

HORACE MANN SCHOOL

**NEWTON EARLY CHILDHOOD PROGRAM
687 WATERTOWN STREET**

DESIGN REVIEW COMMITTEE MEETING

Newton Public Schools
Newton, Massachusetts

May 1, 2019

ARROWSTREET
10 POST OFFICE SQUARE
SUITE 700N
BOSTON, MA 02109
617.623.5555

www.arrowstreet.com

Hill International
75 SECOND AVENUE
SUITE 300
NEEDHAM, MA 02494
617.778.0900

www.hillintl.com

Agenda

- » Site Plan Progress Updates
- » Building Section and Layout
- » Building Performance Review
- » Budget Review
- » Site Plan Approvals Schedule Update

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687 Watertown Street

Meetings we have had since our last meeting with DRC on March 13th

- » DPW 3/13
- » School Building Committee – 3/14
- » Newton Engineering Department Site/Civil Plan Review – 3/21
- » Development Review Team – 3/27
- » School Building Committee – 4/4
- » Several Working Group Meetings – 3/14, 3/21, 4/4, 4/11
- » Public Buildings – 3/15, 4/29
- » Newton Public School Administration
- » Public Facilities – 4/17

Design Review Committee

Topics discussed at last DRC Meeting

- » Parking/ Traffic
- » Site Plan and Layout
- » Flood Plains District and Conservation Commission
- » Floor Plans
- » Building Entry, Egress and Circulation
- » HVAC Systems
- » Exterior Insulation System
- » Daylight at Lower Level

Program Summary and Design Guidelines

Projected NECP at 687 Watertown Street

Exterior/ Site

- » Outdoor age appropriate playground
- » Car-centric due to nature of program
- » Vans operation: 12 - 15 Vans
- » Parent/ guardian vehicles: 45 - 65
- » Staff vehicles: 85 - 100

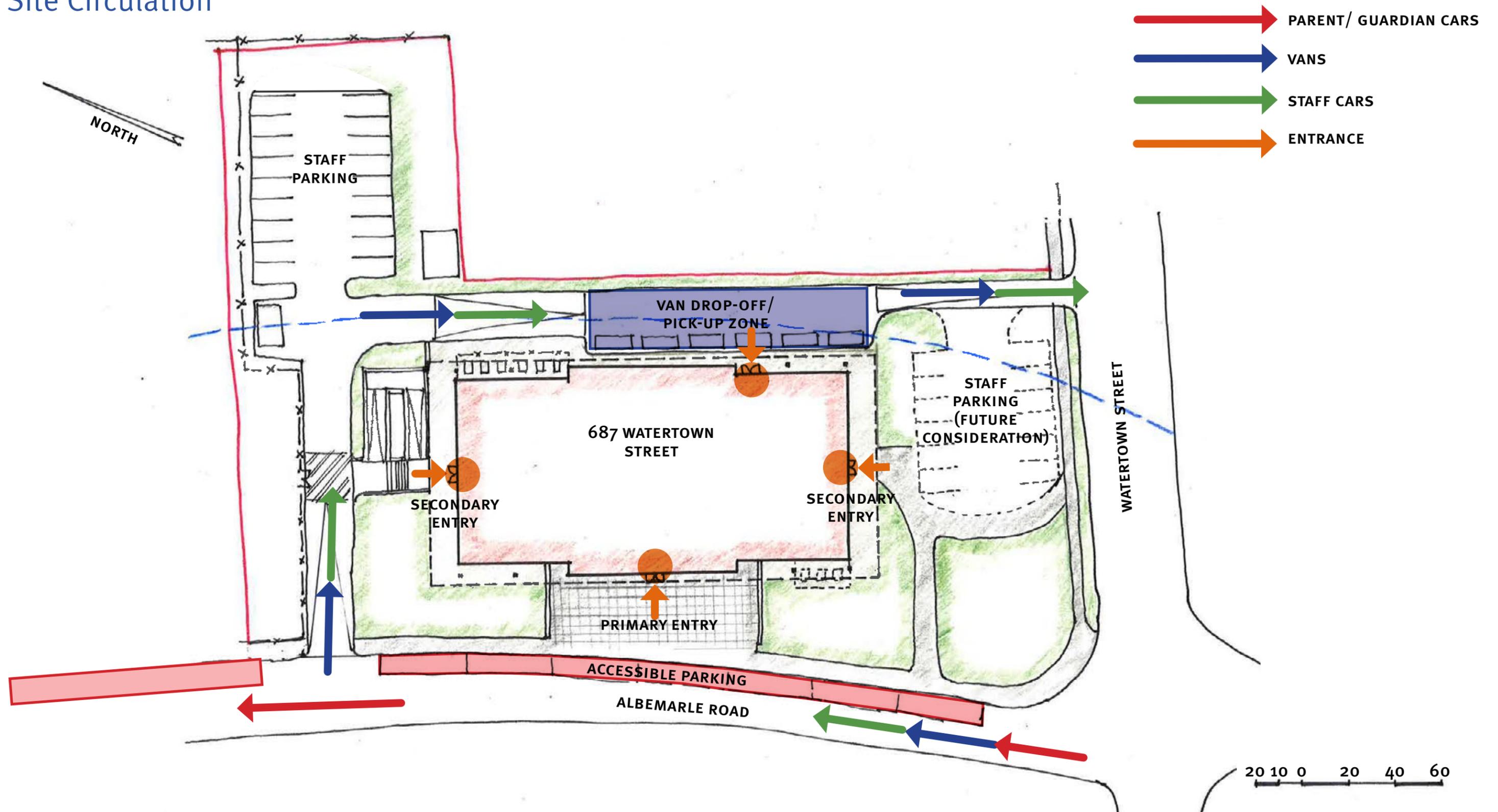
Building/ Program

- » Building Size: 38,000 SF on 3 levels
- » Remove modulars
- » Occupancy:
 - 305 total students (ages 2.9 to under 6 years old)
 - 104 Special needs
 - 90 Typically developing
 - 111 Related services85 - 105 Staff
- » Hours of Operation:
 - Entry 8:30am to 9:00am
 - Dismissal 12:00 to 12:30pm, 1:30pm, and 2:30pm
- » 14 - 18 Classrooms

Features/ Goals

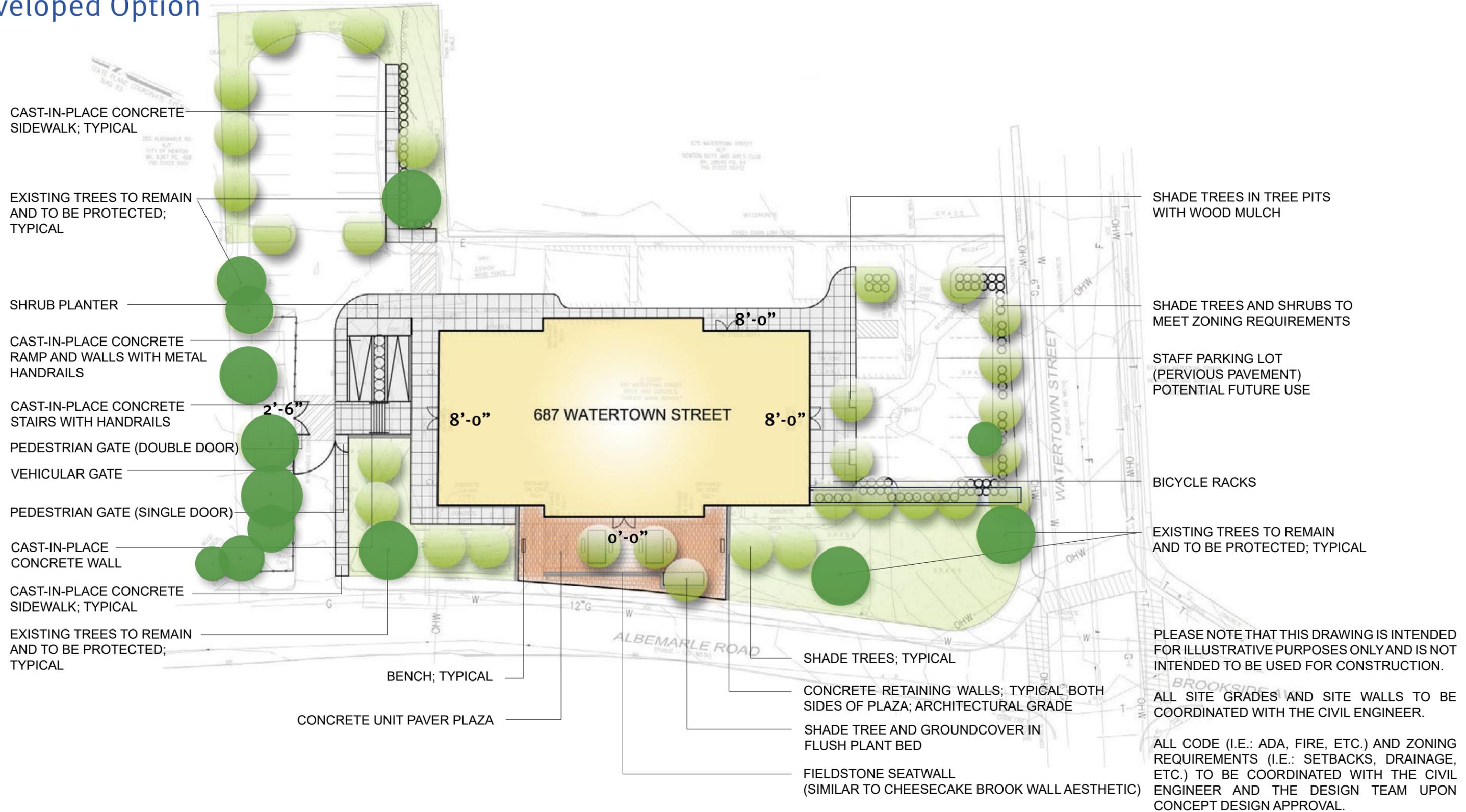
- » Improve pick-up/ drop off and entry to provide access and security for families and caregivers
- » Design with regard with understanding the mobility and sensory needs of population
- » Design for inclusiveness and spaces for specialists adjacent or within classrooms
- » Create shared specialist offices to foster collaboration and sharing between teachers

687 Watertown Street Site Circulation

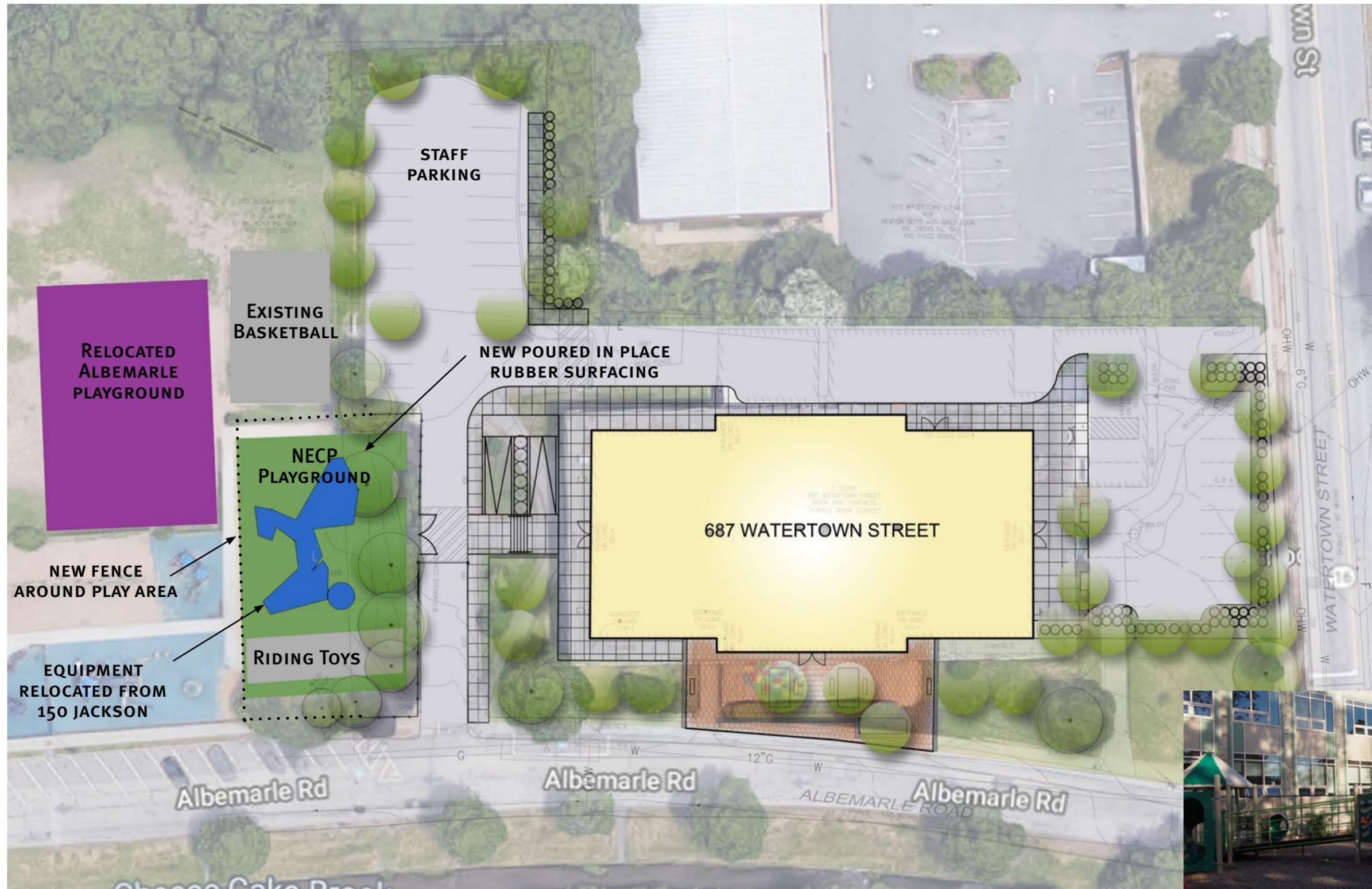


687 Watertown Street

Developed Option



687 Watertown Street Playground Concept



RUBBER SURFACING EXAMPLES

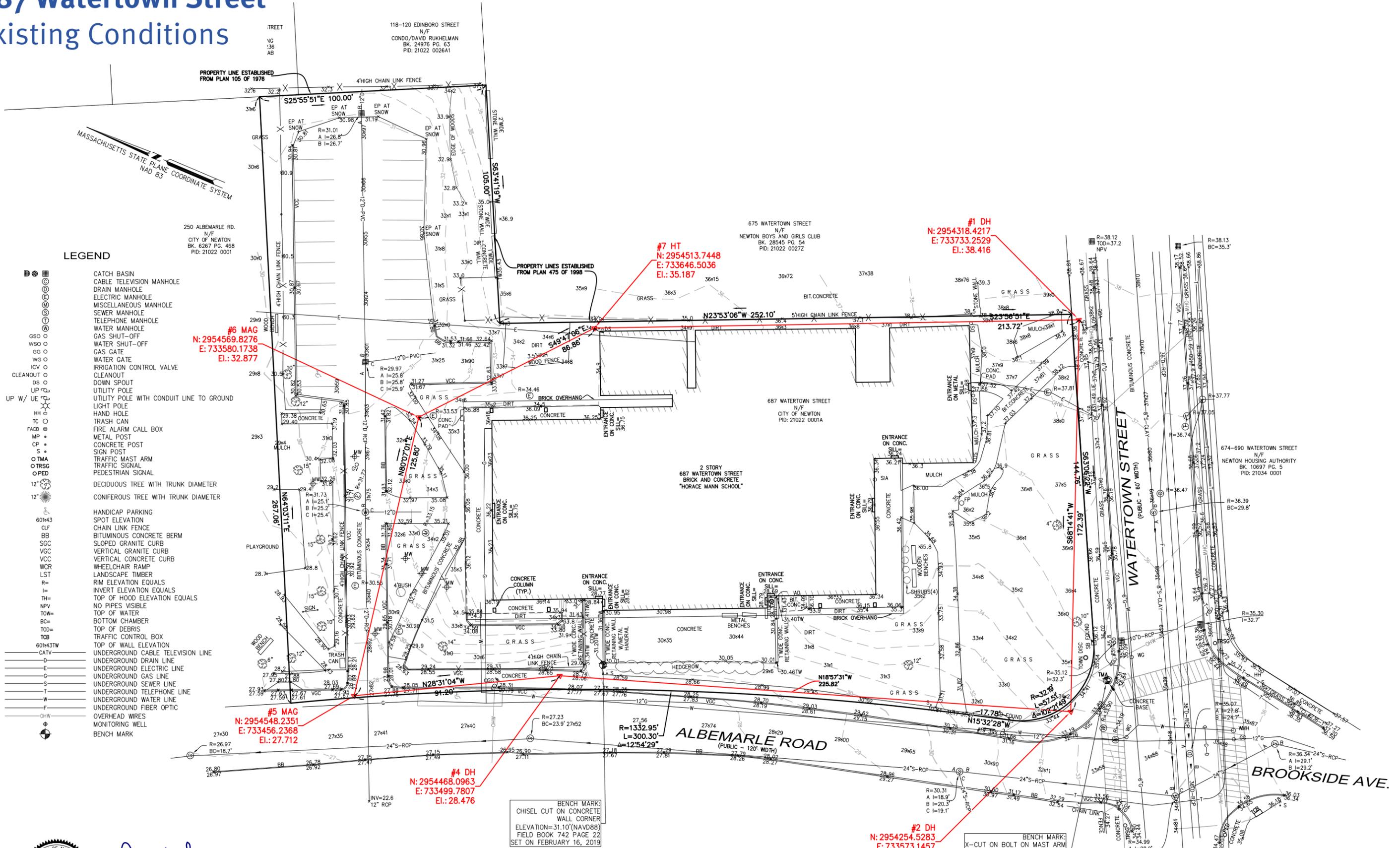


EQUIPMENT FROM 150 JACKSON



687 Watertown Street

Existing Conditions



LEGEND

- ⊗ CATCH BASIN
- ⊙ CABLE TELEVISION MANHOLE
- ⊙ DRAIN MANHOLE
- ⊙ ELECTRIC MANHOLE
- ⊙ MISCELLANEOUS MANHOLE
- ⊙ SEWER MANHOLE
- ⊙ TELEPHONE MANHOLE
- ⊙ WATER MANHOLE
- ⊙ GAS SHUT-OFF
- ⊙ WATER SHUT-OFF
- ⊙ GAS GATE
- ⊙ WATER GATE
- ⊙ IRRIGATION CONTROL VALVE
- ⊙ CLEANOUT
- ⊙ DOWN SPOUT
- ⊙ UTILITY POLE
- ⊙ UTILITY POLE WITH CONDUIT LINE TO GROUND
- ⊙ LIGHT POLE
- ⊙ HAND HOLE
- ⊙ TRASH CAN
- ⊙ FIRE ALARM CALL BOX
- ⊙ METAL POST
- ⊙ CONCRETE POST
- ⊙ SIGN POST
- ⊙ TRAFFIC MAST ARM
- ⊙ TRAFFIC SIGNAL
- ⊙ PEDESTRIAN SIGNAL
- ⊙ DECIDUOUS TREE WITH TRUNK DIAMETER
- ⊙ CONIFEROUS TREE WITH TRUNK DIAMETER
- ⊙ HANDICAP PARKING
- ⊙ SPOT ELEVATION
- ⊙ CHAIN LINK FENCE
- ⊙ BITUMINOUS CONCRETE BERM
- ⊙ SLOPED GRANITE CURB
- ⊙ VERTICAL GRANITE CURB
- ⊙ VERTICAL CONCRETE CURB
- ⊙ WHEELCHAIR RAMP
- ⊙ LANDSCAPE TIMBER
- ⊙ RIM ELEVATION EQUALS
- ⊙ INVERT ELEVATION EQUALS
- ⊙ TOP OF HOOD ELEVATION EQUALS
- ⊙ NO PIPES VISIBLE
- ⊙ TOP OF WATER
- ⊙ BC= BOTTOM CHAMBER
- ⊙ TD= TOP OF DEBRIS
- ⊙ TC= TRAFFIC CONTROL BOX
- ⊙ 60143TW= TOP OF WALL ELEVATION
- ⊙ CATV= UNDERGROUND CABLE TELEVISION LINE
- ⊙ D= UNDERGROUND DRAIN LINE
- ⊙ E= UNDERGROUND ELECTRIC LINE
- ⊙ G= UNDERGROUND GAS LINE
- ⊙ S= UNDERGROUND SEWER LINE
- ⊙ T= UNDERGROUND TELEPHONE LINE
- ⊙ W= UNDERGROUND WATER LINE
- ⊙ F= UNDERGROUND FIBER OPTIC
- ⊙ OHW= OVERHEAD WIRES
- ⊙ ⊕= MONITORING WELL
- ⊙ ⊙= BENCH MARK

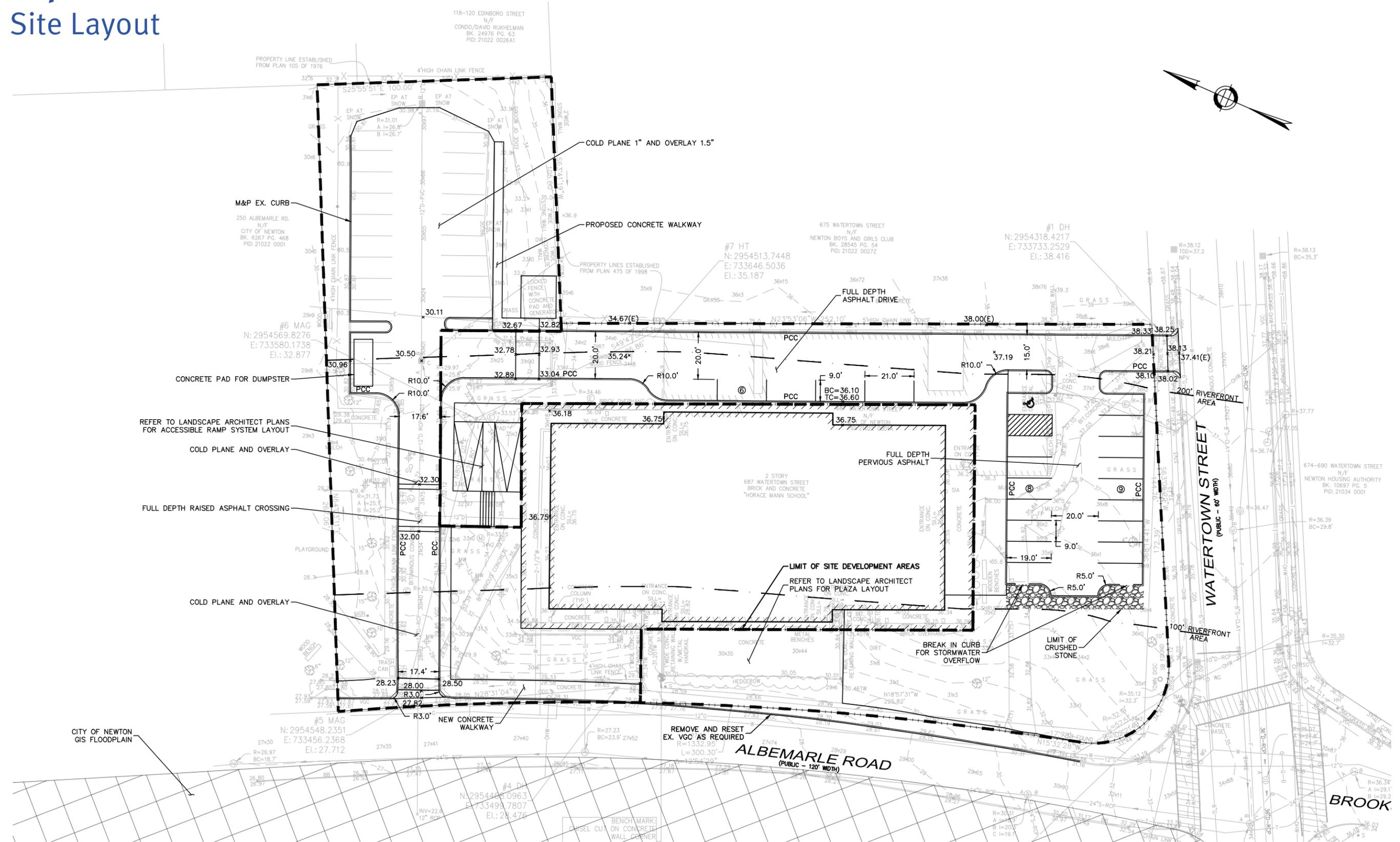
BENCH MARK:
CHISEL CUT ON CONCRETE
WALL CORNER
ELEVATION=31.10'(NAVD88)
FIELD BOOK 742 PAGE 22
SET ON FEBRUARY 16, 2019

#2 DH
N: 2954254.5283
E: 733573.1457



NEWTON EARLY CHILDHOOD PROGRAM AT 687 WATERTOWN STREET Newton, MA

687 Watertown Street Site Layout



687 Watertown Street

Civil Considerations

Requirements:

- » Located within 200' Riverfront Area
- » Subject to the DEP's Wetland Protection Act for Riverfronts

Goals:

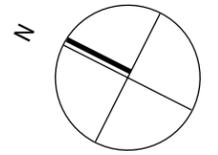
- » To meet the Riverfront requirements, the proposed site improvements will include:
 - Limiting disturbance of the existing site
 - Minimizing increase in impervious cover on the site
 - Installation of stormwater management systems to collect, treat, and infiltrate stormwater

Next Conservation Commission Meeting, May 9th:

- » Site Plan Review
- » Basis of Design and Regulation Compliance

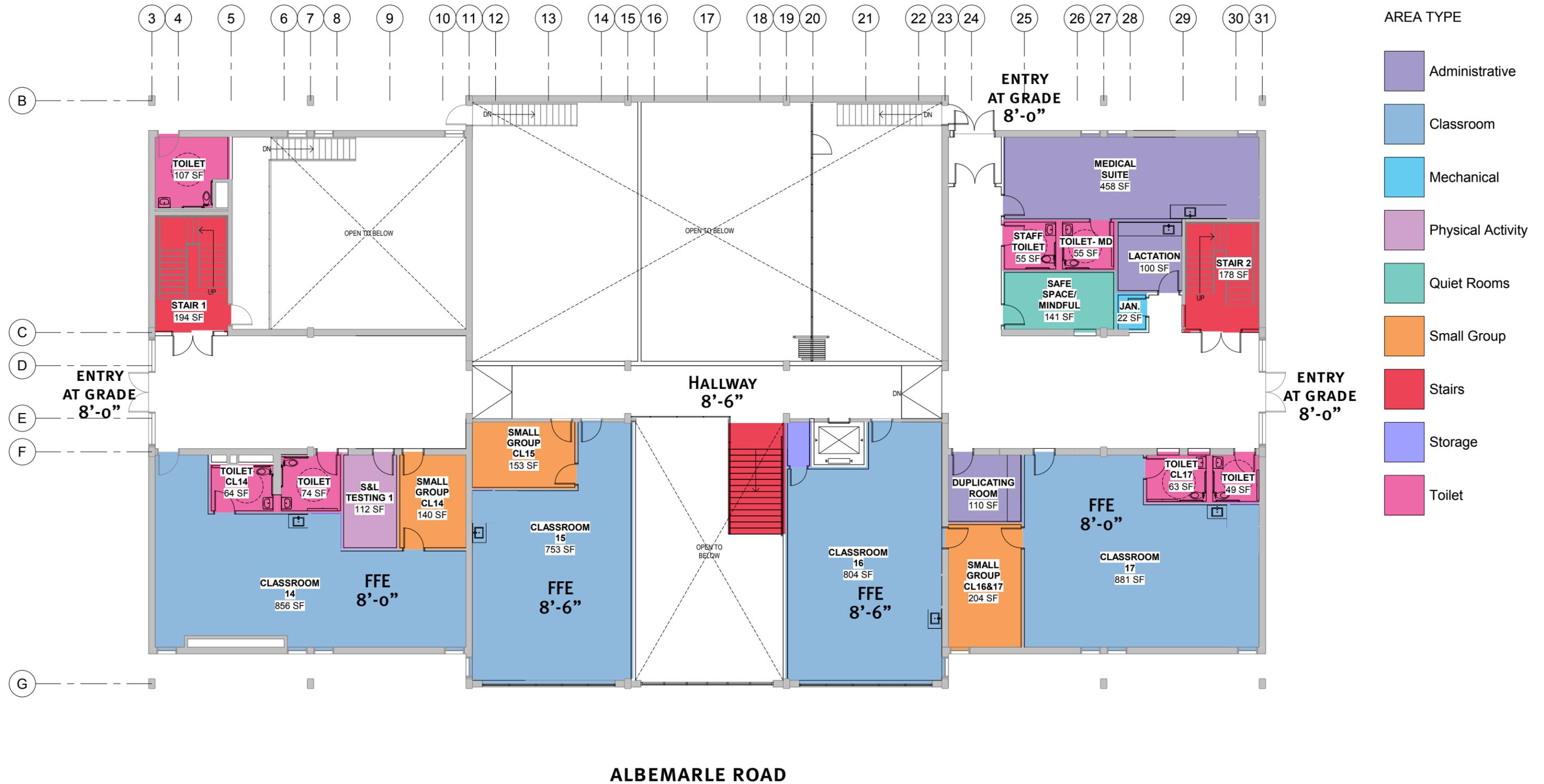
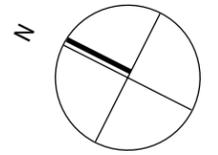
Newton Early Childhood Program

Lower Level (Level o) – Fit Plan



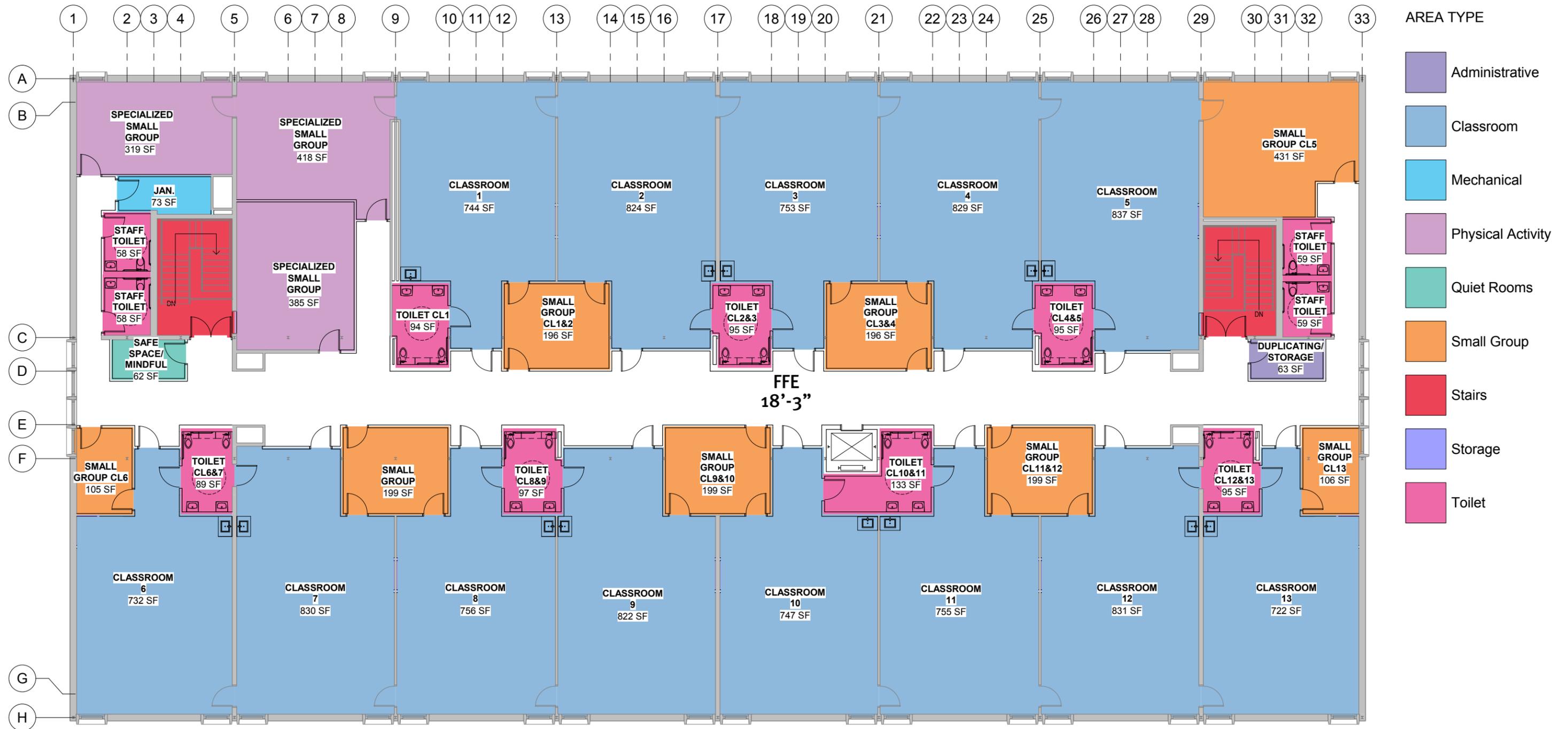
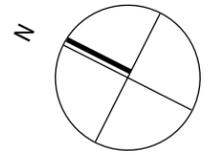
Newton Early Childhood Program

Middle Level (Level 1) – Fit Plan



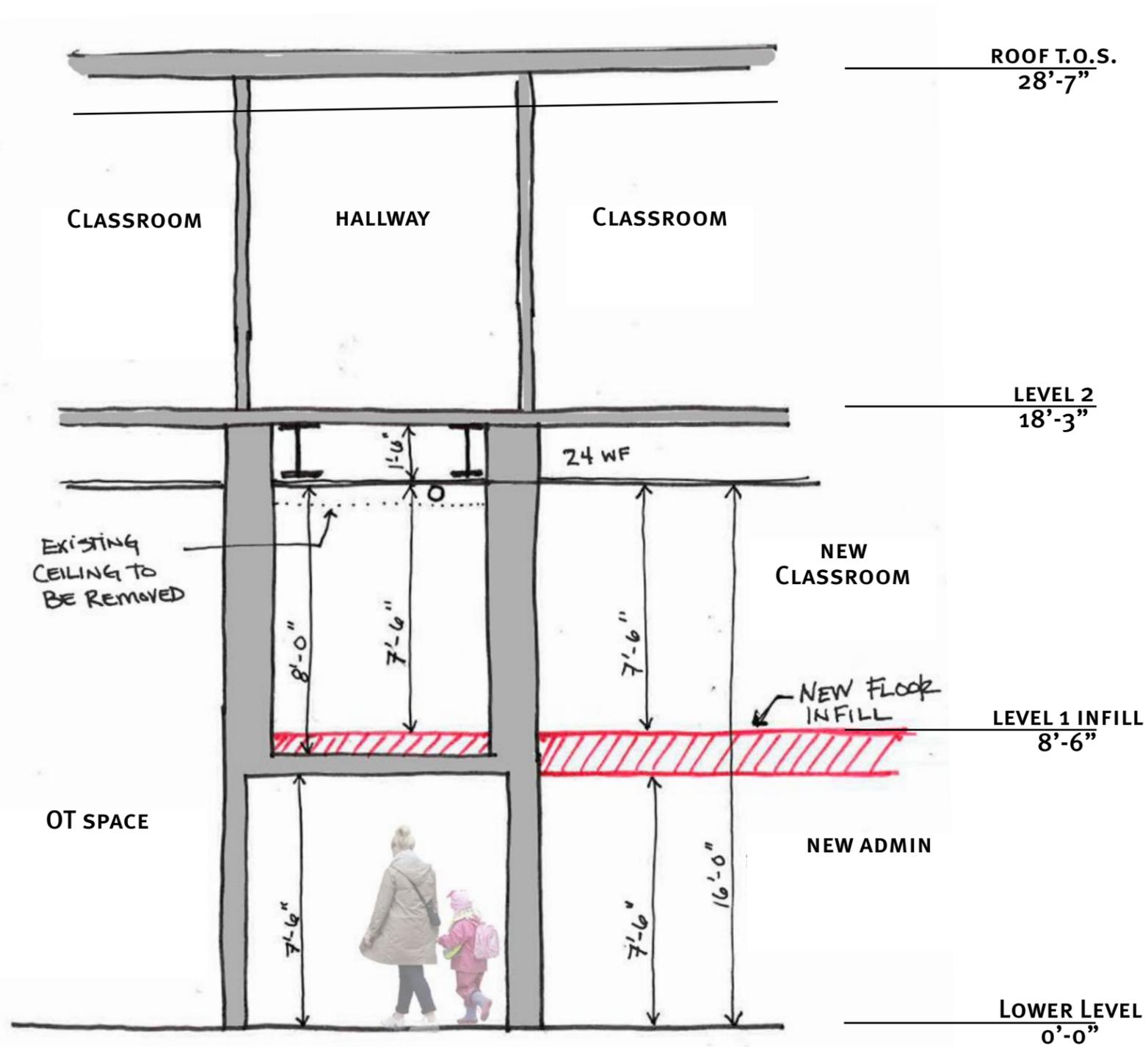
Newton Early Childhood Program

Upper Level (Level 2) – Fit Plan



ALBEMARLE ROAD

Newton Early Childhood Program Proposed Floor Infill Section



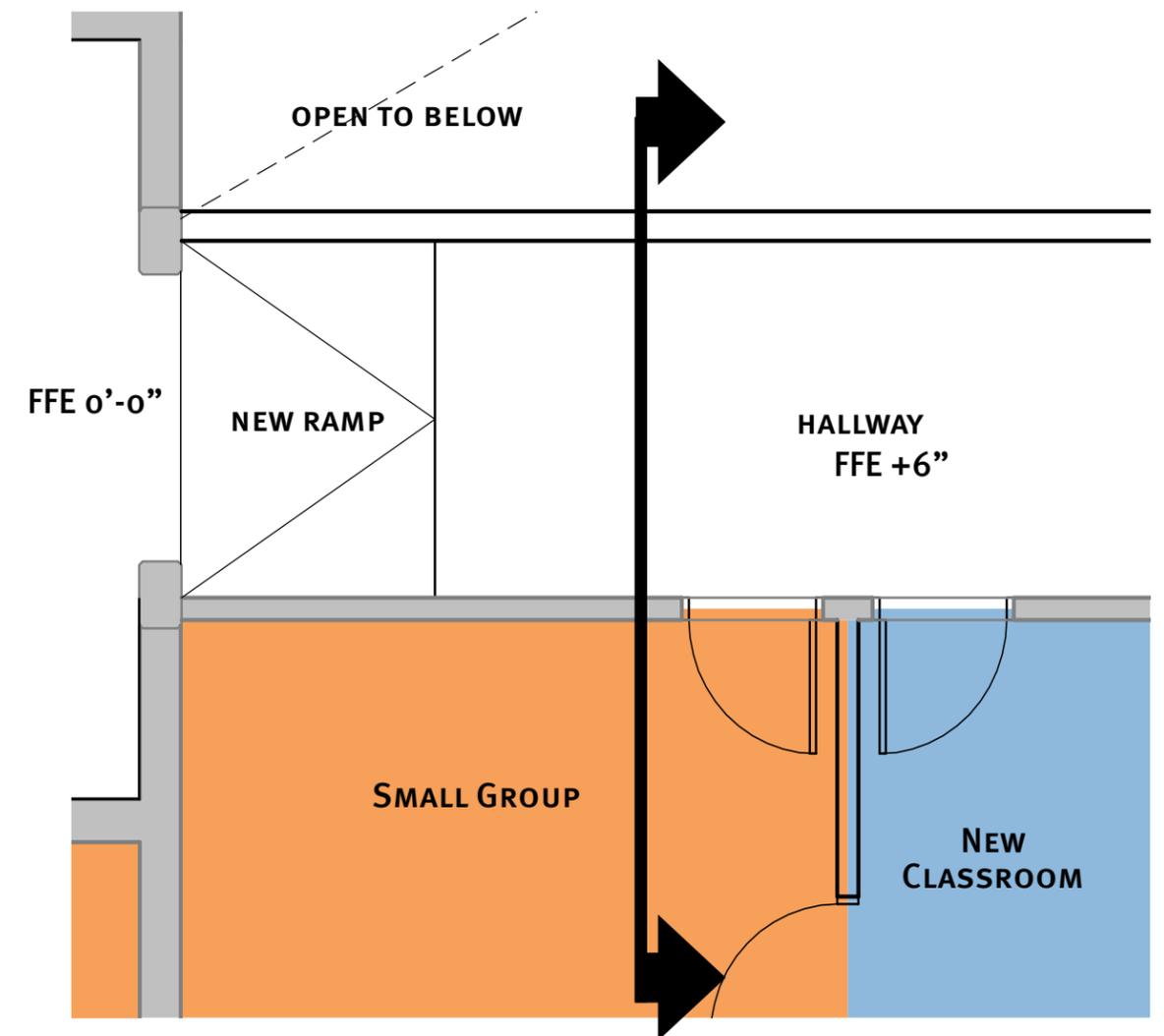
PROPOSED BUILDING SECTION AT INFILL



EXISTING GYMNASIUM



EXISTING LEVEL 1 HALLWAY



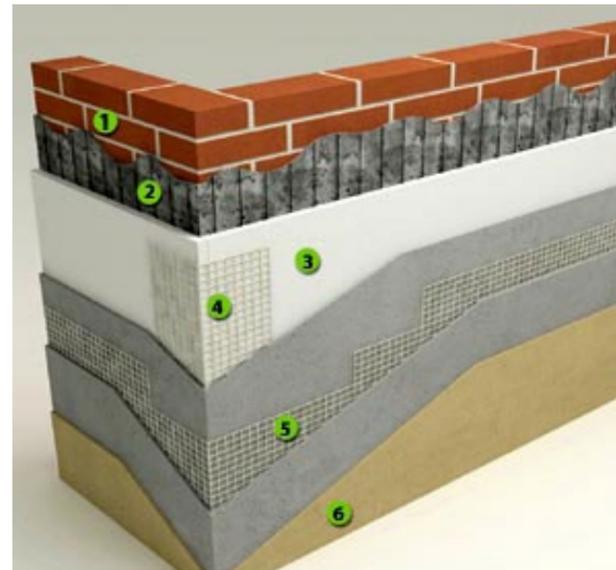
ENLARGED FLOOR PLAN ON LEVEL 1 CONNECTOR

Newton Early Childhood Program/ Building Performance- Exterior Wall Insulation- SUMMARY

OPTION 1 - EXTERIOR INSULATION FINISHING SYSTEM (EIFS)

- Approximate Construction Costs: \$794,467

Exterior Wall (at Upper Level) Brick with EIFS	R-Value
Exterior Air - Avg Summer/Winter	0.17
EIFS with XPS 2"	10.00
Waterproofing Membrane	0.0
3 5/8" Face Brick	0.44
1" Air Space	1.0
3/4" Concrete (parge at cavity, Concrete Light Weight (110 lb/cft)	0.14
3 5/8" Face Brick	0.44
Interior Air - Vertical	0.68
Assembly Total:	12.87



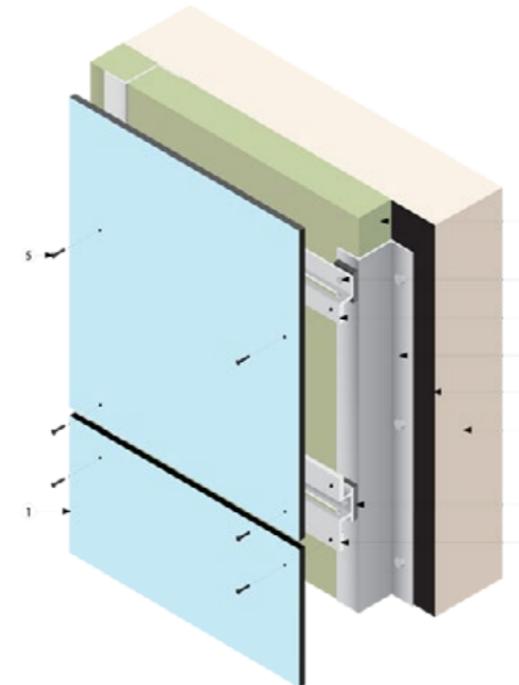
CONCEPTUAL IMAGE OF EIFS SYSTEM

OPTION 2 - INSULATED RAIN SCREEN SYSTEM

- Fiber Cement- Approximate Construction Costs: \$860,000

- Metal Panel- Approximate Construction Costs: \$1,467,866

Exterior Wall (at Upper Level) Brick with Metal Rain Screen	R-Value
Exterior Air - Avg Summer/Winter	0.17
Metal Panel	0.61
1" Air Space	1.0
4" Mineral Wool Insulation w/ continuous galvanized girt	8.6
3 5/8" Face Brick	0.44
1" Air Space	1.0
3/4" Concrete (parge at cavity, Concrete Light Weight (110 lb/cft)	0.14
3 5/8" Face Brick	0.44
Interior Air - Vertical	0.68
Assembly Total:	13.08



CONCEPTUAL IMAGE OF RAINSCREEN SYSTEM

It should be noted that improvements to the existing walls will provide other benefits to the building beyond cost implications such as improvements to thermal comfort, moisture management, energy use reductions and other factors that should be considered.

*Building Envelope Payback Summary suggests that adding any of the above insulation approaches to the existing walls **does not result in a pay-back within the 30 year study period**. Results in a 48- Year Simple Payback.*

687 Watertown Street

City of Newton - Building Design and Construction Sustainability Guidelines

Conceptual Design Phase:

» **Option 1:** Meets all codes and budget

- Will be met with baseline VRF System, DDC controls, lighting controls, and minimizing site impacts

» **Option 2:** Reduces energy use to 30% below code requirements, but exceeds budget for systems

- Option 1 systems noted above; plus
- Wall insulation assembly;
- Will need to purchase renewable energy

» **Option 3:** Reducing energy use to net zero

- Based on items above, NZE is not practical nor affordable

*** Life Cycle Analysis has been completed on HVAC systems options and Wall Insulation Systems**

687 Watertown Street

City of Newton - Building Design and Construction Sustainability Guidelines

Continuing Efforts and Evaluation of:

- » **High Performing windows:** Existing 2013 windows to remain. New storefront glazing will be high performing.
- » **Air barrier and insulating wall and roof assemblies:** Variety of wall insulation strategies will continue to be investigated and evaluated. A full roof replacement will address roof insulation and air barriers.
- » **Constructability of thermal break strategies in foundation and structure:** Existing building conditions will be reviewed and improved if possible.
- » **HVAC and lighting approaches:** Two HVAC systems have been evaluated, see Feasibility Study report for further information. Lighting will be upgraded as needed.
- » **Building Controls, management, monitoring and display functions:** Will continue to develop in further phases.
- » **Durability and performance of building materials:** New interior finishes will be evaluated
- » **Educational opportunities for users and the community:** NECP education program goals and community interests will continuously be integrated into the project.

Newton Early Childhood Program

Budget Review

Total Project Cost Budget:

» \$10 million

Estimated Construction Cost Budget:

» \$8.2 million

Next:

- » Preliminary cost estimate needs to be reviewed by the Public Buildings Commissioner, Deputy Commissioner, and Hill International.
- » Value Engineering Efforts will need to be discussed to keep project on budget.

Newton Early Childhood Program at 687 Watertown Street

Site Approvals Schedule

Site Plan Approvals Schedule NECP at 687 Watertown Street Property

January 31, 2019, Amended 4/4/2019

Task:

Meeting Date:

Design Review Committee (DRC) Meeting

February 13, 2019

- Building Test Fit
- Preliminary Site Concept Options Plan

Development Review Team (DRT) Meeting

February 27, 2019

- Professional Team Introduction
- Review DRT Site Review Process/Criteria
- Preliminary Site Concept Options Plan

DPW - Transportation Division Meeting

March 13, 2019

- Preliminary Site Concept Options Plan
- Report -Traffic Study

Design Review Committee (DRC) Meeting

March 13, 2019

- Study Progress Report
- Site Plan Development and Preferred Option Evaluation

LE-NECP School Building Committee Meeting

March 14, 2019

- Study Progress Report
- Site Plan Development and Preferred Option Evaluation

Development Review Team (DRT) Meeting

March 27, 2019

- Progress Report, Site Plan Development and Preferred Option Evaluation

LE-NECP School Building Committee Meeting

April 4, 2019

- Progress Report, Site Plan Development and Preferred Option Evaluation
- **Vote** - authorize submission of documents to DRC for 5-58 Ordinance Site Plan Approval

Newton Early Childhood Program at 687 Watertown Street

Site Approvals Schedule

Site Plan Approvals Schedule NECP at 687 Watertown Street Property

January 31, 2019, Amended 4/4/2019

Task: _____ Meeting Date: _____

Design Review Committee (DRC) Meeting *April 10, 2019*

- Schematic Floor Plans and Preferred Site Plan

Public Facilities Committee Meeting *April 17, 2019*

- Building Test Fit
- Progress Report, Site Plan Development and Preferred Option Evaluation

Conservation Commission Meeting *April 18, 2019*

- Project Introduction

TODAY



Design Review Committee (DRC) Meeting *April 24, 2019*

- Schematic Floor Plans and Preferred Site Plan
- **Vote - 5-58 Ordinance Site Plan Approval**

Conservation Commission Meeting *May 9, 2019*

- Site Plan Review
- Basis of Design and Regulation Compliance

PUBLIC HEARING DOCKET & PUBLIC NOTICES ISSUED – City Council Clerk by *May 15, 2019*

Public Facilities Committee Hearing *June 5, 2019*

- Public Hearing on Proposed Site Development/Plan

Public Facilities Committee Meeting *June 19, 2019*

- **Vote - 5-58 Ordinance Site Plan Approval**

Finance Committee Meeting *June 24, 2019*

- Preferred Schematic Report and Total Project Budget Request
- **Vote – Total Project Budget Appropriation**

**JANUARY 2021
687 WATERTOWN ST
OCCUPANCY**

687 Watertown Street

5-58 Conditions of Approval

Continuing to:

- » Refine and address all parking, traffic, and site circulation challenges
- » Develop site drainage and storm water management system to meet Con Comm requirements
- » Develop the landscaping and site lighting plans to minimize the impact to the abutters and neighborhood
- » Work with Parks and Recreation to facilitate the installation of the playgrounds
- » Pursue Sustainability initiatives, reduce project energy consumption and embodied carbon, and eliminate and/or reduce fossil fuel consumption
- » Continue to explore PV options for the site

Discussion

www.newtonma.gov/gov/building/capital_projects

www.lincolneliot-necp-projects.com

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