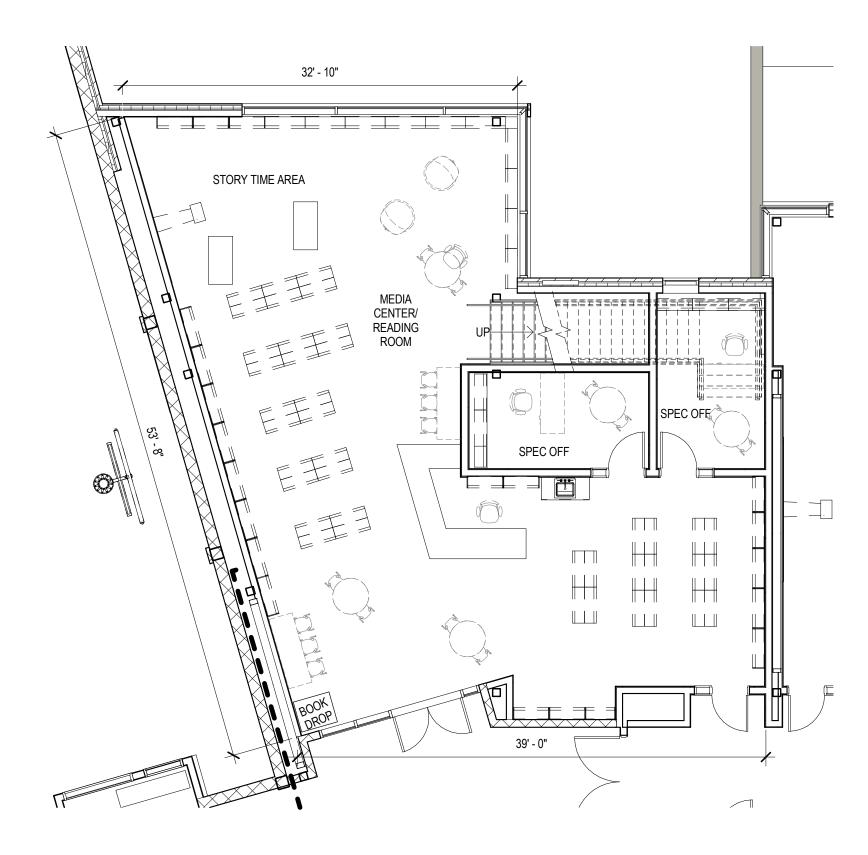
Casework /Specialties: Types & Configurations indicated in room layout drawing including: (27 LF) Open shelving with counter

- Furnishings: (1) Office chair
 - (1) Administration desk
 - (1) Administration desk (2) Round conference table for two
 - (2) Guest chairs

Equipment: Types & Configurations indicated in room layout drawing Shelving / Storage: Types & Configurations indicated in room layout drawing

Additional Requirements:

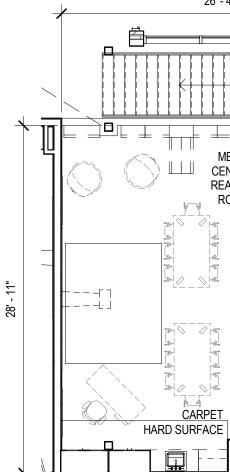
None



MEDIA CENTER - MAIN LEVEL

1

1/8" = 1'-0"





26' - 4" П _ =Media Center/ Reading Room





4.1.2.13-95

Room Data Sheet: Cafeteria/Dining

Functional Criteria:

| Description: | Student dining, large group instruction & meeting, performance seating |
|---------------|--|
| Program Area: | 2225 SF |
| Quantity: | 1 |
| Occupant Load | 190 students at lunch seating (Additional seating in Quite Zones) |
| | 252 visitors in performance seating configuration |

Location Criteria:

| Users: | Students, faculty & staff, visitors |
|----------------------|--|
| Adjacency: | Kitchen, performance platform, and quiet zones |
| Orientation / Views: | Exterior views required |

| Floor Finishes: | Linoleum sheet goods |
|-------------------|---|
| Wall Finishes: | Ceramic Tile wainscoting, Gypsum Wall Board above, painted. Full-height to 7' storefront at quiet café locations. |
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits, specialty ceilings, painted structure. |
| Acoustical: | Acoustic treatments based on recommendation of acoustician for dining and performance conditions |
| Windows: | Aluminum curtainwall with vision glazing, room darkening shades |
| Doors: | No door |
| | Flush wood doors & motorized coiling grille at servery |
| HVAC: | Overhead distribution with air conditioning |
| | Radiant panels for supplemental heating |
| Plumbing / FP: | Fully Sprinklered |
| Lighting: | Specialty pendant lighting coordinated with ceiling design |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |
| | Large format motorized projection screen at platform proscenium |
| | Ceiling mount projector |
| | AV system to support projection equipment & performance functions |
| | |

| Casework /Specialties: | Types & Configurations indicated in the attached room layout sheets |
|------------------------|--|
| Furnishings: | (30) Chairs for student dining |
| | (160) Chairs as supplement for special events/performances |
| | (5) Round folding tables on casters |
| | (10) Rectangular folding tables on casters w/ attached bench – 16 students per |
| | table |
| Equipment: | Types & Configurations indicated in the attached room layout sheets |
| Shelving / Storage: | Types & Configurations indicated in the attached room layout sheets |

Additional Requirements:

Room Data Sheet: Cafeteria/Quiet Zone - Smaller

Functional Criteria:

Description: Student dining for small groups in a quiet setting, small group instruction & meetings Program Area: 322 SF Quantity: 1 Occupant Load 20 (Total)

Location Criteria:

| Users: | Students, faculty & staff, visitors |
|----------------------|--|
| Adjacency: | Kitchen, performance platform, cafeteria and larger Quite zone |
| Orientation / Views: | Exterior views required |

| Floor Finishes: Wall Finishes: | |
|-----------------------------------|---|
| | Projectable Magnetic writable surface at teaching wall location, floor to 7' for teacher and student use |
| | Motorized acoustic room divider wall on wall adjacent to small Quite zone. Full-height to 7' storefront at quiet café locations. |
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits, specialty ceilings, painted structure. |
| Acoustical: | 6 |
| | Additional acoustical considerations at demising wall between quiet zones and cafeteria and between quiet zones and gymnasium. |
| Windows: | None to the exterior |
| Doors: | Flush wood door with full light. |
| | Motorized room divider |
| HVAC: | Displacement ventilation with air conditioning |
| Plumbing / FP: | Fully Sprinklered |
| Lighting: | Specialty pendant lighting coordinated with ceiling design |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |
| | Interactive projector |
| | |

| Casework /Specialties: | Types & Configurations indicated in the attached room layout sheets |
|------------------------|---|
| Furnishings: | (4) Chairs for student dining |
| | (8) Bench seats for student dining |
| | (4) Rectangular dining tables |
| Equipment: | Types & Configurations indicated in the attached room layout sheets |
| Shelving / Storage: | Types & Configurations indicated in the attached room layout sheets |

Additional Requirements:

Room Data Sheet: Cafeteria/Quiet Zones - Large

Functional Criteria:

Description:Student dining for small groups in a quiet setting, small group instruction &
meetings, Space to double as a green room during school performancesProgram Area:665 SF
Quantity:Quantity:1Occupant Load30

Location Criteria:

| Users: | Students, faculty & staff, visitors |
|----------------------|---|
| Adjacency: | Kitchen, performance platform, cafeteria and small Quite zone |
| Orientation / Views: | Exterior views required |

| Floor Finishes: Wall Finishes: | Linoleum sheet goods Gypsum Wall Board above, painted |
|-----------------------------------|--|
| | Projectable Magnetic writable surface at teaching wall location, floor to 7' for teacher and student use |
| | Motorized acoustic room divider wall on wall adjacent to small Quite zone. |
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits, specialty ceilings, painted structure. |
| Acoustical: | Acoustic treatments based on recommendation of acoustician for dining. |
| | Additional acoustical considerations at demising wall between quiet zones and |
| | cafeteria and between quiet zones and gymnasium. |
| Windows: | Aluminum curtainwall with vision glazing, room darkening shades |
| Doors: | Flush wood door with full light and wide sidelight |
| | Motorized room divider |
| HVAC: | Displacement ventilation with air conditioning |
| | Radiant panels supplemental heating |
| Plumbing / FP: | Fully Sprinklered |
| | Specialty pendant lighting coordinated with ceiling design |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |
| | Interactive projector |
| | |

| • • | Types & Configurations indicated in the attached room layout sheets (30) Chairs for student dining |
|---------------------|--|
| Furnishings: | (6) Rectangular dining tables |
| | (2) Round dining tables |
| | |
| Equipment: | Types & Configurations indicated in the attached room layout sheets |
| Shelving / Storage: | Types & Configurations indicated in the attached room layout sheets |

Additional Requirements:

Room Data Sheet: Performance Platform

Functional Criteria:

Description:12" high raised performance area, open to cafeteriaProgram Area:1002 SFQuantity:1Occupant Load75 students and/or staff

Location Criteria:

| Users: | Students, faculty & staff, visitors |
|----------------------|--|
| Adjacency: | Cafeteria |
| Orientation / Views: | Orient proscenium to cafeteria; exterior views |

Technical Criteria:

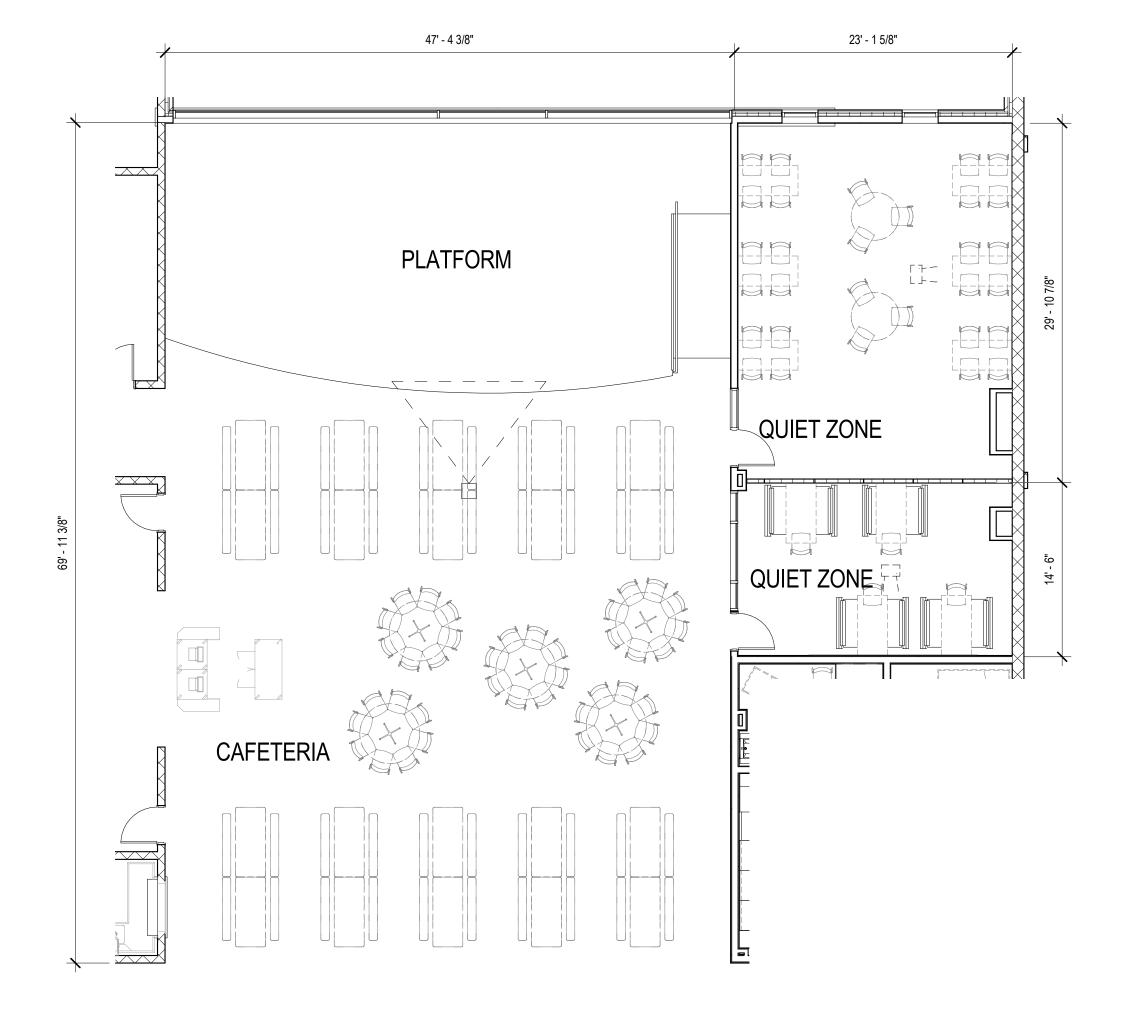
| Floor Finishes: | Hardwood strip flooring |
|-------------------|---|
| Wall Finishes: | Concrete masonry unit, ground faced/GWB |
| Ceiling Finishes: | Painted structure |
| Acoustical: | Acoustically open to cafeteria |
| Windows: | Curtain wall |
| Doors: | None |
| HVAC: | Overhead distribution with air conditioning |
| Plumbing / FP: | Fully Sprinklered |
| Lighting: | Theatrical lighting batten with dimming system |
| Electrical & | Typical perimeter power requirements |
| Technology: | Public Address system |
| | Wireless network access |
| | Large format motorized projection screen at platform proscenium |
| | AV system to support projection equipment & performance functions |

Fixtures & Furnishings:

Casework /Specialties: None Furnishings: None Equipment: Cyclorama Shelving / Storage: None

Additional Requirements:

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Room Data Sheet: Kitchen

Functional Criteria:

Description:Food preparation, dedicated toilet rooms, food service coordinator officeProgram Area:1438 SFQuantity:1Occupant Load6 kitchen staff

Location Criteria:

Users: Kitchen staff Adjacency: Cafeteria Orientation / Views: None

Technical Criteria:

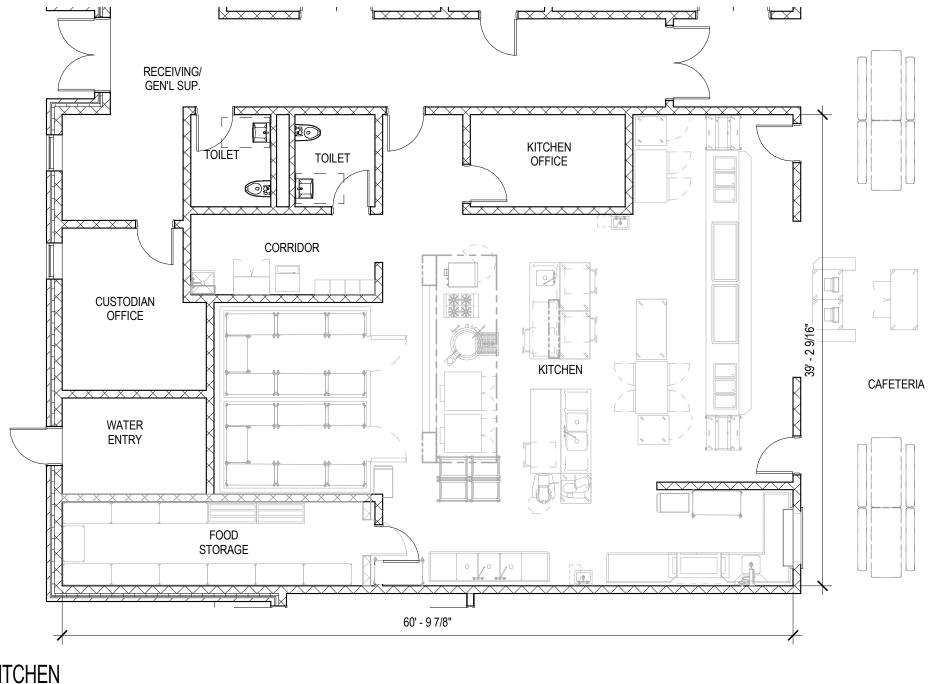
| Floor Finishes: | Quarry tile |
|-------------------|--|
| Wall Finishes: | Ceramic tile / epoxy painted CMU to ceiling |
| Ceiling Finishes: | Vinyl faced gypsum lay-in tiles |
| Acoustical: | None |
| Windows: | None |
| Doors: | Flush wood door at servery |
| | Motorized overhead coiling grille at servery |
| | Manual coiling steel door at ware washing |
| | Flush steel doors at loading area, toilet rooms |
| HVAC: | Overhead distribution Heating & Ventilating with air conditioning |
| | Make-up air unit |
| Plumbing / FP: | Fully Sprinklered |
| | dedicated single user toilet rooms |
| | Plumbing to coordinate with foodservice equipment layout |
| Lighting: | Lay-in fluorescent |
| Electrical & | Typical perimeter power requirements |
| Technology: | Public Address system |
| | Wireless network access |
| | Additional power requirements to coordinate with foodservice equipment |
| | Motorized operator at servery OH coiling grille |

Fixtures & Furnishings:

| Casework /Specialties: | TBD |
|------------------------|---|
| Furnishings: | TBD |
| Equipment: | Types & Configurations indicated in the attached room layout sheets |
| Shelving / Storage: | Types & Configurations indicated in the attached room layout sheets |

Additional Requirements:

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1 KITCHEN 1/8" = 1'-0"





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Room Data Sheet: Staff Lunch

Functional Criteria:

Description:Staff dining, group instruction & meetingProgram Area:514 SFQuantity:1Occupant Load25

Location Criteria:

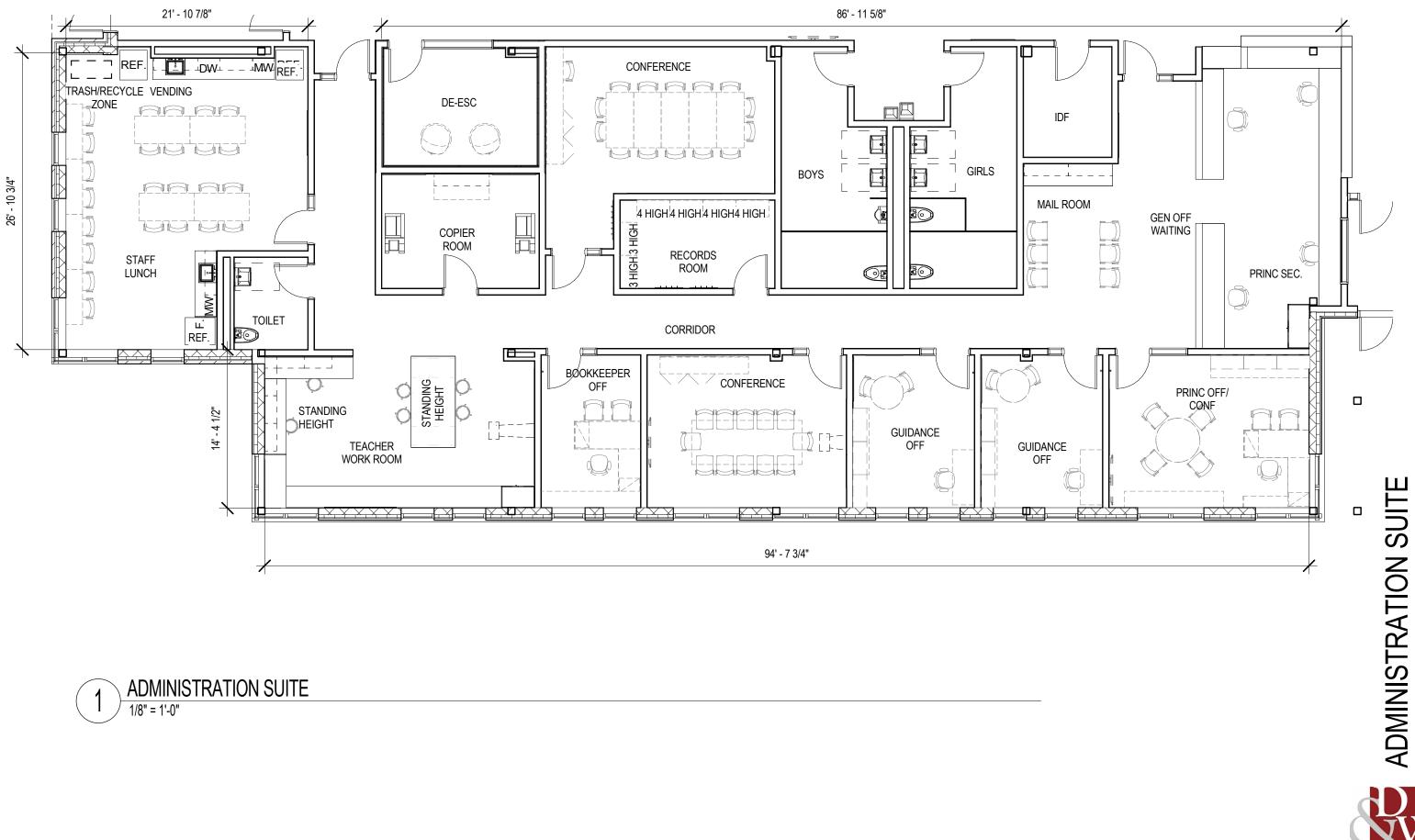
| Users: | Faculty, staff, & visitors |
|----------------------|--|
| Adjacency: | Administration suite, teacher's workroom |
| Orientation / Views: | Exterior views required. Exterior views of playground preferred. |

| Wall Finishes: | Linoleum sheet goods Gypsum Wall Board above, painted |
|-------------------|---|
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits, specialty ceilings, painted structure. |
| Acoustical: | Acoustic treatments based on recommendation of acoustician for dining |
| Windows: | Aluminum curtainwall with vision glazing, room darkening shades |
| Doors: | Door with sidelight |
| HVAC: | Overhead distribution with air conditioning |
| | Radiant panels for supplemental heating |
| Plumbing / FP: | Fully Sprinklered |
| | (2) Accessible sinks |
| | (1) Water line for coffee machine |
| | Dishwasher supply line and drain |
| Lighting: | Linear pendant lighting |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |
| | |

| Casework /Specialties: | Types & Configurations indicated in the attached room layout sheets |
|------------------------|---|
| ••• | |
| Furnishings: | (16) Chairs for staff dining |
| | (16) Counter height stools |
| | (4) Rectangular tables |
| | (4) Standing height tables |
| Equipment: | Types & Configurations indicated in the attached room layout sheets |
| | (2) Refrigerators |
| | (1) Vending Machine (N.I.C) |
| | (1) Dishwasher |
| | (4) Microwaves |
| | (1) Trash/Recycling area |
| | |

Shelving / Storage: Types & Configurations indicated in the attached room layout sheets

Additional Requirements:



DORE & WHITTIER ARCHITECTS, INC. 4.1.2.13-113

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Room Data Sheet: Nurse's Office/Waiting Room

Functional Criteria:

| Description: | Home base for Nurse, locked storage of medications and medical supplies |
|---------------|---|
| Program Area: | 250 SF |
| Quantity: | 1 |
| Occupant Load | 1 Nurse, 2 students in waiting |
| | |

Location Criteria:

| Users: | Nurse, Students |
|----------------------|---|
| Adjacency: | Integral component of medical suite, near Principal Secretary, easily accessible |
| | from main building entrance and academic wing |
| Orientation / Views: | Interior views to resting exam room, interior views to General Office/Waiting Area |

Technical Criteria:

| Floor Finishes: | Linoleum sheet goods |
|-------------------|--|
| Wall Finishes: | Gypsum Wall Board, painted |
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits |
| Acoustical: | None |
| Windows: | None |
| Doors: | Flush wood door, sidelight |
| | Horizontal mini blinds at vision panels |
| | Office hardware set |
| HVAC: | Overhead distribution with air conditioning |
| Plumbing / FP: | Fully Sprinklered |
| | Sinks in configurations indicated in the attached room layout sheets |
| Lighting: | Lay-in fluorescent |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |

Fixtures & Furnishings:

Casework /Specialties: Types & Configurations indicated in the attached room layout sheets Furnishings: (1) Office chair (2) Student Waiting Chairs Equipment: Types & Configurations indicated in the attached room layout sheets (1) Full size Refrigerator w/ ice maker (1) Medical cabinet Shelving / Storage: Types & Configurations indicated in the attached room layout sheets

Additional Requirements:

Room Data Sheet: Exam Room – Type 1

Functional Criteria:

Description:Exam room for student resting and administration of medicationProgram Area:100 SFQuantity:1Occupant Load2 on cots

Location Criteria:

| Users: | Students, medical staff |
|----------------------|---|
| Adjacency: | Integral component of the medical suite |
| Orientation / Views: | None |

Technical Criteria:

| Floor Finishes: | Linoleum sheet goods |
|-------------------|--|
| Wall Finishes: | Gypsum Wall Board, painted but open to Nurse's Office and waiting room |
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits |
| Acoustical: | None |
| Windows: | None |
| Doors: | None |
| HVAC: | Overhead distribution with air conditioning |
| Plumbing / FP: | Fully Sprinklered |
| | Sinks in configurations indicated in the attached room layout sheets |
| Lighting: | Lay-in fluorescent |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |

Fixtures & Furnishings:

Casework /Specialties: Types & Configurations indicated in the attached room layout sheets
 Furnishings: (2) cots
 Equipment: Ceiling-mounted privacy curtain
 Shelving / Storage: Types & Configurations indicated in the attached room layout sheets

Additional Requirements:

Room Data Sheet: Exam Room – Type 2

Functional Criteria:

| Description: | Exam room for medical treatment requiring visual/acoustical privacy |
|---------------|---|
| Program Area: | 100 SF |
| Quantity: | 1 |
| Occupant Load | 1 student, 1 nurse |

Location Criteria:

| Users: | Students, medical staff |
|----------------------|---|
| Adjacency: | Immediately adjacent to Nurse area/waiting area as an integral component of |
| | the Nurse's suite |
| Orientation / Views: | None |

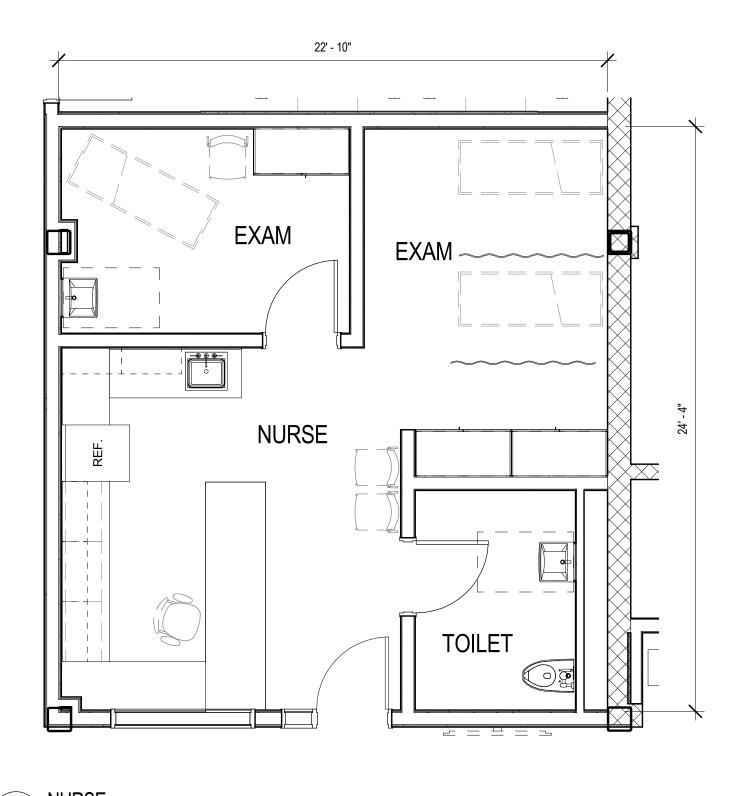
Technical Criteria:

| Floor Finishes: | Linoleum sheet goods |
|-------------------|--|
| Wall Finishes: | Gypsum Wall Board, painted |
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits |
| Acoustical: | None |
| Windows: | None |
| Doors: | Flush wood door |
| | Horizontal mini blinds at vision panels |
| | Office hardware set |
| HVAC: | Overhead distribution with air conditioning |
| Plumbing / FP: | Fully Sprinklered |
| | Sinks in configurations indicated in the attached room layout sheets |
| Lighting: | Lay-in fluorescent |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |

Fixtures & Furnishings:

| Casework /Specialties: | Types & Configurations indicated in the attached room layout sheets |
|------------------------|---|
| Furnishings: | (1) cot |
| | (1) side chair |
| Equipment: | Types & Configurations indicated in the attached room layout sheets |
| Shelving / Storage: | Types & Configurations indicated in the attached room layout sheets |

Additional Requirements:



NURSE 1/4" = 1'-0"

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Room Data Sheet: General Office/Waiting Room

Functional Criteria:

Description:Home base for Principal Secretary; serves as check-in for visitors and studentsProgram Area:318 SFQuantity:1Occupant Load:3 employees, 6 visitors

Location Criteria:

| Users: | Office aids, secretary, guests, administration, faculty, & students. |
|----------------------|---|
| Adjacency: | Near learning communities, component of central administrative suite, |
| | immediately adjacent to main entry vestibule, Records Room, and General |
| | Office/Waiting; direct visual contact with main entry and building approach |
| Orientation / Views: | Interior views to main entry vestibule, main corridor, and lobby |

| Floor Finishes: Wall Finishes: Ceiling Finishes: Acoustical: | Gypsum Wall Board, painted Acoustical ceiling system, painted gypsum soffits |
|---|---|
| Windows: | |
| | Flush wood doors with side light |
| | Office hardware set |
| | Sliding or coiling grille to secure after hours. |
| HVAC: | Overhead distribution with air conditioning |
| Plumbing / FP: | Fully Sprinklered |
| Lighting: | Linear pendant |
| | Typical perimeter power requirements. Assume quad outlets at four |
| Technology: | workstation areas Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |

| Casework /Specialties: | Types & Configurations indicated in attached room layout drawing |
|------------------------|--|
| Furnishings: | (3) Office chair |
| | (6) Waiting Chairs |
| | File cabinets for personal storage |
| Equipment: | Types & Configurations indicated in room layout drawing |
| Shelving / Storage: | Types & Configurations indicated in room layout drawing |

Additional Requirements:

General office area to be open to the corridor and separated by a counter. After hours the secretary area will be secured with a rolling grill.

Room Data Sheet: Teacher's Mail Room

Functional Criteria:

Description:Dedicated area for teacher mailboxes. A component of administrative suiteProgram Area:50 SFQuantity:1Occupant Load0

Location Criteria:

| Users: | Teachers, specialists, paraprofessionals |
|----------------------|--|
| Adjacency: | Component of administrative suite, near general office staff for ease of |
| | communication and distribution of mail. |
| Orientation / Views: | None |

| Floor Finishes: | Carpet tile |
|-------------------|---|
| Wall Finishes: | Gypsum Wall Board, painted |
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits |
| Acoustical: | None |
| Windows: | None |
| Doors: | None |
| HVAC: | Overhead distribution with air conditioning |
| Plumbing / FP: | Fully Sprinklered |
| Lighting: | Lay-in |
| Electrical & | Typical perimeter power requirements. |
| Technology: | None |

Casework /Specialties:Types & Configurations indicated in the attached room layout sheetsFurnishings:Types & Configurations indicated in the attached room layout sheetsEquipment:Types & Configurations indicated in the attached room layout sheetsShelving / Storage:Types & Configurations indicated in the attached room layout sheets

Additional Requirements:

Room Data Sheet: Duplication Room

Functional Criteria:

Description:Dedicated room for copiers and printersProgram Area:148 SFQuantity:1Occupant Load3

Location Criteria:

Users: Teachers, specialists, paraprofessionals, administration staff Adjacency: Immediately adjacent to teacher workroom, component of administrative suite Orientation / Views: Interior views into the space from the administration corridor

| Floor Finishes: | Linoleum sheet goods |
|-------------------|---|
| Wall Finishes: | Gypsum Wall Board, painted |
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits |
| Acoustical: | Similar to classrooms - work space appropriate. |
| Windows: | Interior barrowed lights or storefront to provide views into the space from the |
| | administration corridor. |
| Doors: | Flush wood door, sidelight & transom frame |
| | Passage hardware set |
| HVAC: | Overhead distribution with air conditioning with appropriate ventilation for |
| | copier equipment |
| Plumbing / FP: | Fully Sprinklered |
| Lighting: | Lay-in |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power & data required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |
| | Copiers (power and data) |
| | |

Casework /Specialties:Types & Configurations indicated in the attached room layout sheetsFurnishings:Types & Configurations indicated in the attached room layout sheetsEquipment:Types & Configurations indicated in the attached room layout sheetsShelving / Storage:Types & Configurations indicated in the attached room layout sheets

Additional Requirements:

Room Data Sheet: Records Rooms

Functional Criteria:

Description: Storage of MCAS materials Program Area: 110 SF Quantity: 1 Occupant Load 0

Location Criteria:

Users: Administrative & Guidance staff Adjacency: Adjacent to Principal's Secretary, component of administrative suite Orientation / Views: None

| Floor Finishes: | Carpet |
|-------------------|---|
| Wall Finishes: | Gypsum Wall Board, painted |
| Ceiling Finishes: | Acoustical ceiling system |
| Acoustical: | None |
| Windows: | None |
| Doors: | Flush wood door |
| | Lockable Storage hardware function |
| HVAC: | Overhead distribution with air conditioning |
| Plumbing / FP: | Fully Sprinklered |
| Lighting: | Lay-in fluorescent |
| Electrical & | Typical perimeter power requirements. |
| Technology: | |

Casework /Specialties: TBD Furnishings: (4) 4 High lateral files (2) 3 High lateral files w/ countertop (2) Coat hook racks for staff personal belongings Equipment: TBD Shelving / Storage: TBD

Additional Requirements:

Room Data Sheet: Principal Office

Functional Criteria:

Description: Home base for Principal Program Area: 251 SF Quantity: 1 Occupant Load 1 staff, 6 visitors

Location Criteria:

| | Principal |
|----------------------|---|
| Adjacency: | Within Administrative suite. Visually connected to main entry and approach. |
| | Near conference room. Adjacent to Principal's Secretary and General |
| | Office/Waiting Area |
| Orientation / Views: | Exterior views |

| Floor Finishes: Wall Finishes: Ceiling Finishes: | • |
|--|--|
| Acoustical: | Similar to classrooms - work space appropriate. |
| Windows: | Aluminum windows with vision glazing, room darkening shades |
| Doors: | Flush wood door, sidelight |
| | Horizontal mini blinds at vision panels |
| | Office hardware set |
| HVAC: | Overhead distribution with air conditioning |
| | Radiant panels for supplemental heating |
| Plumbing / FP: | Fully Sprinklered |
| Lighting: | Lay-in |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |
| | Large format flat panel monitor |

Furnishings:

Casework /Specialties: Types & Configurations indicated in room layout drawing

- (1) Office chair
- (1) Administration desk
- (1) Round conference table for four
- (6) Guest chairs
- (24 LF) Open shelving/closet shelving/files
- Equipment: Types & Configurations indicated in room layout drawing

Shelving / Storage: Types & Configurations indicated in room layout drawing

Additional Requirements:

None

Room Data Sheet: Principal's Secretary/Waiting

Functional Criteria:

Description: Home base for Principal Secretary Program Area: 125 SF Quantity: 1 Occupant Load 1

Location Criteria:

| Users: | Principal's Secretary |
|----------------------|--|
| Adjacency: | Near building main entry, component of administrative suite, immediately |
| | adjacent to vestibule, Records Room, and General Office/Waiting; direct visual |
| | contact with main entry, building approach & principal's office |
| Orientation / Views: | Interior views to vestibule, main corridor, and lobby |

Technical Criteria:

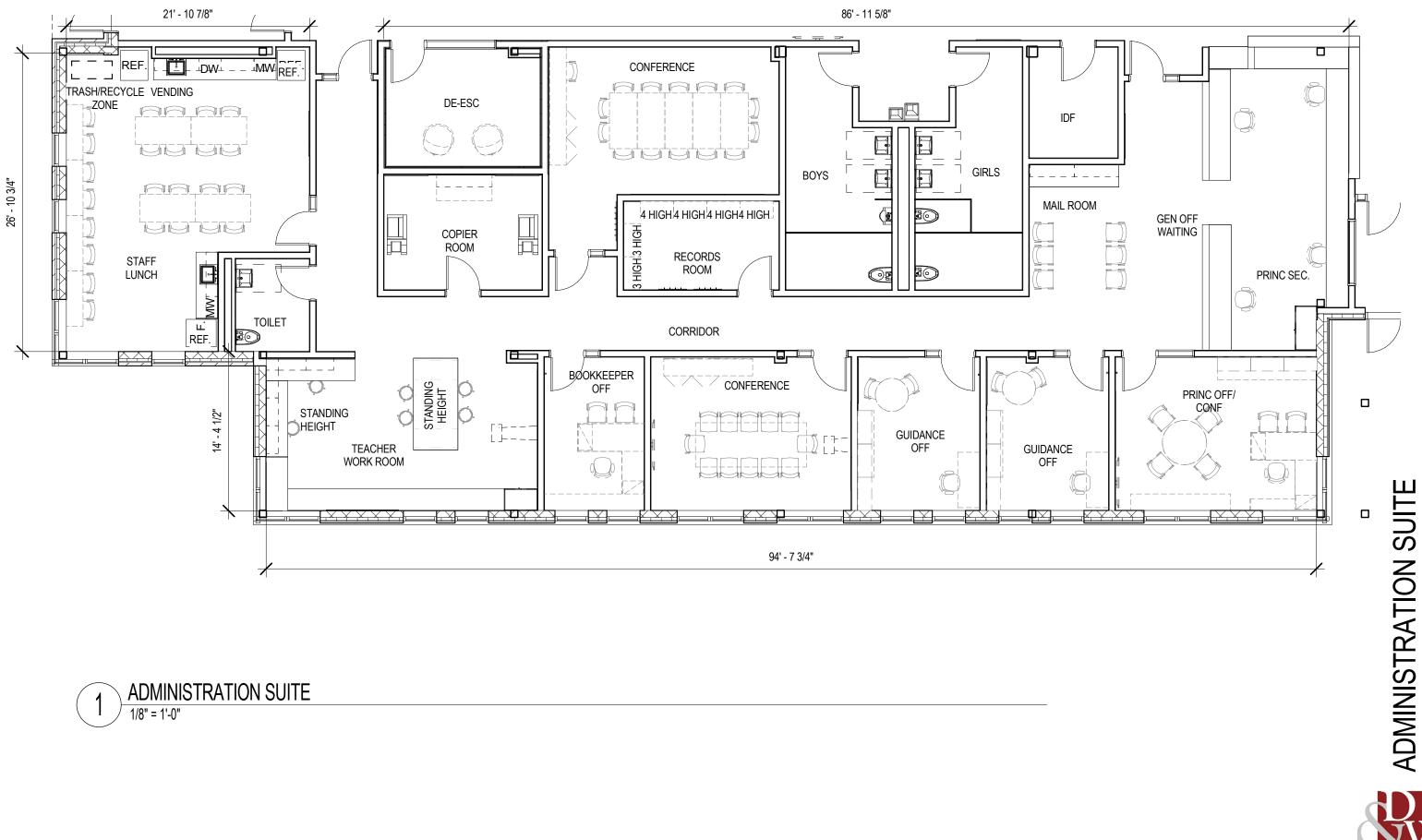
| Floor Finishes: | Carpet |
|-------------------|--|
| Wall Finishes: | Gypsum Wall Board, painted |
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits |
| Acoustical: | Similar to classrooms - work space appropriate |
| Windows: | None |
| Doors: | None |
| HVAC: | Overhead distribution with air conditioning |
| Plumbing / FP: | Fully Sprinklered |
| Lighting: | Linear pendant |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipmentWireless |
| | network access |

Fixtures & Furnishings:

| Casework /Specialties: | Types & Configurations indicated in attached room layout drawing |
|------------------------|--|
| Furnishings: | (1) Office chair |
| | File cabinets for personal storage |
| Equipment: | Types & Configurations indicated in room layout drawing |
| Shelving / Storage: | Types & Configurations indicated in room layout drawing |

Additional Requirements:

Principals secretary office to be open to the corridor and separated by a counter. After hours the secretary area will be secured with a rolling grill.



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Room Data Sheet: Assistant Principal

Functional Criteria:

Description:Home base for the Assistant PrincipalProgram Area:150SFQuantity:1Occupant Load5

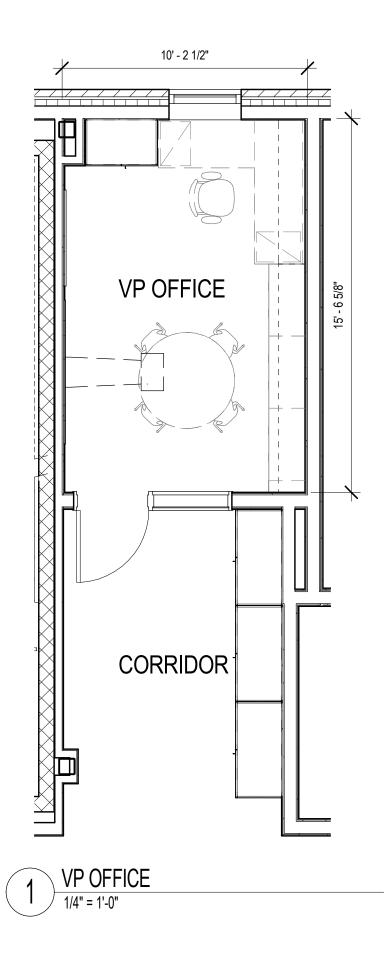
Location Criteria:

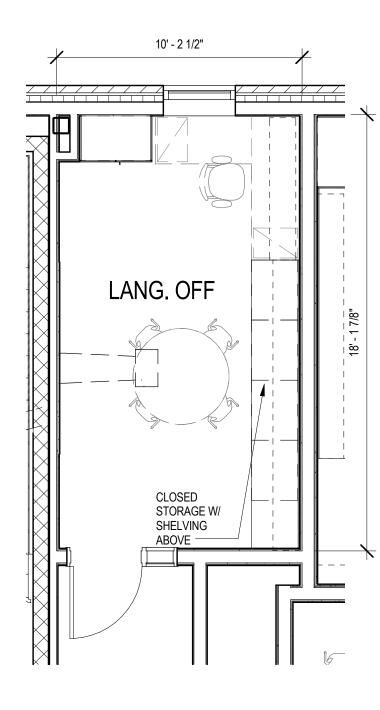
| Users: | Assistant Principal, students, |
|----------------------|--|
| Adjacency: | In academic portion of the building and in close proximity to the youngest |
| | children in the building. |
| Orientation / Views: | Exterior views |

| Wall Finishes: | Linoleum sheet goods Gypsum Wall Board, painted |
|-------------------|--|
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits |
| Acoustical: | Similar to classrooms - work space appropriate. |
| Windows: | Aluminum windows with vision glazing, room darkening shades |
| Doors: | Flush wood door, sidelight |
| | Horizontal mini blinds at vision panels |
| | Office hardware set |
| HVAC: | Displacement ventilation with air conditioning |
| | Radiant panels for supplemental heating |
| Plumbing / FP: | Fully Sprinklered |
| Lighting: | Linear pendant |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |
| | Large format LCD monitor |

| | 0 |
|------------------------|---|
| Casework /Specialties: | Types & Configurations indicated in the attached room layout sheets |
| Furnishings: | (1) Administrator Desk |
| | (1) Office chair |
| | (1) Rectangular student meeting table |
| | (4) Student chairs |
| | (2) 2-drawer filing cabinet |
| | (12 LF) Open shelving |
| Equipment: | Types & Configurations indicated in the attached room layout sheets |
| Shelving / Storage: | Types & Configurations indicated in the attached room layout sheets |
| | |

Additional Requirements:











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Room Data Sheet: Bookkeepers Office

Functional Criteria:

Description:Home base for the school BookkeeperProgram Area:125 SFQuantity:1Occupant Load3

Location Criteria:

| Users: | Bookkeeper, office administration |
|----------------------|-----------------------------------|
| Adjacency: | Component of administrative suite |
| Orientation / Views: | Exterior views |

| Floor Finishes: Wall Finishes: Ceiling Finishes: | Carpet Gypsum Wall Board, painted Acoustical ceiling system, painted gypsum soffits |
|--|---|
| • | |
| Acoustical: | Similar to classrooms - work space appropriate. |
| Windows: | Aluminum windows with vision glazing, room darkening shades |
| Doors: | Flush wood door, sidelight |
| | Horizontal mini blinds at vision panels |
| | Office hardware set |
| HVAC: | Overhead distribution with air conditioning |
| | Radiant panels for supplemental heating |
| Plumbing / FP: | Fully Sprinklered |
| Lighting: | Linear pendant |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |
| | |

| Casework /Specialties: | Types & Configurations indicated in the attached room layout sheets |
|------------------------|---|
| Furnishings: | (1) Administration desk |
| | (1) Office chair |
| | (1) Table for 2 |
| | (2) Guest chairs |
| | (2) 2-drawer filing cabinet |
| | (10 LF) Open counter |
| Equipment: | Types & Configurations indicated in the attached room layout sheets |
| | (1) Safe N.I.C |
| Shelving / Storage: | Types & Configurations indicated in the attached room layout sheets |

Additional Requirements:

Room Data Sheet: Conference Room

Functional Criteria:

Description: Administrative Conference Room Program Area: 249 SF Quantity: 1 Occupant Load 10-12 staff

Location Criteria:

| Users: | School staff |
|----------------------|--|
| Adjacency: | Near learning communities, component of administrative suite |
| Orientation / Views: | Exterior views |

| Floor Finishes: | Carpet |
|-------------------|--|
| Wall Finishes: | Gypsum Wall Board, painted |
| | Projectable magnetic marker surface at one wall |
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits |
| Acoustical: | Similar to classrooms - work space appropriate. |
| Windows: | Aluminum windows with vision glazing, room darkening shades |
| Doors: | Flush wood door, sidelight |
| | Horizontal mini blinds at vision panels |
| | Office hardware set |
| HVAC: | Overhead distribution with air conditioning |
| | Radiant panels supplemental heating |
| Plumbing / FP: | Fully Sprinklered |
| Lighting: | Linear pendant |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |
| | Interactive projector |
| | Teachers station to coordinate with interactive projector (data & power) |
| | Large format flat panel display |

| Casework /Specialties: | Types & Configurations indicated in the attached room layout sheets |
|------------------------|---|
| Furnishings: | (1) Rectangular conference table for 12 |
| | (12) Office chair |
| | (1) Storage credenza |
| Equipment: | Types & Configurations indicated in the attached room layout sheets |
| Shelving / Storage: | Types & Configurations indicated in the attached room layout sheets |

Additional Requirements:

Room Data Sheet: Guidance Office

Functional Criteria:

Description:Home base for the Guidance CounselorProgram Area:152 SFQuantity:2Occupant Load3

Location Criteria:

| Users: | Guidance Counselor, students, visiting parents |
|----------------------|--|
| Adjacency: | Near learning communities, component of administrative suite |
| Orientation / Views: | Exterior views |

| Floor Finishes: | Carpet |
|-------------------|--|
| Wall Finishes: | Gypsum Wall Board, painted |
| | Tack surface adhered to wall |
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits |
| Acoustical: | Similar to classrooms - work space appropriate. |
| Windows: | Aluminum windows with vision glazing, room darkening shades |
| Doors: | Flush wood door, sidelight |
| | Horizontal mini blinds at vision panels |
| | Office hardware set |
| HVAC: | Overhead distribution with air conditioning |
| | Radiant panels for supplemental heating |
| Plumbing / FP: | Fully Sprinklered |
| Lighting: | Linear pendant |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |

Casework /Specialties: Types & Configurations indicated in the attached room layout sheets Furnishings: (1) Small administration desk (1) Office chair (1) Round table for 2 (2) Guest chairs (2) 2-drawer filing cabinet (33 LF) Open shelving Equipment: Types & Configurations indicated in the attached room layout sheets Shelving / Storage: Types & Configurations indicated in the attached room layout sheets

Additional Requirements:

Room Data Sheet: Teacher's Work Room

Functional Criteria:

Description: Teacher work room Program Area: 315 SF Quantity: 1 Occupant Load 10 teachers

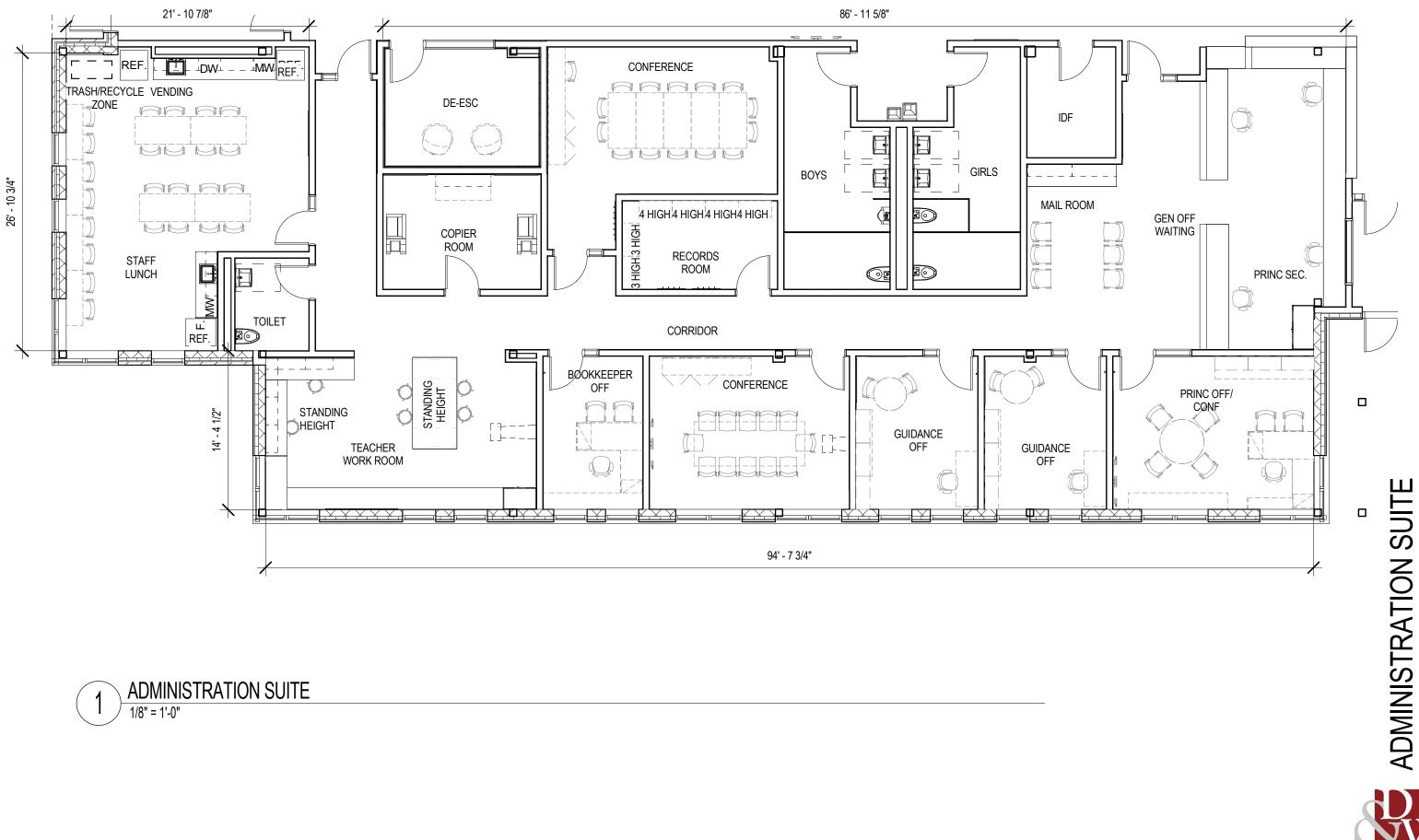
Location Criteria:

| Users: | Teachers, specialists, paraprofessionals |
|----------------------|---|
| Adjacency: | Immediately adjacent to Duplication/Mail Room component of administrative |
| | suite |
| Orientation / Views: | Exterior views |

| Floor Finishes: Wall Finishes: | Linoleum sheet flooring Gypsum Wall Board, painted. Magnetic dry-erase surface on one wall. |
|-----------------------------------|--|
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits |
| Acoustical: | Similar to classrooms - work space appropriate. |
| Windows: | Aluminum windows with vision glazing, room darkening shades |
| Doors: | No door |
| HVAC: | Overhead distribution with air conditioning |
| | Fin Tube Radiation supplemental heating |
| Plumbing / FP: | Fully Sprinklered |
| Lighting: | Linear pendant |
| Electrical & | Typical perimeter power requirements. |
| Technology: | Additional power required to support specific room equipment |
| | Public Address system |
| | Clock System |
| | Wireless network access |
| | Interactive projector |
| | Teachers station to coordinate with interactive projector (data & power) |
| | |

| Casework /Specialties: | Types & Configurations indicated in the layout below |
|------------------------|--|
| | (40 LF) Standing height counter |
| | Central working island/layout table for large projects |
| Furnishings: | (6) Stools |
| Equipment: | Types & Configurations indicated in the layout below |
| Shelving / Storage: | Types & Configurations indicated in the layout below |

Additional Requirements:



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Room Data Sheet: Custodian's Office

Functional Criteria:

Description: Office for custodial staff Program Area: 150 SF Quantity: 1 Occupant Load 3

Location Criteria:

| Users: | Custodial Staff |
|----------------------|--|
| Adjacency: | Shipping & receiving, custodial work and storage areas |
| Orientation / Views: | None |

| Floor Finishes: | Sealed concrete |
|-------------------|---|
| Wall Finishes: | CMU, painted |
| Ceiling Finishes: | Acoustical ceiling system |
| Acoustical: | None |
| Windows: | Aluminum windows with vision glazing, room darkening shades |
| Doors: | Flush wood door, sidelight & transom frame |
| | Horizontal mini blinds at vision panels |
| | Office hardware function |
| HVAC: | Heating & Ventilation only |
| | Radiant panels for supplemental heating |
| Plumbing / FP: | Fully Sprinklered |
| Lighting: | Lay-in fluorescent |
| Electrical & | Typical perimeter power requirements |
| Technology: | Public Address system |
| | Clock System |
| | Wireless network access |
| | |

Casework /Specialties: TBD Furnishings: (1) Desk (1) Office chair (2) Guest chairs Equipment: TBD Shelving / Storage: TBD

Additional Requirements:

Room Data Sheet: Custodian's Workshop

Functional Criteria:

| Description: | Open area within the custodial storage zone for the assembly, repair, and |
|---------------|---|
| | general maintenance of school equipment and furnishings |
| Target Area: | 375 SF |
| Quantity: | 1 |
| Occupant Load | 2 staff |

Location Criteria:

| Users: | Custodial Staff |
|----------------------|--|
| Adjacency: | Shipping & receiving, custodial work and storage areas |
| Orientation / Views: | None |

| Floor Finishes: | Sealed concrete |
|-------------------|---|
| Wall Finishes: | CMU, painted |
| Ceiling Finishes: | Exposed structure, painted |
| Acoustical: | None |
| Windows: | None required |
| Doors: | Double Flush wood doors to Shipping & Receiving |
| HVAC: | Heating & Ventilation only |
| | Radiant panels for supplemental heating |
| Plumbing / FP: | Fully Sprinklered |
| | Mop sink |
| | Free-standing utility sink |
| Lighting: | Pendant |
| Electrical & | Typical perimeter power requirements |
| Technology: | Public Address system |
| | Wireless network access |

Casework /Specialties: TBD Furnishings: (1) Perimeter workbench Equipment: TBD Shelving / Storage: TBD

Additional Requirements:

Room Data Sheet: Custodian's Storage

Functional Criteria:

Description:Open area within the custodial/maintenance zone for storage of items related
to building maintenance – tools, wire, cleaning equipment, etc.Target Area:376 SF
Quantity:Quantity:1Occupant Load1 staff

Location Criteria:

| Users: | Custodial Staff |
|----------------------|--|
| Adjacency: | Shipping & receiving, custodial work and storage areas |
| Orientation / Views: | None |

| Floor Finishes: | Sealed concrete |
|-------------------|---|
| Wall Finishes: | CMU, painted |
| Ceiling Finishes: | Exposed structure, painted |
| Acoustical: | None |
| Windows: | None required |
| Doors: | None |
| HVAC: | Heating & Ventilation only |
| | Radiant panels for supplemental heating |
| Plumbing / FP: | Fully Sprinklered |
| Lighting: | Pendant |
| Electrical & | Typical perimeter power requirements |
| Technology: | Public Address system |
| | Wireless network access |

Casework /Specialties: TBD Furnishings: (TBD) Open metal shelving Equipment: TBD Shelving / Storage: TBD

Additional Requirements:

Room Data Sheet: Recycling Room/Trash

Functional Criteria:

Description:Dedicated space for recycling bins and trash receptaclesProgram Area:401Quantity:1Occupant Load0

Location Criteria:

Users: Custodial Staff Adjacency: Custodial work areas / shipping receiving, adjacent to custodial office, shipping receiving Orientation / Views: None

| Floor Finishes: | Sealed concrete |
|-------------------|--|
| Wall Finishes: | CMU, painted |
| Ceiling Finishes: | Exposed structure, painted |
| Acoustical: | None |
| Windows: | None |
| Doors: | Flush wood door to Custodian Workshop |
| | Storage hardware function |
| | Steel coiling overhead door to corridor |
| HVAC: | Heating & Ventilation only |
| | Dedicated exhaust |
| Plumbing / FP: | Fully sprinklered |
| Lighting: | Pendant |
| Electrical & | Typical perimeter power requirements |
| Technology: | Additional power to support specific equipment |

Casework /Specialties: TBD Furnishings: TBD Equipment: TBD Shelving / Storage: TBD

Additional Requirements:

Room Data Sheet: Receiving/General Supply

Functional Criteria:

| Description: | Open area for shipping/receiving of bulk supplies – paper towels, toilet paper, copier paper, cleaning products, etc. including food and dry goods |
|---------------|--|
| Program Area: | 243 SF |
| Quantity: | 1 |
| Occupant Load | 0 |
| | |

Location Criteria:

| Users: | Custodial Staff |
|----------------------|---|
| Adjacency: | Adjacent to custodial office, Custodian's Workshop, Custodian's Storage |
| Orientation / Views: | None |

| Floor Finishes: | Sealed concrete |
|-------------------|--|
| Wall Finishes: | CMU, painted |
| Ceiling Finishes: | Acoustical ceiling panels |
| Acoustical: | None |
| Windows: | None |
| Doors: | Flush steel double door to exterior |
| HVAC: | Heating & Ventilation only |
| Plumbing / FP: | Fully sprinklered |
| Lighting: | Surface mount fluorescent |
| Electrical & | Typical perimeter power requirements |
| Technology: | Additional power to support specific equipment |

Casework /Specialties: None Furnishings: None Equipment: None Shelving / Storage: None

Additional Requirements:

Room Data Sheet: Storeroom

Functional Criteria:

Description: General storage of supplies Program Area: 287 SF Quantity: 1 Occupant Load 0

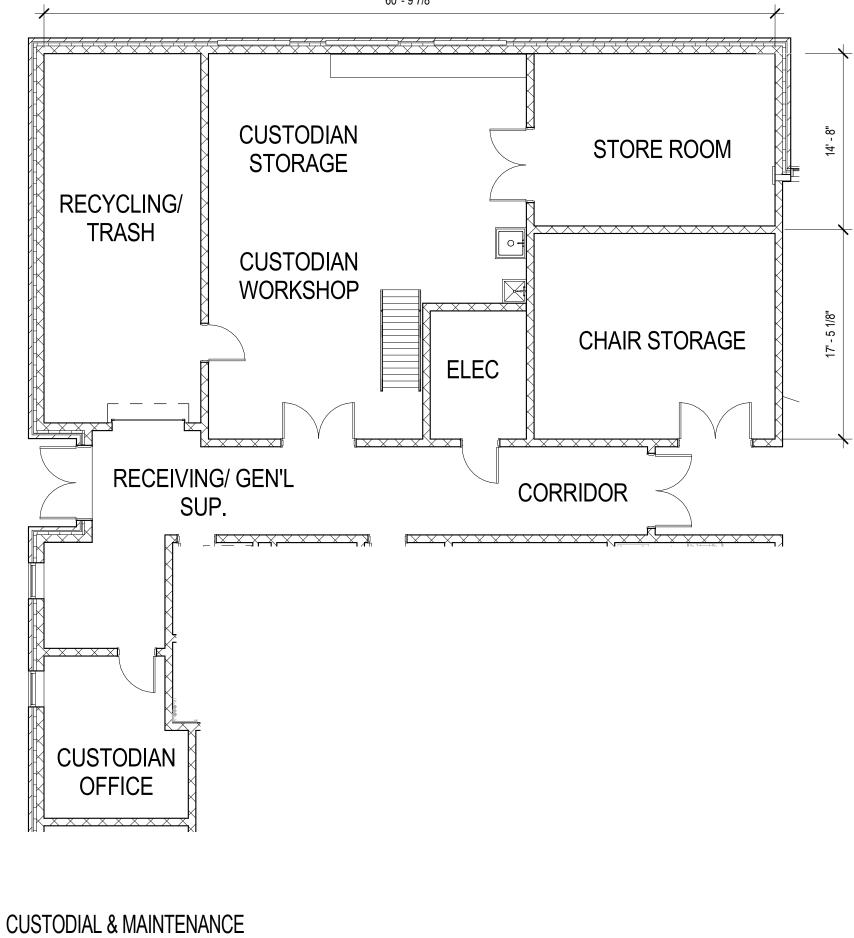
Location Criteria:

Users: Custodians Adjacency: Custodial Work room, Custodial Storage Orientation / Views: None

| Sealed concrete |
|---------------------------------------|
| CMU, painted |
| Exposed Structure, painted |
| None |
| None |
| Flush wood double door |
| Storage hardware function |
| Heating and ventilation only |
| Fully Sprinklered |
| Pendant |
| Typical perimeter power requirements. |
| |
| |

Casework /Specialties: TBD Furnishings: TBD Equipment: TBD Shelving / Storage: TBD

Additional Requirements:



1/8" = 1'-0"





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Room Data Sheet: Main Entry

Functional Criteria:

Description: Main entry for the building. Program Area: 156 SF Quantity: 1 Occupant Load 0

Location Criteria:

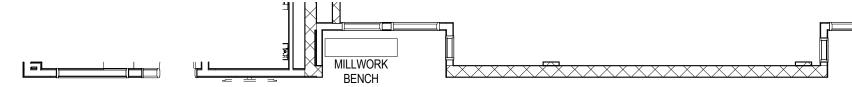
| Users: | Visitors, guests, teachers, specialists, paraprofessionals, parents | | |
|------------|---|--|--|
| Adjacency: | Central to the public portion of the building, adjacent to the administration | | |
| | suite. | | |
| | | | |

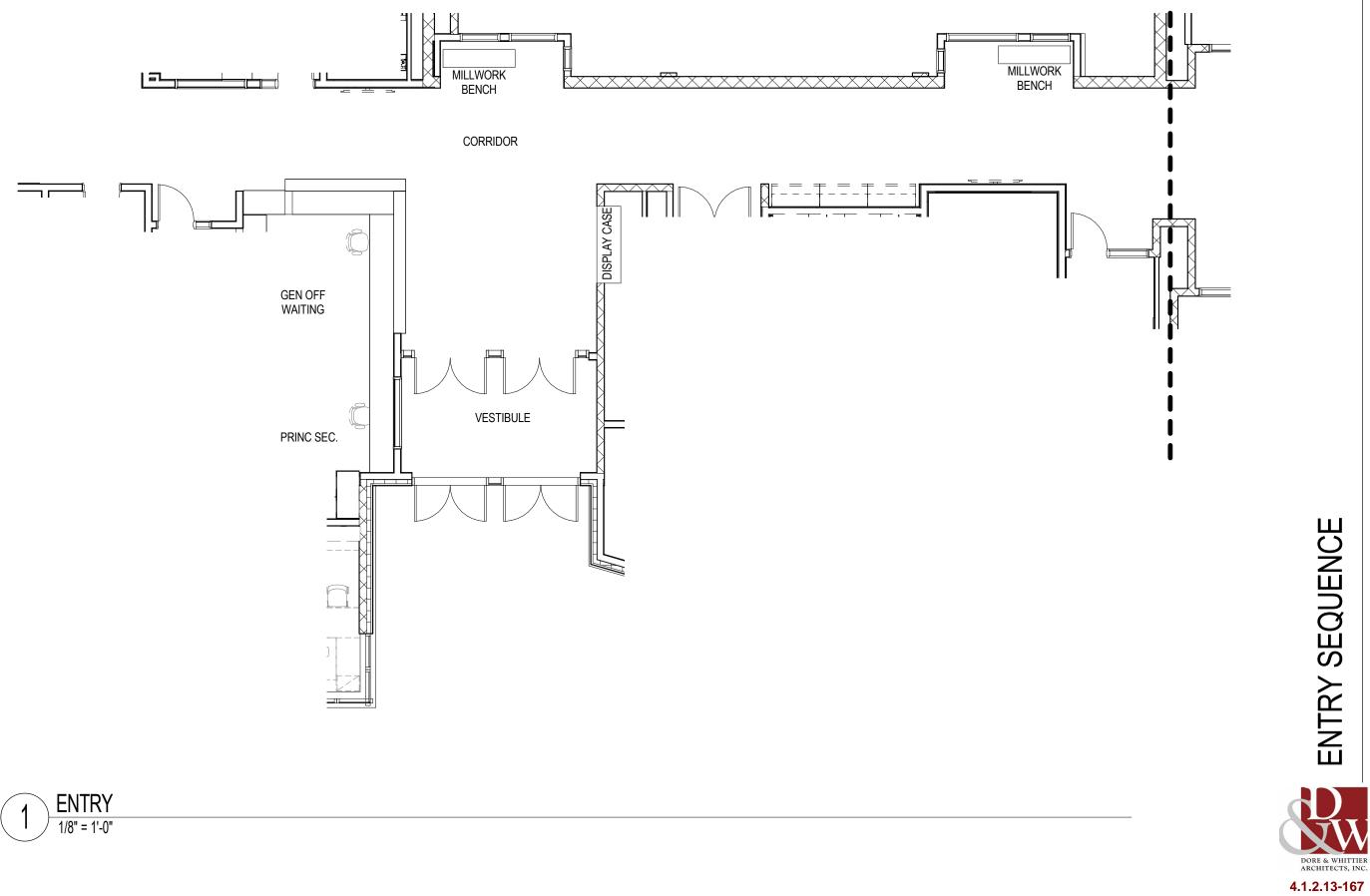
Orientation / Views: Exterior views of parking and approach and interior views of reception

| Floor Finishes: | Walk off mat/porcelain tile | |
|-------------------|---|--|
| Wall Finishes: | CMU, Ground faced | |
| Ceiling Finishes: | Acoustical ceiling system, painted gypsum soffits | |
| Acoustical: | None | |
| Windows: | Sliding transaction window, laminated glass, bullet resistant | |
| Doors: | Aluminum curtainwall door system with double buzz entry | |
| | Secured vestibule | |
| HVAC: | Overhead distribution with air conditioning | |
| Plumbing / FP: | Fully Sprinklered | |
| | Knox box/ Rapid entry system | |
| | Fire alarm control panel | |
| Lighting: | Recessed lay-in | |
| Electrical & | Typical perimeter power requirements. | |
| Technology: | Lockdown hardware: Confirm hardware functions are compatible with the | |
| | District's protocols related to lockdown. | |

| Casework /Specialties: | Types & Configurations indicated in the layout below (2) custom millwork bench |
|------------------------|--|
| | (1) Display cabinet |
| Furnishings: | TBD |
| Equipment: | Types & Configurations indicated in the layout below |
| Shelving / Storage: | Types & Configurations indicated in the layout below |

Additional Requirements:





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PROPOSED CONSTRUCTION METHODOLOGY

The Town of Needham has evaluated the relative advantages and disadvantages of both the conventional Design-Bid-Build (DBB) methodology regulated by M.G.L. chapter 149 Sections 44A-44M and the Construction Manager at Risk (CMr) methodology regulated by M.G.L. chapter 149A. Each of these procurement models offers distinct advantages and potential disadvantages depending on the specific project conditions. Often, the three principal criteria are considered when determining the procurement model are the project budget, time constraints, and project quality requirements. Other consideration include the Owner's own expertise and experience with complex publicly funded projects, and project specific requirements such as the need to provide swing space for students or schedule limitations.

A general comparison of the methodologies is portrayed with the comparison charts below.

DESIGN-BID-BUILD (DBB) PROCUREMENT MODEL

ADVANTAGES

- One bid package for the project
- Linear design progression
- Simplified documentation process
- Conventional process is well understood by most parties and has an established history
- Construction cost is determined at contract award
- Affords greater flexibility in managing design costs before bid date

DISADVANTAGES

- No opportunity for design, constructability, or cost estimating from contractors prior to bid
- Potentially results in the potential for an adversarial role between contractor and Owner or Architect
- Actual costs are not known until bid date. If project is over budget, re-design or re-scoping can take additional time
- Competition at bid time can inflate the cost of changes during the construction phase
- Quality is more difficult to control

CONSTRUCTION MANAGER AT RISK (CMR) PROCUREMENT MODEL

ADVANTAGES

- Pre-construction services, including constructability reviews, clash detection, and expedited scheduling
- Project acceleration and early packages potentially reduce overall schedule, General Requirements
- Cost estimation and project value evaluation
- Additional risk / accountability assumed by CM
- Established GMP fixes project costs
- CM plays greater role in project quality assurance
- Additional coordination for complex or multi-phased projects

CONSIDERATIONS

- Increased services cost a premium ranging from 5% to 15% or more over conventional D-B-B
- Acceleration is only advantageous when other constraints are present (swing space requirements or other project influences)
- Reduced Owner control over construction process
- GMPs can still be altered with contract modifications and is not a "hard cap"
- Limited competition with few large CM firms

With these relative advantages and disadvantages in mind, the Town of Needham PPBC met several times to discuss the project delivery method and ultimately chose to pursue the conventional DBB Chapter 149 project delivery model for the Hillside School project. The Town's employees are familiar with the standard public procurement model and is comfortable serving a more active role in the construction process. Because the project will be all new construction on a site separate from the currently occupied school buildings, complicated phasing or swing space solutions are not a consideration for the project. While there are some existing building and site preparation conditions included as part of this project, they are not critical to maintaining the project schedule and some of these activities are being managed by the Town's own staff. Because of the reduced scheduling pressures, it was determined that the Owner may not realize the full value of the premium costs associated with the CMr procurement model.

Given this value determination by the Town, procurement under M.G.L. chapter 149, sections 44A-44M will be implemented. With a project value over \$10 million, the project will require pre-qualification for all sub-filed bidder categories with a sub-bid value over \$20,0000.

PERMANENT PUBLIC BUILDING COMMITTEE

TOWN OF NEEDHAM

MINUTES OF MEETING

| Date: November 30, 201 | 5 Tim | e: 7:30 PM | Location: Town Hall |
|-----------------------------|--|---|---|
| Attendance PPBC Members: | Present: George Kent, S Absent: Paul Salamone | | a Espada, Irwin Silverstein chneider |
| | Steve Popper (PFD-C I Hank Haff (Project Mar Phaldie Taliep (Project | | Construction) |
| User Representatives: | Rick Merson David Davison | DPW Director | |
| | Heidi Black | School Committee, H | |
| | Aaron Sicotte Susan Neckes | HS Assist. Principal, School Committee, H | |
| Other Attendees: | Rhain Hoyland Cal Olson John Connelly | Highway Superintend Drummey Rosane An Finance Committee | |
| Minutes prepared by: | Kathryn Copley | Administrative Specia | alist |

A. <u>Approval of Minutes</u>

The Committee reviewed the minutes from the November 16th PPBC meetings. Mr. Kent made a motion that the Committee approve the minutes. Ms. Espada seconded the motion. The motion was then voted upon and approved unanimously.

B. <u>Salt Shed Project</u>

David Davison (Finance Director) and Rick Merson (DPW Director) attended the meeting.

Mr. Haff reviewed the request for bird netting on the large bay doors that had been received from the DPW. The magnitude of the bird droppings issue was not fully anticipated during the design and construction of the salt storage shed. Bird netting was installed to protect the area above the rafters inside the salt shed. However the pigeons are finding roosting places, such as the overhead door and railing, below the netting.

A quote from Bird Masters was received in the amount of \$9,054.00 for a pulley operated bird netting drape system. Placed on the two large bay doors of the drive thru, the drapes would keep the birds out of the shed and keep them from roosting on surfaces not

protected by the netting placed inside the shed upon construction. This would prevent pigeons from entering the shed and placing guano on the equipment and floor area. A suggestion was made that rather then protecting the two outer receiving bay openings, place the netting on the single loading opening which could be operated internal to the building. This will be looked at.

Mr. Haff reviewed other measures to keep seagulls, crows and pigeons off of the shed roof top surfaces and under the lean –to storage bay. The DPW will look into seagull distress call speakers that periodically play recorded seagull distress calls in order to move them off the roof surfaces. Netting would be needed in the lean –to storage bay to prevent pigeons from roosting in the rafters and relieving themselves on the equipment. These measures will be explored and put in place in 2016.

There is \$44,395.00 left of the construction budget, which would fund the bird netting. There is a balance of \$89,071.63 in the Environmental Remediation portion of the project funding. The Closure Report is being submitted to the State this week. It is anticipated that the Environmental project close out will be prior to June 2016.

Mr. Davison made a motion that the Committee authorize \$9,054.00 to Bird Masters to install the pulley operated bird netting on the Salt Shed drive thru if the interior option did not prove less effective. Mr. Silverstein seconded the motion. The motion was then voted upon and approved unanimously.

Handouts: Power point presentation

C. <u>St. Mary Street Pump Station</u>

Rick Merson (DPW Director) attended the meeting.

The Committee reviewed an invoice from Computer Telephone Inc. in the amount of \$980.66, the remaining balance of the invoice for installing the telephone system. The invoice was reviewed and approved by Mr. Taliep. Mr. Kent made a motion that the Committee approve the invoice for payment. Mr. Merson seconded the motion. The motion was then voted upon and approved unanimously.

The Committee reviewed an invoice from Grainger in the amount of \$8,394.77 for an Aerial Lift within the FF&E budget. The invoice was reviewed and approved by Mr. Taliep. Mr. Kent made a motion that the Committee approve the invoice for payment. Ms. Espada seconded the motion. The motion was then voted upon and approved unanimously.

The Committee reviewed an invoice from E.H. Wachs in the amount of \$6,895.00 for a portable reversible valve operator within budget. The invoice was reviewed and approved by Mr. Taliep. Mr. Kent made a motion that the Committee approve the invoice for payment. Mr. Silverstein seconded the motion. The motion was then voted upon and approved unanimously.

D. <u>DPW Location Study</u>

Rick Merson (DPW Director) attended the meeting.

Mr. Taliep handed out the draft RFQ for designers to prepare a study, for various phasing options to resolve the needs for a modern DPW facility. It would be the intent of the study to identify the next steps in modernizing and consolidating DPW services which are now located at 470 Dedham Avenue and elsewhere in Town. Certain operations may be moved to another site to better fit a long term view on how to consolidate or at least overcome some of the shortcomings with current arrangement and conditions. Among other things the study will look at which functions should remain together. There are site determination and programmatic issues involved. This effort will rely on information already obtained thru the 2014 Facilities Master Plan and other studies that had been previously commissioned by the Town.

If the Committee has further questions or comments on the scope they were requested to send them to Mr. Taliep.

Handouts: Designer RFQ draft

E. <u>Senior Center Construction</u>

The Committee reviewed an invoice from The Dorchester Awning Company in the amount of \$5,300.00 for installing the awning. The invoice was reviewed and approved by Mr. Taliep. Mr. Kent made a motion that the Committee approve the invoice for payment. Ms. Espada seconded the motion. The motion was then voted upon and approved unanimously.

Mr. Kent recommended that the Committee vote to rescind the remaining amount of the Senior Center appropriation in the amount of \$12,218.87. Mr. Chandler seconded the motion. The motion was then voted upon and approved unanimously.

Handouts: Detail of Expenditures

F. <u>High School Cafeteria Expansion</u>

Heidi Black (School Committee), Aaron Sicotte (H.S. Assist. Principal) and Cal Olson (DRA) attended the meeting.

Filed Sub bids were received on November 25th. There was a decent response to the IFB. The bid tabulation was handed out. DRA will be checking the low bids and confirming them with the bidders. The apparent low bids totaled \$452,133; lower by \$187,022 than that estimated at \$639,135.

The General Contractor bids are due on December 9th. It is anticipated that the contract will be awarded after the December 14th PPBC meeting which will review and approve the recommended general contractor.

The Committee reviewed an invoice from Andrew T. Johnson in the amount of \$256.65 for copies of the bid documents. The invoice was reviewed and approved by Mr. Taliep. Mr. Kent made a motion that the Committee approve the invoice for payment. Mr. Chandler seconded the motion. The motion was then voted upon and approved unanimously.

Handouts: Sub-Contractor bid tabulation

G. <u>Hillside School Feasibility Study</u>

Susan Neckes and Heidi Black (School Committee) attended the meeting.

The Committee discussed the advantages and disadvantages of the Construction Manager at Risk (CMR) method of construction delivery. There are increased costs associated with using a CMR considered to be at least 5%. Using a CMR on a complicated renovation or time constrained project is beneficial. The Central Ave site may not have these concerns. The lower cost of using Design, Bid, Build would be beneficial to the Town.

Further information and discussion will be forthcoming at the next PPBC meeting.

H. Adjournment

The meeting was adjourned at 9:50 PM. The next PPBC meeting will be on Monday, December 14, 2015 at 7:30 PM, at the Needham Public Library Community Room.

These minutes are intended to convey the content of the discussions at the Committee meeting. If no comments are received by the next meeting, they will go to file as part of the permanent Committee record.

PERMANENT PUBLIC BUILDING COMMITTEE

TOWN OF NEEDHAM

MINUTES OF MEETING

| Date: December 14, 2015 | 5 Tin | ne: 7:30 PM | Location: Needham Library |
|-----------------------------|---|---|--|
| Attendance PPBC Members: | Irwin Silverste Absent: Natasha Espace Steve Popper (PFD-C I Hank Haff (Project Ma | ein la, Peter Schneider Director of Design and nager) | Salamone, Roy Schifilliti Construction) |
| User Representatives: | Phaldie Taliep (Project Heidi Black | | H.S. & Hillside Rep. |
| oser representatives. | Aaron Sicotte Matt Toolan Patty Carey | HS Assist. Principal | l, H.S. Rep. issioner, Rosemary Rep. |
| Other Attendees: | Cal Olson Cynthia Chaston Christopher Gerstel Mike Retzky David DiCicco Joel Bargmann John Connelly | Drummey Rosane A Park & Rec. Comm Park & Rec. Comm Park & Rec. Comm Park & Rec. Comm Bargmann Hendrie Finance Committee | issioner issioner issioner issioner |
| Minutes prepared by: | Kathryn Copley | Administrative Spec | cialist |

A. Approval of Minutes

The Committee reviewed the minutes from the November 30th PPBC meeting. Mr. Kent made a motion that the Committee approve the minutes. Mr. Chandler seconded the motion. The motion was then voted upon and approved unanimously.

B. <u>St. Mary Street Pump Station</u>

Mr. Taliep reported that the contractor is making good progress on the punch list items. The Building Department issued a Temporary Certificate of Occupation for the building.

Baffles are being installed on the generator which hopefully will bring the noise level into compliance. There has been no cost to the Town on the resolution to this issue. The electrical contractor is taking care of it.

The O&M manuals are still outstanding. It is anticipated that Change Order #10 in the amount of +/- \$16,000 will be presented at the next meeting along with the final requisition from Waterline. The remaining contingency balance at this time is \$115,428.95. A utility rebate in the amount of \$35,000 is expected.

The Committee reviewed Requisition #21 from Waterline Construction in the amount of \$62,000.00 due primarily to draw down of the punch list. The requisition was reviewed and approved by Mr. Taliep. Mr. Kent made a motion that the Committee approve the requisition for payment. Mr. Schifilliti seconded the motion. The motion was then voted upon and approved unanimously.

Handouts: budget update

C. <u>Hillside School Feasibility Study</u> Heidi Black (School Committee) and Michele Rogers (D&W) attended the meeting.

The Committee reviewed an invoice from Dore & Whittier Architects in the amount of \$31,265.14 for services thru November 2015. The invoice was reviewed and approved by Mr. Haff. Mr. Kent made a motion that the Committee approve the invoice for payment. Mr. Silverstein seconded the motion. The motion was then voted upon and approved unanimously.

At the last meeting the Committee discussed the advantages and disadvantages of the Construction Manager at Risk (CMR) method of construction delivery. Additional information from Daedalus confirmed that the increase in costs associated with using a CMR to be at least 5% if not more. Using a CMR on a complicated renovation or time constrained project is beneficial; however it is not felt that the Central Ave site would be a high risk project. The lower cost of using Chapter 149 Design, Bid & Build would be beneficial to the Town.

Mr. Kent recommended that the Committee go forward with the Chapter 149 delivery method. Mr. Chandler seconded the motion. The motion was then voted upon and approved unanimously.

The Town sent a letter of interest to the owner of 609 Central Avenue, located next to the Central Avenue property. It was thought that the addition of this property would ease bus traffic and add play space to the new school site. The Town has not heard back from the owner. Dore & Whittier presented several possible advantages for use of the property if integrated with the Central Avenue site. Four alternative scenarios were reviewed. A list of value added items to justify the addition of the property will be developed.

Dore & Whittier will be meeting with the School Superintendent to discuss the upcoming MSBA meetings scheduled for January 6th and January 27th.

Handouts: sketches with 609 Central Ave

D. High School Cafeteria Expansion

Heidi Black (School Committee), Aaron Sicotte (H.S. Assist. Principal) and Cal Olson (DRA) attended the meeting.

A total of four general contractor bids were received on December 9th from the five prequalified firms. They were from Maron Construction, Northern Contracting Corp., O'Connor Constructors and Paul J Rogan Company, Inc. The bid tabulation was handed out and reviewed. The lowest bid was \$200,000 below the estimate. The three lowest bids were:

| Paul J Rogan Company, Inc. | \$1,550,730 |
|----------------------------|-------------|
| Northern Contracting Corp. | \$1,648,100 |
| Maron Construction | \$1,709,250 |

Mr. Silverstein recommended that the Committee accept Paul J Rogan Company, Inc. as the qualified low bidder for H.S. Cafeteria Expansion project. Mr. Schifilliti seconded the motion. The motion was then voted upon and approved unanimously.

The Committee reviewed PSS #3 from DRA in the amount of \$45,550 for additional Design and Contract Administration Services needed to extend DRA's services thru construction. Mr. Silverstein seconded the motion. The motion was then voted upon and approved unanimously.

The Committee reviewed an invoice from Drummey Rosane Anderson Architects in the amount of \$4,266.00 for services thru December 11, 2015. The invoice was reviewed and approved by Mr. Taliep. Mr. Kent made a motion that the Committee approve the invoice for payment. Mr. Sicotte seconded the motion. The motion was then voted upon and approved unanimously.

Handouts: General bid tabulation

E. Rosemary Pool

Matt Toolan (Park & Recreation Commissioner), Patty Carey (Park & Rec. Director) and Joel Bargmann (BH+A) attended the meeting.

The Committee reviewed an invoice from Bargmann Hendrie & Archetype in the amount of \$15,000.00 for services thru October 2015. The invoice was reviewed and approved by Mr. Haff. Mr. Kent made a motion that the Committee approve the invoice for payment. Ms. Carey seconded the motion. The motion was then voted upon and approved unanimously.

Mr. Bargmann reviewed three options for the building. The base option is a one story building and would need 125 parking spaces. The second option is a two story building with a multipurpose room, which would require 138 parking spaces. The third option is a three story building with offices and a multipurpose room/gym, which would require 164

parking spaces. The Committee would like estimates on the various options and the incremental cost for the office spaces. A chairs meeting would be set up to discuss the options after the estimates are available. BH+A needs direction from the Committee on a preferred design in order to go forward and complete the schematic design.

Handouts: drawings

F. Adjournment

The meeting was adjourned at 10:20 PM. The next PPBC meeting will be on Monday, January 11, 2016 at 7:30 PM, at the Needham Public Library Community Room.

These minutes are intended to convey the content of the discussions at the Committee meeting. If no comments are received by the next meeting, they will go to file as part of the permanent Committee record.

DISTRICT'S ANTICIPATED REIMBURSEMENT RATE

Estimated Funding Capacity: The Town of Needham intends to appropriate a total of \$66,460,000 for the construction of a new elementary school to be located at or about 585 Central Avenue. The amount represents the total estimated cost for the entire project inclusive of both eligible and ineligible expenses.

Under Massachusetts General Laws, there are two debt limits to which cities and town are subject. The first limit on a municipality is five percent of the total taxable property as determined by the State biannually referred to as the Equalized Valuation (EQV). This is referred to as the municipality's Normal Debt Limit. The municipality may appropriate up to that limit without State approval. The second limit is ten percent of the taxable valuation, which a community with State approval may appropriate. Based on the January 2014 State Equalized Valuation, the Normal Debt Limit for the Town of Needham is \$414,671,300. The Town, at the start of fiscal year 2016, had \$95,610,417 in principal outstanding of which \$53,611,000 is funded by debt exclusion (override). The Town's financing plan for the project assumes that all but \$460,000 will be funded by debt that will be presented to the voters in the form of a debt exclusion question.

Other Municipal Projects Underway: The Town of Needham recently approved the renovation of the High School cafeteria. The budget for this project is \$2,100,000 and it will be funded by debt within the levy limit. This project is currently under contract and will be in full operation this summer. The Town has also identified several other projects in various stages of study or design that will be funded from various sources (cash, debt, excluded debt); the projects include 1) Department of Public Works facility, 2) Fire Station #2 upgrade or replacement, 3) improvements to the High School, 4) improvements to the Memorial Park building, 5) new Public Safety Complex, 6) Rosemary Recreation Complex, and 7) School Administration Building reconstruction.

Districts Not to Exceed Total Project Budget: The Board of Selectmen, School Committee, and the Permanent Public Building Committee (the Town's School Building Committee) voted a total not to exceed project budget of \$66,460,000 for the project on May 24, 2016, May 17, 2016, and May 24, 2016 respectively.

Process for Authorizing Funding: The borrowing authorization for the new Elementary School will require two separate approvals. The first would be a bond authorization vote to be presented at a Special Town Meeting. This meeting would be scheduled for the early fall of 2016 and the bonding approval requires a 2/3 vote. The second approval is from the voters of Needham through a debt exclusion override question. The Board of Selectmen would need to approve submission of the ballot question by a 2/3 vote and file the question with the Secretary of State prior to the first Wednesday in August 2016 for the question to appear on the November 8, 2016 Presidential election. Passage of the

ballot question requires a simple majority vote for approval. A second appropriation to be funded by cash will be presented to Town Meeting for the work related to a nature trail and playing field.

Town of Needham's steps to secure local funding for the new Hillside Elementary School at Central Ave started in 2015. This involved the study and purchase of the Owen's Poultry Farm (OPF) site at 585 Central Ave plus the abutting house properties at 559, 567,579, 597 and 603 Central Ave as well as 45 Sunset Rd from the Owen's family. This process took several steps including:

- Signing a Purchase & Sale Agreement for the above properties,
- Securing \$45,000 of additional Feasibility Study Funding STM- 11/2/2015- Article #12,
- Appropriating \$7,000,000 for the funding for the purchase STM- 11/2/2016- Article#13,
- Approving the Preferred Schematic Report (PSR) with the selection of the Central Ave site as the preferred location for the new school and submission to MSBA on 12/1/2015
- Approval of the Hillside School PSR by MSBA Board on 1/27/16 with authorization for the Town to proceed into Schematic Design,
- Closing the purchase of the OPF 10.5 acre property on 3/7/2016,

During the PSR process the Town also identified many advantages for purchasing one more property at 609 Central Ave to help lessen the traffic impact of the new school on the adjacent neighborhood, enhance the planted buffer along the southern boundary, increase the school parking to 100 cars, separate bus and service traffic from the car traffic and increase the size of the upper playground. This process included:

- Signing an Intent to Purchase Agreement with owner of 609 Central Ave, contingent on funding,
- Appropriating \$762,500 to fund the purchase of 609 Central Ave STM- 5/9/2016 Article#7,
- Signing a Purchase and Sale Agreement for 609 Central Ave in process,
- Anticipated closing date on 609 Central Ave is 8/1/2016.

The Town of Needham has also entered into a License Agreement (dated 2/9/2016) with the Town of Wellesley for the use of some of the land which Wellesley owns within the Town of Needham to the west of the Central Ave site. The Wellesley Water Board owns an 80+ acre parcel, which is mainly wetlands, surrounding the Rosemary Brook that acts as a buffer to their water supply wells. The License Agreement will allow for Needham to construct a playing field, and nature trails on farm fields and uplands which are bisected by the property line on the western side of the school. The Town of Needham will secure the funding for the design and construction of the playing field and nature trails as a parallel project in November 2016.

The bond authorization vote for the funding of the balance of the design and construction funds for the new school is scheduled to occur at the early fall - Special Town Meeting (STM) 2016, and in a ballot question on 11/8/2016 at the same time as the national presidential election as noted above.

The anticipated 2016 reimbursement rate for the Hillside Elementary School project is **34.72%** as noted in the following MSBA Reimbursement Rate Calculation. The Town of Needham will only receive the base points of 31.00% before Incentives because the "Property Wealth Factor" has dropped to 0% from 1.47% since the 2014 Feasibility Study Agreement. The Maintenance Incentive points of 1.72% were noted by the MSBA in and email from the Project Manager on 10/28/2015. The 2% Energy Efficiency – "Green Schools" incentive points are targeted for the project by designing it to <u>LEED – Silver</u> standards, as noted within Section 4.1.2.10 – LEED Scorecard Documents.

| Needham | | |
|---|-------|-----------|
| Hillside Elementary School - Schematic Design | | |
| MSBA Reimbursement Rate Calculation | | |
| Base Points | 31.00 | |
| Income Factor | 0 | |
| Property Wealth Factor | 0 | |
| Poverty Factor | 0 | |
| Subtotal : Reimbursement Rate Before Incentives | 31.00 | 2016 rate |
| | | |
| Incentive Points | | |
| Maintenance (0-2) | 1.72 | |
| CM at Risk (0-1) | 0 | |
| Newly Formed Regional District (0-6) | 0 | |
| Major Reconstruction or Reno / Reuse (0-5) | 0 | |
| Overlay Zoning 40R & 40S (0-1) | 0 | |
| Overlay Zoning 100 units or 50% of units for 1,2 or | | |
| 3 | | |
| family structures (0-0.5) | 0 | |
| Energy Efficiency - "Green Schools" (0-2) | 2.00 | |
| Model Schools (5) | 0 | |
| Total Incentive Points | 3.72 | |
| Anticipated MSBA Reimbursement Rate | 34.72 | |

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TOTAL PROJECT BUDGET

The following pages include the Project Budget Spreadsheet, the MSBA 3011 Form, completed by the OPM (the Town of Needham) and the proposed schedule for alternates which has been signed by the Chair of the PPBC, the Town Manager, the Superintendent of Schools, and the Chair of the School Committee.

Two cost estimates were developed, the first by the Designer's cost estimator PM&C and the second by the Owner's cost estimator Daedalus Projects Inc. A Schematic Cost Estimate Comparison is included noting both estimator's cost, the average cost, the differential, and the cost noted in the PSR estimate.

Full cost estimates of both PM&C and Daedalus follow this section.

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Total Project Budget

| otal Project Budget: All costs associated with the roject are subject to 963 CMR 2.16(5) easibility Study Agreement | 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 | | | |
|---|---|--|--|--|--|---|---|
| PM Feasibility Study | \$75,000 | \$0 | \$75,000 | NURSE CONTRACT SHOP STATE | | ProRa | ted 20% Exclusion |
| E Feasibility Study | \$495,000 | \$0 \$0 | \$495,000 \$75,000 | | | | \$0 -Administration \$0 -A/E Services |
| ther | \$50,000 | \$0 | \$50,000 | | 1 C | | \$0 -A/E Services \$0 -Miscellaneous Proj Costs |
| easibility Study Agreement Subtotal | \$695,000 | \$0 | \$695,000 | \$241,304 | Soft Cost Reimbursement | | \$6,975,541 Sum of Three Soft Costs |
| dministration egal Fees | \$0 | | \$0 | | | | e Soft Costs Category |
| legal rees Dwner's Project Manager | D | \$0 | \$0 | \$0 | \$1,718,000 \$5,282,000 | \$0 \$54,459 | \$1,718,000 -Administration \$5,227,541 -A/E Services |
| Design Development | \$150,000 | \$0 | \$150,000 | | | Ineligible therefore not inclu | ded in calculation -Site Acquisition |
| Construction Contract Documents (&GC & FSB Prequalification) | \$320,000 | \$0 \$0 | | | \$155,000 \$1,075,000 | \$125,000 \$43,000 | \$30,000 -Miscellaneous Proj Costs \$1,032,000 FFE |
| Construction Contract Administration | \$720,000 | \$0 | | SAUGURA STATE | \$1,075,000 | | in this calculation Owners Contingency |
| Noseout | \$80,000 | \$0 | | | | | \$8,007,541 Total Eligible Soft Costs |
| Extra Services Reimbursable & Other Services | \$55,000 | \$0 \$0 | | | Construction Costs assoc | iated with Soft Cost Cap Calcu | lation |
| Cost Estimates | \$60,000 | \$0 | \$60,000 | | Estimated Budget | | ruction Costs Category |
| Advertising Permitting | \$10,000 \$25,000 | \$0 \$0 | \$10,000 \$25,000 | | \$0 | | \$0 -CM Preconstruction service |
| Dwner's Insurance | \$6,000 | \$0 | | | \$45,925,414 | Not included | \$45,925,414 -Construction Cost in this calculation -Construction Contingency |
| Other Administrative Costs | \$22,000 | \$0 | \$22,000 | | | | \$45,925,414 Total Construction Cost |
| Administration Subtotal | \$1,593,000 | \$0 | \$1,593,000 | \$553,090 | | | 20% Soft Cost Allowance |
| Basic Services | L RUMAN DESCENT OF STREET, STRE | | | | | | \$9,185,083 Reimbursable Soft Cost |
| Design Development | \$960,054 | \$0 | \$960,054 | | | | -\$1,177,542 Eligible minus Reimbursable |
| Construction Contract Documents | \$1,397,096 \$198,164 | \$0 \$0 | \$1,397,096 | | | Eligible minus Reimbursable is ne | egative OK. |
| Construction Contract Administration | \$198,164 | \$0 \$54,459 | \$198,164 \$1,506,497 | | | Ligible minus Reimbursable is proceed 20% of Construction Cost because the second sec second second sec | ositive enter value into Soft Costs that below in the Ineligible column. |
| Noseout | \$35,730 | | \$35,730 | | | | · · · · · · · · · · · · · · · · · · · |
| Other Basic Services Basic Services Subtotal | \$0 \$4,152,000 | \$0 \$54,459 | \$0 \$4,097,541 | | Construct | ion Budget \$45,925,414 | · · · · · · · · · · · · · · · · · · · |
| Reimbursable Services | \$4,152,000 | \$04,405 | \$4,037,341 | | | 1011 Budget \$45,925,414 | OPM Value @ |
| Construction Testing | \$100,000 | \$0 | \$100,000 | | OPM Services | Eligible Fees % of 1 | otal Construction 3.50% Value > 3.5% |
| Printing (over minimum) Dther Reimbursable Costs | \$30,000 \$205,000 | \$0 \$0 | | | Basic Services | \$1,465,000 \$1,465,000 \$190,000 | 3.19% \$1,607;389 -\$142,3 0.41% |
| lazardous Materials | \$50,000 | \$0 | | | | \$150,000 | Designer Value @ |
| Geotech & Geo-Env. Site Survey | \$100,000 | | | | Designer Services | | 10.00% Value > 10% |
| Vetlands | \$25,000 \$25,000 | \$0 \$0 | | | Basic Services | \$4,647,000 \$4,592,541 \$635,000 | 10.12% \$4,592,541 1.38% |
| Traffic Studies | \$25,000 | \$0 | \$25,000 | | | | |
| Architectural/Engineering Subtotal | \$4,712,000 | \$54,459 | \$4,657,541 | \$1,617,098 | 5 | | |
| Pre-Construction Services | \$0 | \$0 | \$0 | \$(| | | |
| Site Acquisition | | | Rene Star British | | | | |
| and / Building Purchase Appraisal Fees (& Bond costs) | \$7,225,000 \$35,000 | \$7,225,000 \$35,000 | \$0 \$0 | | Includes Owens Poultry Far | rm sites and 609 Central Ave | |
| Recording Fees (& other closing costs) | \$20,000 | \$35,000 | \$0 | | | | |
| Site Acquisition Subtotal | \$7,280,000 | \$7,280,000 | \$0 | \$0 |) | | |
| Construction Costs | 1. 化的现在分词 化合同的合同 | | | | | | |
| Foundations | \$2,061,284 | \$0 | A REAL PROPERTY OF | | - | | |
| Basement Construction | \$0 | | | | | | |
| SHELL SuperStructure | \$3,389,580 | \$0 | | | | | |
| Exterior Closure | | \$0 | | | | | |
| Exterior Walls Exterior Windows | \$2,780,753 | | | Street States States Reality of | | | |
| Exterior Doors | \$1,956,237 \$93,205 | \$0 \$0 | | | | | |
| Roofing | \$2,659,334 | | | State States in Sections | | | |
| NTERIORS Interior Construction | \$3,297,334 | \$0 | | | - | | |
| Staircases | \$188,808 | \$0 | | | - | | |
| Interior Finishes | \$2,232,674 | \$0 | | | | | |
| Conveying Systems | \$138,000 | \$0 | | | | | |
| Plumbing | \$1,168,311 | \$0 | Contraction Providence | the state of the state | | | |
| HVAC Fire Protection | \$4,046,974 | | | West and the second second | - | | |
| Electrical | \$408,159 \$2,887,997 | | | Store and a second starting of the | | | |
| QUIPMENT & FURNISHINGS | | and Street and other | | dependent and address to the | | | |
| Equipment Furnishings | \$557,045 \$1,034,965 | | | | - | | |
| PECIAL CONSTRUCTION & DEMOLITION | ψ1,004,300 | | | A DAY NEW YORK OF THE | Site Cost Reimbursement | = 8.0% | |
| Special Construction | \$0 | | | | Direct Site Cost Exc | cluded Eligibl | e Site Costs |
| Existing Building Demolition In-Bldg. Hazardous Material Abatement | \$608,179 \$157,000 | | | | \$4,136,276 Direct Building Cost | \$0 | \$4,136,276 Eligible Site Costs |
| Asbestos Cont'g Floor Mat'l Abatement | \$0 | \$0 | | | \$28,900,660 | | \$2,312,053 Reimbursable Site Cost |
| Other Hazardous Material Abatement UILDING SITEWORK | \$0 | \$0 | | | So | cope Excluded Site Cost | \$1,824,223 Eligible minus Reimbursab |
| Site Preparation | \$432,714 | \$0 | | | | ligible minus Reimbursable is ne ligible minus Reimbursable is po | gative OK. No ineligible needed sitive enter value into Scope Excluded Site Co |
| Site Improvements | \$2,389,847 | \$0 | | | | agiore minus remousable is po | Sitte sitter value into scope Excluded Site Ct |
| Site Civil / Mechanical Utilities Site Electrical Utilities | \$966,020 \$347,695 | | | | | | |
| Other Site Construction | \$347,695 | | | | Construction Cost Reimbo \$608,179 Elic | | |
| Scope Excluded Site Cost | | \$1,824,223 | | | | gible Abatement | |
| Construction Trades Subtotal Contingencies (Design and Pricing) | \$34,262,115 | \$1,824,223 | | | \$765,179 Tot | al Eligible Demo & Abatement | |
| LUDTIDGEDCIES (LIESIGD and Pricing) | \$3,349,807 | \$178,354 | Party South and the second | CONTRACT AND A DESCRIPTION OF A DESCRIPR | \$74,812 | D&P 9.78% % of 1 | rades \$506 Total \$/sf |

Total Project Budget

| eedham illeida Elomontary School at Central Ave | | | | Update- 5/27/2016 | | | |
|---|------------------------|---|---|---|---|------------------------------------|--|
| illside Elementary School at Central Ave otal Project Budget: All costs associated with the roject 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 | | ж , Ч | |
| D/B/B Insurance | \$504,230 | \$26,847 | | | \$11,261 | | 1.47% % of Trades |
| D/B/B General Conditions | \$2,600,000 | | and the second states in | | \$58,066 | | 7.59% % of Trades |
| D/B/B Overhead & Profit | \$1,315,380 | | | | \$29,377 \$0 | | 3.84% % of Trades 0.00% % of Trades |
| GMP Insurance | \$0 \$0 | | | | \$0 | | 0.00% % of Trades |
| GMP Fee GMP Contingency | \$0 | | | | \$0 | | 0.00% % of Trades |
| Escalation to Mid-Point of Construction | \$3,490,499 | | | S CHORACE SE DESERVE | \$77,954 | | 8.23% % of Cumulative sum of |
| verall Excluded Construction Cost | | \$14,155,520 | | | the second se | Marked Up Demo | |
| onstruction Budget | \$45,925,414 | \$16,600,734 | \$29,324,680 | \$10,181,529 | | Eligible Constru | |
| Iternates | Statistics and | | and the second second second | | | | Manually enter eligible area if less |
| eligible Work Included in the Base Project | \$0 | | | | | Reimbursable Co Reimbursable Co | onstruction Cost for New Constructi |
| ternates Included in the Total Project Budget | ¢444.70 | \$0 |) \$0 -\$444,795 | | | Marked Demo & | |
| ternates Excluded from the Total Project Budget | -\$444,795 | | | \$0 | and the second second second second second | | construction Cost |
| ubtotal to be Included in Total Project Budget | \$(| \$0 |) | | | Eligible Minus R | |
| iscellaneous Project Costs tility Company Fees | \$30,000 |) \$0 | \$30,000 |) States and the states | | | e OK. No ineligible entry needed |
| esting Services | \$0 | \$0 | \$0 | NUMBER OF STREET | If Eligible minus Reimb | | enter value into Overall Excluded C |
| wing Space / Modulars | \$0 | \$0 | | | FFE Reimbursement | | |
| ther Project Costs (Mailing & Moving) | \$125,000 | | | | | Eligible FFE | - 1 |
| lisc. Project Costs Subtotal | \$155,000 | \$125,000 | \$30,000 | \$10,416 | - | Design Enrollme | |
| urnishings and Equipment | ¢540.000 | | \$516,000 | | | Reimbursable Co | Student (Subject to change) |
| urnishings | \$516,000 \$516,000 | | | | | Eligible Minus R | |
| quipment | \$43,000 | | | | If Eligible minus Reimb | ursable is negative | e OK. |
| F&E Subtotal | \$1,075,000 | | | \$358,310 | | | enter value into Scope Excluded Fl |
| | | | | | | (0-2) Maintenanc | |
| oft Costs that exceed 20% of Construction Cost | | \$0 | And the second descent of the second s | | | 0 (0-1) CM @ Risk | |
| roject Budget | \$61,435,414 | \$24,103,193 | \$37,332,221 | 12961747.2 | 0.00 | 0 (0-6) Newly Form | ned Regional School District |
| | | | | ** ¹ | 0.00 | (0-5) Major Reco | nstruction or Reno/Reuse type in rou |
| Board Authorization | | 31.00 | Reimbursement Rate B | efore Incentive Points | | #VALUE! | 0 gsf Renovated or Exist |
| Design Enrollment | 430 | And the process | Total Incentive Points ^{3, 4} | | | | 1 gsf Total at Conclusion |
| | | | | | 0.00 | (0-1) Overly Zoni | |
| Total Building Gross Floor Area (GSF) | 90,702 | | MSBA Reimbursement | Rale | | | 100 |
| Total Project Budget (excluding Contingencies) | \$61,435,414 | NOTES This document was prepared by the M | SBA based on a preliminary review of | f information and estimates provided | | | Coning 100 units or 50% of units 1,2, |
| Scope Items Excluded or Otherwise Ineligible | \$24,103,193 | by the of for the | School project. Based | on this preliminary review, certain | 2.00 | 0 (0-2) Energy Effic | ciency - "Green Schools" |
| Third Party Funding (Ineligible) | \$0 | budget, cost and scope items have been does not contain a final, exhaustive list | en determined to be ineligible for reim t of all budget, cost and scope items v | bursement, however, this document which may be ineligible for | 0.00 | (5) Model School | ls |
| Estimated Basis of Maximum Total Facilities Grant | \$37,332,221 | reimbursement by the MSBA. Nor is it | intended to be a final determination of | of which budget, cost and scope items | 3.72 | Total Incentive | Points |
| sources and a second the second | | review and audit by the Authority, and | the Authority shall determine, in its so | ble discretion whether any such | Construction Budget | | \$45,925,41 |
| Reimbursement Rate ^{3, 4} | 34.72% | budget, cost and scope items are eligit | ole for reimbursement. The MSBA ma | ay determine that certain additional | | | \$50 |
| Est. Max. Total Facilities Grant (before recovery) | \$12,961,747 | | | | Construction Cost/SF (| Total GSF) | |
| Cost Recovery ⁵ | \$C | 1 - The Estimated Basis of Total Facilit the "MSBA Board Approved Budget" c | | | Design Enrollment | | 43 |
| Estimated Maximum Total Facilities Grant ¹ | \$12,961,747 | subject to review and audit by the MSE | BA. The Estimated Basis of Total Fac | ilities Grant, Estimated Maximum | Total Gross Square Fe | et | 90,70 |
| | | Facilities Grant, and Maximum Total Facilities Grant, and Grant, a | for construction bids received in acco | ordance with Section 2.2 of the PFA | Project Budget | | \$61,435,41 |
| Q ⁱ Q ⁱ 2 | \$2 276 000 | and any budget revision requests subm Revised Budget PFA column of the PF | nitted and approved by the MSBA as | of the Date noted in the Proposed | Scope Exclusions / Ine | ligible Costs | \$24,103,19 |
| Construction Contingency ² | | audit by the MSBA | ramenument. These amounts are a | and cableor to rararel review and | Estimated Basis of Tot | 0 | \$37,332,22 |
| Ineligible Construction Contingency ² | \$1,816,746 | 2 - Pursuant to Section 3.20 of the Pro | ject Funding Agreement and the appli | icable policies and guidelines of the | | an actines Grant | |
| "Potentially Eligible" Construction Contingency ² | \$459,254 | Authority, any project costs associated | with the reallocation or transfer of fur | nds from either the Owner's | Reimbursement Rate | | 34.729 |
| Owner's Contingency ² | \$2,276,000 | contingency or the Construction contin to determine whether any such costs a | gency to other budget line items shall ire eligible for reimbursement by the A | Authority. All costs are subject to | Est'd Max Total Fac Gr | ant before Recove | ery 1296174 |
| | \$0 | review and audit by the MSBA. | | | Cost Recovery | | \$ |
| Ineligible Owner's Contingency ² | | 3 - The MSBA has provisionally include | ed two (2) incentive points for energy | efficiency, subject to the District | Estimated Maximum To | tal Facilities Gran | t \$12,961,74 |
| Ineligible Owner's Contingency ² | \$2 276 000 | | ents for the project. If the District doe | es not meet the requirements for the | Potentially Eligible Ow | | |
| "Potentially Eligible" Owner's Contingency ² | \$2,276,000 | meeting certain sustainability requirem | ualify for these incentive points and th | te MSBA will adjust the | | | ¢0 70E 0E |
| "Potentially Eligible" Owner's Contingency ² Total Potentially Eligible Contingency ² | \$2,735,254 | energy efficiency, the District will not quering reimbursement rate accordingly. | ualify for these incentive points and th | te MSBA will adjust the | | | +=1. ++1== |
| "Potentially Eligible" Owner's Contingency ² Total Potentially Eligible Contingency ² Reimbursement Rate ^{3,4} | \$2,735,254 34.72% | reening certain sustainability requirem energy efficiency, the District will not que reimbursement rate accordingly. | ualify for these incentive points and the ed one (1) incentive point for the Cons | struction Manager at Risk | Potential add'l Grant F | | ncies \$949,68 |
| "Potentially Eligible" Owner's Contingency ² Total Potentially Eligible Contingency ² | \$2,735,254 34.72% | for each substantiability requirem energy efficiency, the District will not q reimbursement rate accordingly. 4 - The MSBA has provisionally include construction delivery method, subject t | ualify for these incentive points and th ed one (1) incentive point for the Cons o the District receiving approval from | struction Manager at Risk the Office of the Inspector General to | | | ncies \$949,68 |
| "Potentially Eligible" Owner's Contingency ² Total Potentially Eligible Contingency ² Reimbursement Rate ^{3,4} | \$2,735,254 34.72% | energy efficiency, the District will not q reimbursement rate accordingly. 4 - The MSBA has provisionally include construction delivery method, subject t utilize this method. If the District does | ualify for these incentive points and th ed one (1) incentive point for the Cons o the District receiving approval for m not receive approval for the Constru- | struction Manager at Risk the Office of the Inspector General to ction Manager at Risk delivery | Potential add'l Grant F | unds for Continger | +=1. +=1=+ |

By signing this Total Project Budget, I hereby certify that I have read and understand the form and further certify, to the best of my knowledge and belief, that the information supplied by the District in the table above is true, accurate, and complete. complete 9 11

By: George Kent, PE Title: Chair of School Building Committee (Permanent Public Building Committee) 27/16

Date:

By signing this Total Project Budget, I hereby certify that I have read and understand the form and further certify, to the best of my knowledge and belief, that the information supplied by the District in the table above is true, accurate, and

By signing this Total Project Budget, I hereby certify that I have read and understand the form and further certify, to the best of my knowledge and belief, that the information supplied by the District in the table above is true, accurate, and complete. ague (RA)

By: Kate Fitzpatrick Title: Town Manager Date: 5-27-206

By: Dr. Daniel Gutekanst Title: Superintendent of Schools 10 51 ile Date:

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6000

By signing this Total Project Budget, I hereby certify that I have read and understand the form and further certify, to the best of my knowledge and belief, that the information supplied by the District in the table above is true, accurate, and

complete. A nech

By: Susan Neckes Title: Chair of School Committee

Date: 5.31.16

es and Markups

total area of (subject to change)

iction Cost

to 2 decimal places Remain oject

amily structures

0.3472

| Need | dham Hi | Ilside at Central Avenue | | | | | | | | | | | | | |
|------------|----------------|--|------------|--------|---|-------------------|----------------|---|----------|--------------------------|-----------------------------|----------------|--|----------|----------------------|
| | | st Estimate Comparison | | | | | | | | | | | | | |
| | | n Cost Review based on reconciled estimates receive | ed 5/9/201 | 16 | | | | | | | | | | 1 | |
| | | | | | | | | | | | | | | | |
| | GSF | 90,702 | 2 | | PM& | С | | DPI | | Average | Difference | %Δ | | Ρ | SR Est. |
| | | | | | | cost/SF | | total amount | cost/SF | | | | | | |
| A10 | 44040 | FOUNDATIONS (N+R) | | | \$2,061,284 | \$22.73 | - | \$2,013,357 | \$22.20 | \$2,037,321 | 47,927 | 2.4% | | \$ | 2,312,192 |
| | A1010 A1020 | Standard Foundations Special Foundations | - | | \$1,437,040 \$0 | | - | Included \$0 | | | | | | | |
| | A1020 | Lowest Floor Construction | - | | \$0 \$624,244 | | - | ەت Included | | | | | | | |
| A20 | 711000 | BASEMENT CONSTRUCTION | | | \$02 | \$0.00 | - | \$0 | | \$0 | 0 | N/A | | | N/A |
| | A2010 | Basement Excavation | | | \$0 | | - | \$0 | | | | | | | |
| | A2020 | Basement Walls | | | \$0 | | | \$0 | | | | | | | |
| B10 | . | SUPERSTRUCTURE | | | \$3,389,580 | \$37.37 | - | \$3,329,012 | | \$3,359,296 | 60,568 | 1.8% | | \$ | 3,681,471 |
| | B1010 B1020 | Upper Floor Construction Roof Construction | - | | \$1,559,787 \$1,829,793 | | | Included Included | | | | | | | |
| B20 | B1020 | EXTERIOR CLOSURE | | | \$1,829,793 | \$53.25 | - | \$4,630,628 | | \$4,730,412 | 199,567 | 4.2% | | \$ | 5,521,402 |
| 020 | B2010 | Exterior Walls | | | \$2,780,753 | φ00.20 | - | Included | | ψτ,100,τ12 | 100,001 | 4.270 | | φ | 3,321,402 |
| | B2020 | Windows | - | | \$1,956,237 | | - | Included | | | | | | | |
| | B2030 | Exterior Doors | | | \$93,205 | | - | Included | | | | | | | |
| B30 | | ROOFING | | | \$2,659,944 | \$29.33 | | \$2,009,047 | \$22.15 | \$2,334,496 | 650,897 | 27.9% | | \$ | 1,102,376 |
| | B3010 | Roof Coverings | - | | \$2,646,744 | | - | Included | | | | | | | |
| C10 | B3020 | Roof Openings INTERIOR CONSTRUCTION | | | \$13,200 \$3,297,334 | \$36.35 | | Included \$2,916,149 | | \$3.106.742 | 381,185 | 12.3% | | \$ | 2,716,280 |
| 010 | C1010 | Partitions | | | \$2,212,812 | ψ00.00 | | Jncluded | ψυ2.10 | ψ0,100,742 | 001,100 | 12.0/0 | | φ | 2,710,200 |
| | C1020 | Interior Doors | - | | \$511,990 | | · | Included | | | | | | | |
| | C1030 | Specialties / Millwork | - | | \$572,532 | | - | Included | | | | | | | |
| C20 | | STAIRCASES | | | \$188,808 | \$2.08 | | \$201,073 | | \$194,941 | (12,265) | -6.3% | | \$ | 233,384 |
| | C2010 | Stair Construction | _ | | \$159,000 | | - | Included | | | | | | | |
| C30 | C2020 | Stair Finishes INTERIOR FINISHES | | | \$29,808 \$2,232,674 | \$24.62 | - | Included \$2,528,192 | | ¢0.000.400 | (005 510) | -12.4% | | 0 | 1 707 040 |
| 630 | C3010 | Wall Finishes | - | | \$552,390 | \$Z4.0Z | - | محرجة المحرجة ا | | \$2,380,433 | (295,518) | -12.4% | | \$ | 1,727,613 |
| | C3020 | Floor Finishes | - | | \$1,028,785 | | F | Included | | | | | | | |
| | C3030 | Ceiling Finishes | - | | \$651,499 | | F | Included | | | | | | | |
| D10 | | CONVEYING SYSTEMS | | | \$138,000 | \$1.52 | | \$148,350 | | \$143,175 | (10,350) | -7.2% | | \$ | 123,000 |
| D20 | | PLUMBING | | | \$1,168,311 | \$12.88 | | \$1,247,958 | | \$1,208,135 | (79,647) | -6.6% | | \$ | 1,303,504 |
| D30 | | HVAC | | | \$4,046,974 | \$44.62 | - | \$3,884,843 | | \$3,965,909 | 162,131 | 4.1% | | \$ | 3,931,536 |
| D40 D50 | | FIRE PROTECTION ELECTRICAL | - | | \$408,159 \$2,887,997 | \$4.50 \$31.84 | - | \$408,242 \$2,826,403 | | \$408,201 \$2,857,200 | <mark>(83)</mark> 61,594 | 0.0% | | \$ | 409,172 |
| D00 | D5010 | Service & Distribution | | | \$2,007,997 | φ 31.04 | - | Jack Jack Jack Jack Jack Jack Jack Jack | | φ2,037,200 | 01,594 | Z.Z 70 | | \$ | 3,090,075 |
| | D5020 | Lighting & Power | - | | \$795,353 | | - | Included | | | | | | | |
| | D5030 | Communication & Security Systems | | | \$896,608 | | - | Included | | | | | | | |
| | D5040 | Other Electrical Systems | | | \$181,052 | | | Included | | | | | | | |
| E10 | | EQUIPMENT | | | \$557,045 | \$6.14 | | \$467,595 | | \$341,547 | 89,450 | 26.2% | | \$ | 657,700 |
| E20 | E0040 | FURNISHINGS | | | \$1,034,965 | \$11.41 | - | \$909,278 | | \$972,122 | 125,687 | 12.9% | | \$ | 876,762 |
| | E2010 E2020 | Fixed Furnishings Movable Furnishings | - | | \$1,034,965 NIC | | - | \$909,278 NIC | | | | | | | |
| F20 | L2020 | SELECTIVE BUILDING DEMOLITION | | | \$313,729 | \$3.46 | | \$208,100 | | \$260,915 | 105,629 | 33.7% | | | |
| | | Building Demolition | | | \$188,729 | | - | \$192,400 | | \$190,565 | (3,671) | | | \$ | - |
| | | Hazardous Materials Abatement | | | \$125,000 | | - | \$15,700 | \$0.17 | \$70,350 | 109,300 | | | \$ | - |
| | 1 | 609 Central Ave | | | \$146,793 | | | \$171,086 | | | | | | | |
| | NG TRADE | | | | \$28,901,270 | | | \$27,728,227 | | \$28,314,749 | | 4.1% | | \$ | 27,686,467 |
| G00 | | SITE WORK | | | \$4,136,276 | \$45.60 | - | \$4,380,165 | | \$4,258,221 | (243,889) | -5.7% | | \$ | 4,189,070 |
| G10 G20 | | SITE PREPARATION SITE IMPROVEMENTS | - | | \$432,714 \$2,389,847 | \$4.77 \$26.35 | - | \$457,414 \$2,632,062 | | \$445,064 \$2,510,955 | (24,700) (242,215) | -5.5% -9.6% | | \$ \$ | 789,840 1,982,730 |
| G30 | | SITE MECHANICAL UTILITIES | - | | \$966,020 | | F | \$917,639 | | \$941,830 | 48,381 | 5.1% | | \$ \$ | 1,982,730 |
| G40 | | SITE ELECTRICAL UTILITIES | - | | \$347,695 | \$3.83 | · | \$373,050 | | \$360,373 | (25,355) | -7.0% | | \$ | 191,500 |
| TOTAL | CONSTRU | CTION COSTS (BASE) | | | \$33,498,068 | \$369.32 | | \$32,487,578 | \$358.18 | \$32,992,823 | 1,010,490 | 3.1% | | \$ | 31,875,537 |
| | | | | | | | | | | | | | | \$ | 30,000 |
| | | Design & Estimating Contingency | | 10.00% | \$3,349,807 | \$36.93 | 10.00% | \$3,248,758 | \$35.82 | | | | | \$ | 4,847,242 |
| | | | _ | | * 0.000.000 | ¢00.07 | 0.000/ | <u> </u> | ¢04.50 | * 0 700 450 | (050.007) | 0.50/ | | | |
| | | General Conditions | - | 1.25% | \$2,600,000 \$504,230 | \$28.67 \$5.56 | 8.00% 1.00% | \$2,858,907 \$385,952 | | \$2,729,453 | (258,907) | -9.5% | | \$ ¢ | 2,552,443 |
| | | Insurance Bonds | - | 1.25% | \$504,230 \$403,384 | φ0.00 | 1.00% | \$389,812 | | INCL. | | | | \$ \$ | 474,754 356,066 |
| | | Fee | 1 | 3.00% | \$1,315,380 | \$14.50 | 3.00% | \$1,181,130 | | \$1,248,255 | 134,249 | 10.8% | | \$ \$ | 957,166 |
| | | | 1 | | | | | | | | | | | \$ | - |
| | | Escalation | | 10.42% | \$3,490,499 | \$38.48 | 9.38% | \$3,803,790 | \$41.94 | \$3,647,145 | (313,292) | -8.6% | | \$ | 5,104,886 |
| TOTAL | ESTIMATE | D COSTS (BASE) | | | \$45,161,368 | \$497.91 | | \$44,355,928 | \$489.03 | \$44,758,648 | 805,441 | 1.8% | | \$ | 46,198,094 |
| | | | | | | | | | | | | | | | |
| ALTER | - | CLUDING MARK-UPS | | | | | | | | | | | | | |
| | 1 | HVAC - Dehumidification at Classrooms | - | | (\$475,027) \$100,421 | | | (\$340,000) | | | | | | <u> </u> | |
| | 2 | Underslab Insulation to R-30 Conc. Mas. I.L.O. Stone Veneer | | | \$190,431 (\$171,578) | | | \$190,000 (\$145,000) | | | | | | <u> </u> | |
| | 4 | Gymansium acoustic divider | | | \$240,084 | | | (\$145,000) \$197,000 | | | | | | | |
| | 5 | EPDM in lieu of Built-up roofing system | 1 | | (\$554,018) | | | (\$404,000) | | | | | | - | |
| | 1 | | - i | | 1 A A A A A A A A A A A A A A A A A A A | | | · · · · · · · · · · · · · · · · · · · | | | | | | ÷ | |

| | 5 | EPDIVI IN IIEU OF BUILT-UP ROOTING SYSTEM | | (\$554,018) | |
|--|---|---|--|-------------|--|
| | 6 | 609 Central Avenue alternate | | \$179,199 | |
| | 7 | Nature Walk & Field | | \$266,177 | |

| (\$404,000) | |
|-------------|--|
| \$233,000 | |
| \$256,000 | |

Proposed Schedule of Alternates

Needham Hillside Elementary School

| 5/24/2016 | 5 | 24 | 12 | 01 | 6 |
|-----------|---|----|----|----|---|
|-----------|---|----|----|----|---|

| Description of Item | Ineligible Work & Alternates to be included in District's Total Project Budget | Alternates Excluded From the Total Project Budget that are to be funded through Bid Savings | District Rationale | Eligibility for Reimbursement |
|----------------------------------|---|--|--|---|
| Concrete Mas. ILO Stone Veneer | -\$171,578 | | potential savings if Bid is too high | The proposed cost associated with this deduct alternate will not impact reimbursement if the District accepts this deduct alternate as the reimburseable construction will continue to exceed the \$299/sf reimbursement cap based on the District's schematic design submittal. |
| EPDM ILO Built up Roofing System | -\$554,018 | | potential savings if Bid is too high | The proposed cost associated with this deduct alternate will not impact reimbursement if the District accepts this deduct alternate as the reimburseable construction will continue to exceed the \$299/sf reimbursement cap based on the District's schematic design submittal. |
| 609 Central Ave Improvements | -\$179,199 | | purchase scheduled for 8/1/16 - to be removed from alternate list after purchase | The proposed cost associated with this deduct alternate will not impact reimbursement if the District accepts this deduct alternate as the reimburseable construction will continue to exceed the \$299/sf reimbursement cap based on the District's schematic design submittal. |
| Playing Field & Nature trail | \$460,000 | | Partly on Wellesley owned land- to be funded by free cash | All associated costs are ineligible for reimbursement as the proposed construction is outside of the propoerty owned and controlled by the District. |
| Total | -\$444,795 | \$0 | | |

By signing this Total Project Budget, I hereby By signing this Total Project Budget, I hereby certify that I By signing this Total Project Budget, I hereby certify that I have read and understand the form and further certify, to the best of my knowledge and belief, that the information supplied by the District in the table above is true, accurate, and complete

By: George Kent L RE

Title: Chair of the Permanent Public Building Committee (PPBC)

Date

have read and understand the form and further certify, to certify that I have read and understand the form the best of my knowledge and belief, that the information supplied by the District in the table above is true, accurate, and complete

By:Kate Fitzpatrick

Title: Town Manager

Date: 5-24-2016

and further certify, to the best of my knowledge and belief, that the information supplied by the District in the table above is true, accurate, and complete

By: Dan Gutekanst

Title: Superintendent of Schools

0 Date

By signing this Total Project Budget, I hereby certify that I have read and understand the form and further certify, to the best of my knowledge and belief, that the information supplied by the District in the table above is true, accurate, and complete

By: Susan Neckes

Title: Chair of the School Committee

Date: 5,24.2016

Hillside Elementary School - Needham, MA



Hillside Elementary School 585 Central Avenue

Needham, MA

PM&C LLC 20 Downer Ave, Suite 1C Hingham, MA 02043 (T) 781-740-8007 (F) 781-740-1012 Prepared for:

Dore & Whittier Architects, Inc.

May 16, 2016



Hillside Elementary School 585 Central Avenue Needham, MA

Schematic Design Estimate

| | Construction Start | Gross Floor Area | \$/sf | Estimated Construction Cost |
|------------------------------------|-----------------------|---------------------|-----------|--------------------------------|
| NEW SCHOOL BUILDING | | | | |
| NEW BUILDING | Jun-18 | 90,702 | \$318.64 | \$28,901,270 |
| HAZ MAT | | | | \$125,000 |
| DEMOLITION OF EXISTING BUILDINGS | | 1 | LS | \$188,729 |
| 509 CENTRAL AVE | | | | \$146,793 |
| SITEWORK | | | | \$4,136,276 |
| SUB-TOTAL | | 90,702 | \$369.32 | \$33,498,068 |
| DESIGN AND PRICING CONTINGENCY | 10.00% | | | \$3,349,807 |
| ESCALATION TO START (5% per year) | 10.42% | | | \$3,490,499 |
| SUB-TOTAL | | | | \$40,338,374 |
| GENERAL CONDITIONS | 20 | months | \$130,000 | \$2,600,000 |
| BONDS | 1.00% | | | \$403,384 |
| INSURANCE PERMIT | 1.25% | | | \$504,230 NIC |
| SUB-TOTAL | | | | \$43,845,988 |
| PROFIT | 3.0% | | | \$1,315,380 |
| TOTAL OF ALL CONSTRUCTION | | 90,702 | \$497.91 | \$45,161,368 |
| EARLY DEMOLITION PACKAGE B | REAK-OUT COSTS | (Costs | | \$765,179 |
| ALTERNATES (Including all Markups) | | | | |
| CONCRETE UNIT MASONRY VENEER | ILO NATURAL STOP | NE VENEER | DEDUCT | (\$171,578) |
| EPDM ILO BUILT-UP ROOFING SYSTE | CM | | DEDUCT | (\$554,018) |
| 609 CENTRAL AVE ALTERNATE | | | DEDUCT | (\$198,171) |
| | | | ADD | \$266,177 |



Hillside Elementary School

585 Central Avenue

Needham, MA

Schematic Design Estimate

This Schematic Design cost estimate was produced from drawings and specifications produced by Dore and Whittier Architects, Inc. and their design team dated April 18, 2016. Design and engineering changes occurring subsequent to the issue of these documents have not been incorporated in this estimate.

This estimate includes all direct construction costs, general contractor's overhead and profit and design contingency. Cost escalation assumes start dates indicated.

Bidding conditions are expected to be public bidding under Massachusetts General Laws C. 149 to pre-qualified general contractors, and pre-qualified sub-contractors, open specifications for materials and manufactures.

The estimate is based on prevailing wage rates for construction in this market and represents a reasonable opinion of cost. It is not a prediction of the successful bid from a contractor as bids will vary due to fluctuating market conditions, errors and omissions, proprietary specifications, lack or surplus of bidders, perception of risk, etc. Consequently the estimate is expected to fall within the range of bids from a number of competitive contractors or subcontractors, however we do not warrant that bids or negotiated prices will not vary from the final construction cost estimate.

ITEMS NOT CONSIDERED IN THIS ESTIMATE

Items not included in this estimate are:

All professional fees and insurance Land acquisition, feasibility, and financing costs All Furnishings, Fixtures and Equipment Items identified in the design as Not In Contract (NIC) Items identified in the design as by others Owner supplied and/or installed items (e.g. draperies, furniture and equipment) Rock excavation; special foundations (unless indicated by design engineers) Utility company back charges, including work required off-site Work to City streets and sidewalks, (except as noted in this estimate) 16-May-16



Hillside Elementary School 585 Central Avenue Needham, MA

Schematic Design Estimate

16-May-16

GFA 90,702

| | BUILDING | | ON COST SUMMA SUB-TOTAL | TOTAL | ¢/CF | % |
|-----|----------------|---------------------------------|----------------------------|--------------------|---------|-----|
| | | | SUB-IUIAL | IUIAL | \$/SF | 70 |
| | NSTRUC | | | | | |
| A10 | FOUNE A1010 | OATIONS Standard Foundations | ¢1 407 0 40 | | | |
| | A1010 A1020 | Special Foundations | \$1,437,040 \$0 | | | |
| | A1020 A1030 | Lowest Floor Construction | \$0 \$624,244 | \$2,061,284 | \$22.73 | 7. |
| | A1030 | Lowest Floor Construction | 4024,244 | <i>φ</i> 2,001,204 | φ22./3 | /• |
| A20 | BASEM | ENT CONSTRUCTION | | | | |
| | A2010 | Basement Excavation | \$o | | | |
| | A2020 | Basement Walls | \$o | \$0 | \$0.00 | 0.0 |
| B10 | SUPER | STRUCTURE | | | | |
| | B1010 | Upper Floor Construction | \$1,559,787 | | | |
| | B1020 | Roof Construction | \$1,829,793 | \$3,389,580 | \$37.37 | 11. |
| B20 | EXTER | IOR CLOSURE | | | | |
| | B2010 | Exterior Walls | \$2,780,753 | | | |
| | B2020 | Windows | \$1,956,237 | | | |
| | B2030 | Exterior Doors | \$93,205 | \$4,830,195 | \$53.25 | 16. |
| B30 | ROOFI | NG | | | | |
| 200 | B3010 | Roof Coverings | \$2,646,744 | | | |
| | B3020 | Roof Openings | \$13,200 | \$2,659,944 | \$29.33 | 9. |
| C10 | INTERI | OR CONSTRUCTION | | | | |
| | C1010 | Partitions | \$2,212,812 | | | |
| | C1020 | Interior Doors | \$511,990 | | | |
| | C1030 | Specialties/Millwork | \$572,532 | \$3,297,334 | \$36.35 | 11. |
| C20 | STAIR | TASES | | | | |
| 020 | C2010 | Stair Construction | \$159,000 | | | |
| | C2010 | Stair Finishes | \$29,808 | \$188,808 | \$2.08 | 0. |
| Сзо | INTER | OR FINISHES | | | | |
| | C3010 | Wall Finishes | \$552,390 | | | |
| | C3020 | Floor Finishes | \$1,028,785 | | | |
| | C3030 | Ceiling Finishes | \$651,499 | \$2,232,674 | \$24.62 | 7. |
| | ~~~~~ | | | | | |
| D10 | CONVE | YING SYSTEMS | | | | |



Hillside Elementary School 585 Central Avenue Needham, MA

Schematic Design Estimate

16-May-16

GFA 90,702

| | BUILDING | SYSTEM | SUB-TOTAL | TOTAL | \$/SF | % |
|------|----------|---|-------------|--------------|----------|--------|
| W CO | NSTRUC | TION | | | | |
| D13 | SPECIA | L CONSTRUCTION | | | | |
| | D1313 | Special Construction | \$o | \$0 | \$0.00 | 0.09 |
| D20 | PLUMB | BING | | | | |
| | D20 | Plumbing | \$1,168,311 | \$1,168,311 | \$12.88 | 4.02 |
| D30 | HVAC | | | | | |
| | D30 | HVAC | \$4,046,974 | \$4,046,974 | \$44.62 | 14.0 |
| D40 | FIRE P | ROTECTION | | | | |
| | D40 | Fire Protection | \$408,159 | \$408,159 | \$4.50 | 1.4 |
| D50 | ELECT | RICAL | | | | |
| | D5010 | Service & Distribution | \$1,014,984 | | | |
| | D5020 | Lighting & Power | \$795,353 | | | |
| | D5030 | Communication & Security Systems | \$896,608 | | | |
| | D5040 | Other Electrical Systems | \$181,052 | \$2,887,997 | \$31.84 | 10.0 |
| E10 | EQUIP | MENT | | | | |
| | E10 | Equipment | \$557,045 | \$557,045 | \$6.14 | 1.9 |
| E20 | FURNIS | SHINGS | | | | |
| | E2010 | Fixed Furnishings | \$1,034,965 | | | |
| | E2020 | Movable Furnishings | NIC | \$1,034,965 | \$11.41 | 3.6 |
| F20 | HAZMA | AT REMOVALS | | | | |
| | F2010 | Building Elements Demolition | \$o | | | |
| | F2020 | Hazardous Components Abatement | \$ 0 | \$0 | \$0.00 | 0.0 |
| TOTA | I. DIRF | CT COST (Trade Costs) | | \$28,901,270 | \$318.64 | 100.0% |

| CSI | and besign | n Estimate | | <u> </u> | UNIT | EST'D | GFA SUB | TOTA |
|------|------------|---|-----------------|------------|-----------------|------------------|------------|------|
| CODE | | DESCRIPTION | QTY | UNIT | COST | COST | TOTAL | cos |
| NEW | CONSTR | RUCTION | | | | | | |
| [| GROSS | FLOOR AREA CALCULATION | | | | | | |
| | | First Floor | | | 32,086 | | | |
| | | Second Floor | | | 39,266 | | | |
| | | Third Floor | | | 19,350 | | | |
| [| | TOTAL GROSS FLOOR AREA (GFA) | | | | 90,702 s | f | |
| [| A10 | FOUNDATIONS | | | | | | |
| • | A1010 | STANDARD FOUNDATIONS | | | | | | |
| | 033000 | CONCRETE | | | | | | |
| | | Strip Footings | 357 | CY | | | | |
| | | Foundation Walls | 511 | CY | | | | |
| | | Spread Footings | 864 | CY | | | | |
| | | Piers | 34 | CY | | | | |
| | | Total Foundation Concrete | 1,766 | CY | | | | |
| | | Strip footings - 3'-0" x 1'-0" | | | | | | |
| | | Formwork | 3,000 | sf | 10.00 | 30,000 | | |
| | | Re-bar | 10,500 | lbs | 1.20 | 12,600 | | |
| | | Concrete material; 4,000 psi | 175 | cy | 130.00 | 22,750 | | |
| | | Placing concrete | 175 | cy | 70.00 | 12,250 | | |
| | | Strip footings - 10'-0" x 2'-0" | | | | | | |
| | | Formwork | 740 | sf | 10.00 | 7,400 | | |
| | | Re-bar | 8,640 | lbs | 1.20 | 10,368 | | |
| | | Concrete material; 4,000 psi | 144 | cy | 130.00 | 18,720 | | |
| | | Placing concrete | 144 | cy | 70.00 | 10,080 | | |
| | | <u>Interior strip footings - 2' 0"x 1'-0"</u> Formwork | 980 | sf | 10.00 | 9,800 | | |
| | | Re-bar | 2,280 | lbs | 1.20 | 9,800 2,736 | | |
| | | Concrete material; 4,000 psi | 38 | cy | 130.00 | 4,940 | | |
| | | Placing concrete | 38 | cy | 70.00 | 2,660 | | |
| | | Foundation walls at exterior - 16" thick | 0 | - 2 | , | , | | |
| | | Formwork | 12,000 | sf | 12.00 | 144,000 | | |
| | | Re-bar | 24,000 | lbs | 1.20 | 28,800 | | |
| | | Concrete material; 4,000 psi | 310 | cy | 130.00 | 40,300 | | |
| | | Placing concrete | 310 | cy | 70.00 | 21,700 | | |
| | | Form shelf | 1,500 | lf | 10.00 | 15,000 | | |
| | | Retaining walls - 24" thick | | | | | | |
| | | Formwork | 5,180 | sf | 16.00 | 82,880 | | |
| | | Re-bar | 12,950 | lbs | 1.20 | 15,540 | | |
| | | Concrete material; 4,000 psi | 201 | cy | 130.00 | 26,130 | | |
| | | Placing concrete F6 - Column footings - 6'-0" x 6'-0"x 2'-0" | 201 | cy | 70.00 | 14,070 | | |
| | | | | c | | | | |
| | | Formwork | 3,072 | sf lb a | 14.00 | 43,008 | | |
| | | Re-bar | 21,480 | lbs | 1.20 | 25,776 | | |
| | | Concrete material; 4,000 psi Placing concrete | 179 | cy | 130.00 | 23,270 | | |
| | | Set anchor bolts grout plates | 179 64 | cy ea | 70.00 150.00 | 12,530 9,600 | | |
| | | F9 - Column footings - 9'-0" x 9'-0" x 2'-6" | | ca | 190.00 | 9,000 | | |
| | | Formwork | 7,830 | sf | 14.00 | 109,620 | | |
| | | Re-bar | /,030 82,200 | lbs | 14.00 | 98,640 | | |
| | | Concrete material; 4,000 psi | 685 | cy | 130.00 | 90,040 89,050 | | |
| | | Placing concrete | 685 | cy | 70.00 | 47,950 | | |
| | | Set anchor bolts grout plates | 87 | ea | 150.00 | 13,050 | | |
| | | | -/ | | -000 | -0,-00 | | |

PM&C Hillside Elementary School

| PM&C |
|----------------------------|
| Hillside Elementary School |
| 585 Central Avenue |
| Needham, MA |

| CODE | | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
|------|--------|--|----------------|----------|---------------|---------------|--------------|---------------|
| NEW | CONSTR | RUCTION | | | | · | · | |
| | | Re-bar | 6,400 | lbs | 1.20 | 7,680 | | |
| | | Concrete material; 3,000 psi | 34 | cy | 120.00 | 4,080 | | |
| | | Placing concrete | 34 | cy | 80.00 | 2,720 | | |
| | | Form and pour grease trap | 1 | ls | 750.00 | 750 | | |
| | 070001 | WATERPROOFING, DAMPPROOFING AND CAULKING | | | | | | |
| | | Waterproofing retaining wall and footing | 4,070 | sf | 7.00 | 28,490 | | |
| | 072100 | THERMAL INSULATION | | | | | | |
| | | Insulation to foundation walls; 2" thick EPS | 8,590 | sf | 2.52 | 21,647 | | |
| | 312000 | EARTHWORK | | | | | | |
| | | Strip footings - 3'-0" x 1'-0" | | | | | | |
| | | Excavation | 1,556 | cy | 15.00 | 23,340 | | |
| | | Reuse on site | 1,556 | cy | 8.00 | 12,448 | | |
| | | Backfill with imported material | 1,381 | cy | 30.00 | 41,430 | | |
| | | <u>Strip footings - 10'-0" x 2'-0"</u> Excavation | 1.0.40 | 0 | 15.00 | 00.145 | | |
| | | Excavation Reuse on site | 1,343 1 242 | cy | 15.00 8.00 | 20,145 | | |
| | | Backfill with imported material | 1,343 | cy cy | 30.00 | 10,744 | | |
| | | Interior strip footings - 2' 0"x 1'-0" | 1,199 | cy | 30.00 | 35,970 | | |
| | | Excavation | 436 | cy | 15.00 | 6,540 | | |
| | | Reuse on site | 436 | cy | 8.00 | 3,488 | | |
| | | Backfill with imported material | 398 | cy | 30.00 | 11,940 | | |
| | | F6 - Column footings - 6'-0" x 6'-0"x 2'-0" | | | | | | |
| | | Excavation | 948 | cy | 20.00 | 18,960 | | |
| | | Reuse on site | 948 | cy | 8.00 | 7,584 | | |
| | | Backfill with imported material | 769 | cy | 30.00 | 23,070 | | |
| | | <u>F9 - Column footings - 9'-0" x 9'-0"x 2'-6"</u> | | | | | | |
| | | Excavation | 2,178 | cy | 20.00 | 43,560 | | |
| | | Reuse on site | 2,178 | cy | 8.00 | 17,424 | | |
| | | Backfill with imported material | 1,493 | cy | 30.00 | 44,790 | | |
| | | Miscellaneous | | 16 | 0 | | | |
| | | Perimeter drain | 200 | lf | 18.00 | 3,600 | | |
| | | Underslab E&B for plumbing | 1 | ls | 15,000.00 | 15,000 | | |
| | | Allowance for dewatering for foundation work | 1 | ls | 10,000.00 | 10,000 | | |
| | | SUBTOTAL | | | | | 1,437,040 | |
| | A1020 | SPECIAL FOUNDATIONS | | | | | | |
| | | No work in this section | | | | | | |
| | | SUBTOTAL | | | | | | |
| | | | | | | | | |
| | A1030 | LOWEST FLOOR CONSTRUCTION | | | | | | |
| | - | | | | | | | |
| | 033000 | CONCRETE | | | | | | |
| | | <u>Slab on grade, 5" thick</u> | 47,020 | sf | | | | |
| | | Vapor barrier | 47,020 | sf | 0.75 | 35,265 | | |
| | | WWF reinforcement | 54,073 | sf | 0.80 | 43,258 | | |
| | | Concrete - 5" thick; 4,000 psi | 761 | cy | 130.00 | 98,930 | | |
| | | Placing concrete | 761 | cy | 45.00 | 34,245 | | |
| | | Finishing and curing concrete | 47,020 | sf | 1.50 | 70,530 | | |
| | | Sawcut full depth control joints | 47,020 | sf | 0.20 | 9,404 | | |
| | | Elevator pit walls | | | | | | |
| | | formwork | 480 | sf | 14.00 | 6,720 | | |
| | | reinforcement | 720 | lbs. | 1.20 | 864 | | |
| | | concrete material | 6 | cy | 125.00 | 750 | | |
| | | placing concrete | 6 | cy | 60.00 | 360 | | |
| | | <u>Slab @ elevator pit</u> | | | | | | |
| | | formwork | 60 | sf | 12.00 | 720 | | |

GFA 90,702

| PM&C | |
|---------------------------|---|
| Hillside Elementary Schoo | 1 |
| 585 Central Avenue | |
| Needham, MA | |

16-May-16

| CSI CODE | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
|-------------|--|--------|------|--------------|---------------|--------------|---------------|
| NEW CON | STRUCTION | | | | | | |
| | reinforcement | 750 | lbs. | 1.20 | 900 | | |
| | concrete material in slab | 7 | cy | 125.00 | 875 | | |
| | placing concrete | 7 | cy | 60.00 | 420 | | |
| | Miscellaneous | | | | | | |
| | Equipment pads | 1 | ls | 5,000.00 | 5,000 | | |
| | Premium for ramp | 110 | sf | 5.00 | 550 | | |
| 0700 | 01 WATERPROOFING, DAMPPROOFING AND CAULKING | | | | | | |
| | Mennonite water stops | 1 | ls | 500.00 | 500 | | |
| | Cementitious waterproofing to elevator pit | 340 | sf | 16.00 | 5,440 | | |
| 07210 | o THERMAL INSULATION | | | | | | |
| | Rigid insulation; 2" XPS | 47,020 | sf | 2.25 | 105,795 | | |
| 31200 | o EARTHWORK | | | | | | |
| | <u>Slab on grade</u> | | | | | | |
| | Structural fill to make up levels | 3,213 | cy | 30.00 | 96,390 | | |
| | Compacted gravel fill under slab 8" thick | 1,167 | cy | 35.00 | 40,845 | | |
| | Compacted granular structural fill under slab 8" thick | 1,167 | cy | 35.00 | 40,845 | | |
| | Compact existing sub-grade | 47,020 | sf | 0.50 | 23,510 | | |
| | <u>Elevator Pit</u> | | | | | | |
| | Excavation for elevator pit | 84 | cy | 16.00 | 1,344 | | |
| | Store for re-use | 84 | cy | 8.00 | 672 | | |
| | Backfill with imported material | 4 | cy | 28.00 | 112 | | |
| | SUBTOTAL | | | | | 624,244 | |
| | TOTAL - FOUNDATIONS | | | | | | \$2,061,284 |
| | | | | | | | 1 / / - |
| | | | | | | | |
| A2 | 0 BASEMENT CONSTRUCTION |] | | | | | |
| ٨٩ | 10 BASEMENT EXCAVATION | | | | | | |
| A20 | No work in this section | | | | | | |

A2020 BASEMENT WALLS

SUBTOTAL

No work in this section

SUBTOTAL

TOTAL - BASEMENT CONSTRUCTION

| B10 | SUPERSTRUCTURE | | | | |
|--------|--|--------------|----------------|----------|---------|
| B1010 | FLOOR CONSTRUCTION | 718 15.83 | tns lbs/gsf | | - |
| 033000 | CONCRETE | | | | |
| | WWF reinforcement | 50,234 | sf | 0.80 | 40,187 |
| | Concrete Fill to metal deck; 4-1/2" thick; normal weight | 637 | cy | 125.00 | 79,625 |
| | Place and finish concrete | 43,682 | sf | 2.25 | 98,285 |
| | Rebar to decks | 13,105 | lbs | 1.20 | 15,726 |
| | Moisture mitigation admixture | 637 | cy | 60.00 | NIC |
| 051200 | STRUCTURAL STEEL FRAMING | | | | |
| | Beams/columns/bracing, 13#/SF | 284 | tns | 3,500.00 | 994,000 |
| | Connections | 28 | tns | 3,500.00 | 98,000 |
| | Premium for HSS | 71 | tns | 300.00 | 21,300 |

-

| PM&C |
|----------------------------|
| Hillside Elementary School |
| 585 Central Avenue |
| Needham, MA |

| | | | | UNIT | EST'D | SUB | TOTAL |
|---------|--|------------|---------------|-----------|-----------|-----------|-------|
| DE | DESCRIPTION | QTY | UNIT | COST | COST | TOTAL | COST |
| W CONST | TRUCTION | | | | | | |
| | 2" Metal galvanized floor deck | 43,682 | sf | 3.25 | 141,967 | | |
| | Shear studs | 8,736 | ea | 3.80 | 33,197 | | |
| | Miscellaneous | | | | | | |
| | Allowance for beam penetrations | 1 | ls | 5,000.00 | 5,000 | | |
| 078400 | FIREPROOFING/FIRESTOPPING | | | | - | | |
| | Fireproofing to columns and beams | 1 | ls | 25,000.00 | 25,000 | | |
| | Fire stopping floors | 1 | ls | 7,500.00 | 7,500 | | |
| | SUBTOTAL | | | | | 1,559,787 | |
| B102 | 0 ROOF CONSTRUCTION | | | | | | |
| 033000 | CONCRETE | | | | | | |
| | WWF reinforcement | 7,757 | sf | 0.85 | 6,593 | | |
| | Concrete Fill to metal deck; 4-1/2" thick; normal weight | 98 | cy | 170.00 | 16,660 | | |
| | Place and finish concrete | 6,745 | sf | 2.25 | 15,176 | | |
| | Rebar to decks | 2,024 | lbs | 1.20 | 2,429 | | |
| 051200 | STRUCTURAL STEEL FRAMING | | | | | | |
| | Beams/columns/bracing, 13#/SF - 15#/SF @ overhangs | 369 | tns | 3,500.00 | 1,291,500 | | |
| | Connections | 3 7 | tns | 3,500.00 | 129,500 | | |
| | Premium for HSS | 92 | tns | 300.00 | 27,600 | | |
| | Premium for trusses | 1 | ls | 25,000.00 | 25,000 | | |
| | 3" Metal galvanized roof deck | 55,343 | \mathbf{sf} | 4.00 | 221,372 | | |
| | Premium for acoustic deck | 6,275 | sf | 3.50 | 21,963 | | |
| | Steel support for roof screens | 16 | tns | 4,500.00 | 72,000 | | |
| 078400 | FIREPROOFING/FIRESTOPPING | | | | | | |
| | Fireproofing to roof deck | | | | NIC | | |
| | Intumescent paint to exposed beams | | | | NIC | | |
| | SUBTOTAL | | | | | 1,829,793 | |

TOTAL - SUPERSTRUCTURE

| B20 | EXTERIOR CLOSURE | | | | |
|--------|--|--------|----|-----------|--------|
| B2010 | EXTERIOR WALLS | 33,360 | SF | | - |
| 040001 | MASONRY | | | | |
| | Brick veneer | 17,535 | sf | 35.00 | 613,72 |
| | Natural stone veneer | 3,435 | sf | 85.00 | 291,9 |
| | Cast stone sill | 280 | lf | 60.00 | 16,80 |
| | Mock up | 1 | ls | 20,000.00 | 20,00 |
| | CMU back, 8" | 5,365 | sf | 22.00 | 118,0 |
| | CMU back, 12" | 4,755 | sf | 26.00 | 123,6 |
| | Staging to exterior wall | 48,637 | sf | 3.00 | 145,9 |
| 052000 | MISC. METALS | | | | |
| | Misc. angles, lintels etc. at masonry | 25,725 | sf | 1.25 | 32,1 |
| 070001 | WATERPROOFING, DAMPPROOFING AND CAULKING | | | | |
| | Air and vapor barrier | 33,360 | sf | 6.00 | 200,1 |
| | AVB at window openings | 6,554 | lf | 4.00 | 26,2 |
| | Miscellaneous sealants | 48,637 | sf | 0.20 | 9,7 |

\$3,389,580

16-May-16

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| 16-May-16 |
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| GFA | 90,702 |
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| | sign Estimate | | | | | | |
|-------------|--|------------|---------------|--------------------|------------------|--------------|---------------|
| CSI CODE | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
| NEW CONS | STRUCTION | | | | | | |
| 07210 | o THERMAL INSULATION | | | | | | |
| | Mineral fiber insulation, 4" | 12,390 | sf | 4.75 | 58,853 | | |
| | Rigid insulation, 3" | 20,970 | sf | 4.00 | 83,880 | | |
| | Insulation at window openings | 6,554 | lf | 6.00 | 39,324 | | |
| 07400 | 0 WALL PANELS | | | | | | |
| -,4 | Wood cladding | 12,390 | sf | 55.00 | 681,450 | | |
| | | ,0)* | | 00.00 | | | |
| 09290 | 00 GYPSUM BOARD ASSEMBLIES | | | | | | |
| | Exterior gypsum sheathing | 23,240 | sf | 2.90 | 67,396 | | |
| | 6" metal stud | 23,240 | sf | 7.50 | 174,300 | | |
| | GWB lining, 5/8" | 23,240 | sf | 3.00 | 69,720 | | |
| 10140 | o SIGNAGE | | | | | | |
| | Exterior signage | 1 | ls | 7,500.00 | 7,500 | | |
| | SUBTOTAL | | | | | 2,780,753 | |
| B20 | 20 WINDOWS | 15,277 | SF | | | | |
| | | 0, , , | | | | | |
| 06100 | o ROUGH CARPENTRY | | | | | | |
| | Wood blocking at openings | 6,554 | lf | 4.00 | 26,216 | | |
| 07000 | MATERPROOFING, DAMPPROOFING AND CAULKING | | | | | | |
| ., | Backer rod & double sealant | 6,554 | lf | 9.00 | 58,986 | | |
| | | -)001 | | 2 | 0-77 | | |
| 08000 | | | | | | | |
| | Aluminum windows | 1,144 | sf | 85.00 | 97,240 | | |
| | Curtainwall | 14,133 | sf | 115.00 | 1,625,295 | | |
| | Premium for Solera glass Sun shades | 3,600 1 | sf ls | 20.00 75,000.00 | 72,000 75,000 | | |
| | Sur shades | 1 | 15 | /5,000.00 | /3,000 | | |
| 08900 | 00 LOUVERS | | | | | | |
| | Louvers | 1 | ls | 1,500.00 | 1,500 | | |
| | SUBTOTAL | | | | | 1,956,237 | |
| B20 | 30 EXTERIOR DOORS | | | | | | |
| | | | | | | | |
| 06100 | ROUGH CARPENTRY Wead blocking at appring | -0- | 16 | 1.00 | | | |
| | Wood blocking at openings | 285 | lf | 4.00 | 1,140 | | |
| 07920 | 0 JOINT SEALANTS | | | | | | |
| | Backer rod & double sealant | 285 | lf | 9.00 | 2,565 | | |
| 081110 | DOORS, FRAMES & HARDWARE | | | | | | |
| 00110 | Double | 5 | pr | 3,300.00 | 16,500 | | |
| | Double | 5 | P | 3,300.00 | 10,500 | | |
| 08411 | | | | | | | |
| | Glazed aluminum entrance doors including frame and | 5 | \mathbf{pr} | 8,000.00 | 40,000 | | |
| | hardware; double | | | 1 000 00 | 00.000 | | |
| | nardware; double Glazed aluminum entrance doors including frame and hardware; single | 5 | ea | 4,000.00 | 20,000 | | |
| 08710 | Glazed aluminum entrance doors including frame and hardware; single | 5 | ea | 4,000.00 | 20,000 | | |
| 08710 | Glazed aluminum entrance doors including frame and hardware; single | 2 | ea ea | 6,500.00 | 13,000 | | |
| 08710 | Glazed aluminum entrance doors including frame and hardware; single<i>DOOR HARDWARE</i> | | | | | 93,205 | |

288

| 201 | -90 | | | | | | | |
|------------|--------|---|--------|---------------|----------|-----------|-----------|-------------|
| 291 292 | B3010 | ROOF COVERINGS | | | | | | |
| 293 294 | 055000 | MISC. METALS | | | | | | |
| 295 | | Roofladder | 3 | ea | 2,500.00 | 7,500 | | |
| 296 | | Aluminum pergolas | 575 | \mathbf{sf} | 120.00 | 69,000 | | |
| 297 298 | 061000 | ROUGH CARPENTRY | | | | | | |
| 299 | | Rough blocking | 7,020 | lf | 6.00 | 42,120 | | |
| 300 | | | | | | | | |
| 301 | 070002 | ROOFING AND FLASHING | | | | | | |
| 302 | | 3 ply built-up roofing | 51,298 | \mathbf{sf} | 24.50 | 1,256,801 | | |
| 303 | | EPDM w/ ballasts at low roof | 4,045 | \mathbf{sf} | 20.50 | 82,923 | | |
| 304 | | Miscellaneous Roofing | | | | | | |
| 305 | | Roof edge detail; metal parapet caps/fascia | 585 | lf | 30.00 | 17,550 | | |
| 306 | | Walk pads | 1 | ls | 5,000.00 | 5,000 | | |
| 307 308 | | | | | | | | |
| | 074200 | METAL PANELS | | | | | | |
| 309 | | Linear metal panel at overhang and canopy soffits, including framing, sheathing, insulation | 4,744 | sf | 65.00 | 308,360 | | |
| 310 | | MCM panel at overhang soffits, including framing, sheathing, insulation | 2,666 | sf | 70.00 | 186,620 | | |
| 311 | | MCM roof edge panel, 3' | 1,167 | lf | 210.00 | 245,070 | | |
| 312 | | MCM roof edge panel, 5' | 588 | lf | 350.00 | 205,800 | | |
| 313 314 | 074210 | ROOFTOP ENCLOSURES | | | | | | |
| 315 | | Acoustic screen | 4,000 | sf | 55.00 | 220,000 | | |
| 316 | | SUBTOTAL | | | | | 2,646,744 | |
| 317 | | | | | | | | |
| 318 | B3020 | ROOF OPENINGS | | | | | | |
| 319 | | Skylight 6' x 6" | 2 | ea | 5,600.00 | 11,200 | | |
| 320 | | Roof hatch | 1 | ea | 2,000.00 | 2,000 | | |
| 321 | | SUBTOTAL | | | | | 13,200 | |
| 322 323 | | TOTAL - ROOFING | | | | | | \$2,659,944 |
| 324 | | | | | | | | |
| 325 | | | | | | | | |
| 326 327 | С10 | INTERIOR CONSTRUCTION | | | | | | |
| 328 | C1010 | PARTITIONS | | | | | | |
| 329 | 040001 | MASONRY | | | | | | |
| 330 | | CMU 4" | 420 | \mathbf{sf} | 16.00 | 6,720 | | |
| 331 | | CMU 6" | 420 | \mathbf{sf} | 18.00 | 7,560 | | |
| 332 | | CMU 8" | 26,012 | \mathbf{sf} | 20.00 | 520,240 | | |
| 333 | | CMU, 12" | 4,340 | \mathbf{sf} | 24.00 | 104,160 | | |
| 334 | | Premium for polished GFCMU | 9,450 | \mathbf{sf} | 6.00 | 56,700 | | |
| 335 | | Premium for acoustic CMU | 2,000 | sf | 15.00 | 30,000 | | |
| 336 337 | 050001 | MISCELLANEOUS METALS | | | | | | |

UNIT COST

QTY

UNIT

EST'D COST

NEW CONSTRUCTION

B30

ROOFING

DESCRIPTION

Hillside Elementary School

585 Central Avenue Needham, MA

P

289 290 GFA 90,702

TOTAL

 \mathbf{COST}

SUB TOTAL

Operable partition steel support

Misc. metals to masonry

Seismic clips

061000 ROUGH CARPENTRY

337 338

339

340

341 342 lf

ea

 \mathbf{sf}

90.00

120.00

1.00

2,070

61,560

31,192

23

513

31,192

| PM&C |
|----------------------------|
| Hillside Elementary School |
| 585 Central Avenue |
| Needham, MA |

| CSI CODE | | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
|-------------|--------|---|--------|---------------|--------------|---------------|--------------|---------------|
| NEW (| CONSTR | RUCTION | | | | | | |
| | | Rough blocking | 7,744 | lf | 6.00 | 46,464 | | |
| | 080002 | GLASS AND GLAZING | | | | | | |
| | | Interior storefront | 698 | sf | 80.00 | 55,840 | | |
| | | Borrowed lites | 351 | sf | 60.00 | 21,060 | | |
| | | Premium for 1 hour rated | 276 | sf | 60.00 | 16,560 | | |
| | | Switchable privacy glass | 168 | sf | 100.00 | 16,800 | | |
| | 092900 | GYPSUM BOARD ASSEMBLIES | | | | | | |
| | | Type A - 6" MS, 1 layer GWB b/s, insulation | 26,866 | sf | 12.50 | 335,825 | | |
| | | Type A2a - 6" MS, 2 layer GWBs b/s, insulation | 21,056 | sf | 15.00 | 315,840 | | |
| | | Type F4 - 3-5/8" MS, 1 layer GWB, insulation | 11,298 | sf | 8.25 | 93,209 | | |
| | | Type F5 - 3-5/8" MS, 2 layers GWB, insulation | 28,728 | sf | 9.50 | 272,916 | | |
| | | Type F6 - 6" MS, 1 layer GWB, insulation | 7,196 | sf | 9.50 | 68,362 | | |
| | | Type M - 6" MS, 2 layer GWBs b/s, insulation, resilient clips | 4,970 | sf | 16.50 | 82,005 | | |
| | | Type N - 3-5/8" MS, 1 layer GWB, insulation | 6,365 | sf | 7.75 | 49,329 | | |
| - | 102226 | OPERABLE PARTITIONS | | | | | | |
| | | Operable partition, electrically operated | 230 | sf | 80.00 | 18,400 | | |
| | | SUBTOTAL | 0 | | | - , 1 | 2,212,812 | |
| | | | | | | | | |
| | C1020 | INTERIOR DOORS | | | | | | |
| | 061000 | ROUGH CARPENTRY | | | | | | |
| | | Wood blocking at openings | 2,616 | lf | 4.00 | 10,464 | | |
| | 070001 | WATERPROOFING, DAMPPROOFING AND CAULKING | | | | | | |
| | | Backer rod & double sealant | 2,616 | lf | 6.00 | 15,696 | | |
| | 080002 | GLASS AND GLAZING | | | | | | |
| | | Door side lights | 1,099 | sf | 45.00 | 49,455 | | |
| | 081110 | DOORS, FRAMES & HARDWARE | | | | | | |
| | | Single | 128 | ea | 1,600.00 | 204,800 | | |
| | | Double | 22 | pr | 3,300.00 | 72,600 | | |
| | | Premium for acoustic gasketing | 70 | ea | 500.00 | 35,000 | | |
| | | Sidelights | 1,099 | sf | 25.00 | 27,475 | | |
| | 083110 | ACCESS DOORS AND FRAMES | | | | | | |
| | | Access doors | 1 | ls | 1,500.00 | 1,500 | | |
| | | | | | | | | |
| | 083300 | OVERHEAD DOOR | | | 0 | 2 | | |
| | | Overhead coiling grille at kitchen | 1 | ea | 8,400.00 | 8,400 | | |
| | | Overhead coiling door at recycling | 1 | ea | 4,200.00 | 4,200 | | |
| | | Overhead coiling grille at reception | 1 | ea | 2,100.00 | 2,100 | | |
| | 084110 | ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS | | | | | | |
| | | Glazed aluminum doors including frame and hardware; double door | 6 | \mathbf{pr} | 8,000.00 | 48,000 | | |
| | 087100 | DOOR HARDWARE | | | | | | |
| | | Automatic opening hardware | 1 | ea | 6,500.00 | 6,500 | | |
| | 090007 | PAINTING | | | | | | |
| | / | Finish doors and frames | 172 | ea | 150.00 | 25,800 | | |
| | | SUBTOTAL | -/- | cu | 10.00 | | 511,990 | |
| | | | | | | | 5,,,,, | |

16-May-16

| PM&C | |
|---------------------------|---|
| Hillside Elementary Schoo | 1 |
| 585 Central Avenue | |
| Needham, MA | |

| | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
|-------|---|--------|------|--------------|---------------|--------------|---------------|
| CONS | STRUCTION | | | | | | |
| C10 | 30 SPECIALTIES / MILLWORK | | | | | | |
| 05500 | 00 MISCELLANEOUS METALS | | | | | | |
| | Rail support for elevator cabs | 1 | loc | 3,000.00 | 3,000 | | |
| | Guardrail | 26 | lf | 250.00 | 6,500 | | |
| | Miscellaneous metals throughout building | 90,702 | sf | 1.00 | 90,702 | | |
| 06100 | 00 ROUGH CARPENTRY | | | | | | |
| | Backer panels in electrical closets | 1 | ls | 1,500.00 | 1,500 | | |
| | Wood blocking at interiors | 90,702 | gsf | 0.50 | 45,351 | | |
| 07000 | 01 WATERPROOFING, DAMPPROOFING AND CAULKING | | | | | | |
| | Miscellaneous sealants throughout building | 90,702 | sf | 0.70 | 63,491 | | |
| 10110 | 0 VISUAL DISPLAY SURFACES | | | | | | |
| | Tack Board | 2,626 | sf | 18.00 | 47,268 | | |
| | White Board | 192 | sf | 20.00 | 3,840 | | |
| | Interactive White Board projector | 68 | loc | 2,800.00 | 190,400 | | |
| | Wall mirror | 140 | sf | 45.00 | 6,300 | | |
| 10140 | o SIGNAGE | | | | | | |
| | Building directory | 1 | loc | 3,000.00 | 3,000 | | |
| | Room Signs | 172 | loc | 120.00 | 20,640 | | |
| | Other signage | 1 | ls | 2,500.00 | 2,500 | | |
| 10211 | | | | | | | |
| | ADA | 10 | ea | 1,600.00 | 16,000 | | |
| | Standard | 14 | ea | 1,200.00 | 16,800 | | |
| | Urinal screen | 6 | ea | 400.00 | 2,400 | | |
| 10280 | | | | | | | |
| | Gang bathroom | 10 | rms | 2,350.00 | 23,500 | | |
| | Single bathroom | 15 | rms | 1,100.00 | 16,500 | | |
| | Janitors Closet Accessories | 3 | rms | 300.00 | 900 | | |
| 10440 | 90 FIRE PROTECTION SPECIALTIES | | | | | | |
| | Fire extinguisher cabinets | 30 | ea | 350.00 | 10,500 | | |
| 10511 | 3 LOCKERS | | | | | | |
| | Double tier lockers at kitchen | 8 | opn | 180.00 | 1,440 | | |
| | SUBTOTAL | | | | | 572,532 | |
| | TOTAL - INTERIOR CONSTRUCTION | | | | | | \$3,297,3 |
| C2 | o STAIRCASES | ٦ | | | | | |
| 02 | | | | | | | |

 033000 CONCRETE

Concrete fill to stairs

055000 MISCELLANEOUS METALS

Egress stairs

SUBTOTAL

C2020 STAIR FINISHES

flt

flt

2,500.00

24,000.00

15,000

144,000

159,000

90,702

GFA

| Schema | atic Desigr | 1 Estimate | | | | | GFA | 90,7 |
|-------------|-------------|---|------------------|----------|----------------|--------------------|--------------|---------------|
| CSI CODE | | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
| NEW | CONSTR | RUCTION | | 11 | I | 1 | | |
| | 090005 | RESILIENT FLOORS | | | | | | |
| | | Rubber treads/risers | 720 | lfr | 22.00 | 15,840 | | |
| | | Rubber landings | 462 | sf | 14.00 | 6,468 | | |
| | 090007 | PAINTING | | | | | | |
| | | Paint to staircases SUBTOTAL | 6 | flt | 1,250.00 | 7,500 | 29,808 | |
| | | TOTAL - STAIRCASES | | | | | | \$188,8 |
| | Сзо | INTERIOR FINISHES | | | | | | |
| | C3010 | WALL FINISHES | | | | | | |
| | 090002 | TILE | | | | | | |
| | | Glazed wall tile, 6" x 18" | 4,410 | sf | 22.00 | 97,020 | | |
| | | Glazed wall tile, 6" x 6" | 6,867 | sf | 20.00 | 137,340 | | |
| | 098400 | ACOUSTICAL ROOM COMPONENTS | | | | | | |
| | | Absorptive wall panels | 1,360 | sf | 30.00 | 40,800 | | |
| | 090007 | PAINTING | | | | | | |
| | | Vinyl coated wall covering - Marker Surface | 7,378 | sf | 11.00 | 81,158 | | |
| | | Custom print wall covering | 200 | sf | 20.00 | 4,000 | | |
| | | Paint to GWB | 164,350 | sf | 0.80 | 131,480 | | |
| | | Paint to CMU | 60,592 | sf | 1.00 | 60,592 | | |
| | | SUBTOTAL | | | | | 552,390 | |
| | C3020 | FLOOR FINISHES | | | | | | |
| | - | | | | | | | |
| | 033000 | CONCRETE Sealed concrete | 2,175 | sf | 1.50 | 3,263 | | |
| | | | -,-/5 | 51 | 1.50 | 3,203 | | |
| | 090002 | TILE | | c | | | | |
| | | Quarry tile Quarry tile base | 1,425 | sf | 22.00 | 31,350 | | |
| | | Paver tile | 210 2,205 | lf sf | 20.00 24.00 | 4,200 | | |
| | | Ceramic tile base | 420 | lf | 24.00 | 52,920 8,400 | | |
| | | | • | | | - , 1 | | |
| | 090005 | RESILIENT FLOORS | | | | | | |
| | | Sheet linoleum Moisture mitigation | 62,242 62,242 | sf sf | 7.00 3.50 | 435,694 217,847 | | |
| | | Rubber Base | 20,747 | lf | 3.00 | 62,241 | | |
| | 096470 | FLUID-APPLIED FLOORING | | | | | | |
| | | Epoxy Base | 720 | lf | 6.00 | 4,320 | | |
| | | Epoxy Flooring | 2,120 | sf | 12.00 | 25,440 | | |
| | | | | | | | | |
| | 096810 | TILE CARPETING | | | | | | |
| | | Carpet tile | 4,350 | sf | 6.22 | 27,057 | | |
| | 096430 | WOOD FLOORING | | | | | | |
| | | Platform | 1,040 | sf | 22.00 | 22,880 | | |

511

PM&C

| PM&C |
|----------------------------|
| Hillside Elementary School |
| 585 Central Avenue |
| Needham, MA |

| SI DDE | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
|-----------|--|----------------|------|--------------|------------------|--------------|---------------|
| EW CONST | RUCTION | | | | | | |
| 096460 | WOOD ATHLETIC FLOORING | | | | | | |
| | Wood athletic floor at gym | 6,075 | sf | 18.00 | 109,350 | | |
| | Moisture mitigation | 6,075 | sf | 3.50 | 21,263 | | |
| | Vented base | 320 | lf | 8.00 | 2,560 | | |
| | SUBTOTAL | | | | | 1,028,785 | |
| | | | | | | | |
| Сзозо | CEILING FINISHES | | | | | | |
| 090003 | ACOUSTICAL TILE | | | | | | |
| 0,0000 | ACP1 - 2 x 4, Tegular Edge | 2,875 | sf | 5.00 | 14,375 | | |
| | ACP1A - 2 x 2, Tegular Edge | 48,212 | sf | 5.70 | 274,808 | | |
| | ACP2 - 2 x 4, SLT Edge | 265 | sf | 5.50 | 1,458 | | |
| | ACP2A - 2 x 2, SLT Edge | 2,130 | sf | 6.00 | 12,780 | | |
| | ACP3A - 2 x 2, SLT Edge | 1,395 | sf | 6.25 | 8,719 | | |
| | ACP4 - 2 x 2, 1/2" GWB w/ washable surface | 1,560 | sf | 6.00 | 9,360 | | |
| | ACP5 - 2 x 4, Square Edge | 95 | sf | 5.00 | 475 | | |
| | ACP5A - 2 x 2, Square Edge | 2,860 | sf | 6.00 | 17,160 | | |
| | ACP7 - 4 x 4, 1" fiberglass | 3,500 | sf | 12.00 | 42,000 | | |
| | ACP8 - 2 x 2, aluminum panels in music room | 660 | sf | 20.00 | 13,200 | | |
| | Linear slat wood ceiling | 2,530 | sf | 35.00 | 88,550 | | |
| 092900 | GYPSUM BOARD ASSEMBLIES | | | | | | |
| .,,,,., | GWB ceilings | 2.045 | sf | 10.00 | 20.450 | | |
| | Acoustic ceiling at Music room | 2,945 1,500 | sf | 15.00 | 29,450 22,500 | | |
| | GWB soffits | 1,500 | ls | 25,000.00 | 25,000 | | |
| 090007 | PAINTING | | | | | | |
| -) , | Paint to GWB | 9.045 | sf | 1.05 | 3,681 | | |
| | Paint to exposed ceilings | 2,945 6,530 | sf | 1.25 1.50 | 3,081 9,795 | | |
| | Paint to exposed ceilings - gymnasium | 6,075 | sf | 2.50 | 9,795 15,188 | | |
| 009400 | | - / - / 0 | | | 0, | | |
| 098400 | ACOUSTICAL ROOM COMPONENTS Baffles, Ecophon | 1,900 | sf | 20.00 | 38,000 | | |
| | Suspended acoustical clouds at Cafeteria and Media | 1,900 | ls | | 25,000 | | |
| | SUSPENDED acoustical clouds at Caleteria and Media | 1 | 15 | 25,000.00 | 25,000 | 651 400 | |
| | SUBIOIAL | | | | | 651,499 | |
| | TOTAL - INTERIOR FINISHES | | | | | | 2,232,67 |
| | | | | | | | |
| D10 | CONVEYING SYSTEMS | | | | | | |
| D1010 | • ELEVATOR | | | | | | |
| 055000 | MISCELLANEOUS METALS | | | | | | |
| | Pit ladder and miscellaneous metals | 1 | ls | 3,000.00 | 3,000 | | |
| 142100 | ELECTRIC TRACTION ELEVATOR | | | | | | |
| , | Holeless hydraulic passenger elevator, 3 stop | 1 | ls | 135,000.00 | 135,000 | | |
| | | 1 | 13 | 133,000.00 | 133,000 | | |
| | SUBTOTAL | | | | | 138,000 | |
| | TOTAL - CONVEYING SYSTEMS | | | | | | \$138,00 |
| D13 | SPECIAL CONSTRUCTION | | | | | | |
| | |] | | | | | |
| D1313 | SPECIAL CONSTRUCTION | | | | | | |
| | | | | | | | |

16-May-16

90,702

GFA

PM&C Hillside Elementary School 585 Central Avenue Needham, MA

| Instrument Instrument Instrument Instrument Instrument Instrument NEW CONSTRUCTION SUBTOTAL FOTAL - SPECIAL CONSTRUCTION Instrument | CSI CODE | | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTA COS |
|--|-------------|--------|---|--------|----------|--------------|----------------------|--------------|-------------|
| JUTURE | | CONSTI | | ¥ | 0 | 0001 | 0001 | TOTAL | |
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| Art room sinks - double width2ea2,00,004,200Art room sinks - single width1ea1,750,001,750ADA showers2ea2,000,004,000Emergency shower / eye wash station - mechanical room1ea2,750,002,750Emergency shower / eye wash station - science & tech classrooms5555Hose bibs - allow10ea175,001,750Wall hydrants- allow4ea225,00900Roof hydrants - allow1la500,00010,000Domestic Water Piping1la10,000,00010,000Domestic water distribution & branch piping incl. insulation90,702sf3.50317,457Allowance for kitchen rough-in & connections1ls20,000,0020,000Allowance for kitchen rough-in & connections1ls20,000,0020,000Lab Waste1ls20,000,0020,00020,000Assume to not be required in Elementary School5555Sanitary Waste And Vent1ls20,000,0020,0001 | | | | | | | - | | |
| Art room sinks - single width1ea1,750.001,750ADA showers2ea2,000.004,000Emergency shower / eye wash station - mechanical room1ea2,750.002,750Emergency shower / eye wash station - science & tech classroomsAssumed to be not requiredHose bibs - allow10ea175.001,750Wall hydrants- allow4ea225.00900Roof hydrants - allow1ea500.00500Allowance for fixtures yet to be designed / shown1ls10,000.0010,000Domestic Water PipingDomestic insulation90,702sf3.50317,457Kitchen Rough-in & Connections1ls20,000.0020,000Allowance for kitchen rough-in & connections1ls20,000.0020,000Lab WasteAssume to not be required in Elementary SchoolsiSciSciSciSanitary Waste And VentSciSciSciSciSciSanitary Waste And VentSciSciSciSciSciSciSciSciSciSciSciSciSciSciSci <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> | | | | | | | | | |
| ADA showers2ea2,000.004,000Emergency shower / eye wash station - science & tech classroomsiea2,750.002,750Emergency shower / eye wash station - science & tech classroomsiea2,750.002,750Hose bibs - allow10ea175.001,750Wall hydrants- allow4ea225.00900Roof hydrants - allow1ea500.00500Allowance for fixtures yet to be designed / shown1ls10,000.0010,000Domestic Water PipingDomestic water distribution & branch piping incl. insulation90,702sf3.50317,457Kitchen Rough-in & Connections1ls20,000.0020,00020,000Lab WasteAssume to not be required in Elementary SchoolissciencesciencescienceSanitary Waste And Vent1lssciencesciencescience | | | | | | , | | | |
| Emergency shower / eye wash station - mechanical room1ea2,750.002,750Emergency shower / eye wash station - science & tech classrooms | | | _ | | | | | | |
| Emergency shower / eye wash station - science & tech classroomsAssumed to be not requiredHose bibs - allow10ea175.001,750Hose bibs - allow4ea225.00900Roof hydrants - allow1ea500.00500Roof hydrants - allow1ls10,000.0010,000Allowance for fixtures yet to be designed / shown1ls10,000.0010,000Domestic Water PipingDomestic water distribution & branch piping incl. insulation90,702sf3.50317,457Kitchen Rough-in & connections1ls20,000.0020,00020,000Lab WasteFequired in Elementary SchoolExcludedExcludedSanitary Waste And VentFequired in Elementary SchoolFexcludedFexcluded | | | | | | | | | |
| Hose bibs - allow10ea175.001,750Wall hydrants - allow4ea225.00900Roof hydrants - allow1ea500.00500Allowance for fixtures yet to be designed / shown1ls10,000.0010,000Domestic Water PipingDomestic water distribution & branch piping incl. insulation90,702sf3.50317,457Kitchen Rough-in & Connection1ls20,000.0020,00020,000Allowance for kitchen rough-in & connections1ls20,000.0020,000Lab WasteAssume to not be required in Elementary SchoolExcludedExcludedSanitary Waste And Vent5555 | | | Emergency shower / eye wash station - science & tech | | cu | 2,730.00 | Assumed to | | |
| Wall hydrants- allow4ea225.00900Roof hydrants - allow1ea500.00500Allowance for fixtures yet to be designed / shown1ls10,000.0010,000Domestic Water Piping1ls10,000.00317,457Domestic water distribution & branch piping incl. insulation90,702sf3.50317,457Kitchen Rough-in & Connection1ls20,000.0020,000Lab Waste1ls20,000.0020,000Lab Waste5555Assume to not be required in Elementary School555Sanitary Waste And Vent5555 | | | Hose bibs - allow | 10 | 62 | 175.00 | - | | |
| Roof bydrants - allow1ea500.00500Allowance for fixtures yet to be designed / shown11s10,000.0010,000Domestic Water PipingDomestic water distribution & branch piping incl. insulation90,702sf3.50317,457Domestic water distribution & branch piping incl. insulation90,702sf3.50317,457Kitchen Rough-in & Connection11s20,000.0020,000Allowance for kitchen rough-in & connections11s20,000.0020,000Lab WasteAssume to not be required in Elementary SchoolExcludedSanitary Waste And VentSanitary Waste And VentSanitary Waste And VentSanitary Waste And Vent | | | | | | | | | |
| Allowance for fixtures yet to be designed / shown11110,000.0010,000Domestic Water PipingDomestic insulation90,702sf3.50317,457Domestic water distribution & branch piping incl. insulation90,702sf3.50317,457Kitchen Rough-in & Connection11s20,000.0020,000Allowance for kitchen rough-in & connections11s20,000.0020,000Lab WasteAssume to not be required in Elementary SchoolExcludedSanitary Waste And VentSanitary Waste And VentSanitary Waste And VentSanitary Waste And Vent | | | | | | | | | |
| Domestic Water PipingDomestic Water PipingDomestic water distribution & branch piping incl. insulation90,702sf3.50317,457Kitchen Rough-in & ConnectionAllowance for kitchen rough-in & connections11ls20,000.0020,000Lab WasteAssume to not be required in Elementary SchoolExcludedSanitary Waste And Vent | | | - | | | | | | |
| Domestic water distribution & branch piping incl. insulation90,702sf3.50317,457Kitchen Rough-in & Connection1ls20,000.0020,000Allowance for kitchen rough-in & connections1ls20,000.0020,000Lab Waste44555Assume to not be required in Elementary SchoolExcluded55Sanitary Waste And Vent5555 | | | | 1 | | ,000,000 | 10,000 | | |
| Kitchen Rough-in & Connection 1 ls 20,000.00 20,000 Lab Waste Assume to not be required in Elementary School Excluded Sanitary Waste And Vent Excluded | | | | 90.702 | sf | 3.50 | 317.457 | | |
| Allowance for kitchen rough-in & connections1ls20,000.0020,000Lab WasteAssume to not be required in Elementary SchoolExcludedSanitary Waste And VentExcluded | | | | ,0,/0= | <u>.</u> | 5.50 | 0-/ /1 0/ | | |
| Lab WasteAssume to not be required in Elementary SchoolExcludedSanitary Waste And Vent | | | 5 | 1 | ls | 20 000 00 | 20.000 | | |
| Assume to not be required in Elementary SchoolExcludedSanitary Waste And VentExcluded | | | | 1 | 1.5 | 20,000.00 | 20,000 | | |
| Sanitary Waste And Vent | | | | | | | Excluded | | |
| | | | | | | | Excluded | | |
| | | | | | | | | | |
| | | | Allowance for u/g pipework | 90,702 | sf | 0.35 | 31,746 | | |

Above ground

617

| PM&C |
|----------------------------|
| Hillside Elementary School |
| 585 Central Avenue |
| Needham, MA |

636 637 16-May-16

| | Schematic | Design Estimate | | | | | GFA | 90,702 |
|-----|-------------|--|--------|------|--------------|---------------|--------------|---------------|
| | CSI CODE | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
| | NEW CO | NSTRUCTION | | | | | | |
| 618 | | Allowance for a/g pipework, floor drains, etc. | 90,702 | sf | 2.00 | 181,404 | | |
| 619 | | Sump pump; allow | 1 | ea | 3,500.00 | 3,500 | | |
| 620 | | Storm Drainage, Hubless Cast Iron Pipe | | | | | | |
| 621 | | <u>Under ground</u> | | | | | | |
| 622 | | Allowance for u/g pipework | 90,702 | sf | 0.75 | 68,027 | | |
| 623 | | Above ground | | | | | | |
| 624 | | Allowance for a/g pipework, roof drains, etc. | 90,702 | sf | 1.00 | 90,702 | | |
| 625 | | Natural Gas Piping | | | | | | |
| 626 | | Connection to gas meter | 1 | ea | 1,200.00 | 1,200 | | |
| 627 | | Gas booster | 1 | ea | 35,000.00 | 35,000 | | |
| 628 | | Allowance for gas sub-meter | 1 | ea | 5,000.00 | 5,000 | | |
| 629 | | Kitchen master gas valve c/w controls | 1 | ea | 2,400.00 | 2,400 | | |
| 630 | | Allowance for pipework | 90,702 | sf | 0.25 | 22,676 | | |
| 631 | | Miscellaneous | | | | | | |
| 632 | | Plumbing general conditions / requirements | 1 | ls | 38,899.42 | 38,899 | | |
| 633 | | SUBTOTAL | | | | | 1,168,311 | |
| 634 | | | | | | | | |
| 635 | | TOTAL - PLUMBING | | | | | | \$1,168,311 |

| D30 | HVAC | | | | |
|-----|--|------------|----------|------------------------|------------------|
| D30 | HVAC, GENERALLY | | | | |
| | Heating hot water equipment | | | | |
| | Gas fired high efficiency condensing boilers | 3,800 | MBH | 25.00 | 95,000 |
| | Expansion tank | 2 | ea | 6,000.00 | 12,000 |
| | Air separator | 1 | ea | 5,750.00 | 5,750 |
| | Chemical treatment system HHW primary pumps; 320gpm | 1 2 | ea ea | 12,000.00 12,500.00 | 12,000 25,000 |
| | VFD's | 2 | ea | 6,000.00 | 12,000 |
| | Chilled water equipment | | | | |
| | Air cooled chiller | 25 | tons | 950.00 | 23,750 |
| | Expansion tank | 1 | ea | 6,000.00 | 6,000 |
| | Air separator | 1 | ea | 5,750.00 | 5,750 |
| | Chemical treatment system CHW primary pumps; 44gpm | 1 2 | ea ea | 12,000.00 5,000.00 | 12,000 10,000 |
| | VFD's | 2 | ea | 2,750.00 | 5,500 |
| | Air distribution | | | | |
| | <u>Air Handling Unit</u> | | | | |
| | Classroom RTU | 30,600 | cfm | 12.50 | 382,500 |
| | Music & Adaptive PE RTU | 3,000 | cfm | 11.00 | 33,00 |
| | Gymnasium RTU | 6,500 | cfm | 11.00 | 71,50 |
| | Admin, Nurse & Guidance Areas RTU | 4,500 | cfm | 11.00 | 49,50 |
| | Media Center & Reading Rooms Areas RTU | 3,500 | cfm | 11.00 | 38,50 |
| | Cafeteria, Quiet Zones, Platform & Teachers Dining RTU | 7,000 | cfm | 11.00 | 77,00 |
| | Kitchen MUA | 3,000 | cfm | 7.00 | 21,00 |
| | Kitchen & Custodial Support Areas RTU | 3,500 | cfm | 11.00 | 38,50 |
| | <u>Terminal Units</u> | | | | |
| | VAV's c/w HW reheat | 3 7 | ea | 1,400.00 | 51,80 |
| | Allowance for unit heaters | 7 | ea | 2,000.00 | 14,000 |
| | Allowance for cabinet unit heaters | 12 | ea | 3,000.00 | 36,000 |

Radiant Panels

Allowance for radiant panels

669

670

2,047

lf

125.00

255,875

| l |
|---|
| |
| |
| |

| CODE | DESCRIPTION | QTY | UNIT | COST | COST | TOTAL | COST |
|---------|---|---------|-----------|--------------------|-----------------------|-----------|------|
| NEW CON | STRUCTION | | | | | | |
| | Active Chilled Beams | | | | | | |
| | Allowance for 2x4' active chilled beams | 18 | ea | 1,200.00 | 21,600 | | |
| | Allowance for 2x2' active chilled beams | 7 | ea | 900.00 | 6,300 | | |
| | Allowance for chilled beams to Media Center | 10 | ea | 1,200.00 | 12,000 | | |
| | Ductless Split Systems | | | | | | |
| | Allowance for split systems to electric rooms, IDF closets & <u>Exhaust fan</u> | 5 | ea | 10,000.00 | 50,000 | | |
| | Allowance for fans | 1 | ls | 25,000.00 | 25,000 | | |
| | Sheet metal & Accessories | | | | | | |
| | Allowance for ductwork | 86,167 | lbs | 11.00 | 947,837 | | |
| | Allowance for duct insulation | 51,700 | sf | 4.00 | 206,800 | | |
| | Allowance for rooftop external insulation | 4,308 | sf | 15.00 | 64,620 | | |
| | Black iron welded kitchen exhaust | 2,500 | lbs | 16.00 | 40,000 | | |
| | Insulation; fire wrap | 2,000 | sf | 25.00 | 50,000 | | |
| | Boiler combustion air and flues | 1 | ls | 20,000.00 | 20,000 | | |
| | Displacement diffusers | 58 | ea | 750.00 | 43,500 | | |
| | Allowance for registers, grilles, diffusers, etc. | 173 | ea | 100.00 | 17,300 | | |
| | Volume dampers | 231 | ea | 85.00 | 19,635 | | |
| | Allowance for FD/SD's | 1 | ls | 10,000.00 | 10,000 | | |
| | Piping | | | | | | |
| | Hot Water Piping | | | | | | |
| | Hot water piping incl. insulation | 90,702 | sf | 3.15 | 285,711 | | |
| | Chilled Water Pipework | | | | | | |
| | Chilled water piping incl. insulation | 90,702 | sf | 1.15 | 104,307 | | |
| | Condensate Drain Piping | | | - | | | |
| | Condensate drain piping | 90,702 | sf | 0.25 | 22,676 | | |
| | Controls (DDC) | 2-11- | | | <i>y</i> - <i>y</i> - | | |
| | Boilers; allowance for BACNet interface with BMS | 2 | ea | 5,000.00 | 10,000 | | |
| | HHW pumps; 5 points per pump | | | | | | |
| | | 10 | pts | 900.00 | 9,000 | | |
| | RTU's; allowance for BACNet interface with BMS | 13 | ea | 5,000.00 | 65,000 | | |
| | Air cooled chiller; allowance for BACNet interface with BMS CHW pumps; 5 points per pump | 1 10 | ea pts | 5,000.00 900.00 | 5,000 9,000 | | |
| | VAV's & FCU's; 7 points per unit | 259 | pts | 900.00 | 233,100 | | |
| | Unit heaters; 1 point per unit | 19 | pts | 900.00 | 17,100 | | |
| | Radiant panels; 1 point per panel | 90 | pts | 900.00 | 81,000 | | |
| | Chilled beams; 4 points per beam | 140 | pts | 900.00 | 126,000 | | |
| | Split systems; integration only | 5 | ea | 2,500.00 | 12,500 | | |
| | Allowance for controls to fans | 1 | ls | 30,000.00 | 30,000 | | |
| | Electrical meters; interface only; allow | 10 | pts | 900.00 | 9,000 | | |
| | Lighting control system; interface only | 1 | ls | 2,500.00 | 2,500 | | |
| | Sump pump; status only | 1 | ea | 900.00 | 900 | | |
| | Emergency generator; status only | 1 | ea | 2,500.00 | 2,500 | | |
| | Municipal electric utility provider; interface only | 1 | ea | 2,500.00 | 2,500 | | |
| | | | | | | | |
| | Allowance for kitchen demand control ventilation | 1 | ls ptc | 15,000.00 | 15,000 | | |
| | Misc. points | 20 | pts | 900.00 | 18,000 | | |
| | Balancing | | | - | - | | |
| | System testing & balancing | 90,702 | sf | 0.65 | 58,956 | | |
| | Miscellaneous | | | | | | |
| | HVAC general conditions / requirements | 1 | ls | 98,706.68 | 98,707 | | |
| | SUBTOTAL | | | | | 4,046,974 | |

16-May-16

90,702

GFA

| PM&C |
|----------------------------|
| Hillside Elementary School |
| 585 Central Avenue |
| Needham, MA |

| CSI CODE | | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
|-------------|--------|---|--------|----------|-------------------------|----------------|--------------|---|
| | ONSTR | RUCTION | 4.1 | 0 | 0001 | 0001 | Tottill | |
| Г | JONSIN | TOTAL - HVAC | | | | | | \$4,046,9 |
| L | | | | | | | | + + + + - + - + - + - + - + - + - + - + |
| Г | D40 | FIRE PROTECTION | 7 | | | | | |
| L | D40 | FIRE PROTECTION, GENERALLY | | | | | | |
| | 240 | Sprinklers | | | | | | |
| | | Allowance for wet sprinkler system and standpipe system | 90,702 | sf | 4.50 | 408,159 | | |
| | | SUBTOTAL | | | | | 408,159 | |
| Г | | TOTAL - FIRE PROTECTION | | | | | | \$408, |
| L | | | | | | | | |
| Г | D50 | ELECTRICAL | | | | | | |
| _ | Deoto | CEDVICE & DISTDIDUTION | | | | | | |
| | D2010 | SERVICE & DISTRIBUTION Gear & Distribution Normal Power | | | | | | |
| | | 1,600A main switchboard | 1 | ls | 87,500.00 | 87,500 | | |
| | | 400A 480V panel | 2 | ea | 8,000.00 | 16,000 | | |
| | | 225A 480V panel | 1 | ea | 4,500.00 | 4,500 | | |
| | | 100A 480V panel | 3 | ea | 2,500.00 | 7,500 | | |
| | | 225kVA xfmr | 2 | ea | 20,000.00 | 40,000 | | |
| | | 400A 208V double tub panel | 1 | ea | 8,000.00 | 8,000 | | |
| | | 225A 208V triple tub panel | 3 | ea | 8,500.00 | 25,500 | | |
| | | 225A 208V double tub panel | 1 | ea | 5,000.00 | 5,000 | | |
| | | 100A fused disconnect for performance lighting | 1 | ea | 1,250.00 | 1,250 | | |
| | | 100A 208V double tub panel | 4 | ea | 3,750.00 | 15,000 | | |
| | | EPO for kitchen & elevator machine room | 2 | ea | 1,250.00 | 2,500 | | |
| | | Allowance for metering | 1 | ls | 10,000.00 | 10,000 | | |
| | | Allowance for SPD's | 8 | ea | 1,500.00 | 12,000 | | |
| | | Feeders | | | | | | |
| | | Secondary feeder from xfmr | | | | | | |
| | | 600mcm | 1,440 | lf | 38.48 | 55,411 | | |
| | | 4" PVC conduit | | | | In Sitework | | |
| | | 800A feeder | 30 | lf | 290.00 | 8,700 | | |
| | | 400A feeder | 1,090 | lf | 118.00 | 128,620 | | |
| | | 225A feeder | 1,000 | lf 16 | 65.00 | 65,000 | | |
| | | 100A feeder | 1,280 | lf | 33.00 | 42,240 | | |
| | | Emergency power 250kW natural gas generator | | 00 | 108 750 00 | 108,750 | | |
| | | Weatherproof enclosure | 1 | ea ea | 108,750.00 50,000.00 | 50,000 | | |
| | | 100A ATS | 1 | ea | 5,000.00 | 5,000 | | |
| | | 400A ATS | 1 | ea | 9,000.00 | 9,000 | | |
| | | 400A 480V panel | 1 | ea | 4,500.00 | 4,500 | | |
| | | 150A 480V panel | 1 | ea | 2,250.00 | 2,250 | | |
| | | 100A 480V double tub panel | 1 | ea | 4,000.00 | 4,000 | | |
| | | 30kVA xfmr | 2 | ea | 2,900.00 | 5,800 | | |
| | | 150A 208V double tub panel 100A 208V double tub panel | 1 | ea | 4,500.00 3,500.00 | 4,500 2,500 | | |
| | | 100A 208V double tub panel | 1 | ea ea | 3,500.00 1,800.00 | 3,500 5,400 | | |
| | | Allowance for SPD's | 3 4 | ea | 1,500.00 | 6,000 | | |
| | | Feeders | - | | | | | |
| | | ATS underground feeders from genset | | | | | | |
| | | 4/0 | 320 | lf | 10.50 | 3,360 | | |

| PM&C |
|----------------------------|
| Hillside Elementary School |
| 585 Central Avenue |
| Needham, MA |

DESCRIPTION

CSI CODE

| | CODE | DESCRIPTION | QIY | UNII | cosr | cosr | IOIAL | cosi |
|------------|-----------|--|-------------|---------------|-----------|----------------------|-----------|------|
| | NEW CONST | RUCTION | | | | | <u>.</u> | |
| 778 | | #4 | 80 | lf | 3.45 | 276 | | |
| 779 | | #6 | 80 | lf | 2.80 | 224 | | |
| 780 | | Conduit | | | | In sitework | | |
| 781 | | 400A | 465 | lf | 118.00 | 54,870 | | |
| 782 | | 200A | 75 | lf | 53.00 | 3,975 | | |
| 783 | | 150A | 150 | lf | 42.00 | 6,300 | | |
| 784 | | 125A | 345 | lf | 38.00 | 13,110 | | |
| 785 | | 100A | 585 | lf | 33.00 | 19,305 | | |
| 786 | | 50A | 30 | lf | 21.00 | 630 | | |
| 787 | | UPS System | | | | | | |
| 788 | | 24KW UPS | 1 | ea | 16,200.00 | 16,200 | | |
| 789 | | Emergency power off | 1 | ea | 500.00 | 500 | | |
| 790 | | 200A disconnect switch | 5 | ea | 2,000.00 | 10,000 | | |
| 791 | | Equipment Wiring | | | | | | |
| 792 | | Allowance for mechanical equipment feeds & connections | 90,702 | \mathbf{sf} | 1.50 | 136,053 | | |
| 793 | | Allowance for empty conduits for PV system | 1 | ls | 5,000.00 | 5,000 | | |
| 794 | | SUBTOTAL | | | | | 1,014,984 | |
| 795 | | | | | | | | |
| 796 | D5020 | D LIGHTING & POWER | | | | | | |
| 797 | | Lighting & Branch Power | | | | | | |
| 798 | | Lighting | | | | | | |
| 799 | | Lighting & Branch Power | | | | | | |
| 800 | | Lighting | | | | | | |
| 801 | | Allowance for lighting | 90,702 | sf | 4.00 | 362,808 | | |
| 802 | | LR24 | 197 | ea | | Included | | |
| 803 | | LP4 | 3 | ea | | Included | | |
| 804 | | LP8 | 215 | ea | | Included | | |
| 805 | | LWS | 304 | lf | | Included | | |
| 806 | | LW4 | 2 | ea | | Included | | |
| 807 | | LS4 | 7 | ea | | Included | | |
| 808 | | LS8 | 20 | ea | | Included | | |
| 809 | | RC1 | 71 | ea | | Included | | |
| 810 | | RC2 | 36 | ea | | Included | | |
| 811 | | PC1 | 24 | ea | | Included | | |
| 812 813 | | PC2 | 24 | ea | | Included | | |
| 814 | | PC3 | 24 | ea | | Included | | |
| 815 | | RSH | 2 | ea | | Included | | |
| 816 | | LPD1 LPG | 12 15 | ea | | Included Included | | |
| 817 | | Track | 15 24 | ea lf | | Included | | |
| 818 | | Track mounted fixtures | 24 12 | ea | | Included | | |
| 819 | | Wiring points | 677 | ea | | Included | | |
| 820 | | Allowance for performance lighting | 1 | ls | | Included | | |
| 821 | | Lighting Control | - | - | | | | |
| 822 | | Allowance for lighting control incl. wiring | 90,702 | sf | 1.00 | 90,702 | | |
| 823 | | Branch devices | | | | - | | |
| 824 | | Allowance for branch power | 9,500 | sf | 3.00 | 28,500 | | |
| 825 | | Duplex; tamper resistant | 28 7 | ea | 125.00 | 35,875 | | |
| 826 | | Duplex; GFI; tamper resistant | 109 | ea | 175.00 | 19,075 | | |
| 827 | | Quad; tamper resistant | 131 | ea | 200.00 | 26,200 | | |
| 828 | | Quad; floor mounted | 9 | ea | 600.00 | 5,400 | | |
| 829 | | Quad; poke-thru | 181 | ea | 450.00 | 81,450 | | |
| 830 | | Allowance for coring | 190 | ea | 200.00 | 38,000 | | |
| 831 | | Junction box | 11 | ea | 117.50 | 1,293 | | |
| 832 | | Wiring points | 918 | ea | 100.00 | 91,800 | | |
| 833 | | Wiring premium for floor mounted outlets | 190 | ea | 75.00 | 14,250 | | |
| 834 | | SUBTOTAL | | | | | 795,353 | |
| 835 | | | | | | | | |
| | | | | | | | | |

16-May-16

GFA 90,702

SUB TOTAL TOTAL COST

EST'D COST

UNIT COST

UNIT

QTY

| PM&C |
|----------------------------|
| Hillside Elementary School |
| 585 Central Avenue |
| Needham, MA |

| IEW CONSTI D5030 | RUCTION | QTY | | | | | |
|---------------------|---|------------------|----|------------------|------------------|---------|--------|
| | RUCHON | | | • | | k | |
| 23030 | COMMUNICATION & SECURITY SYSTEMS | | | | | | |
| | Voice & Data | | | | | | |
| | Allowance for voice & data rough-in & fit-out | 90,702 | sf | 2.25 | 204,080 | | |
| | Fire Alarm | 90,701 | 51 | 2.23 | 204,000 | | |
| | Fire alarm control panel | 1 | ea | 20,000.00 | 20,000 | | |
| | Fire alarm terminal cabinet | 5 | ea | 2,500.00 | 12,500 | | |
| | Fire alarm remote annunciator | 3 2 | ea | 1,325.00 | 2,650 | | |
| | Master box | - 1 | ea | 1,000.00 | 1,000 | | |
| | Knox box | 1 | | | | | |
| | Beacon | | ea | 375.00 280.00 | 375 280 | | |
| | | 1 | ea | | | | |
| | Manual pull station | 27 86 | ea | 187.00 | 5,049 | | |
| | Smoke detector | 86 | ea | 181.40 | 15,600 | | |
| | Allowance for CO/Gas sensor | 4 | ea | 175.00 | 700 | | |
| | Duct smoke detector, allow | 16 | ea | 615.86 | 9,854 | | |
| | Heat detector, allow | 9 | ea | 153.22 | 1,379 | | |
| | Speaker / strobe | 113 | ea | 174.69 | 19,740 | | |
| | Visual device | 42 | ea | 121.02 | 5,083 | | |
| | Remote alarm indicator; allow | 9 | ea | 92.84 | 836 | | |
| | Door holders (pair) | 3 | ea | 800.00 | 2,400 | | |
| | Fire alarm drill switch | 1 | ea | 250.00 | 250 | | |
| | Elevator recall connection | 1 | ea | 500.00 | 500 | | |
| | Control/monitor module; allow | 25 | ea | 250.00 | 6,250 | | |
| | Fire alarm wiring point | 337 | ea | 200.00 | 67,400 | | |
| | Device test / commission | 337 | ea | 54.75 | 18,451 | | |
| | Allowance for fire alarm devices yet to be designed | 90,702 | sf | 0.40 | 36,281 | | |
| | Master Clock System | | | | | | |
| | Allowance for master clock system | 90,702 | sf | 0.25 | 22,676 | | |
| | Security System | | | | | | |
| | Allowance for access control, intruder detection & CCTV | 90,702 | sf | 2.25 | 204,080 | | |
| | Audio Visual Systems | | | | | | |
| | Allowance for projection / video outlets | 90,702 | sf | 0.35 | 31,746 | | |
| | Allowance for media distribution system; rough-in only | 1 | ls | 5,000.00 | 5,000 | | |
| | Allowance for PA system | 90,702 | sf | 0.60 | 54,421 | | |
| | Allowance for speech reinforcement system | 90,702 | sf | 0.75 | 68,027 | | |
| | Allowance for Café sound system | 1 | ls | 30,000.00 | 30,000 | | |
| | Gymnasium Equipment | | | | | | |
| | Allowance for gymnasium sound system | 1 | ls | 50,000.00 | 50,000 | | |
| | SUBTOTAL | | | | | 896,608 | |
| | | | | | | | |
| D5040 | OTHER ELECTRICAL SYSTEMS | | | | | | |
| | <u>Miscellaneous</u> Grounding & bonding | 90,702 | sf | 0.30 | 27,211 | | |
| | Lightning protection system, allow | 90,702 | sf | | 31,746 | | |
| | Temp power and lights | 90,702 90,702 | sf | 0.35 0.60 | | | |
| | | | | | 54,421 67.674 | | |
| | Electrical general conditions / requirements | 1 | ls | 67,673.63 | 67,674 | 19: 0=0 | |
| | SUBTOTAL | | | | | 181,052 | |
| | TOTAL - ELECTRICAL | | | | | | \$2,88 |

E10 EQUIPMENT, GENERALLY

113100 APPLIANCES

887 888

889 890

| PM&C |
|----------------------------|
| Hillside Elementary School |
| 585 Central Avenue |
| Needham, MA |

Sch

16-May-16

| matic Desig | gn Estimate | | | | | GFA | 90,7 |
|-------------|---|-------|------|--------------|---------------|--------------|---------------|
| E | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
| V CONST | RUCTION | | | | | • | |
| | Refrigerator/freezer | 4 | ea | 1,800.00 | 7,200 | | |
| | Dishwasher | 1 | ea | 800.00 | 800 | | |
| | Microwave | 4 | ea | 500.00 | 2,000 | | |
| | Kiln at art room | 1 | ea | 3,000.00 | 3,000 | | |
| | SUBTOTAL | | | | | | |
| 114000 | FOODSERVICE EQUIPMENT | | | | | | |
| | Kitchen equipment | 1 | ls | 358,445.00 | 358,445 | | |
| 115213 | PROJECTION SCREENS | | | | | | |
| | Electrically operated screen at Cafeteria platform and Media Center, 16' | 2 | ea | 7,500.00 | 15,000 | | |
| | Electrically operated screen at Gymnasium, 16' | 2 | ea | 7,500.00 | 15,000 | | |
| | Electrically operated screen at Extended learning | 3 | ea | 5,000.00 | 15,000 | | |
| 116100 | THEATRE EQUIPMENT | | | | | | |
| | Stage curtain and rigging | 1 | ls | 50,000.00 | 50,000 | | |
| | Green screen, 10' | 1 | ls | | F,F&E | | |
| 116600 | ATHLETIC EQUIPMENT | | | | | | |
| | OT/PT swing | 1 | ls | 2,000.00 | 2,000 | | |
| | Gym wall pads | 1 | ls | 10,000.00 | 10,000 | | |
| | Basketball backstops; retractable | 6 | ea | 8,500.00 | 51,000 | | |
| | Gymnasium dividing net | 1,380 | sf | 20.00 | 27,600 | | |
| | Bleachers | | | | NIC | | |
| | SUBTOTAL | | | | | 557,045 | |
| | TOTAL - EQUIPMENT | | | | | | \$557,0 |
| L | | | | | | | |
| E20 | FURNISHINGS | | | | | | |
| E2010 | FIXED FURNISHINGS | | | | | | |
| 064020 | INTERIOR ARCHITECTURAL WOODWORK | | | | | | |
| | Picture rail | 160 | lf | 25.00 | 4,000 | | |
| | Window sill | 2,185 | lf | 40.00 | 87,400 | | |
| | Extended learning millwork storage and play structure, 16' | 3 | loc | 12,800.00 | 38,400 | | |
| | Media center circulation desk | 20 | lf | 800.00 | 16,000 | | |
| | Office Welcome desk | 26 | lf | 800.00 | 20,800 | | |
| | Office Welcome desk/work counter | 30 | lf | 200.00 | 6,000 | | |
| | | | | | - | | |
| | Millwork bench | 36 | lf | 450.00 | 16,200 | | |

3,000.00

500.00

6.50

12.00

8.00

350.00

220.00

90,000

198,000

90,461

16,320

17,184

28,000

13,200

loc

lf

 \mathbf{sf}

 \mathbf{sf}

 \mathbf{sf}

lf

lf

13,917

1,360

2,148

Storage cabinet doors w/ marker surface, 4 leaf sliding

Open storage units w/ cabinets above, 7' high

WINDOW TREATMENT

Motor operated shades

Interior blinds

CASEWORK

Kindergarten

Wall cabinet

Single roller shades, manual

Base cabinets w/ p'lam countertop

| PM&C |
|----------------------------|
| Hillside Elementary School |
| 585 Central Avenue |
| Needham, MA |

| DE | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTA COS |
|--------|---|-----|------|------------------|---------------|--------------|-------------|
| W CONS | TRUCTION | | | | | | |
| | General Classroom | | | | | | |
| | Base cabinets w/ p'lam countertop | 80 | lf | 350.00 | 28,000 | | |
| | Book shelving | 360 | lf | 150.00 | 54,000 | | |
| | Art | | | | | | |
| | Base cabinets w/ epoxy countertop | 25 | lf | 440.00 | 11,000 | | |
| | Wall cabinet | 4 | lf | 220.00 | 880 | | |
| | Art display cabinet, double sided | 5 | lf | 500.00 | 2,500 | | |
| | <u>Steam</u> | | | | | | |
| | Base cabinets w/ epoxy countertop | 8 | lf | 440.00 | 3,520 | | |
| | Display cabinet, double sided | 5 | lf | 440.00 500.00 | 2,500 | | |
| | Display cabiliet, double slacu | Э | 11 | 500.00 | 2,500 | | |
| | Music | | | | | | |
| | Base cabinets w/ p'lam countertop | 24 | lf | 350.00 | 8,400 | | |
| | Wall shelves | 24 | lf | 150.00 | 3,600 | | |
| | Wardrobe | 1 | ea | 1,600.00 | 1,600 | | |
| | Instrument storage, open | 12 | lf | 500.00 | 6,000 | | |
| | General casework | | | | | | |
| | Base cabinets w/ p'lam countertop | 210 | lf | 350.00 | 73,500 | | |
| | Wall cabinet | 110 | lf | 220.00 | 24,200 | | |
| | Wall shelves | 140 | lf | 150.00 | 21,000 | | |
| | Countertop | 65 | lf | 200.00 | 13,000 | | |
| | Wardrobe | 25 | ea | 1,600.00 | 40,000 | | |
| | Display cabinet, double sided | 5 | lf | 500.00 | 2,500 | | |
| | Shelving in classroom closets | 240 | lf | 200.00 | 48,000 | | |
| | | | | | | | |
| 124810 | ENTRANCE FLOOR MAT AND FRAMES | | | | | | |
| | Entry mats & frames | 640 | sf | 45.00 | 28,800 | | |
| | SUBTOTAL | | | | | 1,034,965 | |
| E202 | o MOVABLE FURNISHINGS | | | | | | |
| | All movable furnishings to be provided and installed by owner | | | | | | |
| | SUBTOTAL | | | | | NIC | |
| | | | | | | 1110 | |
| | TOTAL - FURNISHINGS | | | | | | \$1,03 |
| F20 | SELECTIVE BUILDING DEMOLITION | | | | | | |
| F20 | SELECTIVE BUILDING DEMOLITION | | | | | | |
| F201 | o BUILDING ELEMENTS DEMOLITION | | | | | | |
| | See main summary for demolition of existing buildings | | | | | | |
| | SUBTOTAL | | | | | | |
| F202 | 0 HAZARDOUS COMPONENTS ABATEMENT | | | | | | |
| | See main summary for HazMat allowance | | | | See Summary | | |
| | SUBTOTAL | | | | | | |
| | TOTAL - SELECTIVE BUILDING DEMOLITION | | | | | | |

90,702

GFA



Hillside Elementary School 585 Central Avenue Needham, MA

| NI DDE | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTA COST |
|-----------|--|----------------|------|--------------|------------------|--------------|--------------|
| TEWORK | DESCRIPTION | QII | UNII | 051 | 0001 | IOIAL | 051 |
| G | SITEWORK | | | | | | |
| G10 | SITE PREPARATION & DEMOLITION | | | | | | |
| | Site Demolitions and Relocations | | | | | | |
| | Site construction fence | 1,375 | lf | 14.00 | 19,250 | | |
| | Snow fence | 954 | lf | 6.00 | 5,724 | | |
| | Construction gates | 1 | ea | 2,500.00 | 2,500 | | |
| | Remove and dispose utility pole | 1 | loc | 900.00 | 900 | | |
| | Remove and dispose utility pole with transformer | 1 | loc | 2,000.00 | 2,000 | | |
| | Remove and dispose overhead electric wires to utility pole | 435 | lf | 15.00 | 6,525 | | |
| | Pavement/curbing removal - grind up asphalt to reuse | 36,685 | sf | 0.75 | 27,514 | | |
| | Remove and dispose chain-link fence | 935 | lf | 5.00 | 4,675 | | |
| | Remove and dispose wood fence | 560 | lf | 8.00 | 4,480 | | |
| | Remove and dispose concrete walls | 328 | lf | 20.00 | 6,560 | | |
| | Remove and dispose concrete sidewalk | 270 | sf | 3.00 | 810 | | |
| | Remove and dispose of existing patio | 1,375 | sf | 5.00 | 6,875 | | |
| | Remove and dispose of existing deck | 210 | sf | 1.00 | 210 | | |
| | Remove and dispose concrete pad | 700 | sf | 3.00 | 2,100 | | |
| | Remove and dispose of existing stairs | 2 | ea | 500.00 | 1,000 | | |
| | Remove and dispose of existing sewer line | 207 | lf | 12.00 | 2,484 | | |
| | Remove and dispose of existing water line | 166 | lf | 10.00 | 1,660 | | |
| | Remove and dispose of existing storm line | 17 | lf | 10.00 | 170 | | |
| | Remove and dispose of existing gas line | 60 | lf | 10.00 | 600 | | |
| | Remove and dispose of existing jersey barriers | 35 | lf | 10.00 | 350 | | |
| | Remove and dispose concrete walls | 328 | lf | 12.00 | 3,936 | | |
| | Remove and dispose of existing cesspool w/ sand | 1 | ls | 500.00 | 500 | | |
| | Remove and dispose of existing sheds | 2 | ea | 500.00 | 1,000 | | |
| | Sawcut | 100 | lf | 5.00 | 500 | | |
| | Demolish existing buildings | | | | Summary | | |
| | Remove and dispose foundations to existing buildings being removed | 2,159 | lf | 8.00 | 17,272 | | |
| | Tree removal | 1 | ls | 20,000.00 | 20,000 | | |
| | Misc. Tree Protection | 1 | ls | 2,000.00 | 2,000 | | |
| | Cut and cap existing utilities | 10 | loc | 500.00 | 5,000 | | |
| | SUBTOTAL | | | | | 146,595 | |
| | | | | | | | |
| | <u>Site Earthwork</u> Construction entrances/wheel washes | 0 00 - | sf | 8.00 | 15 800 | | |
| | Strip topsoil, store on site for reuse | 2,225 7,446 | cy | 12.00 | 17,800 89,352 | | |
| | Site cut | 4,204 | cy | 8.00 | 33,632 | | |
| | Fill with onsite materials | 7,907 | cy | 6.00 | 47,442 | | |
| | Export excess cut | 2,758 | cy | 16.00 | 44,128 | | |
| | Fine grading | 18,586 | sy | 0.50 | 9,293 | | |
| | Silt fence/erosion control - Type A | 226 | lf | 12.00 | 2,712 | | |
| | Silt fence w/ haybale /erosion control - Type B | 62 | lf | 15.00 | 930 | | |
| | Silt fence w/ wattles /erosion control - Type C | 650 | lf | 14.00 | 9,100 | | |
| | Attach orange fence onto existing chain-link | 1,030 | lf | 6.00 | 6,180 | | |
| | Slope stabilization | 60 | lf | 40.00 | 2,400 | | |
| | Inlet protection | 9 | ea | 350.00 | 3,150 | | |
| | Erosion Control monitoring & maintenance | 1 | ls | 20,000.00 | 20,000 | | |
| | Ground water remediation | | | | NIC | | |

G20 SITE IMPROVEMENTS

54 55

| PM&C |
|----------------------------|
| Hillside Elementary School |
| 585 Central Avenue |
| Needham, MA |

| CSI CODE | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
|-------------|---|--------------|---------------|-----------------------|------------------|--------------|---------------|
| SITEWORK | | | | | | | |
| 56 | Roadways and Parking Lots | | | | | | |
| 57 | Bituminous concrete paving | 73,573 | | | - | | |
| 58 | gravel base; 12" thick | 2,725 | cy | 35.00 | 95,375 | | |
| 59 | bituminous concrete; 4" thick | 8,175 | sy | 24.00 | 196,200 | | |
| 60 | Porous Asphalt Paving | 3,752 | | | - | | |
| 61 | gravel base; 20" thick | 232 | cy | 35.00 | 8,120 | | |
| 62 | pea gravel base; 3" thick | 35 | cy | 36.00 | 1,260 | | |
| 63 | crushed stone base; 4" thick | 46 | cy | 38.00 | 1,748 | | |
| 64 | porous asphalt 4" | 417 | sy | 32.00 | 13,344 | | |
| 65 66 | Concrete pads | _ | | | | | |
| 67 | gravel base; 12" thick concrete paving; 6" thick | 9 | cy sf | 35.00 | 315 | | |
| 68 | granite curb | 238 4,030 | lf | 12.00 36.00 | 2,856 145,080 | | |
| 69 | flush granite curb | 4,030 | lf | 32.00 | 3,584 | | |
| 70 | granite corner curb | 4 | loc | 10.00 | 40 | | |
| 71 | Single solid lines, 4" thick | 91 | space | 30.00 | 2,730 | | |
| 72 | Wheelchair Parking | 20 | space | 75.00 | 1,500 | | |
| 73 | Other road markings | 1 | ls | 5,000.00 | 5,000 | | |
| 74 | HC curb cuts | 8 | loc | 350.00 | 2,800 | | |
| 75 | Crosswalks | 2 | loc | 4,000.00 | 8,000 | | |
| 76 | Wheel stops | 4 | loc | 350.00 | 1,400 | | |
| 77 | Flashing pedestrian signs | 4 | ea | 7,000.00 | 28,000 | | |
| 78 | Flashing 25 MPH school zone signs | 3 | ea | 6,000.00 | 18,000 | | |
| 79 80 | Left turn only lane striping | 1 | ls | 10,000.00 | 10,000 | | |
| 80 | Entrance sign; stone veneer and LED messaging sign and lighting | 1 | ls | 24,000.00 | 24,000 | | |
| 81 82 | New traffic signs | 1 | ls | 5,000.00 | 5,000 | | |
| 83 | SUBTOTAL | | | | | 574,352 | |
| 84 | Pedestrian paving | | | | | | |
| 85 | Bituminous concrete paving | | | | | | |
| 86 | gravel base; 6" thick | 422 | cy | 35.00 | 14,770 | | |
| 87 | color concrete; 5" thick | 22,804 | sf | 9.50 | 216,638 | | |
| 88 | Bluestone pavement | , | | <i>y</i> • 0 • | | | |
| 89 | gravel base; 8" thick | 19 | cy | 35.00 | 665 | | |
| 90 | Bluestone pavement | 700 | sf | 28.00 | 19,600 | | |
| 91 | Stone Dust Pavement | | | | | | |
| 92 | 4" stone dust pathway | 2,881 | \mathbf{sf} | 4.00 | ALT | | |
| 93 | gravel base; 8" thick | 71 | cy | 35.00 | ALT | | |
| 94 | | | | | | | |
| 95 | Site Improvements | | | | | | |
| 96 | Stairs and Ramps | | | | | | |
| 97 | Granite to stair treads | 200 | lfr | 250.00 | 50,000 | | |
| 98 | Stainless steel handrails | 150 | lf | 220.00 | 33,000 | | |
| 99 | Color concrete to stair treads | 87 | lfr | 200.00 | 17,400 | | |
| 100 | Ramps - gravel base; 6" thick | 4 | cy | 32.00 | 128 | | |
| 101 | Ramps - concrete paving; 6" thick | 235 | sf | 25.00 | 5,875 | | |
| 102 | Cheek walls | -55 256 | sf | 80.00 | 20,480 | | |
| 103 | Bicycle racks | 20 | | 600.00 | | | |
| 104 | | | ea loc | | 12,000 | | |
| | Flag pole | 1 | loc | 7,500.00 | 7,500 | | |
| 105 | Ornamental trash/recycling receptacles | 8 | ea | 800.00 | 6,400 | | |
| | 6 seat picnic table | 7 | ea | 1,500.00 | 10,500 | | |
| 107 | Bollards | 54 | ea | 800.00 | 43,200 | | |
| 108 | Cedar fence | 330 | lf | 90.00 | 29,700 | | |
| 109 | 6' wood screen fence | 160 | lf | 150.00 | 24,000 | | |



| | CSI CODE | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
|------------|-------------|---|--------|----------|--------------------|----------------|--------------|---------------|
| | SITEWORK | | | | | | | |
| 110 | | Stockdale fencing 4' high | 225 | lf | 45.00 | ALT | | |
| 111 | | Stockdale fencing 4' high - operable gate | 1 | ea | 1,600.00 | ALT | | |
| 112 | | Vinyl CL Fencing; 4' | 150 | lf | 35.00 | 5,250 | | |
| 113 | | 6' steel benches | 8 | ea | 2,500.00 | 20,000 | | |
| 114 | | Brick retaining wall | 80 | lf | 960.00 | 76,800 | | |
| 115 | | Stone veneer walls | 50 | lf | 920.00 | 46,000 | | |
| 116 | | Stone retaining walls | 86 | lf | 300.00 | 25,800 | | |
| 117 | | Stone retaining walls - circular | 122 | lf | 350.00 | 42,700 | | |
| 118 | | Blackboard retaining walls | 41 | lf | 300.00 | 12,300 | | |
| 119 | | Concrete retaining walls | 2,272 | sf | 55.00 | 124,960 | | |
| 120 | | Precast concrete seatwall | 63 | lf | 450.00 | 28,350 | | |
| 121 | | Blast wall - 12' tall CMU w/ brick veneer, precast concr | | lf | 1,050.00 | 50,400 | | |
| 122 | | double swing gate | 3 | ea | 3,000.00 | 9,000 | | |
| 123 | | Play surface | 2,417 | sf | 18.00 | 43,506 | | |
| 124 | | Wood fiber surface | 5,639 | sf | 13.00 | 73,307 | | |
| 125 | | 10 x 10 wood shed | 1 | ea | 5,000.00 | 5,000 | | |
| 126 | | Potting table | 1 | ea | 3,000.00 | 3,000 | | |
| 127 | | Art terrace benches | 5 | ea | 2,500.00 | 12,500 | | |
| 128 | | Swing bench | 1 | ls | 3,000.00 | 3,000 | | |
| 129 | | Curved bench | 20 | lf | 300.00 | 6,000 | | |
| 130 | | Gazebo | 1 | ls | 7,500.00 | 7,500 | | |
| 131 | | Pavement marking | 1 | ls | 7,500.00 | 7,500 | | |
| 132 | | Wood pedestrian bridge | 2 | ea | 10,000.00 | ALT | | |
| 133 | | Playground equipment | 1 | ls | 320,000.00 | 320,000 | | |
| 134 | | SUBTOTAL | _ | | 5, | 5 | 1,434,729 | |
| 135 | | | | | | | -,101,7-7 | |
| 136 | | Athletic Field | | | | | | |
| 137 | | Gravel base - 12" thick | 286 | cy | 35.00 | ALT | | |
| 138 | | Soil mix; reuse amended soil from on-site spoils | 355 | cy | 20.00 | ALT | | |
| 139 | | Natural turf | | of | 0.05 | ALT | | |
| 140 | | Irrigation | 7,350 | sf sf | 0.35 | ALT | | |
| 141 | | Landscaping & Plantings: | 7,350 | 51 | 1.50 | ALI | | |
| 142 | | Spread existing amended topsoil @ seeded areas | 6,604 | cy | 18.00 | 118,872 | | |
| | | | -, | -) | | ,_/_ | | |
| 143 | | New seeded areas - L&S | 10,773 | sf | 0.25 | 2,693 | | |
| 144 | | Conservation and wildlife seed | 22,935 | sf | 0.20 | 4,587 | | |
| 145 146 | | Planting areas Deciduous Trees | 24,445 | sf | 2.00 | 48,890 | | |
| 140 | | Sugar Maple - 2.5" - 3" cal | 24 | ea | 675.00 | 16,200 | | |
| 148 | | October glory red maple 3-3 1/2 cal | | ea | 875.00 | 6,125 | | |
| 149 | | Armstrong red maple 3" - 3 1/2" cal | 18 | ea | 875.00 | 15,750 | | |
| 150 | | Red sunset red maple 3" - 3 1/2" cal | 1 | ea | 875.00 | 875 | | |
| 151 | | Skyline honeylocust 3-3 1/2" cal | 8 | ea | 875.00 | 7,000 | | |
| 152 | | River brich 10" - 12" HGT | 4 | ea | 1,000.00 | 4,000 | | |
| 153 | | Paper Birch - 2-21/2 cal | 5 | ea | 625.00 | 3,125 | | |
| 154 | | Sweetgum - 2.5" - 3" cal | 7 | ea | 675.00 | 4,725 | | |
| 155 156 | | <u>Flowering trees</u> Autumn brilliance appl serviceberry - 10-12'HT | _ | | 10 | | | |
| 150 | | Autumn brilliance appl serviceberry - 10-12'HT Butterflies magnolia- 6-7' HT | 5 2 | ea ea | 1,000.00 550.00 | 5,000 1,100 | | |
| 158 | | Flowering dogwood - 10-12' HT | 2 | ea | 1,000.00 | 7,000 | | |
| 159 | | Deciduous Shrubs | / | cu | 1,000.00 | 7,000 | | |
| 160 | | Meadow sweet - 24"-30"HGT | 119 | ea | 64.00 | 7,616 | | |
| 161 | | Gro-Lo Sumac - 18"24" HGT | 128 | ea | 44.00 | 5,632 | | |
| 162 | | American hornbeam- 3-3 1/2" cal | 1 | ea | 700.00 | 700 | | |
| 163 | | Northern bayberry - 24"-30" HGT | 12 | ea | 64.00 | 768 | | |
| | | | | | | | | |



| CSI CODE | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
|-------------|---|-----------|------|----------------|---------------|--------------|---------------|
| SITEWORK | DESCRIF HUN | Q11 | UNII | 0051 | 0051 | IUIAL | 0051 |
| | New importance of a call LICT | | | () 00 | 4 = 0(| | |
| | New jersey tea - 24"-30" HGT Summersweet 24" | 24 | ea | 64.00 68.00 | 1,536 | | |
| | Grey Dogwood 24" | 15 38 | ea | | 1,020 | | |
| | Evergreen Shrubs | 30 | ea | 72.00 | 2,736 | | |
| | Sea green juniper - 24" HT | 131 | ea | 60.00 | 7,860 | | |
| | Sargenti juniper - 18" HT | 321 | ea | 44.00 | 14,124 | | |
| | Eastern white pine - 12'-14"HT | 321 25 | ea | 1,000.00 | 25,000 | | |
| | Shamrock inkberry - compact 30" | -5 152 | ea | 64.00 | 9,728 | | |
| | Looers white rhododendron- 24"-30" HGT | 38 | ea | 64.00 | 2,432 | | |
| | Horizontal Juniper 24" | 228 | ea | 80.00 | 18,240 | | |
| | Shrubs @ Central Ave - Allowance | 150 | ea | 75.00 | 11,250 | | |
| | Groundcovers | 0 | | ,0 | , 0, | | |
| | Japanese pachysandra - #1 cont | 120 | ea | 60.00 | 7,200 | | |
| | Perennials | 120 | cu | 00100 | /,=00 | | |
| | Purple Conflower #5 | 55 | ea | 50.00 | 2,750 | | |
| | Black-eyed Susan #5 | 16 | ea | 50.00 | 800 | | |
| | Ornamental Grasses | | | 5 | | | |
| | New england aster #3 cont | 31 | ea | 32.00 | 992 | | |
| | Oehme sedge | 149 | ea | 32.00 | 4,768 | | |
| | Tussock sedge #3 cont | -49 | ea | 32.00 | 1,632 | | |
| | Hamelin dwarf fountain grass - #2 cont | 157 | ea | 24.00 | 3,768 | | |
| | Little kitten maiden grass - #2 cont | 158 | ea | 24.00 | 3,792 | | |
| | Blue whisper catmint- #2 cont | 20 | ea | 24.00 | 480 | | |
| | SUBTOTAL | | | | | 380,766 | |
| | | | | | | | |
| G30 | CIVIL MECHANICAL UTILITIES | | | | | | |
| | Water supply | | | | | | |
| | New water 6" domestic | 365 | lf | 80.00 | 29,200 | | |
| | New fire DI: 8" | 210 | lf | 100.00 | 21,000 | | |
| | New fire hydrant | 2 | loc | 2,600.00 | 5,200 | | |
| | FD connection | 1 | loc | 2,000.00 | 2,000 | | |
| | Gate valves | 7 | loc | 750.00 | 5,250 | | |
| | Connect to existing line (Wet Taps) | 3 | loc | 5,000.00 | 15,000 | | |
| | Sanitary sewer | | | | | | |
| | 8" PVC | 600 | lf | 55.00 | 33,000 | | |
| | SMH | 5 | loc | 5,000.00 | 25,000 | | |
| | 6" CI | 12 | lf | 80.00 | 960 | | |
| | Connect to existing | 1 | loc | 1,500.00 | 1,500 | | |
| | 4,500 gal grease trap | 1 | loc | 12,000.00 | 12,000 | | |
| | Storm Sewer | | 1 | | | | |
| | Manhole | 23 | loc | 4,000.00 | 92,000 | | |
| | Connect to existing line | 1 | loc | 2,500.00 | 2,500 | | |
| | Catch basins | 9 | loc | 3,500.00 | 31,500 | | |
| | Area drains | 11 | loc | 1,400.00 | 15,400 | | |
| | Trap drains | 2 | loc | 2,200.00 | 4,400 | | |
| | FES | 4 | loc | 500.00 | 2,000 | | |
| | 12" CPP | 1,802 | lf | 55.00 | 99,110 | | |
| | 6" CPP | 445 | lf | 40.00 | 17,800 | | |
| | Trench drain | 60 | lf | 120.00 | 7,200 | | |
| | Roof leader connection | 4 | ea | 350.00 | 1,400 | | |
| | Gravel wetland | 1,740 | sf | 20.00 | 34,800 | | |
| | Underground Infiltration | | c | | | | |
| | Stormtech 740 infiltration system | 19,000 | sf | 26.00 | 494,000 | | |
| | Gas and Telecom service | | | | | | |
| | E&B trench for new lines, pipe and install by utilities | | | | | | |
| | New researches | | 10 | · · | | | |
| | New gas service | 210 | lf | 25.00 | 5,250 | | |
| | New telecom service | 342 | lf | 25.00 | 8,550 | | |

PM&C

Hillside Elementary School 585 Central Avenue Needham, MA

Schematic Design Estimate

| CSI CODE | | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
|-------------|------|--|-------|------|--------------|-----------------|--------------|---------------|
| SITEW | VORK | | | | | | <u>.</u> | |
| | | SUBTOTAL | | | | | 966,020 | |
| | | | | | | | | |
| | G40 | SITE ELECTRICAL | | | | | | |
| | | Power | | | | | | |
| | | Primary ductbank; | | | | | | |
| | | Pole riser | 1 | ea | 1,500.00 | 1,500 | | |
| | | Allowance for excavate, backfill and make good; allow | 450 | lf | 22.00 | 9,900 | | |
| | | 2-5" PVC conduits | 900 | lf | 22.00 | 19,800 | | |
| | | Manhole | 10 | ea | 12,000.00 | 120,000 | | |
| | | Primary cabling | | | | Utility company | | |
| | | Transformer pad | 1 | ea | 2,500.00 | 2,500 | | |
| | | Utility transformer | | | | Utility company | | |
| | | Secondary ductbank, allow | | | | | | |
| | | Excavate, backfill and make good | 70 | lf | 22.00 | 1,540 | | |
| | | 6-4" PVC conduits | 420 | lf | 19.00 | 7,980 | | |
| | | Secondary cabling; included in building electrical | | | | Included | | |
| | | Generator ductbank, allow | | | | | | |
| | | Excavate, backfill and make good | 60 | lf | 22.00 | 1,320 | | |
| | | 4-4" PVC conduits | 240 | lf | 19.00 | 4,560 | | |
| | | Allowance for concrete encasement | 60 | lf | | | | |
| | | Generator feeders; included in building electrical | | | | Included | | |
| | | Generator pad | 1 | ea | 2,500.00 | 2,500 | | |
| | | Communications | | | | | | |
| | | Communications ductbank, allow | | | | | | |
| | | Pole riser | 3 | ea | 1,500.00 | 4,500 | | |
| | | Excavate, backfill and make good; Cable TV & Telephone | 315 | lf | 22.00 | 6,930 | | |
| | | Manhole | 3 | ea | 12,000.00 | 36,000 | | |
| | | 4-4" PVC conduits | 1,260 | lf | 19.00 | 23,940 | | |
| | | 3-1 1/4" innerduct | 945 | lf | 5.00 | 4,725 | | |
| | | Cabling | | lf | | Utility company | | |
| | | Site Lighting | | | | | | |
| | | Allowance for site lighting | 1 | ls | 100,000.00 | 100,000 | | |
| | | SUBTOTAL | | | | | 347,695 | |
| | | | | | | | | |

| PM&C |
|---|
| Hillside Elementary School 585 Central Avenue Needham, MA |

| SI ODE | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
|-----------|--|---------|---------------|--------------|---------------|--------------|---------------|
| | AL AVENUE | | | | | | |
| | | _ | | | | | |
| G | SITEWORK | | | | | | |
| G10 | SITE PREPARATION & DEMOLITION | | | | | | |
| | Site Demolitions and Relocations | | | | | | |
| | Site construction fence | 200 | lf | 12.00 | 2,400 | | |
| | Demolition | 1 | ls | 15,000.00 | 15,000 | | |
| | Hazardous material abatement | 1 | ls | 32,000.00 | 32,000 | | |
| | SUBTOTAL | | | | | 49,400 | |
| | Site Earthwork | | | | | | |
| | Construction entrances/wheel washes | 2,225 | sf | 8.00 | 17,800 | | |
| | Strip topsoil, store on site for reuse | 185 | cy | 12.00 | 2,220 | | |
| | Cut / Fill | 1 | ls | 5,000.00 | 5,000 | | |
| | Silt fence/erosion control - Type A | 200 | lf | 12.00 | 2,400 | | |
| | Hazardous Waste Remediation | | | | NIC | | |
| | SUBTOTAL | | | | | 27,420 | |
| G20 | D SITE IMPROVEMENTS | | | | | | |
| | Roadways and Parking Lots | | | | | | |
| | Bituminous concrete paving | (1,757) | | | - | | |
| | gravel base; 12" thick | (65) | cy | 35.00 | (2,275) | | |
| | bituminous concrete; 4" thick | (195) | sy | 24.00 | (4,680) | | |
| | granite curb | 370 | lf | 36.00 | 13,320 | | |
| | SUBTOTAL | | | | | 6,365 | |
| | | | | | | | |
| | Pedestrian paving | | | | | | |
| | Bituminous concrete paving | | | | | | |
| | gravel base; 6" thick | 28 | cy | 35.00 | 980 | | |
| | color concrete; 5" thick | 1,510 | sf | 9.50 | 14,345 | | |
| | | | | | | | |
| | Site Improvements | | | | | | |
| | 6' wood screen fence | 32 | lf | 95.00 | 3,040 | | |
| | Concrete retaining walls | 260 | sf | 65.00 | 16,900 | | |
| | Play surface | 416 | sf | 18.00 | 7,488 | | |
| | Wood fiber surface | 970 | sf | 13.00 | 12,610 | | |
| | SUBTOTAL | | | | | 55,363 | |
| | | | | | | | |
| | Landscaping & Plantings: | | | | | | |
| | Spread existing amended topsoil @ seeded areas | 56 | cy | 20.00 | 1,120 | | |
| | New seeded areas - L&S | 1,500 | \mathbf{sf} | 0.25 | 375 | | |
| | Deciduous Trees | | | | | | |
| | Sugar Maple - 2.5" - 3" cal | 10 | ea | 675.00 | 6,750 | c | |
| | SUBTOTAL | | | | | 8,245 | |
| | | | | | | | |
| GUD | COTAL 609 CENTRAL AVENUE | | | | | | \$146 |

16-May-16

| PM&C |
|----------------------------|
| Hillside Elementary School |
| 585 Central Avenue |
| Needham, MA |

| | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | тс С |
|------|---|-------------|----------|--------------|-----------------|--------------|---------|
| EWAL | K AND FIELD | | | | | | |
| | | - | | | | | |
| G | SITEWORK | | | | | | |
| G10 | SITE PREPARATION & DEMOLITION | | | | | | |
| | Site Demolitions and Relocations | | | | | | |
| | Tree Protection | 24 | ea | 250.00 | 6,000 | | |
| | Temporary construction signs | 1 | ls | 3,000.00 | 3,000 | | |
| | SUBTOTAL | | | | | 9,000 | |
| | City Development | | | | | | |
| | <u>Site Earthwork</u> Fine grading | 2,966 | CT I | 0.50 | 1,483 | | |
| | Silt fence w/ haybale /erosion control - Type B | 2,900 | sy lf | 15.00 | 2,250 | | |
| | | - | | | | | |
| | Silt fence w/ wattles /erosion control - Type C | 650 | lf | 14.00 | 9,100 | | |
| | Orange safety fence | 1,020 | lf | 6.00 | 6,120 | | |
| | Remove barriers and fencing | 1,820 | lf | 7.00 | 12,740 | | |
| | Temporary acess and repairs | 1 | ls | 20,000.00 | 20,000 | | |
| | Erosion Control monitoring & maintenance | 1 | ls | 2,500.00 | 2,500 NIC | | |
| | Ground water remediation Hazardous Waste Remediation | | | | NIC | | |
| | SUBTOTAL | | | | itie | 54,193 | |
| | | | | | | 01/ 00 | |
| G20 | SITE IMPROVEMENTS | | | | | | |
| | Roadways and Parking Lots | | | | | | |
| | Stone Dust Pavement | | | | | | |
| | 4" stone dust pathway | 6,211 | sf | 4.00 | 24,844 | | |
| | gravel base; 8" thick | 153 | cy | 35.00 | 5,355 | | |
| | | | | | | | |
| | Site Improvements | | 16 | | | | |
| | Stockdale fencing 4' high | 225 | lf | 45.00 | 10,125 | | |
| | Stockdale fencing 4' high - operable gate | 1 | ea | 1,600.00 | 1,600 | | |
| | Vinyl CL Fencing; 4' | 295 | lf | 35.00 | 10,325 | | |
| | Science signs | 7 | ea | 200.00 | 1,400 | | |
| | Nature benches | 6 | ea | 1,200.00 | 7,200 | | |
| | Wood pedestrian bridge | 2 | ea | 10,000.00 | 20,000 | | |
| | SUBTOTAL | | | | | 80,849 | |
| | Athletic Field | | | | | | |
| | Gravel base - 12" thick | 286 | cy | 35.00 | 10,010 | | |
| | Soil mix; reuse amended soil from on-site spoils | 355 | cy | 20.00 | 7,100 | | |
| | - Natural turf | 7,350 | sf | 0.35 | 2,573 | | |
| | Irrigation | 7,350 | sf | 1.50 | 2,5/3 11,025 | | |
| | Landscaping & Plantings: | /,550 | 01 | 1.30 | 11,020 | | |
| | Spread existing amended topsoil @ seeded areas | 48 7 | cy | 18.00 | 8,766 | | |
| | Conservation and wildlife seed | 13,136 | sf | 0.20 | 2,627 | | |
| | SUBTOTAL | -/ - | | | - / | 42,101 | |
| | | | | | | | |
| G30 | CIVIL MECHANICAL UTILITIES | | | | | | |
| | <u>Storm Sewer</u> Underdrain to field | | ~f | | 11.005 | | |
| | SUBTOTAL | 7,350 | sf | 1.50 | 11,025 | 11,025 | |
| | SUBICIAL | | | | | 11,025 | |
| | | | | | | | |



Needham Hillside School at Central Ave Needham, MA

May 17, 2016

Schematic Design Estimate

Owner: Town of Needham Permanent Public Building Committee 500 Dedham Avenue Needham, MA 02492 (781) 455-7550 Estimator: Daedalus Projects Incorporated 112 South Street Boston, MA 02111 (617) 451 2717

Design Architect:

Dore & Whitter Architects, Inc. 260 Merrimac Street Building 7, 2nd Floor Newburyport, MA 01950 (978) 499-2999



INTRODUCTION

Project Description:

- Construction of a new 90,702 SF Hillside School at 585 Central Avenue Needham, MA
- The scope of the work includes all related sitework, hardscape/landscape, and underground utilities

Project Particulars:

- Schematic Design Drawings; Project Manual dated April 18, 2016
- Detailed quantity takeoff from these documents where possible
- Daedalus Projects, Inc. experience with similar projects of this nature

Project Assumptions:

- The project will be publicly bid to General Contractors
- It has been assumed that no less than three bids will be received. Less than three bids may result in higher
- pricing
- Start of construction June 2017
- An escalation allowance has been carried in the Main Summary
- Subcontractor's markups have been included in each unit rate. Markups cover the cost of field overhead, home office overhead and subcontractor's profit
- Design and Pricing Contingency markup is an allowance for unforeseen design issues, design detail development and specification clarifications
- General Conditions and Requirements value have been carried in the Main Summary for on-site supervision staff, site office, temporary utilities, project requirements, overheads
- Fee markup is calculated on a percentage of direct construction costs

Estimate Exclusions:

- Architectural/Engineering; Designer and other Professional fees, testing, printing, surveying
- Owner's administration; legal fees, advertising, permitting, Owner's insurance, administration
- Work beyond the boundary of the site
- Interest expense
- Project costs; utility company back charges prior to construction, construction of swing space and temporary
- facilities, program related phasing, relocation
- Owner furnished and installed products; furnishings, equipment, artwork, loose case goods, and similar items
- Utility company back charges during construction
- Testing & commissioning
- Rock excavation
- Computer networking
- Construction contingency
- Traffic improvements
- Building Permit or fees
- Street/sidewalk permits



| eed | ham, | MA |
|-----|------|----|
| | | |

| MAIN SUMMARY | | Neeun | | Needham, MA |
|---|--------|--------------|--------------------------|---------------------------|
| | | | | 90,702 GSF |
| | | | Total | Cost/GSF |
| Direct Trode Costs | | | | |
| Direct Trade Costs Building Trade Costs | | | \$27,893,176 | \$307.53 |
| Building Trade Costs | | | φ21,000,110 | φουν.ου |
| Hazardous Waste Remediation | | | \$157,000 | \$1.73 |
| Demolition of Existing Building | | | \$192,400 | \$2.12 |
| Site Development Costs | | | \$4,007,114 | \$44.18 |
| Direct Trade Cost Subtotal | | - | \$32,249,690 | \$355.56 |
| Design and Pricing Contingency | 10.00% | \$32,249,690 | \$3,224,969 | \$35.56 |
| Trade Cost Subtotal | | - | \$35,474,659 | \$391.11 |
| General Conditions and Requirements | 7.50% | \$35,474,659 | \$2,660,599 | \$29.33 |
| Insurance | 1.00% | \$38,135,259 | \$381,353 | \$4.20 |
| GC Bonds | 1.00% | \$38,516,611 | \$385,166 | \$4.25 |
| Permit | | • | Waived | * • • • • - |
| Fee | 3.00% | \$38,901,777 | \$1,167,053 | \$12.87 |
| Estimated Construction Cost Total | | _ | \$40,068,831 | \$441.76 |
| Escalation (assume construction bid date June 2018) | 8.33% | \$40,068,831 | \$3,339,069 | \$36.81 |
| ECC including Escalation Total | | - | \$43,407,900 | \$478.58 |
| Alternate: (Markups included) Alternate #1: Concrete Unit Masonry veneer in Lieu of Natu | | r | (\$145,000) | |
| Alternate #2: EPDM roof in lieu of tremco poly ply roof syste Alternate #3: Add alternate amount for the nature walk and | | | (\$404,000) \$263,000 | |
| Alternate #3. Add alternate amount for the nature Walk and | | | \$263,000 | |
| | | | | |



| Needham, MA |
|-------------|
| 90,702 GSF |

BUILDING SUMMARY

| BUILDING SUMMARY | | | | 90,702 GSF |
|-------------------------------------|--------------|---------------|---------------------|------------|
| TRADE DESCRIPTION | SITEWORK | BUILDING | TOTAL | COST/SF |
| | | • • • • • • • | • • • • • • | • |
| A10 FOUNDATIONS | | \$2,013,357 | \$2,013,357 | \$22.20 |
| A20 BASEMENT | | \$0 | \$0 | \$0.00 |
| B10 STRUCTURE | | \$3,329,012 | \$3,329,012 | \$36.70 |
| B20 EXTERIOR CLOSURE | | \$4,630,628 | \$4,630,628 | \$51.05 |
| B30 ROOFING | | \$2,009,047 | \$2,009,047 | \$22.15 |
| | | ¢2,000,011 | <i>\\</i> _;000;011 | <i> </i> |
| C10 INTERIOR CONSTRUCTION | | \$2,916,149 | \$2,916,149 | \$32.15 |
| C20 STAIRCASES | | \$201,073 | \$201,073 | \$2.22 |
| C30 INTERIOR FINISHES | | \$2,528,192 | \$2,528,192 | \$27.87 |
| | | | | |
| D10 CONVEYING SYSTEMS | | \$148,350 | \$148,350 | \$1.64 |
| D20 PLUMBING | | \$1,247,958 | \$1,247,958 | \$13.76 |
| D30 HVAC | | \$3,884,843 | \$3,884,843 | \$42.83 |
| D40 FIRE PROTECTION | | \$408,242 | \$408,242 | \$4.50 |
| D50 ELECTRICAL | | \$3,199,453 | \$3,199,453 | \$35.27 |
| | | | | • |
| E10 EQUIPMENT | | \$467,595 | \$467,595 | \$5.16 |
| E20 FURNISHINGS | | \$909,278 | \$909,278 | \$10.02 |
| F10 SPECIAL CONSTRUCTION | | \$0 | \$0 | \$0.00 |
| F20 SELECTIVE DEMOLITION | | See Sitework | \$0 | \$0.00 |
| | | | | |
| G10 SITE PREPARATION | \$457,414 | | \$457,414 | \$5.04 |
| G20 SITE IMPROVEMENTS | \$2,632,062 | | \$2,632,062 | \$29.02 |
| G30 SITE CIVIL/MECHANICAL UTILITIES | \$917,639 | | \$917,639 | \$10.12 |
| G40 SITE ELECTRICAL UTILITIES | See Building | | \$0 | \$0.00 |
| | | | | |
| Direct Trade Cost Subtotal | \$4,007,114 | \$27,893,176 | \$31,900,290 | \$351.70 |
| | | | | |
| | | | | |
| | 1 | | | |

AEDALUS

Needham Hillside School at Central Ave Needham, MA

SITEWORK DETAILS

| DESCRIPTION | QUANTITY | UNIT | UNIT COST | COST |
|---|--|--|---|---|
| G10 SITE PREPARATION | | | | |
| | | | | |
| G1010 SITE CLEARING | | | | |
| | 7 | EA | \$250.00 | \$1,750 |
| • | 1,174 | LF | \$12.00 | \$14,088 |
| | - | LF | \$5.00 | \$5,615 |
| Double construction gate | 1 | PR | \$2,600.00 | \$2,600 |
| Temporary construction entrance | 2,170 | SF | \$7.00 | \$15,190 |
| Use existing gate | 1 | EA | | Existing |
| Temporary parking lot | 1 | AL | \$10,000.00 | \$10,000 |
| Temp signs | 1 | LS | \$3,000.00 | \$3,000 |
| R & D trees | 1 | LS | \$10,400.00 | \$10,400 |
| Wash down/re-fueling/parking allowance | 3,000 | SF | \$2.00 | \$6,000 |
| Dewatering for sitework excavation; allow | 1 | LS | \$15,000.00 | \$15,000 |
| Perimeter protection barrier; Type A | 540 | LF | \$6.00 | \$3,240 |
| Perimeter protection barrier; Type B | 305 | LF | \$10.00 | \$3,050 |
| Perimeter protection barrier; Type C | 725 | LF | \$8.00 | \$5,800 |
| Inlet protection; Silt sacks | 9 | EA | \$250.00 | \$2,250 |
| Slope stabilization | 1 | AL | \$2,000.00 | \$2,000 |
| Remove construction fence | 2,297 | LF | \$7.00 | \$16,079 |
| Remove construction gate | 2 | EA | \$700.00 | \$1,400 |
| | | | | |
| G1020 SITE DEMOLITION AND RELOCATION | | | | |
| Saw cut existing pavement | 767 | LF | \$6.50 | \$4,986 |
| R & D existing asphalt pavement | 31,297 | SF | \$0.95 | \$29,732 |
| M & P bit concrete pavement | 5,129 | SF | \$0.95 | \$4,873 |
| R & D existing concrete walk | 276 | SF | \$2.00 | \$552 |
| R & D chain-link fence | 992 | LF | \$7.00 | \$6,944 |
| R & D lst | 362 | LF | \$8.00 | \$2,896 |
| R & D patio | 1,342 | SF | \$2.00 | \$2,684 |
| R & D portion of driveway to south | 658 | SF | \$1.00 | \$658 |
| R & D deck | 205 | SF | \$2.00 | \$410 |
| R & D cesspool fill cesspool with sand | 1 | EA | | \$4,000 |
| R & D shed | 234 | SF | | \$1,170 |
| R & D wooden overhang | 424 | SF | | \$2,120 |
| R & D jersey barriers | 36 | LF | \$12.00 | \$432 |
| R & D stair | 191 | SF | | \$478 |
| R & D concrete pad and wall and lading | 487 | SF | \$2.50 | \$1,218 |
| R & D path | 340 | SF | \$1.50 | \$510 |
| R & D stair | 38 | SF | \$2.50 | \$95 |
| R & D wood fence | 299 | LF | | \$2,093 |
| R & D concrete pad and brick stairs | 91 | SF | \$2.00 | \$182 |
| R & D transformer pad | 174 | SF | \$2.00 | \$348 |
| | G10 SITE PREPARATION G1010 SITE CLEARING Tree protection fence; allow 8' Construction fence, install, maintain, remove; allow Orange safety fence on existing fence Double construction gate Temporary construction entrance Use existing gate Temporary parking lot Temp signs R & D trees Wash down/re-fueling/parking allowance Dewatering for sitework excavation; allow Perimeter protection barrier; Type A Perimeter protection barrier; Type B Perimeter protection barrier; Type C Inlet protection; Silt sacks Slope stabilization Remove construction fence Remove construction fence Remove construction gate G1020 SITE DEMOLITION AND RELOCATION Saw cut existing pavement R & D existing concrete walk R & D chain-link fence R & D patio R & D potio of driveway to south R & D potio R & D poter R & D batia R & D poter </td <td>G10 SITE PREPARATION G101 SITE CLEARING Tree protection fence; allow 7 8' Construction fence, install, maintain, remove; allow 1,174 Orange safety fence on existing fence 1,123 Double construction gate 1 Temporary construction entrance 2,170 Use existing gate 1 Temporary construction entrance 3,000 Dewatering for sitework excavation; allow 1 Perimeter protection barrier; Type A 540 Perimeter protection barrier; Type B 305 Perimeter protection barrier; Type C 725 Inlet protection fence 2,297 Remove construction fence 2,297 Remove construction fence 2,297 Remove construction fence 2,297 Remove construction gate 2 G1020 SITE DEMOLITION AND RELOCATION 31,297 R & D existing asphalt pavement 767 R & D concrete pavement 5,129 R & D concrete pavement 5,129 R & D concrete pavement 362 R & D botion of driveway to south 668 R & D patio</td> <td>G10 SITE PREPARATION G1010 SITE CLEARING Tree protection fence; allow 7 EA 8' Construction fence, install, maintain, remove; allow 1,174 LF Orange safety fence on existing fence 1,123 LF Double construction gate 1 PR Temporary construction entrance 2,170 SF Use existing gate 1 EA Temporary parking lot 1 AL Temp signs 1 LS Wash down/re-fueling/parking allowance 3,000 SF Dewatering for sitework excavation; allow 1 LS Perimeter protection barrier; Type A 540 LF Perimeter protection barrier; Type C 725 LF Inlet protection; Sitt sacks 9 EA Slope stabilization 1 AL Remove construction fence 2,297 LF Remove construction gate 2 EA Slope stabilization 1 AL Sw cut existing payement 767 LF R & D existing concrete walk 276 SF</td> <td>G10 SITE PREPARATION G1010 SITE CLEARING 7 EA \$250.00 8' Construction fence; allow 7 EA \$250.00 9' Construction fence; install, maintain, remove; allow 1,174 LF \$12.00 Orange safety fence on existing fence 1,173 LF \$5.00 Double construction entrance 2,170 SF \$7.00 Use existing gate 1 EA \$10,400.00 Temporary parking lot 1 LS \$10,400.00 Was hown/re-fueling/parking allowance 3,000 SF \$2200 Dewatering for sitework excavation; allow 1 LS \$10,400.00 Perimeter protection barrier; Type A 540 LF \$8.00 Perimeter protection barrier; Type B 305 LF \$10.00 Perimeter protection barrier; Type C 725 LF \$8.000 Remove construction fence 2,297 LF \$7.000 Remove construction fence 2,297 LF \$7.00 Remove construction gate 2</td> | G10 SITE PREPARATION G101 SITE CLEARING Tree protection fence; allow 7 8' Construction fence, install, maintain, remove; allow 1,174 Orange safety fence on existing fence 1,123 Double construction gate 1 Temporary construction entrance 2,170 Use existing gate 1 Temporary construction entrance 3,000 Dewatering for sitework excavation; allow 1 Perimeter protection barrier; Type A 540 Perimeter protection barrier; Type B 305 Perimeter protection barrier; Type C 725 Inlet protection fence 2,297 Remove construction fence 2,297 Remove construction fence 2,297 Remove construction fence 2,297 Remove construction gate 2 G1020 SITE DEMOLITION AND RELOCATION 31,297 R & D existing asphalt pavement 767 R & D concrete pavement 5,129 R & D concrete pavement 5,129 R & D concrete pavement 362 R & D botion of driveway to south 668 R & D patio | G10 SITE PREPARATION G1010 SITE CLEARING Tree protection fence; allow 7 EA 8' Construction fence, install, maintain, remove; allow 1,174 LF Orange safety fence on existing fence 1,123 LF Double construction gate 1 PR Temporary construction entrance 2,170 SF Use existing gate 1 EA Temporary parking lot 1 AL Temp signs 1 LS Wash down/re-fueling/parking allowance 3,000 SF Dewatering for sitework excavation; allow 1 LS Perimeter protection barrier; Type A 540 LF Perimeter protection barrier; Type C 725 LF Inlet protection; Sitt sacks 9 EA Slope stabilization 1 AL Remove construction fence 2,297 LF Remove construction gate 2 EA Slope stabilization 1 AL Sw cut existing payement 767 LF R & D existing concrete walk 276 SF | G10 SITE PREPARATION G1010 SITE CLEARING 7 EA \$250.00 8' Construction fence; allow 7 EA \$250.00 9' Construction fence; install, maintain, remove; allow 1,174 LF \$12.00 Orange safety fence on existing fence 1,173 LF \$5.00 Double construction entrance 2,170 SF \$7.00 Use existing gate 1 EA \$10,400.00 Temporary parking lot 1 LS \$10,400.00 Was hown/re-fueling/parking allowance 3,000 SF \$2200 Dewatering for sitework excavation; allow 1 LS \$10,400.00 Perimeter protection barrier; Type A 540 LF \$8.00 Perimeter protection barrier; Type B 305 LF \$10.00 Perimeter protection barrier; Type C 725 LF \$8.000 Remove construction fence 2,297 LF \$7.000 Remove construction fence 2,297 LF \$7.00 Remove construction gate 2 |

50 R & D stone wall

\$765

\$15.00

51

LF

AEDALUS

Needham Hillside School at Central Ave

Needham, MA

SITEWORK DETAILS

| | DESCRIPTION | QUANTITY | UNIT | UNIT COST | COST |
|----|--|----------|------|--------------|--------------|
| | | | | | |
| 51 | R & D wood deck | 202 | SF | \$2.00 | \$404 |
| 52 | R & D wood step | 54 | SF | \$1.00 | \$54 |
| 53 | R & D wall | 315 | LF | \$25.00 | \$7,875 |
| 54 | R & D stone pile; allow | 1 | AL | \$10,000.00 | \$10,000 |
| 55 | Demo sewer: | | | | |
| 56 | Cut and cap sewer pipe | 7 | EA | \$500.00 | \$3,500 |
| 57 | R & D sewer pipe | 267 | LF | \$26.00 | \$6,942 |
| 58 | Demo water: | | | | |
| 59 | Cut and cap water pipe | 5 | EA | \$400.00 | \$2,000 |
| 60 | Demo water pipe | 162 | LF | \$24.00 | \$3,888 |
| 61 | Abandon water line in place | 287 | LF | \$10.00 | \$2,870 |
| 62 | Demo gas: | | | | |
| 63 | Cut & cap gas pipe | 5 | EA | \$350.00 | \$1,750 |
| 64 | R & D gas pipe | 60 | LF | \$24.00 | \$1,440 |
| 65 | Demo Drainage: | | | | |
| 66 | Cut & cap drain pipe | 1 | EA | \$400.00 | \$400 |
| 67 | R & d drain pipe | 49 | LF | \$24.00 | \$1,176 |
| 68 | Demo Electrical: | | | | |
| 69 | R & D overhead wire | 481 | LF | \$2.50 | \$1,203 |
| 70 | R & D utility pole | 2 | EA | \$750.00 | \$1,500 |
| 71 | protect existing to remain | 1 | AL | \$7,500.00 | \$7,500 |
| 72 | Misc. demolition other than above | 1 | AL | \$10,000.00 | \$10,000 |
| 73 | 02 41 16 Structure Demolition | | | | |
| 74 | R & D existing building | 1 | AL | \$181,800.00 | Main Summary |
| 75 | R & D shed | | | | By Owner |
| 76 | 02 82 00 Hazardous Waste Remediation | | | | |
| 77 | Abatement | 1 | LS | \$125,000.00 | Main Summary |
| 78 | Extension of Site Development: | | | | |
| 79 | Saw cut existing pavement | 28 | LF | \$8.00 | \$224 |
| 80 | R & D fence | 15 | LF | \$8.00 | \$120 |
| 81 | R & D wood deck | 20 | SF | \$2.00 | \$40 |
| 82 | R & D wood step | 13 | SF | \$2.00 | \$26 |
| 83 | R & S topsoil | 1 | CY | \$15.00 | \$8 |
| 84 | 8' High construction fence | 132 | LF | \$12.00 | \$1,584 |
| 85 | Existing fence; orange safety fence attach to existing fence | 3 | LF | \$7.00 | \$21 |
| 86 | Silty fence Type C | 168 | LF | \$8.00 | \$1,344 |
| 87 | Demolition of house | 1 | AL | \$10,600.00 | Main Summary |
| 88 | Abatement | 1 | LS | \$32,000.00 | Main Summary |
| 89 | Demo sewer: | | | | |
| 90 | Cut and cap sewer pipe | 1 | EA | \$500.00 | \$500 |
| 91 | R & D sewer pipe | 24 | LF | \$26.00 | \$624 |
| 92 | Demo water: | | | | |
| 93 | Cut and cap water pipe | 1 | EA | \$400.00 | \$400 |
| 94 | Demo water pipe | 24 | LF | \$24.00 | \$576 |
| | | | | | |

DAEDALUS

Needham Hillside School at Central Ave

SITEWORK DETAILS

Needham, MA

| | DESCRIPTION | QUANTITY | UNIT | UNIT COST | COST |
|------------|--|----------|----------|--------------------------------------|------------------------|
| | DESCRIPTION | QUANTIT | | | 0031 |
| 95 | Demo gas: | | | | |
| 96 | Cut & cap gas pipe | 1 | EA | \$350.00 | \$350 |
| 97 | R & D gas pipe | 24 | LF | \$24.00 | \$576 |
| 98 | Regrading in building demolition | 260 | CY | \$25.00 | \$6,505 |
| 99 | | | | | |
| 100 | G1030 SITE EARTHWORK | | | | |
| 101 | Strip and stockpile existing topsoil allowance | 2,344 | CY | \$10.00 | \$23,440 |
| 102 | Fine grade | 108,104 | SF | \$0.75 | \$81,078 |
| 103 | Cuts and fills - site grade | 2,735 | CY | \$10.00 | \$27,352 |
| 104 | Cuts and fills of asphalt pavement | 4,373 | CY | \$12.00 | \$52,477 |
| 105 | Cuts and fills of concrete pavement | 1,088 | CY | \$12.00 | \$13,061 |
| 106 | | | | | |
| 107 | G10 SITE PREPARATION TOTAL | | | | \$457,414 |
| 108 | | | | | |
| 109 | | _ | | | |
| 110 | G20 SITE IMPROVEMENTS | | | | |
| 111 | | | | | |
| 112 | G2020 ROADWAYS | | ~- | A a a a | • · • • • • • • |
| 113 | Asphalt concrete paving at roadway and parking lot | 68,174 | SF | \$2.75 | \$187,479 |
| 114 | Asphalt concrete pavement w/ color play surfacing (8 colors min) | 10,542 | SF | \$5.00 | \$52,710 |
| 115 | Gravel base to roadway & parking lot | 3,207 | CY | \$30.00 | \$96,210 |
| 116 | Vertical granite curb | 3,975 | LF | \$35.00 | \$139,125 |
| 117 | Granite driveway corner | 15 | EA | \$150.00 | \$2,250 |
| 118 | Flush granite curbing | 114 | LF | \$32.00 | \$3,648 |
| 119 | Precast concrete tire stops | 4 | EA | \$100.00 | \$400 \$2,495 |
| 120 | Parking stall painting | 91 | EA EA | \$35.00 \$75.00 | \$3,185 \$200 |
| 121 122 | Parking stall painting; HC Crosswalks | 4 | EA | \$75.00 \$396.00 | \$300 \$702 |
| | Misc. marking other than above | 2 1 | AL | \$396.00 \$5,000.00 | \$792 \$5,000 |
| 123 | Extension of Site Development: | 1 | AL | φ3,000.00 | φ3,000 |
| 125 | Asphalt concrete paving at roadway and parking lot | 1,210 | SF | \$2.75 | \$3,328 |
| 126 | Vertical granite curb | 588 | LF | \$35.00 | \$20,580 |
| 127 | Flush granite curbing | 36 | LF | \$32.00 | \$1,152 |
| 128 | Gravel base | 49 | CY | \$30.00 | \$1,479 |
| 129 | | | • | <i>Q</i> QQQQQQQQQQQQQ | <i>ϕ</i> ., <i>o</i> |
| 130 | G2020.05 SITE WALLS | | | | |
| 131 | C.I.P retaining wall | 275 | LF | \$340.00 | \$93,500 |
| 132 | Brick retaining wall | 78 | LF | \$900.00 | \$70,200 |
| 133 | Blast wall | 48 | LF | \$1,000.00 | \$48,000 |
| 134 | Stone retaining wall | 206 | LF | \$1,000.00 | \$206,000 |
| 135 | Stone veneer wall w/ 4' ht granite coping | 49 | LF | \$360.00 | \$17,640 |
| 136 | Precast concrete seat wall | 49 | LF | \$220.00 | \$10,780 |
| 137 | Blackboard retaining walls | 42 | LF | \$320.00 | \$13,440 |
| | | | | | |

138 Extension of Site Development:



Needham, MA

SITEWORK DETAILS

| | DESCRIPTION | QUANTITY | UNIT | UNIT COST | COST |
|-----|---|----------|------|--------------|-----------|
| | | | | | |
| 139 | C.I.P retaining wall | 62 | LF | \$340.00 | \$21,080 |
| 140 | Brick retaining wall | 53 | LF | \$900.00 | \$47,700 |
| 141 | | | | | |
| 142 | G2030 PEDESTRIAN PAVING | | | | |
| 143 | Gravel base to concrete pavement | 716 | CY | \$30.00 | \$21,480 |
| 144 | Pedestrian concrete walk | 2,299 | SF | \$5.50 | \$12,645 |
| 145 | Colored Concrete pavement; pedestrian | 18,707 | SF | \$7.00 | \$130,949 |
| 146 | Concrete pavement; Vehicular | 3,252 | SF | \$6.50 | \$21,138 |
| 147 | Accessible curb cut | 2 | EA | \$350.00 | \$700 |
| 148 | Concrete entrance pavement | 850 | SF | \$8.00 | \$6,800 |
| 149 | Concrete handicap ramp | 482 | SF | \$10.00 | \$4,820 |
| 150 | Irregular bluestone pavement | 374 | SF | \$35.00 | \$13,090 |
| 151 | Native boulders 2-3' dia. and ht. | 7 | EA | \$250.00 | \$1,750 |
| 152 | Dust stone pavement | 3,424 | SF | \$3.00 | Alterante |
| 153 | Extension of Site Development: | | | | |
| 154 | Gravel base to concrete pavement | 30 | CY | \$30.00 | \$911 |
| 155 | Colored Concrete pavement; pedestrian | 811 | SF | \$7.00 | \$5,677 |
| 156 | Concrete pavement; Vehicular | 301 | SF | \$6.50 | \$1,957 |
| 157 | Accessible curb cut | 1 | EA | \$350.00 | \$350 |
| 158 | | | | | |
| 159 | G2040.01 FENCES AND GATES | | | | |
| 160 | CEDAR fence | 291 | LF | \$50.00 | \$14,550 |
| 161 | Wood screen fence; 6' ht. 4" square metal posts | 147 | LF | \$45.00 | \$6,615 |
| 162 | Double swing gate | 3 | EA | \$2,500.00 | \$7,500 |
| 163 | Double chain link gate | 1 | EA | \$1,500.00 | Alternate |
| 164 | Chain link fence ; 4' ht | 31 | LF | \$19.00 | \$589 |
| 165 | Chain link fence ; 10' ht | 180 | LF | \$30.00 | \$5,400 |
| 166 | Extension of Site Development: | | | | |
| 167 | CEDAR fence | 172 | LF | \$50.00 | \$8,600 |
| 168 | Chain link fence ; 4' ht | 71 | LF | \$19.00 | \$1,349 |
| 169 | | | | | |
| 170 | G2040.02 SITE AND STREET FURNISHES | / | ~- | | |
| 171 | Play surfacing: | 8,054 | SF | • | • • • • • |
| 172 | Rough/fine grading | 8,054 | SF | \$0.50 | \$4,027 |
| 173 | Cut and fill | 447 | CY | \$9.00 | \$4,027 |
| 174 | 8" Stone base | 220 | CY | \$28.00 | \$6,156 |
| 175 | 30% Playground safety surface | 2,416 | SF | \$15.00 | \$36,243 |
| 176 | 70% Fiber safety surface | 5,638 | SF | \$7.00 | \$39,465 |
| 177 | New playground equipment; allowance provided | 1 | AL | \$400,000.00 | \$400,000 |
| 178 | Wood pedestrian bridge | 314 | SF | \$75.00 | Alternate |
| 179 | Stainless steel bollards | 39 | EA | \$800.00 | \$31,200 |
| 180 | Concrete filled steel bollards | 8 | EA | \$500.00 | \$4,000 |
| 181 | Stainless steel handrails | 152 | LF | \$240.00 | \$36,480 |
| 182 | Bike racks | 1 | LS | \$7,000.00 | \$7,000 |



Needham, MA

SITEWORK DETAILS

| | DESCRIPTION | QUANTITY | UNIT | UNIT COST | COST |
|-----|---|----------|------|--------------------------|--------------------------|
| 183 | Curved bench | 3 | EA | \$1,800.00 | \$5,400 |
| 184 | Benches | 6 | EA | \$1,200.00 | \$3,400 \$7,200 |
| 185 | Canopy structure | 1,041 | SF | \$85.00 | \$88,485 |
| 186 | Picnic table | 6 | EA | \$400.00 | \$2,400 |
| 187 | Potting table | 1 | EA | \$800.00 | φ <u>2</u> ,400 \$800 |
| 188 | Dumpster | 2 | EA | φ000.00 | φ000 |
| 189 | Flagpole | - 1 | EA | \$7,500.00 | \$7,500 |
| 190 | Granite stairs per risers | 271 | LF | \$170.00 | \$46,070 |
| 191 | Concrete stair per riser | 95 | LF | \$75.00 | \$7,125 |
| 192 | Concrete landing | 33 | SF | \$10.00 | \$330 |
| 192 | Timber edge | 224 | LF | \$12.00 | \$2,688 |
| 193 | Art terrace benches | 5 | EA | \$1,500.00 | \$2,000 \$7,500 |
| 194 | | 5 1 | | \$1,200.00 | \$7,300 \$1,200 |
| | Swing bench | | EA | \$1,200.00 \$2,000.00 | \$1,200 \$4,000 |
| 196 | Basketball hoops and posts | 2 | EA | | |
| 197 | 10'x10; wood shed | 1 | EA | \$5,000.00 | \$5,000 \$1,500 |
| 198 | Foursquare layout | 1 | LS | \$1,500.00 | \$1,500 |
| 199 | Gazebo | 1 | EA | \$7,500.00 | \$7,500 |
| 200 | U.S. Map | 1 | LS | \$1,400.00 | \$1,400 |
| 201 | Chess board, 3x3 squares | 1 | LS | \$1,500.00 | \$1,500 \$2,500 |
| 202 | Traffic signs | 1 | LS | \$2,500.00 | \$2,500 |
| 203 | Site entry sign | 1 | LS | \$15,000.00 | \$15,000 |
| 204 | Litter and recycling receptacle allowance | 8 | EA | \$1,800.00 | \$14,400 |
| 205 | Freestanding construction mockup; 24'x12'x12' | 1 | LS | \$28,800.00 | \$28,800 |
| 206 | Misc. site improvements other than above | 1 | LS | \$50,000.00 | \$50,000 |
| 207 | Extension of Site Development: | | | | |
| 208 | Play surfacing: | 1,280 | SF | • | • |
| 208 | Rough/fine grading | 1,280 | SF | \$0.50 | \$640 |
| 208 | Cut and fill | 71 | CY | \$9.00 | \$640 |
| 208 | 8" Stone base | 35 | CY | \$28.00 | \$978 |
| 208 | 30% Playground safety surface | 384 | SF | \$15.00 | \$5,760 |
| 208 | 70% Fiber safety surface | 896 | SF | \$7.00 | \$6,272 |
| 208 | New playground equipment; allow | 1 | AL | \$15,000.00 | \$15,000 |
| 215 | | | | | |
| 216 | G2050.02 LAWNS AND GRASSES | | | | |
| 217 | Imported topsoil | 2,344 | CY | \$35.00 | \$82,040 |
| 218 | Plant bed | 1,031 | CY | \$40.00 | \$41,240 |
| 219 | Mulch | 155 | CY | \$45.00 | \$6,956 |
| 220 | Conservation and wildlife seed mix | 30,694 | SF | \$0.20 | \$6,139 |
| 221 | Lawn | 16,682 | SF | \$0.35 | \$5,839 |
| 222 | Grass field: | 7,586 | SF | | |
| 223 | Rough/fine grading | 7,586 | SF | \$0.50 | Alternate |
| 224 | Cut and fill | 421 | CY | \$9.00 | Alternate |
| 225 | 8" Stone base | 188 | CY | \$30.00 | Alternate |
| 226 | Sand base | 45 | CY | \$35.00 | Alternate |

DAEDALUS

Needham Hillside School at Central Ave

Needham, MA

SITEWORK DETAILS

| | DESCRIPTION | QUANTITY | UNIT | UNIT COST | COST |
|-----|---|----------|------|-----------|-----------|
| | | | | | |
| 227 | Underdrain | 7,586 | SF | \$1.50 | Alternate |
| 228 | Athletic field seed mix | 3,486 | SF | \$1.50 | \$5,229 |
| 229 | Irrigation systems allowance | 7,586 | SF | \$0.75 | Alternate |
| 230 | Extension of Site Development: | | | | |
| 231 | Plant bed | 63 | CY | \$40.00 | \$2,516 |
| 232 | Mulch | 7 | CY | \$45.00 | \$302 |
| 233 | Lawn | 12,558 | SF | \$0.35 | \$4,395 |
| 234 | | | | | |
| 235 | G2050.03 TREES, PLANTS AND GROUND COVERS | | | | |
| 236 | Deciduous Trees: | | | | |
| 237 | Deciduous trees 3 -3-1/2" Cal. | 81 | EA | \$900.00 | \$72,900 |
| 238 | Flowering Tree: | | | | |
| 239 | Autumn Brilliance Apple serviceberry 10'-12' Ht | 6 | EA | \$750.00 | \$4,500 |
| 240 | Columnar Sargent Cherry 3 -3-1/2" Cal. | 3 | EA | \$850.00 | \$2,550 |
| 241 | Butterflies Magnolia 6'-7' Ht | 1 | EA | \$600.00 | \$600 |
| 242 | Flowering Dogwood 10'-12' Ht | 1 | EA | \$750.00 | \$750 |
| 243 | Jelena Witch-hazel -Copper 6'-7' Ht | 1 | EA | \$550.00 | \$550 |
| 244 | Capitol Pear 3 -3-1/2" Cal. | 8 | EA | \$850.00 | \$6,800 |
| 245 | Donald Wyman Crabapple 3 -3-1/2" Cal. | 1 | EA | \$850.00 | \$850 |
| 246 | Evergreen Trees: | | | | |
| 247 | Eastern Red Cedar 7'-8' Ht. 6'-7' Ht | 30 | EA | \$600.00 | \$18,000 |
| 248 | Eastern White Pine 12'-14' Ht | 11 | EA | \$700.00 | \$7,700 |
| 249 | Deciduous Shrubs: | | | | |
| 250 | Deciduous Shrubs 36"-48' Ht. | 16 | EA | \$200.00 | \$3,200 |
| 251 | Deciduous Shrubs 18"-30" Ht | 244 | EA | \$150.00 | \$36,600 |
| 252 | Evergreen Shrubs: | | | | |
| 253 | Evergreen Shrubs 30" Ht. | 117 | EA | \$120.00 | \$14,040 |
| 254 | Evergreen Shrubs 18"-24" Ht. | 738 | EA | \$85.00 | \$62,730 |
| 255 | Grasses / Perennials: | | | | |
| 256 | Grasses / Perennials #3 Cont. | 82 | EA | \$50.00 | \$4,100 |
| 257 | Grasses / Perennials #2 Cont. | 438 | EA | \$35.00 | \$15,330 |
| 258 | Grasses / Perennials #1 Cont. | 215 | EA | \$25.00 | \$5,375 |
| 259 | Groundcover: | | | | |
| 260 | Japanese Pachysandra #1 Cont. | 120 | EA | \$15.00 | \$1,800 |
| 261 | Extension of Site Development: | | | | |
| 262 | Deciduous trees 3 -3-1/2" Cal. | 5 | EA | \$900.00 | \$4,500 |
| 263 | Deciduous trees 2 -2-1/2" Cal. | 11 | EA | \$700.00 | \$7,700 |
| 264 | Flowering Tree: | | | | |
| 265 | Autumn Brilliance Apple serviceberry 10'-12' Ht | 9 | EA | \$750.00 | \$6,750 |
| 266 | Evergreen Trees: | | | | |
| 267 | Eastern Red Cedar 7'-8' Ht. 6'-7' Ht | 20 | EA | \$600.00 | \$12,000 |
| 268 | Eastern White Pine 12'-14' Ht | 7 | EA | \$700.00 | \$4,900 |
| 269 | | | | | |

270

AEDALUS

Needham, MA

Needham Hillside School at Central Ave

SITEWORK DETAILS

| | DESCRIPTION | QUANTITY | UNIT | UNIT COST | COST |
|------------|-------------------------------------|----------|------|-------------|----------------------|
| 271 | G20 SITE IMPROVEMENTS TOTAL | | | | \$2,632,062 |
| 272 | | | | | <i>,-,,-</i> |
| 273 | | | | | |
| 274 | G30 SITE CIVIL/MECHANICAL UTILITIES | | | | |
| 275 | | | | | |
| 276 | G3010 WATER SUPPLY | | | | |
| 277 | All incl. trench and backfill | | | | |
| 278 | 8" T, S,& G | 2 | EA | \$4,200.00 | \$8,400 |
| 279 | Hydrant and gate | 1 | EA | \$2,550.00 | \$2,550 |
| 280 | 8" Gate | 2 | EA | \$1,200.00 | \$2,400 |
| 281 | Hydrant | 1 | EA | \$1,400.00 | \$1,400 |
| | 8" CLDI | 454 | LF | \$80.00 | \$36,320 |
| | 6" CLDI | 67 | LF | \$70.00 | \$4,690 |
| 284 | 8"x6" Tee | 1 | EA | \$220.00 | \$220 |
| 285 | 8"x8" Tee | 1 | EA | \$240.00 | \$240 |
| 286 | 8" bend | 2 | EA | \$160.00 | \$320 |
| 287 | 6" bend | 1 | EA | \$140.00 | \$140 |
| 288 | Thrust blocks | 1 | LS | \$1,800.00 | \$1,800 |
| 289 290 | G3020 SANITARY SEWER | | | | |
| 290 291 | All incl. trench and backfill | | | | |
| 291 | Connect to existing SMH | 1 | EA | \$2,000.00 | \$2,000 |
| 293 | SMH | 5 | EA | \$4,000.00 | \$20,000 |
| 294 | Grease trap | 3 1 | EA | \$15,000.00 | \$20,000 \$15,000 |
| 295 | 6" PVC sewer pipe | 588 | LF | \$48.00 | \$28,224 |
| | 6" CI | 13 | LF | \$65.00 | \$845 |
| 297 | | | | + | + |
| 298 | G3030 STORM SEWER | | | | |
| 299 | All incl. trench and backfill | | | | |
| 300 | DMH | 23 | EA | \$3,500.00 | \$80,500 |
| 301 | СВ | 9 | EA | \$3,200.00 | \$28,800 |
| 302 | AD | 11 | EA | \$1,800.00 | \$19,800 |
| 303 | FE | 4 | EA | \$800.00 | \$3,200 |
| 304 | RD connection | 5 | EA | \$350.00 | \$1,750 |
| 305 | Rip rap; allow | 1 | LS | \$1,600.00 | \$1,600 |
| 306 | Trench drain | 60 | LF | \$45.00 | \$2,700 |
| 307 | 8" drain pip; allow | 430 | LF | \$32.00 | \$13,760 |
| 308 | 12" drain pip; allow | 1,794 | LF | \$40.00 | \$71,760 |
| 309 | Underground drainage system | 18,662 | SF | \$30.00 | \$559,860 |
| 310 | | | | | |
| 311 | G3040 HEATING DISTRIBUTION | | | | |
| 312 | Connection to existing gas main | | | | By Other |
| 313 | Gas line piping, incl's valves (2) | | | | By Other |
| 314 | Excavation & backfill of gas line | 208 | LF | \$45.00 | \$9,360 |



Needham, MA

Needham Hillside School at Central Ave

SITEWORK DETAILS

DESCRIPTION QUANTITY UNIT **UNIT COST** COST 315 G30 SITE CIVIL/MECHANICAL UTILITIES TOTAL \$917,639 316 317 318 **G40 SITE ELECTRICAL UTILITIES** 319 320 See Building Details 321 322 **G40 SITE ELECTRICAL UTILITIES TOTAL** \$0 323 324

 325
 TOTAL TO SUMMARY
 \$4,025,039

| | | | | DAE | DALUS |
|----|---|----------|--------|-------------------|----------------|
| | | | Needha | m Hillside School | at Central Ave |
| | BUILDING DETAILS | | | | Needham, MA |
| | | | | · · · · · | 90,702 GSF |
| | DESCRIPTION | QUANTITY | UNIT | UNIT COST | COST |
| 7 | A10 FOUNDATIONS | | | | |
| 8 | | | | | |
| 9 | Earthwork | | | | |
| 10 | Excavate, haul, disposal for foundations, pits | 446 | CY | \$37.00 | \$16,494 |
| 11 | Dewatering during excavation | 1 | LS | \$14,000.00 | \$14,000 |
| 12 | Imported backfill around new foundations | 267 | CY | \$25.00 | \$6,687 |
| 13 | Perimeter foundation drain | 329 | LF | \$25.00 | \$8,225 |
| 14 | Gravel base to slab on grade | 1,865 | CY | \$30.00 | \$55,950 |
| 15 | Imported structural fill | 1,395 | CY | \$35.00 | \$48,825 |
| 16 | Unforseen site earthwork | 1 | AL | \$200,000.00 | \$200,000 |
| 17 | | | | | |
| 18 | Concrete | | | | |
| 19 | Slab-on-Grade | 45,767 | sf | | |
| 20 | Concrete | 742 | CY | \$130.00 | \$96,460 |
| 21 | WWF -10% overlap | 50,344 | SF | \$0.65 | \$32,723 |
| 22 | Place and finish | 45,767 | SF | \$2.00 | \$91,534 |
| 24 | Vapor mitigation | 742 | CY | \$60.00 | NIC |
| 25 | Concrete - Walls - Foundation ext - 5'x14" | | lf | · | |
| 26 | Concrete - Walls - Foundation ext - 5'x16" | 410 | lf | | |
| 27 | Concrete - Walls - Retain high wall - 18'x24" | 226 | lf | | |
| 28 | Concrete - Walls - Retain high wall - 12'x24" | 103 | lf | | |
| 29 | Concrete | 720 | CY | \$130.00 | \$93,600 |
| 30 | Rebar 150lbs/cy | 108,000 | LBS | \$1.20 | \$129,600 |
| 31 | Formwork | 23,604 | SF | \$10.00 | \$236,040 |
| 32 | Brick shelf | 739 | LF | \$6.00 | \$4,434 |
| 33 | Place and finish | 720 | CY | \$75.00 | \$54,000 |
| 34 | Concrete - Footings - Continuous - 2'th x 10'w | 326 | lf | | |
| 35 | Concrete - Footings - Continuous Ext - 2'th x 2'w | 455 | lf | | |
| 36 | Concrete - Footings - Continuous Ext - 2'th x 3'w | 339 | lf | | |
| 37 | Concrete | 403 | CY | \$125.00 | \$50,375 |
| 38 | Rebar 90lbs/cy | 36,270 | LBS | \$1.20 | \$43,524 |
| 39 | Formwork | 4,481 | SF | \$8.00 | \$35,848 |
| 40 | Place and finish | 403 | CY | \$75.00 | \$30,225 |
| 41 | Concrete - Footings - Spread - F9 9'x9'x2'th @ 3-Storey areas | 90 | ea. | | |
| 42 | Concrete - Footings - Spread F6- 6'x6'x1.5'th @ 1-Storey areas | 70 | ea. | | |
| 43 | Concrete | 714 | CY | \$125.00 | \$89,250 |
| 44 | Rebar 75lbs/cy | 53,550 | LBS | \$1.20 | \$64,260 |
| 45 | Formwork | 9,000 | SF | \$9.00 | \$81,000 |
| 46 | Place and finish | 714 | CY | \$75.00 | \$53,550 |
| 47 | Exterior spread footing 8'6"x8'6"x2'2" (assume 20'oc column grid) | 8 | ea. | | |
| 48 | Concrete | 9 | CY | \$125.00 | \$1,125 |
| 49 | Rebar 75lbs/cy | 675 | LBS | \$1.20 | \$810 |
| 50 | Formwork | 256 | SF | \$12.00 | \$3,072 |



| edham, MA |
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| | BUILDING DETAILS | | neeuna | m miliside School | Needham, MA 90,702 GSF |
|----------|---|----------|--------|-------------------|---------------------------|
| | DESCRIPTION | QUANTITY | UNIT | UNIT COST | COST |
| 51 | Place and finish | 9 | CY | \$75.00 | \$675 |
| 52 | Pier/pilaster | 168 | ea. | | |
| 53 | Concrete | 105 | CY | \$125.00 | \$13,125 |
| 54 | Rebar | 21,000 | LBS | \$1.20 | \$25,200 |
| 55 | Formwork | 5,645 | SF | \$12.00 | \$67,740 |
| 56 | Place and finish | 105 | CY | \$75.00 | \$7,875 |
| 57 | Elevator pit slab 18" thick | 112 | sf | · | . , |
| 58 | Concrete | 7 | CY | \$125.00 | \$875 |
| 59 | Rebar | 706 | LBS | \$1.20 | \$847 |
| 60 | Edge form | 84 | SF | \$8.00 | \$672 |
| 61 | Place and finish | 112 | SF | \$2.50 | \$280 |
| 62 | Sump pit | 1 | EA | \$650.00 | \$650 |
| 63 | Elevator pit walls 12" thick | 210 | sf | \$000.00 | 4000 |
| 64 | Concrete | 8 | CY | \$125.00 | \$1,021 |
| 65 | Rebar | 591 | LBS | \$1.20 | \$709 |
| 66 | Formwork | 420 | SF | \$12.00 | \$5,040 |
| 67 | Place and finish | 420 | CY | \$120.00 | \$980 |
| 68 | | 1 | LS | \$66,000.00 | \$66,000 |
| 69 | General concrete requirements | | LO | φ00,000.00 | \$00,000 |
| 09 70 | Miscellaneous items | | | | |
| 71 | Vapor barrier to slab on grade | 45,767 | SF | \$0.65 | \$29,749 |
| 72 | Housekeeping & mechanical equipment pads | 43,707 | LS | \$10,000.00 | \$10,000 |
| 73 | Anchor bolt setting | 430 | EA | \$45.00 | \$19,350 |
| 74 | And for bolt setting | 430 | LA | φ43.00 | φ19,550 |
| 75 | Thermal & Moisture Protection | | | | |
| 76 | | 322 | SF | \$22.00 | Ф 7 О94 |
| | Waterproofing elevator pit | | SF | \$22.00 \$5.00 | \$7,084 \$26,520 |
| 77 | Waterproofing @ Retaining walls | 5,304 | | | \$26,520 \$27,405 |
| 78 | Damp proofing to foundation walls SEE A10/A6.50 tops only | 5,497 | SF | \$5.00 | \$27,485 |
| 79 | Rigid insulation at foundation walls | 6,944 | SF | \$3.25 | \$22,568 |
| 80 | Rigid insulation under slab | 45,767 | SF | \$3.00 | \$137,301 |
| 81 | A10 FOUNDATIONS TOTAL | | | | \$2,013,357 |
| 82 | | | | | |
| 83 | | | | | |
| 84 | A20 BASEMENT | | | | |
| 85 | Carried retaining wall at Line ~58 on S1.12 and along lines 1.20 & 1.30 | | | | |
| 86 | on S1.22 | | | | Div A10 |
| 87 | | | | | |
| 88 | | | | | |
| 89 | B10 STRUCTURE | | | | |
| 90 | | _ | | | |
| 91 | Slab on deck; 4.5" Normal Weight Concrete - Typ. Floor | 43,889 | sf | | |
| 92 | Slab on deck; 4.5" Normal Weight Concrete - Low Roof | 2,181 | sf | | |
| 93 | Concrete | 640 | CY | \$135.00 | \$86,381 |
| | | | | | |



BUILDING DETAILS

| | BUILDING DETAILS | | rtoouna | | Needham, MA 90,702 GSF |
|-----|--|----------|---------|-------------|---------------------------|
| | DESCRIPTION | QUANTITY | UNIT | UNIT COST | COST |
| 94 | WWF - 10% overlap | 50,677 | SF | \$1.20 | \$60,812 |
| 95 | Place and finish | 46,070 | SF | \$2.50 | \$115,175 |
| 96 | Slab on roof deck; mechanical equipment area | 2,700 | sf | <i> </i> | <i>\</i> |
| 97 | Concrete | 58 | CY | \$135.00 | \$7,830 |
| 98 | WWF - 10% overlap | 2,970 | SF | \$1.20 | \$3,564 |
| 99 | Place and finish | 2,700 | SF | \$1.75 | \$4,725 |
| 100 | Composite upper floor metal deck | 2,700 | SF | \$4.75 | \$12,825 |
| 101 | Structural steel | | | | |
| 102 | Per SD Pricing Manual Type Floor/Low Roof = 13 #/SF | 299 | TNS | \$3,400.00 | \$1,016,600 |
| 103 | Premium for HSS steeel column | 181 | TNS | \$450.00 | \$81,450 |
| 104 | Premium for HSS steel braceframe | 28 | TNS | \$450.00 | \$12,600 |
| 105 | Premium for 40 LH16 | 29 | TNS | \$500.00 | \$14,500 |
| 106 | Miscellaneous beams, elevator, openings, etc. | 46 | TNS | \$3,400.00 | \$155,759 |
| 107 | Per SD Pricing Manual Type Roof 13#/SF | 291 | TNS | \$3,400.00 | \$989,400 |
| 108 | Per SD Pricing Manual Type Roof Overhang 15#/SF | 31 | TNS | \$3,850.00 | \$119,350 |
| 109 | Per SD Pricing Manual Type Vestibule Roof 15#/SF add#2 | 1 | TNS | \$900.00 | \$900 |
| 110 | Per SD Pricing Manual Type Vestibule Roof 15#/SF | 4 | TNS | \$900.00 | \$3,600 |
| 111 | Connections | 67 | TNS | \$3,400.00 | Included |
| 112 | Shear studs | 8,778 | EA | \$5.00 | \$43,890 |
| 113 | Moment connection | 181 | EA | \$650.00 | \$117,650 |
| 114 | Roof screen structure | 39,090 | LBS | \$1.25 | \$48,863 |
| 115 | Aluminum Pergola per addenda 2 | 393 | SF | \$65.00 | \$25,545 |
| 116 | Aluminum Pergola per art addenda 2 | 271 | SF | \$65.00 | \$17,615 |
| 117 | Metal roof deck | 42,651 | SF | \$4.50 | \$191,930 |
| 118 | Acoustical roof deck at gym and cafetorium | 9,256 | SF | \$8.00 | \$74,048 |
| 119 | Dunnage steel, etc. | 5 | TNS | \$5,000.00 | \$25,000 |
| 120 | Steel support for roof screens; allow | 1 | AL | \$74,000.00 | \$74,000 |
| 121 | Spray fireproof | 1 | SF | \$25,000.00 | \$25,000 |
| 122 | B10 STRUCTURE TOTAL | | | | \$3,329,012 |
| 123 | | | | | |

12 124

B20 EXTERIOR CLOSURE 125

| 126 | | | | | |
|-----|--|--------|----|---------|-----------|
| 127 | Total exterior closure coverage | 48,013 | sf | | |
| 128 | Exterior Brick Veneer | 17,270 | sf | | |
| 129 | Natural Stone | 3,204 | sf | | |
| 130 | Exterior wood cladding Prodex Panels | 11,971 | sf | | |
| 131 | Storefront / Curtain Wall (QUANTITY PROVIDED BY ARCHITECT) | 14,133 | sf | | |
| 132 | Windows | 1,435 | sf | | |
| 133 | | | | | |
| 134 | Brick exterior wall system | 17,270 | SF | \$34.00 | \$587,180 |
| 135 | Natural stone exterior wall system | 3,204 | SF | \$85.00 | \$272,340 |
| 136 | Wood exterior veneer - Prodex Panels | 11,971 | SF | \$55.00 | \$658,405 |



| Needham Hillside School at Central Ave | Needham | Hillside | School | at | Central Ave |
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| | BUILDING DETAILS | | rtoouna | | Needham, MA 90,702 GSF |
|-------------|--|----------|---------|-------------|---------------------------|
| | DESCRIPTION | QUANTITY | UNIT | UNIT COST | COST |
| 137 | Mock up allowance | 1 | LS | \$20,000.00 | \$20,000 |
| 138 | Storefront / Curtain Wall (QUANTITY PROVIDED BY ARCHITECT) | 14,133 | SF | \$110.00 | \$1,554,630 |
| 139 | Premium specialty glazing (ALLOWANCE PROVIDED BY ARHITECT) | 3,600 | SF | \$20.00 | \$72,000 |
| 14 0 | Windows | 1,435 | SF | \$80.00 | \$114,800 |
| 141 | 8" cmu Backup | 5,546 | SF | \$23.00 | \$127,558 |
| 142 | 12" cmu Backup | 5,856 | SF | \$28.00 | \$163,968 |
| 143 | Light gage metal framing and gypsum sheathing | 21,043 | SF | \$9.00 | \$189,387 |
| 144 | Light gage metal framing and gypsum sheathing UNDER MEDIA CENTER | 1,033 | SF | \$11.00 | \$11,363 |
| 145 | Wall insulation 3" Rigid Insulation | 20,474 | SF | \$2.50 | \$51,185 |
| 146 | Wall insulation - 4" Mineral Fiber Insulation | 14,133 | SF | \$1.75 | \$24,733 |
| 147 | Ceiling Insulation UNDER MEDIA CENTER | 1,033 | SF | \$1.75 | \$1,808 |
| 148 | Sunshades | 1 | LS | \$75,000.00 | \$75,000 |
| 149 | Aluminum entry door - pair | 8 | PR | \$7,000.00 | \$56,000 |
| 150 | Aluminum entry door - single | 5 | LEAF | \$3,500.00 | \$17,500 |
| 151 | Egress HM door - single | 1 | LEAF | \$1,650.00 | \$1,650 |
| 152 | Exterior HM door - pair | 7 | PR | \$3,300.00 | \$23,100 |
| 153 | Powered door opener Exterior; ALLOW | 8 | LOC | \$3,255.00 | \$26,040 |
| 154 | Miscellaneous metals to exterior | 48,013 | SF | \$3.75 | \$180,049 |
| 155 | Misc. Metals - Lintel @ Brick Exterior (Inc above) | 266 | LF | \$65.00 | \$17,290 |
| 156 | Blocking at openings | 15,568 | SF | \$5.50 | \$85,624 |
| 157 | Through wall sheet metal flashing | 48,013 | SF | \$0.50 | \$24,007 |
| 158 | Caulking and sealants | 48,013 | SF | \$1.90 | \$91,225 |
| 159 | Air/vapor barrier | 32,445 | SF | \$5.50 | \$178,448 |
| 160 | Louvers | 4 | SF | \$60.00 | \$240 |
| 161 | Allow for miscellaneous louvers | 1 | LS | \$3,500.00 | \$3,500 |
| 162 | Elevator vent | 1 | EA | \$1,600.00 | \$1,600 |
| 163 | B20 EXTERIOR CLOSURE TOTAL | | | | \$4,630,628 |
| 164 | | | | | |
| 165 | | | | | |
| 166 | B30 ROOFING | | | | |
| 167 | | | | | |
| 168 | Roof area | 52,414 | sf | | |
| 169 | Roof - R1 @ Gymnasium | 9,256 | SF | \$22.00 | \$203,632 |
| 170 | Roof - R1 | 40,502 | SF | \$22.00 | \$891,044 |
| 171 | Roof - R1 - Addenda 2 Vestibule | 156 | SF | \$22.00 | \$3,432 |
| 172 | Roof - R3B | 2,500 | SF | \$22.00 | \$55,000 |
| 173 | Roof - R1 - "Vestibule" | 515 | SF | \$12.00 | \$6,180 |
| 174 | MCM Roof Edge Panel @ Vestibules | 230 | sf | \$45.00 | \$10,350 |
| 175 | MCM Roof Edge Panel @ Vestibules Addenda 2 | 46 | sf | \$45.00 | \$2,070 |
| 176 | Roof A8/A6.10 Overhang | 886 | lf | | \$0 |
| | | e | 10 | | \$40.000 |

5" Metal Channel

177

\$15.00

886

lf

\$13,290



| Needham, | MA |
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| | BUILDING DETAILS | | | | 90,702 GSF |
|-----|--|----------|------|-------------|-------------|
| | DESCRIPTION | QUANTITY | UNIT | UNIT COST | COST |
| | | QUANTIT | UNIT | | 0001 |
| 178 | 1.5" CRMF | 4,058 | sf | \$4.00 | \$16,232 |
| 179 | 1/2" Cover board @ Facial | 1,152 | sf | \$2.00 | \$2,304 |
| 180 | 3" Rigid @ facial and Under side | 5,139 | sf | \$2.50 | \$12,847 |
| 181 | GWB 5 | 3,987 | sf | \$2.50 | \$9,968 |
| 182 | MCM Roof Edge Panel | 3,101 | sf | \$45.00 | \$139,545 |
| 183 | | -, - | | • | \$0 |
| 184 | Roof A8/A6.10 Overhang | 564 | lf | | \$0 |
| 185 | 5" Metal Channel | 564 | sf | \$15.00 | \$8,460 |
| 186 | 3 5/8" CRMF | 4,230 | sf | \$4.00 | \$16,920 |
| 187 | Z Furring | 4,230 | sf | \$2.00 | \$8,460 |
| 188 | 1/2" Cover board @ Facial | 846 | sf | \$2.00 | \$1,692 |
| 189 | 3" Rigid @ facial and Under side | 5,640 | sf | \$2.50 | \$14,100 |
| 190 | GWB 5 | 4,230 | sf | \$2.50 | \$10,575 |
| 191 | MCM Roof Edge Panel | 5,640 | sf | \$45.00 | \$253,800 |
| 192 | , | | | | \$0 |
| 193 | Parapet E11/6.50 | 749 | lf | | \$0 |
| 194 | 3/4" Ext Grade Plywood | 1,124 | sf | \$15.00 | \$16,853 |
| 195 | 6" LGMF | 1,183 | sf | \$5.50 | \$6,509 |
| 196 | 2.5" LGMF | 749 | sf | \$4.50 | \$3,371 |
| 197 | 1/2" Cover board @ Facial | 749 | sf | \$2.00 | \$1,498 |
| 198 | 3" Rigid @ facial and Under side | 7,490 | sf | \$2.50 | \$18,725 |
| 199 | GWB 5 | 2,996 | sf | \$2.50 | \$7,490 |
| 200 | | | | | \$0 |
| 201 | Metal framed skylights | 72 | SF | \$150.00 | \$10,800 |
| 202 | Rough blocking to roof | 42,651 | SF | \$1.50 | \$63,977 |
| 203 | Terrace | | SF | \$50.00 | \$0 |
| 204 | Railing at terrace | | LF | \$350.00 | \$0 |
| 205 | Firestopping | 90,702 | GSF | \$0.35 | \$31,746 |
| 206 | Miscellaneous roof accessories | 1 | LS | \$90,000.00 | \$90,000 |
| 207 | Roof Access Hatch (Included above) | 1 | ea | | \$0 |
| 208 | Roof screens | 3,909 | sf | \$20.00 | \$78,180 |
| 209 | B30 ROOFING TOTAL | | | | \$2,009,047 |
| 210 | | | | | |
| 211 | | | | | |
| 212 | C10 INTERIOR CONSTRUCTION | | | | |
| 213 | | | | | |
| 214 | Walls - Type D (4" CMU) 1400 | 167 | SF | \$20.00 | \$3,340 |
| 215 | Walls - Type E (8" CMU) 1400 | 16,433 | SF | \$23.00 | \$377,959 |
| 216 | Walls - Type E1hr (8" CMU) 1400 | 7,701 | SF | \$23.00 | \$177,123 |
| 217 | Walls - TypeG1 hr (12" CMU) 3200 | 4,603 | SF | \$24.00 | \$110,472 |
| 218 | Acoustic Block in Gym per A9.01 - ADDER | 2,000 | SF | \$10.00 | \$20,000 |
| 219 | Misc. metals for lintels, restraints | 24,301 | SF | \$2.50 | \$60,753 |
| 220 | Misc. Metals - Lintel @ CMU Included above | 504 | lf | | \$0 |
| 221 | Walls - Type A (6", 1 layer 5/8" each, Batt Insulation) 1400 | 43,256 | SF | \$9.75 | \$421,746 |
| | | | | | |

BUILDING DETAILS



| | BUILDING DETAILS | | Neeunai | | Needham, MA |
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| | BUILDING DETAILS | | | | 90,702 GSF |
| | DESCRIPTION | QUANTITY | UNIT | UNIT COST | COST |
| | | QUANTIT | | | 0001 |
| 222 | Walls - Type A1hr (6", 1 layer 5/8" each, Batt Insulation) 1400 | 168 | SF | \$10.00 | \$1,680 |
| 223 | | 25,702 | SF | \$8.50 | \$218,467 |
| 223 | Walls - Type F4 (3 5/8", 1 Layer GWB one side, Batt Insulation) | - | SF | \$8.00 | |
| | Walls - Type F6 (6", 1 Layer GWB one side, Batt Insulation) | 19,870 | | | \$158,960 \$10,205 |
| 225 | Walls - Type M (6", 1 layer 5/8" each, Batt Insulation) 1700 | 2,031 | SF | \$9.50 | \$19,295 |
| 226 | Walls - Type F4 (3 5/8", 1 Layer GWB one side, Batt Insulation) | 356 | SF | \$6.00 | \$2,136 |
| 227 | Walls - Gypsum Fiber Board Adder (GFB from Finish Schedule) | 1,202 | SF | \$5.00 | \$6,010 |
| 228 | Premum for specialties to walls | 1 | LS | \$150,000.00 | \$150,000 |
| 229 | Interior storefront system | 717 | SF | \$80.00 | \$57,360 |
| 230 | Mirror - Ballet | 124 | SF | \$35.00 | \$4,340 |
| 231 | Interior Lite, rated 1hour 800h | 150 | SF | \$110.00 | \$16,500 |
| 232 | Interior Lite, 500 | 61 | SF | \$75.00 | \$4,575 |
| 233 | Interior Lite, rated 1 hour 408h | 27 23 | SF SF | \$110.00 \$110.00 | \$2,970 \$2,520 |
| 234 235 | Interior Lite, rated 1hour 600h Interior Lite, rated 1hour 504h | 33 | SF | \$110.00 \$110.00 | \$2,530 \$3,630 |
| 235 | Interior Lite, rated Thour 3041 | 24 | SF | \$110.00 | \$3,630 \$2,640 |
| 237 | Privacy glass | 168 | SF | \$175.00 | \$29,400 |
| 238 | Glass Rail at ST 3 | 150 | SF | \$550.00 | \$82,500 |
| 239 | Operable folding partitions | 607 | SF | \$60.00 | \$36,420 |
| 240 | Rough carpentry internal partitions and ceilings | 90,702 | GSF | \$1.50 | \$136,053 |
| 241 | Interior caulking | 90,702 | GSF | \$0.50 | \$45,351 |
| 242 | Top-of-partition firestopping | 90,702 | | \$0.15 | \$13,605 |
| 243 | | 50,702 | 001 | φ0.10 | φ10,000 |
| 244 | Interior aluminum entry door double | 2 | PR | \$7,000.00 | \$14,000 |
| | Interior aluminum entry door double | | | | |
| 245 | Interior aluminum entry door Single | 1 | PR | \$7,000.00 | \$7,000 |
| 246 | Powered interior entry door opener | 8 | LOC | \$3,255.00 | \$26,040 |
| 247 | Single door, frame and hardware | 126 | EA | \$2,000.00 | \$252,000 |
| 248 | Pair of doors | 16 | PR | \$4,000.00 | \$64,000 |
| 249 | Glass sidelights and door glazing | 328 | SF | \$35.00 | \$11,478 |
| 250 | Paint door and frame | 142 | OPEN | \$150.00 | \$21,300 |
| 251 | Blocking at doors | 2,556 | LF | \$2.50 | \$6,390 |
| 252 | Access doors | 33 | EA | \$350.00 | \$11,550 |
| 253 | Coiling door - Roll Down Grill 4' - Reception | 100 | SF | \$150.00 | \$15,000 |
| 254 | Coiling door - Roll Down Grill 4' - Trash Recycling | 24 | SF | \$150.00 | \$3,600 |
| 255 | Coiling door - Roll Down Grill 4' - Cafeteria | 52 | SF | \$150.00 | \$7,800 |
| 256 | Stainless steel corner guards | 1 | LS | \$6,000.00 | \$6,000 |
| 257 | 5 | | | . , | . , |
| 258 | Toilet compartments | 14 | EA | \$1,200.00 | \$16,800 |
| 259 | Toilet compartments ADA | 10 | EA | \$1,500.00 | \$15,000 |
| | | | EA | | |
| 260 | Urinal screen | 3 | LA | \$500.00 | \$1,500 |
| 261 | | • • | Γ^ | ¢400.00 | ¢4 400 |
| 262 | Lavatory mirror | 34 | EA | \$130.00 | \$4,420 |
| 263 | Soap dispenser | 34 | EA | \$35.00 | \$1,190 |
| 264 | Paper towel dispenser/waste receptacle | 24 | EA | \$300.00 | \$7,200 |
| 265 | Toilet paper dispenser | 39 | EA | \$75.00 | \$2,925 |
| 266 | Grab bars | 81 | PR | \$160.00 | \$12,960 |
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Needham MA

| | | | | | Needham, MA 90,702 GSF |
|-----|--|----------|------|-------------|---------------------------|
| | DESCRIPTION | QUANTITY | UNIT | UNIT COST | COST |
| 267 | TA - Shower curtain & Rod | 2 | EA | \$75.00 | \$150 |
| 268 | Specialties - Curtain 10' High | 293 | SF | \$20.00 | \$5,860 |
| 269 | Specialties - Curtain 10' High @ 211A | 287 | EA | \$20.00 | \$5,740 |
| 270 | Specialties - Coat Hook | 4 | EA | \$30.00 | \$120 |
| 271 | Appliances - Refrigerator - Staff | 3 | EA | \$800.00 | \$2,400 |
| 272 | Appliances - Dishwasher - Staff | 1 | EA | \$600.00 | \$600 |
| 273 | Appliances - Microwave - Staff | 4 | EA | \$300.00 | \$1,200 |
| 274 | Appliances - Refrigerator - Nurse | 1 | EA | \$400.00 | \$400 |
| 275 | Specialties - Coat Rack | 2 | EA | \$150.00 | \$300 |
| 276 | Install toilet accessories | 256 | EA | \$50.00 | \$12,800 |
| 277 | Vanity counter - toilets | 0 | LF | \$150.00 | \$0 |
| 278 | Laylite at the atrium | 72 | SF | \$150.00 | \$10,800 |
| 279 | Kitchen and custodial staff lockers | 4 | EA | \$275.00 | \$1,100 |
| 280 | Fire extinguisher and cabinet | 23 | EA | \$500.00 | \$11,500 |
| 281 | Tack Boards | 2,870 | SF | \$8.00 | \$22,960 |
| 282 | Green Screen | 128 | SF | \$9.00 | \$1,152 |
| 283 | Motorized projection screen, Commons | 1 | EA | \$7,500.00 | \$7,500 |
| 284 | Motorized projection screen, Admin/Conference | 1 | EA | \$2,800.00 | \$2,800 |
| 285 | Projection screens - miscellaneous (extended learning) | 3 | EA | \$5,000.00 | \$15,000 |
| 286 | Projection screens - Library and cafeteria | 2 | EA | \$10,000.00 | \$20,000 |
| 287 | Interactive | 68 | EA | \$1,500.00 | \$102,000 |
| 288 | Misc Metals - Roof Ladder ~8' + overrun & cage | 2 | EA | \$2,500.00 | \$5,000 |
| 289 | Misc Metals - Roof Ladder ~14' + overrun & cage | 1 | EA | \$3,500.00 | \$3,500 |
| 290 | Misc Metals - Ship ladder to roof hatch 1400 | 1 | EA | \$6,500.00 | \$6,500 |
| 291 | Misc. metal other than above | 1 | EA | \$2,800.00 | \$2,800 |
| 292 | C10 INTERIOR CONSTRUCTION TOTAL | | | _ | \$2,916,149 |
| 293 | | | | | |
| 294 | | | | | |
| 295 | C20 STAIRCASES | | | | |
| 296 | | | | | |
| 297 | Vestibule 131 Stairs - Stair 1 - 5' wide | 44 | RS | \$850.00 | \$37,400 |
| 298 | Stair # 2 | 44 | RS | \$650.00 | \$28,600 |
| 299 | Stair # 3 | 44 | RS | \$650.00 | \$28,600 |
| 300 | Concrete fill in metal pan Stair # 1 | 4 | FLT | \$5,000.00 | \$20,000 |
| 301 | Concrete fill in metal pan Stair # 2 | 4 | FLT | \$8,000.00 | \$32,000 |
| 302 | Concrete fill in metal pan Stair # 3 | 4 | FLT | \$2,500.00 | \$10,000 |
| 303 | Concrete fill in metal pan Media | 2 | FLT | \$2,500.00 | \$5,000 |
| 304 | Stair @ Media Room | 21 | RS | \$1,200.00 | \$25,200 |
| 305 | Rubber flooring - stairs | 1,762 | SF | \$6.50 | \$11,453 |
| 306 | Landing - open stairs | 27 | SF | \$20.00 | \$540 |
| 307 | Treads & risers - open stairs @ Media | 114 | SF | \$20.00 | \$2,280 |
| 308 | C20 STAIRCASES TOTAL | | | _ | \$201,073 |
| 309 | | | | | |
| 310 | | | | | |

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| | Needham Hillside School at Central A | | | | l at Central Ave |
|-----|--|----------|------|-----------|------------------|
| | BUILDING DETAILS | | | | Needham, MA |
| | | | | | 90,702 GSF |
| | DESCRIPTION | QUANTITY | UNIT | UNIT COST | COST |
| 311 | C30 INTERIOR FINISHES | | | | |
| 312 | | | | | |
| 313 | Wall Finishes | | | | |
| 314 | Ceramic tile walls Per Elevations & Finish Schedule | 13,975 | SF | \$20.00 | \$279,500 |
| 315 | Absorptive wall panels - 1" Thick - Per A9.01 in "Remarks" | 1,360 | SF | \$13.75 | \$18,700 |
| 316 | Wall safety pads | 900 | SF | \$20.00 | \$18,000 |
| 317 | Removable wall pads | 200 | SF | \$25.00 | \$5,000 |
| 318 | Paint walls | 178,233 | SF | \$1.25 | \$222,791 |
| 319 | Paint walls Epoxy Paint (EPT | 1,142 | SF | \$1.25 | \$1,428 |
| 320 | Wall Finish WC-1 @ 48" | 367 | SF | \$15.00 | \$5,505 |
| 321 | Marker Surface | 6,160 | SF | \$22.00 | \$135,520 |
| 322 | Misc. other wall finishes | 91,623 | GSF | \$2.50 | \$229,058 |
| 323 | | | | | |
| 324 | Floor Finishes | | | | |
| 325 | Walk Off Mat | 623 | SF | \$90.00 | \$56,070 |
| 326 | Epoxy Floor | 1,713 | SF | \$10.00 | \$17,130 |
| 327 | Wood Athletic Floor (WAF) - GYM | 6,021 | SF | \$17.50 | \$105,368 |
| 328 | Rubber Athletic Floor (RAF) - | 1,316 | SF | \$10.00 | \$13,160 |
| 329 | Quarry tile Floor - QT | 1,606 | SF | \$17.00 | \$27,302 |
| 330 | Carpet - CPT | 5,586 | SF | \$4.50 | \$25,137 |
| 331 | Concrete floor - SLR | 2,090 | SF | \$1.25 | \$2,613 |
| 332 | Ceramic Tile Floor - Tile 1 | 2,702 | SF | \$16.00 | \$43,232 |
| 333 | Linoleum floors - LIN | 57,044 | SF | \$7.00 | \$399,308 |
| 334 | Moisture mitigation | 58,360 | SF | \$3.50 | \$204,260 |
| 335 | Base - Epoxy | 430 | SF | \$10.00 | \$4,300 |
| 336 | Base - QT | 277 | LF | \$15.00 | \$4,155 |
| 337 | Base - Tile | 489 | SF | \$16.00 | \$7,824 |
| 338 | Base - Rubber | 12,703 | LF | \$1.75 | \$22,230 |
| 339 | | | | | |
| 340 | Ceiling Finishes | | | | |
| 341 | Ceilings - ACP1A 2x2 | 44,322 | SF | \$5.50 | \$243,771 |
| 342 | Ceilings - ACP1 2x4 | 3,020 | SF | \$4.00 | \$12,080 |
| 343 | Ceilings - ACP3A 2x2 | 1,248 | SF | \$6.00 | \$7,488 |
| 344 | Ceilings - ACP5A 2x2 | 3,555 | SF | \$6.00 | \$21,330 |
| 345 | Ceilings - ACP2 2x4 | 255 | SF | \$4.00 | \$1,020 |
| 346 | Ceilings - ACP2A 2x2 | 3,751 | SF | \$5.50 | \$20,631 |
| 347 | Acoustic Panels - AB-1 | 1,115 | SF | \$15.00 | \$16,725 |
| 348 | Ceilings - ACP7 2x2 | 3,453 | SF | \$5.50 | \$18,992 |
| 349 | Ceilings - ACP3A 2x2 | 100 | SF | \$5.50 | \$550 |
| 350 | Ceilings - ACP4 2x4 | 1,568 | SF | \$4.00 | \$6,272 |
| 351 | Ceilings - ACP5 2x4 | 102 | SF | \$4.00 | \$408 |
| 352 | Ceilings - Soffits - Exterior LMS | 4,957 | SF | \$30.00 | \$148,710 |
| 353 | Ceilings - Soffits - Exterior LMS - Under Media ctr | 1,033 | SF | \$30.00 | \$30,990 |
| 354 | Ceilings - Exterior LMS @ Vestibule Addenda 2 | 156 | SF | \$30.00 | \$4,680 |
| | | | | | |



| | BUILDING DETAILS Needham Hillside School at Central Needham, | | | At Central Ave Needham, MA | |
|-----|---|----------|------|-------------------------------|-------------|
| | | | | | 90,702 GSF |
| | DESCRIPTION | QUANTITY | UNIT | UNIT COST | COST |
| 355 | Ceilings -WD | 3,144 | SF | \$25.00 | \$78,600 |
| 356 | GWB ceilings and soffits | 3,474 | SF | \$12.00 | \$41,688 |
| 357 | Music Classroom (Ceiling underneath SD pricing manual pg 88 detail) Sound assembly only, not the steel grid for PE | 1,546 | SF | \$0.00 | \$0 |
| 358 | 3.5" Batt Insulation | 1,546 | SF | \$1.50 | \$2,319 |
| 359 | Neopreme washers - excluded - span all from steel | | SF | \$1.50 | \$0 |
| 360 | Caulking | 1,546 | SF | \$0.75 | \$1,160 |
| 361 | LGMSF | 1,546 | SF | \$3.00 | \$4,638 |
| 362 | Double layer 5/8" GWB | 1,546 | SF | \$4.00 | \$6,184 |
| 363 | Direct applied Sound-Absorptive Finish | 1,546 | SF | \$4.00 | \$6,184 |
| 364 | Steel Grid @ PE | 1,546 | SF | \$4.00 | \$6,184 |
| 365 | Exposed structure | | SF | \$1.50 | \$0 |
| 366 | C30 INTERIOR FINISHES TOTAL | | | | \$2,528,192 |
| 367 | | | | | |
| 368 | | | | | |
| 369 | D10 CONVEYING SYSTEMS | | | | |
| 370 | | | | | |
| 371 | Elevator, cab; 3 stop, single opening | 1 | EA | \$145,000.00 | \$145,000 |
| 372 | Elevator pit ladder and sill angles | 1 | EA | \$2,600.00 | \$2,600 |
| 373 | Hoist beam | 1 | EA | \$750.00 | \$750 |
| 374 | D10 CONVEYING SYSTEMS TOTAL | | | | \$148,350 |
| 375 | | | | | |
| 376 | | | | | |
| 377 | D20 PLUMBING | | | | |
| 378 | | | | | |
| 379 | D20 PLUMBING | | | | |
| 380 | 4" Water service main w/ meter | 1 | EA | \$3,094.00 | \$3,094 |
| 381 | 4" Reduced pressure backflow preventer | 1 | EA | \$3,198.00 | \$3,198 |
| 382 | 1 1/2" Reduced pressure backflow preventer | 1 | EA | \$1,417.00 | \$1,417 |
| 383 | 3/4" Reduced pressure backflow preventer | 3 | EA | \$708.50 | \$2,126 |
| 384 | Gas fired hot water heater w/ storage tank | 2 | EA | \$16,705.00 | \$33,410 |
| 385 | Expansion tank | 2 | EA | \$1,105.00 | \$2,210 |
| 386 | Air separator | 2 | EA | \$1,495.00 | \$2,990 |
| 387 | Gas meter | 1 | EA | \$2,970.50 | \$2,971 |
| 388 | Circulating pump | | | | |
| 389 | - RP-1 | 1 | EA | \$1,280.50 | \$1,281 |
| 390 | Mixing valve (Main) | 1 | EA | \$4,225.00 | \$4,225 |
| 391 | Domestic service water meter | 1 | EA | \$3,705.00 | \$3,705 |
| 392 | Sewage Ejector Station; Duplex Pump | 1 | EA | \$40,105.00 | \$40,105 |
| 393 | Grease Interceptor; 1500 Gallons | 1 | EA | \$33,150.00 | \$33,150 |
| 394 | Fixtures | | | | |
| 395 | Water closet | 39 | EA | \$2,372.50 | \$92,528 |
| 396 | Urinal | 7 | EA | \$2,892.50 | \$20,248 |
| 397 | Lavatory | 30 | EA | \$1,885.00 | \$56,550 |
| | | | | | |



| Needham, MA | |
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|-----|--|----------|--------|--------------|--------------------|
| | BUILDING DETAILS | | | | Needham, MA |
| | DESCRIPTION | QUANTITY | UNIT | UNIT COST | 90,702 GSF COST |
| | | | | | |
| 398 | Handwash sink | 3 | EA | \$2,405.00 | \$7,215 |
| 399 | Classroom sink | 37 | EA | \$2,632.50 | \$97,403 |
| 400 | Sink | 4 | EA | \$2,632.50 | \$10,530 |
| 401 | Mop sink | 4 | EA | \$2,840.50 | \$11,362 |
| 402 | Pedestal service sink | 1 | EA | \$3,185.00 | \$3,185 |
| 403 | Art room sink with sediment trap | 3 | EA | \$3,965.00 | \$11,895 |
| 404 | Hi-Lo electric water cooler | 5 | EA | \$3,420.00 | \$17,100 |
| 405 | Hose bibbs | 8 | EA | \$448.50 | \$3,588 |
| 406 | Wall hydrant | 9 | EA | \$708.50 | \$6,377 |
| 407 | Floor cleanout | 14 | EA | \$578.50 | \$8,099 |
| 408 | Floor drains: | | | | |
| 409 | - 4" | 6 | EA | \$1,378.00 | \$8,268 |
| 410 | - 3" | 10 | EA | \$1,267.50 | \$12,675 |
| 411 | Roof drains: | | | | |
| 412 | - 4" | 16 | EA | \$1,670.50 | \$26,728 |
| 413 | Domestic water piping: | 6,750 | LF | \$29.71 | \$200,509 |
| 414 | Domestic water pipe insulation: | 6,750 | LF | \$10.86 | \$3,789 |
| 415 | Storm piping, below grade | 1,040 | LF | \$60.65 | \$63,071 |
| 416 | Storm piping, above grade | 930 | LF | \$55.19 | \$51,322 |
| 417 | Storm piping insulation | 1 | LS | \$12,900.00 | \$12,900 |
| 418 | Waste and vent piping, below grade | 1,850 | LF | \$45.05 | \$83,333 |
| 419 | Waste and vent piping, above grade | 2,450 | LF | \$36.79 | \$90,136 |
| 420 | Gas piping | | | | |
| 421 | - 2" | 960 | LF | \$21.78 | \$20,904 |
| 422 | - 1 1/2" | 420 | LF | \$20.67 | \$8,681 |
| 423 | - Branch | 2,070 | LF | \$22.23 | \$46,016 |
| 424 | Gas hook-ups; boilers, domestic water heaters, RTU | 12 | EA | \$715.00 | \$8,580 |
| 425 | Flue piping | 85 | FT | \$110.50 | \$9,393 |
| 426 | Vents - VTR | 7 | EA | \$585.00 | \$4,095 |
| 427 | Hydraulic lifts / rigging | 1 | LS | \$28,200.00 | \$28,200 |
| 428 | System testing, flushing / sterilize | 1 | LS | \$22,700.00 | \$22,700 |
| 429 | Coring, cutting & sleeves | 1 | LS | \$11,900.00 | \$11,900 |
| 430 | Seismic restraints and structural steel component | 1 | LS | \$12,000.00 | \$12,000 |
| 431 | Shop drawings / BIM coordination / As-builts / Engineering support | 1 | LS | \$18,100.00 | \$18,100 |
| 432 | Commissioning support | 1 | LS | \$12,300.00 | \$12,300 |
| 433 | Permits & fees | 1 | LS | \$12,400.00 | \$12,400 |
| 434 | D20 PLUMBING TOTAL | | | | \$1,247,958 |
| 435 | | | | | |
| 436 | D30 HVAC | | | | |
| 437 | Rooftop unit: | | | | |
| 438 | - RTU-1 10,200CFM (Energy Wheel) | 1 | EA | \$140,500.00 | \$140,500 |
| 439 | - RTU-2 10,200CFM (Energy Wheel) | 1 | EA | \$140,500.00 | \$140,500 |
| 440 | - RTU-3 10,200CFM (Energy Wheel) | 1 | EA | \$140,500.00 | \$140,500 |
| 441 | - RTU-4 3,000CFM | 1 | EA | \$32,775.00 | \$32,775 |
| | | | | | |



Needham, MA

| | | | | | 90,702 GSF |
|-----|---|----------|------|------------------------|---------------------|
| | DESCRIPTION | QUANTITY | UNIT | UNIT COST | COST |
| | | | | | |
| 442 | - RTU-5 6,500CFM | 1 | EA | \$66,740.00 | \$66,740 |
| 443 | - RTU-6 4,500CFM | 1 | EA | \$49,165.00 | \$49,165 |
| 444 | - RTU-7 3,500CFM | 1 | EA | \$38,250.00 | \$38,250 |
| 445 | - RTU-8 7,000CFM | 1 | EA | \$72,155.00 | \$72,155 |
| 446 | - RTU-9 3,500CFM | 1 | EA | \$38,240.00 | \$38,240 |
| 447 | - MAU-1 3,000CFM | 1 | EA | \$32,775.00 | \$32,775 |
| 448 | - H&V 3,500CFM | 1 | EA | \$48,220.00 | \$48,220 |
| 449 | HVAC ductless split system: | | | | |
| 450 | - AHU-1 / ACCU-1 (Tele/Data) | 1 | EA | \$10,150.00 | \$10,150 |
| 451 | - AHU-2 / ACCU-2 (Elevator Machine) | 1 | EA | \$10,150.00 | \$10,150 |
| 452 | - AHU-3 / ACCU-3 (Electrical) | 3 | EA | \$10,150.00 | \$30,450 |
| 453 | Exhaust fan: | | | | |
| 454 | - EF-1 / EF-2 4500 CFM | 2 | EA | \$7,900.00 | \$15,800 |
| 455 | - EF-3 450 CFM | 8 | EA | \$1,065.00 | \$8,520 |
| 456 | - EF-4 150 CFM | 10 | EA | \$985.00 | \$9,850 |
| 457 | Terminal box w/ Re-heat coil | | | | |
| 458 | - TB | 37 | EA | \$1,850.00 | \$68,450 |
| 459 | Unit heater | 6 | EA | \$1,495.00 | \$8,970 |
| 460 | Cabinet unit heater | 11 | EA | \$865.00 | \$9,515 |
| 461 | Induction Units | 23 | EA | \$1,985.00 | \$45,655 |
| 462 | Fin-tube radiant panels | 1,960 | LF | \$110.00 | \$215,600 |
| 463 | Gas fired boilers 1950 MBH | 2 | EA | \$47,500.00 | \$95,000 |
| 464 | Expansion tank | 2 | EA | \$850.00 | \$1,700 |
| 465 | Air separator | 2 | EA | \$1,150.00 | \$2,300 |
| 466 | Register & diffusers | 116 | EA | \$320.00 | \$37,120 |
| 467 | Volume dampers | 116 | EA | \$45.00 | \$5,220 |
| 468 | Fire and smoke dampers | 42 | EA | \$445.00 | \$18,690 |
| 469 | Sound attenuators | 1 | LS | \$31,500.00 | \$31,500 |
| 470 | Galvanized duct | 62,720 | LBS | \$10.85 | \$680,512 |
| 471 | Duct insulation | 34,780 | SF | \$3.75 | \$130,425 |
| 472 | Seal ductwork | 5,720 | LF | \$1.35 | \$7,722 |
| 473 | Steel ductwork | 2,500 | LBS | \$18.85 | \$47,125 |
| 474 | Rooftop elevator exhaust air hood | 1 | EA | \$3,850.00 | \$3,850 |
| 475 | Boiler combustion air / exhaust flue piping | 3 | EA | \$4,850.00 | \$14,550 |
| 476 | Chilled / Heating hot water piping: | 5 005 | | * ~~ ~ - | \$040 504 |
| 477 | - Mains | 5,625 | LF | \$38.85 | \$218,531 |
| 478 | - Branch | 10,965 | LF | \$19.00 | \$208,335 |
| 479 | - Insulation | 16,590 | LF | \$3.25 | \$53,918 |
| 480 | Condensate system | 1 | LS | \$12,500.00 | \$12,500 |
| 481 | | ~ | ۲, | ¢0.005.00 | ¢40 570 |
| 482 | - HWP-1 / HWP-2 325 GPM | 2 | EA | \$9,285.00 | \$18,570 \$6,570 |
| 483 | - CHWP-1 / CHWP-2 44 GPM | 2 | EA | \$3,285.00 | \$6,570 \$2,040 |
| 484 | - CP Equipment book-ups: | 3 | EA | \$980.00 | \$2,940 |
| 462 | E CHURCHER DI DICIK-LIUS | | | | |

485 Equipment hook-ups:



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| | | Needham Hillside School at Central Ave | | | | |
|--|----------|--|--------------|-------------|--|--|
| BUILDING DETAILS | | | | Needham, MA | | |
| | | | | 90,702 GSF | | |
| DESCRIPTION | QUANTITY | UNIT | UNIT COST | COST | | |
| | | | | | | |
| - Boiler | 2 | EA | \$2,100.00 | \$4,200 | | |
| - Pumps | 4 | EA | \$2,650.00 | \$10,600 | | |
| - RTU | 10 | EA | \$6,850.00 | \$68,500 | | |
| - VENTILATOR | 1 | EA | \$5,850.00 | \$5,850 | | |
| Misc. valves & specialties | 1 | LS | \$43,800.00 | \$43,800 | | |
| VFD | 4 | EA | \$2,850.00 | \$11,400 | | |
| Controls | 1 | LS | \$463,285.00 | \$463,285 | | |
| Testing & balance | 1 | LS | \$85,000.00 | \$85,000 | | |
| Hydraulic lifts/rigging | 1 | LS | \$66,000.00 | \$66,000 | | |
| System testing, flushing and sterilize | 1 | LS | \$54,500.00 | \$54,500 | | |
| Coring, cutting and sleeves | 1 | LS | \$18,300.00 | \$18,300 | | |
| Seismic restraints and structural steel components | 1 | LS | \$55,000.00 | \$55,000 | | |
| Shop drawings / BIM / ENG support / As-builts | 1 | LS | \$73,000.00 | \$73,000 | | |
| Commissioning support | 1 | LS | \$56,900.00 | \$56,900 | | |
| Fees & permit | 1 | LS | \$38,500.00 | \$38,500 | | |
| D30 HVAC TOTAL | | | - | \$3,884,843 | | |
| D40 FIRE PROTECTION | | | | | | |
| Sprinkler Coverage | 90,702 | SF | \$3.50 | \$317,457 | | |
| Zone control valve assembly w/ standpipe | 5 | EA | \$2,050.00 | \$10,250 | | |
| Fire department Siamese connection | 1 | EA | \$2,280.00 | \$2,280 | | |
| Alarm valve assembly w/ trim | 1 | EA | \$3,065.00 | \$3,065 | | |
| Dry valve with alarm, compressor | 1 | EA | \$15,500.00 | \$15,500 | | |
| 8" Backflow preventer | 1 | EA | \$8,375.00 | \$8,375 | | |
| 8" Water service main | 1 | EA | \$2,186.00 | \$2,186 | | |
| FDV w/ standpipe | 1 | EA | \$8,400.00 | \$8,400 | | |
| FDV cabinet | 2 | EA | \$1,425.00 | \$2,850 | | |
| Main piping: | | | | | | |
| - 8" | 140 | LF | \$59.85 | \$8,379 | | |
| Hydraulic lifts / rigging | 1 | LS | \$7,600.00 | \$7 600 | | |

| 515 | Hydraulic lifts / rigging | 1 | LS | \$7,600.00 | \$7,600 |
|-----|--|---|----|------------|-----------|
| 516 | Coring, cutting and sleeves | 1 | LS | \$2,000.00 | \$2,000 |
| 517 | Seismic restraints and structural steel components | 1 | LS | \$5,900.00 | \$5,900 |
| 518 | Shop drawings / BIM / ENG CALC / as-Builts | 1 | LS | \$9,900.00 | \$9,900 |
| 519 | Permit & fees | 1 | LS | \$4,100.00 | \$4,100 |
| 520 | D40 FIRE PROTECTION TOTAL | | | | \$408,242 |

D40 FIRE PROTECTION TOTAL

D50 ELECTRICAL

- Interior Electrical
- Gear & Distribution
- Normal Power
- Utility meter
- Digital monitoring

\$450

\$5,000

ΕA

LS

\$450.00

\$5,000.00



Needham, MA

| | BUILDING DETAILS | | | | Needham, MA |
|------------|--|----------|-------------|---------------------------|----------------------|
| | | | | | 90,702 GSF |
| | DESCRIPTION | QUANTITY | UNIT | UNIT COST | COST |
| 530 | 2000A main switchboard | 1 | EA | \$80,000.00 | \$80,000 |
| 531 | SPD | 4 | LS | \$850.00 | \$3,400 |
| 532 | 800A distribution panelboard | 2 | EA | \$25,000.00 | \$50,000 |
| 533 | 400A distribution panelboard | 3 | EA | \$12,000.00 | \$36,000 |
| 534 | 225A triple tub panelboard | 3 | EA | \$6,000.00 | \$18,000 |
| 535 | 225A double tub panelboard | 6 | EA | \$4,000.00 | \$24,000 |
| 536 | 225A panelboard | 1 | EA | \$2,500.00 | \$2,500 |
| 537 | 100A panelboard | 5 | EA | \$1,850.00 | \$9,250 |
| 538 | 225KVA dry type transformer | 2 | EA | \$15,340.00 | \$30,680 |
| 539 | 800A feed | 30 | LF | \$214.00 | \$6,420 |
| 540 | 400A feed | 755 | LF | \$108.00 | \$81,540 |
| 541 | 225A feed | 480 | LF | \$50.00 | \$24,000 |
| 542 | 100A feed | 710 | LF | \$24.00 | \$17,040 |
| 543 | Grounding and bonding | 1 | LS | \$5,000.00 | \$5,000 |
| 544 | Generator Power | | | * * | ¢405.000 |
| 545 | 250KW natural gas generator set in weather proof enclosure | 1 | LS | \$135,000.00 | \$135,000 \$2,500 |
| 546 547 | Annunciator | 1 | LS | \$2,500.00 \$7,875,00 | \$2,500 \$7,875 |
| 548 | 400A 3 pole automatic transfer switch 100A 3 pole automatic transfer switch | 1 | LS EA | \$7,875.00 \$3,830.00 | \$7,873 \$3,830 |
| 549 | 400A double tub panelboard | 1 | EA | \$3,830.00 \$12,000.00 | \$3,000 \$12,000 |
| 550 | 400A double tob panelboard 400A panelboard | 2 | EA | \$8,500.00 | \$17,000 |
| 551 | 150A double tub panelboard | - | EA | \$3,500.00 | \$3,500 |
| 552 | 100A panelboard | 3 | EA | \$1,850.00 | \$5,550 |
| 553 | 112.5KVA dry type transformer (K-13 Rated) | 1 | EA | \$20,650.00 | \$20,650 |
| 554 | 45KVA dry type transformer | 1 | EA | \$5,400.00 | \$5,400 |
| 555 | 30KVA dry type transformer (K-13 Rated) | 1 | EA | \$7,110.00 | \$7,110 |
| 556 | 400A feed | 430 | LF | \$180.00 | \$77,400 |
| 557 | 200A feed | 40 | LF | \$44.00 | \$1,760 |
| 558 | 150A feed | 150 | LF | \$33.00 | \$4,950 |
| 559 | 100A feed | 700 | LF | \$24.00 | \$16,800 |
| 560 | 60A feed | 30 | LF | \$17.00 | \$510 |
| 561 | | | | | |
| 562 | UPS | _ | | | • |
| 563 | 24KW UPS | 1 | LS | \$20,000.00 | \$20,000 |
| 564 | 100A double tub panelboard | 1 | EA | \$3,000.00 | \$3,000 |
| 565 | 100A feed | 300 | LF | \$24.00 | \$7,200 |
| 566 567 | | | | | \$0 \$0 |
| 567 568 | Equipment Wiring Elevator FSS, feed and connection | 1 | EA | \$3,500.00 | \$0 \$3,500 |
| 569 | | 1 | | | \$3,500 \$1,500 |
| 570 | Elevator cab power FSS, feed and connection VFD's connection only | 6 | EA EA | \$1,500.00 \$850.00 | \$1,500 \$5,100 |
| 571 | Chiller unit feed and connection | 0 1 | EA | \$8,500.00 | \$3,100 \$8,500 |
| 572 | RTU FSS WP, feed and connection | 8 | EA | \$3,500.00 \$3,500.00 | \$28,000 |
| 573 | MAU FSS WP, feed and connection | 1 | EA | \$3,500.00 | \$3,500 |
| | | • | _/ \ | <i>40,000.00</i> | 40,000 |



| Needham, MA |
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| | BUILDING DETAILS | | | | Neednam, MA |
|------------|---|----------|------|---------------------|--------------------|
| | | | | | 90,702 GSF |
| | DESCRIPTION | QUANTITY | UNIT | UNIT COST | COST |
| | | | | | |
| 574 | H&V FSS WP, feed and connection | 1 | EA | \$3,500.00 | \$3,500 |
| 575 | Split system WP, feed and connection | 3 | EA | \$2,500.00 | \$7,500 |
| 576 | Boiler FSS, feed and connection | 2 | EA | \$1,500.00 | \$3,000 |
| 577 | Pump FSS, feed and connection | 4 | EA | \$1,500.00 | \$6,000 |
| 578 | Kiln recp, feed and connection | 1 | EA | \$650.00 | \$650 |
| 579 | Kiln hood exhaust feed and connection | 1 | EA | \$850.00 | \$850 |
| 580 | Hand dryer feed and connection | 8 | EA | \$1,000.00 | \$8,000 |
| 581 | Misc. equipment feed and connections | 90,702 | SF | \$0.35 | \$31,746 |
| 582 | Kitchen equipment wiring | , | | + | . , |
| 583 | Large equipment wiring (allow) | 4 | EA | \$1,500.00 | \$6,000 |
| 584 | Small equipment wiring (allow) | 35 | EA | \$450.00 | \$15,750 |
| 585 | | | LA | φ+30.00 | φ10,700 |
| 586 | Lighting & Branch Power | | | | |
| 587 | | | | | |
| 588 | Lighting | 12 | EA | | \$6,600 |
| 589 | Type LPD1 | | | \$550.00 | |
| | Type LPG | 15 | EA | \$550.00 | \$8,250 \$1,080 |
| 590 | Type LP2 | 9 | EA | \$120.00 | \$1,080 |
| 591 | Type LP4 | 3 | EA | \$240.00 | \$720 |
| 592 | Type LR24 | 197 | EA | \$200.00 | \$39,400 |
| 593 | Type LRK | 32 | EA | \$250.00 | \$8,000 |
| 594 | Type LP8 | 205 | EA | \$480.00 | \$98,400 |
| 595 | Type LS4 | 7 | EA | \$200.00 | \$1,400 |
| 596 | Type LS8 | 22 | EA | \$250.00 | \$5,500 |
| 597 | Type LW4 | 8 | EA | \$325.00 | \$2,600 |
| 598 | Type LRS | 296 | LF | \$85.00 | \$25,160 |
| 599 | Type PC1 | 42 | EA | \$400.00 | \$16,800 |
| 600 | Type PC2 | 42 | EA | \$500.00 | \$21,000 |
| 601 | Type PC3 | 42 | EA | \$600.00 | \$25,200 |
| 602 | Type RC1 | 72 | EA | \$300.00 | \$21,600 |
| 603 | Type RC2 | 31 | EA | \$300.00 | \$9,300 |
| 604 | Type RSH | 2 | EA | \$250.00 | \$500 |
| 605 | Type TR1 (Track) | 24 | LF | \$25.00 | \$600 |
| 606 | Type TH1/2 (Head) | 12 | EA | \$150.00 | \$1,800 |
| 607 | Exit sign (allow) | 50 | EA | \$200.00 | \$10,000 |
| 608 | Elevator pit light | 1 | EA | \$150.00 | \$150 |
| 609 | Lighting fixtures not shown at this scope level | 90,702 | SF | \$0.50 | \$45,351 |
| 610 | | , | 2. | ÷0.00 | \$0 |
| 611 | Single pole switch | 6 | EA | \$25.00 | \$150 |
| 612 | Automated/network lighting control system (Daylight Harvesting) | 90,702 | SF | \$1.00 | \$90,702 |
| 613 | LTS | 2 | | 85 | \$170 |
| 614 | Local switching/dimming station | 101 | EA | \$35.00 | \$3,535 |
| 615 | | 80 | EA | \$35.00 \$200.00 | \$16,000 |
| 616 | Occupancy sensor | 39 | EA | | \$7,800 |
| | Daylight sensor | | | \$200.00 \$25.00 | |
| 617 | Duplex receptacle | 191 | EA | \$25.00 | \$4,775 |



| Needham, | MA |
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| | | | | | 90,702 GSF |
|------------|--|----------|------|-------------|----------------------|
| | DESCRIPTION | QUANTITY | UNIT | UNIT COST | COST |
| | | | | | |
| 618 | Duplex receptacle (Tamper) | 42 | EA | \$35.00 | \$1,470 |
| 619 | Double duplex receptacle | 280 | EA | \$50.00 | \$14,000 |
| 620 | Double duplex receptacle (Tamper) | 70 | EA | \$70.00 | \$4,900 |
| 621 | GFI duplex receptacle | 39 | EA | \$41.00 | \$1,599 |
| 622 | GFI duplex receptacle (Tamper) | 69 | EA | \$75.00 | \$5,175 |
| 623 | Dishwasher feed, connection and switch | 1 | EA | \$150.00 | \$150 |
| 624 | Floor box | 10 | EA | \$300.00 | \$3,000 |
| 625 | Poke thru floor box | 189 | EA | \$400.00 | \$75,600 |
| 626 | Device plate | 700 | EA | \$5.00 | \$3,500 |
| 627 | Device box | 1,875 | EA | \$28.00 | \$52,500 |
| 628 | 3/4" EMT | 10,000 | LF | \$7.00 | \$70,000 |
| 629 | #12 THHN | 50,000 | LF | \$0.81 | \$40,500 |
| 630 | 12-2 MC cable | 21,000 | LF | \$4.10 | \$86,100 |
| 631 | 12-3 MC cable | 6,500 | LF | \$4.85 | \$31,525 |
| 632 | | | | | \$0 |
| 633 | Fire Alarm | | | | \$0 |
| 634 | Fire alarm control panel | 1 | EA | \$12,000.00 | \$12,000 |
| 635 | Terminal cabinet | 5 | EA | \$1,000.00 | \$5,000 |
| 636 | LCD annunciator | 1 | EA | \$1,500.00 | \$1,500 |
| 637 | Graphic map | 1 | EA | \$650.00 | \$650 |
| 638 | Digital dialer | 1 | EA | \$850.00 | \$850 |
| 639 | Exterior beacon | 1 | EA | \$175.00 | \$175 |
| 640 | Knox box | 1 | EA | \$600.00 | \$600 |
| 641 | Drill switch | 1 | EA | \$200.00 | \$200 |
| 642 | Initiating device | 118 | EA | \$140.00 | \$16,520 |
| 643 | CO detector | 4 | EA | \$140.00 | \$560 |
| 644 | Ductsmoke detector, allow | 2 | EA | \$450.00 | \$900 |
| 645 | Audio/visual device | 120 | EA | \$115.00 | \$13,800 |
| 646 | Visual device | 39 | EA | \$105.00 | \$4,095 |
| 647 | Remote alarm indicator | 8 | EA | \$95.00 | \$760 |
| 648 | Elevator recall connection | 1 | EA | \$180.00 | \$180 |
| 649 | Monitoring/control module | 25 | EA | \$140.00 | \$3,500 |
| 650 | Stopper II cover (allow) | 6 | EA | \$150.00 | \$900 |
| 651 | Wire guard | 4 | EA | \$85.00 | \$340 |
| 652 | | 320 | EA | \$25.00 | \$8,000 |
| 653 | 3/4" EMT | 9,600 | LF | \$7.00 | \$67,200 |
| 654 | FA cable | 15,500 | LF | \$1.50 | \$23,250 |
| 655 | Testing and programming | 1 | LS | \$4,000.00 | \$4,000 \$0 |
| 656 | | | | | \$0 \$0 |
| 657 | Public Safety Radio Distributed Antenna System | | | | \$0 \$25,000 |
| 658 | DAS antenna system | 1 | ls | \$35,000.00 | \$35,000 \$45,000 |
| 659 | Two way communication (Elevator) | 1 | ls | \$15,000.00 | \$15,000 ۳۵ |
| 660 661 | Talanhana/Data/CAT)/ | | | | \$0 \$0 |
| 661 | Telephone/Data/CATV | | | | \$0 |

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|-----|--|----------|------|-----------------|---------------------------|
| | Needham Hillside School a | | | | |
| | BUILDING DETAILS | | | | Needham, MA |
| | DESCRIPTION | QUANTITY | UNIT | UNIT COST | 90,702 GSF COST |
| | | QUAITIT | UNIT | | 0001 |
| 662 | Rough In | | | | \$0 |
| 663 | Device box, conduit stub to ceiling and cable tray | 90,702 | SF | \$0.80 | \$72,562 |
| 664 | Devices and cabling | 90,702 | SF | \$1.60 | \$145,123 |
| 665 | Grounding | 1 | LS | \$1,000.00 | \$1,000 |
| 666 | MDF Server room fit out | 1 | EA | \$10,000.00 | \$10,000 |
| 667 | IDF fit out | 1 | EA | \$6,500.00 | \$6,500 |
| 668 | | | | . , | \$0 |
| 669 | Master Clock/Public Address System | | | | \$0 |
| 670 | Wireless master clock system head-end | 1 | LS | \$25,000.00 | \$25,000 |
| 671 | Clocks, speakers and cabling | 90,702 | LS | \$0.80 | \$72,562 |
| 672 | Speech reinforcement system, Classroom (allow) | 24 | EA | \$2,200.00 | \$52,800 |
| 673 | | | | ÷ , | \$0 |
| 674 | Audio/Visual Systems | | | | \$0 |
| 675 | Cafeteria AV system, rough-in only | 1 | EA | \$3,500.00 | \$3,500 |
| 676 | Cafeteria Sound system | 1 | EA | \$15,000.00 | \$15,000 |
| 677 | Gymnasium AV system, rough-in only | 1 | LS | \$3,500.00 | \$3,500 |
| 678 | Gymnasium Sound system | 1 | EA | \$20,000.00 | \$20,000 |
| 679 | Media Center/ AV distribution system rough-in only | 1 | EA | \$2,500.00 | \$2,500 |
| 680 | Media Center Sound System | 1 | EA | \$10,000.00 | \$10,000 |
| 681 | Music room/ AV distribution system rough-in only | 1 | EA | \$2,500.00 | \$2,500 |
| 682 | | | | | |
| 683 | Security System | | | | |
| 684 | Security system head-end | 1 | LS | \$20,000.00 | \$20,000 |
| 685 | CCTV cameras, card readers, door contacts, | 90,702 | SF | \$2.00 | \$181,404 |
| 686 | detectors and cabling | | | | |
| 687 | | | | | |
| 688 | Gymnasium Equipment | | | | |
| 689 | Scoreboard with control and shot clock | 1 | LS | \$12,000.00 | \$12,000 |
| 690 | Motorized backstop recp. feed and connection | 6 | EA | \$1,500.00 | \$9,000 |
| 691 | Motorized curtain feed and connection | 1 | EA | \$1,500.00 | \$1,500 |
| 692 | Projector screen feed, connections and controllers | 1 | EA | \$750.00 | \$750 |
| 693 | | | | | |
| 694 | Cafeteria | | | | |
| 695 | Projector screen feed, connections and controllers | 1 | EA | \$750.00 | \$750 |
| 696 | | | | | |
| 697 | Lightning Protection | | | | |
| 698 | Lightning protection | 1 | LS | \$35,000.00 | \$35,000 |
| 699 | | | | | |
| 700 | Photovoltaic System | | | | |
| 701 | Photovoltaic system, provisions only per spec | 1 | LS | \$5,000.00 | \$5,000 |
| 702 | | | | | |
| 703 | Reimbursable | | | | |
| 704 | Fees & Permits | 1 | LS | \$50,000.00 | \$50,000 |
| 705 | Seismic restraints | 1 | LS | \$10,000.00 | \$10,000 |
| | | | | | |



| | BUILDING DETAILS Neednam Hillside School at Central Ave | | | | | Needham, MA |
|------------|---|------------|----------|----|-----------------------|----------------------|
| | | | | | | 90,702 GSF |
| | DESCRIPTION | QUANTITY | UNIT | U | INIT COST | COST |
| 706 | Coordination & management | 1 | LS | | \$50,000.00 | \$50,000 |
| 707 | Coordination study and testing | 1 | LS | | \$5,000.00 | \$5,000 |
| 708 | Identification | 1 | LS | | \$2,500.00 | \$2,500 |
| 709 | Fire stopping | 1 | LS | | \$5,000.00 | \$5,000 |
| 710 | Temporary power & lights | 1 | LS | | \$40,000.00 | \$40,000 |
| 711 | | | | | | |
| 712 | SITE ELECTRICAL | | | | | |
| 713 | Utility Ductbanks and Service | | | | | |
| 714 | Utility Co. charges (allow) | 1 | LS | \$ | 30,000.00 | \$30,000 |
| 715 | Power riser pole | 1 | LS | \$ | 1,500.00 | \$1,500 |
| 716 | Primary overhead by Utility Company | | | | | By Utility co. |
| 717 | Primary service ductbank 2-5" conduits concrete encased | 450 | LF | | \$153.00 | \$68,850 |
| 718 | Manhole | 1 | EA | \$ | 8,500.00 | \$8,500 |
| 719 | Transformer by Utility Company | 1 | EA | | | By Utility co. |
| 720 | Transformer pad | 1 | EA | | \$2,500.00 | \$2,500 |
| 721 | 2000A secondary service ductbank | 70 | LF | | \$450.00 | \$31,500 |
| 722 | | | | | | |
| 723 | Emergency Generator Ductbank | | | | | |
| 724 | 400A feed | 40 | LF | | \$150.00 | \$6,000 |
| 725 | 100A feed | 40 | LF | | \$25.00 | \$1,000 |
| 726 | Control wiring | 40 | LF | | \$10.00 | \$400 |
| 727 | Communications Dusthand Comiss | | | | | |
| 728 | Communications Ductbank and Service | | Γ. | | ¢4 500 00 | ¢4 гоо |
| 729 730 | Pole riser | 1 | EA | ۴ | \$1,500.00 | \$1,500 \$25,500 |
| | Manhole | 3 | EA | \$ | 8,500.00 | \$25,500 |
| 731 732 | Communication service ductbank 4-4" conduits concrete encased | 320 | LF | | \$120.00 | \$38,400 |
| 732 | Site Security System | | | | | |
| 734 | Site Security System | 6 | | | ¢0,000,00 | \$12,000 |
| 735 | Camera WP (Mounted on light pole) allow Circuitry | 6 1,000 | EA LF | | \$2,000.00 \$15.00 | \$12,000 \$15,000 |
| 736 | Circuity | 1,000 | LI | | φ13.00 | φ13,000 |
| 737 | Site Lighting | | | | | |
| 738 | Pole light (single head) | 23 | EA | | \$2,250.00 | \$51,750 |
| 739 | Pole light (double head) | 6 | EA | | \$2,250.00 | \$13,500 |
| 740 | Pole base | 29 | EA | | \$350.00 | \$10,150 |
| 741 | Site lighting circuitry | 2000 | LF | | \$12.50 | \$25,000 |
| 742 | Exterior building lighting | 1 | LS | | \$30,000.00 | \$30,000 |
| 743 | | • | L0 | | ψ30,000.00 | ψ30,000 |
| 744 | D50 ELECTRICAL TOTAL | | | | | \$3,199,453 |
| 745 | | | | | | |
| 746 | | _ | | | | |
| 747 | E10 EQUIPMENT | | | | | |
| 748 | | | | | | |



| Needham, MA |
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| | | | | | 90,702 GSF |
|-----|---|----------|------|--------------|-------------|
| | DESCRIPTION | QUANTITY | UNIT | UNIT COST | COST |
| | | | | | |
| 750 | Gymnasium equipment | | | \$72,150.00 | |
| 751 | Electronic scoreboard | 1 | EA | \$7,500.00 | \$7,500 |
| 752 | Shot clock/shot timer | 1 | EA | \$1,250.00 | \$1,250 |
| 753 | Cargo net | 1 | LS | \$2,500.00 | \$2,500 |
| 754 | Pull up bar | 1 | EA | \$850.00 | \$850 |
| 755 | Gym pads | 1 | LS | \$5,000.00 | \$5,000 |
| 756 | Pegged board vertical climber | 1 | EA | \$1,000.00 | \$1,000 |
| 757 | Vertical ladder | 1 | EA | \$550.00 | \$550 |
| 758 | Rope hoist | 1 | EA | \$500.00 | \$500 |
| 759 | Overhead mounted folding backstop w/glass backboard | 2 | EA | \$6,500.00 | \$13,000 |
| 760 | Gym divider curtain | 1 | EA | \$35,000.00 | \$35,000 |
| 761 | Gym equipment controls-power touch | 1 | LS | \$5,000.00 | \$5,000 |
| 762 | Kitchen (Allowance per SD design manual) | 1 | AL | \$358,445.00 | \$358,445 |
| 763 | Occupational euipment | 1 | EA | \$2,000.00 | \$2,000 |
| 764 | Theatrical drapes | 1 | AL | \$35,000.00 | \$35,000 |
| 765 | E10 EQUIPMENT TOTAL | | | | \$467,595 |
| 766 | | | | | |
| | | _ | | | |
| 768 | E20 FURNISHINGS | | | | |
| 769 | | | | | |
| 770 | E2010 FIXED FURNISHINGS | | | | |
| 771 | Millwork, casework, standing and running trim, misc. metals | | | | |
| 772 | Cabinets - Adjustable large Instrument Storage | 12 | LF | \$400.00 | \$4,800 |
| 773 | Cabinets - Base Cabinets | 474 | LF | \$200.00 | \$94,800 |

| 773 | Cabinets - Base Cabinets | 474 | LF | \$200.00 | \$94,800 | |
|-----|---|-------|----|----------|----------|--|
| 774 | Countertops - Base Cabinets | 474 | LF | \$200.00 | \$94,800 | |
| 775 | Cabinets - Base Cabinets - Cubied and Open | 280 | LF | \$300.00 | \$84,000 | |
| 776 | Cabinets - Circulation Desk | 19 | LF | \$650.00 | \$12,350 | |
| 777 | Countertops - Circulation Desk | 19 | LF | \$650.00 | \$12,350 | |
| 778 | Cabinets - Play Structure | 48 | LF | \$500.00 | \$24,000 | |
| 779 | Cabinets - Reception Desk transaction top | 35 | LF | \$650.00 | \$22,750 | |
| 780 | Countertops - Reception Desk transactiontop | 35 | LF | \$650.00 | \$22,750 | |
| 781 | Cabinets - Reception Desk w/ Base Cabinets | 55 | LF | \$650.00 | \$35,750 | |
| 782 | Countertops - Reception Desk w/ Cabinets | 110 | LF | \$650.00 | \$71,500 | |
| 783 | Cabinets - Tall Wardrobe | 46 | LF | \$300.00 | \$13,800 | |
| 784 | Cabinets - Wall Cabinets | 276 | LF | \$200.00 | \$55,200 | |
| 785 | Cabinets - Work Tops | 75 | LF | \$250.00 | \$18,750 | |
| 786 | Shelves - 2 level adjustable | 100 | LF | \$35.00 | \$3,500 | |
| 787 | Shelves - Adjustable 1'9" wide | 1,407 | LF | \$25.00 | \$35,175 | |
| 788 | | | | | | |
| 789 | Millwork - Picture Rail | 154 | LF | \$15.00 | \$2,310 | |
| 790 | Casework - Open Sotrage Units (Locker(ish) 7'hx1.5' | 288 | LF | \$300.00 | \$86,400 | |
| 791 | Millwork - Sliding Doors 3070 per leaf Marker Surface | 303 | LF | \$150.00 | \$45,450 | |
| 792 | Millwork - Window Sills | 675 | LF | \$25.00 | \$16,875 | |
| 793 | Millwork - Dual Sided Display Case (Art) | 33 | LF | \$350.00 | \$11,550 | |
| | | | | | | |



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| | | Needha | m Hillside Schoo | ol at Central Ave |
|---|----------|--------|------------------|-------------------|
| BUILDING DETAILS | | | | Needham, MA |
| | | | | 90,702 GSF |
| DESCRIPTION | QUANTITY | UNIT | UNIT COST | COST |
| | | | | |
| Millwork - @ APE Rm 134 Allowance??? | 1 | LF | \$300.00 | \$300 |
| Millwork - Ballet Bar | 18 | LF | \$25.00 | \$450 |
| Millwork - Bench | 36 | LF | \$175.00 | \$6,300 |
| Millwork - Display case | 17 | LF | \$350.00 | \$5,950 |
| Millwork - teacher Mailboxes | 8 | LF | \$150.00 | \$1,200 |
| Commerative plaque | 2 | LOC | \$1,500.00 | \$3,000 |
| Dimensional characters; School name | 1 | AL | \$5,000.00 | \$5,000 |
| Plastic panel signs for room identification, way finding, hazard identification | 1 | AL | \$25,000.00 | \$25,000 |
| Miscellaneous signage | 90,702 | GSF | \$0.20 | \$18,140 |
| Other furnishing items | 1 | AL | \$65,000.00 | \$65,000 |
| Window treatment | 1,435 | SF | \$6.50 | \$9,328 |
| Shades in interior glazing | 150 | SF | \$5.00 | \$750 |
| E20 FURNISHINGS TOTAL | | | | \$909,278 |
| | | | | |
| | | | | |
| F10 SPECIAL CONSTRUCTION | | | | |
| | | | | |
| No anticipated work | | | | |
| | | | | |
| F10 SPECIAL CONSTRUCTION TOTAL | | | | \$0 |
| | | | | |
| F20 SELECTIVE BUILDING DEMOLITION | | | | |
| | | | | |
| F2010 BUILDING DEMOLITION | | | | |
| Building demolition | | | | See Sitework |

Building demolition F2010 BUILDING DEMOLITION TOTAL

F20 SELECTIVE BUILDING DEMOLITION TOTAL

TOTAL TO SUMMARY \$27,893,176

\$0

\$0

UPDATED DESIGN WORK PLAN

Project Directory

The Project Directory that follows includes revisions made to the Design Team after the submission of the PSR. These changes were documented in a letters to the OPM, presented to the PPBC for acceptance and submitted to the MSBA for documentation of the change. The revisions include the change of Landscape Architect, from Copley Wolff to Brown Sardina, and the exclusive use of HML as the Geotehnical Engineer and LSP. The original proposal included Comprehensive Environmental, Inc. as the LSP due to their extensive knowledge of the environmental issues that exist on the current Hillside site. When the preferred site was chosen it was determined that HML acting as the LSP and Geotechnical Engineer would be more cost effective and meet the project needs.

On April 26, 2016 the School Committee voted in a new Committee Chair, Assistant Chair, Secretary, and new members. Susan Neckes replaced Connie Barr as Committee Chair, and Heidi Black replaced Susan Neckes as the Assistant Chair. Both Ms. Neckes and Ms. Black have served as School Committee representatives for the Hillside School project and have an in-depth knowledge of the project.

Roles & Responsibilities

There have been no changes to the Roles & Responsibilities of the Design Team or the Owner's Project Mangers Team since the start of the Feasibility Study. Daedalus Project Inc, the OPM's cost estimating consultant, has taken a more active role during the schematic design process and participated in cost estimating services and reconciliation with the Designer's cost estimator PM&C.

Communications & Document Control Procedures

Communication between the Designer and the Owner is made through the OPM to either the Design Principal or Project Manager. Communication is often in writing and copied to other team members as needed. Design Documents are reviewed both in-house and by the OPM prior to presentation to the Owner and the general public.

Designer's Work Plan

The following attachments include an updated Designer's Work Plan.

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| NEEDHAM - HILLSIDE ELEMENTARY SCHOOL | Projected Weeks | d Weeks | | Completion JUNE | | | | | JULY | | | AU | IGUST | SEPTEMBER | | | | OCTOBER | | | NOVEMBER | | |
|---|-----------------|----------|--------------------|-----------------|-----------------|------------|------------|----------|----------------|-------------|------------|----------|-------------------|----------------|--------------|---------------|------------|------------------|----------|----------|----------|----------|---------|
| | | | | 06/03/16 | 06/10/16 06/17/ | 16 06/24/1 | 6 07/01/16 | 07/08/16 | 07/15/16 07/22 | /16 07/29/* | 6 08/05/16 | 08/12/16 | 08/19/16 08/26/16 | 09/02/16 09/09 | /16 09/16/16 | 6 09/23/16 09 | /30/16 10/ | 0/07/16 10/14/16 | 10/21/16 | 10/28/16 | 11/04/16 | 11/11/16 | 11/18/1 |
| Schematic Design | | 01/27/16 | 07/20/16 | | | | | | | | | | | | | | | | | | | | |
| 4.1 Schematic Design Submittal | | | 06/02/16 | 6/2 | | | | | | | | | | | | | | | | | | | |
| 4.2 Review and Approval of SD Submittal | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | ••• | | | | | | | | | | | | | | | | | | | |
| 4.2.1 MSBA Staff review respose to district questions | | | 06/14/16 | | | | | | | | | | | | | | | | | | | | |
| 4.2.2 Facilities Assessment Subcommittee Review - if requi | ired | | 6/15/16 or 6/29/16 | 6 | 6/15 | | 6/29 | | | | | | | | | | | | | | | | - |
| 4.2.3 Project Scope and Budget Conference | | | 07/00/40 | | | | | | 7/2 | | | | | | | | | | | | | | |
| 4.2.4 MSBA Board Approval | | | 07/20/16 | | | | | | | | | | | | | | | | | | | | |
| 4.3 Conclusion of Module 4 | | | 07/20/16 | | | | | | | | | | | | | | | | | | | | |
| Project Funding | | | | | | | | | | | | | | | | | | | | | | | |
| | | 07/21/16 | 11/18/16 | | | | | | | | | | | | | | | | | | | | |
| 5.1 Project Scope and Budget Agreement | | | | | | | | | | | | | | | | | | | | | | | |
| E 2 Local Authorization and Einsteid Surgest (400 down) | | | | - | | | | | | | | | | | | | | | | | | | |
| 5.2 Local Authorization and Finacial Support (120 days) Special Town Meeting | | 10/24/16 | 10/26/16 | | | | | | | | | | | | | | | | | | | | 1 |
| | | | | | | | | | | | | | | | | | | | | | | | |
| 5.3 Project Funding Agreement | | 11/08/16 | 11/18/16 | | I | | | | | | | | | | | | | | | | | | |
| 5.4 ProPay System Budget Update | | | | | | | | | | | | | | | | | | | | | | | |
| 5.5 Conclusion of Module 5 | | | 11/18/16 | | | | | | - | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | |
| Detailed Design | | 11/19/16 | 12/01/17 | | | | | | | | | | | | | | | | | | | | 4 |
| 6.1 Design Development Documents | | 11/19/16 | 08/15/17 | | | | | | | | | | | | | | | | | | | | - |
| Coordination with AHJs | | | | | | | | | | | | | | | | | | | | | | | |
| Document Development List of Proprietary items | | | | | | | | | | | | | | | | | | | | | | | |
| Project Sign | | | | | | | | | | | | | | | | | | | | | | | |
| MSBA Response | | | | | | | | | | | | | | | | | | | | | | | |
| 6.2 Local Authorization and Finacial Support (120 days) | | | | | | | | | | | | | | | | | | | | | | | |
| Special Town Meeting | | 10/24/16 | 10/26/16 | | | | | | | | | | | | | | | | | | | | |
| 6.3 60% Documents | | 10/27/16 | 08/15/17 | | | | | | | | | | | | | | | | | | | | |
| Construction Cost Estimates | | | | | | | | | | | | | | | | | | | | | | | |
| Value Engineering Recommendations Projec Budget Update | | | | | | | | | | | | | | | | | | | | | | | |
| Project Schedule Update | | | | | | | | | | | | | | | | | | | | | | | |
| Work Plan Update | | | | | | | | | | | | | | | | | | | | | | | |
| Permitting Assessment Updated Space Summary | | | | | | | | | | | | | | | | | | | | | | | - |
| Design Narratives | | | | | | | | | | | | | | | | | | | | | | | |
| Interior Color Board Interior Elevations | | | | | | | | | | | | | | | | | | | | | | | |
| Updated Code Analysis | | | | | | | | | | | | | | | | | | | | | | | |
| Updated Specifications Updated Design Documents (all trades) | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | |
| 6.4 90% Documents Updated Work Plan | | 08/17/17 | 12/06/17 | | | | | | | | | | | | | _ | [| | | | | | |
| Updated Permitting Schedules | | | | | | | | | | | | | | | | | | | | | | | |
| Structural & Energy Calculations | | | | | | | | | | | | | | | | | | | | | | | |
| Project Schedule Update Updated Space Summary | | | | | | | | | | | | | | | | | | | | | | | |
| Updated Code Analysis | | | | | | | | | | | | | | | | | | | | | | | |
| Updated Specifications Updated Design Documents (all trades) | - | | | | | | | | | | | | | | | | | | | | | | - |
| | | | | | | | | | | | | | | | | | | | | | | | |
| Bidding & Procurement | | | 05/15/18 | | | | | | | | | | | | | | | | | | | | |
| Construction | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 09/02/20 | | | | | | | | | | | | | | | | | | | | |

28 Glen Gary Needham, MA Dore and Whittier Project No.: 15-704

| Title | NAME | PHONE / E-MAIL | FAX |
|-----------------------------------|--|--|-----|
| MSBA | Executive Director Jack McCarthy, Executive Dir. 40 Broad Street, Suite 500 Boston, MA 02109 | 617-720-4466 | |
| | Project Manager Caulin Finch 40 Broad Street, Suite 500 Boston, MA 02109 | 617-720-4466 Caulen.Finch@MassSchoolBuildings.org | |
| | Project Coordinator Sarah Blache 40 Broad Street, Suite 500 Boston, MA 02109 | 617-720-4466 Sarah.Blache@MassSchoolBuildings.org | |
| Owner Town of Needham | Town Manager Kate Fitzpatrick 1471 Highland Ave Needham, MA 02492 | 781-455-7500 x204 kfitzpatrick@NeedhamMa.gov | |
| | Assit. Town Manger Dave Davison 1471 Highland Ave Needham, MA 02492 | 781-455-7500 x220 ddavison@needhamma.gov | |
| Owner School Department | Supt. Of Schools Dr. Dan Gutekanst, Administration Office 1330 Highland Ave Needham, MA 02492 | 781-455-0400 x203 dan_gutekanst@needham.k12.ma.us | |
| | Administrative Assistant Joyce Wiggins Administration Office 1330 Highland Ave Needham, MA 02492 | 781-455-0400 x203 Joyce_Wiggins@needham.k12.ma.us | |
| | Director of Financial Operations Anne Gulati Administration Office 1330 Highland Ave Needham, MA 02492 | 781-455-0400 x203 Anne_Gulati@needham.k12.ma.us | |

28 Glen Gary Needham, MA Dore and Whittier Project No.: 15-704

| Title | NAME | PHONE / E-MAIL | FAX |
|--|---|--|-----|
| | Student Support Services Director Mary Lammi Administration Office 1330 Highland Ave Needham, MA 02492 | 781-455-0400 x213 Mary_Lammi@needham.k12.ma.us | |
| | Director of Human Resources Thomas Campbell Administration Office 1330 Highland Ave Needham, MA 02492 | 781-455-0400 x209 Tom_Campbell@needham.k12.ma.us | |
| Owner Permanent Public Building Committee (PPBC) | PPBC Chair George Kent 500 Dedham Ave Needham, MA 02492 | g.kent@neu.edu | |
| | PPBC Members Stuart Chandler Natasha Espada Peter Schneider Paul Salamone Roy Schifilliti Irwin Silverstein | stuartc27@Gmail.com nespada@aol.com salamone123@verizon.net slamonep@wit.edu schifilliti@gmail.com isilverstein2@verizon.net | |
| Owner School Committee | School Committee Chair Connie Barr 205 Edgewater Drive Needham, MA 02492 | 781-444-4645 Connie_Barr@needham.k12.ma.us | |
| | School Committee Members Susan Neckes Heidi Black Michael Greis Kim Marie Nichols Aaron Pressman | Susan_Neckes@needham.k12.ma.us Heidi_Black@needham.k12.ma.us Michael_Greis@needham.k12.ma.us Kim_Marie_Nicols@needham.k12. ma.us Aaron_Pressman@needham.k12.ma. us | |

28 Glen Gary Needham, MA Dore and Whittier Project No.: 15-704

| Title | NAME | PHONE / E-MAIL | FAX |
|---------------------------------------|---|--|--------------|
| | | | |
| Owner Building Committee | Den Gutekanst Michael Kascak Jessica Downey | | |
| Working Group | Chanit List Heather Drummett Rob Tatro | | |
| | Liz Hitron Donna Demaria Mary Lammi | | |
| Owner's PM | Needham Public Facilities Department. | | |
| | Director of Design & Construction Steve Popper 500 Dedham Ave Needham, MA 02492 | 781-455-7550 x 315 spopper@needhamma.gov | |
| | Senior Project Manager Hank Haff 500 Dedham Ave Needham, MA 02492 | 781-455-7550 x 347 hhaff@needhamma.gov | |
| | Administrative Assistant Kathryn Copley 500 Dedham Ave Needham, MA 02492 | 781-455-7550 x 314 <u>kcopley@needhamma.gov</u> | |
| | | | |
| Architect | Dore & Whittier Architects, Inc. 260 Merrimac St. Build #7 Newburyport, MA 01950 | 978-499-2999 | 978-499-2944 |
| | Don Walter, Principal in Charge | 978-590-8306 (c) <u>dwalter@doreandwhittier.com</u> | |
| | Michele Barbaro Rogers, Project Manager | 978-360-4019 (c) mrogers@doreandwhittier.com | |
| | Jason Boone, Educational Planner | jboone@doreandwhittier.com | |
| | Emily Rae, Assistant Project Manager | erae@doreandwhittier.com | |

28 Glen Gary Needham, MA Dore and Whittier Project No.: 15-704

| Title | NAME | PHONE / E-MAIL | FAX |
|-------------------------------|--|--|--------------|
| | 1 | | |
| Construction Manager | TBD | | |
| Structural Engineers | Engineers Design Group, Inc. 350 Main Street 2 nd Floor Malden, MA 02115 | 781-396-9007 | 781-396-9008 |
| | Mehul Dhruv, P.E | mdhruv@edginc.com | |
| MEP / FP | Garcia Galuska DeSousa, Inc 370 Faunce Corner Road Dartmouth, MA 02747 | 508-998-5700 | 508-998-0883 |
| Mechanical/ | Dominick Puniello | dom_puniello@g-g-d.com | |
| Electrical/ | Carlos DeSousa | carlos_desousa@g-g-d.com | |
| Plumbing & Fire Protection | Christopher M Garcia | <u>chris_garcia@g-g-d.com</u> | |
| Hazardous Materials | Universal Environmental Consultants 12 Brewster Rd. Framingham MA 01702 | 508.628.5486 | 508-628-5488 |
| | Ammar Dieb - President | 617-984-9772 (c) <u>adieb@uec-env.com</u> | |
| Landscape | Copley Wolff 160 Boylston St 2 nd Floor Boston, MA 02116 | 617-654-9000 | 617-654-9002 |
| | Sean Sanger | ssanger@copley-wolff.com | |
| Site/Civil Engineers | Nitsch Engineering 2 Center Plaza Suite 430 Boston, MA 02108 | 617-338-0063 | 617-338-6472 |
| | Sandra Broch | sbroch@nitscheng.com | |

28 Glen Gary Needham, MA Dore and Whittier Project No.: 15-704

| Title | NAME | PHONE / E-MAIL | FAX |
|--------------------------------------|--|--|--------------|
| Data, Communications. Security | Edvance Technology Design 300 Brickstone Sq. Suite 201 North Andover, MA 01810 | 978-256-9900 | 978-560-1771 |
| | Scott Goodrich, Principal Douglas Faria, Principal | sgoodrich@edvancetech.com dfaria@edvancetech.com | |
| Sustainable Design | The Green Engineer Inc 54 Junction Square Drive Concord, MA 01742 Chris Schaffner, PE | 978-369-8978 978-844-1464 (c) <u>chris@greenengineer.com</u> | 781-240-8003 |
| | Erik Ruoff, LEED Matt Smith | 617-694-7681 (c) <u>Erik@greenengineer.com</u> 857-205-9499 (c) <u>Matt@greenengineer.com</u> | |
| Kitchen Equip | Crabtree McGrath Associates 161 West Main St. Georgetown, MA 01833 | 978-352-8500 | 978-352-8588 |
| | John Sousa, Principal | 401-996-9627 (c) jsousa@crabtree-mcgrath.com | |
| Geotechnical Engineer | HML 19 Rockwood Road Hingham, MA 02043 | 781-740- 9999 | |
| | Nick Lanney | 781-799-7241(c) nick.hml@comcast.net | |
| Cost Estimating | PM&C 59 South St. Hingham, MA 02043 | 781-740-8007 | 781-740-1012 |
| | Peter Bradley | peterbradley@pmc-ma.com | |

PROJECT SCHEDULE

Project Schedule Overview

The Hillside Elementary School project continues to progress according to the broad timeline identified during the PDP and PSR stages of the project. This Schematic Design report is being submitted to the MSBA on June 2, 2016 in anticipation of the July 20, 2016 MSBA Board meeting. With the MSBA approval the Town and the District will then work together to prepare the Warrant Articles for the October 2016 Special Town Meeting and the ballot override question for the November general election. The Schematic Design and the project Scope and Budget Agreement will provide the various Town Boards and Committees with the details necessary to prepare the documents needed for Town Meeting members and voters to approve funding for the project, completing the Module 5 MSBA requirements. The acquisition of the final piece of property at 609 Central Ave is anticipated to close in early August 2016. The site preparation, hazardous material removal and demolition of existing buildings on the Central Ave site is in process and should be complete by December 2016.

Design Development (DD)

The project schedule initiates DD in December 2016 for the duration of five months. During this stage the Design team and OPM will refine the design and conduct additional geotechnical testing. They will also provide project updates to the various local boards and committees for informal discussion about building design, site layout, planning, conservation, traffic and related issues, so that the DD drawing can be refined in accordance with the local, state and federal regulation. An early May 2017 DD submission to the MSBA is anticipated, with the requisite review and approval by the MSBA staff of DD during that month.

Construction Documents (CD)

In early June 2017 the design team will initiate Construction Documents. During the seven month CD period the OPM and design team will assist the PPBC in the Prequalification process for the General Contractors and Filed Sub-Contractors. With 60% CD completion by August 2017 the team will initiate the local permitting process with the Design Review Board, Planning Board, Conservation Commission, so that these approvals are in place prior to bidding the project. 90% CD submittals to the MSBA are anticipated in early January 2018.

Bidding

By February 2018 the team will be able to issue the Filed Sub-Bid Documents for receipt in March of 2018. Solicitation of General Contractor bids from prequalified firms will occur during the month of April with notice to MSBA by the end of the month and anticipated award of contract by May 2018.

PROJECT SCHEDULE

Construction

A 24-month construction schedule is projected, starting in early June 2018 and finishing at the end of May 2020. The majority of the building construction should be complete within a 20-month period allowing four months for final sitework, IT and systems setup, LEED documentation and building commissioning. This will provide the three months of June, July and August to move in the furnishings, setup the classrooms and orient the Hillside staff to the new building. In September 2020 the students, who are now kindergarteners at Hillside will enter their new school as fifth graders.

Project Closeout

The final LEED –Silver certification could extend six months to a year beyond opening. Final project accounting, warranty issues, enhanced training typically requires 1-4 months to finalize. The OPM, town and district will coordinate with the MSBA staff through the final audit process to achieve project closeout during FY 2020-2021.

| SCHEMATIC DESIGN - PROJE | | | |
|---|------------------------------|---|---|
| Hillside Elementary School | Project P | ermitting & Construction Schedule | |
| Public Facilities - Construction | PPBC | Update - 05/17/2016 | |
| Needham, MA Calendar Yea | r | 2015 2016 | <u>2017</u> 201820192020 |
| Fiscal Yea | | rish Duration Jan Feb Mar Apr May Jun Jul Aug Sep Oct Novi Deci Jan Feh Mar Apr May Jun Jul Aug Sep Oct Novi Dec | Y17 FY18 FY19 FY20 FY21 C Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov FY21 |
| | | | |
| New Elementary School at Central Ave | | 3 months DSB | |
| Designer Selection Feasibility Study / Schematic | Apr-15 Ju | n-16 15 months | |
| Preliminary Design Program (PDP) | | 3/15 6 months PDP | |
| Development Review Team (DRT) review | | DRT | |
| Planning Board (Informa Conservation Commission (Informa | | PB P | |
| Preferred Schematic Report (PSR) | | 1/16 3 months PSR | |
| Facilities Assessment Sub-Comm | | 3/16 4 weeks 16 13 | |
| Address MSBA PSR comment MSBA Board Meeting | | 5/16 2 weeks 27 7/16 7 weeks 27 | |
| Schematic Design (SD) | 12/1/16 1/2 1/28/15 | 5 months Schematic Design | |
| Mass Historical Commission | | 8/16 1 month MHC | |
| Letter of Map Agreement (LOMA) - FEMA review | | | |
| DRT review Planning Board (Informal | - in the second | 3/16 1 week DRT 9/16 2 weeks PB DRT | ┢╌┼╼┼╌┼╼┼╌┼╌┼╌┼╌┼╌╎╴╎╴╎╴╎╴┥╴┥╴┥╴┥╴┥╴┥╴┥╴┥╴┥╴┥╴┥╴┥ |
| Conservation Commission (Demo NOI) |) 3/7/16 3/2 | 4/16 3 weeks CC | |
| Purchase Property (note#1 | | V16 Target date | |
| ATM- Transfer & STM - Purchase of 609 Centra Phase I: Site Preparation | | | |
| Phase II: Building Demolition | 6/23/16 11/3 | 10/16 2 months Bid Demo Bulldings | |
| MSBA review of DESE submittal | | 1 week 9 4/16 6 weeks 9 14 | |
| DESE Review and Approva Schematic Design Submittal to MSBA | | /16 1 day 2 | |
| MSBA Review of Scope and Budge | | /16 4 weeks 2 7 | |
| PPBC & SC Mtgs to approve S&E | | | |
| BOS Meeting to Approve S&E MSBA Board Meeting | | | |
| Submit Ballot question to Sec. of State | 8/3/16 8/3 | | |
| Special Town Meeting | 10/24/16 10/2 | | |
| Override Ballot Question Project Funding Agreement | | 3/16 Nat. Elect. 8 Loc 0/16 TBD 30 30 30 | al ballot with National Election |
| Design Development | 11/0/10 11/3 | | Design Dev |
| Development Review Team review | | | |
| Design Review Board (DRB) Planning Board (Informal) | | | DRB |
| Conservation Commission - (informal) | and the second second | | |
| Design Development Submission to MSBA | | | |
| MSBA Review Address MSBA Review Comments | | | |
| Construction Documents | 5/25/27 5/2 | 8 months | Construction Documents |
| 60% Submittal to MSBA | [| | |
| MSBA 60% review Address MSBA Review Comments | | | |
| Prequalification of General Contractors | | | |
| Prequalification of Filed Subcontractors | 9/18/17 11/1 | 7/17 2 months | FSB |
| 60% Documents (Basis for Permits) Design Review Board (DRB) | 9/18/17 10/2 | /17 TBC | |
| Planning Application | 10/10/17 10/2 | 4/17 TBC | |
| Conservation Commission -NOI Prequalification of General Contractors | | | |
| Prequalification of General Contractors Pregualification of Filed Subcontractors | | | |
| 90% Submittal to MSBA | 9/6/17 12/6 | /17 13 weeks | |
| MSBA review of 90% | | | 3 |
| Address MSBA Review Comments Completion of Construction Docs | | | |
| Budget Reconciliation | | | |
| Bidding Documents / Procurement | 2/01/12 | 3.5 months | FSB & GC Bids |
| Filed Sub-Bids GC Bids | 2/21/18 3/14 2/21/18 3/28 | | |
| MSBA Agreement | 4/9/18 4/27 | /18 3 weeks | |
| Contract Award | 5/1/18 5/15 | | |
| Construction Start to Substantial Completion | 6/1/18 1/31 | 24 months 20 months <t< th=""><th>Image: Second state in the second s</th></t<> | Image: Second state in the second s |
| Final sitework & planting | 2/1/20 5/31 | | |
| . Commissioning | 2/1/20 5/31 | | Commissioning |
| Move into new School Admin & Teacher setup classrooms | 6/1/20 8/1/ 8/1/20 8/31 | | |
| Start of School | 9/2/ | | |
| Notes: | | | |
| 1) Land Purchase, Building Demolition and DE | P filing are funded i | n parallel to MSBA project funds. (Special Town Meeting -(STM-11/2/2015 - Article#13) | |

LOCAL ACTIONS AND APPROVALS

During Schematic Design Dore & Whittier and the Town of Needham's OPM met regularly with the Owner's Working Group and the Permanent Public Building Committee to discuss the project. The PPBC has held five (5) meetings regarding the Hillside Elementary School project since the January 27, 2016 MSBA Board of Directors approval for the District to proceed into Schematic Design. The design team also presented to the PPBC on January 11, 2016 (prior to the MSBA Board vote) to update the PPBC and the community of the PSR submission, the next steps, and the expectations regarding approval into the Schematic Design phase.

On May 24, 2016 the PPBC voted unanimously (8 : 0) to approve the submittal of the Schematic Design to the MSBA. The May 24th PPBC meeting was followed by a presentation to the Board of Selectmen who also unanimously endorsed the submittal of the Schematic Design to the MSBA. Copies of these meeting minutes, agendas, and the formal vote can be found on the following pages. Meeting minutes include a list of attendees and a description of the materials provided to the Committee. All presentations are open to the public and presentation materials are made available to the public for viewing on the Town's and School Department's websites. Also, the Board of Selectman's meetings and the School Committee meetings are broadcast on Needham's cable channel.

Prior to the meetings on May 24th the OPM and Design team presented to the School Committee on two occasions and received approval on May 17, 2016 from the School Committee for the submission of the Schematic Design to the MSBA. Copies of these meeting minutes and school committee material can be found on the Town's website. A presentation was also given to the Finance Committee on May 18, 2016.

Over a dozen User Group meetings were held with both large and small groups. These meetings were interactive and helped to guide the design team in the development of both the interior and exterior design of the building and site. Smaller focus group meetings included both the department heads and the daily users of each space. All spaces and room data sheets were reviewed, including but not limited to general classrooms, special education space, library, gym, cafeteria, kitchen, maintenance, and administration. Outdoor learning and play areas were reviewed with the District head of the Elementary Science Curriculum, the Hillside School Physical Education teacher and District Director of Physical Education, the Design Team Landscape Architect, School Principal, and Superintendent of Schools.

The development of the building massing, materials and elevations occurred through a series of meetings with the User Group, the Working Group, and representatives of the PPBC. Image boards

were presented to the groups for inspiration and discussion. Through a series of meetings, a collective building imagery developed and was later refined and presented to the PPBC, Design Review Board, and the Planning Board for discussion and input.

Police, Fire, Conservation Commission, Development Review Team, and other local boards were consulted throughout the schematic design process and recommendations are reflected in the Schematic Design documents. A summary of these and other meetings has been included in the following pages.

Local Actions & Approvals Certification Letter

A letter dated May 25,2016 addressed to Ms. Diane Sullivan and signed by Ms. Kate Fitzpatrick, Needham Town Manager; Dan Gutekanst, Superintendent of Schools; and Susan Neckes, Chair of the Needham School Committee can be found on the following page.



Office of the TOWN MANAGER

TOWN OF NEEDHAM TOWN HALL 1471 Highland Avenue Needham, MA 02492-2669

> TEL: (781) 455-7500 FAX: (781) 449-4569 TDD: (781) 455-7558

May 25, 2016

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

Dear Ms. Sullivan:

The Needham Permanent Public Building Committee (PPBC) which is the School Building Committee ("SBC") for this project has completed review of the Schematic Design Submittal for the Hillside Elementary School project and voted to approve and authorize the OPM to submit the Schematic Design related submittals to the MSBA for consideration on May 24, 2016. A certified copy of the PPBC meeting minutes, which includes the specific language of the vote and the number of votes in favor, opposed and abstained, are attached.

The PPBC held five (5) meetings regarding the Hillside Elementary School project since the MSBA Board of Directors approved the District to proceed into Schematic Design on January 27, 2016.

A summary of the PPBC meetings during this period is summarized in Attachment A, which includes the dates, times, locations of meetings as well as the topics discussed and members in attendance. The slide shows presented at each meeting as well as the meeting minutes are included in the Appendices of the Schematic Design materials.

In addition to the PPBC meetings listed above, the District held ten (10) other public meetings, which were posted in compliance with the Open Meeting Law, at which the Hillside Elementary School project was discussed.

A summary of the other public meetings held during the Schematic Design phase to discuss this project are summarized in Attachment B to this letter. The summary includes the meeting body, date, time and location of the meeting, as well as the topics discussed and members in attendance.

The meeting presentation materials, meeting minutes and summary materials as they relate to the Hillside Elementary School project are available locally for public review at the office of

Massachusetts School Building Authority

Module 4 – Schematic Design

- 4G-1 -

the Permanent Public Building Committee, 500 Dedham Ave, Needham MA as well as the Town of Needham Web site filed under the respective Committee or Board.

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 Steven Popper, PE, Director of Design & Construction also the Employee OPM for the Hillside Project 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: Kate Fitzpatrick

Title: Town Manager

Date: 5-24-2016

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: Dan Gutekanst

Title: Superintendent of Schools Date: $5 f \partial 5 | (Q$ 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.

Juna Veck

By: Susan Necke

Title: Chair of the School Committee

Date: 5,24.2016

Module 4 – Schematic Design

Certified Copy of the Permanent Public Building Committee Vote

A certified copy of the Permanent Public Building Committee's vote to approve the submission of the Schematic Design documents to the MSBA and copies of meeting agenda and meeting minutes follow this page. Meetings dates include:

- 11 January 2016 (prior to MSBA Board vote of 1/27/16)
- 22 February 2016
- 21 March 2016
- 27 April 2016
- 10 May 2016
- 24 May 2016

Permanent Public Building Committee Presentation Material

PPBC presentation material is included for the following meetings:

- 21 March 2016
- 27 April 2016



Public Facilities Department – Construction Permanent Public Building Committee Town of Needham 500 Dedham Avenue

Needham, MA 02492 781 455-7550 781 453-2510

VOTE BY: Permanent Public Building Committee (PPBC)

DATE: May 24, 2016

SUBJECT: Hillside Elementary School

Suggested Motion by the Chairman:

Motion: That the Permanent Public Building Committee approves the submission of the Hillside Elementary School – Schematic Design to the Massachusetts School Building Authority.

In Favor: <u>5</u> Opposed: <u>0</u>

Abstained:

 Present:

 PPBC Members:

 George Kent, Chairman

 Stuart Chandler

 Natasha Espada

 Paul Salamone

 Roy Schifilliti

 Abt

 Peter Schneider

 Irwin Silverstein

 User Group Representatives:

 Heidi Black

 Susan Neckes

Vote confirmed by the Chairman:

George Kent

Certified by the Town Clerk:

m 5/25/2016

Theodore Eaton

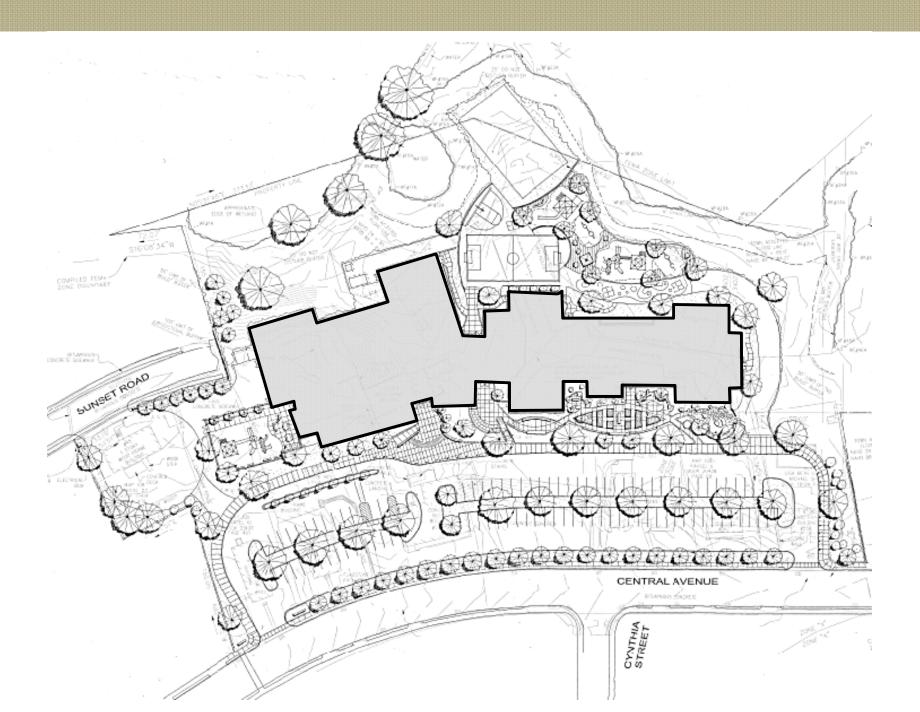
Date

HILLSIDE ELEMENTARY SCHOOL

TOWN OF NEEDHAM NEEDHAM, MASSACHUSETTS



PPBC PRESENTATION MARCH 21, 2015



a g e n d a

Project Overview

schedule to date building program

Building Site

location neighborhood context existing conditions unique site features

Proposed Plans

Site Plan / Dimensional Criteria Site Circulation Floor Plans

Proposed Building Imagery

Review of inspiration boards Proposed Building Elevations



project overview

3/15 Award of the Feasibility / Schematic Design Study

study of multiples sites, grade configurations, and building programs

12/15 Submission of the Feasibility Study noting Preferred Option

K-5 Elementary School located on the proposed Central Avenue Site

1/16 Began Schematic Design of the Preferred Option

purchase of the property building program development site design development building imagery development

6/16 Submission of the Schematic Design to the MSBA

11/16 Town Vote for the Project

project overview

- K-5 Elementary School
- 430 Students
- 90,702 sq. ft. building
- 3 story academic wing
- Features

4 classrooms / grade

Classrooms for Special (art, music, spanish,

& technology/ steam) Extended Learning Areas for Project Based Learning

Library

Gym (sized for two teaching stations)

Cafeteria w/ Performance Space

Special Education Classrooms

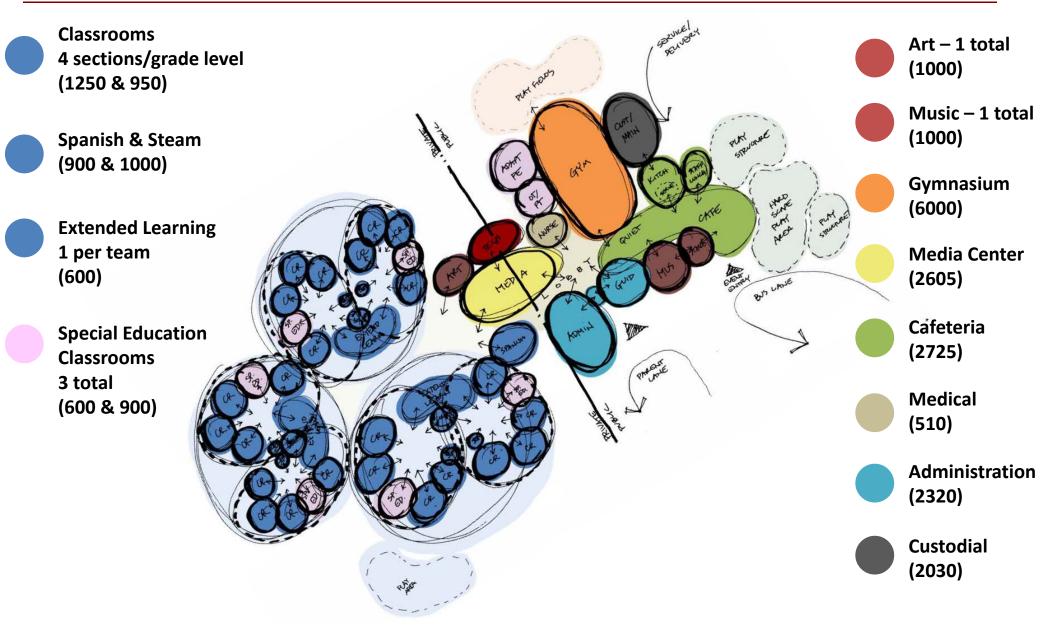
Adaptive PE and OT/ PT spaces

Administrative Spaces including

teacher work rooms and conference spaces

| | | - | PROPOSED | | | | | | | | | | |
|---|--------------------------|-------------|-------------------|--------------------------|------------|--------------------------|--------|---|----------|-----------------------|---|--|--|
| HILLSIDE ES | Ð | isting Cond | itions | | New | | | MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines | | | | | |
| ROOM TYPE | ROOM NFA ¹ | # OF RMS | area totals | ROOM NFA ¹ | # OF RMS | area totals | | ROOM NFA ¹ | # OF RMS | area totala | Comments | | |
| E ACADEMIC SPACES | | | 15,916 | | | 30,750 | 11,950 | | 19 | 18,800 | | | |
| All classrooms of different sizes separately to -Koderganten, will saled inderganten, will saled Classroom 1, 2 | | | | 1,250 | 4 | 5,000 | | 1,200 | 3 | 3,600 | 1.100 07 min - 1.000 07 max 1.100 07 min - 1.000 07 max | | |
| Cleaseroom 1, 2 Tolet - XX, XX, XX, XX General Cleaserourses - Grade 1-6 XX, XX, XX, XX, XX, XX, XX, XX, XX, XX, | 1,240 | 2 4 | 2,420 | | | | | _ | | | | | |
| General Classrooms - Grade 1-6 XX, XX, XX, XX, XX, XX, XX, | 850 830 | . 6 | 5,100 | 960 | 20 | 19,000 | | 950 | 16 | 15,200 | 100 SF min - 1,200 SF max | | |
| Spanish Classroom Fatended Learning Area | 8,92 | .19 | 8,300 | 950 | 1 | 900 3.400 760 | | | | | | | |
| Small Group Roome Book Room (NOT IN NET) | | | | 600 136 200 | 6 | 765 | | | | - | | | |
| Spenish Cassison Extended Learning Area Sinal Group Rooms Rook Room (NOT IN NET) Project Materials Storage (NOT IN NET) STEAM Classroppin Teacher Collaborativo | | | | 250 1,000 250 | 1 | 1.000 | | | | | | | |
| ECIAL EDUCATION | | | 2,474 | 200 | | 6.580 | 2.050 | | | 4,530 | | | |
| (Liss records of different scient separately) | 830 | 1 | 830 | 600 | 2 | 1,200 | **** | 960 | 3 | 2,860 | PL IF page in sufficient and SPED | | |
| sali Costande SPED (ELC) Seli Contando SPED (ELC) Seli Contando SPED - totel Resurce Room (ELL) Small Group Room / Reading | | | | 950 | 1 | 950 100 | | 60 | 3 | 180 | | | |
| Self-Contained SPED - tolet Resource Room (ELL) | | | | 130 | 1 | 950 100 130 500 | | \$00 600 | 2 | 1,000 | Rater Oceant & Lar Only Nater Oceant, Lan, Shower & Oranging Table 18 sear Gard, Gros, 19 sear Gard, Gros, | | |
| Small Group Room / Reading XX XX | 192 | 1 | 192 54 189 | | 0 | | | 600 | | 650 | Uf size fand. 15m. | | |
| OT/PT OT/PT Suprame | 54 | | 180 | 600 | | 600 150 | | | | _ | 1 | | |
| Adaptive PE Speech & Language Office SPED Lanson Office Lanson | | | | 630 175 175 | - | 605 | | | | | | | |
| SPED Liamon Office Liamon | 483 524 | 1 | 489 | 1/5 | 2 | 525 | | | | | | | |
| Liaiton SPED Conference Room De-escalation (ELC) Lianacy Caedina Math Coach | | | | 300 150 | 1 | 300 600 | | | | | | | |
| Annacy Coaches Math Coach | 88 98 | 1 | 96 | 250 250 | 2 | 500 250 | | - | | _ | | | |
| T & MUSIC | 813 | | 813 | | | 2,575 | 0 | | | 2.575 | searced schedule 2 lines / each (student | | |
| Art Classroom - 25 seats - 22 Art Workvoom w' Storage & kin Music Classroom / Large Group - 25-50 seats | 813 | 1 | 813 | 1,000 190 1,200 | | 1,000 160 1,200 | | 1,000 150 1,200 | 1 | 1,000 | annument actualities 2 times / annum / student Annument actualities 2 times / annum / student | | |
| Nr Workvoom of Storage & Kin Music Classroom I Large Grisg - 25-50 seats Music Practice / Ensemble Music Storage | | | | 0 225 | 0 | 225 | | 1,200 | 3 | 1,200 | | | |
| AT MALE & BOOMERS AT ADDRESS & BOOMER | | | 2,823 | | | 6,300 | 0 | | | 6,305 | | | |
| Gymnasium | 2,755 | 1 | 2,705 | 6.000 150 | 1 | 6,000 | | 6,000 150 | 1 | 6,000 (65) 155 | 0000 SF Mm. Barr | | |
| Gyes Storemon Health Instructor's Office w Shower & Tollet Shower & Yollet (NOT IN NET) Health Instructor's Office | | | | 0 75 150 | 2 | * 150 | | 150 | | 150 | 1 | | |
| EDIA CENTER | | | 2,374 | | | 2,605 | 0 | | | 2,605 | | | |
| Media Center / Reading Room Media Specialist Office Instructional Tech: Specialist Office | 2,183 182 | | 2,182 | 2,355 | 1 | 2.365 125 125 | | 2,605 | | 2,605 | The subdivised in fully interactions | | |
| Instructional Tech Specialist Office | _ | | 3.471 | 125 | 1 | 4,798 | 292 | | | | | | |
| Cafeteria / Dining | 2,190 | | 2,190 | 0 2,225 | 0 | | 204 | 3,225 | 1 | 6,506 3,225 | 2 molege - 1557 per sed | | |
| Cafeteria / Driing Larger Zone (Performance) Smaller Zones (Oxieter) Stage | 514 | 1 | 514 | 500 | 2 | 2,225 | | 1,000 | | 1,000 | | | |
| Stagn Chair I Table / Equipment Storage Kitchen | 682 122 163 | 1 | | 1,000 343 1,430 | - 1 - 1 | 1,000 343 1,430 | | 1,000 343 1,750 | 1 | 1,000 343 1,730 | 1600 SF for firel 300 = 1 SF Intuitient Add1 | | |
| Food Storage Food Storage | 122 | 1 | 682 122 163 | 200 | 1 | 200 | | - | | | | | |
| Roman Scallery Food Startege Kathan Office Make Tokel Room (NOT IN NET) Famile Tokel Room (NOT IN NET) Start Lunch Room | - | | | 50 | 1 | | | - | | | 0.00000 | | |
| Staff Lunch Room | | | | 50 | 1 | 500 | | 201 | 1 | 29 | 21 St Grouwet | | |
| IDUCAL Medical Sulte Tollut | | | 189 | 60 | | \$10 60 | 0 | 60 | 1 | 510 | | | |
| Medical Suite Tolkit Numusi Office / Wasting Risom Examination Room / Reisting | 180 | 1 | 186 | 40 260 100 | 2 | 62 20 22 20 | | 60 340 150 | 2 | 50 565 255 | | | |
| MINISTRATION & GUIDANCE | | | 1,783 | 520 | | 2,320 | 0 | 305 | - | 2,145 | 1.148 | | |
| General Office / Walting Room / Totel General Office / Walting Room XX | 284 256 | 1 | 584 236 | | 1 | | | | | | | | |
| XX Orantiow Admin Totet Teachers' Mail and Time Room | 236 | 1 | 256 | 50 50 150 | 0 | | | 1940 | | 044 | | | |
| Duplicating Room Reports Room (MCAS Storegal) | 156 573 | 1 | 152 | 150 1150 | 1 | 50 150 110 | | 100 150 110 | 1 | 100 150 115 | 1 | | |
| Principal's Office of Conference Area Principal's Secretary / Waiting | 373 | . 9 | 375 | 250 | 4 | 250 125 | | 375 | 1 | 375 | | | |
| Concerning Office Ade(s) - 2 | | | | | | | | | | | 1 | | |
| Assistant Principal's Office Supervisory / Spare Office | | | | 150 | 1 | 150 | | 120 | 0 | 120 | | | |
| METCO Liaison Office Bookkeeper Office | | - | | 175 | 1 | 176 | | | | | | | |
| METCO Lason Office Soatkeeper Office Conference Room Judance Office Sudance Storencom | 294 | 1 | 256 | 150 | 2 | 250 | | 250 150 34 | 1 | 250 150 | | | |
| STODIAL & MAINTENANCE | 494 | 1 | 1,065 | 515 | | 2,636 | 0 | S22 | - | 2,030 | 2 | | |
| ustodian's Office Ustodian's Workshop Iustodian's Storage | 225 | 1 | 225 | 155 575 | 1 | 155 575 375 | | 153 375 375 | 1 | 150 | | | |
| XX XX XX | 71 | 1 | 71 | 375 | - | 375 | | 375 | 1 | 375 | | | |
| XX Recycling Room / Trash Receiving and General Supply | #1 | 1 | 56 61 | 400 | , | 400 | | 400 | 1 | 400 | | | |
| Receiving and General Supply Storaroom | | | | 243 267 | 1 | 243 287 | | 243 287 | 1 | 243 187 | | | |
| XX XX XX | 625 59 | | 525 65 | | | | | - | | | | | |
| Network / Telecom Room | - 24 | | 53 | 200 | 1 | 205 | | 205 | 1 | 205 | | | |
| HER Star (specify) | | | ŵ | | | ů. | ٥ | | | û | <i></i> | | |
| | | | | _ | | | | | | | | | |
| utal Building Net Floor Area (NFA) | | | 31,118 | | | 60,468 | 14,467 | | | 46,001 | | | |
| Hoposed Student Capacity / Enrolment | | | | | | | | _ | | 43 | | | |
| Intel Building Gross Floor Area (GFA) ² | | | 45.005 | | + + | 90.702 | 19,824 | | - | 70,878 | | | |
| | | | | | | | | | | 1.00 | | | |

project overview





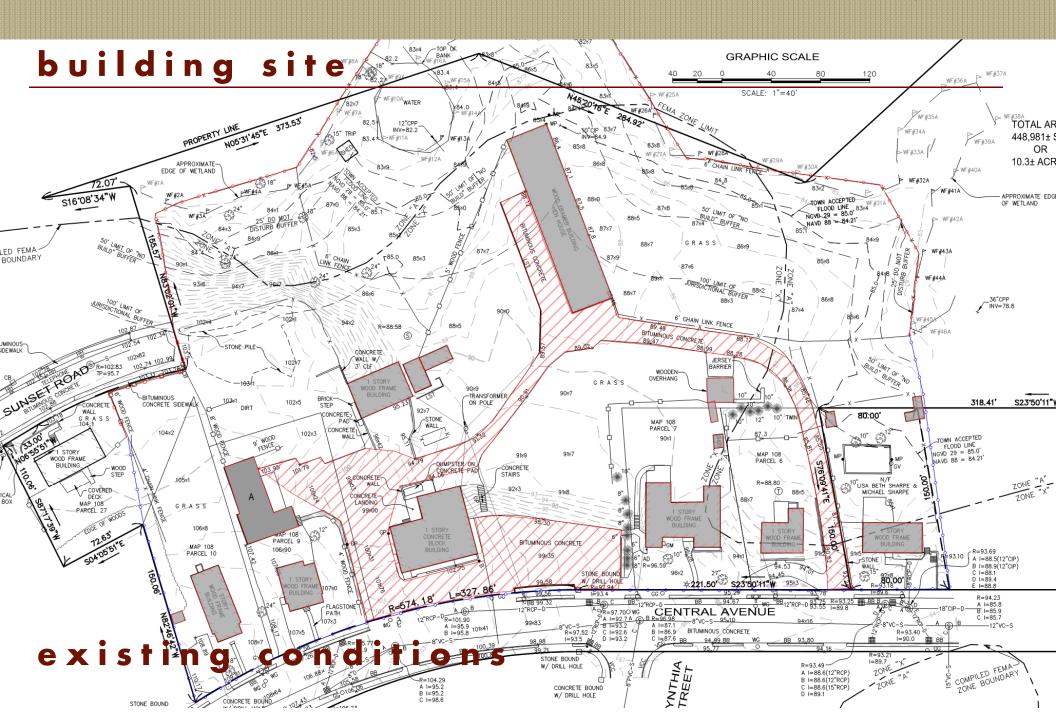
building site



building site



neighborhood context



building site







building site







existing conditions

building site



unique site features

building site



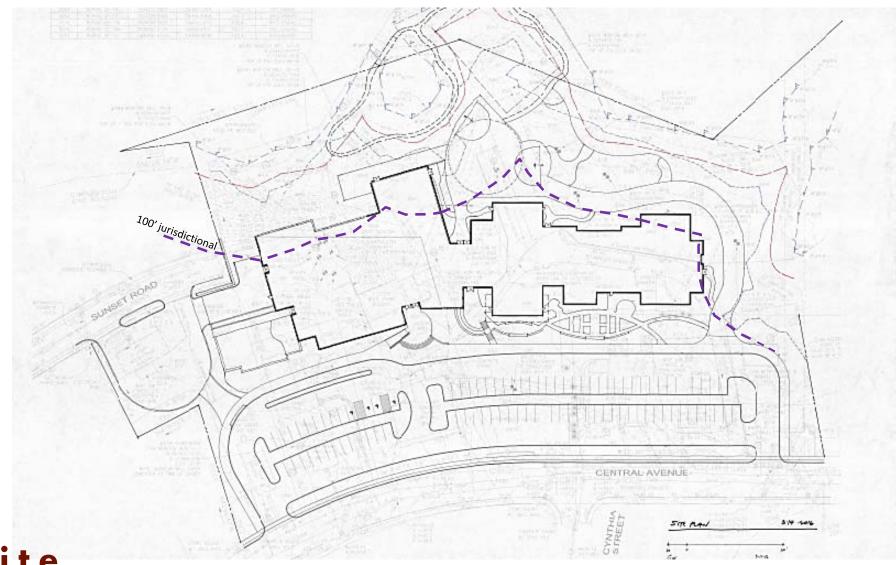
unique site features

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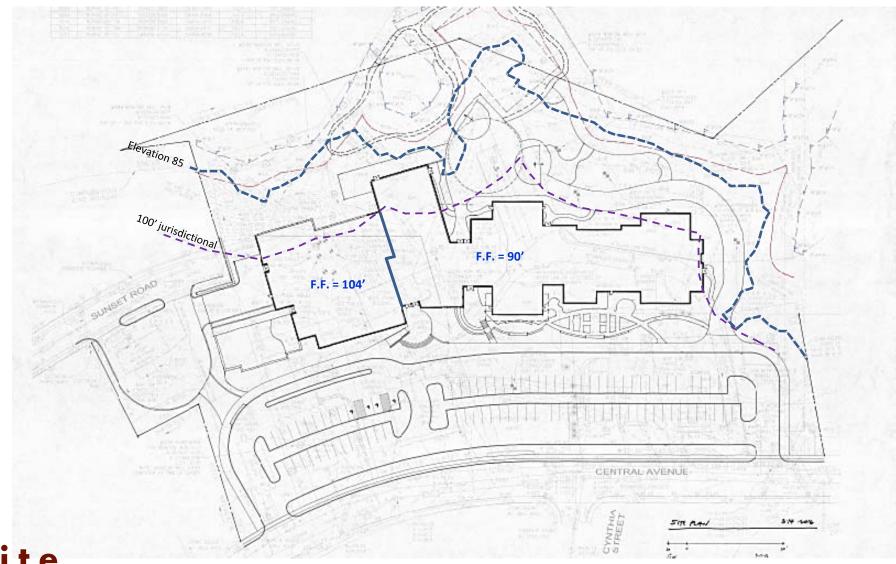


proposed plans



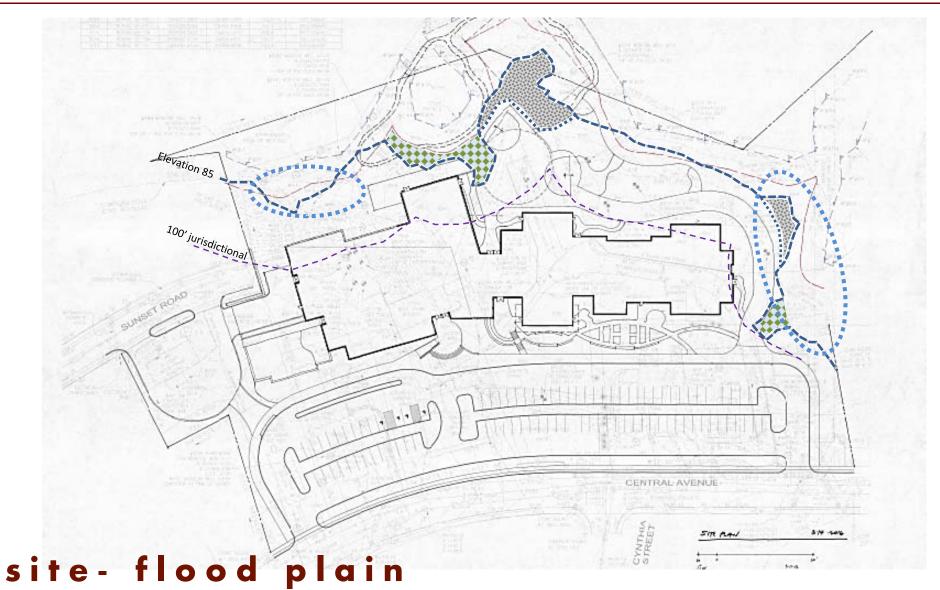
site

proposed plans

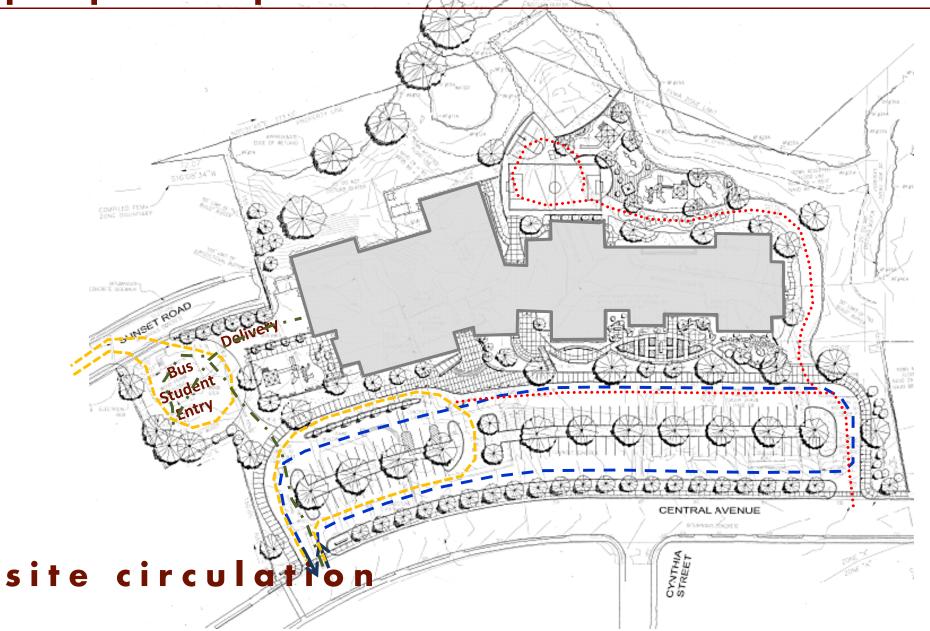


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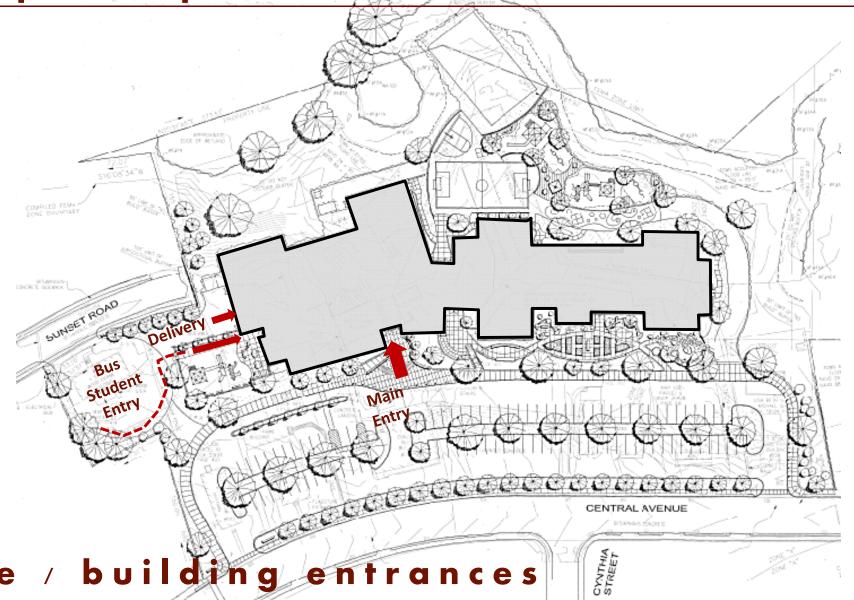
proposed plans



proposed plans

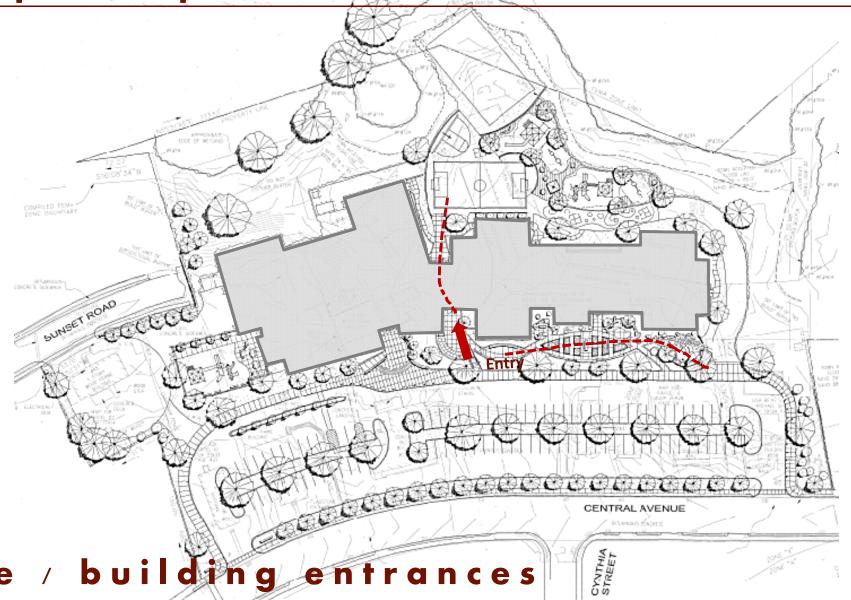


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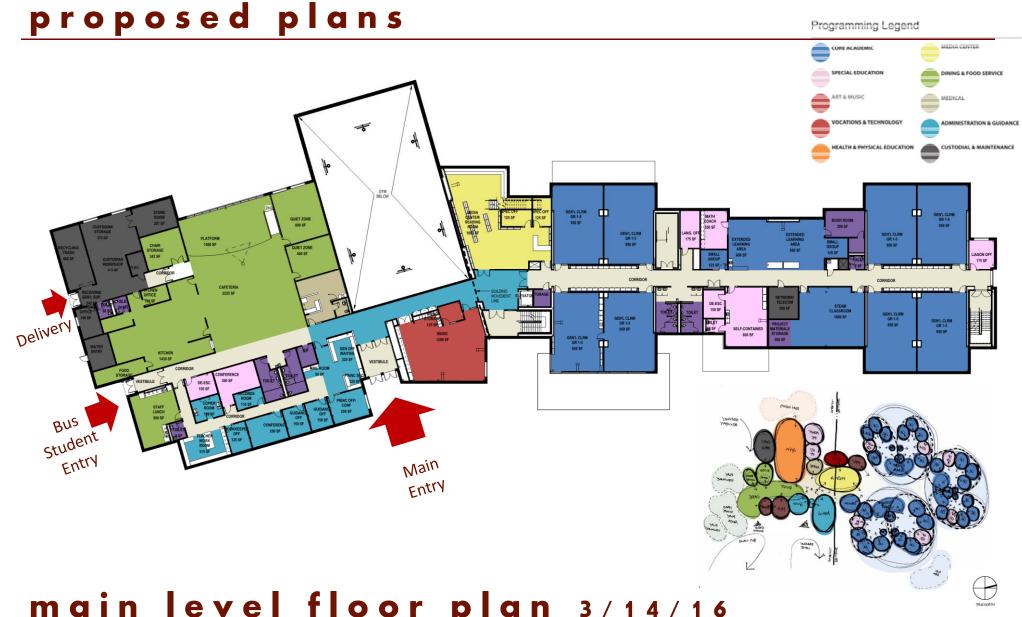


site / building entrances

proposed plans



site / building entrances



main level floor plan 3/14/16

proposed plans Programming Legend MEDIA CENTER CORE ACADEMIC SPECIAL EDUCATION DINING & FOOD SERVICE ABT & MUCH CATIONS & TECHNOLOG INISTRATION & GUIDANCE ALTH & PHYSICAL EDUCATION CUSTODIAL & MAINTENA GR 1-5 GR 1-5 W TOILET WI TOILET Lower Level Entry

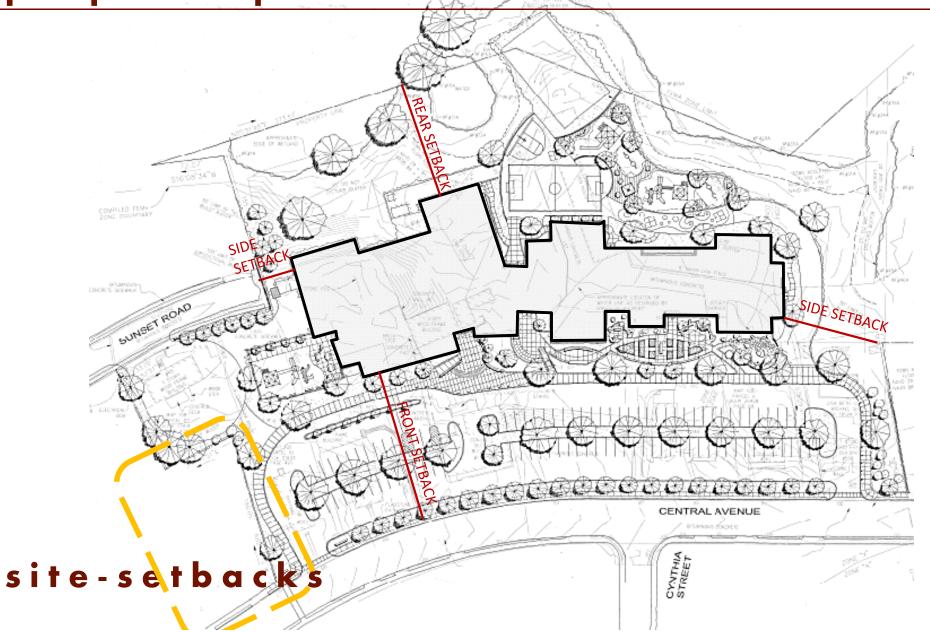
lower level floor plan 3/14/16

proposed plans Programming Legend MEDIA CENTER CORE ACADEMIC PECIAL EDUCATION DINING & FOOD SERVICE ABT & MUCH CATIONS & TECHNOLOG INISTRATION & GUIDANCE F f ALTH & PHYSICAL EDUCATION 4 GR 1-5 950 SF GEN'L CLRM GR 1-5 GR 1-5 950 SF GR 1-5 SELF-CONTA 600 SF

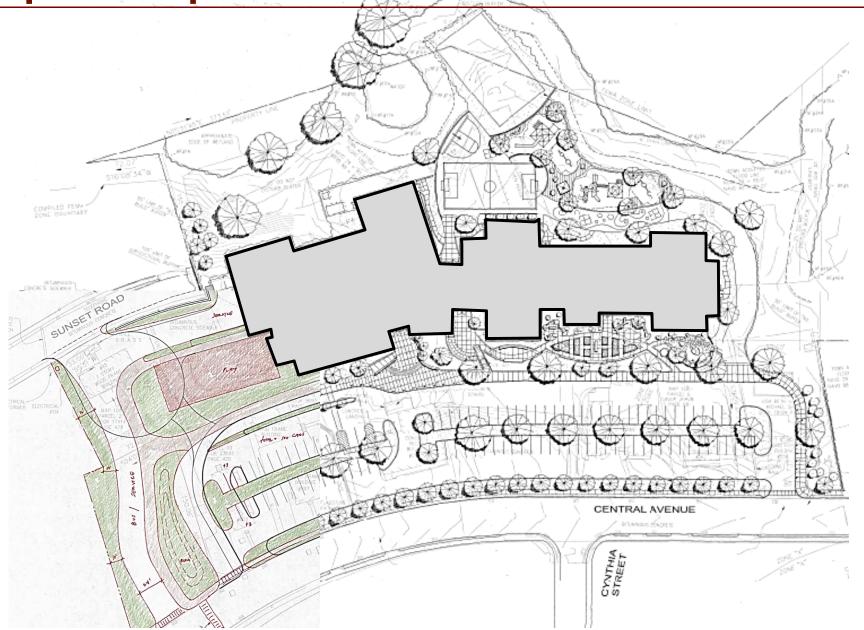
upper level floor plan 3/14/16

SCALE: 118">T-8" GRAPHIC SCALE

proposed plans



proposed plans





proposed plans











exposed aggregate concrete





d tence











stone wal













proposed elevations



central ave south 3/14/16

proposed elevations



central ave north 3/14/16

proposed elevations

view of garden 3/14/16



proposed elevations



rear elevation 3/14/16

Project Schedule

Design Schedule

<u>2016</u>

- 6/2 Submit Schematic Design to MSBA
- 7/20 MSBA board Meeting / PFA
- **10/24** Special Town Meeting- Project Funding
- **11/8** Election to approve over-ride funding

<u>2017</u>

- 4/30 Complete Design Development
- 12/15 Permitting & Construction Documents
- 12/30 Prequalification of GC

Procurement & Construction

<u>2018</u>

- 4/1 Bid Docs & Procurement
- 4/25 PPBC Award Contract
- 5/1 Start Construction

<u>2019</u>

Construction continues

<u>2020</u>

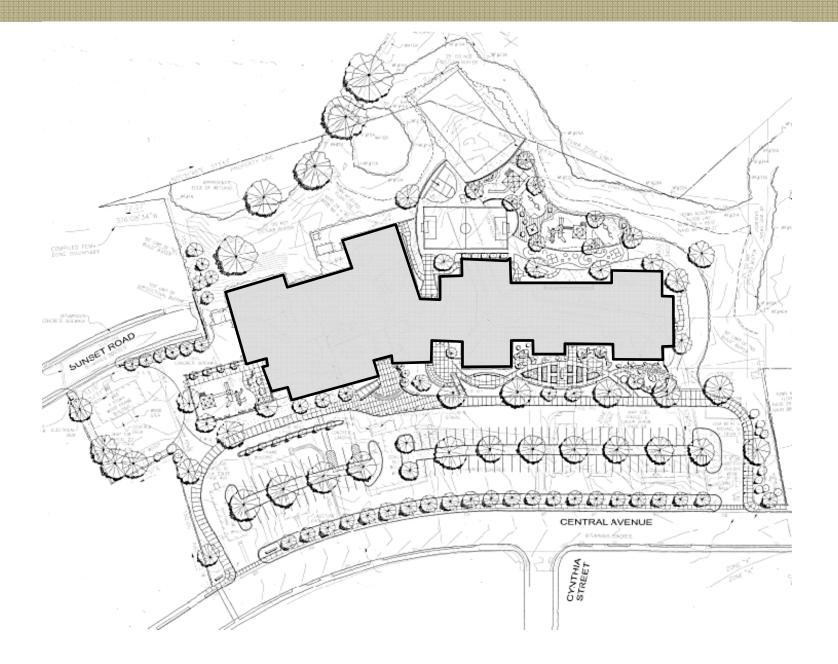
- 6/1 Substantial Completion
- 8/1 Move-in complete
- 9/1 New School Opens

HILLSIDE ELEMENTARY SCHOOL

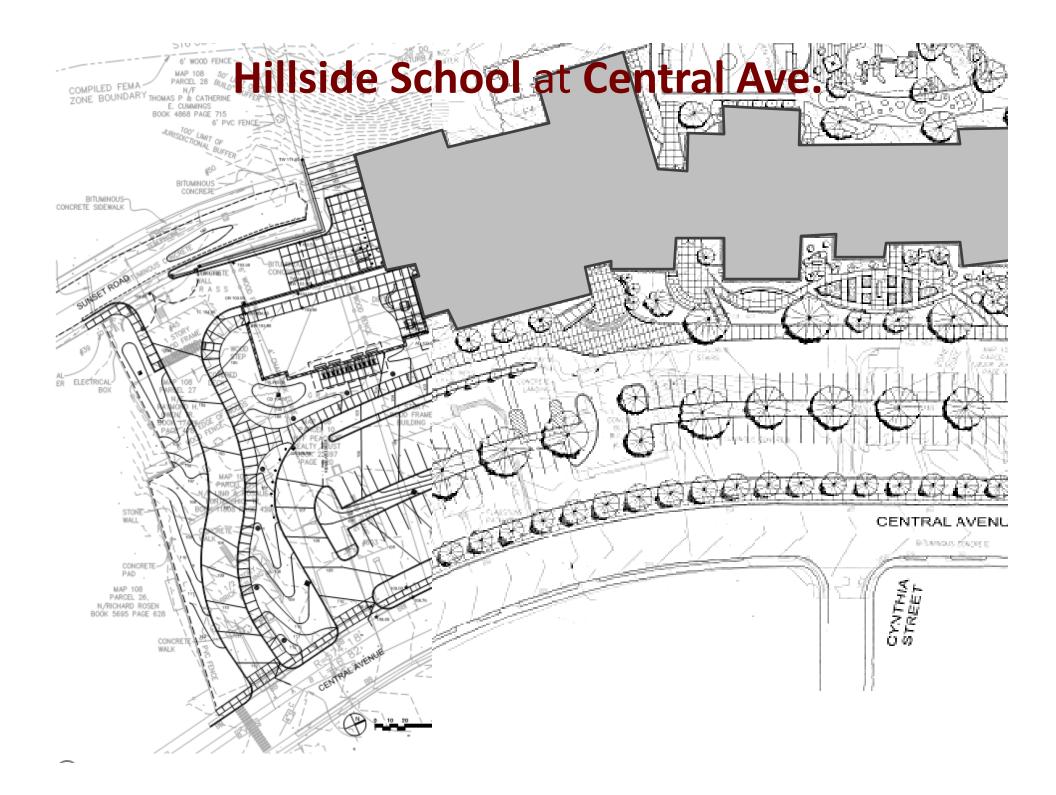
TOWN OF NEEDHAM NEEDHAM, MASSACHUSETTS



PPBC PRESENTATION MARCH 21, 2016







proposed elevations



















Hillside School at Central Ave. Needham, MA

Project Schedule

Design Schedule

<u>2016</u>

- 6/2 Submit Schematic Design to MSBA
- 7/20 MSBA board Meeting / PFA
- 10/24 Special Town Meeting- Project Funding
- 11/8 Election to approve over-ride funding

<u>2017</u>

- 4/30 Complete Design Development
- 12/15 Permitting & Construction Documents
- 12/30 Prequalification of GC

Procurement & Construction

<u>2018</u>

- 4/1 Bid Docs & Procurement
- 4/25 PPBC Award Contract
- 5/1 Start Construction

<u>2019</u>

Construction continues

<u>2020</u>

- 6/1 Substantial Completion
- 8/1 Move-in complete
- 9/1 New School Opens

| Attacl | Attachment A - | Hillside Elementary School | | | | Updated - 05/24/2016 | |
|--|----------------|--|--|--|--|--|--------------|
| FOR THE REAL PROPERTY OF THE P | Meeting Log | Meeting Log Permanent Public Building Committee (PPBC) | nmittee (PPBC) | 17 | The PPBC is acting as the School Building Committee for the project | Committee for the project | |
| Mtg No | Date* | Meeting Type | Meeting Body | Location | Present** | Topics | Notes |
| Module 4 | 1 - FEASIBILI | Module 4 - FEASIBILITY STUDY - SCHEMATIC DESIGN PHASE | N PHASE | | | | |
| | 1/27/2016 | PSR approved by IMSBA Board - Town authorized to move onto Schematic Design Stage of Project | - Town authorized | to move onto Schematic | Design Stage of Project | | |
| PPBC #14 | 2/22/2016 | Permanent Public Building Committee Meeting (PPBC) | PPBC Public Meeting | Needham Town Hall 1471 Highland Street, Needham MA Great Plain Room | PPBC - George Kent, Chair; PPBC Members SC, PS, RS, IS, User Reps: Heidi Black & Sue Neckes <u>OPM</u> - Steve Popper, Hank Haff, Kathryn Copley <u>FinCom</u> - John Connelly <u>D&W</u> - Don Walter, Jason Boone | Working Group meetings in progress- Room Data Sheets progressing well. Preliminary material image boards presented. Sustainable issues (solar ready roof) under study. Property closing on for 3/1/2016. Escrow of \$200K for EPH cleanup and removal of non-compliant fill.PSS #7 approved for Demolition. PSS#8 for added environmental approved for 609 Central Study. Invoices approved. | PPBC/ OPM |
| PPBC #15 | 3/21/2016 | Permanent Public Building Committee Meeting (PPBC) | PPBC Public Meeting | Needham Town Hall 1471 Highland Street, Needham MA Great Plain Room | PPBCGeorge Kent, Chair; PPBCMembers SC, NE, Peter S, Paul S, RS,IS User Reps: Heidi Black & SueNeckesNeckesOPMSteve Popper, Hank Haff,Kathryn CopleyFinCom - John ConnellyD&WD&WJason Boone | Project Update: Schematic Design- Site Plan, Floor Plans, Perspectives, Materials, Room Data Sheet updates. Concerns include: buff- brick look, more playful image, need to break down scale further, better understanding of materials needed. Approved Design Team Org. Chart changes w/ LA- Brown Sardinia; LSP - HML Associates. Demolition update- two packages. Schedule update, Budget update, Invoice approval. | PPBC/ OPM |
| PPBC #16 | 4/27/2016 | Permanent Public Building Committee Meeting (PPBC) | PPBC Public Meeting | Needham Town Hall 1471 Highland Street, Needham MA Great Plain Room | PPBC - George Kent, Chair; PPBC Members SC, NE, RS, IS User Reps: Heidi Black & Sue Neckes <u>OPM</u> - Steve Popper, Hank Haff, Kathryn Copley <u>FinCom</u> - John Connelly <u>D&W</u> - Don Walter, Michele Rogers | Exterior design update, exterior materials, project schedule, proprietary materials, roof materials, costing exercise in progress. Also, contract award to P.M. Ziliolli, Inc. for Phase I: Site Preparation as the apparent low bidder. Reference checks Good. PPBC voted to award to P.M. Ziliolli, Inc. | PPBC/ OPM |
| PPBC #17 | 5/10/2016 | Permanent Public Building Committee Meeting (PPBC) | Public Meeting | Needham Public Library Rosemary Street, Needham MA | <u>PPBC</u> - George Kent, Chair; PPBC Members SC, NE, RS, IS User Reps: Heidi Black & Sue Neckes <u>OPM</u> - Steve Popper, Hank Haff, Kathryn Copley <u>FinCom</u> - John Connelly <u>D&W</u> - Don Watter, Michele Rogers | Review of Project Budget, and two cost estimates. PPBC voted on Add and Deduct alternates including:1) Bldg shall have full AC (remove from deduct alt), 2) no acoustic wall in gym (remove from dwgs & estimate), 3) Add Alternate for playing field & nature walk,4) Deduct alternates for: a) underslab insulation, b) natural stone, c) EPDM roof. will consider acelerated time frame for cost savings, but SD should include 2020 opening schedule. | PPBC/ OPM |
| PPBC #18 | 5/24/2016 | Permanent Public Building Committee Meeting (PPBC) | PPBC Public Meeting | Needham Public Library Rosemary Street, Needham MA | PPBC - George Kent, Chair, PPBC Members SC, NE, Paul S, RS, IS User Reps: Heidi Black & Sue Neckes <u>OPM</u> - Steve Popper, Hank Haff, Kathryn Copley <u>FinCom</u> - John Connelly <u>D&W</u> - Don Walter, Michele Rogers | Executive Summary, Total Project Budget, Project Schedule, Proposed Space Summary and draft motion to approve distributed and discussed. Approval of Schematic Design for OPM submission to MSBA. (See certified vote sheet) | PPBC/ OPM |
| Notes | | modings are onen to the number and | t advartised on the | Town Meh Site at least 48 | hours prior to the meeting in accordance | * All DDDC montiones are once to the public and advertised on the Town Web Site at least 48 hours prior to the meeting in accordance with the Massachusetts Public meeting laws | |
| | PPBC meet | ings start at 7:30PM unless otherw | ise noted, all meetin | g notes are available on th | e Town Web site, and copies of all preser | All F PDC meetings are open to the promotion and advertised on the route and adverted by the route of all presentation materials are available at the PPBC office of the contest of all meetings are available at the PPBC office of the adverted by the adver | |
| | ** The PPE | notes and presentation materials in 3C members include: George Kent, | oni each public mee Chair, Stuart Chand | ting are also included in th ller, Natasha Espada, Paul | All meeting noies and presentation materials nom each public meeting are also included in the Appendix to the Funding and Funding and Invin Silverstein ** The PPBC members include: George Kent, Chair; Stuart Chandler, Natasha Espada, Paul Salamone, Roy Schifflift, Peter Schneider, and Irwin Silverstein | r, and Irwin Silverstein | |
| | The User R | epresentatives for the Hillside Scho | ol project are: Heidi | Black and Susan Neckes | The User Representatives for the Hillside School project are: Heidi Black and Susan Neckes (both are also current members of the Needham School Committee). | edham School Committee). | |

Town of Needham Permanent Public Building Committee Proposed Agenda

Monday, January 11, 2016

Needham Public Library – Community Room

| 7:30 - 7:35 | I. | Approve Minutes | PPBC |
|-------------|------|--|--|
| 7:35 - 8:05 | II. | Hillside School Feasibility Study A. Status | PPBC, Heidi Black and Susan Neckes |
| 8:05 - 8:50 | III. | Rosemary Pool Project A. Status | PPBC, Matt Toolen, Patty Carey and BH+A |
| 8:50 - | IV. | PPBC Other Business A. Next Meetings and Agenda | PPBC |

The **January** 2016 meetings are scheduled for Monday, 1/11 at Needham Public Library Community Room and Monday 1/25 at the Needham **Town Hall** Great Plain Room

The **February** 2016 meetings are scheduled for Monday, 2/8 at Needham Public Library Community Room and Monday 2/22 at the Needham **Town Hall** Great Plain Room

The **March** 2016 meetings are scheduled for Monday, 3/7 and Monday 3/21 at Needham Public **Library** Community Room

PERMANENT PUBLIC BUILDING COMMITTEE

TOWN OF NEEDHAM

MINUTES OF MEETING

| Date: January 11, 2016 | Time: | 7:30 PM | Location: Needham Library | | |
|------------------------|--|--------------------------------------|--|--|--|
| Attendance | | | | | |
| PPBC Members: | Present: George Kent, Natasha Espada, Roy Schifilliti Irwin Silverstein | | | | |
| | Absent: Stuart Chandler, Paul Salamone, Peter Schneider | | | | |
| | Steve Popper (PFD-C Director of Design and Construction) Hank Haff (Project Manager) Mike Retzky (Project Manager) | | | | |
| User Representatives: | Susan Neckes Matt Toolan Patty Carey | | e, Hillside Rep. nissioner, Rosemary Rep. tor, Rosemary Rep. | | |
| Other Attendees: | Joel Bargmann John Connelly | Bargmann Hendrie Finance Committe | | | |
| Minutes prepared by: | Kathryn Copley | Administrative Spo | ecialist | | |

A. <u>Approval of Minutes</u>

The Committee reviewed the minutes from the December 14th PPBC meeting. Mr. Kent made a motion that the Committee approve the minutes. Mr. Schifilliti seconded the motion. The motion was then voted upon and approved unanimously.

B. <u>Hillside School Feasibility Study</u>

Susan Neckes (School Committee) attended the meeting.

There was a Facilities Assessment Subcommittee (FAS) meeting at the Massachusetts School Board Authority (MSBA) on January 6, 2016, that was attended by Mr. Kent, Mr. Popper, Mr. Haff, Kate Fitzpatrick, Dan Gutekanst, Connie Barr, Michael Kascak and Dore & Whittier. This resulted from a review of the project submittal of Preferred Schematic Report (PSR) and is a required step in the approval process before going to Board vote authorizing the project move into Schematic Design. The questions that the MSBA had asked in an earlier letter were discussed. The FEMA floodplain will be adjusted to Elevation 85. The Letter of Map Amendment (LOMA) process is underway and it is believed that it will be granted by FEMA.

It is anticipated that at the next Board meeting on January 27, 2016 the MSBA will approve the project to proceed to the next step in the MSBA process. The MSBA stated

that the work done to date was well thought out and complete. They were satisfied with the education program and felt the design was good. They have not established a final reimbursement rate yet. The current rate of reimbursement for the Feasibility Study is 32.47%.

The part of the playing field that is on Wellesley property will not be eligible for reimbursement (and later determined cannot be in the project scope).

Mr. Kent indicated that low levels of EPH have been found on site in the soil. Because the property is close to the Wellesley water supply this needs to be treated as a Zone 2 contaminant. Information is being gathered and once the findings are received the next steps will be taken.

Dore & Whittier presented a proposal for Additional Geotechnical Investigation, PSS #6, with a not to exceed limit of \$49,500. The investigation will need to define the extent of the contamination and find its source. It is not expected to be a major issue.

The initial LSP report of the soil and water samples has been given to the owner's attorney on December 21, 2015. They have 120 days to provide notice to DEP. It is the property owner's responsibility to report to the DEP. They will need to identify and remediate the contaminant.

The Towns will be keeping track of the investigation expenditures and will ask the owner to cover these costs. An escrow out of the property purchase price may be established to recover the cost of clean-up, and DEP reporting.

The Committee reviewed PSS #6 from Dore & Whittier Architects in an amount not to exceed \$49,500.00 for additional Geotechnical services at the Central Avenue site. These services will initially be funded by the land acquisition appropriation. Mr. Kent made a motion that the Committee approve PSS #6. Mr. Silverstein seconded the motion. The motion was then voted upon and approved unanimously.

The Selectmen are currently investigating the value and availability of 609 Central Avenue as a potential addition to the school site.

Handouts: Central Ave GeoTech Report, PSS #6, MSBA Facility Assessment Sub-Committee presentation

C. <u>Rosemary Pool</u>

Matt Toolan (Park & Recreation Commissioner), Patty Carey (Park & Rec. Director) and Joel Bargmann (BH+A) attended the meeting.

Mike Retzky has been hired by the Public Facilities Department, Construction Division as project manager and will initially cover the Rosemary Pool Project. He was formerly a Park and Recreation Commissioner until his resignation last week. He is a Civil Engineer who worked at CDM Smith for 30 years as a Construction Manager and Construction Representative.

There have been discussions with Park & Recreation Commission, the Board of Selectmen and the Finance Committee as to what is wanted for the Rosemary Pool and building. Discussions revolved around a seasonal facility or a year round facility with a multipurpose room and/or offices.

Mr. Toolan indicated that the Commission asked the architect to see if shrinking the pool would cut costs and what various scenarios would look like. It turns out that a smaller 12,000 square foot pool would have minimal savings, which are not sufficient to warrant a change from the current design.

The Commission at their meeting earlier in the evening selected Option C as previously presented by BH+A. It has the two pool option and a two story building, which includes a multipurpose room and offices for two Town departments. The access grade would have to be changed and an additional 27 parking places would be needed. The elevation of the pool would be raised out of the pond.

BH+A will combine schematic design with design development drawings and have them costed by their cost estimator in time for vetting by the PPBC in early April. The estimate will be provided at the May 2016 Annual Town Meeting with a request for additional design funding for approval to continue with the construction documents and permitting.

The Committee reviewed an invoice from Bargmann Hendrie & Archetype in the amount of \$21,700.00 for services thru November 2015. The invoice was reviewed and approved by Mr. Haff. Mr. Kent made a motion that the Committee approve the invoice for payment. Mr. Schifilliti seconded the motion. The motion was then voted upon and approved unanimously.

The Committee reviewed PSS #2 from Bargmann Hendrie & Archetype in the amount of \$22,340.00 for year round use study and additional cost estimating. Mr. Kent made a motion that the Committee approve PSS #2. Ms. Carey seconded the motion. The motion was then voted upon and approved unanimously.

Handouts: PSS #2, Budget, BH+A invoice, drawings

D. Adjournment

The meeting was adjourned at 9:00 PM. The next PPBC meeting will be on Monday, January 25, 2016 at 7:30 PM, at the Needham Town Hall, Great Plain Room.

These minutes are intended to convey the content of the discussions at the Committee meeting. If no comments are received by the next meeting, they will go to file as part of the permanent Committee record.

Town of Needham Permanent Public Building Committee Proposed Agenda

Monday, February 22, 2016

Town Hall – Great Plain Room

| 7:30 - 7:35 | I. | Approve Minutes | PPBC |
|-------------|------|--|--|
| 7:35 – 7:55 | II. | Police & Fire Stations Feas. Study A. RFQ | PPBC, Kate Fitzpatrick, Chris Coleman, Dennis Condon and John Schlittler |
| 7:55 - 8:30 | III. | Hillside School Feasibility Study A. Status | PPBC, Heidi Black, Susan Neckes and D&W |
| 8:30 - 9:00 | IV. | High School Expansion Project A. Status | PPBC, Heidi Black, Aaron Sicotte and DRA |
| 9:00 - 9:30 | V. | Rosemary Pool Project A. Status | PPBC, Matt Toolen, Patty Carey and BH+A |
| 9:30 - | VI. | PPBC Other Business A. Next Meetings and Agenda | РРВС |

The March 2016 meetings are scheduled for Monday, 3/7 and Monday 3/21 at Needham Public Library Community Room

The **April** 2016 meetings are scheduled for Monday, 4/11 at Needham Public **Library** Community Room and Monday 4/25 at the Needham **Town Hall** Great Plain Room

The **May** 2016 meetings are scheduled for Tuesday, 5/10 and Monday 5/23 at Needham Public **Library** Community Room

PERMANENT PUBLIC BUILDING COMMITTEE

TOWN OF NEEDHAM

MINUTES OF MEETING

| Date: February 22, 2016 | Time | : 7:30 PM | Location: Needham Town Hall | |
|-------------------------|--|---|---|--|
| Attendance | | | | |
| PPBC Members: | Present: George Kent, Stuart Chandler, Paul Salamone, Roy Schifilliti Irwin Silverstein Absent: Natasha Espada, Peter Schneider Steve Popper (PFD-C Director of Design and Construction) | | | |
| | Hank Haff (Project Mar Phaldie Taliep (Project Mike Retzky (Project M | Manager) | | |
| User Representatives: | Dennis Condon John Schlittler Susan Neckes Heidi Black Aaron Sicotte Matt Toolan Patty Carey | School Committee School Committee H.S. Assist Princ/H Park & Rec. Comm | e/Fire Stations Řep. , Hillside Rep. , Hillside Rep., H.S. Rep. | |
| Other Attendees: | Kate Fitzpatrick Chris Coleman John Connelly Joel Bargmann David DiCicco | Town Manager Assist Town Mgr./ Finance Committe Bargmann Hendrie Park & Rec. Comm | e & Archetype | |
| Minutes prepared by: | Kathryn Copley | Administrative Spe | ecialist | |

A. <u>Approval of Minutes</u>

The Committee reviewed the minutes from the January 25th PPBC meeting. Mr. Kent made a motion that the Committee approve the minutes. Mr. Schifilliti seconded the motion. The motion was then voted upon and approved unanimously.

B. Police & Fire Stations Feasibility Study

John Schlittler (Police Chief), Dennis Condon (Fire Chief), Kate Fitzpatrick (Town Manager) and Chris Coleman (Assist Town Mgr.) attended the meeting.

The RFQ was sent out for review. Several comments were received and incorporated into the document. The RFQ will be available on February 24th. A briefing session is scheduled for March 2nd and the responses will be due on March 16th. Mr. Retzky will be the project manager.

Police Chief John Schlittler and Fire Chief Dennis Condon will be the user group representatives to the PPBC.

Funds were approved at the November 2015 Special Town Meeting for the Fire Station #2 Feasibility Study. After some consideration it was felt that design aspects of Fire Station #2 were intermingled with Fire Station #1 and the Police Station. It made sense to combine the two studies so that the architect would study both locations concurrently. Funds for the Police Station and Fire Station #1 were appropriated at the February 2016 Special Town Meeting.

The chiefs indicated that larger capacity for vehicles, personnel and public spaces is needed. The police and fire stations should be designed to serve the community over the next 75 years. It is anticipated that several options regarding new construction, renovation and additions and phasing will be addressed in the study.

A public information session will be scheduled for one of the future PPBC meetings.

Work on Fire Station #2 is expected to precede work on the Police/Fire Station #1. Design funds for Fire Station #2 will most likely be sought at the May 2017 Annual Town Meeting.

Handouts: None

C. <u>Hillside School Feasibility Study</u>

Susan Neckes, Heidi Black (School Committee), Don Walter and Jason Boone (D&W) attended the meeting.

Mr. Haff reported that several meetings have taken place to discuss design characteristics, programming, room data sheets and exterior discussions. A Leadership presentation was held today with school staff to start dialog as to what the building should look and feel like. The Architect is looking at materials that mimic a wood-like feeling and that would blend into the community, neighborhood and site. They will be looking at solar and geothermal energy possibilities in the design process. Perhaps the building should be solar ready for future needs.

The closing date of the sale of the Central Avenue site is scheduled for March 1st. An escrow account will be set up with the amount of \$200,000 set aside to deal with any

contamination on the site. Any remaining funds would be turned over to the seller upon completion of the remediation.

The Committee reviewed PSS #7r from Dore & Whittier Architects in the amount of \$113,970 for the Early Demolition Documents for Central Avenue. Mr. Kent made a motion that the Committee approve PSS #7r. Mr. Silverstein seconded the motion. The motion was then voted upon and approved unanimously.

The Committee reviewed PSS #8r from Dore & Whittier Architects in the amount of \$12,005.00 for additional environmental services for 609 Central Avenue. Services will include survey, hazmat testing, and landscape design. Mr. Kent made a motion that the Committee approve PSS #8r. Mr. Schifilliti seconded the motion. The motion was then voted upon and approved unanimously.

The Committee reviewed an invoice from Dore & Whittier Architects in the amount of \$10,125.00 for services thru January 2016. The invoice was reviewed and approved by Mr. Haff. Mr. Kent made a motion that the Committee approve the invoice for payment. Mr. Silverstein seconded the motion. The motion was then voted upon and approved unanimously.

The Committee reviewed an invoice from Dore & Whittier Architects in the amount of \$16,615.00 for geotechnical services thru January 2016. The invoice was reviewed and approved by Mr. Haff. Mr. Kent made a motion that the Committee approve the invoice for payment. Mr. Chandler seconded the motion. The motion was then voted upon and approved unanimously.

Handouts: Draft Schedule, PSS #7r & 8r

D. <u>High School Cafeteria Expansion</u>

Heidi Black (School Committee), Aaron Sicotte (H.S. Assist. Principal) and Cal Olson (DRA) attended the meeting.

Mr. Taliep indicated that meetings have occurred with the contractor and with Mr. Sicotte to discuss the project logistics. Mr. Taliep has met with the Building Inspector to discuss requirements.

It is anticipated that during the April school vacation the Contractor will mobilize on site and enclose the exterior space and proceed with demolition of the exterior cafeteria wall. Plywood will be installed as a barrier replacing the storefront windows which will be demolished. The Contractor will stay on site after that to prepare for new foundations, slab installation and tie in of the existing building. The Contractor will need to start steel erection in June in order to be finished by August 2016.

Comments were made by Mr. Salamone on the importance of assuring that air quality within the cafeteria would not be compromised by the ongoing work outside the building.

The Committee reviewed PSS #4 from DRA in the amount of \$1,767.17 for Bidding document print services. Mr. Kent made a motion that the Committee approve PSS #4. Mr. Silverstein seconded the motion. The motion was then voted upon and approved unanimously.

The Committee reviewed CO #1 from Paul J. Rogan Co., Inc. in the amount of \$2,287.00 for Builders Risk Insurance. The change order was reviewed and approved by the Architect and Mr. Taliep. Mr. Kent made a motion that the Committee approve CO #1. Mr. Sicotte seconded the motion. The motion was then voted upon and approved unanimously.

The Committee reviewed two invoices from Drummey Rosane Anderson Architects in the amounts of \$1,577.24 and 25,004.50 for services thru December 2015 and January 2016. The invoices were reviewed and approved by Mr. Taliep. Mr. Kent made a motion that the Committee approve the invoice for payment. Mr. Silverstein seconded the motion. The motion was then voted upon and approved unanimously.

The Committee reviewed Payment Requisition #1 from Paul J. Rogan Co., Inc. in the amount of \$43,497.65 for bonds and general liability. The requisition was reviewed and approved by the Architect and Mr. Taliep. Mr. Kent made a motion that the Committee approve the invoice for payment. Mr. Sicotte seconded the motion. The motion was then voted upon and approved unanimously.

Mr. Kent requested a schedule from the GC as soon as possible. Mr. Taliep reported that they were fine tuning the schedule.

Handouts: Pay Application #1, updated budget

E. <u>Rosemary Pool</u>

Matt Toolan (Park & Recreation Commissioner), Patty Carey (Park & Rec. Director) and Joel Bargmann (BH+A) attended the meeting.

Mr. Bargmann reported on the progress of the project. The upper parking lot has been laid out and the access road is shown at a more gradual grade of a 6% slope, a change from the current 14% slope. A subterranean water retention and dispersal system under the lower parking lot is being suggested.

There is a compensatory storage issue that will add a significant cost component to the project budget. The issue results from the weir level and a flooding observation made some 22 years ago that is in difference to the currently identified FEMA flood plain. There are several possible solutions being investigated.

Currently a parallel project to dredge the lake is being developed. This would result in an approximate \$500,000 saving to the Rosemary Project. It is anticipated that both projects can start in Fall 2017.

The Architect is looking at framing the second story with wood. Exterior siding would consist of Hardy Board construction.

Handouts: Preliminary project schedule, Power Point Presentation

F. <u>Adjournment</u>

The meeting was adjourned at 9:50 PM. The next PPBC meeting will be on Monday, March 21, 2016 at 7:30 PM, at the Needham Library, Community Room.

These minutes are intended to convey the content of the discussions at the Committee meeting. If no comments are received by the next meeting, they will go to file as part of the permanent Committee record.

Town of Needham Permanent Public Building Committee Proposed Agenda

Monday, March 21, 2016

Needham Public Library – Community Room

| 7:30 - 7:35 | I. | Approve Minutes | PPBC |
|-------------|------|--|--|
| 7:35 - 8:05 | II. | Police & Fire Stations Feas. Study A. Short List Design Selection | PPBC, Kate Fitzpatrick, Chris Coleman, Dennis Condon and John Schlittler |
| 8:05 - 8:25 | III. | DPW Feasibility Study A. Status | PPBC, Kate Fitzpatrick, Rick Merson and Weston & Sampson |
| 8:25 - 8:55 | IV. | Rosemary Pool Project A. Status | PPBC, Matt Toolen, Patty Carey and BH+A |
| 8:55 – 9:15 | V. | High School Expansion Project A. Status | PPBC, Heidi Black and Aaron Sicotte |
| 9:15 – 9:40 | VI. | Hillside School Feasibility Study A. Status | PPBC, Heidi Black, Susan Neckes and D&W |
| 9:40 - | VII. | PPBC Other Business A. Next Meetings and Agenda | PPBC |

The **April** 2016 meetings are scheduled for Monday, 4/11 at Needham Public **Library** Community Room and Monday 4/25 at the Needham **Town Hall** Great Plain Room

The **May** 2016 meetings are scheduled for Tuesday, 5/10 and Monday 5/23 at Needham Public **Library** Community Room

The **June** 2016 meetings are scheduled for Mondays, 6/6 and 6/20 at the Needham **Town Hall** Great Plain Room

The **July** 2016 meetings are scheduled for Mondays, **7**/11 and 7/25 at Needham Public **Library** Community Room

The August 2016 meetings are scheduled for Mondays, 8/8 and 8/22 at Needham Public Library Community Room

PERMANENT PUBLIC BUILDING COMMITTEE

TOWN OF NEEDHAM

MINUTES OF MEETING

| Date: March 21, 2016 | Time: 7 | :30 PM | Location: Needham Town Hall | |
|-----------------------|--|---|---|--|
| Attendance | | | | |
| PPBC Members: | Present: George Kent, Stuart Chandler, Natasha Espada, Paul Salamone, Peter Schneider, Irwin Silverstein Absent: Roy Schifilliti | | | |
| | Steve Popper (PFD-C Director of Design and Construction) Hank Haff (Sr. Project Manager) Phaldie Taliep (Project Manager) Mike Retzky (Project Manager) | | | |
| User Representatives: | Dennis Condon John Schlittler Matt Toolan Heidi Black Aaron Sicotte Susan Neckes | Police Chief, Po Park & Rec. Co School Commit H.S. Assist Prin | ce/Fire Stations Rep. blice/Fire Stations Rep. mmissioner, Rosemary Rep. tee, Hillside Rep., H.S. Rep. IC/H.S. Rep. tee, Hillside Rep. | |
| Other Attendees: | Mike Richard Joel Bargmann Don Walter Michele Rogers Jason Boone John Connelly | Weston & Samp Bargmann Henc Dore & Whittie Dore & Whittie Dore & Whittie Finance Commi | Irie & Archetype r Architects r Architects r Architects r Architects | |
| Minutes prepared by: | Kathryn Copley | Administrative | Specialist | |

A. <u>Approval of Minutes</u>

The Committee reviewed the minutes from the February 17th and February 22nd PPBC meetings. Mr. Kent made a motion that the Committee approve the minutes. Mr. Silverstein seconded the motion. The motion was then voted upon and approved unanimously.

B. Police & Fire Stations Feasibility Study

John Schlittler (Police Chief) and Dennis Condon (Fire Chief) attended the meeting.

Ten firms submitted qualifications which were received on March 16, 2016 and one firm's submittal was received on March 17, 2016 due to a UPS failure to pick up. The

majority of the Committee felt that this was a minor informality and the qualification were considered in the short listing process.

The eleven companies that submitted qualifications were CSS Architects, Dore & Whittier Architects, Donham & Sweeney Architects, Lavallee Brensinger Architect, Tecton Architects, Robinson Green Barett Architects, HKT Architects, Winter Street Architects, JCJ Architecture, Kaestle Boos Associates and The Galante Architecture Studios. These were distributed to the Committee for review.

The Committee discussed the qualifications of the firms and five were chosen for interviews at the next PPBC meeting on April 11th. The firms that were chosen for interviews are Donham & Sweeney Architects, Dore & Whittier Architects, HKT Architects, Kaestle Boos Associates and Winter Street Architect.

Handouts: Evaluation criteria

C. <u>DPW Feasibility Study</u>

Rick Merson (DPW Director) and Mike Richard (Weston & Sampson) attended the meeting.

Mr. Taliep reported on the progress of the project. Weston & Sampson has conducted interviews of staff members and have looked at and inventoried the equipment and fleet.

Mr. Richard reviewed the work plan and the schedule. There are four tasks, Data Review & Confirmation, Existing Site & Facility Analysis, Alternate Site Analysis and Final Study Report. The final study report is due September 2016. The staff was given interview outline questionnaire sheets. The results are being tallied now. An inventory of all of the equipment and fleet vehicles is being compiled.

Handouts: Work Plan, Schedule

D. <u>St. Mary St. Pump Station Construction</u>

Rick Merson (DPW Director) attended the meeting.

The Committee reviewed an invoice from Balanced Input in the amount of \$1,600.00 for a television within the FF&E budget. The invoice was reviewed and approved by Mr. Taliep. Mr. Kent made a motion that the Committee approve the invoice for payment. Ms. Espada seconded the motion. The motion was then voted upon and approved unanimously.

E. <u>Salt Shed Construction</u>

Rick Merson (DPW Director) attended the meeting.

The Committee reviewed an invoice from Bird Master in the amount of \$9,054.00 for the installation of bird netting on the Salt Shed. The invoice was reviewed and approved by Mr. Haff. Mr. Kent made a motion that the Committee approve the invoice for payment. Mr. Schneider seconded the motion. The motion was then voted upon and approved unanimously.

F. <u>Rosemary Pool</u>

Matt Toolan (Park & Recreation Commissioner) and Joel Bargmann (BH+A) attended the meeting.

Mr. Bargmann reported on the progress of the project. The design development documents are going to the cost estimator tomorrow. Determination of the estimated cost of the project is on schedule and should be available by April 11th.

The current design was reviewed for the Committee. The pool deck level has been changed to the 100 foot level, 6 inches above the previous level to account for the flood level impacts of providing compensatory storage established by historic information obtained by the Town Engineers office. The survey of the lake and the identification of the wetlands are complete. A wetlands Abbreviated Notice of Resource Area Delineation (ANRAD) has been filed.

The lake bottom dredging is being planned to coincide with the pool reconstruction as a separate project overseen by the Engineering Department. This would eliminate the need to build a temporary dam and would realize substantial savings to the pool project.

BH+A is working on the parking lot configuration and storm water management system. The new access road is at a lower pitch than the existing access road. An underground water storage system had been anticipated to be built under the parking lot. BH+A is now suggesting using porous pavement as a cost saving measure. They are also fixing and increasing the size of the existing detention basin which was built for the Library and High School runoff.

There is no elevator in the current plan with the understanding that personnel communication between the two levels is not a normal event. The CPC will not fund the second story of the building. The second floor is expected to cost approximately \$2 to \$2.5 million dollars. Discussions are being held with the Board of Selectman, Finance Committee and Park & Recreation Commission regarding the cost.

The Committee reviewed an invoice from Bargmann Hendrie + Archetype in the amount of \$64,135.00 for services thru January 2016. The invoice was reviewed and approved by Mr. Retzky. Mr. Kent made a motion that the Committee approve the invoice for payment. Mr. Toolan seconded the motion. The motion was then voted upon and approved unanimously.

The Committee reviewed an invoice from Bargmann Hendrie + Archetype in the amount of \$60,050.00 for services thru February 2016. The invoice was reviewed and approved by Mr. Retzky. Mr. Kent made a motion that the Committee approve the invoice for payment. Mr. Toolan seconded the motion. The motion was then voted upon and approved unanimously.

Handouts: Cost estimate memo, schedule

G. <u>High School Cafeteria Expansion</u>

Heidi Black (School Committee) and Aaron Sicotte (H.S. Assist. Principal) attended the meeting.

Mr. Taliep reported on the progress of the project. The cafeteria exterior wall demolition is scheduled to commence during the April school vacation. The permit application is underway.

A contract for air quality assessments is in the works with OccuHealth. FF&E and finishes are being worked out. A quote for the technology portion has been received.

It is anticipated that during the April school vacation the Contractor will mobilize on site, establish a work zone and proceed with demolition of the exterior cafeteria wall. A plywood wall will be installed as a barrier replacing the storefront windows which will be demolished. The Contractor will stay on site after that to prepare for new foundations, slab installation and tie in of the existing building. The Contractor will need to start steel erection in June, immediately after summer recess begins, in order to be finished by August 2016.

The Committee reviewed an invoice from Drummey Rosane Anderson Architects in the amount of \$6,103.00 for services thru February 2016. The invoice was reviewed and approved by Mr. Taliep. Mr. Kent made a motion that the Committee approve the invoice for payment. Mr. Schneider seconded the motion. The motion was then voted upon and approved unanimously.

The Committee reviewed Payment Requisition #2 from Paul J. Rogan Co., Inc. in the amount of \$22,971.38 for work thru February 17, 2016. The requisition was reviewed and approved by the Architect and Mr. Taliep. Mr. Kent made a motion that the Committee approve the invoice for payment. Mr. Silverstein seconded the motion. The motion was then voted upon and approved unanimously.

Handouts: Agenda, updated schedule, budget, anticipated cost log, Pay Application #2

H. <u>Hillside School Feasibility Study</u>

Susan Neckes, Heidi Black (School Committee), Don Walter, Michele Rogers and Jason Boone (D&W) attended the meeting.

Dore & Whittier reviewed the project steps taken over the past year. Central Avenue is the preferred site chosen. Seven buildings on the Central Avenue site will be demolished. FEMA is being asked to approve the 85 foot line as the flood plain line. The school building will be built at elevation 90, 5 feet above the flood line. Site circulation was reviewed.

Updated floor plans of the school building were reviewed. Meetings with the Planning Board and the Conservation Commission are scheduled.

If 609 Central Avenue is added to the site the building will not change but the traffic flow would change and there would be an increase in the number of parking spaces. Mr. Kent reported that the Chairs meeting discussed the acquisition of 609 Central Avenue. The Board of Selectmen indicated that it would be advantageous to the Town and the project to purchase the property. A purchase price is being negotiated and a warrant article will be presented at the May 2016 Annual Town Meeting.

The Committee reviewed an invoice from Dore & Whittier Architects in the amount of \$68,399.38 for services thru February 2016. The invoice was reviewed and approved by Mr. Haff. Mr. Kent made a motion that the Committee approve the invoice for payment. Ms. Espada seconded the motion. The motion was then voted upon and approved unanimously.

Mr. Haff reported that Dore & Whittier have changed the landscape architect and environmental services firms from Copley Wolff to Brown Sardinia and from Comprehensive Environmental to HML Associates. The MSBA has indicated that this is not a problem as long as the Committee approves of this change. Mr. Kent made a motion that the Committee approve the change in team. Mr. Salamone seconded the motion. The motion was then voted upon and approved unanimously.

Handouts: Agenda

I. Adjournment

The meeting was adjourned at 10:45 PM. The next PPBC meeting will be on Monday, April 11, 2016 at 7:00 PM, at the Needham Library, Community Room.

These minutes are intended to convey the content of the discussions at the Committee meeting. If no comments are received by the next meeting, they will go to file as part of the permanent Committee record.

Town of Needham Permanent Public Building Committee Proposed Agenda

Wednesday, April 27, 2016

Town Hall – Great Plain Room

| 7:30 - 7:35 | I. | Approve Minutes | PPBC |
|-------------|------|---|---|
| 7:35 – 7:55 | II. | Rosemary Pool Project A. Status | PPBC, Matt Toolen, Patty Carey and BH+A |
| 7:55 - 8:25 | III. | High School Expansion Project A. Status/Pay Req/CO | PPBC, Heidi Black, Aaron Sicotte and DRA |
| 8:25 - 9:05 | IV. | Hillside School Feasibility Study A. Status/Schematic Approval | PPBC, Heidi Black, Susan Neckes and D&W |
| 9:05 - | V. | PPBC Other Business A. Next Meetings and Agenda | РРВС |

The May 2016 meetings are scheduled for Tuesday, 5/10 and Monday 5/23 at Needham Public Library Community Room

The **June** 2016 meetings are scheduled for Mondays, 6/6 and 6/20 at the Needham **Town Hall** Great Plain Room

The **July** 2016 meetings are scheduled for Mondays, **7**/11 and 7/25 at Needham Public **Library** Community Room

The August 2016 meetings are scheduled for Mondays, 8/8 and 8/22 at Needham Public Library Community Room

PERMANENT PUBLIC BUILDING COMMITTEE

TOWN OF NEEDHAM

MINUTES OF MEETING

| Date: April 27, 2016 | Time: 7:3 | 0 PM | Location: Needham Town Hall |
|-----------------------|---|-----------------------------------|---|
| Attendance | | | |
| PPBC Members: | Present: George Kent, Stuart Chandler, Natasha Espada, Roy Schifilliti, Irwin Silverstein Absent: Paul Salamone, Peter Schneider Steve Popper (PFD-C Director of Design and Construction) Hank Haff (Sr. Project Manager) Phaldie Taliep (Project Manager) Mike Retzky (Project Manager) | | |
| User Representatives: | Patty Carey Heidi Black Aaron Sicotte Susan Neckes | School Commit H.S. Assist Prin | on Director, Rosemary Rep. tee, Hillside Rep., H.S. Rep. c./H.S. Rep. tee, Hillside Rep. |
| Other Attendees: | Joel Bargmann Don Walter | Bargmann Hend Dore & Whittier | lrie & Archetype r Architects |
| Minutes prepared by: | Kathryn Copley | Administrative S | Specialist |

Tonight was Phaldie Talieps last meeting. He has accepted a position with the State and his last day is Friday. He will be missed.

A. <u>Approval of Minutes</u>

The Committee reviewed the minutes from the April 11th PPBC meeting. Mr. Kent made a motion that the Committee approve the minutes. Mr. Chandler seconded the motion. The motion was then voted upon and approved unanimously.

B. <u>Rosemary Pool</u>

Patty Carey (Park & Recreation Director) and Joel Bargmann (BH+A) attended the meeting.

Mr. Bargmann reported on the progress of the project. The updated drawings and renderings were reviewed. The architect is looking at using porous pavement for the lower parking lot and driveway. The Disabilities Commission was satisfied with the ramp design and did not believe that not having an elevator in the building would be an

issue since the functionality of the building separates the uses on the two levels. All patrons will have the equal amount of access to the two areas.

The architect will seek a variance for keeping the existing terraces without railings.

Geo-probes will be conducted on a tight grid to determine the soil conditions under the existing pool structure. This will remove the uncertainty during bidding. The holes will be filled in and then painted.

It was suggested by Ms. Espada that the Architect take another look at the exterior façade to make it more in tune with the function of the facility. Making it more "fun loving" was encouraged.

The Board of Selectman voted unanimously in favor of the warrant article to be presented at Town Meeting. The Finance Committee voted 7 to 2 against recommending the warrant article; being conflicted by the majority vote process for approving design monies but needing 2/3 vote approval for approving construction funding. They also weren't satisfied that sufficient vetting had occurred for the need of a second floor.

The Committee reviewed PSS #3 from Bargmann Hendrie + Archetype in the amount of \$4,895.00 for the ANRAD Permitting. The PSS was reviewed and approved by Mr. Popper and Mr. Retzky. Mr. Kent made a motion that the Committee approve PSS #3. Mr. Chandler seconded the motion. The motion was then voted upon and approved unanimously.

The Committee reviewed PSS #4 from Bargmann Hendrie + Archetype in the amount of \$21,780.00 for added Geotechnical work: soil borings and geo-probes. The PSS was reviewed and approved by Mr. Popper and Mr. Retzky. Mr. Kent made a motion that the Committee approve PSS #4. Mr. Chandler seconded the motion. The motion was then voted upon and approved unanimously.

Handouts: Agenda, budget update, PSS #3 and #4, Option C estimates, April 2016 updated renderings

C. <u>High School Cafeteria Expansion</u>

Heidi Black (School Committee) and Aaron Sicotte (H.S. Assistant Principal) attended the meeting.

Mr. Taliep reported on the progress of the project. The cafeteria exterior wall demolition is 99% complete. The temporary wall is in place. The windows have been ordered.

The soil under the site is glacial till. The water is trapped, doesn't drain very well and has been shown to enter into the cafeteria door during heavy down pours. An estimated placeholder of \$30,000 has been placed in anticipated costs to cover appropriate changes to the drainage and replacement of suitable soils. It is hoped that a practical and cost effective method can be developed.

Version 4 of the schedule is underway and should be available soon. CORI checks have been approved for the majority of the workers. Three are still in process.

FF&E tables and chairs are being reevaluated and various options are being evaluated.

The Committee reviewed CO #2 from Paul J. Rogan Co., Inc. in the amount of \$2,832.00 for revisions to the temporary wall allowing for usage of the air vents and sprinklers within the space contingent to the cafeteria. The CO was reviewed and approved by the Architect, Mr. Popper and Mr. Taliep. Mr. Kent made a motion that the Committee approve CO #2. Mr. Chandler seconded the motion. The motion was then voted upon and approved unanimously.

The Committee reviewed Payment Requisition #3 from Paul J. Rogan Co., Inc. in the amount of \$163,284.94 for work thru April 25, 2016. The requisition was reviewed and approved by the Architect and Mr. Taliep. Mr. Kent made a motion that the Committee approve the invoice for payment. Mr. Chandler seconded the motion. The motion was then voted upon and approved unanimously.

The Committee reviewed an invoice from Drummey Rosane Anderson Architects in the amount of \$6,832.50 for services thru March 2016. The invoice was reviewed and approved by Mr. Taliep. Mr. Kent made a motion that the Committee approve the invoice for payment. Mr. Chandler seconded the motion. The motion was then voted upon and approved unanimously.

Mr. Taliep indicated that the amount budgeted for technology was not enough. The quote from Valley Communication, for the AV equipment, which included some enhancements to provide a more effective system, came in at \$88,971.89. Mr. Taliep asked the Committee to approve an increase in the technology budget by \$10,000 out of contingency. Mr. Kent made a motion that the Committee increase the technology budget as outlined by Mr. Taliep. Mr. Chandler seconded the motion. The motion was then voted upon and approved unanimously.

Mr. Taliep is recommending that the Committee go forward with the quote from Valley Communications in the amount of \$88,971.89. Mr. Kent made a motion that the Committee go forward with Valley Communications. Mr. Chandler seconded the motion. The motion was then voted upon and approved unanimously.

Handouts: Agenda, AV quote, updated budget, anticipated cost log, Pay Application #3, CO #2

D. <u>Hillside School Feasibility Study</u>

Susan Neckes, Heidi Black (School Committee) and Don Walter (D&W) attended the meeting.

Mr. Walter reviewed the Power Point presentation shown to the School Committee last night.

Mr. Haff reported that five bids were received on April 21, 2016 for the Site Preparation soil remediation project at Central Avenue. The lowest bidder was P.M. Zilioli, Inc. with a bid of \$64,500. References were checked and all came back positive. There were no issues or concerns and all would use the company again.

Mr. Kent made a motion that the Committee go forward and award P.M. Zilioli, Inc. with the contract for the Central Avenue Site Preparation soil remediation. Mr. Silverstein seconded the motion. The motion was then voted upon and approved unanimously.

Mr. Haff has received a quote from NW Pest Control in the amount of \$3,250.00 to provide pest control services at the Central Avenue site. A charge of \$2,250 is expected during the site preparation effort (reimbursable from the escrow funds) and \$1,000 for the demolition services. Mr. Kent made a motion that the Committee go forward with NW Pest Control. Mr. Chandler seconded the motion. The motion was then voted upon and approved unanimously.

Mr. Haff notified the Committee that nine proprietary system votes will be presented at future meetings as design goes forward. Committee votes will be needed.

The Committee reviewed PSS #9 from Dore & Whittier Architects in the amount of \$1,375.00 for a hydrant flow test. The PSS was reviewed and approved by Mr. Popper and Mr. Haff. The testing was completed and the results were favorable. Mr. Kent made a motion that the Committee approve PSS #9. Mr. Schifilliti seconded the motion. The motion was then voted upon and approved unanimously.

The Committee reviewed an invoice from Dore & Whittier Architects in the amount of \$62,535.00 for services thru March 2016. The invoice was reviewed and approved by Mr. Haff. Mr. Kent made a motion that the Committee approve the invoice for payment. Mr. Chandler seconded the motion. The motion was then voted upon and approved unanimously.

Comments from the Commission on Disabilities regarding the main entrance ramp are being reviewed.

Two companies are currently working on estimates based on the drawings to date. The schematic design will be submitted to the MSBA on June 2 for a July MSBA board vote.

Handouts: Project update email, Power Point presentation

E. <u>PPBC Future Meetings</u>

Mr. Kent proposed that three meetings be changed. It was agreed that the Monday, May 23rd meeting be moved to Tuesday, May 24th. It was also agreed

that the June meetings be changed from June 6^{th} and June 20^{th} . The meetings in June will now be on Monday, June 13^{th} and Monday, June 27^{th} .

F. <u>Adjournment</u>

The meeting was adjourned at 9:55 PM. The next PPBC meeting will be on Tuesday, May 10, 2016 at 7:30 PM, at the Needham Library, Community Room.

These minutes are intended to convey the content of the discussions at the Committee meeting. If no comments are received by the next meeting, they will go to file as part of the permanent Committee record.

Town of Needham Permanent Public Building Committee Proposed Agenda

Tuesday, May 10, 2016

Library – Community Room

| 7:30 - 7:35 | I. | Approve Minutes | PPBC |
|-------------|------|--|--|
| 7:35 – 8:00 | II. | DPW Feasibility Study A. Status | PPBC, Kate Fitzpatrick, Rick Merson and Weston & Sampson |
| 8:00 - 8:30 | III. | Police & Fire Stations Feas. Study A. Status | PPBC, Dennis Condon, John Schlittler, Kaestle Boos |
| 8:30 - 9:00 | IV. | Hillside School Feasibility Study A. Status/Schematic Cost Development | PPBC, Heidi Black, Susan Neckes and D&W |
| 9:00 - | V. | PPBC Other Business A. Next Meetings and Agenda | PPBC |

The May 2016 meetings are scheduled for Tuesday, 5/10 and Tuesday 5/24 at Needham Public Library Community Room

The June 2016 meetings are scheduled for Mondays, 6/13 and 6/27 at the Needham Town Hall Great Plain Room

The **July** 2016 meetings are scheduled for Mondays, **7**/11 and 7/25 at Needham Public **Library** Community Room

The August 2016 meetings are scheduled for Mondays, 8/8 and 8/22 at Needham Public Library Community Room

PERMANENT PUBLIC BUILDING COMMITTEE

TOWN OF NEEDHAM

MINUTES OF MEETING

| Date: May 10, 2016 | Time: 7:3 | 0 PM | Location: Library |
|-----------------------|---|--|--|
| Attendance | | | |
| PPBC Members: | Present: George Kent, Stuart Chandler, Natasha Espada, Irwin Silverstein Absent: Paul Salamone, Roy Schifilliti, Peter Schneider Steve Popper (PFD-C Director of Design and Construction) Hank Haff (Sr. Project Manager) Mike Retzky (Project Manager) | | |
| User Representatives: | Dennis Condon John Schlittler Heidi Black Susan Neckes | Police Chief, P School Commi | ice/Fire Stations Rep. Police/Fire Stations Rep. ttee, Hillside Rep., H.S. Rep. ttee, Hillside Rep. |
| Other Attendees: | Mike McKeon Don Walter Michele Rogers Mike Richard Jeff Albertini David Steve Joe Fitzpatrick Dan Gutekanst | Kaestle Boos A Dore & Whittie Dore & Whittie Weston & Sam Weston & Sam Weston & Sam School Superin | er Architects er Architects apson apson apson apson |
| Minutes prepared by: | Kathryn Copley | Administrative | Specialist |

A. <u>Approval of Minutes</u>

The Committee reviewed the minutes from the April 27th PPBC meeting. Mr. Kent made a motion that the Committee approve the minutes. Ms. Espada seconded the motion. The motion was then voted upon and approved unanimously.

B. <u>Police & Fire Stations Feasibility Study</u>

John Schlittler (Police Chief), Dennis Condon (Fire Chief) and Mike McKeon (Kaestle Boos) attended the meeting.

Mr. Retzky report that the Kaestle Boos has met with both of the Chiefs and have had a meeting with Planning.

Mr. McKeon reported that they are well into the first three activities; data gathering, interviews and existing site investigation. Cost estimates will be developed for comparison and for more detail during Schematic Design. The fire station response times will be looked at.

The study schedule was reviewed. There are six phases and a final report. A field trip was taken to the Foxborough Public Safety building. Chief Schlittler and Chief Condon attended.

A Public Information session is tentatively scheduled for the PPBC meeting on September 12 with a PPBC presentation of the final study report on September 26th. Fire Station #2 will be on a fast track for completion or renovation/construction and ensuing schematic design will follow, whereas the Police Department and Fire Station #1 will be completed further in the future.

Handouts: Agenda, Study Schedule

C. <u>DPW Feasibility Study</u>

Mike Richard, Jeff Albertini, David Steve and Joe Fitzpatrick (Weston & Sampson) attended the meeting.

Mr. Albertini reviewed the progress to date. They have assembled a library of documents and have given out staff interview sheets. This information is presented in their Task 1 Status Update Document issued April 12, 2016. They are in the midst of the existing site analysis with site inspections where equipment and activities occur, and have done an independent review of operations.

The next step is to look at the options for consolidating equipment and activities.

It was reported that Parcel 74 was taken off the list of options for at least a period of one year at the recent Annual Town Meeting. It was suggested that the building next to Claxton Field be considered as possible option for staging of equipment. Weston & Sampson will be evaluating traffic conditions at the RTS site to better understand impacts of the use of this site for further development.

Weston & Sampson will develop project phasing plan options, which may include several sites, and will develop project budgets to better understand the impacts of moving forward.

A working group has been assembled, that includes Kate Fitzpatrick, Rick Merson and Bob Lewis. Weston & Sampson meets with the group to review and discuss the study development.

The Committee would like Weston & Sampson to report on trends in siting and consolidating DPW operations in different towns. They are tasked to comment on combining division functions where possible.

Handouts: Schedule Outline, Work Plan

D. <u>Hillside School Feasibility Study</u>

Susan Neckes, Heidi Black (School Committee), Don Walter and Michele Rogers (D&W) attended the meeting.

Mr. Popper reported that Dore & Whittier, the OPM's and the estimators have been busy working on evaluating and reconciling the estimates. Input was gathered from PM+C as the Architects estimator and Daedalus Projects as the OPM estimator. The construction estimates are now close. There is an \$800,000 (2%) difference in the two out of a \$45 million construction cost. The MSBA generally accepts a five percent difference as reasonable. It was felt that a fair representation of the cost of work was achieved. Mr. Popper indicated he was comfortable with the estimate.

There is a list of six possible add or deduct alternates that need to be decided upon. Preferably those will be limited to one or two. These items are the HVAC –dehumidification at classrooms, under slab insulation to R-30, stone veneer, gymnasium acoustic divider, EPDM in lieu of built-up roofing system and the nature walk & field. The base design and estimate includes air conditioning, a built-up roof and stone veneer.

After much discussion Mr. Kent made a motion that air conditioning in the new school will be included in the base design and not included as an alternate. Ms. Neckes seconded the motion. The motion was then voted upon and approved unanimously.

Ms. Black made a motion that the acoustical wall in the gym be removed from consideration as an alternate and from the base design. Mr. Silverstein seconded the motion. The motion was then voted upon and approved unanimously.

The EPDM roofing and the stone veneer will be left as a deduct alternate. The added insulation will be left as an add alternates. (This was later removed as the payback was considered unreasonable.) The nature walk, trail and field will be left as an add alternate. The field and nature walk are considered necessary components of the school curriculum needs but must be excluded from the Project Budget as they are on land not owned by the Town of Needham.

The budget estimate draft was reviewed. The total construction hard costs are estimated to be in the range of \$45,000,000. A design & estimating contingency of 10% is being carried in that amount. The project is carrying 5% construction contingency plus 5% owner's contingency in addition to other associated soft costs.

The question of whether the project could start in the Fall of 2017 for a finish date of September 2019 was discussed. This would entail shortening the design from 14 months to 10 and construction from 24 to 20 months, and would save approximately \$1.75 million on the project projected escalation costs. This funding, estimated at \$250,000, would be needed to start the design earlier than that anticipated by appropriation at the November Special Town Meeting 2016. Funding would need to be in place before October.

Preliminary discussions with MSBA have indicated that other Districts have elected to start design prior to the signing of a Project Funding Agreement (PFA).

The Committee reviewed an invoice from Dore & Whittier Architects in the amount of \$102,045.75 for services thru April 2016. The invoice was reviewed and approved by Mr. Haff. Mr. Kent made a motion that the Committee approve the invoice for payment. Mr. Chandler seconded the motion. The motion was then voted upon and approved unanimously.

The Committee reviewed an invoice from Dore & Whittier Architects in the amount of \$2,989.50 for geotechnical services at the Central Avenue site thru April 2016. The invoice was reviewed and approved by Mr. Haff. Mr. Kent made a motion that the Committee approve the invoice for payment. Mr. Chandler seconded the motion. The motion was then voted upon and approved unanimously.

A Committee vote on the Schematic Design Report (SDR) to approve design will be presented at the next PPBC meeting on May 24th. The SDR will be delivered to the MSBA on June 2nd for a July MSBA board vote.

A discussion relative to a decision on OPM services ensued. The current approved MSBA structure of using a Town-employee OPM has only been in effect thru Schematic Design. To continue would require MSBA approval along with a plan for augmenting current work staff. A substantial savings on the OPM budget line item could be realized.

Handouts: Budget update, Schematic Design draft budget, Schematic Cost Estimate comparison

E. <u>High School Cafeteria Expansion</u>

Heidi Black (School Committee) attended the meeting.

The Committee reviewed an invoice from Drummey Rosane Anderson Architects in the amount of \$13,684.71 for services thru April 2016. The invoice was reviewed and approved by Mr. Popper. Mr. Kent made a motion that the Committee approve the invoice for payment. Mr. Silverstein seconded the motion. The motion was then voted upon and approved unanimously.

F. <u>Adjournment</u>

The meeting was adjourned at 10:25 PM. The next PPBC meeting will be on Tuesday, May 24, 2016 at 7:00 PM, at the Needham Town Hall, Great Plain Room.

These minutes are intended to convey the content of the discussions at the Committee meeting. If no comments are received by the next meeting, they will go to file as part of the permanent Committee record.

Town of Needham Permanent Public Building Committee Proposed Agenda

Tuesday, May 24, 2016

Town Hall – Great Plain Room

| 7:00 - 7:05 | I. | Approve Minutes | PPBC |
|-------------|------|---|---|
| 7:05 - 7:25 | II. | High School Expansion Project A. Status/CO | PPBC, Heidi Black, Aaron Sicotte and DRA |
| 7:25 – 7:40 | III. | St. Mary St. Pump Station A. Status/ Pay Req. | PPBC, Rick Merson and Tony DelGaizo |
| 7:40 - 8:00 | IV. | Hillside School Feasibility Study A. Status/Schematic Approval | PPBC, Heidi Black, Susan Neckes and D&W |
| 8:00 - | V. | PPBC Other Business A. Next Meetings and Agenda | PPBC |

The **June** 2016 meetings are scheduled for Mondays, 6/13 and 6/27 at the Needham **Town Hall** Great Plain Room

The **July** 2016 meetings are scheduled for Mondays, **7**/11 and 7/25 at Needham Public **Library** Community Room

The August 2016 meetings are scheduled for Mondays, 8/8 and 8/22 at Needham Public Library Community Room

The **September** 2016 meetings are scheduled for Monday, 9/12 at Needham Public **Library** Community Room and Monday, 9/26 at Needham **Town Hall** Great Plain Room

The **October** 2016 meetings are scheduled for Mondays, 10/17 and 10/31 at Needham Public **Library** Community Room

The November 2016 meetings are scheduled for Mondays, 11/14 and 11/28 at Needham Public Library Community Room

The **December** 2016 meeting is scheduled for Monday, 12/12 at Needham Public **Library** Community Room

PERMANENT PUBLIC BUILDING COMMITTEE

TOWN OF NEEDHAM

MINUTES OF MEETING

| Date: May 24, 2016 | Time: 7:0 | 0 PM | Location: Town Hall |
|-----------------------|--|--|---|
| Attendance | | | |
| PPBC Members: | Present: George Kent, Stuart Chandler, Natasha Espada, Paul Salamone, Roy Schifilliti, Irwin Silverstein Absent: Peter Schneider Steve Popper (PFD-C Director of Design and Construction) Hank Haff (Sr. Project Manager) | | |
| User Representatives: | Heidi Black Aaron Sicotte Tony DelGaizo Susan Neckes | HS Assistant Pr Town Engineer | ttee, Hillside Rep., H.S. Rep. rincipal, H.S. Rep. r, St. Mary St. Pump Rep. ttee, Hillside Rep. |
| Other Attendees: | Judd Christopher Don Walter Michele Rogers | Drummey Rosa Dore & Whittie Dore & Whittie | er Architects |
| Minutes prepared by: | Kathryn Copley | Administrative | Specialist |

A. <u>Approval of Minutes</u>

The Committee reviewed the minutes from the May 10th PPBC meeting. Mr. Kent made a motion that the Committee approve the minutes. Mr. Chandler seconded the motion. The motion was then voted upon and approved unanimously.

B. <u>High School Cafeteria Expansion</u>

Heidi Black (School Committee) and Aaron Sicotte (H.S. Assistant Principal) attended the meeting.

Mr. Popper reported an issue with the movable partition. The subcontractor (vendor) has been unresponsive and the General Contractor will be going to another vendor. This will increase the cost by \$9,465.00. The GC has agreed to share the additional cost with the Town. The Committee agreed to have Mr. Popper conclude the negotiation.

The construction specifications indicate that the planted area near the main school entrance was to be regraded to the expanded cafeteria plaza. The plants within the regraded area are mature and it was proposed that the existing vegetation be kept and that a retaining wall be

built instead. The Architect has been asked to prepare a sketch for the retaining wall thus preserving the area for the GC to price.

The Committee reviewed CO #3 from Paul J. Rogan Co., Inc. in the amount of \$33,886.00 for four additions, additional site work due to soil conditions, protective covering for added insulation inside the cafeteria, repair of unmarked site light conduit, and added conduit and drops for technology addition approved in CO#2. The change order was reviewed and approved by the Architect, Mr. Popper and Mr. Haff. Mr. Kent made a motion that the Committee approve CO #3. Mr. Sicotte seconded the motion. The motion was then voted upon and approved unanimously.

Handouts: updated budget, anticipated cost log, CO #3, proposed location of retaining wall

C. <u>St Mary Street Pump Station</u>

Tony DelGaizo (Town Engineer) attended the meeting.

Mr. Popper reported that the noise abatement of the generator is ongoing. Monday a silencer was added to the generator. There will be a test of the generator on Thursday morning and noise measurements taken.

The Committee reviewed Requisition #23 from Waterline Industries in the amount of \$28,593.00 for work thru May 2016. This is the final requisition. The requisition was reviewed and approved by Mr. Popper. Mr. Kent made a motion that the Committee approve the requisition for payment subject to the generator meeting the decibel level required by the Planning Board. Mr. Chandler seconded the motion. The motion was then voted upon and approved unanimously.

The Committee reviewed the final invoice from BETA Group in the amount of \$4,700.57 for services thru October 2015. The invoice was reviewed and approved by Mr. Popper. Mr. Kent made a motion that the Committee approve the invoice for payment. Mr. Chandler seconded the motion. The motion was then voted upon and approved unanimously.

The Committee reviewed an invoice from Computer Telephone in the amount of \$189.00 for cable installation services. The invoice was reviewed and approved by Mr. Popper. Mr. Kent made a motion that the Committee approve the invoice for payment. Mr. Chandler seconded the motion. The motion was then voted upon and approved unanimously.

Mr. Popper would like the Committee to approve the hiring of an independent acoustical consultant L.G. Copley Associates to independently review the generator noise. The cost would be under \$1,000. The Committee agreed.

Handouts: None

D. Hillside School Feasibility Study

Susan Neckes, Heidi Black (School Committee), Don Walter and Michele Rogers (D&W) attended the meeting.

The Committee will be voting on the acceptance of the Schematic Design and will also ask the Board of Selectmen to vote on the acceptance at their meeting tonight at 8 pm.

A project budget summary of \$66 million is being proposed. Between \$12.5 and \$13.5 million will establish the Maximum Facilities Grant offered by the MSBA. (This was later increased to between \$12.9 and \$13.9 million due to MSBA Board actions on May 25th increasing the allowed building construction amount to \$312/sf from \$299/sf)

A document with Frequently Asked Question will be assembled for inquiry's that will be expected in the fall before the special town meeting.

Mr. Kent made a motion that the PPBC approve the submission of the Hillside Elementary School Schematic Design to the MSBA. The Schematic Design Report (SDR) will be delivered to the MSBA on June 2nd for a July MSBA board vote. Mr. Chandler seconded the motion. The motion was then voted upon and approved unanimously by Ms. Black, Ms. Neckes, Mr. Kent, Mr. Chandler, Ms. Espada, Mr. Salamone, Mr. Schifilliti and Mr. Silverstein. The vote was approved 8 to 0.

The Committee reviewed an invoice from Community Newspaper in the amount of \$55.20 for a legal ad for the Central Ave. Site Preparation. The invoice was reviewed and approved by Mr. Popper. Mr. Kent made a motion that the Committee approve the invoice for payment. Mr. Schifilliti seconded the motion. The motion was then voted upon and approved unanimously.

The Committee reviewed an invoice from NW Pest Control in the amount of \$1,250.00 for pest control services at the Central Avenue. The invoice was reviewed and approved by Mr. Haff. Mr. Kent made a motion that the Committee approve the invoice for payment. Ms. Espada seconded the motion. The motion was then voted upon and approved unanimously.

The Finance Committee has sent a letter to the Board of Selectmen and the PPBC, requesting that the Committee try to get the cost per square foot reduced from \$500 to \$400. Mr. Kent will be attending a Chairs meeting tomorrow and will discuss this.

Handouts: Budget update, Propose Schedule of Alternates, Draft Construction budget, Schematic Design project schedule, vote for MSBA

E DPW Feasibility Study

The Committee reviewed an invoice from Weston & Sampson in the amount of \$6,000.00 for services thru March 2016. The invoice was reviewed and approved by Mr. Popper. Mr. Kent made a motion that the Committee approve the invoice for payment. Mr. Chandler seconded the motion. The motion was then voted upon and approved unanimously.

F. <u>Rosemary Pool Study</u>

The Committee reviewed an invoice from Bargmann Hendrie & Archetype in the amount of \$118,970.00 for services thru March 2016. The invoice was reviewed and approved by Mr. Retzky. Mr. Kent made a motion that the Committee approve the invoice for payment. Mr. Chandler seconded the motion. The motion was then voted upon and approved unanimously.

The Committee reviewed an invoice from James Houle, PhD. in the amount of \$500.00 for presenting a porous pavement workshop on May 13, 2016. The invoice was reviewed and approved by Mr. Retzky. Mr. Kent made a motion that the Committee approve the invoice for payment. Mr. Chandler seconded the motion. The motion was then voted upon and approved unanimously.

G. Adjournment

The meeting was adjourned at 8:05 PM. The next PPBC meeting will be on Monday, June 13, 2016 at 7:30 PM, at the Needham Town Hall, Great Plain Room.

These minutes are intended to convey the content of the discussions at the Committee meeting. If no comments are received by the next meeting, they will go to file as part of the permanent Committee record.

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Other Public Meetings and Presentations

In addition to the PPBC Meetings listed above, the District held ten (10) other public meetings, which were posted in compliance with the Open Public Meeting Law, at which the Hillside Elementary School project was discussed. These meetings are summarized in the following spread sheet, and agendas, meeting minutes, or formal votes are also attached. It is important to note that Town Meeting voted to approve the jurisdictional transfer of the Central Ave site from the Board of Selectmen to the School Committee under Article #33. Also the Special Town Meeting authorized funding for the purchase of parcel 609 Central Ave under Article #7-STm-5-9-2016, for educational purposes.

Other Working Group Meetings

The Design Team had multiple additional meetings with the Working Group and Public Safety Department. These meetings are summarized in the following spread sheet.

| | Notes | | МОО | ConCom | В | NCOD | SC | Town Clerk | Town Clerk |
|----------------------------|--|---|---|--|---|---|--|---|---|
| Updated - 5/24/2016 | Topics | | Informal review of Schematic Design, landscape and Building exterior. Appreciate the site constraints, and stepping of building mass. Encourage a diversity of planting types (high and low) in buffer along Central Ave.(NH) Elevation reads a bit "flat"- not a sculptural quality yet. Looks like it functions well, but exterior is not yet developed. (CR). Concerns about rear elevation & scale. | Review and approval of the585 Central Ave - Notice of Intent DEP file # 234-754 for Demolition of the houses and barns at 559,567,573, 585, 597 & 603 Central Ave. Informal presentation of the Schematic Design for the new School at Central Ave. | Informal review of Schematic Design, plans, site plan, landscape, traffic, parking, zoning waivers, and 609 Central Ave Alt. Plan. The alt plan is a "much better solution" because it addresses PB concerns: reduces bus traffic in neighborhood, increases parking to 100 spaces, improves transition Zone planting | Presentation of the current Schematic Design of the Hillside Elementary School with discussion about the accessibility features of the new school. | Update of project Hillside School Design, exterior envelope, site improvements with 609 Central Ave, and schedule | Warrant Article # 33- Transfer of Property for Educational Use - A portion of DeFazio Park and Central Ave ("Owen's Farm") Approval of funding to purchase 609 Central Ave | Warrant Article # 7- Appropriate for Property Acquisition- Approved \$762,500 of funding for acquisition of 609 Central Ave for educational use. |
| | Present | | <u>DRB</u> - Mark Gluesing, Deborah Robinson, Nelson Hammer, Chad Reilly <u>ORM</u> - Hank Haff <u>D&W</u> - Don Walter, Michele Rogers | <u>ConCom</u> : P. Alpert, Chair; S. Farr; P.Oehlkers; S. Soltzberg; C. Rhoades; M.Varrell; D. Anderson; <u>Designer</u> : M. Rogers; S. Ventresca; R. Kirby <u>OPM</u> : S. Popper, M. Retzky | PB: Jeanne McKnight, Chair, Martin Jacobs, Elizabeth Grimes, Bruce Eisenhunt; <u>OPM</u> - S. Popper & H. Haff <u>Designer:</u> - M. Rogers; | NCOD - Jeanie Martin, Co- Chairperson; Elaine Saunders, Co- Chairperson; Susan Crowell, Bruce Howell, Debbie Heller, Barbara Moss, Dale Wise, Leon Foster, Tatiana Swanson, Town Liason, <u>OPM</u> - S. Popper, H. Haff, <u>Designer</u> - D. Walter, M. Rogers | School Committee -Susan Neckes Chair; Heidi Black, Vice Chair; Dr. Connie Barr , Michael Greis, Andrea Longo Carter, Kim Marie Nicols & Aaron Pressman School Dept - Dan Gutekanst & Sr. Staff AG, TD, ML & TC. <u>OPM</u> - S. Popper, H. Haff <u>Designer</u> - D Watter, M Rogers | Town Meeting Members School Committee, Board of Selectmen, Finance Committee & etc. | Town Meeting Members School Committee, Board of Selectmen, Finance Committee & etc. |
| | Location | | Public Services Administration Bldg (PSAB) 500 Dedham Ave., Needham, MA Charles River Room (CRR) | PSAB- CRR | PSAB- CRR | Needham Public Library, Community Rm, 1369 Highland Ave, Needham, MA | Broadmeadow School Broad Meadow Rd, Needham, MA | Town Hall 1471 Highland Ave Needham, MA BOS Chambers | Town Hall 1471 Highland Ave Needham, MA BOS Chambers |
| | Meeting Body | I PHASE | Design Review Board | Conservation Commission | Planning Board / Planning Director | NCOD | School Committee | Town Meeting Members | Town Meeting Members |
| Hillside Elementary School | Other Public Meetings" Meeting Type | Module 4 - FEASIBILITY STUDY - SCHEMATIC DESIGN PHASE | Design Review Board | Conservation Commission (Public Meeting- NOI Demolition & Informal Mtg re: Schem. Des.) | Planning Board | Needham Commission on Disabilities - Public Meeting | School Committee | Annual Town Meeting | Special Town Meeting within Annual Town Meeting |
| Attachment - B - | Meeting Log Date | - FEASIBILIT | 3/21/2016 | 3/24/2016 | 3/29/2016 | 4/19/2016 | 4/26/2016 | 5/2/2016 | 5/9/2016 |
| Attachn | Mta No | Module 4 | DRB #1 | Com Com #2 | Planning Bd #1 | NCOD #1 | SC #6 | ATM- 2016 | STM- 2016 |

Attachment B Page 1 of 2

| Attach | Attachment - B - | Hillside Elementary School | 0 | | | opualeu - Siztizu IO | |
|--------------|------------------|---|--------------------------|---|--|--|--------|
| | Meeting Log | Other Public Meetings* | | | | | |
| Mtg No | | | Meeting Body | Location | Present | Topics | Notes |
| SC #7 | 5/17/2016 | School Committee | School Committee | Broadmeadow School Broad Meadow Rd, Needham, MA | School Committee -Susan Neckes Chair; Dr. Connie Barr , Heidi Black, Andrea Longo Carter, Michael Greis, Kim Marie Nicols & Aaron Pressman School Dept - Dan Gutekanst & Sr. Staff AG, TD, ML & TC. | Approval of Schematic Design for submittal to MSBA (certified vote) | SC |
| FinCom #3 | 5/18/2016 | Finance Committee (Public Meeting) | Finance Committee | Town Hall 1471 Highland Ave Needham, MA | Finance Committee - Louise Miller, Chair; Rick Zambone, Vice Chair; Barry Coffman, John Connelly, Tom Jacob, Richard Lunetta, Richard Reilly, Carol A. Smith-Fachetti PPBC - George Kent PPBC - George Kent <u>PPBC - George Kent</u> <u>PPBC - Steve Popper, Hank Haff School Com.</u> - Dr. Connie Barr <u>Board of Selectmen</u> - Matt Borrelli <u>School Dept</u> - Dan Gutekanst, <u>Anne Gulati</u> <u>Town Manager</u> - Kate Fitzpatrick, Dave Davison | Review and discussion of Hillside Schematic Design Total Project Budget and related documents. Issues discussed included: comparable cost per GSF and comparable area per student to other MSBA projects. Also potential cost savings, project base schedule vs. accelerated schedule and the anticipated reimbursement rate for the project in comparison to other similar Towns. | FinCom |
| BOS #4 | 5/24/2016 | Board of Selectmen (Public Meeting Televised on CCTV) | Board of Selectmen | Town Hall 1471 Highland Ave Needham, MA BOS Chambers | <u>BOS-</u> , Matthew Borrelli, Chair;Marianne Cooley, Vice Chair; Daniel Matthews, Clerk; John Bulian; Maurice Handel; <u>Town Manager.</u> Kate Fitzpatrick; <u>PPBC</u> - George Kent; <u>SC</u> - Sue Neckes, Heidi Black; <u>OPM</u> - S Popper, H Haff; <u>Designer</u> - D Walter, M. Rogers | Presentation of a Summary of the Schematic Design, and Total Project Budget, discussion and approval of Schematic Design for submittal to MSBA. | BOS |
| Notes | | | | | - | | |
| | * All meeting | * All meetings are open to the public and advertised on the Town | ertised on the Town We | eb Site at least 48 hours pric | Web Site at least 48 hours prior to the meeting in accordance with the Massachusetts Public meeting laws | e Massachusetts Public meeting laws | |
| | All meeting r. | rotes are available on the Town M | /eb site for the respect | ive Committee or Board, and | All meeting notes are available on the Town Web site for the respective Committee or Board, and hard copies are also available at the PPBC office | PBC office | |
| | All meeting r. | All meeting notes and presentation materials from each public meeting are also included in the Appendix to the PDP. | rom each public meetir | ng are also included in the A | ppendix to the PDP. | | |
| | ** The PPB(| C members include: George Kent, | Chair, Stuart Chandle | r, Natasha Espada, Paul Sa | ** The PPBC members include: George Kent, Chair, Stuart Chandler, Natasha Espada, Paul Salamone, Roy Schifiliti, Peter Schneider, and Irwin Silverstein | ; and Irwin Silverstein | |
| | The User Re | The User Representatives for the Hillside School project are: Sue | | ckes. SC Chair, and Heidi B | slack. SC Vice Chair (both are current n | Nackee, SC Chair and Heidi Black, SC Vice Chair (hoth are current members of the Needham, School Committee) | |

8



Public Facilities Department – Construction Permanent Public Building Committee

Town of Needham

500 Dedham Avenue Needham, MA 02492 781 455-7550 tel. 781- 453-2510 fax

Meeting Notes (DRB-1)

| Project: | HILLSIDE ELEMENTARY SCHOOL –FEASIBILITY- SCHEMATIC DESIGN |
|-----------|---|
| Location: | Charles River Room, PSAB, 500 Dedham Ave, Needham |
| Topic: | Hillside Schematic Design – Informal Presentation |
| Date: | March 21, 2016 |

ATTENDING:

| Mark Gluesing (MG) | Chairman - Design Review Board | (DRB) |
|-----------------------|---|-------|
| Deborah Robinson (DR) | Vice Chair- Design Review Board | (DRB) |
| Chad Reilly (CR) | Design Review Board Member | (DRB) |
| Nelson Hammer (NH) | Design Review Board Member | (DRB) |
| Hank Haff (HH) | Town of Needham, Owners Project Manager | (OPM) |
| Michele Rogers (MR) | Dore & Whittier Architects, Inc. | (D&W) |

Review: Any comments or corrections should be e-mailed to HH prior to the next meeting. Note: These MEETING NOTES WERE PREPARED BY THE OPM AS A RECORD OF THE INFORMAL DISCUSSION

| ITEM NUMBER | ITEM | ACTION |
|----------------|---|--------|
| | | 1 |
| 1-01 | As noted on the Town Web site - The Design Review Board shall review permit applications for all new structures and outdoor uses, exterior additions, exterior alterations, and exterior changes in all areas as specified in 7.7.2.2 of the zoning by-laws, and shall also review requests for all sign permits, as required under Article XIX of the Needham general by-laws. | Record |
| | This was an Informal Presentation to the DRB. D& W presented the 3/21/16 PowerPoint presentation (attached) as an overview of the Hillside Elementary School project at Schematic Design Stage and the comments provided by the Board are informal recommendations for the project as the design continues to develop. | |
| | The site selected during the PSR stage is, the former Owen Poultry Farm at 585 Central Ave including six abutting properties. The Town closed on the purchase of the property on 3/7/16. An additional property at 609 Central Ave is also being recommended by the Board of Selectmen (BOS) and will be the subject of a warrant article at May- Annual Town Meeting. An alternate site plan study including this area was part in the presentation. The DRB recognized the traffic flow and Transition Zone advantages of adding this parcel to the overall site. | |

| | Notes by OPM (HH) | |
|------|---|---------------------------|
| 1-06 | MR- D&W will take these DRB comments into consideration as the design develops. With each step in the MSBA process the design gets more final as noted on the MSBA web site "Working with Us". At the conclusion of Schematic Design the building program, net and gross building areas, and site layout will be fixed. The Building Materials will be refined and integrated into the project cost estimate and then the Project Funding Agreement (PFA). Further refinement and selection of materials occurs during DD stage, but must remain within the PFA limits. | D&W |
| 1-05 | CR – acknowledged that the images are conceptual, but felt that the Courtyard view was the most successful in articulating the design direction. The plan is well developed and the integration into the site makes sense, however the elevations express a "sense of function", not yet a "sense of place." The other elevations do not yet express the sculptural qualities identified in the plan. The form needs further refinement to breakdown the scale, yet integrate the whole building. | D&W |
| 1-04 | DR – appreciated the way the massing of the building stepped into the hill and how this helps reduce the visual scale of the three story wing so that it reads like a 2 or 2 ½ story building from the street. Concerns were expressed about the West elevation, and recommended that the massing needs further articulation to help break down the scale. MR indicates this is in progress. | D&W |
| 1-03 | presentation in late 2017, at about 60% Construction Documents stage.NH- Remarked that the DRB would encourage the plantings within the 10-ft wide landscaped zone along the Central Ave side of the parking lot include both high and low plantings (trees & bushes) to help screen the parked cars from the road. The three layers of plantings create a good screen of the building to the neighborhood. | D&W Landscape Arch. |
| 1-02 | The project <u>schedule</u> indicates that the DRB will see an updated Informal presentation at the conclusion of Design Development in mid-2017 and a formal | D&W in DD & CD |
| | The D&W Design direction is for a building is contemporary, yet classical – one that will stand the test of time. Exterior envelope materials are still being studied based upon conceptual image boards presented to the Working Group. The Structural frame of the building is steel. There is an emphasis on the horizontal, yet breaking up of the building mass to reflect the residential scale of the neighborhood. Fenestration is organized to maximize day-lighting with in the classrooms and limit East & West solar heat-gain issues. Exterior materials will be natural materials, like stone and wood, but durable to reduce maintenance and construction costs (such as engineered wood (phenolic resin – wood veneer panels, metal panel and cast stone). D&W is still evaluating alternatives. | |

T:\PPBC\Current Projects\Hillside School\Meeting Notes\Schematic Design Stage\2016.03.21_Mtg Notes_Hillside-SD_DesRevBd.doc

TOWN OF NEEDHAM CONSERVATION COMMISSION PUBLIC SERVICES ADMINISTRATION BUILDING CHARLES RIVER ROOM MEETING AGENDA Thursday, March 24, 2016 7:45 p.m.

MISCELLANEOUS BUSINESS

- 1. Minutes
- 2. Enforcement & Violation Updates

HEARINGS/APPOINTMENTS

- 8:00 PM 559, 567, 573, 597 AND 603 CENTRAL AVENUE NOTICE OF INTENT (DEP FILE #234-7XX)
- 8:15 PM KEOLIS COMMUTER SERVICE REQUEST FOR DETERMINATION OF APPLICABILITY

OTHER BUSINESS

REQUEST FOR CERTIFICATE OF COMPLIANCE – 1516 CENTRAL AVENUE (DEP FILE #234-654)

DISCUSSION ITEM – UPDATE ON HILLSIDE SCHOOL AT CENTRAL AVENUE DESIGN

DISCUSSION ITEM – UPDATE ON ROSEMARY RECREATIONAL COMPLEX DESIGN

DISCUSSION ITEM – ROSEMARY GLEN OPEN SPACE

TOWN OF NEEDHAM CONSERVATION COMMISSION MEETING MINUTES Thursday, March 24, 2016

LOCATION: Public Services Administration Building (PSAB), Charles River Room

ATTENDING: Janet Carter Bernardo, Artie Crocker, Stephen Farr, Peter Oehlkers, Alison Richardson, Cory Rhoades, Sharon Soltzberg, Matthew Varrell (Director of Conservation), Debbie Anderson (Conservation Specialist)

GUESTS: Bill Brown, Michelle Callahan, Kristen Capodilupo, Patricia Carey, Sue Cotton, Kerrie Gondola, Maureen Harrington, Kim Howard, Carolyn Lynes, Phil Lyons, Josh Melia, Lynne Melia, Barry Miller, Steven Popper, James Puccio, Michael Retzky, Michelle Rogers, Matt Snow, Andy Truman, Steven Ventresca

P. Oehlkers opened the public meeting at 7:35 pm.

MISCELLANEOUS BUSINESS:

Motion to approve the Meeting Minutes of July 9, 2015 by J. Carter Bernardo, seconded by S. Farr, approved 7-0-0.

Motion to approve the Meeting Minutes of July 23, 2015 by J. Carter Bernardo, seconded by S. Farr, approved 7-0-0.

Motion to approve the Meeting Minutes of February 25, 2016 by J. Carter Bernardo, seconded by S. Farr, approved 7-0-0.

ENFORCEMENT & VIOLATION UPDATES

280 NEHOIDEN STREET

M. Varrell notified the Commission that he noticed the fence had been removed from the wetland and was currently leaning against the house.

HEARINGS

559, 567, 573, 597 and 603 CENTRAL AVENUE – NOTICE OF INTENT (DEP FILE #234-754)

Applicant/Owner: Steven Popper, Town of Needham Public Facilities Dept. - Construction Division

<u>Project:</u> The proposed project consists of the demolition of all buildings and structures within the project boundary, including the removal of two trees and existing utilities. The demolition work is in anticipation of the proposed Hillside School. Properties included in the application include 559, 567, 573, 585, 597, and 603 Central Avenue. In addition to the demolition and minor regrading work, this application addresses an outstanding enforcement issue from the previous owner pertaining to unauthorized fill within the 100-foot Buffer Zone. The fill removal will include removal and proper disposal of soil contaminated with illegally dumped animal fat by the previous owner. The Applicant is also requesting confirmation of the wetland boundaries as part of the approval. Portions of the proposed work are located within Bordering Land Subject to Flooding and the 100-foot Buffer Zone to Bordering

Vegetated Wetlands. The proposed limit of work is approximately 10 feet from the limits of Bordering Vegetated Wetlands.

<u>Present for the Applicant:</u> Michelle Callahan and Steve Ventresca of Nitsch Engineering, Steven Popper and Michael Retzky of the Town of Needham Public Facilities Dept., Construction Division and Michelle Rogers of Dore & Whittier Architects.

Supporting Documents include:

- □ WPA Form 3 Notice of Intent and supporting documents received March 10, 2016
- □ Needham Wetlands Protection Bylaw Application for Permit received March 10, 2016
- Plan entitled: "EX-1 Exhibit Plan 585 Central Avenue Needham, Massachusetts 02494," prepared by Nitsch Engineering, signed and stamped by Jamie G. Gayton, P.L.S. #49624, dated 10/6/2015 (revised 2/10/16).
- Plans entitled: "Hillside School Central Ave. Site Demo", Sheets C0.00, C1.00, C2.00, C3.00, C3.01, prepared by Nitsch Engineering, stamped and signed by Steven Ventresca, P.E. #46872, dated 3/9/2016.
- Plans entitled: "Hillside School Central Ave. Site Demo", Sheets C0.00, C1.00, C2.00, C3.00, C3.01, prepared by Nitsch Engineering, stamped and signed by Steven Ventresca, P.E. #46872, dated 3/18/2016.

J. Carter Bernardo opened the Public Hearing at 8:00 pm. S. Farr recused himself.

M. Retzky explained that the proposed project is the demolition of several buildings in anticipation of the construction of the Hillside School. The construction of the school will be permitted through a separate Notice of Intent filing. M. Callahan presented the proposed project. The site consists of 559-603 Central Avenue and 585 Central Street (previously known as the Owen's Poultry Farm). The Town of Needham purchased the properties for the purpose of constructing the new Hillside School. A small portion of the project area is on land owned by the Town of Wellesley. The Town of Needham has a license agreement for the proposed work.

The two resource areas located on the site are Bordering Vegetated Wetlands (BVW) and Bordering Land Subject to Flooding (BLSF). A Letter of Map Amendment (LOMA) has been filed with FEMA to adjust the flood line to coincide with Needham Survey flood elevation of 85. There is an outstanding Superseding Order of Conditions on the 585 Central Street site that requires the removal of non-compliant fill. The proposed work includes the demolition of ten (10) buildings. The building foundations will be filled in and seeded with a meadow mix. Existing patios, walkways and retaining walls will be removed resulting in a decrease of impervious area of 0.63 acres. There will be utility demolition as well including cutting and capping of sewer and water lines. The gas company will cut and cap their lines. The only work proposed within the 25-foot Buffer Zone includes the removal of a 150 s.f. shed. Erosion controls will be implemented for the project. The Superseding Order of Conditions will be closed out as part of this process. The un-permitted fill has been tested and is deemed to be clean fill so it will be used on site to fill foundations. Small areas of the fill have been tested and found to contain turkey grease from the previous land use. These areas of contaminants will be removed and disposed of properly.

M. Varrell described the history of the Superseding Order of Conditions. In 2004, there was a Notice of Violation issued for unauthorized placement of fill within Buffer Zone. No action took place to remediate the issue and a second Enforcement Order with fines was issued. This resulted in the property owner submitting a Notice of Intent in January 2005 to the Commission. In February 2005, an Order of Conditions was issued requiring the removal of the unauthorized fill. The owner appealed the Order of Conditions to MassDEP. In May 2005, MassDEP issued a Superseding Order of Conditions upholding the Commission's Order of Conditions requiring removal of the fill. The owner requested an

adjudicatory hearing with MassDEP and appealed the Bylaw Order to Superior Court. The Commission voted to stay the adjudicatory hearing process to allow the Superior Court process to continue. The stay order was issued by DEP in July of 2005. In October of 2005, the Superior Court appeal was dismissed and the Bylaw Order of Conditions went back into effect. This Bylaw Order of Conditions has since expired. The stay was never lifted on the request for adjudicatory hearing. As part of the purchase of the property by the Town, the previous owner was required to submit a letter to DEP withdrawing his request for an adjudicatory hearing. As of now, DEP has not acted on this request. If DEP accepts the request then the Superseding Order will go back into effect. If the Commission issues an Order for the demolition work, there would be two open Orders on the same property for essentially the same work. The Town could request a Certificate of Compliance from DEP to close out the Superseding Order of Conditions and complete all the work under this new Order or this Order could be issued only under the Bylaw for that portion of the work. J. Carter Bernardo asked if it was necessary for the Commission to delay closing the Hearing for a reply back from DEP. M. Varrell replied that it may take quite a while for DEP to react.

There are two (2) trees proposed for removal under this portion of the project. They will be mitigated for during the school construction phase. J. Carter Bernardo inquired when they expect to hear back from FEMA. M. Callahan replied that they had filed in January and expect a reply within a couple of months. M. Varrell stated that as part of this filing, the Applicant requested approval of the wetland resource boundaries. The Bordering Vegetated Wetlands delineation can be approved but the BLSF line cannot be approved at this time.

Phil Lyons of 586 Central Avenue asked if the rest of the site had been tested for toxicity and where does toxic material end up being deposited. Additionally, he wanted to know what will be done to prevent impacts from dust and debris to neighboring properties. M. Callahan responded that the entire site has been tested. The only reason the turkey grease areas have been designated as "hazardous" is because they are located within a Zone 2 area. A landfill has been designated that will take the contaminated fill. Proposed seeding with meadow grass will help stabilize the disturbed soils and keep the dust down and it's part of the SWPPP. During demolition, the contractor should be watering the soils to keep them from becoming airborne.

Josh Melia of 553 Central Avenue asked if the trees located behind 567 Central Avenue will be coming down. M. Callahan replied that they will not be removed as part of this filing.

Matt Snow of 50 Sunset Road asked if the house at 45 Sunset Road was going to remain as a construction office for the demolition portion of the project. M. Callahan replied that it may be used for that purpose then removed during the end of the construction phase. He mentioned that survey crews had been on his property surveying trees. He was given a card to call with questions, which he did but did not receive a reply. J. Carter Bernardo replied that surveyors like to get a good idea of what's happening on adjacent properties as far as drainage and surface materials are concerned.

Kerrie Gondola of 145 Taylor Street stated that the survey seemed very extensive. M. Callahan replied that even in the Taylor Street area, they are considered abutters. J. Carter Bernardo added that it would be nice if surveyors would knock on doors and leave cards at properties where they are conducting surveys.

Sue Cotton of 40 Sunset Road asked for clarification regarding the request for proposed changes to the FEMA floodplain elevations. J. Carter Bernardo replied that they were only asking FEMA to assign an elevation of 85 where they had not had one for this area. She also had concerns regarding potential flooding issues in the future due to grading changes. S. Popper stated that they could contact him if they had any issues. S. Ventresca stated that once the demolitions are complete the site will be graded back to current conditions with the land sloping towards the wetlands.

Josh Melia of 553 Central Avenue stated that he had been required along with the owners of 559 Central Avenue, and Owen's Farm to purchase flood insurance several years ago because they were now located in the floodplain. M. Callahan agreed that if FEMA accepts their proposed elevation of 85 then the abutters will receive documentation and may no longer have to purchase flood insurance.

M. Callahan requested that the existing impervious area on the site be held as the existing conditions for the school design/construction phase.

Motion to close the public hearing for 559, 567, 573, 597 and 603 CENTRAL AVENUE (DEP FILE #234-754) by A. Richardson, seconded by S. Soltzberg, approved 6-0-1

KEOLIS COMMUTER SERVICE – REQUEST FOR DETERMINATION OF APPLICABILITY

Applicant/Owner: Keolis Commuter Services

<u>Project:</u> The submission was made for the sole purpose of verifying the accuracy of the identification of those resources protected under the MA Rights-of-Way Management Regulations. No work is proposed within wetland resource areas. This Determination was requested in support of the renewal of Keolis' Vegetation Management Plan (VMP).

Present for the Applicant: No one

Supporting Documents include:

- WPA Form 1 Request for Determination of Applicability and supporting documents received March 7, 2016
- □ USGS Right of Way Maps by Rail Line and Community dated 3/1/16.

J. Carter Bernardo opened the Public Hearing at 8:15 pm.

M. Varrell stated that the Applicant had requested a continuance to the April 28, 2016 Meeting at a time later on the Agenda.

Motion to continue the public hearing for Keolis Commuter Service to April 28, 2016 at 8:00 pm. by S. Farr, seconded by A. Richardson, approved 7-0-0.

OTHER BUSINESS

REQUEST FOR CERTIFICATE OF COMPLIANCE – 1516 CENTRAL AVENUE (DEP FILE #234-654)

D. Anderson explained that this filing for the Sunnyhill Horse Farm was submitted in response to a wetlands stop work order for work performed without a Permit including the issuance of an Enforcement Order and fine which has been paid. The owner had begun installation of a heated driveway including digging a trench for water and electrical lines from the house to the driveway. Part of the work took place within the right-of-way to Central Avenue and was remedied by removing the grate and filling the trench with stone in the portion within the right-of-way. In addition, the installation of the proposed french drain was to be witnessed by a Professional Engineer and written documentation provided to the Commission that it was installed properly. The installation was not witnessed. D. Anderson had no other issues and recommended the Commission issue a complete Certificate of Compliance.

Motion to issue a Certificate of Compliance for 1516 Central Avenue (DEP File #234-654) by S. Soltzberg, seconded by S. Farr, approved 7-0-0.

DISCUSSION ITEM – ROSEMARY GLEN OPEN SPACE

M. Varrell explained that a neighbor, Kristen Capodilupo, had contacted him regarding a property for sale that may be of interest to the Commission to purchase near Rosemary Glen and he had conducted a site visit. M. Varrell introduced K. Capodilupo of 19 Colonial Road to discuss a land acquisition opportunity at 159 Marked Tree Road. She explained that the property is for sale and the existing house will most likely be a tear down. The listing states that the property is being marketed for land value only and there is an additional abutting vacant lot available. She proposed using the land as a connection between Marked Tree Road and Sportsman's Pond. There is some type of existing right-of-way to access the rear parcel. She explained that there is abundant wildlife using the land. There is a question whether it is buildable at all. M. Varrell stated that the wetlands had been recently delineated. J. Carter Bernardo stated that the Commission would discuss whether they had interest in pursuing acquiring the property in an Executive Session. The Commission will look at the master plan to see if the purchase would enhance their current holdings. J. Carter Bernardo will stop by and look at the property. M. Varrell discussed potential trail access and noted that there is not a real connection between to the two lots.

DISCUSSION ITEM – UPDATE ON HILLSIDE SCHOOL AT CENTRAL AVENUE DESIGN

M. Rogers reviewed the project schedule, went over the public meeting dates and discussed the updates on the school website. The plan is for the new school to open in September of 2020. The Town of Wellesley is licensing their piece of property to the Town of Needham to use as playing field space, as well as, create walkways to the knoll. M. Rogers and the Landscape Architect, Bill Brown went over the existing site plan including wetlands and Buffer Zones. There is an area which is already disturbed right up to the wetland line where they are proposing some grading, construction of a stone dust path and bridge over the existing culvert to access the knoll. In addition, there is an area that was previously disturbed in the 25-foot Buffer Zone where they are proposing to grade and construct portions of a playing field. J. Carter Bernardo stated that the Commission would ask that they try to avoid construction of the field in the 25-foot Buffer Zone and perhaps return the 25-foot Buffer Zone to a natural state. Areas of floodplain will be filled and replicated. The proposed bus access was discussed.

S. Ventresca explained that they were proposing installation of Stormtech systems to infiltrate the roof and parking area runoff. Soil testing has not yet been performed. They had wanted to use all porous asphalt but realized this would not work in the playground area. The fire department did not have any comment on the proposed usage of pervious pavement along their access. The groundwater elevation was discussed as it would relate to stormwater.

DISCUSSION ITEM – UPDATE ON ROSEMARY RECREATIONAL COMPLEX DESIGN

Andy Truman from Samiotes Consultants presented the updates on the Rosemary Pool Recreational Complex Design. Originally they had planned to set the new pool up higher to the second terrace. Through the ANRAD process it was determined that the proposed project would result in floodplain filling and the need for compensation. Due to the financial constraints involved, the revised plan is to put the pool back in at the same elevation as existing. The potential use of porous pavement for the site in order to minimize spending on stormwater infiltration efforts may be proposed. Due to comments from DPW the upper parking lot would remain impervious pavement. The pool deck will be porous pavement as well. There is a desire from the public for a spray pool at the park. It was originally proposed in another location but was disconnected from the pool area. The new location would be outside the 25-foot Buffer Zone but within the 50-foot Buffer Zone in the area of existing beach. J. Carter Bernardo stated that the only concern she had was the proposed use of pervious pavement on the

steep driveway slope. M. Retsky stated that they would be presenting the revised design to the Park & Recreation Department for their approval on Monday. Where the coffer dam is located now will be replaced by a cement wall.

Motion to adjourn the meeting by S. Soltzberg, seconded by A. Richardson, approved 7-0-0.

The meeting was adjourned at 9:50 pm.

NEXT PUBLIC MEETING

Thursday, April 14, 2016 at 7:30 PM in the Public Services Administration Building, Charles River Room.



TOWN OF NEEDHAM, MA

PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT

500 Dedham Ave Needham, MA 02492 781-455-7500

PLANNING

NEEDHAM PLANNING BOARD Charles River Room, Public Services Administration Building 500 Dedham Avenue, Needham, Massachusetts <u>Tuesday March 29, 2016</u> <u>7:00 p.m.</u>

- 1. Correspondence.
- Transfer of Permit: Major Project Site Plan Review No. 2006-04: Asillem, LLC, d/b/a Stone Hearth Pizza Co., P.O. Box 725, Sherborn, MA 01770 to Sol Soul Family Foods LLC d/b/a Hearth Pizzeria, 59 Mount Vernon Avenue, Needham, MA 02492, Petitioner (Property located at 974 Great Plain Avenue, Needham, MA).
- 3. Public Hearing:

4. Appointment:

7:30 p.m. Presentation regarding Hillside School at Central Avenue.

- 5. Decision: Major Project Site Plan Special Permit No. 2016-01: 57 Dedham Ave LLC, 471 Hunnewell Street, Needham, MA, Petitioner. (Property located at 15 & 17 Oak Street, Needham, Massachusetts).
- 6. Minutes.
- 7. ANR Plan Needham Nine Owner, LLC, Petitioner (Property located at 77 A Street, 156 B Street and 0 A Street, Needham, MA).
- 8. Report from Planning Director and Board members.

(Items for which a specific time has not been assigned may be taken out of order.)

FUTURE DATES: Planning Board Meetings: April 11, 2016 and April 26, 2016, May 24, 2016, June 14, 2016, June 28, 2016.
 League of Women Voters Warrant Meeting: April 25, 2016.
 Annual Town Meeting: May 2, 2016.

^{7:00} p.m. Major Project Site Plan Review No. 2010-03: F & A Farms, Inc. d/b/a Volante Farms, 226 Brookside Road, Needham, MA, 02492, Petitioner, (Property located at 292 Forest Street, Needham, MA.)

NEEDHAM PLANNING BOARD MINUTES

March 29, 2016

The regular meeting of the Planning Board held in the Charles River Room, Public Services Administration Building, was called to order by Jeanne McKnight, Chairman, on Tuesday, March 29, 2016 at 7:00 p.m. with Messrs. Eisenhut and Jacobs, and Ms. Grimes as well as Planning Director, Ms. Newman, Assistant Planner, Ms. Clee and Recording Secretary, Ms. Kalinowski.

Correspondence

Ms. McKnight noted the following correspondence for the record: a notice from the Dedham Planning Board with changes to the Zoning By-Law on Mixed Use. She noted she found the information on page 3 regarding dwelling units in a Mixed-Use Development interesting. Each dwelling unit cannot be less than 400 square feet or more than 1,500 square feet. She questions this. She thought generally square footage could not be regulated. She noted a notice from the City of Newton and commented she found this interesting. Newton is changing street facing garages. She suggested the Board might want to find out what Newton is doing.

Ms. McKnight also noted copies of Needham Times articles: an article by Karen Price, dated 3/10/16, regarding the Large House issue; a letter dated 3/10/16 thanking Sam Bass Warner and an article dated 2/25/16 regarding food trucks in down town and a petitioned article to liberalize regulations. Mr. Jacobs asked if the Board has been asked to give their opinion on the food truck issue. Mr. Eisenhut stated there has been enormous success in Boston. The thinking is it brings in business. Mr. Jacobs stated he does not buy that. Not with all the restaurants in town. Ms. McKnight commented she thinks it is working people who want a quick bite to pick up. She noted Danny at Bagel's Best thinks it is competition.

Ms. Newman stated she shares the concerns. The restaurants have significant expenses with rent and such and food trucks have no expenses. The trucks are properly put in areas where it is underserved. The place for food trucks is at places like Memorial Field at events. Mr. Eisenhut stated he does not want to express an opinion to the Selectmen. Mr. Jacobs stated he will express his opinion to the Council of Economic Advisors (CEA).

<u>Transfer of Permit: Major Project Site Plan Review No. 2006-04: Asillem, LLC, d/b/a Stone Heath Pizza</u> <u>Co, P.O. Box 725, Sherborn, MA 01770 to Sol Soul Family Foods, LLC d/b/a Heath Pizzeria, 59 Mount</u> <u>Vernon Avenue, Needham, MA 02494, Petitioner (Property located at 974 Great Plain Avenue, Needham, MA).</u>

Ms. Newman noted this has been put off.

Public Hearing:

7:00 p.m. – Major Project Site Plan Review No. 2010-03: F & A Farms, Inc. d/b/a Volante Farms, 226 Brookside Road, Needham, MA 02492, Petitioner (Property located at 292 Forest Street, Needham, MA).

Luke Showalter, Project Engineer for Sage Engineering and Contracting, Inc., stated the existing farm stand is about 25,000 square feet with the greenhouse. The original plan was approved in 2010. There will be 3 major changes. For the frontage on Forest and Brookside, they will tear down a dilapidated barn. Two barns will be built at 4,075 square feet to store farm equipment. The barns will be pre-engineered steel constructed buildings. There will be underground storm water management features.

Mr. Showalter noted there will be a renovation of an area in the basement. This will be a prep kitchen. He noted the applicant wants to expand to meet the need. The third modification will be to the parking area to meet the requirements of the barns and food prep area. The project will add 11 net total parking spots. This will exceed the required amount. He noted the Conservation Commission approved on 1/14/16. He met with Planning

Director Newman and Assistant Planner Clee to review the plans and address all comments. On 3/7/16 he met with the Design Review Board (DRB) with revised plans to address their comments. Mr. Jacobs asked if there is a gravel road and was informed there was a gravel road to the barn. Mr. Jacobs asked if it would remain gravel. Dave Volante stated it would remain gravel. Ms. McKnight asked about deliveries. Mr. Volante stated the barns will just be for long-term storage for farm equipment and dry storage. He stated they send no trucks up Brookside Road.

Mr. Eisenhut noted there are 2 existing home by the farm and asked if the houses were owned by the Volantes. Mr. Volante stated the houses are owned by his mother and sister. Mr. Showalter stated they have responded to DPW comments with control measures to meet NPDES requirements.

Ms. McKnight noted the following correspondence for the record: a letter from Assistant Town Engineer Thomas Ryder referring to the plan with NPDES requirements; an email from Fire Chief Dennis Condon, dated 3/25/16, with no objections; an email from Police Lt. John Kraemer, dated 3/3/16, with no concerns; and a memo from Tara Gurge of the Board of Health, dated 3/23/16, with comments.

Ms. McKnight asked if there were new drainage facilities. Mr. Showalter stated the project will utilize underground infiltration chambers. It will catch roof runoff and parking lot run off and will be under the pavement. Ms. Newman stated the DPW has reviewed and signed off. Ms. McKnight asked about landscaping. Mr. Volante stated there will be landscaping in front of the barn. There will be dogwoods and shrubs. In the strip between the road and the parking lot he will extend the existing landscaping and screening with the same varieties and spacing. Ms. McKnight stated she sees maples on sheet C3. Mr. Volante stated he will not match the entire strip. Ms. McKnight noted she would like a landscape plan as a condition.

Upon a motion made by Mr. Eisenhut, and seconded by Ms. Grimes, it was by the four members present unanimously:

VOTED: to close the hearing.

Ms. Newman noted she will prepare a decision for the next meeting. Mr. Eisenhut stated he would like a condition that there will be no deliveries on Brookside Road to the barn. He would also like a landscape plan with more detail.

Appointment:

7:30 p.m. - Presentation regarding Hillside School at Central Avenue.

Mr. Jacobs stated he would like some sense of what the applicant wants from the Board. Michele Rogers, of Dore & Whittier Architects, stated she would like feedback if the project is going in right direction and any other feedback. She commented they need to know of any changes ahead of time. Henry Haff stated there is a warrant article at Town Meeting for the acquisition of 609 Central Avenue although it is not required the town get that property. Ms. Rogers gave a project overview and noted it is a K-5 Elementary School with the preferred site at Central Avenue.

Mr. Haff stated in 1/2016 the applicant began the schematic design. The town purchased the property on 3/7/16 which includes 6 houses and 6 structures. There is a potential parcel at 609 Central Avenue with a signed offer pending Town Meeting approval. Ms. Rogers noted the applicants have begun site design development. They met with the DRB, Permanent Public Building Committee (PPBC) and Conservation Commission this week. They have also met with the Fire, Police, School Superintendent, Principal, teachers and parents. She reviewed the design project schedule. Construction will start in 2018 and there will be a new school in 2020. There will be 430 students in a 90,732 square foot building with a 3-story academic wing.

Ms. Rogers described the features and the rooms. The classrooms are in one area to be kept private. The quasi public spaces are all in one area which is separated. She noted cars and buses are separated for site circulation.

She stated the parcel backs up to Briarwood Circle, Taylor Street and homes on Central Avenue and Sunset Rd. About half the site is wetlands. One parcel is on Sunset. Behind Sunset is in the Town of Needham but Wellesley owns the wetlands that abut its water supply. Most homes in the area are one to 2 story tall single family. Steven Popper, of the PPBC, stated there were a lot of questions from neighbors. There was the normal expected concern. There has been communication and the angst seems to have diminished. He noted the bus drop off is on Sunset.

Mr. Haff stated Needham has a license agreement with Wellesley for the abutting pond, field and knoll area. Mr. Jacobs stated licenses can be terminated by the licensor at any time. Mr. Haff stated the Needham By-Laws only allow for 10 year licenses. Both Town Counsels drafted the license. They will have to fund the licensed improvements separately. There will be a small play field and walking trails. Mr. Jacobs stated he would like to take a look at the license agreement.

Ms. McKnight stated she does not see a plan that shows how many people are going to be affected by the bus turnaround. Ms. Rogers stated she showed existing conditions and the demo plan. She noted the town will keep the house on Sunset for the contractor if he needs it for a trailer office. She showed the buildings to be demolished. She noted the view of the pond which is proposed to be used as a science pond. Ms. McKnight asked if there was an environmental study done at the site. Mr. Haff noted there was and there is an order of conditions from the Needham Conservation Commission. It requires removal of non-compliant fill the owner put in and some animal oil left by the former owner. There is some asbestos in the houses that will be remediated with the demolition.

Ms. Rogers stated there is a 25 foot setback required from the wetlands and a FEMA flood plain on the site. She filed an LOMA plan with FEMA to adopt and accept elevation 85 as the Flood Plain line. The project will fill in Elevation 85 in some areas and cut back in others. The applicants are asking the Conservation Commission for approval to re-grade in some jurisdictional areas. She reviewed the floor plan. The 3-story part of the building is the academic wing. They are using the existing contours and do not exceed the height limitation. There is a 14 foot difference between the lowest grade and the highest grade. The project may need a waiver for height. K and 1 will be on the lower level, 2 and 3 on the main level and 4 and 5 on the upper level. There will be a 2-story library in the middle of the building.

Ms. McKnight stated the High Rock School had solar panels. Ms. Rogers stated the project is not starting with solar panels but they will be equipped for the future. Mr. Haff noted it will be a LEED silver certified building. The town will get 2 additional MSBA reimbursement points with the LEED silver certification.

Ms. Rogers noted there are 95 parking spaces shown on the site plan. The parent cars and buses are separate. The parents enter at the southern end and circulate in and around the parking lot and exit back out at the same point. There will be a gate on the northern entrance. Vans enter the same but then cut through to the van drop off. There will be a path from the sidewalk to the sensory garden and other gardens to the lower student entry door. Buses will enter and exit via Cefalo and Sunset Road. Emergency vehicles will also have a separate northern entrance with a gate off Central Avenue with access to the front and back. Ms. McKnight asked if there will be a crossing guard and was informed there would be a guard and a cross walk. There will be flashing lights.

Ms. Rogers noted visibility is best at the southern entry location. Deliveries are not scheduled during pick up and drop off. There is a fenced in Kindergarten play area. Ms. Grimes stated she has a problem with the bus route. She lives in the Hillside district and has kids that attend the school. The parent drop-off loop seems wonderful. The bus loop, however, is going through 2 quaint dead end streets. The neighbors will now have all buses on their streets 4 times per day. Mr. Haff stated there will be all day kindergarten by the time this is built eliminating mid-day transitions. Ms. Grimes stated the bus route bothers her. There might be other options. Mr. Haff noted the project acquiring 609 Central Avenue will help reduce the impact of buses. The street widths are all designed appropriately to town standards and can accommodate busses.

Ms. Grimes stated she has a problem with the buses going through a neighborhood. She asked how many parking spaces are needed for staff. Ms. Rogers stated at 1.5 times the full time equivalent staff the project would need 118 spaces. The current design has 95 spaces. Ms. McKnight asked if consideration was given to buses going in the right side and around back and putting the play space elsewhere.

Ms. Rogers stated the storm water management meets the town requirements. There will be gravel wetlands created to receive some of the runoff. She described the site setbacks. The majority of the site is in Single Residence A with some Single Residence B. The project meets all setbacks. She noted they want to place a shed for gas, snow blowers and such. Ms. Newman noted it cannot be put at the location described, but George Giunta Jr. clarified it is not a structure if under 10 feet high. Ms. Rogers asked if the front yard on Sunset is only the width of the street. Ms. Newman noted she would need to look at it. Ms. Rogers stated there is a 10 foot wide planted edge along the street. The project is proposing fencing where they do not meet the transition setback. Mr. Haff noted section 4.2.8 in the Bylaws regarding transitions. Everything within the 25 foot transition area is a driveway. Ms. McKnight asked if the abutter is affected by the turnaround area. Ms. Rogers noted if the town acquired 609 Central Avenue the drive aisle will be extended and 100 spaces would be accommodated on site. The buses will enter from Central Avenue and come out on Sunset. Ms. Grimes noted this alleviates a lot of her concerns. It will help the abutters keep their neighborhood feel.

Ms. McKnight asked what kind of programs are at the school apart from the school day. Ms. Rogers stated that is the reason they wanted public/private zones in the building. The gym will be used by the public as well as the cafeteria and possibly the library. Mr. Haff stated the fields will likely not be used by Park & Recreation after school programs.

Mr. Popper asked if he could mention to the Finance Committee the Planning Board's thoughts on the improvements made to the plan with 609 Central as it is being recommended by the Selectmen at May Town Meeting. Ms. McKnight stated the zoning concern would be resolved by the purchase of this parcel. Ms. Grimes stated she would like more buffer for the house next to the bus lane. Ms. McKnight asked about cars at night. Ms. Rogers noted it depends on the function. The people would park in the lot and go in the front or main door.

Ms. Rogers noted there is a sensory garden and raised garden beds. There will be a retaining seat wall with a pop up wall to write on, an outdoor art closet, another sensory area with a swing, another outdoor teaching space with bench seats and a small amphitheater with 2 levels of seating along the path to the lower entry. There will be a bituminous path or pervious surface, color coding, hop scotch, four square, 2 playgrounds and a field in back for physical education. There is an existing pond, with a proposed walking trail around the field and bridges, color pavements, bike racks and lots of trees. They are working with the science teacher and arborist to plant new trees that coordinate with the science curriculum.

Mr. Eisenhut stated he would encourage pervious surfaces. Mr. Jacobs expressed safety concerns with kids around the pond water.

Decision: Major Project Site Plan Special Permit No. 2016-01: 57 Dedham Avenue LLC, 471 Hunnewell Street, Needham, MA, Petitioner (Property located at 15 & 17 oak Street, Needham, MA).

George Giunta Jr. noted he has the decision. Mr. Jacobs noted point 1.16 says average illumination level of less than one foot candle. Mr. Giunta Jr. stated it should just say it has to be adequate if that is the concern. Mr. Jacobs noted that was his concern. Ms. Newman will add to 3.19 that it must be adequate. Ms. McKnight noted basic "and adequate." Mr. Giunta Jr. stated he has not had an issue with too little lighting. Mr. Jacobs commented he just wants some kind of measure to fall back on. Maybe adequate is enough. Ms. McKnight noted in 3.9 the proposed sidewalk and asked if it is shown on the plans. Ms. Newman stated it is shown on the plan but it could be clearer. Ms. Newman will clarify the sidewalk is along the entire frontage. Ms. McKnight stated "of the premises."

Ms. McKnight stated in the last sentence of Section 4.7, the following phrase should be taken out: "unless it finds that the use of the property in question or the construction of the site has not begun". The Board should not grant an extension provided unless there is good cause. All members agreed. Mr. Giunta Jr. noted the requested plan modification to include a formal landscape plan. He requested this be removed. The Design Review Board did not see a need for it. Ms. McKnight clarified she wants to know if the landscaping would be trees, shrubs or other plantings. Ms. Newman noted the Board always required a landscape plan. She noted the contractor could do the landscape plan just stating what caliper and species. This is the cheaper way.

Upon a motion made by Mr. Eisenhut, and seconded by Mr. Jacobs, it was by the four members present unanimously:

VOTED: to grant a Major Project Site Plan Special Permit under Section 7.4 of the By-Law; a Special Permit under Section 1.4.6 of the By-Law and a Special Permit under Section 3.2.2 of the By-law and additional waivers as set forth, and all as set forth in the draft decision that was circulated and discussed today.

<u>ANR Plan – Needham Nine Owner, LLC, Petitioner (Property located at 77 A Street, 156 B Street and 0 A</u> <u>Street, Needham, MA).</u>

Ms. Newman noted this is Normandy. There is a letter acknowledging the cross easement not on the ANR Plan. This has not been drafted yet. The applicant wants an easement or parcel before it gets conveyed off. She noted the letter in the packet describes it.

Upon a motion made by Mr. Eisenhut, and seconded by Mr. Grimes, it was by the four members present unanimously:

VOTED: to endorse the plan ANR.

Report from the Planning Director and Board members.

Ms. Newman noted she had a meeting with the Selectmen regarding medical marijuana. There is a school at 255 Highland Avenue the Board did not know about. It is a school under what the Planning Board defined. It is public and non-profit. The Board used public or private and did not use non-profit. It is a Special Education school with an academic component.

Upon a motion made by Mr. Eisenhut, and seconded by Mr. Grimes, it was by the four members present unanimously:

VOTED: to adjourn the meeting at 9:46 p.m.

Respectfully submitted, Donna J. Kalinowski, Notetaker

Elizabeth Grimes, Vice-Chairman and Clerk

Needham Commission on Disabilities

April 19, 2016

Present: Debbie Heller, Elaine Saunders, Babs Moss, Susan Crowell, Bruce Howell

Liaisons: Trisha Mullen School Committee Liaison, Tatianna Swanson ADA Liaison, Karl Harmon NPD Community Service Officer

Meeting called to order 5:30 pm in the Community Room of the Needham Public Library

CoChairperson's Report: Elaine announced the recent passing of NCOD member, Leon Foster. Members recognized both Leon and Beverly Foster's contributions to NCOD. Condolences were sent to Leon's son on behalf of NCOD. Elaine asked Jeff Dougan to reschedule his visit until the September 20, 2016 NCOD meeting.

Minutes March 15, 2016: Minutes approved as written.

ADA Liaison: Tatiana spoke with Teddy Eaton regarding attending the meeting with Jeff Dougan to discuss issues related to the AutoMark voting machines. Teddy declined to attend this month's meeting but she may be interested in attending a future meeting to discuss issues related to the Automark voting machines. Bruce reported that he used the Automark machine recently. He reported that the printer cartridge was not in the printer when he arrived at the polling place and he had to wait while the printer cartridge was installed to allow him to vote. Bruce reported that he was able to successfully vote using the machine.

Tatiana met with Patty Carey, Director of Park and Recreation and walked the ADA trail around the reservoir. Tatiana reviewed the plans with Patty Carey. The project will include an accessible path around the reservoir as well as an accessible fishing platform. The budget for the project has increased, and it is still in the design phase. Bruce suggested that Tatiana follow up regarding reasons why the rope handrail is not being included in the design. Tatiana stated there was some discussion about concerns over vandalism with the rope railing.

Patty Carey was asked to clarify whether or not the rope railing was included in the ADA trail around the reservoir. Patty stated that the project includes a rope railing but the railing will not be continuous. There will be open areas along the path. There will need to be a marker that the rope rail is ending.

Tatiana reported that the NCOD budget amount is \$1800.00 including the \$1500.00 stipend leaving a balance of approximately \$300.00 to cover brochure printing. Tatiana reported she attended a class on managing the town web site in order to upload the NCOD grant application to the town website. She found that she did not have privileges to change the web site. Tatiana notified the IT department to give her privileges to make changes to the web site.

HP issues: Debbie has not had a response from Dave Corriera at MWCIL regarding the accessibility issues at 272 Chestnut Street.

School Committee: No new issues.

APS/Other accessibility issues: Bruce completed a survey distributed by MAAB regarding the types of APS that are currently used in Needham. MAAB is attempting to have some standardization amongst APS in towns throughout the state.

Guest Presentation: Steve Popper, Permanent Public Building Committee, Patty Carey, Director Park and Recreation, Joel Bargmann, Architect, Michelle Grannick, Architect BH&A Architects, Mike Retzky, Public Facilities

Guests presented plans for the Rosemary Pool Complex. Currently, the pool cannot be drained unless Rosemary Lake is drained. The schematic design for the new pool complex has been completed. The second round of design will be presented to Town Meeting on May 9, 2016 and if approved, the project would start in summer/fall of 2017 with completion in 2018. The DPW has a request in front of Town Meeting to dredge the lake to remove contaminants from the bottom of the lake. Some of the construction work for the pool will coincide with the dredging of the lake.

The slope from the bathhouse to the pool is 8 feet down. Currently there is a system of ramps from the bathhouse to the pool level. The plan includes the addition of a second floor to the pool building that will house town offices including the Park and Recreation Department, a community room, and the Health Department. The elevation of the parking lot is 16 feet above the pool level. The pool will remain in the same location. Moving the pool has environmental effects that are not permissible. The project will include an exercise pool as well as a sprinkler park and beach/dock on the lake. The sprinkler park and beach/dock will remain open longer than the pool season. The sprinkler park and beach/dock are accessible by ramp from the parking lot. The decking surrounding the pool will be concrete vs. the current sand.

There is a short ramp from the parking lot to the building to access the year round offices located on the second floor of the building. The second story addition to the building will not have internal access to the first floor bath house. All users will exit the building and use the ramps to access the first floor bath house area. There are 100 parking spaces on the site. There are an additional 20 spaces on the other side of the lake. There are 5 HP spaces close to the building. There is additional deck space around the pool. There are three terraces for seating. The third terrace will not be accessible. Sue suggested that consideration be made by the team to make the third terrace accessible by carving out the hill to increase the second terrace square footage and eliminate the third inaccessible terrace. The design team expressed concerns over the 7 foot high retaining wall that would be required. The architect explained that a ramp to the third terrace would eliminate at least 4 feet of the 10 foot wide terrace depth.

Regarding the elevation from the bath house and lifeguard office, Sue suggested a more universal design could be considered by eliminating the staircase down to the pool but some members supported the use of both the ramp and stairs.

Guest Presentation Hillside School: Steve Popper, PPBC, Hank Haff, Town of Needham Construction Public Works, Don Walker, Dore Whittier Architects.

The Hillside School project is in the early design phase. Guests presented an overview of the project. The building will house K-5. The classrooms are on the north side of the building. The media center is in

the middle building and the gymnasium, administration and cafeteria are on the southern end of the building.

The north side of the building is comprised of three levels. The student drop off entry enters the building on the lowest level. The lower level of the north building has extended learning spaces as well as Kindergarten classes, a gymnasium and adapted gymnasium space.

The south building main entry comes in on the second level. All levels are accessible via an elevator which is located in the center of the building. The staff and visitors will enter through the main entrance of the south building onto the second floor. Special Education classrooms are interspersed throughout the building. The building is expected to house approximately 430 students. The building can fit over 500 children without exceeding the district standards. The plan currently has 95 parking spaces. If the town acquires 609 Central Avenue, it will add approximately 5 parking spaces.

Both the main entrance as well as the student drop off entrance will have stairs and ramp access. The student drop off ramp requires students to traverse the sidewalk for approximately 200 feet and switchback towards the entrance another 200+ feet. Sue expressed concerns that in new construction, consideration should be given to allowing all students, staff and visitors one accessible path of entry. There was discussion that the stairs at the student entry at least could be eliminated to allow for a more universal design approach to the building.

The 2016 Design package will be submitted to various agencies as well as to Town Meeting for project funding. Construction is expected to begin in 2018 with completion of the project in 2020. After further research and design, Steve Popper along with the architects will return to NCOD before construction begins to discuss options for a more universal design for the main entry and student entry.

Meeting adjourned at 7:30 pm. The next regularly scheduled meeting is May 17, 2016.

Respectfully submitted, Susan Crowell



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SCHOOL COMMITTEE MEETING AGENDA

April 26, 2016

Broadmeadow School: School Committee Room

Next School Committee Meeting: May 10, 2016

- 5:45 p.m. Executive Session
- 7:00 p.m. Public Comments/ Public Hearing on School Choice Program
- 7:10 p.m. School Committee Chair and Subcommittee Updates
- 7:20 p.m. Election of School Committee Officers
- 7:30 p.m. Superintendent's Comments

Discussion Items

- 7:40 p.m. 2015-2016 Pollard Middle School Improvement Plan
- 8:20 p.m. Hillside School Schematic Design Presentation
- **9:20 p.m.** Town Meeting Preparation

9:30 p.m. Action Items

Approve School Committee Policies: DH Bonded Employees & Officers Revision 2 DIB/JJF Student Activity Account Revision 2 DJE Bidding Procedures Revision 1 DK Payment Procedures Revision 1 DN School Property Disposal Procedures Revision 3 Rescind Policies: DBK Budget Oversight & Line Item Transfer Authority DGA Authorized Signatures for Warrants DLC Expense Reimbursement – Conferences & Meetings

Approve Needham Education Foundation Grant Accept Donations Approve Minutes of the Meetings of March 8, 2016 and March 22, 2016

9:45 p.m. School Committee Comments

Information Items

- FY16 Third Quarter Financial Report
- Final FY15 Fourth Quarter Financial Report
- Farm Bid Review
- Disposal of Surplus Items
- FY15 End of Year Audit Report

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Theodora K. Eaton, MMC

Town Clerk

TOWN OF NEEDHAM Office of the Town Clerk

1471 Highland Avenue, Needham, MA 02492-0909 Telephone (781) 455-7500 x216 Fax (781) 449-1246 Email: Teaton@needhamma.gov

AT THE ADJOURNED ANNUAL TOWN MEETING

HELD ON MONDAY, MAY 9, 2016

UNDER ARTICLE 33

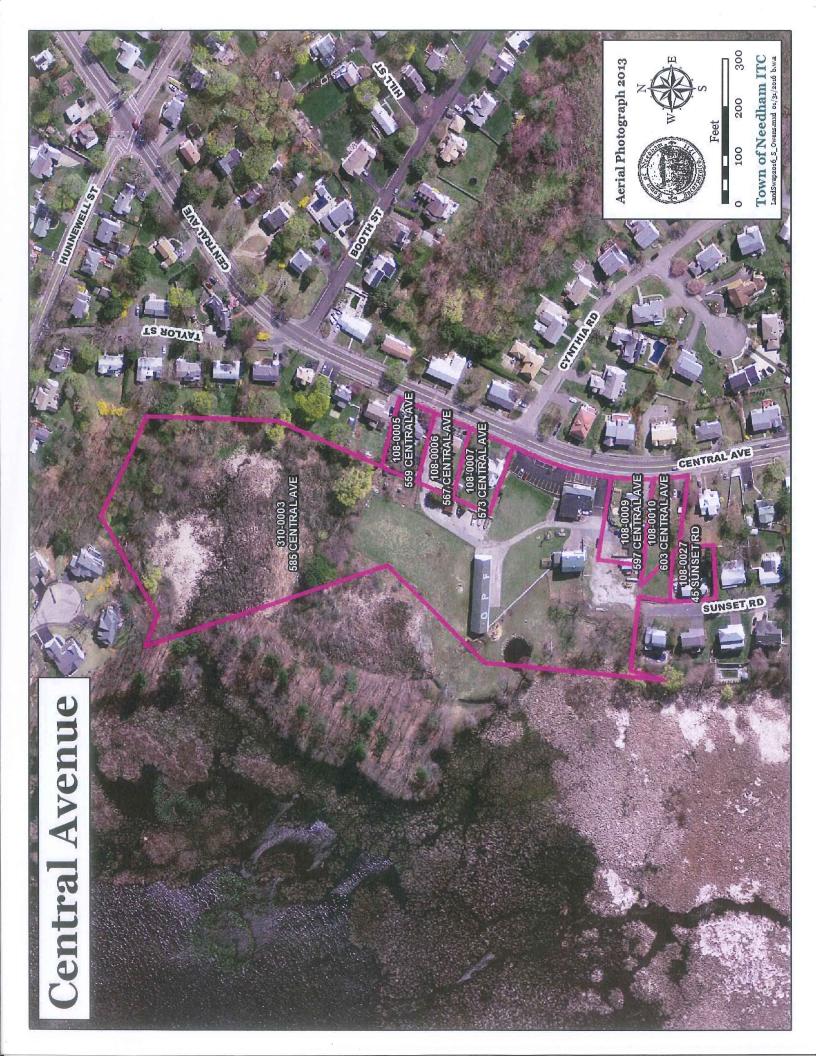
It was

VOTED: That the Town vote to transfer the control of a portion of DeFazio Park (Assessors Map 302) consisting of 9 acres more or less, beginning at a point on the easterly sideline of Dedham Avenue where an iron rod was set adjacent to the entrance driveway to DeFazio Athletic Complex, said point being at the intersection of the southerly jurisdictional line of the Park & Recreation Commission and the easterly sideline of Dedham Avenue; thence running southerly along the sideline of Dedham Avenue S46°14'52"E a distance of 563.00'; thence turning and running N43°45'08"E a distance of 641.12'; thence turning and running N07°06'51"E a distance of 74.41'; thence turning and running N45°15'46"W a distance of 518.63'; thence turning and running S43°45'08"W along said southerly Park & Recreation Commission jurisdictional line a distance of 709.74' to the point of beginning, a portion of DeFazio Park (Assessors Map 302) consisting of 0.27 acres more or less, beginning at a point on the easterly lot line of the DeFazio Complex lot 15.90 feet south of the intersection of said easterly lot line of the DeFazio Complex lot and the southerly Town of Needham Lease Line to the Golf Course where an iron pipe was found; thence running S 07°06'51" W a distance of 72.81'; thence turning and running S 04°14'32" W a distance of 21.72'; thence turning and running S 53°28'31" W a distance of 339.16'; thence turning and running N 43°45'08" E a distance of 409.47' to the point of beginning, and the property known as Owen's Farm and adjacent parcels (Assessors Map 310 parcel 3, and Assessors Map 108 parcels 5, 6, 7, 9, 10, and 27) consisting of 10.31 acres more or less from the Board of Selectmen to the School Committee for educational purposes in accordance with M.G.L. Chapter 40, Section 15A.

TWO-THIRDS VOTE DECLARED BY THE MODERATOR ON A VOICE VOTE

A true copy ATTEST:

Theodora K. Eaton, MMC, Town Clerk







Theodora K. Eaton, MMC Town Clerk

TOWN OF NEEDHAM Office of the Town Clerk

1471 Highland Avenue, Needham, MA 02492-0909 Telephone (781) 455-7500 x216 Fax (781) 449-1246 Email: Teaton@needhamma.gov

AT THE SPECIAL TOWN MEETING

HELD ON MONDAY, May 9, 2016

UNDER ARTICLE 7

It was

VOTED: That the Town vote to raise and/or transfer and appropriate \$762,500 for the acquisition of real property known as 609 Central Avenue (Assessors Map 108, Lot 11) for educational purposes, and for associated costs, to be spent under the direction of the Town Manager, and to meet this appropriation the Treasurer, with the approval of the Board of Selectmen, is authorized to borrow said sum under M.G.L., Chapter 44, Section 7; and further that this is an emergency measure necessary for the immediate preservation of the safety and convenience of the Town, and therefore final vote of the Town Meeting passing this measure shall be immediately operative.

Two-Thirds Declared by the Moderator On a Voice Vote

A true copy ATTEST:

Theodora K. Eaton, MMC, Town Clerk



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SCHOOL COMMITTEE MEETING AGENDA

May 17, 2016

Broadmeadow School: School Committee Meeting Room

Next School Committee Meeting: June 7, 2016

- 7:00 p.m. Public Comments
- 7:10 p.m. School Committee Chair and Subcommittee Updates
- 7:20 p.m. Superintendent's Comments

Discussion Items

- **7:30 p.m**. Presentation and Public Hearing on Full Day Kindergarten
- 8:30 p.m. 2016-2017 Elementary and Secondary Student Handbook Changes
- 9:00 p.m. FY17-FY19 Transportation Bid Awards: Regular and Special Education
- 9:20 p.m. Action Items

Approve Hillside School Schematic Design and Budget Award License of Nike Site for Education-Related Community Farm Use Approve Minutes of the Meetings of March 8, 2016, March 22, 2016 Vote on School Choice Approve Student Trip to Panama Approve Revised 2016-2017 School Calendar Approve Disposal and Donation of Surplus Items

9:40 p.m. School Committee Commentss

Information Items

FY17 Revolving Fund Budgets Disposal of Surplus Items



Needham School Committee Needham, Massachusetts

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| VOTE BY: | Needham School Committee |
|----------|----------------------------|
| DATE: | May 17, 2016 |
| SUBJECT: | Hillside Elementary School |

Suggested Motion by the Chairman:

Motion: That the Needham School Committee approves the submission of the Hillside Elementary School – Schematic Design to the Massachusetts School Building Authority.

In Favor: Opposed: Abstained:

Present:

School Committee Members:

Susan B. Neckes, Chair Heidi Black, Vice-Chair Store Connie S. Barr Andrea Longo Carter Michael Greis Kim Marie Nicols Aaron Pressman

User Group Representatives: / Heidi Black Susan Neckes

Vote confirmed by the Chairman:

Juna & Wickes 5.17.2016 Susan B. Neckes Date

Certified by the Town Clerk:

aton 5/18/16 Date Theodore Eaton

1330 Highland Avenue, Needham, MA 02492

Telephone 781-455-0400

Town of Needham Finance Committee - Meeting Agenda Wednesday, May 18, 2016, 7:00 p.m. Selectmen's Chambers, Needham Town Hall

| 7:00 | Citizen Requests to Address the Finance Committee |
|------|---|
| 7:00 | Approval of Minutes of Prior Meetings (April 27, 2016; May 2, 2015; May 9, 2016) |
| 7:05 | PPBC/Hillside project costs |
| 8:00 | Public Schools: Full Day Kindergarten |
| 8:45 | Finance Committee Updates; Issues not reasonably anticipated by Chair within 48 hours |

Subject to Revision. Please note that times are approximate. Agenda items may be discussed at different times than indicated.

Needham Finance Committee Minutes of Meeting of May 18, 2016

The meeting of the Finance Committee was called to order by the Chair, Louise Miller, at approximately 7:10 pm in the Selectmen's Chambers at the Town Hall.

Present from the Finance Committee:

Louise Miller, Chair; Rick Zimbone, Vice Chair Members: Barry Coffman, John Connelly, Tom Jacob, Ken Lavery, Rick Lunetta, Richard Reilly, Carol Smith-Fachetti

Others present:

David Davison, Assistant Town Manager/Finance Director Stephen Popper, Director of Public Facilities Construction George Kent, Chair, Permanent Public Building Committee Hank Haff, Project Manager, Public Facilities Construction Division Donald M. Walter, Principal, Dore and Whittier Architects Dan Gutekanst, Superintendent of Schools Andrea Longo Carter, School Committee

Citizen Requests

There were no requests to address the Committee.

Hillside School Project

Mr. Walter made a presentation describing the site, neighborhood and traffic considerations. He stated that the acquisition of 609 Central Avenue allows for one way bus traffic. He stated that the building is 90,000 square feet, designed to have minimal impact on the neighborhood. He stated that the next MSBA submission with scope and budget will lead to a reimbursement agreement. He stated that they are on track to go out to bid in April 2018 and start construction in May 2018. Mr. Popper stated that the schedule allows 14 months for design and completing construction documents. Once the MSBA approves the scope and budget, the design funds will be released. Mr. Kent stated that he believes the project can be accelerated to save some money. Mr. Popper stated that costs are now pegged to the regular schedule, but the MSBA is open to altering the schedule. He stated that there are currently discussion with the Town Manager and Finance Director to discuss the funding. Mr. Kent stated that there is a risk, because some funds are needed to accelerate the schedule, but the potential gain is worthwhile. Mr. Popper stated that if \$250,000 of funds can be provided to start the design a month early, then it may be possible to start construction in November 2017, shorten construction to 20 months, and open the school in 2019 which is one year early. That would save the Town almost 5% of \$40 million or \$1.75 million. Mr. Connelly stated that \$250,000 for one month of design work is a fast rate of spending. Mr. Popper stated that a year could be gained by starting design a month early and reducing design time from 14 to 10 months and construction time from 24 to 20 months, and also saving time on construction documents. Mr. Walter stated that this can work because of the timing with the seasons. They would be able to close the building envelope before winter. He stated that 20 months is enough time to build this building. Mr. Reilly asked if there is any

potential downside other than the issue of whether the Town will vote in favor of an override. Mr. Popper stated that there could possibly be an issue at MSBA but it would not increase the cost any higher than the regular schedule. Ms. Miller stated that the Town would need to come up with the \$250,000 design money. She asked why they wouldn't accelerate the construction time are if the design is not started used. Ms. We have stated that the regular schedule is not started as the time state at the time state of the stat

time even if the design is not started early. Mr. Walter stated that the additional month is needed to get the schedule on track for a September 2019 opening. Mr. Zimbone noted that there is no leeway in the accelerated schedule, and one slip will mean losing one school year. Mr. Kent stated that the timing will be important because of the winter. Mr. Walter state that foundation and beam work can be done in winter, but it is not ideal.

Mr. Popper handed out spreadsheets with estimated construction costs. He stated that the MSBA reimbursement rate is 34.72% which is the 31% standard rate plus 3.72% incentive points. Originally, they were told that there would be a 1.47% wealth incentive factor, but the MSBA has eliminated that. Mr. Connelly asked that they identify what costs the 34.72% applies to. Mr. Popper stated that the reimbursement rate has been capped at \$299 per square foot. He stated that the MSBA may move on the \$299 cap as there is pressure to recognize that school construction is expensive, and that it may not be the appropriate cap. The cap increase is limited by statute to 4.75% per year. He stated that the cap applied to this project will be the rate as of the July MSBA board meeting. Any changes after that will not apply to this project. Mr. Popper stated that the site costs are capped at 8% of construction costs. The caps on the site costs and construction costs apply to the biggest parts of the actual project costs. The 34.72% reimbursement rate does not apply to architect, OPM, or engineering costs that fall outside those two buckets. Mr. Connelly stated that the documents show that Town is responsible for \$53.5 million since the project cost is \$66.1 million and the reimbursement is \$13.1 million. Mr. Popper stated that is the current expected reimbursement. Mr. Coffman pointed out that there are \$26.8 million of expenses ineligible for MSBA reimbursement. Mr. Kent stated that the largest part results from the \$299 per square foot cap.

Ms. Miller asked for a description of the construction alternates. Mr. Haff stated that the project could be \$500K less if the roof were downgraded. There is also \$192K associated with the use of natural stone instead of blocks. These items could be deducted if the bids are too high. Mr. Haff stated that the roof costs \$900K. Mr. Kent stated that the more expensive roof is much better, with lower maintenance requirements, though the other roof would not leak.

Mr. Zimbone stated that the MSBA reimbursement is actually less than 20% of the total project cost including land purchases. Therefore, the Town is paying 80% of the project costs. Mr. Connelly stated that the reimbursement rate cannot be changed, so the issue is how to drive down costs. He stated that the project cost is \$450 per square foot without the escalation factor, and asked what the building would look like for \$400 per square foot. Mr. Popper stated that one of the cost drivers is the geometry forced by the site. He stated that there are height limits. There is

a 3-story wing and a 1 ½ story wing, and a lot of roof. He stated one way to decrease costs would be to have a higher building with a smaller footprint, but it could create zoning issues and could not be done easily or practically. Mr. Connelly stated that the Town owes it to taxpayers to go through the exercise of asking how it could be done differently in order to make a conscious choice about the project. He stated that these questions will come up in the fall when seeking construction funds. Mr. Kent stated that is may be worthwhile to take 4 or 5 large elements of

the project such as construction materials and see what could be changed and the effects on the costs. Mr. Popper stated that roofing materials could be changed and that ventilation costs could be \$400K lower without air conditioning. Mr. Reilly asked whether there were programming elements that affected the design. Mr. Popper stated that they did go through that exercise. Mr. Kent stated that those elements affected square footage. Mr. Popper stated that the MSBA has approved the programming, which is a rigid component of moving forward. Changing the programming would mean backing up in the MSBA process. Mr. Walter stated that the building was designed for 4 class sections per grade and 435 students. The enrollment could increase to over 500 students with larger class sizes. There is an abundance of space for special needs and extended learning outside of classrooms, which is becoming more common in school designs. All of the spaces in the design meet MSBA guidelines. Mr. Connelly stated that they should expect the question of why other school building projects have a smaller square footage per student. Ms. Miller asked if there are spaces that could be converted to additional classrooms. Mr. Walter stated that an increase in the number of students in the school would mean an increase the class sizes. Mr. Haff stated that the school is designed based on the lower amount in the policy of 18 students per classroom, but up to 24 students are allowed. Dr. Gutekanst stated that the MSBA follows each district's own policy guidelines on class size when reviewing projects, and does not question the policy.

Mr. Reilly stated that he had questions about the actual reimbursement rates of other projects. He stated that they will need to explain to the Town how the reimbursement percentage rate was determined. Newton's project has a reimbursement rate of 30%, while the Hillside project reimbursement rate is 20% including the land purchase. Mr. Zimbone stated that the Committee members are making the same point, that there needs to be a story to explain the costs and the size of the building, and answers to questions on comparisons.

Mr. Davison stated that the ballot question will show the amount that would be issued as debt, and will not include the amount that will be reimbursed by MSBA. Ms. Miller stated that the Finance Committee should discuss with the Board of Selectmen whether the land purchase should be included. Mr. Davison stated that the Selectmen will vote on the ballot question with the debt exclusion amount in July. He stated that he met with Standard and Poor's and told them that the land purchase amount would be on the ballot. He will need to correct that with them, since it is a material change. They want to know that the Town is making a recurring investment in capital assets without squeezing operations.

Full Day Kindergarten Proposal

Dr. Gutekanst handed out a slide presentation and a December 2015 update of a June 9, 2015 memo from Anne Gulati. He presented the outline of the full day kindergarten program. He stated that many students participate in KASE, the voluntary kindergarten enrichment program. A survey showed that residents feel that full day kindergarten should be compulsory and free to students. He stated that there is a space deficit of 3 classrooms which can be met with creative uses of space, though other programs may be affected. He stated that the cost implications are \$1.6-\$2.7 million including all salaries, benefits and other costs, though there is an anticipated offset of \$360K of additional Chapter 70 money from the state. The plan is to start the program

in the fall of 2018. Dr. Gutekanst stated that Ms. Gulati updated the cost estimates to \$1.4-\$3.2 million in the first year based on updated enrollment projections.

Dr. Gutekanst stated that there are currently 10 kindergarten teachers, and the full day program will need 23 sections. The Schools will need additional teachers, specialists, and teaching assistants. The analysis does not assume redistricting, but does assume making changes in other grades to free up classrooms. There are 3 scenarios being considered. The goal is the fit into the buildings and to be affordable. He stated that the analysis was a mathematical exercise, and not a plan.

Mr. Zimbone asked about the public comment hearing. Ms. Carter stated that it was well attended and that all who spoke were in support of implementing full day kindergarten. She stated that the School Committee listened and did not take any action on the program. Dr. Gutekanst stated that the School Committee has not yet discussed funding. He stated that he has told the Chair and Vice Chair that if the School Committee moves forward with the program that he would urge the School Committee to meet with many different people and groups to figure out the finances and the details to make it work. Mr. Reilly stated that the School Committee will need to explain whether the kindergarten program will be in addition to existing programs or in lieu of some programs. He asked if the Town were to receive an additional \$360K of Chapter 70 funding whether another town would lose some funding. Mr. Davison stated that there is a total amount in the state budget subject to appropriation, so if the state appropriates the same amount and one district needs more, then others would lose. Dr. Gutekanst stated that the foundation formula could change. Mr. Davison stated that the formula uses enrollment data, and if there are more students in Town, there will be more Chapter 70 funding.

Mr. Connelly stated that the plan requires moving students around to where there is space which will cause angst, and suggested waiting until the space issues are resolved. He asked whether the costs included finding space and fitting classrooms for kindergarteners. Dr. Gutekanst stated that there will be costs for moving and purchasing supplies, but no significant expenses such as adding bathrooms. Ms. Miller asked if KASE funds could be used for transporting students. Dr. Gutekanst stated that the funds need to be used carefully, but they have been used for capital needs and buses. Ms. Carter stated that there are funds to replace the current kindergarten buses, plus some additional funds. They are considering what to use the other money for-- possibly curriculum development or devices.

Dr. Gutekanst stated that the School Department has been working to address rapidly increasing transportation costs. Ms. Gulati recently awarded a bid for yellow buses with Natick that increases costs by 7%, where the Town had been facing a 29% increase in the prior contract. He stated that there will also be savings in the special education transportation costs for different reasons.

Discussion:

Ms. Miller asked if the Committee would like to provide feedback to the Board of Selectmen or the PPBC on the Hillside School project. Mr. Connelly stated that there were not yet detailed numbers to react to. Mr. Reilly stated that the Finance Committee would be dissatisfied if there is a vote in the next few weeks that will restrict the Town's ability to explore alternatives. Ms.

4

Miller stated that the areas of concern are the square footage of the proposed building and the cost per square foot of the project. Mr. Reilly noted that the Committee is not objecting to the proposal, but there need to be rational explanations for the choices made. Mr. Connelly stated that the Committee needs to ask what the building would look like for \$400 per square foot. It is

not sufficient for them to say simply that people won't like it. Mr. Connelly stated that when he was on the PPBC, the OPMs who were from on outside firm would challenge the architect. He stated that he does not doubt the professionalism of the Town employees, but when people are working closely together, they are more like partners, and there are not the needed checks and balances. He stated that while the salary costs are lower, if there is not a third party to push back, the costs could be higher in the end. He stated that he is concerned about the lack of independence. He stated that using an in-house OPM worked at Newman because there were not many design aspects in that project compared to an all new school.

Ms. Miller stated that she would like the Finance Committee to discuss the project with the Board of Selectmen once there is a financing plan. Mr. Davison stated that the Selectmen will likely vote on the final submission to the MSBA in the next couple of weeks. He stated that they will need to vote on the ballot question for the override by July in order to get it to the Secretary of State's office in time for the November election. Mr. Lunetta asked if there would be any opportunity for meaningful input after that. Mr. Davison stated that the dollar value of the project will be set. Mr. Lunetta expressed concern about the Finance Committee being outside of the process when critical decisions are made. Mr. Reilly asked if the Selectmen's July vote on the language of the ballot question would foreclose alternate financing plans. Mr. Davison stated that legally it would not, but agreed that practically, it would. Mr. Reilly stated that he would like to have the opportunity to explore other options. Ms. Miller stated that must be done now. Ms. Smith-Fachetti stated that it is important to consider the accelerated schedule as the base plan to work from.

Adjourn

MOVED:

By Mr. Connelly that the Finance Committee meeting be adjourned, as there was no further business. Mr. Reilly seconded the motion. The motion was approved by a vote of 9-0, at approximately 9:34 p.m.

Documents: Slide presentation: Hillside School at Central Ave., Needham, MA, 5/18/2016; Memorandum to MSBA Board of Directors from Maureen Valente, CEO and John McCarthy, Executive Director, re: MSBA Construction cost Policy Update, July 30, 2015; Schematic Design Project Schedule, Hillside Elementary School, 5/17/2016; Hillside Elementary School Rounded Draft Budget, 5/18/2016; New Elementary Schools Comparison Analysis, draft 5/17/2016; Estimated Construction & Total Project Cost Data at Schematic Design, Elementary Schools (MSBA); Needham, Hillside Elementary School, Total Project Budget; Memorandum to Steve Popper and Hank Haff from Donald Walter, Dore and Whittier Architects, May 6. 2016, re: Hillside School Project Schedule Alternatives; Slide presentation: Full-Day Kindergarten for Needham, Finance Committee Update on May 18, 2016; Memorandum to Dan Gutekanst, Superintendent of Schools from Anne Gulati, Director of Financial Operations, June 13, 2015, updated 12/8/15 re: Preliminary Fiscal Impact of Full Day Kindergarten.

Respectfully submitted,

Louise Mizgerd Executive Secretary/Staff Analyst

BOARD OF SELECTMEN May 24, 2016 Needham Town Hall Agenda

Note: Agenda subject to revision, start times are approximate and agenda items may be discussed at earlier or later times.

| | 6:45 | Informal Meeting with Citizens One or more members of the Board of Selectmen will be available between 6:45 and 7:00 p.m. for informal discussion with citizens. While not required, citizens are encouraged to call the Selectmen's Office at (781) 455-7500 extension 204 in advance to arrange for an appointment. This enables the Board to better assure opportunities for participation and respond to citizen concerns. |
|----|------|--|
| 1. | 7:00 | Introduction of Director of Human Resources Christopher Coleman Rachel Glisper |
| 2. | 7:05 | Board Discussion Medical Marijuana Dispensary Applications Minuteman School Project Food Truck/Food Cart Next Steps Ridge Hill/Nike Community Campus Concept |
| 3. | 7:55 | Town Manager Community Compact Application – Information Technology |
| 4. | 8:00 | Hillside School Schematic Design George Kent, PPBC Chair Steve Popper, Director of Design and Construction Sue Neckes, School Committee Chair |
| 5. | 8:30 | Executive Session Exception #6 |

APPOINTMENTS

None

CONSENT AGENDA *=Backup attached

| 1.* | Approve a One Day Special All Alcoholic Beverages license for Gloria Greis, of the Needham Historical Society, to host its Annual Reception on Thursday, May 26, 2016 from 6:30 p.m. to 9:30 p.m. The event will be held at the Needham Historical Society, 1147, Central Avenue, Needham. |
|-----|--|
| 2.* | Approve a One Day Special Wines & Malt Beverages Only License for Beata Fernandez of Needham Pool and Racquet Club to hold its Summerfest Party on Thursday, July 14, 2016 from 6:00 p.m. to 9:00 p.m. The event will be held at Needham Pool and Racquet Club, 1550 Central Avenue, Needham. |
| 3.* | Grant permission for the Needham Business Association to hold its Annual Street Fair on Saturday, June 4, 2016. Event will be held on the Town Common, the Town Hall |

| | | nd on Chapel Street. rea for that day. | Also grant permi | ssion for me | eter free parki | ing in the |
|------|---|---|----------------------|---------------|--------------------|---------------|
| 4. | · · · | ift of two new, made ge A.F. & A.M. for t umon. | - | | - | 1 |
| 5.* | | en Session minutes f / 10, 2016 and May 8, 2016. | | | | |
| 6.* | Water & Sev | ver Abatement Orde | r #1218 | | | |
| 7. | Program: \$5 | ollowing donations r 0 from Mr. and Mrs. nd John E. McDonal | Slosser, Needham | n residents; | | |
| 8. | Accept donations made to the Needham Cultural Council's NeedArts fund from the following people: \$35 from George Marks Jr.; \$35 from Barbara Brownell; \$35 from Judith Ogilvie; \$35 from Inga Puzikov; and \$35 from Kathleen Cahill. | | | | | |
| 9.* | Approve amendment of Employee Agreement between the Town of Needham and Town Manager changing payment of salary from weekly installments to semi-monthly installments (two payments per month). | | | | | |
| 10. | | | | | | |
| 11. | Grant permis | ssion for the following | ng residents to hole | d block part | ies: | |
| Nam | ne | Address | Party Location | Party Date | Party Rain Date | Party Time |
| Jero | me Kassel | 174 Parker Road | Parker Road | 9/10/16 | 9/11/16 | 3:00PM |

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Board of Selectmen TOWN OF NEEDHAM AGENDA FACT SHEET

MEETING DATE: 5/24/2016

| Agenda Item | Endorse Hillside School Schematic Design |
|--------------|--|
| Presenter(s) | Sue Neckes, School Committee Chair George Kent, PPBC Chair Steve Popper, Director of Design and Construction |

| MSE | BRIEF DESCRIPTION OF TOPIC TO BE DISCUS Hillside School Preferred Schematic Report (PSR) wa A on December 1, 2015. The next phase, the Schem nitted by June 2, 2016 for vote of the MSBA Board on July | s submitte atic Design | |
|-----|---|---------------------------|-----------|
| | Neckes, Mr. Kent and Mr. Popper will be available to an Board may have about the project and the design. | nswer any | questions |
| 2. | VOTE REQUIRED BY BOARD OF SELECTMEN | YES | NO |
| | <i>gested Motion:</i> That the Board vote to endorse the Hillsi gn for submittal to the MSBA. | de School | Schemati |
| | | | |
| 3. | BACK UP INFORMATION ATTACHED | YES | NO |
| | . Hillside School at Central Avenue Draft Budget (SD-4) | | |

Town of Needham Board of Selectmen Minutes for May 24, 2016 Selectmen's Chamber Needham Town Hall

6:45 p.m. Informal Meeting with Citizens: Chris Thomas, Vinh Truong, and Bony Ganugapanta, all seniors at Needham High School spoke with the Board about the negative environmental impact of using plastic shopping bags. They asked the Board consider banning the use of plastic bags within the Town.

> Alan Rubin spoke with the Board about a permit application he requested for setting up his hot dog cart on July 4, 2016 in Needham. He commented obtaining a permit has never been an issue until this year when he was taken aback by questions from Town employees who verify information.

- 7:02 p.m. Call to Order: A meeting of the Board of Selectmen was convened by Chairman Matthew D. Borrelli. Those present were Marianne B. Cooley, Daniel P. Matthews, Maurice P. Handel, John A. Bulian, Town Manager Kate Fitzpatrick, and Recording Secretary Mary Hunt.
- 7:02 p.m. Introduction of Director of Human Resources: Christopher Coleman, Assistant Town Manager/Director of Operations appeared before the Board to introduce Rachel Glisper, the Town's new Director of Human Resources.

Mr. Coleman said Ms. Glisper began working for the Town on March 21, 2016. He said an extensive search produced approximately 30 applicants for the position, commenting Ms. Glisper was the preferred candidate. Ms. Glisper commented on her 16 years of experience in Human Resources, both in the private and public sectors.

The Board welcomed Ms. Glisper to the Town of Needham and wished her well in her new position.

- 7:05 p.m. Board Discussion:
 - 1. Medical Marijuana Dispensary Applications

Mr. Borrelli summarized the process thus far. He said a public hearing was held on March 22, 2016 and additional questions were asked of the applicants on May 10, 2016. He noted more information has been received from the applicants since the last meeting. He commented on a proposed ballot initiative for recreational marijuana use. Mr. Borrelli said additional research highlights the question that should the Town allow a Registered Marijuana Dispensary to be sited in Needham and whether or not recreational use could be as of right. Mr. Borrelli said he is concerned the question remains unanswered. He asked the Selectmen for their opinion of each applicant.

Mr. Bulian said the process to site a Registered Marijuana Dispensary in Needham began several years ago. He said the Board of Selectmen listened to three applicants and received a lot of information. He noted the Board of Selectmen meeting held on May 10, 2016 was a good question and answer session that gave him additional information. Mr. Bulian said he favors issuing a letter of support or non-opposition to Sage Cannabis, Inc., because Sage has answered all of the Town's questions every step of the way. He said Michael Dundas, President and CEO knows the process, as well as the rules and regulations. He said Sage Cannabis, Inc., has met all of the elements asked by the Board of Selectmen. He commented he was particularly impressed by the delivery controls relative to the GPS lock system, noting it is truly innovative and creative. Mr. Bulian commented Medical Marijuana of Massachusetts lacked knowledge of regulations, particularly regarding delivery to a business. He also commented MMM was noticed by the Department of Public Health on April 13, 2016 that they were unable, per regulations, to meet the 1 oz. limitation to hardship cases, as acknowledged by Mr. Herlihy, CEO in a letter dated April 26, 2016 to the Department of Public Health. Mr. Bulian said the information was not disclosed at the May 10, 2016 Board of Selectmen meeting, nor by any subsequent communication. Mr. Bulian noted there are as many as 30% hardship cases, which is a material fact that should have been disclosed. Mr. Bulian concluded MMM has elements that make them a quality candidate, but they are lacking in understanding and actions, and for that reason he supports Sage Cannabis, Inc., for a letter of non-opposition.

Mr. Handel commented both applicants are qualified. He said MMM appears more patient and medically oriented, while Sage Cannabis, Inc. appears more interested in a production/pharmaceutical operation. He said he prefers a medical business model, therefore supporting MMM for a letter of support or non-opposition.

Mr. Matthews said both applicants are qualified. He commented on the pending recreational use referendum, noting in some places there may be expanded rights for those holding a medical marijuana permit. He commented it appears the Board is voting on an item which may have broader implications. Mr. Matthews suggested he would like a commitment from each applicant that they would not take advantage of expanded recreational rights, without appearing before the Board of Selectmen for further review and approval.

Mr. Borrelli agreed he can not vote for either candidate unless each agrees that they would not operate as a recreational facility without appearing before the Board of Selectmen for approval.

Ms. Cooley said she is not a fan of the business and is concerned, having learned over the last week, about the understanding of the recreational use marijuana ballot initiative. She said the initiative leaves the Town open to automatically approve and provide for recreational marijuana facility. She said she supports Mr. Matthews proposal that the Community Host Agreement require approval by the Board of Selectmen if there is expanded use. She commented she recognizes voters indicated support for medical marijuana. Ms. Cooley suggested the Board of Selectmen provide feedback to the State regarding hardship marijuana cases and that the current proposal is excessive. She said the amount of marijuana involved in hardship cases at no charge seems crazy. Ms. Cooley said she supports issuing a letter of support or non-opposition to Sage Cannabis, Inc.

Mr. Handel agreed the Board of Selectmen should require approval, much in the same way it requires approval of alcohol licenses. He commented the Town should not commit to establishing a concentration in the mixed-use 128 area, saying much more discussion is needed. Mr. Handel said he supports making sure the Host Agreement reflects at the Community Agreement. Mr. Bulian said he agrees.

Mr. Matthews asked Ms. Fitzpatrick if any of the applicants answered how they would deal with the question of expanded rights should the referendum pass. Ms. Fitzpatrick said while she does not want to speak for any applicant, the answers reflect the ambiguity contained in the initiative petition and the lack of specificity, noting concerns regarding a provision that an RMD could begin selling at retail immediately. She said another provision seems to suggest RMD's have preferred status to apply for retail. Ms. Fitzpatrick noted some concern expressed that an RMD that might want to change its business model, and would the RMD be locked in to a procedure through the Board of Selectmen that another entity would not be. She said the Town could craft satisfactory language. Mr. Matthews clarified Ms. Fitzpatrick feels the Board could move ahead with making a decision to issue a letter of support or non-opposition tonight, and the issue could be addressed in the Community Agreement. Ms. Fitzpatrick said if the Board conditioned the approval on the Agreement, and subsequently approves the Agreement, it would be reasonable.

Discussion ensued on proper wording of a motion.

Mr. Borrelli suggested a broader motion should the referendum not pass, that there would be no expansion of the use of recreational marijuana until approved by the Board of Selectmen. He said language should be crafted by the Town Manager and Town Counsel, working with Counsel for the Applicant with further approval by the Board of Selectmen at its next meeting on June 14, 2016.

Discussion ensued on proper language of a motion including a recreational waiver provision.

Mr. Matthews asked Mr. Borrelli his preference in applicants. Mr. Borrelli said he never supported the idea of recreational marijuana. He said with voter approval and Town Meeting direction, the Board of Selectmen must make a decision in the best interest of the Town. He said based on evidence, letters, and testimony, along with

parking and location, he supports issuing a letter of support or non-opposition to Sage Cannabis, Inc., pending a recreational waiver provision and an increase in the Agreement fee as represented by Attorney Cramer.

Mr. Matthews said the vote tonight is tentative, subject to further formal vote of the Board of Selectmen. He said both applicants are qualified, but based on discussion he supports issuing a letter of non-opposition to Sage Cannabis, Inc.

Motion by Mr. Matthews that the Board of Selectmen tentatively vote to issue a letter of non-opposition to Sage Cannabis, Inc., based on the Community Benefit Agreement and recreational waiver provision to be developed by Town Counsel, Town Manager, and attorney's for the Applicant, subject to further vote by the Board of Selectmen.

Second: Mr. Bulian. Unanimously approved 5-0.

2. <u>Minuteman School Project</u>

Mr. Borrelli referred to a letter dated May 18, 2016 and spreadsheet outlining two options for the Minuteman School Building project. Mr. Matthews said he and Ms. Cooley continue working on the project. He explained the project requires unanimous approval or a waiver by all 16 member communities. He said the Town of Arlington is due to vote on an override scheduled for June 14, 2016, and Belmont, by majority vote at its Town Meeting voted "No" on the project, which effectively vetoes the bonds. He said there are a few possible paths to move forward and the school district has written to the MSBA for an extension. Mr. Matthews said the critical issue is whether or not Belmont may change its vote, based on further ongoing discussion among all parties, in order to achieve the level of agreement needed. Mr. Matthews said the path forward is very difficult without participation by the Town of Belmont, noting the other towns are not compelled to have Belmont to change their opinion. He said size of school may be an issue. Mr. Matthews said towns continue to talk, however if the necessary approval is not reached for the MSBA project, then the default option of "pay as you go" to the existing facility is a very challenging situation. He commented on costs and if the MSBA option is off the table, dissolution of the district may occur. Mr. Matthews said the Town of Needham must make long range contingency plans for how to provide for its vocational students. He said any option would take over five years to complete.

Ms. Cooley noted the "pay as you go" option is more expensive for Needham than building a new school, noting it is a less desirable situation at an increased cost to the Town. She said the towns are still talking and have agreed to another round, and that she is hopeful.

Mr. Matthews gave a timeline of impending meetings and town votes.

Ms. Cooley reminded the Board that the Minuteman school district is regional, with a school board and superintendent who are coordinating many stakeholders. Mr.

Matthews said that while the option of going to a referendum is not off the table, some serious discussion carries the risk of failure and damage that could cause towns to leave the district. Mr. Matthews reiterated the goal is to get the ten member towns to work together.

3. Food Truck/Food Cart Next Steps

Mr. Borrelli referred to discussion prior to Town Meeting regarding the policy causing the "Hot Dog Man" to close. He said a public hearing indicated residents might want some type of food cart use, which he said needs to be balanced with the businesses in Town. He stated the issue was referred back to the Board of Selectmen at Town Meeting. He asked for Board comment.

Mr. Handel said there is a difference between food trucks and food carts, noting the "Hot Dog Man" was a nice amenity, but not sustainable given the circumstances. He said he thinks there would be much less opposition to a small scale food cart opportunity somewhere near the downtown but not taking up metered parking spaces. He said the Town should possibly experiment to see the impact.

Mr. Bulian concurred with Mr. Handel. He said there is a desire by some residents to see the restrictions loosened, but not to take up metered parking spaces. Mr. Bulian said there may be places in the general downtown area that might accommodate a cart, but it is important to have input from restaurants and businesses. He said limited events may also be appropriate.

Ms. Cooley supports Mr. Bulian's comments. She suggested loosening restrictions in a way that supports people using fields, i.e. Defazio. She commented she looks forward to more discussion.

Mr. Matthews said his view is more cautious. He said there is general agreement for allowing mobile food vendors in places that do not have restaurants. He said, however, his experience and observation indicates many people do not know how many different food service options and products are available in Needham. He said there is a lot of variety. Mr. Matthews commented the advocates of mobile food vendors believe they are protecting the business district. He noted it is the exact opposite of what really happens. He said the people working in the business district are subject to all kinds of rules, regulations, and mandates. He commented that by having a mobile food vendor come in, who is not subject to the same rules and regulations is unfair. He cited the lack of mobile food vendors at the Farmer's Market, noting bathrooms are necessary, but because of a courtesy agreement with the fixed location restaurants in the neighborhood, Farmer's Market patrons are allowed use of restaurant bathrooms. He said the same courtesy does not have to be extended to the mobile food vendors. He said there are vacant store fronts in the downtown and invited people "try their hand" in the food service business, noting there is plenty of opportunity. Mr. Matthews commented it is expensive and hard work that is highly competitive, and he is not willing to favor one group over another. Mr. Matthews commented on the \$1000 annual permit fee and said mobile food vendors are much harder to regulate and raise more issues for town staff to work with than fixed locations. He suggested the Town move slowly. Mr. Matthews commented on vendors at events and fields, saying some parents don't want the nuisance and some clubs want to have the "franchise" to support their operation. He said he is willing to consider the issue further, but the bottom line is that the rules must be fair, understood by everyone, and applied equally.

Mr. Handel said there is a difference between a food truck and food cart. He said it is a question of ambiance and suggested the Town experiment with a location near the downtown.

Ms. Cooley said Mr. Matthews' viewpoint is not all that different, noting she was not advocating the Town make a change. She agreed with Mr. Handel regarding the possibility of allowing a food cart. Ms. Cooley suggested a streamlined approval process, similar to that of Wellesley.

Mr. Borrelli clarified there is no interest in having food trucks near the downtown business districts, but there is some interest to explore loosening food cart restrictions, based on feedback from the restaurant owners. He said cart permits must also be considered. He said he is interested in considering food cart vendors, but not food trucks. He said it would interesting to have a "food truck day" for a limited time at Claxton Field where traffic is not in the downtown.

Mr. Matthews said the first step is to collect input from different Boards, particularly Park and Recreation, then hold a public hearing.

Mr. Bulian suggested reaching out to the business owners for an informal meeting.

Ms. Fitzpatrick said drafting revised regulations would require changes to both the zoning and general by-law. She said review is important so as not to run into any unintended consequences.

4. Ridge Hill/Nike Community Campus Concept

Mr. Matthews commented Town Meeting appeared pleased the Board of Selectmen was moving in a positive direction toward creating a community campus at the Ridge Hill/Nike parcels. He said it is important to engage the Conservation Commission early in discussion as their mission is to be protective of conservation land. He commented on the possibility of expanding land under jurisdiction of the Board of Selectmen, which will improve the active use options and conservation values. He said the two current users at the Nike site must be kept informed and engaged in the process.

Mr. Handel noted the complex land and planning situation. He said he agrees with Mr. Matthews in concept, but cautioned the Board of Selectmen to keep an open mind about potential solutions and the ultimate goal of an active community recreational area within an area also devoted to conservation.

Mr. Borrelli said multiple scenarios are possible, and that a joint meeting will be held.

8:02 p.m. Appointments and Consent Agenda: **Motion by Mr. Bulian that the Board of Selectmen vote to approve the Appointments and Consent Agenda as presented.**

APPOINTMENTS: No Appointments were made at this meeting.

CONSENT AGENDA

- 1. Approve a One Day Special All Alcoholic Beverages license for Gloria Greis, of the Needham Historical Society, to host its Annual Reception on Thursday, May 26, 2016 from 6:30 p.m. to 9:30 p.m. The event will be held at the Needham Historical Society, 1147, Central Avenue, Needham.
- 2. Approve a One Day Special Wines & Malt Beverages Only License for Beata Fernandez of Needham Pool and Racquet Club to hold its Summerfest Party on Thursday, July 14, 2016 from 6:00 p.m. to 9:00 p.m. The event will be held at Needham Pool and Racquet Club, 1550 Central Avenue, Needham.
- 3. Grant permission for the Needham Business Association to hold its Annual Street Fair on Saturday, June 4, 2016. Event will be held on the Town Common, the Town Hall parking lot and on Chapel Street. Also grant permission for meter free parking in the downtown area for that day.
- 4. Accept the gift of two new, made in America, nylon United States Flags from the Norfolk Lodge A.F. & A.M. for the Needham Town Common and the Needham Heights Common.
- 5. Approve Open Session minutes from April 13, 2016, May 2, 2016, May 4, 2016, May 9, 2016, May 10, 2016 and May 11, 2016. Also approve Executive Session minutes from March 8, 2016.
- 6. Water & Sewer Abatement Order #1218
- 7. Accept the following donations made to Needham Youth Services Extreme Looks Program: \$50 from Mr. and Mrs. Slosser, Needham residents; and \$100 from Angela L. O'Donnell and John E. McDonald, Needham residents.
- 8. Accept donations made to the Needham Cultural Council's NeedArts fund from the following people: \$35 from George Marks Jr.; \$35 from Barbara Brownell; \$35 from Judith Ogilvie; \$35 from Inga Puzikov; and \$35 from Kathleen Cahill.
- 9. Approve amendment of Employee Agreement between the Town of Needham and Town Manager changing payment of salary from weekly installments to semi-monthly installments (two payments per month).
- 10. Accept a \$2,500 donation made to the Needham Health Department's Substance Abuse Prevention & Education Program from Beth Israel Deaconess Hospital-Needham.
- 11. Grant permission for the following residents to hold block parties:

| Name | Address | Party Location | Party | Party | Party |
|------|---------|----------------|-------|-----------|-------|
| | | | Date | Rain Date | Time |

| Jerome Kassel 174 Parker Road | Parker Road | 9/10/16 | 9/11/16 | 3:00PM |
|-------------------------------|-------------|---------|---------|--------|
|-------------------------------|-------------|---------|---------|--------|

Second: Mr. Handel. Unanimously approved 5-0.

- 8:03 p.m. Town Manager: Kate Fitzpatrick, Town Manager appeared before the Board with one item to discuss:
 - <u>Community Compact Application Information Technology</u> Ms. Fitzpatrick asked the Board for its approval and to authorize her to submit a request for an Information Technology audit through the State's Community Compact program. She explained the program and said that it was started by Governor Baker in 2015.

Ms. Fitzpatrick recommends the Town of Needham participate in the Community Compact program in the area of information technology. She proposed to seek the assistance of the Commonwealth in evaluating the Town's existing IT structure and current staffing level against the Town's long and short term IT strategies and needs. She commented in order to meet the technological challenges that municipalities face requires a solid infrastructure, the creation and execution of a sound strategic plan, and a realistic staffing plan to support and execute it.

Ms. Cooley asked if the audit encompasses schools?

Ms. Fitzpatrick said Town IT infrastructure was primarily being considered, but by its nature some synergy would occur.

Motion by Mr. Handel that the Board approve and authorize the Town Manager to submit a request for an Information Technology Audit through the Community Compact program.

Second: Mr. Bulian. Unanimously approved 5-0.

Mr. Borrelli offered condolences from the Board of Selectmen to Governor Baker, whose mother passed away earlier this week.

8:10 p.m. <u>Endorse Hillside School Schematic Design</u> Sue Neckes, School Committee Chair, George Kent, PPBC Chair, Steve Popper, Director of Design and Construction, Hank Haff, PFD Project Manager, and Don Walter, Dore and Whittier Architects, Inc., appeared before the Board to discuss the next phase, the Hillside School Schematic Design, which will be submitted by June 2, 2016 for a vote of the MSBA Board on July 20, 2016.

A Powerpoint presentation was viewed.

Mr. Walter updated the Board on the design of the new Hillside School. He discussed the site, building plans and images, and the schedule.

Mr. Borrelli commented the project is expensive, but beautiful. Discussion ensued on the cost of the project. Mr. Popper said there are a number of factors contributing to the cost, firstly, that the building is elongated due to the site. Mr. Kent said site work also contributes to the costs, as it is not flat land. Mr. Haff commented if the Town tried to build on the existing Hillside School site, the cost would have been much more.

Mr. Borrelli asked about the project schedule and the possibility of saving money if the project is accelerated.

Discussion ensued on the project schedule, cost of design, and funding. Mr. Popper referred to a comparative schedule and the possibility of accelerating the project. Mr. Popper said the school could essentially be opened one year earlier, thereby saving on escalation costs.

Mr. Handel said it is a good idea.

Mr. Borrelli agreed, the savings is a compelling argument.

Ms. Cooley clarified the risk is if the Town does not pass the override, not risk from the State process.

Mr. Bulian said the benefit is to the Hillside community, construction savings, and interest rate savings.

Mr. Borrelli said spending \$250,000 could save the Town \$1,000,000 to \$2,000,000.

Ms. Fitzpatrick noted if the project moves forward, the MSBA will reimburse the Town a portion of eligible costs.

Mr. Borrelli said the plan must be considered.

Motion by Mr. Bulian that the Board vote to endorse the Hillside School Schematic Design for submittal to the MSBA. Second: Ms. Cooley. Unanimously approved 5-0.

8:45 p.m. Executive Session (Exception 6) Motion by Mr. Bulian that the Board of Selectmen vote to enter into Executive Session.

Exception 6 - To consider the purchase, exchange, lease or value of real estate, if the chair declares that an open meeting may have a detrimental effect on the

negotiating position of the public body. Not to return to open session prior to adjournment.

Second: Ms. Cooley. Mr. Borrelli polled the Board. Unanimously approved 5-0.

A list of all documents used at this Board of Selectmen meeting are available at: <u>http://www.needhamma.gov/Archive.aspx?AMID=99&Type=&ADID=</u>

| lillside Elementary School at Central A | we | · · · · · · · · · · · · · · · · · · · | Proposed Budget (SD-4) |
|--|-------|---------------------------------------|--|
| Veedham, MA | | | 5/19/2016 |
| and Costs | | Rounded Budget | |
| and Acquisition- OPF | \$ | 6,500,000 | STM- 11/2/2015- Art.13 |
| Land Acquisition- 609 central | \$ | 725,000 | STM-5/9/16-Art.7 |
| Subtotal | \$ | 7,225,000 | |
| (Note: | Balaı | nce of funding included in for cl | osing, demo & hazmat costs) |
| New School Building | Basec | I ироп РМ&С-05/16/2016 - SD | |
| Site Development | \$ | 4,136,000 | |
| Special Site Considerations | \$ | 207,000 | HazMat & & 609 Central |
| Existing Bldg Demolition | \$ | 765,000 | Includes \$500K from Land Cost |
| New Construction (Nate #1) | \$ | 28,901,000 | 90,702 SF |
| Subtotal | Ś | 34,009,000 | |
| | - | | |
| Design & Pricing Contingency | \$ | 3,401,000 | 10% |
| Escalation to start (5%/year) | \$ | 3,544,000 | 10.42% |
| Subtotal | \$ | 40,954,000 | |
| OH&P | | ······ | |
| General Conditions | \$ | 2,600,000 | 20mos. @ \$130K |
| Bonds | \$ | 410,000 | 1.00% |
| Insurance | \$ | 512,000 | 1.25% |
| Permit | \$ | - | NA- town project |
| Subtotal | \$ | 44,476,000 | · |
| Profit | \$ | 1,334,000 | 3.00% |
| Total All Construction | \$ | 45, 810,000 | |
| | | | |
| Project Contingency | | | · |
| Construction | \$ | 2,290,000 | 5.00% |
| Owner | \$ | 2,290,000 | 5.00% |
| Total Contingency | \$ | 4,520,000 | |
| | | х. | |
| Soft Costs | | | |
| A&E & Expenses | \$ | 4,714,000 | 10.29% |
| OPM | \$ | 1,603,000 | 3.50% |
| Debt Issuance, Legal & etc. | \$ | 300,000 | Estimated |
| Other Expenses | Ś | 530,000 | Estimated |
| Subtoial | ţ. | 7,147,000 | адара — — — — — — — — — — — — — — — — — — |
| Europhing & Testunology | | | |
| Furnishing & Technology | \$ | 516,000 | 430 x \$1,200/ student |
| | ¢ | 516,000 | 430 x \$1,200/ student 430 x \$1,200/ student |
| Technology | | • | Contingency \$100/student |
| Other | \$ | 43,000 | contingency \$100/student |
| Subtotal | \$ | 1,075,000 | |
| Cost Summary | ¢ | | |
| Construction Costs | \$ | 45,810,000 | planta a mateira de ser a mateira |
| Add Alternate | \$ | 460,000 | Playing Field & Nature Trail |
| Project Contingency | \$ | 4,580,000 | |
| Soft Costs | \$ | 7,147,000 | |
| FF&E & Technology | \$ | 1,075,000 | |
| Subtotal | \$ | 59,072,000 | |
| Site Acquisition | \$ | 7,225,000 | Base land cost |
| One Move | \$ | 125,000 | |
| Total | \$ | 66,423,000 | |
| Base Rounded | | 66,460,000 | |
| Proposed Override Amount : | | 66,000,000 | |
| - | | | |
| Note: The Nature Trail and Plaing Field will b | 1 | | |
| Nature Walk and Playing Field | | 460,000 | Assumes a parallel project with schoo |
| Subtotal | | 460,000 | |

T:\PPBC\Current Projects\Hillside School\Cost Estimates\2016.05.06_SD-Hillside_RECON\2016.05.18_Project Budget_Schematic Design_Draft(4)2016.05.13_Draft Rounded

| Meeting Log Other Working Group Meetings du | Hillside Elementary School Meeting Log Other Working Group Meetings during Fee | during Fee | sibility S | Study - PDP, PSR & Schematic Design | | Updated - 5/25/2016 | A Deto |
|--|---|---|-------------------------|---|---|--|----------|
| ng Body | ng Body | ng Body | | Location | Present | Iopics | Notes |
| Module 4 - FEASIBILITY STUDY - SCHEMATIC DESIGN PHASE | | | | | | | |
| 2/4/2016 MSBA & IG Office MCPPO training Estabr School School | MCPPO training | | Estabre School | Estabrook Elementary School, Lexington, MA | OPM - S. Popper & H. Haff, D&W - J. Boone | Story of a Building- All day Seminar | NA |
| 2/8/2016 Working Group Meeting District Working Scho Group, OPM & Emery (Designer 1330 | District Working Group, OPM & Designer | | Scho Emery (1330 | School Department Emery Grover Bldg (EG) 1330 Highland Ave Needham | Dan Gutekanst, Anne Gulati, Terry Duggan, Mary Lammi, Dave Neves, Kathy Pinkham, Elise Morgan, Mark Messias, Lisa Messina, Ruth Griffin, Michael Kascak, Chanit List, Grade Level Leaders for K-5, PE Teachers, Media Ctr, Technology, SPED, Literacy, Steve Popper, Hank Haff, | Schematic Design kick-off, Overview of next steps, Current design layout of building, room data sheet discussion for K-5 classroom standards and grade differences, extended learning area schematic layout, | Designer |
| WG- 13 2/9/2016 Working Group Meeting - Media Center- Hillside 8:00-10:30am Topic 28 Glen | Working Group Meeting - Media Center- 8:00-10:30am Topic | | Hillside 28 Glen | Hillside Elementary School, 28 Glen Gary St, Needham, MA (HES) | Ī | Media Center, Room Data Sheet and preliminary layout, technology, number of volumes | Designer |
| V/G-14 2/9/2016 Working Group Meeting Gymnasium & PE 10:30 - 12:00 noon spaces | Working Group Meeting 10:30 - 12:00 noon | Gymnasium & PE spaces | | HES | MK, CL, MR, JB, ER, HH, + Rob Tatro, Kathy Pinkham | Gymnasium, Gym Storage, Adaptive PE, OTPT, Outside recreation areas. | Designer |
| DC DC | Working Group Meeting 12:00 - 1:00PM | Spanish | | HES | MK, CL, MR, JB, ER, HH, + Deborah Watters, Pat Mara | Spanish Classroom Room Data Sheet & layout | Designer |
| WG-16 2/9/2016 Working Group Meeting Kindergarten 1:00 - 2:30PM | Working Group Meeting 1:00 - 2:30PM | Kindergarten | | HES | MK, CL, MR, JB, ER, HH, + Martha Miceli, Donna DeMaria | Kindergarten Classroom - room data sheet, Kindergarten location, connection to exterior | Designer |
| WG-17 2/9/2016 Working Group Meeting Nurse's Suite 3:00- 4:00pm | Working Group Meeting 3:00- 4:00pm | Nurse's Suite | | HES | MK, CL, MR, JB, ER, HH, + Debbie Grief (Nurse) | Nurses Suite- Room Data Sheets & location in building, access to exterior | Designer |
| WG-18 2/17/2016 Working Group Meeting SPED /ELC/ 9:00am - 12:00 noon Literacy / OTPT/ | Working Group Meeting 9:00am - 12:00 noon | SPED /ELC/ Literacy / OTPT/ | 1 | ОШ | CL, JB, ER, HH, + Mary Lammi, Lisa Messina, HES parent | SPED rooms data sheets including ELC, descolation rooms, Literacy & Math coach rooms and locations in building, OTPT, Movement studio | Designer |
| WG-19 2/17/2016 Working Group Meeting Kitchen/ Service 12:30 - 3:00pm | Working Group Meeting 12:30 - 3:00pm | Kitchen/ Service | | О | CL, MR, HH + John Sousa- Kitchen Consultant; Ruth Griffin, Chip Laffey | | Designer |
| WG-20 2/18/2016 Working Group Meeting Art / Music / 9:00am - 12:00 noon Cafetorium/ Extended learning | Working Group Meeting 9:00am - 12:00 noon | Art / Music / Cafetorium/ Extended learning | | Э | CL, JB, ER, HH, + Dave Neves | Art Room , Music Room, Performance spaces in building including Cafetorium, Gym for performance, extended learning - display areas in hallway | Designer |
| WG-21 2/22/2016 Working Group Meeting District Working Schr 1:30 - 4:00 PM Group, OPM & Emery 1:330 - 4:00 PM 1:330 - 4:00 PM 2 Designer 1:330 | Working Group Meeting District Working 1:30 - 4:00 PM Group, OPM & Designer | | Schr Emery 1336 | School Department Emery Grover Bldg (EG) 1330 Highland Ave Needham | Dan Gutekanst, Anne Gulati, Terry Duggan, Mary Lammi, Dave Neves, Kathy Pinkham, Elise Morgan, Mark Messias, Lisa Messina, Ruth Griffin, Michael Kascak, Chanit List, Grade Level Leaders for K-5, PE Teachers, Media Ctr, Technology, SPED, Literacy, Steve Popper, Hank Haff, Don Walter, Michele Rogers, Jason Boone | Building design update and exterior conceptual Imagery, working session concluding with a preferred design imagery for the building, Massing model presented | Designer |

| Hillside Elementary School | | 10.0 | | Updated - 5/25/2016 | |
|--|--|-------------------------------------|---|---|------------|
| Weetings | 3 | Study - PDP, PSR & Schematic Design | | | |
| | Meeting Body | Location | Present | Topics | Notes |
| Working Group Meeting 4:00-5:30PM | Exterior Landscape & Ed Spaces | Ü | DW, MR, JB, HH, MK, CH, + RG (Food Service) KP, & RT (PE); DN(Arts), EM (K-5 Science); Patty Carey (P&R); Ed Olsen (Park & Forestry); Matt Varrell | Exterior spaces, including service access, playgrounds, hard surface play areas, playing fields, amphitheater, Pond science paths, walking trails, gardens, Art space, sensory garden, exterior access | Designer |
| Development Review Team 1:00-2:00PM | Project Update, Schedule, upcomming Public meetings and review process | PSAB | D&W- Don Walter, Michele Rogers, Bill Brown, Steve Ventresca, OPM- SP, HH + All department heads in District for DPW, Planning, Engineering, Police, Fire, Building, Health, Park & Rec, Health, IT + Wellesley DPW & Town Engineer | Presentation update to the Department Heads within the town, coordination with Conservation Notice of Intent filing for Demolition, Informal presentation to planning, Design Review Board, traffic discussion, water service and flow test schedule, Infiltration conceptual layout, safe walk to school, Central Ave signage and crossing, sidewalk network | Designer |
| Working Group Meeting 8:30- 9:15AM | Hillside Teachers | HES | OPM- Hank Haff HES- Grade level leaders and all | Hillside Elementary School - Overview of the project with design direction. | Designer |
| | Hillside Admin & Teachers | Avery School, Dedham | D&W- Don Walter, OPM-H Haff, M. Hillside-M. Kascak, C List, D. DeMaria. H Dummett. L. Hitron. | Tour by Avery School Principal of D&W designed Elementary School with 90,000sf +/-, and 4 classrooms per grade levels 1-6 | d Designer |
| | Police & Fire Dept | Fire Station #1- Mtg Rm | D&W- Don Walter, Michele Rogers, Traffic- Nick Havan; OPM- Hhaff; Police-John Schlittler, Chief; Lt Kramer, Fire- Dennis Condon, Chief; Don Ansdtasi, COO | Site Plan overview, Traffic Report, School Zone, Walking Paths, Crosswalk locations, school zone signage, Bus entry/ exit, car & van entry /exit, Delivery route, emergency access routes front, back and side, emergency gate type, building plans, egress & security. | e Designer |
| Working Group Meeting | District Working Group, OPM & Designer | ΗË | D&W - Michele Rogers, Jason Boone & Giovanna Chaisson Working Group - Michael Kascak, Chanit List, & Hillside teachers and School Dept Administrators | 8-9am SPED, ELC & SPL 9-10am - Gym, Adaptive Learning & OTPT 10-11am - Music & Arts 10-12:15 - Kindergarten 11:30-12:15 - Kindergarten 11:30-12:00pm Nurse & counseling areas 2 - 2:45pm - Math & Literacy Coach Rms 3:05 - 4:05pm - Classrooms & Extended Learning | Designer |
| Working Group Meeting | Hillside Admin & Teachers | Ð | D&W- Giovanna Chaisson; M. Rogers; OPM- H. Haff; Hillside∹ Admin & Staff, | 1-2PM Media Center & Technology 2-3PM Administrative Suite | Designer |
| Working Group Meeting | School Admin & School Council Members | Э | D&W- D. Walter, M. Rogers; OPM- H. Haff; Hillside- Admin - M. Kascak, School Dept- D. Gutekanst; School Council- S. Bloom, P. Murry, L. Web-Green, L. Lee & Lauren. | 3-4 PM Project Overview - Hillside School Schematic Design, Site Plan, Building Plans, Room layouts, Welcoming building images, schematic - building materials, exterior materials & plantings, preliminary building perspectives. | Designer |
| | District, Hillside Admin & Teachers, OPM & D&W | Angier School, Newton | D&W-D. Walter; OPM- S. Popper, H. Haff; District- D. Gutekanst, Hillside- M. Kascak, D. DeMaria, H Dummet, L. Hitron | Tour by Angier School Principal of DINisco designed Elementary School with 90,000sf +/-, and 4 classrooms per grade levels K-5 | ΥN |

T:/PPBC/Current Projects/Hillside School/Meeting Notes/Meeting Log - Hillside ES/Vorking Group & Informal Mtgs

| | | Notes | Designer | Designer | Designer | Designer |
|----------------------------|---|--------------|---|--|--|--|
| Updated - 5/25/2016 | | Topics | Building design update including Room Data sheet summary, and final feedback regarding spaces. Exterior landscape plans and exterior elevations schematic drawings. Next Step - Presentations to PPBC, & informal Mtgs with Conservation Commission, Planning Board | D&W - G. Chaisson; OPM- H. Haff, Review of Nurse's Suite and confirmation of # od Hillside- D. Grieff-Nurse; L. Hitron- Media Center book collection | Review of amended Kitchen layout, service areas and cafeteria design. <u>Next step</u> - final adjustments to plan + cut sheets for all equipment in Kitchen. | Preview proposed exterior elevations and exterior materials Schematic Design prior to SC presentation on 2/26/16 and PPBC presentation on 4/27/16. Updated renderings responding to prior critique by PPBC were well received by WG. New Information will be integrated into PPDT show for future SC & PPBC presentations. |
| | tic Design | Present | PPBC- G. Kent, S. Nekes; FinCom- R. Zambone; District- D. Gutekanst, A. Gulati, T. Duggan, M. Lammi, D. Neves, K. Pinkham, M. Messias, L. Messina, J. Tower; Hillside- M. Kascak, C. List, D. DeMaria, H. Dummett, R. Tatro, L. Hitron, M. Micelle, C. Tarantino, B. Fuller, L. Geary, P. Mara; OPM- S. Popper, H. Haff, D&W- D. Walter, M. Rogers, J. | D&W - G. Chaisson; OPM- H. Haff, Hillside- D. Grieff-Nurse; L. Hitron- Media Ctr | D&W - M. Rogers - Food Conslt- J. Sousa; OPM- H. Haff; District - R. Griffin (Dir. Nut. Serv.) & C. Laffey (PFD-Operations) | PPBC- G. Kent, N. Espada SC-S. Nekes; H. Black, District- D. Gutekanst, A. Gulati, T. Hillside- M. Kascak OPM- S. Popper, H. Haff, D&W- D. Walter, M. Rogers, |
| | tudy - PDP, PSR & Schema | Location | School Department Emery Grover Bldg (EG) 1330 Highland Ave Needham | HES | B | Э Э |
| | during Feasibility S | Meeting Body | District Working Group, OPM & Designer | Working Group, OPM & Designer | Working Group, OPM & Designer | Working Group, OPM & Designer |
| Hillside Elementary School | Meeting Log Other Working Group Meetings during Feasibility Study - PDP, PSR & Schematic Design | Meeting Type | Working Group Meeting (design summary & approval) | Working Group Meeting | Working Group Meeting | Working Group Meeting |
| Hillside Ele | Meeting Log | Date | 3/14/2016 | 3/17/2016 | 3/18/2016 | 4/12/2016 |
| | | Mtg No | WG-27 | WG-28 | WG-29 | WG-30 |

Copy of Board Action Letter X.01

Massachusetts School Building Authority

Deborah B. Goldberg Chairman, State Treasurer Maureen G. Valente Chief Executive Officer John K. McCarthy Executive Director / Deputy CEO

January 27, 2016

Ms. Kate Fitzpatrick, Town Manager Town of Needham Needham Town Hall 1471 Highland Avenue Needham, MA 02492

Re: Town of Needham, Hillside Elementary School

Dear Ms. Fitzpatrick:

I am pleased to report that the Board of the Massachusetts School Building Authority (the "MSBA") has voted to approve the Town of Needham (the "Town"), as part of its invitation for Feasibility Study, to proceed into schematic design to replace the existing Hillside Elementary School with a new K-5 facility on the Central Avenue site (the "Proposed Project"), conditional upon the Town's full ownership, control, and exclusive use of the entire proposed project site, or a combination of ownership and, as to that portion of the proposed project site now owned by an adjacent town, a lease that assures exclusive jurisdiction and control of that land for the anticipated useful life of the approved project.

It is my understanding that the Town anticipates seeking community approval for this Proposed Project in November 2016. Therefore, it is critical that the Town, in conjunction with its Owner's Project Manager and Designer, submit a schedule to the MSBA as soon as possible, which should include: the work plan to complete all of the required documentation for presentation to the MSBA's Board of Directors at a future Board meeting; the date of the Town Meeting(s) at which the Proposed Project will be considered; and the anticipated design and construction schedule.

We will be contacting you soon to discuss these next steps in more detail, but in the meantime, I wanted to share with you the Board's vote to approve the Town Needham to proceed into schematic design to replace the existing Hillside Elementary School with a new K-5 facility on the Central Avenue site (the "Proposed Project"), conditional upon the Town's full ownership, control, and exclusive use of the entire proposed project site, or a combination of ownership and, as to that portion of the proposed project site now owned by an adjacent town, a lease that assures exclusive jurisdiction and control of that land for the anticipated useful life of the approved project.

Page 2 January 27, 2016 Needham Preferred Schematic Board Action Letter

I look forward to continuing to work with you as the MSBA's grant program progresses. As always, feel free to contact me or my staff at (617) 720-4466 should you have any questions.

Sincerely,

John K. McCarthy

Executive Director

Cc: Legislative Delegation

Maurice P. Handel, Chair, Needham Board of Selectmen Connie Barr, Chair, Needham School Committee Dr. Daniel E. Gutekanst, Superintendent, Needham Public Schools Anne Gulati, Director of Financial Operations, Needham Public Schools David Davison, Needham Finance Director George Kent, Chair, Needham Permanent Public Building Committee Steven Popper, Owner's Project Manager, Town of Needham Hank Haff, Owner's Project Manager, Town of Needham Donald M. Walter, Designer, Dore & Whittier Architects, Inc. Michele Rogers, Designer, Dore & Whittier Architects, Inc. File: Letters 10.2 (Region 4)

Land Purchase Documents X.02

RECEIVED AND RECORDED NORFOLK COUNTY REGISTRY OF DEEDS DEDHAM, MA

Hallen PO Brough WILLIAM P. O'DONNELL, REGISTER

CERTIFY

QUITCLAIM DEED

RAYMOND H. OWEN, of Nantucket, MA, BARBARA L. OWEN, of Nantucket, MA, DONALD R. OWEN, of Norfolk, MA, DOUGLAS OWEN, individually and as Trustee of the R & D REALTY TRUST u/d/t d. January 1, 1989, recorded with Norfolk County Registry of Deeds in Book 8531, Page 362, as affected and amended by Amendment and Appointment, dated December 2, 2002, recorded with Norfolk County Registry of Deeds in Book 17964, Page 35, of Needham, MA for which a Certificate of Trustee is recorded were with

For consideration paid of ONE MILLION, EIGHT HUNDRED THOUSAND (\$1,800,000.00) Dollars

hereby GRANTS to

THE TOWN OF NEEDHAM, a municipal corporation organized under the laws of the Commonwealth of Massachusetts with a usual place of business at Town Hall, 1471 Highland Avenue, Needham, MA

with QUITCLAIM COVENANTS,

A certain parcel of land in Needham, Norfolk County, MA, with the buildings and improvements thereon, currently known and numbered 585 Central Avenue, being shown and designated as Lot 2, on a plan entitled "Plan of Land in Needham, Mass.", dated November 22, 1986, prepared by George N. Giunta, R.L.S., recorded with Norfolk County Registry of Deeds as Plan No. 441 of 1987 in Plan Book 352, said Lot 2 being more particularly bounded and described as follows, according to said plan:

| Easterly | by Central Avenue, by two courses, Forty-Six and 50/100 (46.50) feet and One Hundred Sixty-Seven and 87/100 (167.87) feet, respectively; |
|-----------|--|
| Southerly | by Lot 1, as shown on said plan, One Hudnred Seventy-Three and 65/100 (173.65) feet; |
| Easterly | again by Lot 1, as shown on said plan, Ninety-Four and 81/100 (94.81) feet; |
| Southerly | by land now or formerly of John P. O'Connor et al, bu land now or formerly of Paul S. Lopez, by Sunset Road, and by land now or formerly of Thomas O. Cummings, et al, as shown on said plan, Two Hundred, Twenty-One and no/100 (221.00) feet; |

| Southwesterly | again by land now or formerly of Thomas P. Cummings, et al, Seventy-One and 92/100 (71.92) feet; |
|---------------|--|
| Westerly | by land now or formerly of the Town of Wellesley, as shown on said plan, Three Hundred, Seventy-Three and 52/100 (372.53) feet; |
| Southwesterly | again by land now or formerly of the Town of Wellesley, as shown on said plan, Two Hundred, Eighty-Four and 92/100 (284.92) feet; |
| Southeasterly | again by land now or formerly of the Town of Wellesley, as shown on said plan, Five Hundred, Twenty-Nine and 22/100 (529.22) feet; |
| Northwesterly | by land now or formerly of Hans Hagen, et al, as shown on said plan, Sixty-Nine and 25/100 (69.25) feet; |
| Northeasterly | by land now or formerly of Hans Hagen, et al and Eugene S. Stark, et al, as shown on said plan, Two Hundred, Thirty-Seven and 51/100 (237.51) feet; |
| Northwesterly | by land now or formerly of Glen S. Orenstein, et al, as shown on said plan, by two courses, measuring One Hundred, Forty-Seven 'and 47/100 (147.47) feet, and Eighty and 70/100 (80.70) feet, respectively; |
| Easterly | by lands now or formerly of Abraham Morgentaler, et al, Charles Nardella, et al, and Lewis L. Ostrofsky, et al, as shown on said plan, Two Hundred Seventy-Two and 57/100 (272.57) feet; |
| Southwesterly | by lands now or formerly of John V. Driscoll, et al, George A. Dennett, et al, Elmer Defasio, et al, Barbara E. Tripp, Trustee, John K. Mapherson, et al, and Raymond H. and Barbara L. Owen, as shown on said plan, Four Hundred, Seventy-Eight and 41/100 (478.41) feet; |
| Southeasterly | by land now or formerly of Raymond H. and Barbara L. Owen, as shown on said plan, One Hundred Forty-Eight and 13/100 (148/13) feet. |

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Containing 369,557 square feet (8.48 acres), more or less, as shown on said plan.

Said premises are conveyed subject to and with the benefit of any and all easement, restrictions and conditions of record that remain in force and are applicable, including,

but not limited to: (i) taking by the Town of Needham for drainage, recorded with Norfolk County Registry of Deeds in Book 2416, Page 490; and (ii) easements recorded with Norfolk County Registry of Deeds in Book 7541, Page 258 and Book 7541, Page 261.

Being and conveying all the same premises described in deeds recorded with Norfolk County Registry of Deeds in Book 8531, Page 371, Book 11119, Page 577, and a portion of the premises described in a deed to Walter H. Owen, recorded with Norfolk County Registry of Deeds in Book 5879, Page 635, to which deeds reference is made for title. See also the Estate of Walter H. Owen, Norfolk Probate No. 85P2587E1 and Certificate Releasing Massachusetts Estate Tax Lien, recorded with Norfolk deeds in Book 8102, Page 465

Grantors hereby swear and acknowledge under the pains and penalties of perjury that none of them reside at the above described Premises, and that none of the, nor any present or former spouses, or other persons, are entitled to any benefits of an existing estate of homestead in the Premises.

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,

Raymond H. Owen

Qu

Barbara L. Owen

COMMONWEALTH OF MASSACHUSETTS

Nantucket, SS

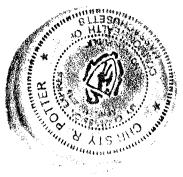
١

February 27th, 2016

Then personally appeared before me the above named Raymond H. Owen and Barbara L. Owen, personally known to me or proved to me through the production of sufficient evidence to be the persons whose signatures are affixed above, and acknowledged that they signed the foregoing document freely for its stated purpose,

Notary Public My commission expires: Jpril 11 2019





R. Juren

Donald R. Owen

ļ,

COMMONWEALTH OF MASSACHUSETTS March 2, 2016

Norfolk, SS

Then personally appeared before me the above named Donald R. Owen, personally known to me or proved to me through the production of sufficient evidence to be the person whose signature is affixed above, and acknowledged that he signed the

foregoing document freely for its stated purpose, * Massachusetts valid Duner's License

Mancy Holden

Notary Public My commission expires: NANCY J. HOLDEN Notary Public Commonwealth of Massachusetts My Commission Expires July 1, 2022 IN WITNESS WHEREOF, the said Raymond H. Owen, Barbara L. Owen, Donald R. Owen and Douglas Owen, individually and as Trustee of the R & D Realty Trust, as aforesaid, have hereunto set their hands and seals, as of the dates indicated.

11-la And

Douglas Owen, Trustee R & D Realty Trust

Douglas Oweh, individually

Douglas Owen, individually

COMMONWEALTH OF MASSACHUSETTS

Norfolk, SS

M>reh February-1, 2016

Then personally appeared before me the above named Douglas Owen, individually and as Trustee of R & D Realty Trust, as aforesaid, personally known to me or proved to me through the production of sufficient evidence to be the person whose signature is affixed above, and acknowledged that he signed the foregoing document freely for its stated purpose as Trustee hereunder and individually,

GEORGE GIUNTA

Notary Public Notary Public Management

ിഴ്<mark>y Commission Expires</mark> വരള**രണ്ടാൻ 2, 2016**

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Beretere trees

George Giunta, Jr. Notary Public My commission expires: Sept. 2, RECEIVED AND RECORDED NORFOLK COUNTY REGISTRY OF DEEDS DEDHAM, MA

QUITCLAIM DEED

Hiller POrtomadd CERTIFY WILLIAM P. O'DONNELL, REGISTER

DOUGLAS C. OWEN, Trustee of the PEACOCK REALTY TRUST u/d/t d. September 30, 1985, recorded with Norfolk County Registry of Deeds in Book 6852, Page 205, as affected by Renewal, dated April 27, 2006, recorded with Norfolk County Registry of Deeds in Book 23651, Page 129, of Needham, MA, for which a Create of Trustee is recorded here with

For consideration paid of SEVEN HUNDRED AND EIGHTY THREE THOUSAND, THREE HUNDRED AND THIRTY THREE (\$783,333.00) Dollars

hereby GRANTS to

THE TOWN OF NEEDHAM, a municipal corporation organized under the laws of the Commonwealth of Massachusetts with a usual place of business at Town Hall, 1471 Highland Avenue, Needham, MA

with QUITCLAIM COVENANTS,

A certain parcel of land in Needham, Norfolk County, MA, with the buildings and improvements thereon, currently known and numbered 559 Central Avenue, being shown and designated as Lot 4 on a Plan of Land in Needham, Massachusetts, dated June 22, 1948, prepared by Roland Uhlin, C.E., recorded with Norfolk County Registry of Deeds in Book 2773, Page 298, said Lot 4 being more particularly bounded and described as follows, according to said plan:

| Southeasterly | by Central Avenue, as shown on said plan, by two lines, measuring 80 feet and 20.91 feet, respectively; |
|---------------|---|
| Northeasterly | by Lot 5, as shown on said plan, 150 feet; |
| Northwesterly | by Lot B, as shown on said plan, 80 feet; and |
| Southwesterly | by Lot 3, as shown on said plan, 150 feet; |

Be any and all measurements more or less, or however otherwise said premises may be measured, bounded and described

Said premises are conveyed subject to and with the benefit of any and all easements, restrictions and conditions of record that remain in force and are applicable.

Being and conveying all the same premises described in deed dated November 13, 2015, recorded with Norfolk County Registry of Deeds in Book 33640, Page 128, to which deed reference is made for title.

n

Grantor hereby releases any homestead rights which grantor may have in the Premises by operation of law, and further swears and acknowledges under the pains and penalties of perjury that there is no one else entitled to an Estate of Homestead in the Premises.

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IN WITNESS WHEREOF, the said Douglas C. Owen, Trustee of the Peacock Realty Trust, as aforesaid, has hereunto set his hands and seals, this 19^{-10} day of March, 2016.

Duten

Douglas C. Owen, Trustee Peacock Realty Trust

COMMONWEALTH OF MASSACHUSETTS

Norfolk, SS

March .2016 1

Then personally appeared before me the above named Douglas C. Owen, Trustee of Peacock Realty Trust, as aforesaid, personally known to me or proved to me through the production of sufficient evidence to be the person whose signature is affixed above, and acknowledged that he signed the foregoing document freely for its stated purpose as Trustee of Peacock Realty Trust,

GEORGE

COMMON WEALTH OF MAS

Notary Publi

My Commission Expires Captember 2, 2016

STOMISFILS

George Giunta, Jr. Notary Public My commission expires: Sept.

, NECEIVED AND RECORDED NORFOLK COUNTY REGISTRY OF DEEDS DEDHAM, MA

Huller PO Formell CERTIFY WILLIAM P. O'DONNELL, REGISTER

QUITCLAIM DEED

DOUGLAS C. OWEN, Trustee of the PEACOCK REALTY TRUST u/d/t d. September 30, 1985, recorded with Norfolk County Registry of Deeds in Book 6852, Page 205, as affected by Renewal, dated April 27, 2006, recorded with Norfolk County Registry of Deeds in Book 23651, Page 129, of Needham, MA, for which a-

Certifate of Trustee 15 recorded herewith For consideration paid of SEVEN HUNDRED AND EIGHTY THREE THOUSAND,

THREE HUNDRED AND THIRTY THREE (\$783,333.00) Dollars

hereby GRANTS to

THE TOWN OF NEEDHAM, a municipal corporation organized under the laws of the Commonwealth of Massachusetts with a usual place of business at Town Hall, 1471 Highland Avenue, Needham, MA

with QUITCLAIM COVENANTS,

A certain parcel of land in Needham, Norfolk County, MA, with the buildings and improvements thereon, currently known and numbered 567 Central Avenue, being shown and designated as Lot 3 on a "Plan of Land in Needham, Massachusetts", dated June 22, 1948, prepared by Roland Uhlin, C.E., recorded with Norfolk County Registry of Deeds in Book 2773, Page 298, said Lot 3 being more particularly bounded and described as follows, according to said plan:

| Southeasterly | by Central Avenue, as shown on said plan, 80 feet; |
|---------------|--|
| Southwesterly | by Lot 2 as shown on said plan, 150 feet; |
| Northwesterly | by Lot B, as shown on said plan, 80 feet; and |
| Northeasterly | by Lot 4, as shown on said plan, 150 feet; |

Containing 11, 817 square feet of land, more or less, according to said plan.

Said premises are conveyed subject to and with the benefit of any and all easements, restrictions and conditions of record that remain in force and are applicable.

Being and conveying all the same premises described in deed dated February 27, 2009, recorded with Norfolk County Registry of Deeds in Book 26428, Page 68, to which deed reference is made for title.

Grantor hereby releases any homestead rights which grantor may have in the Premises by operation of law, and further swears and acknowledges under the pains and penalties of perjury that there is no one else entitled to an Estate of Homestead in the Premises.

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IN WITNESS WHEREOF, the said Douglas C. Owen, Trustee of the Peacock Realty Trust, as aforesaid, has hereunto set his hands and seals, this 1th day of March, 2016.

Nwer Knus

Douglas C. Owen, Trustee Peacock Realty Trust

COMMONWEALTH OF MASSACHUSETTS

Norfolk, SS

, 2016 March 1

My Commission Expires September 2, 2016

Then personally appeared before me the above named Douglas C. Owen, Trustee of Peacock Realty Trust, as aforesaid, personally known to me or proved to me through the production of sufficient evidence to be the person whose signature is affixed above, and acknowledged that he signed the foregoing document freely for its stated purpose as Trustee of Peacock Realty Trust,

George Giunta, Jr. Notary Public My commission expires: Sept. 2, 2036 GEORGE UNITA JR Notary Public COMMCNWEALTH OF MASSACHUSETTS

RECEIVED AND RECORDED NORFOLK COUNTY REGISTRY OF DEEDS DEDHAM, MA

CERTIFY

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WILLIAM P. O'DONNELL, REGISTER

QUITCLAIM DEED

DOUGLAS C. OWEN, of Needham, MA, **DONALD R. OWEN** of Norfolk, MA and **BONNIE L. CONNOLLY** of Medfield, MA, as they are **Co-Trustees of the DOUGLAS C. OWEN REALTY TRUST** u/d/t d. March 9, 2009, recorded with Norfolk County Registry of Deeds in Book 26453, Page 572, for which a Certificate of Trustee is recorded herewith.

For consideration paid of SEVEN HUNDRED AND EIGHTY THREE THOUSAND, THREE HUNDRED AND THIRTY FOUR (\$783,334.00) Dollars

hereby GRANTS to

THE TOWN OF NEEDHAM, a municipal corporation organized under the laws of the Commonwealth of Massachusetts with a usual place of business at Town Hall, 1471 Highland Avenue, Needham, MA

with QUITCLAIM COVENANTS,

A certain parcel of land in Needham, Norfolk County, MA, with the buildings and improvements thereon, currently known and numbered 573 Central Avenue, being shown and designated as Lot 2-A on a "Plan of Land in Needham, Mass. Showing Revised Lot Lines", dated November, 1961, prepared by C. Frasetti, Surveyor, recorded with Norfolk County Registry of Deeds in Book 3960, Page 120, said Lot 2-A being more particularly bounded and described, as follows, according to said plan:

| Southeasterly | by Central Avenue, as shown on said plan, 95 feet; |
|---------------|---|
| Southeasterly | by land now or formerly of John E. MacPherson and Edith MacPherson, being Lot 3, as shown on said plan, 150 feet; |
| Northwesterly | by Lot B, as shown on said plan, 80 feet; and |
| Southwesterly | by Lot 2-A, as shown on said plan, 148.13 feet. |

Containing 12,925 square feet of land, according to said plan.

Said premises is conveyed subject to and with the benefit of any and all easements, restrictions and conditions of record that remain in force and are applicable.

Being and conveying all the same premises described in deed dated March 9, 2009, recorded with Norfolk County Registry of Deeds in Book 26453, Page 580, to which deed reference is made for title.

Grantor hereby releases any homestead rights which grantor may have in the Premises by operation of law, and further swears and acknowledges under the pains and penalties of perjury that there is no one else entitled to an Estate of Homestead in the Premises.

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IN WITNESS WHEREOF, the said Douglas C. Owen, Donald R. Owen and Bonnie L. Connolly, Co-Trustee of the Douglas C. Owen Realty Trust, as aforesaid, have hereunto set their hands and seals, as of the dates set forth below.

Our ,

Douglas C/Owen, Trustee Douglas C. Owen Realty Trust

COMMONWEALTH OF MASSACHUSETTS

Norfolk, SS

March , 2016

Then personally appeared before me the above named Douglas C. Owen, Trustee of the Douglas C. Owen Realty Trust, as aforesaid, personally known to me or proved to me through the production of sufficient evidence to be the person whose signature is affixed above, and acknowledged that he signed the foregoing document freely for its stated purpose as Trustee of Douglas C. Owen Realty Trust,

George Giunta, Jr. Notary Public My commission expires: GEORGE GIUNTA JR ... **Notary Public** COMMONWEALTH OF MASSACHUSETTS My Commission Expires Septembor 2, 2016

onnie L Connolly Bonnie L. Connolly, Trustee

Douglas C. Owen Realty Trust

COMMONWEALTH OF MASSACHUSETTS

Norfolk, SS

March / , 2016

Then personally appeared before me the above named Bonnie L. Connolly, Trustee of the Douglas C. Owen Realty Trust, as aforesaid, personally known to me or proved to me through the production of sufficient evidence to be the person whose signature is affixed above, and acknowledged that she signed the foregoing document freely for its stated purpose as Trustee of Douglas C. Owen Realty Trust,

11111114 GEORGE GUNNTA, JR Notary Public My commission expires: SEPT. CENTA JR. GEOF Notary Public COMMONWEALTH OF MASSACHUSETTS My Commission Expires September 2, 2016

ven. Trustee

Donald R. Owen, Trustee Douglas C. Owen Realty Trust

COMMONWEALTH OF MASSACHUSETTS Much Fobruary 2, 2016

Norfolk, SS

Then personally appeared before me the above named Donald R. Owen, Trustee of the Douglas C. Owen Realty Trust, as aforesaid, personally known to me or proved to me through the production of sufficient evidence to be the person whose signature is affixed above, and acknowledged that he signed the foregoing document freely for its stated purpose as Trustee of Douglas C. Owen Realty Trust,

stated purpose as Trustee of Douglas C. Owen Realty Trust, * Valid MA driver's Mienses

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Notary Public My commission expires:

NANCY J. HOLDEN Notary Public Commonwealth of Massachusetts My Commission Expires July 1, 2022 RECEIVED AND RECORDED • NORFOLK COUNTY REGISTRY OF DEEDS DEDHAM, MA

CERTIFY Hiller PO Bondel WILLIAM P. O'DONNELL, REGISTER

QUITCLAIM DEED

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DOUGLAS OWEN, Trustee of the R & D REALTY TRUST u/d/t d. January 1, 1989, recorded with Norfolk County Registry of Deeds in Book 8531, Page 362, as affected by Amendment and Appointment, dated December2, 2002, recorded with Norfolk County Registry of Deeds in Book 17964, Page 35, of Needham, MA, for which a Certificate of Trustee is recorded herewith

For consideration paid of SEVEN HUNDRED AND EIGHTY THREE THOUSAND, THREE HUNDRED AND THIRTY THREE (\$783,333.00) Dollars

hereby GRANTS to

THE TOWN OF NEEDHAM, a municipal corporation organized under the laws of the Commonwealth of Massachusetts with a usual place of business at Town Hall, 1471 Highland Avenue, Needham, MA

with QUITCLAIM COVENANTS,

A certain parcel of land in Needham, Norfolk County, MA, with the buildings and improvements thereon, currently known and numbered 597 Central Avenue, being shown and designated as Lot 1 on "Plan of Land in Needham, Mass.", dated November 12, 1986, prepared by George N. Giunta, R.L.S., recorded with Norfolk County Registry of Deeds as Plan No. 441 of 1987 in Plan Book 352, said Lot 1 being more particularly bounded and described, as follows, according to said plan:

| Northerly | by Lot 2, as shown on said plan, 173.65 feet; |
|-----------|--|
| Easterly | by Central Avenue, as shown on said plan, 87.73 feet; |
| Southerly | by land now or formerly of John P. O'Connor, et al, as shown on said plan,180.00 feet; and |
| Westerly | by Lot 2, as shown on said plan, 94.81 feet. |

Containing 15,990 square feet of land, more or less, according to said plan.

Said premises are conveyed subject to and with the benefit of any and all easements, restrictions and conditions of record that remain in force and are applicable, including, but not limited to easements recorded with Norfolk County Registry of Deeds in Book 7541 Page 258 and Book 7541, Page 261.

Being and conveying all the same premises described in deed dated June 29, 1992, recorded with Norfolk County Registry of Deeds in Book 9693, Page 663, to which deed reference is made for title.

Grantor hereby releases any homestead rights which grantor may have in the Premises by operation of law, and further swears and acknowledges under the pains and penalties of perjury that there is no one else entitled to an Estate of Homestead in the Premises.

IN WITNESS WHEREOF, the said Douglas Owen, Trustee of the R & D Realty Trust, as aforesaid, has hereunto set his hands and seals, this induced day of March, 2016.

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Douglas Øven, Trustee R & D Realty Trust

COMMONWEALTH OF MASSACHUSETTS

Norfolk, SS

,2016 March

Then personally appeared before me the above named Douglas Owen, Trustee of R & D Realty Trust, as aforesaid, personally known to me or proved to me through the production of sufficient evidence to be the person whose signature is affixed above, and acknowledged that he signed the foregoing document freely for its stated purpose as Trustee of R & D Realty Trust,

George Giunta, Jr. Notary Public My commission expires: Sept. 2

GLOGEE GIUNTAUF Notary Public COMMONWEALTH OF MASSACHUSET My Commission Expires Contomber 2, 2016

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RECEIVED AND RECORDED NORFOLK COUNTY REGISTRY OF DEEDS DEDHAM, MA

CERTIFY Multion PO Montald WILLIAM P. O'DONNELL, REGISTER

QUITCLAIM DEED

DOUGLAS C. OWEN, Trustee of the PEACOCK REALTY TRUST u/d/t d. September 30, 1985, recorded with Norfolk County Registry of Deeds in Book 6852, Page 205, as affected by Renewal, dated April 27, 2006, recorded with Norfolk County Registry of Deeds in Book 23651, Page 129, of Needham, MA, for which a Certificate of Trustee is recorded herewith

For consideration paid of SEVEN HUNDRED AND EIGHTY THREE THOUSAND, THREE HUNDRED AND THIRTY THREE (\$783,333.00) Dollars

hereby GRANTS to

THE TOWN OF NEEDHAM, a municipal corporation organized under the laws of the Commonwealth of Massachusetts with a usual place of business at Town Hall, 1471 Highland Avenue, Needham, MA

with QUITCLAIM COVENANTS,

A certain parcel of land in Needham, Norfolk County, MA, with the buildings and improvements thereon, currently known and numbered 603 Central Avenue, being shown and designated as Lot 20 and Lot 14B on "Plan of Land in Needham, Mass.", scale 1in = 40 ft., prepared by Cheney Engineering Co., Inc., recorded with Norfolk County Registry of Deeds as Plan No. 322 of 1968 in Plan Book 224, to which plan reference is made for a more particular description of the said Lot 20 and Lot 14B.

Said premises are the land described in quitclaim deed from George J. Minkle of Needham (unmarried) and Mary C. Hogan and Cornelius Hogan, husband and wife, both of Milton, and all of Norfolk County, Commonwealth of Massachusetts, to John P. O'Connor and Catherine F. O'Connor, husband and wife, both of Needham, Norfolk County, Massachusetts, dated August 20, 1951, recorded with Norfolk County Registry of Deeds in Book 3025, page 277, subject to a conveyance of a portion fo said premises by quitclaim deed of said John P. O'Connor and Catherine F. O'Connor to Old Colony Homes, Inc., and a deed of Old Colony Homes, Inc. to the said John P. O'Connor and Catherine F. O'Connor, dated May 13, 1968, recorded with Norfolk County Registry of Deeds in Book 5092, Page 5, and a deed from John P. O'Connor and Catherine F. O'Connor, dated October 25, 1967, recorded in Norfolk Deeds in Book 4470, Page 8, and now shown on the records of the Town of Needham, and records of the Registry of Deeds, an amount of 13,034 square feet of land. Said exchange of deds comprising a portion of the rear of premises of John P. O'Connor and Catherine F. O'Connor at 603 Central Avenue, Needham, MA.

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Said premises are conveyed subject to and with the benefit of any and all easements, restrictions and conditions of record that remain in force and are applicable.

Being and conveying all the same premises described in deed dated May 23, 2006, recorded with Norfolk County Registry of Deeds in Book 23697, Page 420, to which deed reference is made for title.

Grantor hereby releases any homestead rights which grantor may have in the Premises by operation of law, and further swears and acknowledges under the pains and penalties of perjury that there is no one else entitled to an Estate of Homestead in the Premises.

IN WITNESS WHEREOF, the said Douglas C. Owen, Trustee of the Peacock Realty Trust, as aforesaid, has hereunto set his hands and seals, this *Jun* day of March, 2016.

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Douglas C. Øwen, Trustee Peacock Realty Trust

COMMONWEALTH OF MASSACHUSETTS

Norfolk, SS

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March (,2016

Then personally appeared before me the above named Douglas C. Owen, Trustee of Peacock Realty Trust, as aforesaid, personally known to me or proved to me through the production of sufficient evidence to be the person whose signature is affixed above, and acknowledged that he signed the foregoing document freely for its stated purpose as Trustee of Peacock Realty Trust,

George Giunta, Jr. Notary Public My commission expires: Sept. GEORGE GIUNTA Notary Public ... COMMONWEALTH OF MASSACHUSETTS My Commission Expires September 2, 2018

RECEIVED AND RECORDED NORFOLK COUNTY REGISTRY OF DEEDS DEDHAM, MA

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QUITCLAIM DEED

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CERTIFY Hillia PO Brondell WILLIAM P. O'DONNELL, REGISTER

DOUGLAS OWEN, Trustee of the R & D REALTY TRUST u/d/t d. January 1, 1989, recorded with Norfolk County Registry of Deeds in Book 8531, Page 362, as affected by Amendment and Appointment, dated December2, 2002, recorded with Norfolk County Registry of Deeds in Book 17964, Page 35, of Needham, MA, for which a Certificate of Trustee is vecorded here with

For consideration paid of SEVEN HUNDRED AND EIGHTY THREE THOUSAND, THREE HUNDRED AND THIRTY THREE (\$783,333.00) Dollars

hereby GRANTS to

THE TOWN OF NEEDHAM, a municipal corporation organized under the laws of the Commonwealth of Massachusetts with a usual place of business at Town Hall, 1471 Highland Avenue, Needham, MA

with QUITCLAIM COVENANTS,

A certain parcel of land in Needham, Norfolk County, MA, with the buildings and improvements thereon, currently known and numbered 45 Sunset Road, being shown and designated as Lot 2B and 14A on "Plan of Land in Needham" by Cheney Engineering Co., Inc., dated April 25, 1973, recorded with Norfolk County Registry of Deeds in Book 4941, Page 569, said Lots 2B and 14A together being bounded and described as follows, according to said plan:

| Easterly | by Sunset Road, on three lines measuring 33.00 feet, 124.46 feet, and 4.14 feet, respectively; |
|---------------|--|
| Northerly | by land of Owen, as shown on said plan, 22.90 feet; |
| Northwesterly | by Lot 14B, as shown on said plan, 112.34 feet; |
| Westerly | by Lot 2C, as shown on said plan, 72.63 feet; and |
| Southerly | by Lot 15A, as shown on said plan, 110.06 feet. |
| | |

Containing 13,937 square feet of land according to said plan.

Said premises are conveyed subject to and with the benefit of any and all easements, restrictions and conditions of record that remain in force and are applicable.

Being and conveying all the same premises described in deed dated October 17, 2002, recorded with Norfolk County Registry of Deeds in Book 17414, Page 478, to which deed reference is made for title.

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Grantor hereby releases any homestead rights which grantor may have in the Premises by operation of law, and further swears and acknowledges under the pains and penalties of perjury that there is no one else entitled to an Estate of Homestead in the Premises.

IN WITNESS WHEREOF, the said Douglas Owen, Trustee of the R & D Realty Trust, as aforesaid, has hereunto set his hands and seals, this day of March, 2016.

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Douglas Own, Trustee R & D Realty Trust

COMMONWEALTH OF MASSACHUSETTS

Norfolk, SS

l March , 2016

Then personally appeared before me the above named Douglas Owen, Trustee of R & D Realty Trust, as aforesaid, personally known to me or proved to me through the production of sufficient evidence to be the person whose signature is affixed above, and acknowledged that he signed the foregoing document freely for its stated purpose as Trustee of R & D Realty Trust,

George Giunta, Jr. Notary Public My commission expires: Sept. 2, 26 9 "manna GEORGE GIUNTA JR Notary Public OMMONWEALTH OF MASSACHUSETTS My Commission Expires September 2, 2016

Land Use License X.03

LICENSE AGREEMENT

License Agreement entered into this <u>A</u> day of <u>EREVARU</u>, 2016, by and between the Town of Wellesley, a municipal corporation, 20 Municipal Way, Wellesley, Massachusetts, 02481, acting through its Board of Public Works ("Licensor)", and the Town of Needham, Massachusetts, a municipal corporation, acting through its Town Manager ("Licensee").

In consideration of the full and faithful performance by Licensee of all covenants and agreements contained herein and subject to the following terms and conditions, the Licensor grants to Licensee and Licensee takes from the Licensor the right to use specified areas owned by the Town of Wellesley in the Town of Needham for passive and active recreation in conjunction with the construction of a new elementary school on or about 585 Central Avenue in Needham (the "Premises"), as shown on a plan entitled "CONCEPTUAL SITE PLAN" and attached here to as Exhibit A.

- 1. The Licensee shall have the exclusive right to enter upon the Premises and to make the Premises available to the staff and students at the proposed elementary school and to the general public for passive and active recreation, as described herein.
- 2. The term of the Agreement shall be January 1, 2016 through December 31, 2025.
- 3. The Licensee is authorized to construct, maintain and use a multi-purpose playing field (Area A approximately 150 feet by 75 feet) all or a portion of which will be located on land owned by the Licensor (as shown on Attachment X). No such improvements shall be made unless and until the plan for such improvements (to include a description of materials to be used in construction and an operation and maintenance plan) is approved by vote of the Licensor. Licensee shall ensure that it complies with all laws, including, but not limited to, the Wetlands Protection Act and any local wetland bylaws when making such improvements.
- 4. The Licensee is authorized to make and maintain improvements such as regrading, fencing, planting, and/or wetlands replication to the small pond (Area C), a portion of which is on land owned by the Licensor as identified on the attached plan. No such improvements shall be made unless and until the plan for such improvements (to include a description of materials to be used in construction and an operation and maintenance plan) is approved by vote of the Licensor. Licensee shall ensure that it complies with all laws, including, but not limited to, the Wetlands Protection Act and any local wetland bylaws when making such improvements.
- 5. The Licensee is authorized to construct, maintain and use a trail and / or walkway on land owned by the Licensor (Area B Uplands), a portion of

which will be accessible to individuals with limited mobility on land owned by the Licensor. No such trail and/or walkway shall be constructed unless and until the plan for such construction (to include a description of materials to be used in construction and an operation and maintenance plan) is approved by vote to the Licensor.

- 6. The Licensee shall indemnify the Licensor from all claims by all parties arising at any time on or adjacent to, and related in any way to the use of the Licensor's property for educational use up to \$100,000 per claim, unless such claim is a result of the negligence or misconduct of the Licensor, its agents, servants, employees, members or their guests.
- 7. It is agreed that the above described property is and shall remain the property of the Licensor and the Licensee shall not make any improvements, alter or remove any of it without the Licensor's express prior written consent, except as provided for in this License.
- 8. Licensee shall procure and maintain, during the term of this License Agreement, comprehensive general liability insurance naming the Licensor as an additional named insured, subject to a combined single limit of at least \$1,000,000 each occurrence and \$3,000,000 in the aggregate for bodily injury and \$1,000,000 property damage. The Licensee shall provide the Licensor with a certificate of insurance.
- 9. Licensee shall not assign this License Agreement or any rights hereunder without the prior written consent of the Licensor.
- 10. It is agreed that this License is subject to termination by either party upon ninety (90) days written notice. The Licensor's notice shall be delivered by leaving a copy thereof with the Town Manager, 1471 Highland Avenue, Needham, Massachusetts. The Licensee's notice shall be delivered by mailing a copy to the Licensor at 20 Municipal Way, Wellesley, MA 02481.
- 11. All the terms and provisions of this License Agreement shall be binding upon and inure to the benefit of and be enforceable by and against the parties hereto, and their respective successors and assigns. This License Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Massachusetts; sets forth the entire understanding between the parties with respect to the Town of Needham's permitted use of the Licensed premises; and shall not be modified or amended except by written instrument signed by both parties hereto.
- 12. The parties hereby submit to the jurisdiction of the courts of the Commonwealth of Massachusetts and the United States District Court of Massachusetts for the resolution of any disputes relative to this License Agreement. Each of the parties hereto represents that this License Agreement

has been signed and sealed by its duly authorized representatives, and agrees that this License Agreement shall take effect as a sealed instrument

15. The Licensor agrees that it shall commence and litigate all actions or proceedings arising in connection with this Agreement exclusively in the Dedham District Court or in the Norfolk Superior Court, both of which are located in the County of Norfolk, Commonwealth of Massachusetts. The aforementioned choice of venue is intended to be mandatory and not permissive in nature, thereby precluding the possibility of the Licensor commencing or prosecuting any litigation against the Licensee, with respect to or arising out of this Agreement, in any court or forum other than those specified in this paragraph.

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|---|----------------------------------|
| EXECUTED under seal on this 1 | day of AERENARY, 2016. |
| | |
| | / |
| | The Town of Needbam (Licensee) |
| | By: Meter Could 1-19-2016 |
| х — — — — — — — — — — — — — — — — — — — | Its: Town Manager |
| | The Town of Wellesley (Licensor) |
| | By: Chudden Suil |
| | Its: Marman Arm |
| | Hereunto duly authorized |
| | |

