

# HORACE MANN SCHOOL

**NEWTON EARLY CHILDHOOD PROGRAM  
687 WATERTOWN STREET**

## **DESIGN REVIEW COMMITTEE MEETING**

Newton Public Schools  
Newton, Massachusetts

April 10, 2019

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

[www.arrowstreet.com](http://www.arrowstreet.com)

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

[www.hillintl.com](http://www.hillintl.com)

## Agenda

- » Parking Plan
- » Preferred Site Plan
- » Floodplain
- » Building Layout, Entry, and Circulation
- » Building Performance Review
- » Sustainability Guidelines
- » 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
- » Public Buildings
  - 3/15
- » Newton Public School Administration

# Design Review Committee

## Topics discussed at last DRC Meeting

- » Site Plan and Layout
- » Floor Plans
- » Building Entry 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



## Trip Generation

Projected NECP at 687 Watertown Street

# Trip Generation – Projected NECP

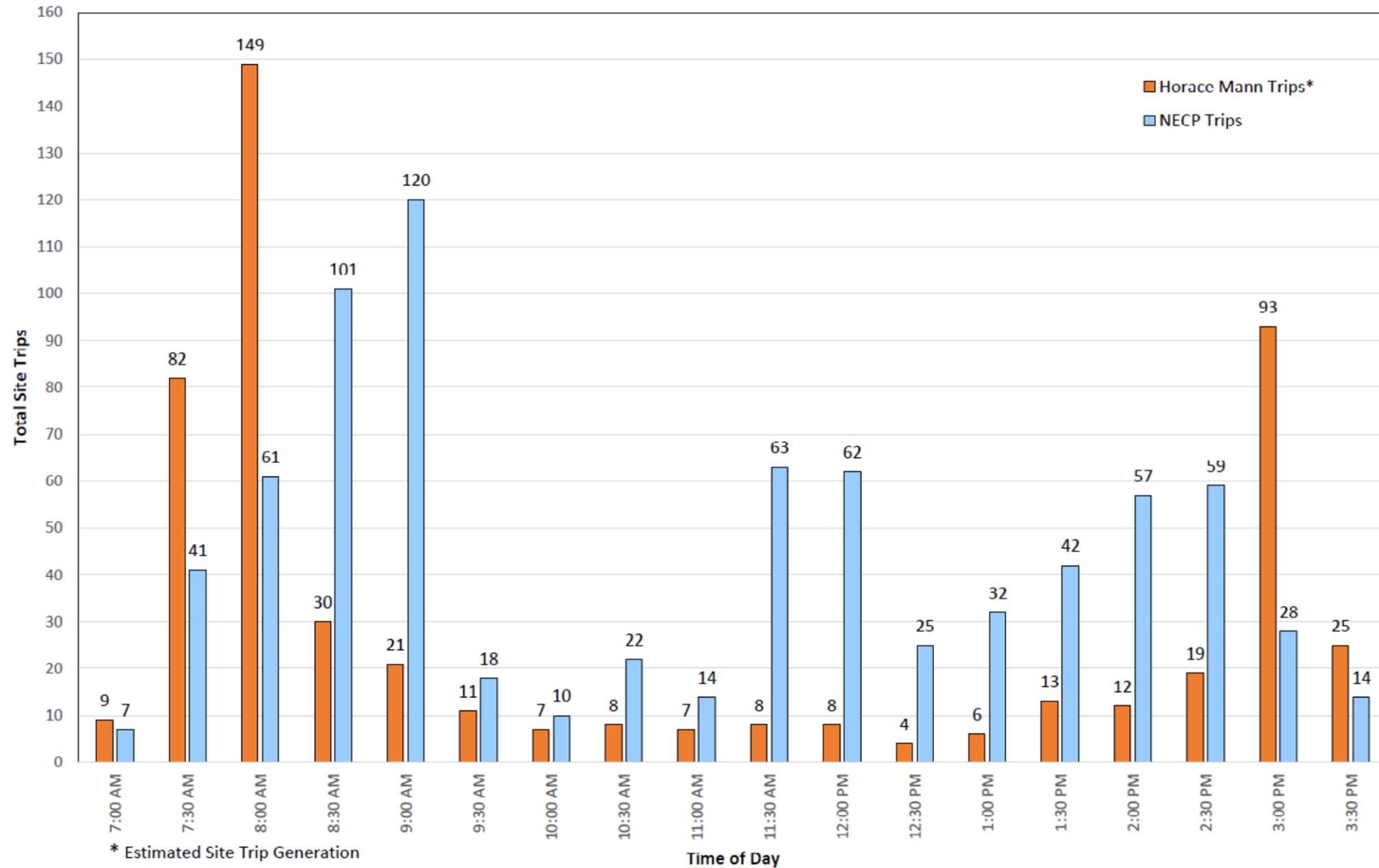
Period	Vehicle-trips <sup>1</sup>			Total
	Staff Auto	Student Auto	Van	
<i>Weekday Morning Drop-Off Period (8:15-9:15 AM):</i>				
Enter	50	89	12	<b>151</b>
<u>Exit</u>	<u>--</u>	<u>89</u>	<u>10</u>	<b><u>99</u></b>
Total	50	178	22	<b>250</b>
<i>Weekday Midday Pick-Up Period (11:30 AM-12:30 PM):</i>				
Enter	--	59	3	<b>62</b>
<u>Exit</u>	<u>8</u>	<u>59</u>	<u>6</u>	<b><u>73</u></b>
Total	8	118	9	<b>135</b>
<i>Weekday Afternoon Pick-Up Period (1:45-2:45 PM):</i>				
Enter	--	37	6	<b>43</b>
<u>Exit</u>	<u>22</u>	<u>52</u>	<u>10</u>	<b><u>84</u></b>
Total	22	89	16	<b>127</b>

<sup>1</sup>Peak hour trips based on empirical trip generation observed at NECP on January 31, 2019 with projected increases based on information provided by NECP staff.

# Site Trip Generation Comparison

## Existing Horace Mann School vs. Proposed NECP

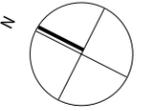
*Newton Early Childhood Program  
Newton, Massachusetts*



**Exhibit 1**

**MDM** TRANSPORTATION CONSULTANTS, INC.  
Planners & Engineers

# 687 Watertown Street Parking Plan



## » Projected parking demand:

85 - 100 Staff

45 - 65 Parents/ Guardians

## » Available parking:

(Approx. 265 total existing)

20 parking lot (Staff)

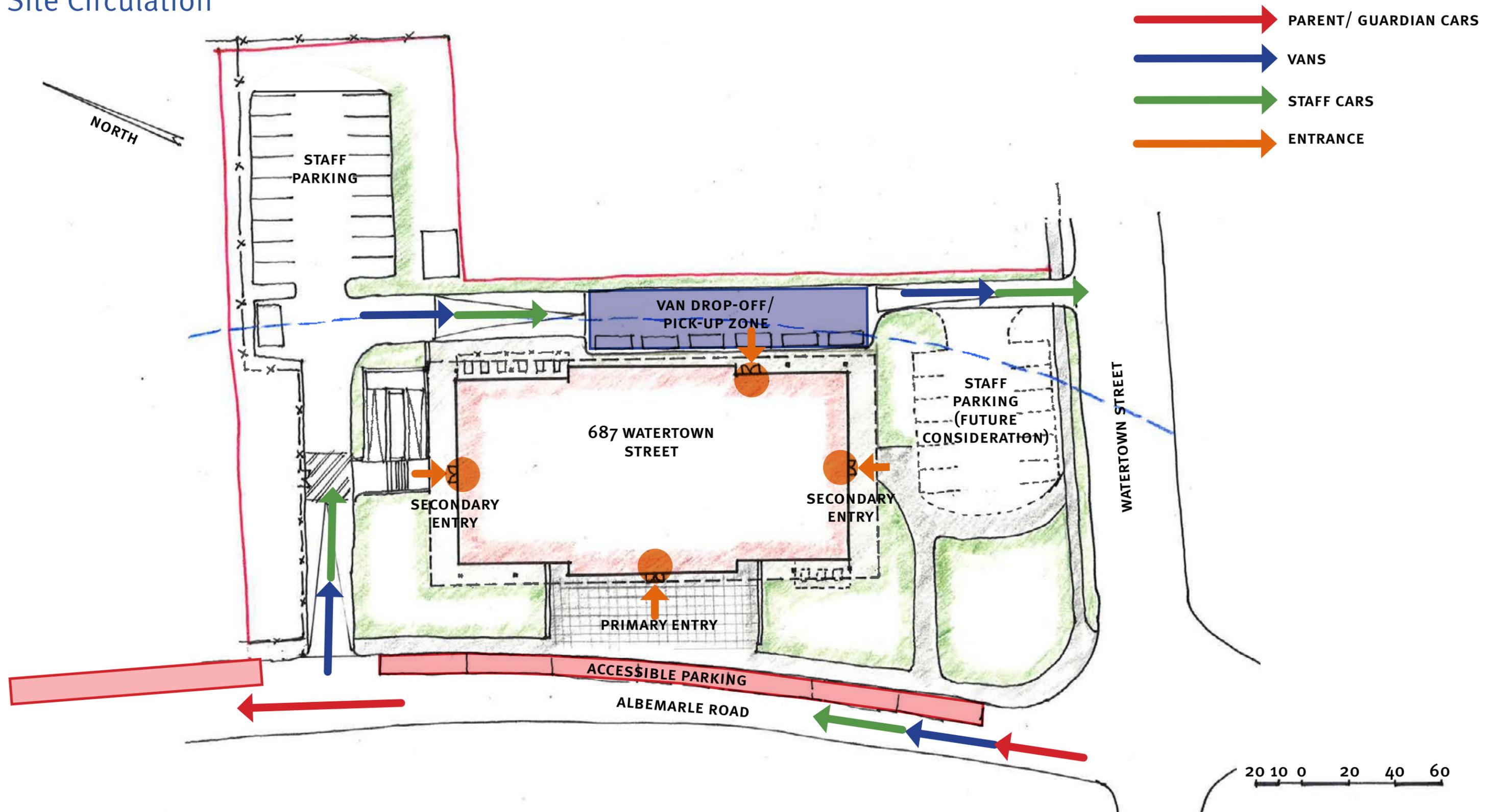
93 head in east side of Albemarle  
down to Gath

72 parallel on west side of Albemarle  
down to Gath

80+ parallel on Edinboro, Page,  
Walker, and Albemarle (South of  
Watertown)

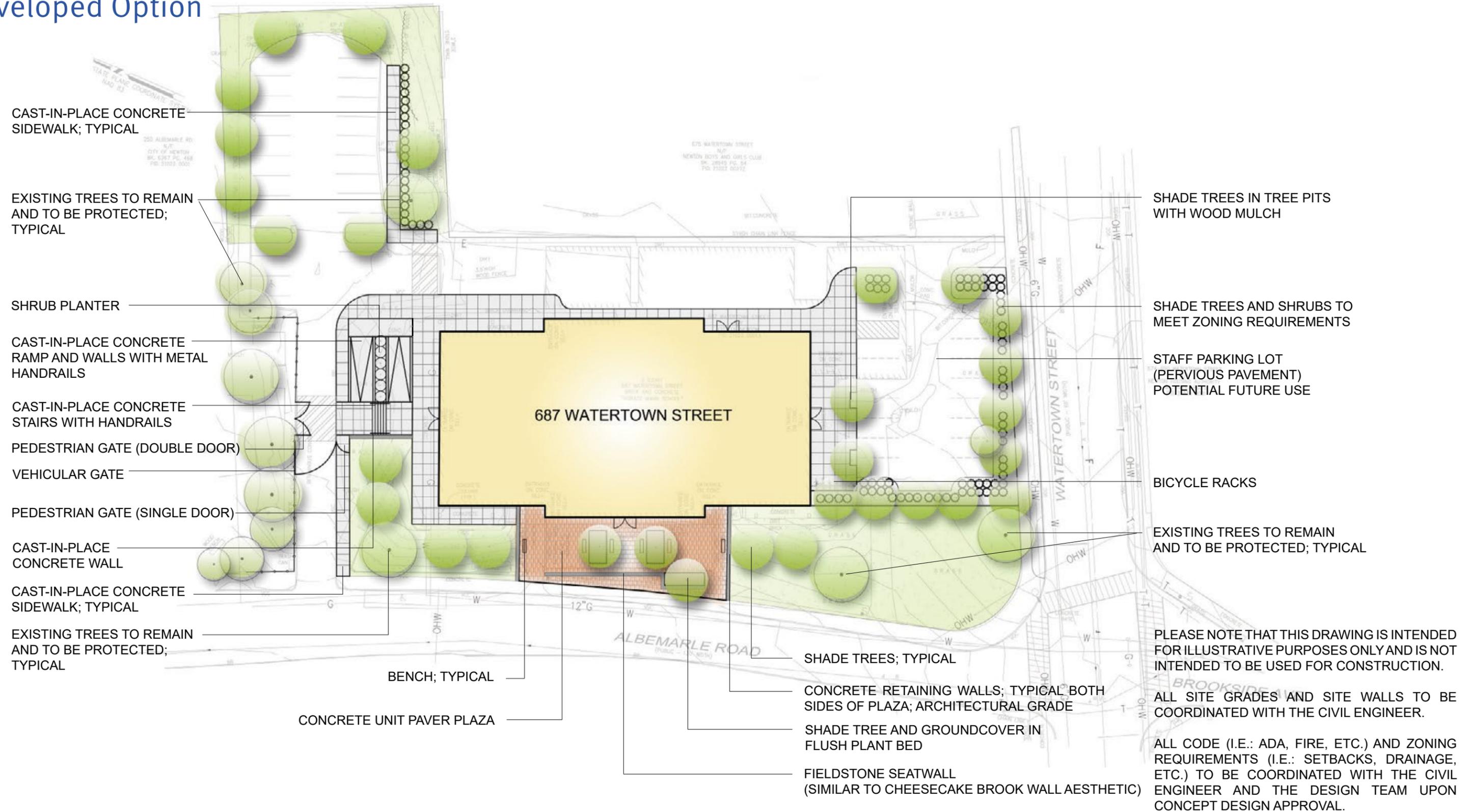


# 687 Watertown Street Site Circulation



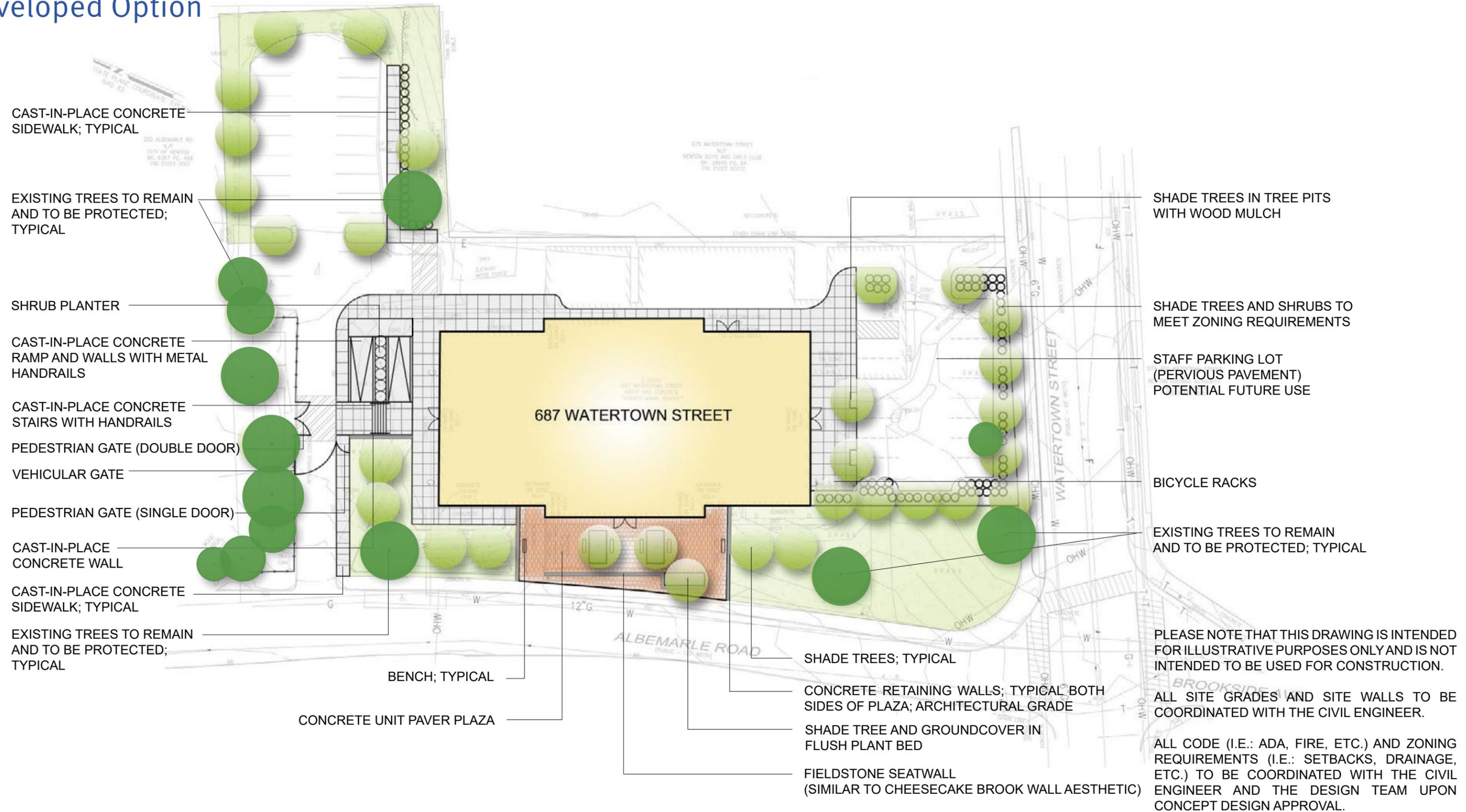
# 687 Watertown Street

## Developed Option



# 687 Watertown Street

## Developed Option



# 687 Watertown Street City Floodplain District

**Newton GIS Browser** [Click a property below for more information](#) [About](#) [Instructions](#) [Data Sources](#) [Map Legend](#)

albemarle

52 ft

WILDWOOD AVE

ALBEMARLE RD

ALBEMARLE

Horace Mann School

Horace Mann School

Boys & Girls Club

WATERTOWN ST

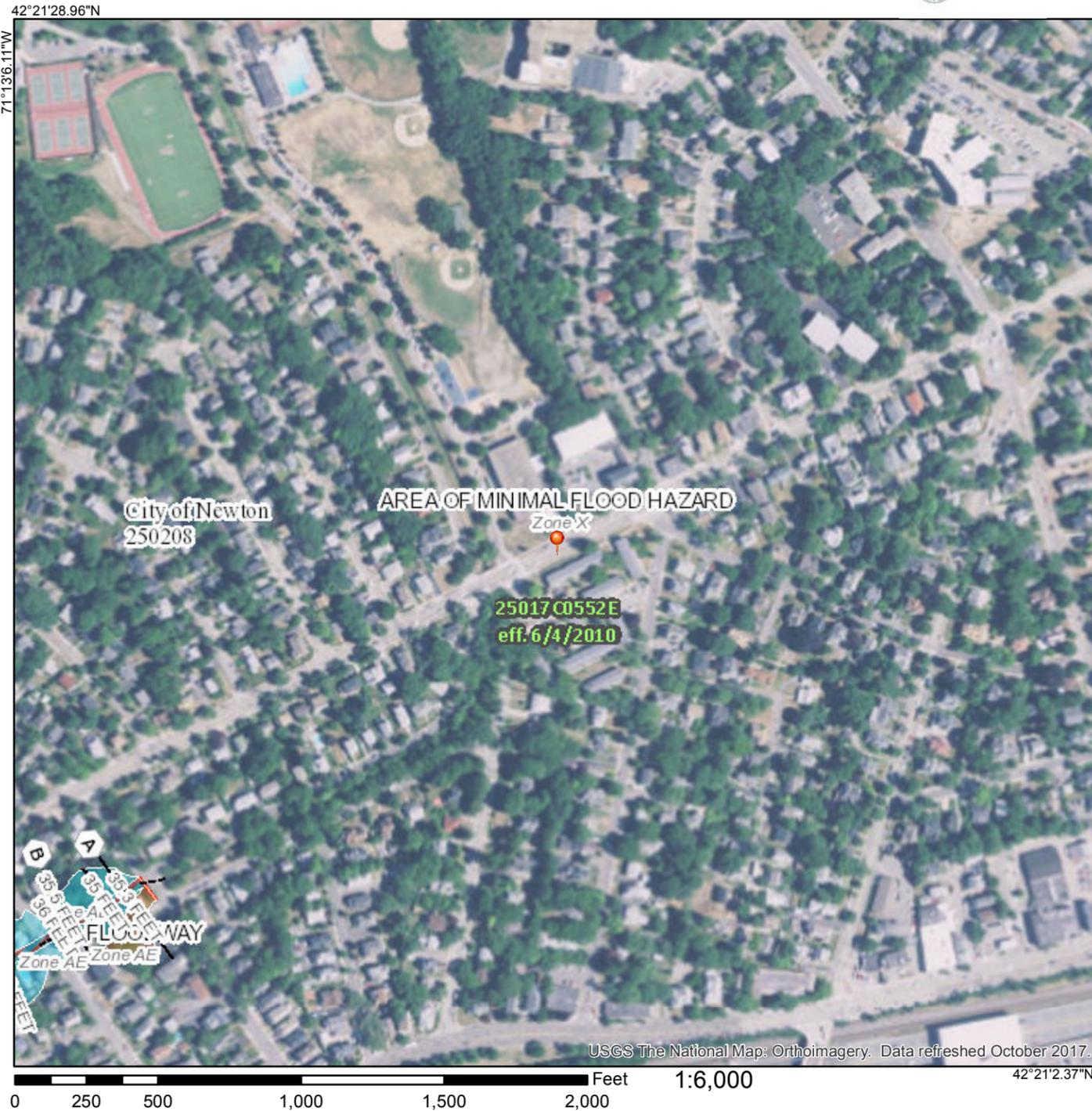
16

WALKER ST

- Rare Species Habitat
- FEMA Flood Zones
- City Floodplain District
- Rivers Protection Act Areas
- Wetland Restrictions
- Wetlands
- Wetland Buffer Areas
- Streams
- Streets-Pavement Edge

# 687 Watertown Street National Flood Hazard

## National Flood Hazard Layer FIRMette



### Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>
OTHER AREAS		Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard <i>Zone D</i>
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards.

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 10/23/2018 at 7:31:45 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

## Area of Minimal Flood Hazard

The site is within an Area of Minimal Flood Hazard **Zone X**, which is identified as an area **outside of the 100-year floodplain**.

# 687 Watertown Street Site Topography

## NOTES

- THIS DOCUMENT IS AN INSTRUMENT OF SERVICE OF NITSCH ENGINEERING. IT IS ISSUED TO ARROWSTREET FOR PURPOSES RELATED DIRECTLY AND SOLELY TO NITSCH ENGINEERING'S SCOPE OF SERVICES UNDER CONTRACT WITH ARROWSTREET FOR 687 WATERTOWN STREET, NEWTON, MA. 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 FOR VIOLATION OF COPYRIGHT LAWS, UNLESS WRITTEN AUTHORIZATION IS GIVEN THEREFOR BY NITSCH ENGINEERING.
- THE PURPOSE OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS OF THE SITE AS THE RESULT OF AN ON-THE-GROUND INSTRUMENT SURVEY WHICH OCCURRED FEBRUARY 12, 2019.
- HORIZONTAL COORDINATES REFER TO NAD83 BASED ON RTK GPS OBSERVATIONS.
- ELEVATION REFERS TO NAVD88 VERTICAL BASED ON RTK GPS OBSERVATIONS.
- THE INFORMATION CONTAINED ON THE DISK OR ELECTRONIC DRAWING FILE ACCOMPANYING THIS PLAN MUST BE COMPARED TO THE SEALED AND SIGNED HARD COPY OF THE PLAN TO ENSURE THE ACCURACY OF ALL INFORMATION AND TO ENSURE NO CHANGES, ALTERATIONS, OR MODIFICATIONS HAVE BEEN MADE. RELIANCE SHALL NOT BE MADE ON A DOCUMENT TRANSMITTED BY COMPUTER OR OTHER ELECTRONIC MEANS UNLESS FIRST COMPARED TO THE ORIGINAL SEALED DOCUMENT ISSUED AT THE TIME OF THE SURVEY. DUE TO THE CRITICAL NATURE OF SURVEYING, DATA ACQUISITION, AND AUTOCAD PLAN DEVELOPMENT, IF CRITICAL DIMENSIONAL INFORMATION IS NEEDED AND IS NOT SPECIFICALLY SHOWN ON THE ELECTRONIC DRAWING FILE, PLEASE CONTACT NITSCH ENGINEERING.

## UTILITY INFORMATION STATEMENT

- THE SUB-SURFACE UTILITY INFORMATION SHOWN HEREON IS COMPILED BASED ON FIELD SURVEY INFORMATION, RECORD INFORMATION AS SUPPLIED BY THE APPROPRIATE UTILITY COMPANIES, AND PLAN INFORMATION SUPPLIED BY THE CLIENT, IF ANY; THEREFORE CANNOT GUARANTEE THE ACCURACY OF SAID COMPILED SUB-SURFACE INFORMATION TO ANY CERTAIN DEGREE OF STATED TOLERANCE. ONLY PHYSICALLY LOCATED SUB-SURFACE UTILITY FEATURES FALL WITHIN NORMAL STANDARD OF CARE ACCURACIES.
- THE LOCATIONS OF UNDERGROUND PIPES, CONDUITS, AND STRUCTURES HAVE BEEN DETERMINED FROM SAID INFORMATION, AND ARE APPROXIMATE ONLY. COMPILED LOCATIONS OF ANY UNDERGROUND STRUCTURES, NOT VISIBLY OBSERVED AND LOCATED, CAN VARY FROM THEIR ACTUAL LOCATIONS.
- ADDITIONAL BURIED UTILITIES/STRUCTURES MAY BE ENCOUNTERED.
- THE STATUS OF UTILITIES, WHETHER ACTIVE, ABANDONED, OR REMOVED, IS AN UNKNOWN CONDITION AS FAR AS OUR COMPILATION OF THIS INFORMATION.
- IT IS INCUMBENT UPON INDIVIDUALS USING THIS INFORMATION TO UNDERSTAND THAT COMPILING UTILITY INFORMATION IS NOT EXACT, AND IS SUBJECT TO CHANGE BASED UPON VARYING PLAN INFORMATION RECEIVED AND ACTUAL LOCATIONS.
- THE ACCURACY OF MEASURED UTILITY INVERTS AND PIPE SIZES IS SUBJECT TO FIELD CONDITIONS, THE ABILITY TO MAKE VISUAL OBSERVATIONS, DIRECT ACCESS TO THE VARIOUS ELEMENTS AND OTHER MATTERS.
- THE PROPER UTILITY ENGINEERING/COMPANY SHOULD BE CONSULTED AND THE ACTUAL LOCATIONS OF SUBSURFACE STRUCTURES SHOULD BE VERIFIED IN THE FIELD (V.I.F.) BEFORE PLANNING FUTURE CONNECTIONS. CONTACT THE DIG SAFE CALL CENTER AT 1-888-344-7233, SEVENTY-TWO HOURS PRIOR TO EXCAVATION, BLASTING, GRADING, AND/OR PAVING.
- AS OF THE DATE OF THIS PLAN RECORD INFORMATION HAS NOT BEEN RECEIVED BY NITSCH ENGINEERING FOR THE FOLLOWING UTILITIES: ENBRIDGE; NEWTON DPW; MWRA WATER; AT&T SIENA; VERIZON BUSINESS; EVERSOURCE FIBER; NEWTON FIRE ALARM; AND, CENTURY LINK.

## 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
- DS
- UP
- UTILITY POLE WITH CONDUIT LINE TO GROUND
- LIGHT POLE
- HAND HOLE
- TRASH CAN
- FIRE ALARM CALL BOX
- METAL POST
- CP
- S
- TMA
- TRSG
- PED
- 12"
- 12"
- 60x43
- CLF
- BB
- SGC
- VCC
- VCC
- WCR
- LST
- R
- I=
- TH=
- NPV
- TOW=
- BC=
- 100=
- TSP
- 60x43TW
- CATV
- D
- E
- G
- S
- T
- W
- F
- OHW
- M
- BENCH MARK

#6 MAG  
N: 2954569.8276  
E: 733580.1738  
El.: 32.877

#5 MAG  
N: 2954548.2351  
E: 733456.2368  
El.: 27.712

#4 DH  
N: 2954468.0963  
E: 733499.7807  
El.: 28.476

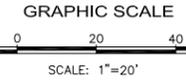
#7 HT  
N: 2954513.7448  
E: 733646.5036  
El.: 35.187

#1 DH  
N: 2954318.4217  
E: 733733.2529  
El.: 38.416

#2 DH  
N: 2954254.5283  
E: 733573.1457  
El.: 33.931

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

BENCH MARK:  
X-CUT ON BOLT ON MAST ARM  
ELEVATION=36.01'(NAVD88)  
FIELD BOOK 742 PAGE 6  
SET ON FEBRUARY 12, 2019



*Den Segin 3/4/19*  
DENIS R. SEGUIN, PLS  
MASSACHUSETTS REG. NO. 37058  
REGISTERED PROFESSIONAL LAND SURVEYOR



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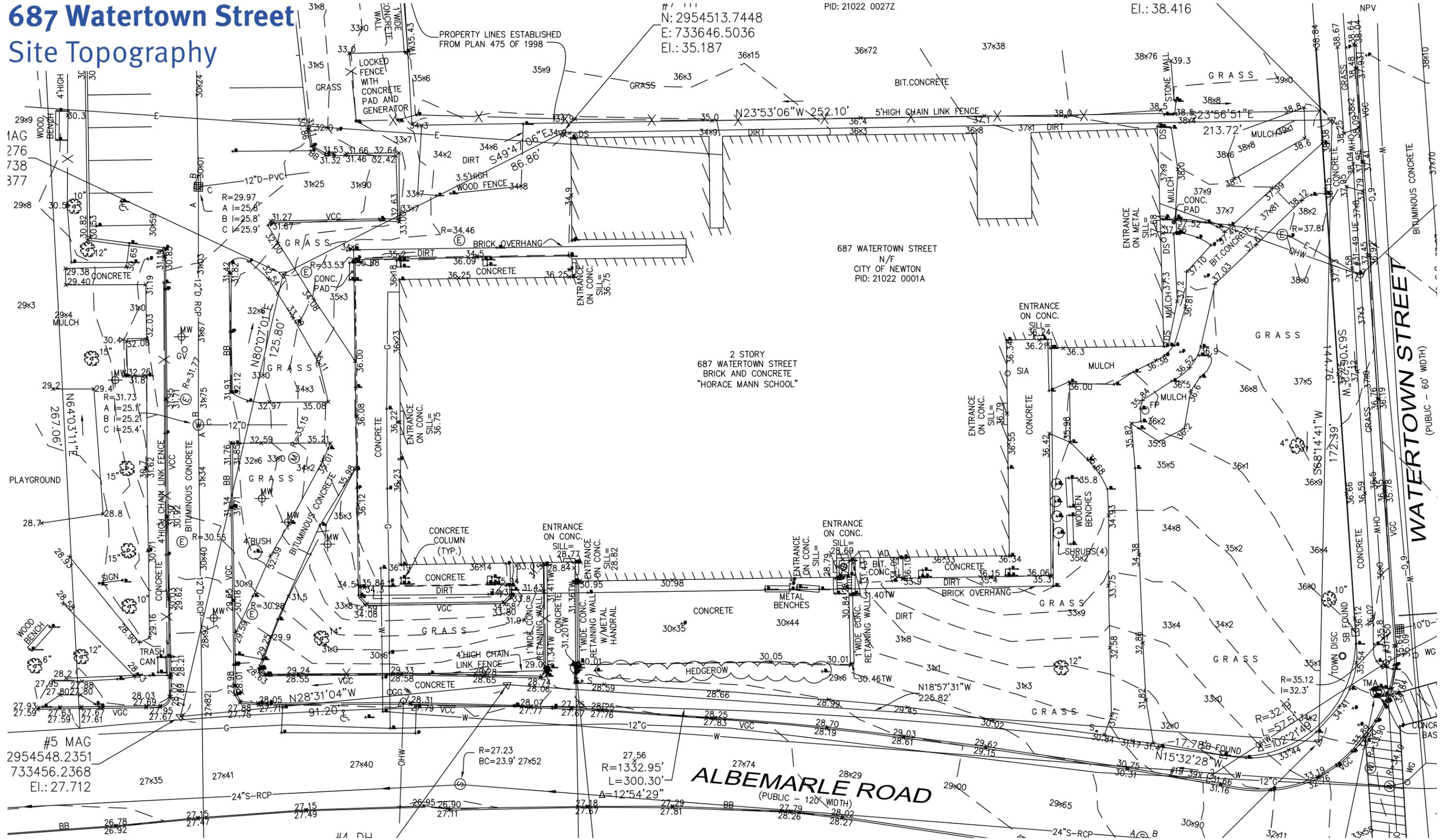
PROJECT # 13033.4  
FILE: 13033.4\_TOPO1.dwg  
SCALE: 1"=20'  
DATE: February 15, 2019  
PROJECT MANAGER: DRS  
FIELD BOOK: 742  
DRAFTED BY: MBP  
CHECKED BY:

REV.	COMMENTS	DATE
1	VERIZON UTILITY LINES ADDED	03/04/2019
	REVISIONS	

EXISTING CONDITIONS PLAN  
HORACE MANN SCHOOL  
687 WATERTOWN STREET, NEWTON, MASSACHUSETTS  
PREPARED FOR:  
**ARROWSTREET**  
10 POST OFFICE SQUARE, SUITE 700N, BOSTON, MASSACHUSETTS

SHEET: J  
**EX-1**  
OF 1 REV. I

# 687 Watertown Street Site Topography



# 687 Watertown Street

## Civil Considerations

### Requirements:

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

### Goals:

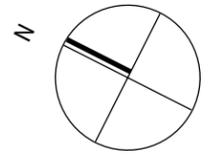
- » To meet the Riverfront requirements, the proposed site improvements will include:
  - Limiting disturbance of the existing site
  - Minimizing increase in impervious cover on the site
  - Installation of stormwater management systems to collect, treat, and infiltrate stormwater

### Next:

- » Meet with Conservation Commission on April 18th

# Newton Early Childhood Program

## Lower Level (Level o) – Fit Plan



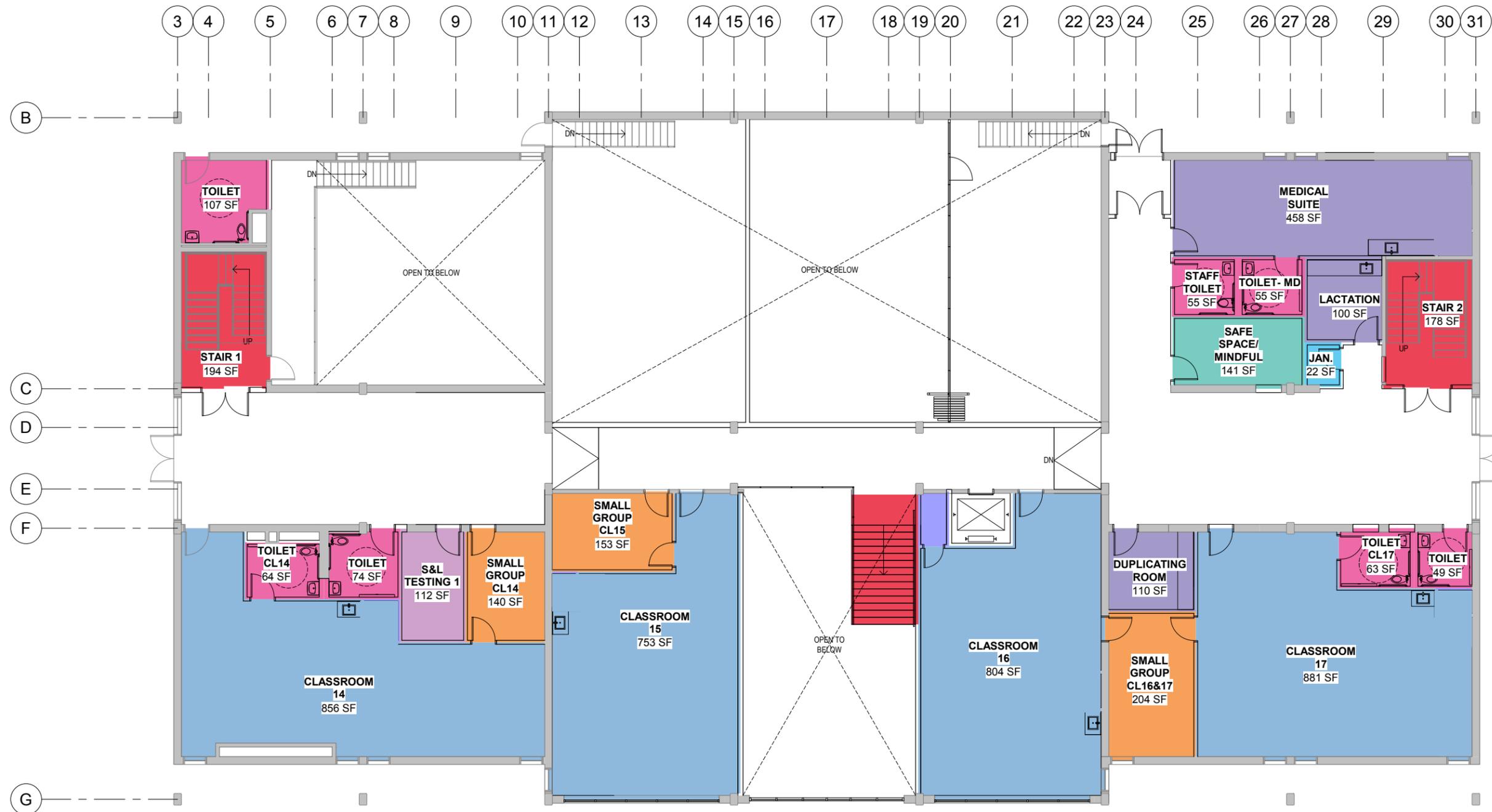
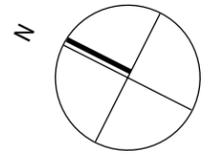
**AREA TYPE**

- Administrative
- Mechanical
- Physical Activity
- Stairs
- Toilet

**ALBEMARLE ROAD**

# Newton Early Childhood Program

## Middle Level (Level 1) – Fit Plan



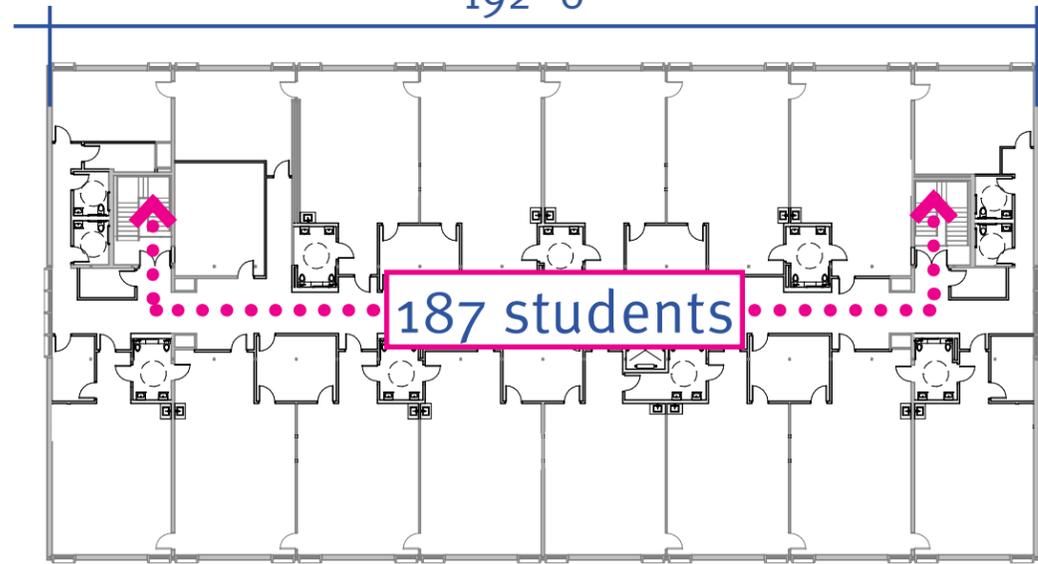
- AREA TYPE**
- Administrative
  - Classroom
  - Mechanical
  - Physical Activity
  - Quiet Rooms
  - Small Group
  - Stairs
  - Storage
  - Toilet

**ALBEMARLE ROAD**

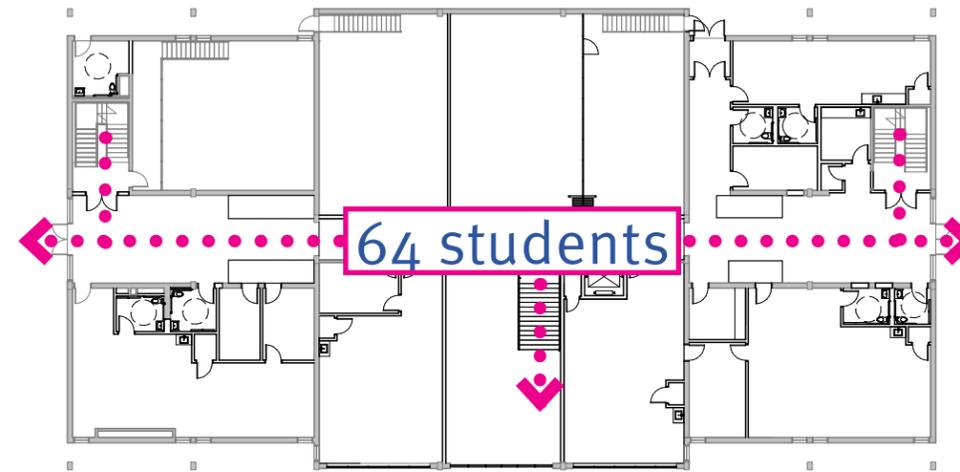


# 687 Watertown Street / Feasibility Egress Plan

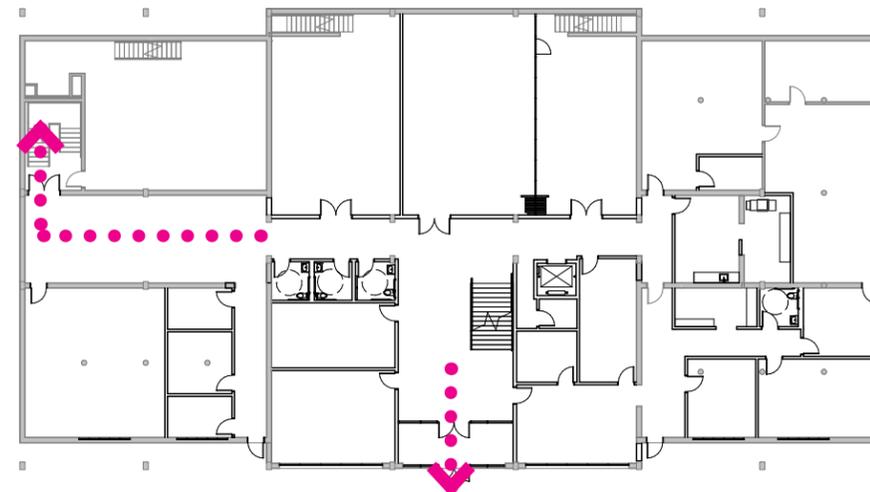
192'-0"



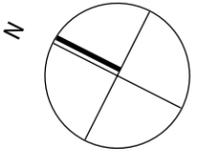
Upper Level (Level 2)  
13 Classrooms



Middle Level (Level 1)  
4 Classrooms



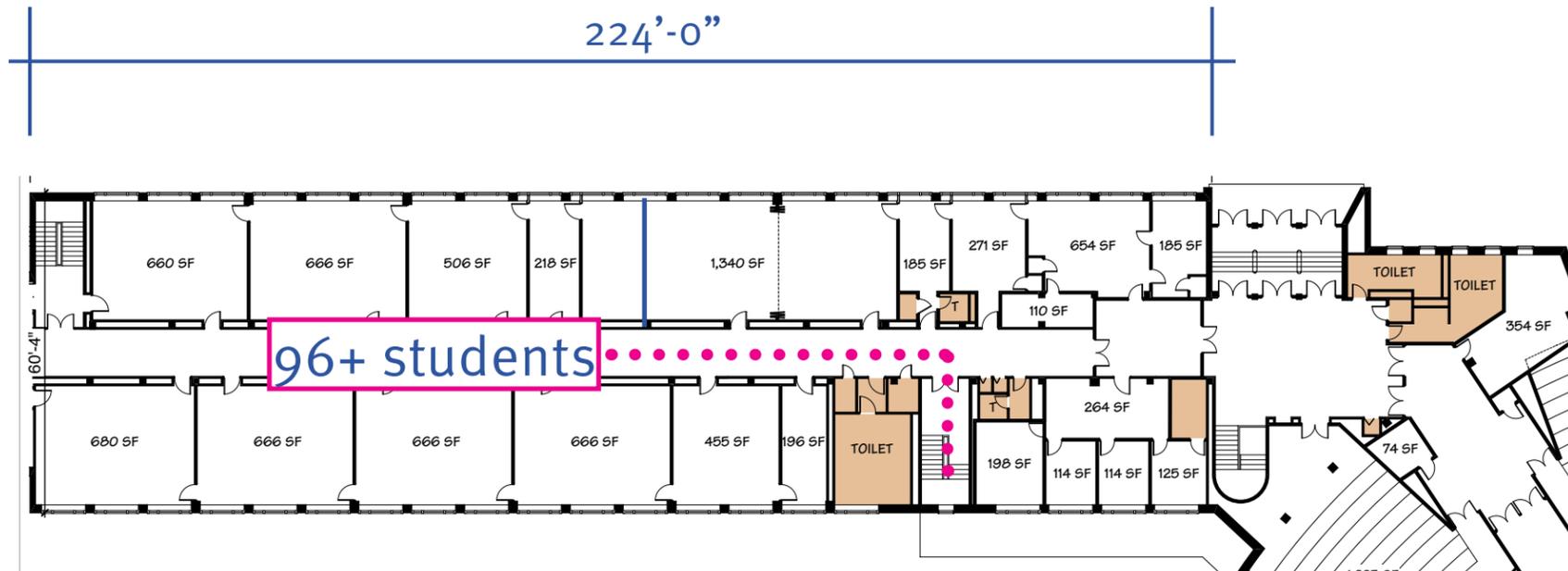
Lower Level (Level 0)



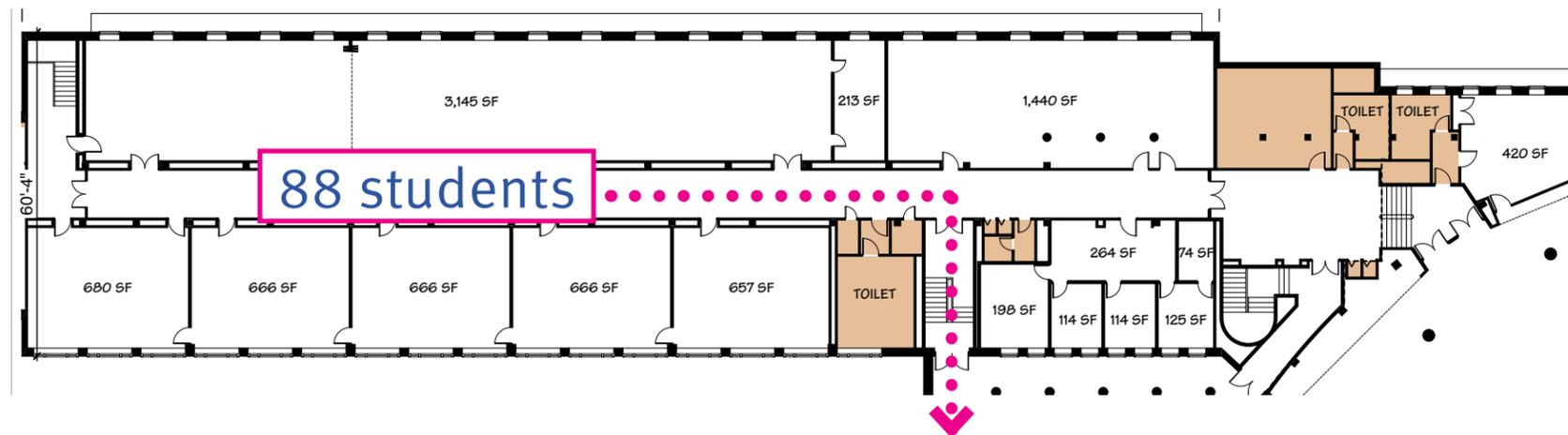
**150 Jackson Road /**  
Feasibility Egress Plan



# 150 Jackson Road / Feasibility Egress Plan

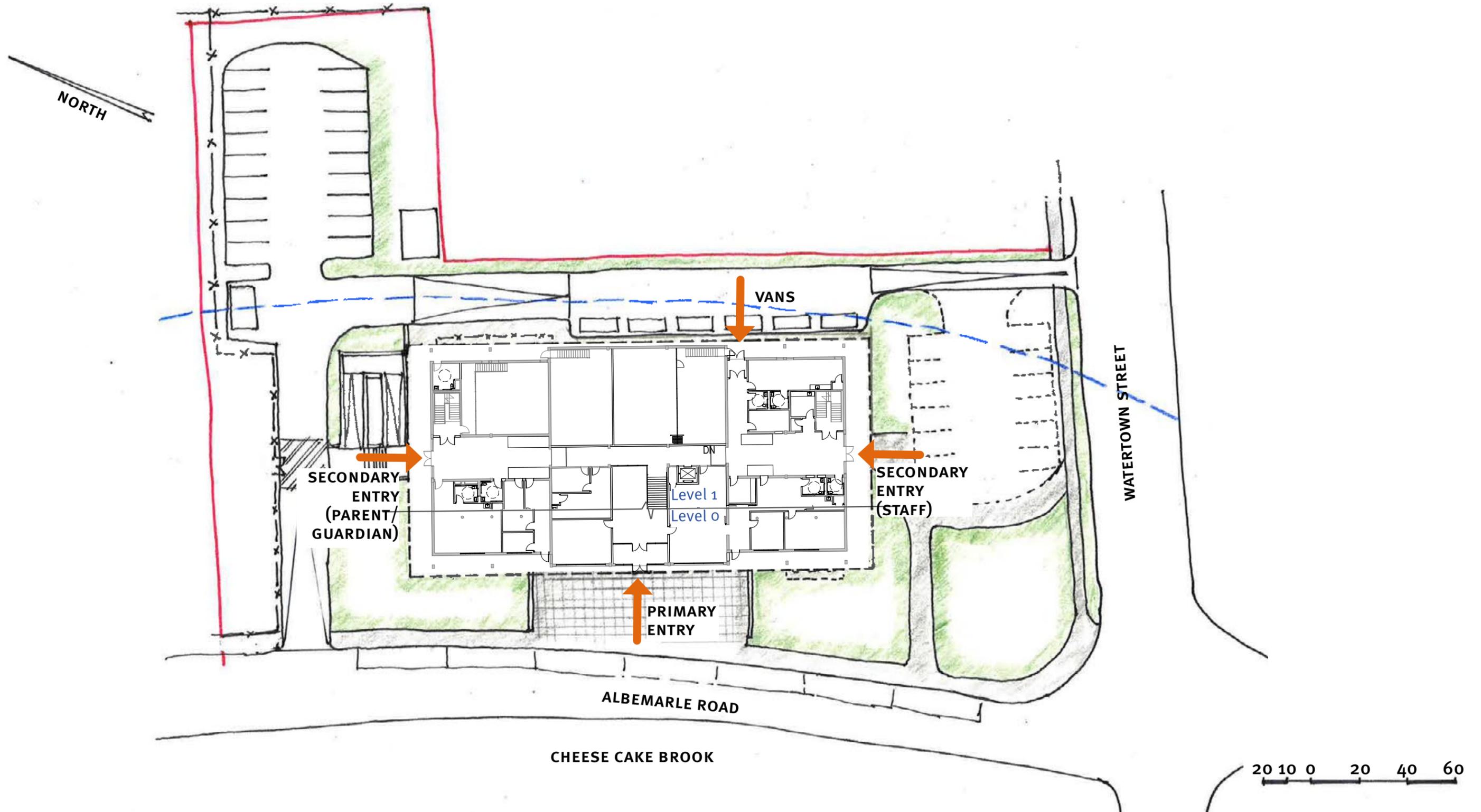


First Floor  
6 Classrooms plus  
therapy rooms

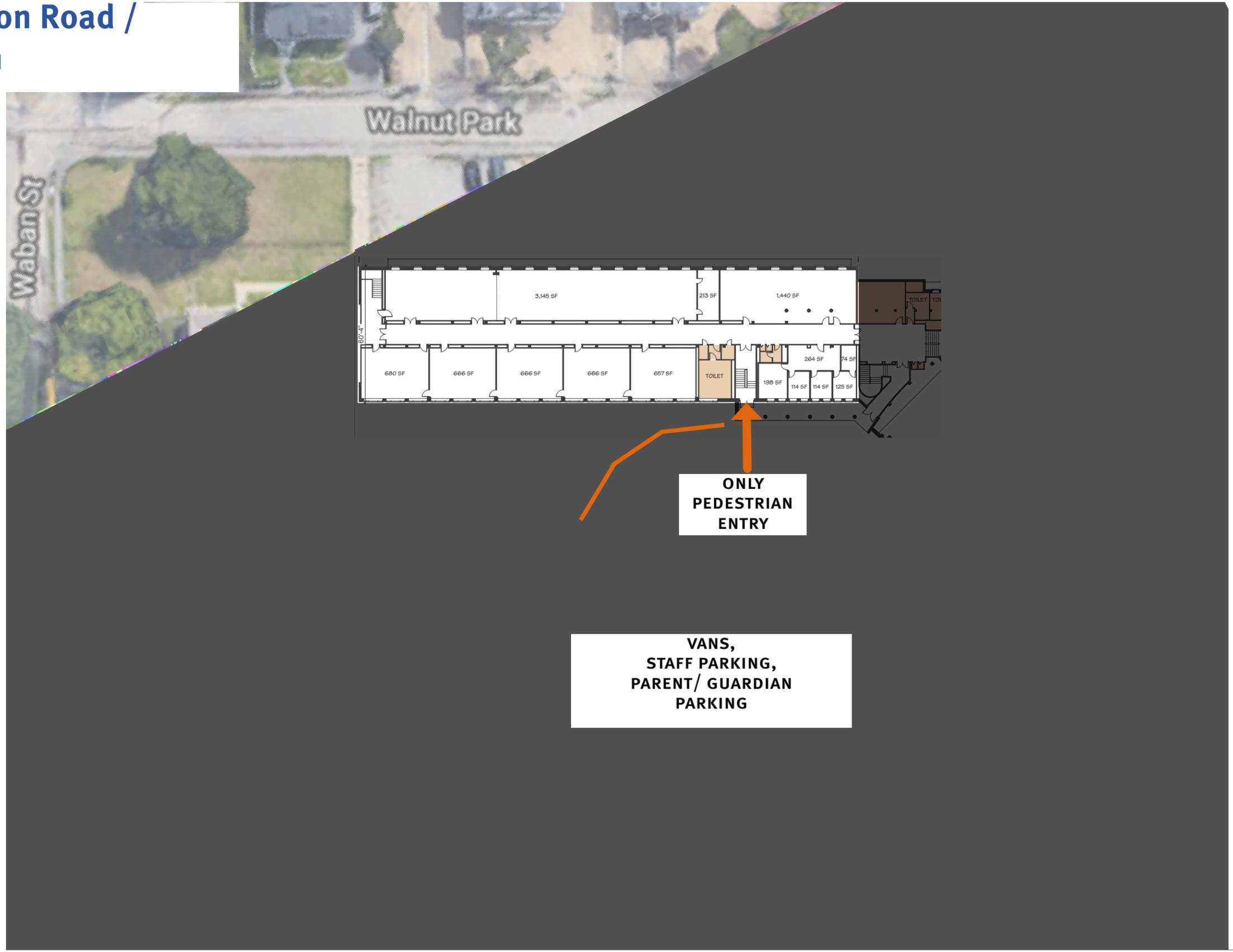


Ground Floor  
7 Classrooms

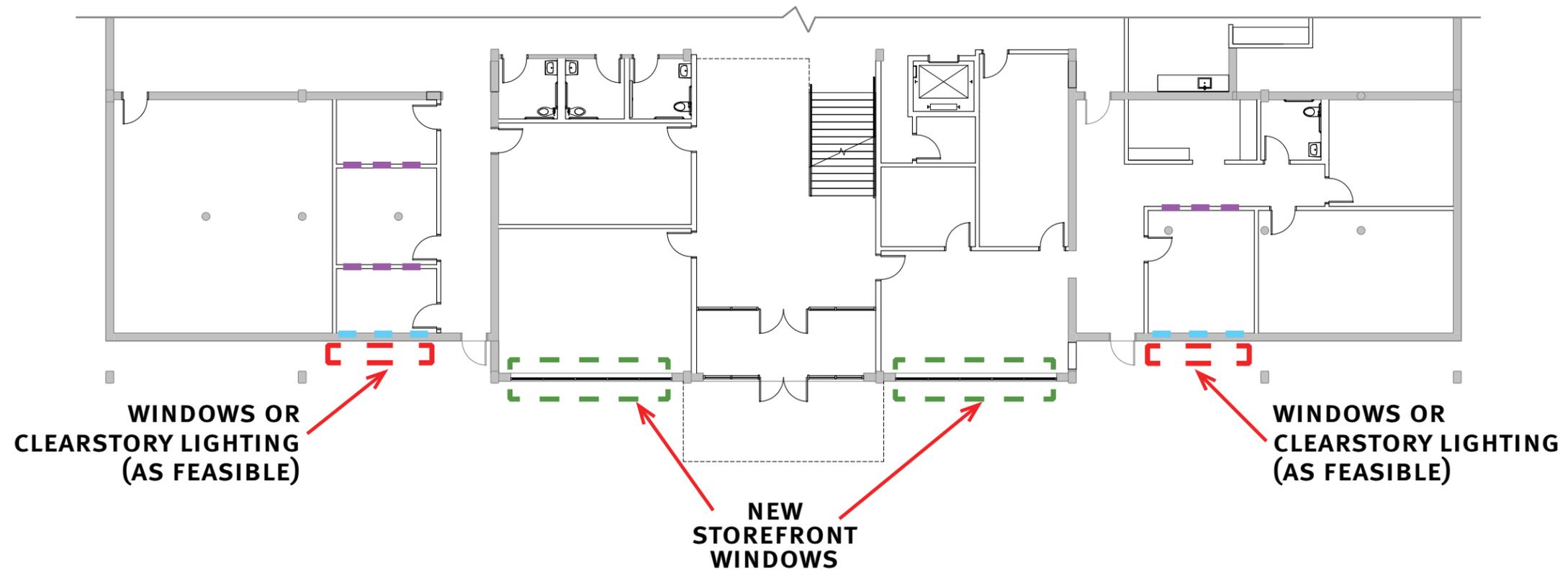
# 687 Watertown Street / Entry Plan



**150 Jackson Road /**  
**Entry Plan**



# Newton Early Childhood Program/ Daylight at Lower Level



## 687 Watertown Street

### Building Performance - HVAC Systems/ Heating and Cooling

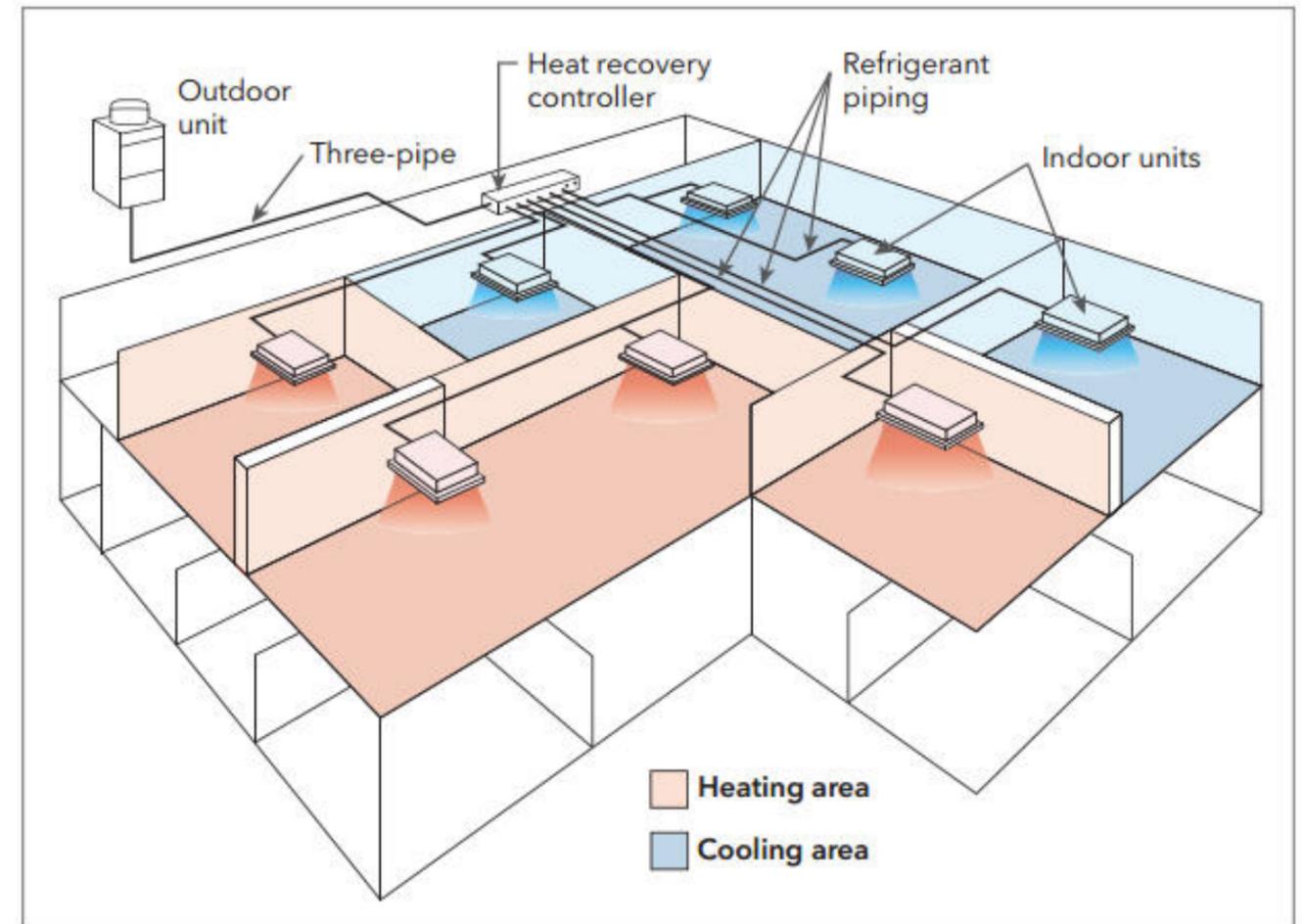
#### Option 1:

#### Variable Refrigerant Flow (VRF) System

- » All electric
- » Indoor VRF System Units in every room
- » On grade VRF Condensing Units (6 Units Required)

#### Mechanical System Payback Summary:

- » Lowest life cycle cost by yielding approx. **\$524,600** savings over the 30-year study period compared to the baseline system



## 687 Watertown Street

### Building Performance - HVAC Systems/ Heating and Cooling

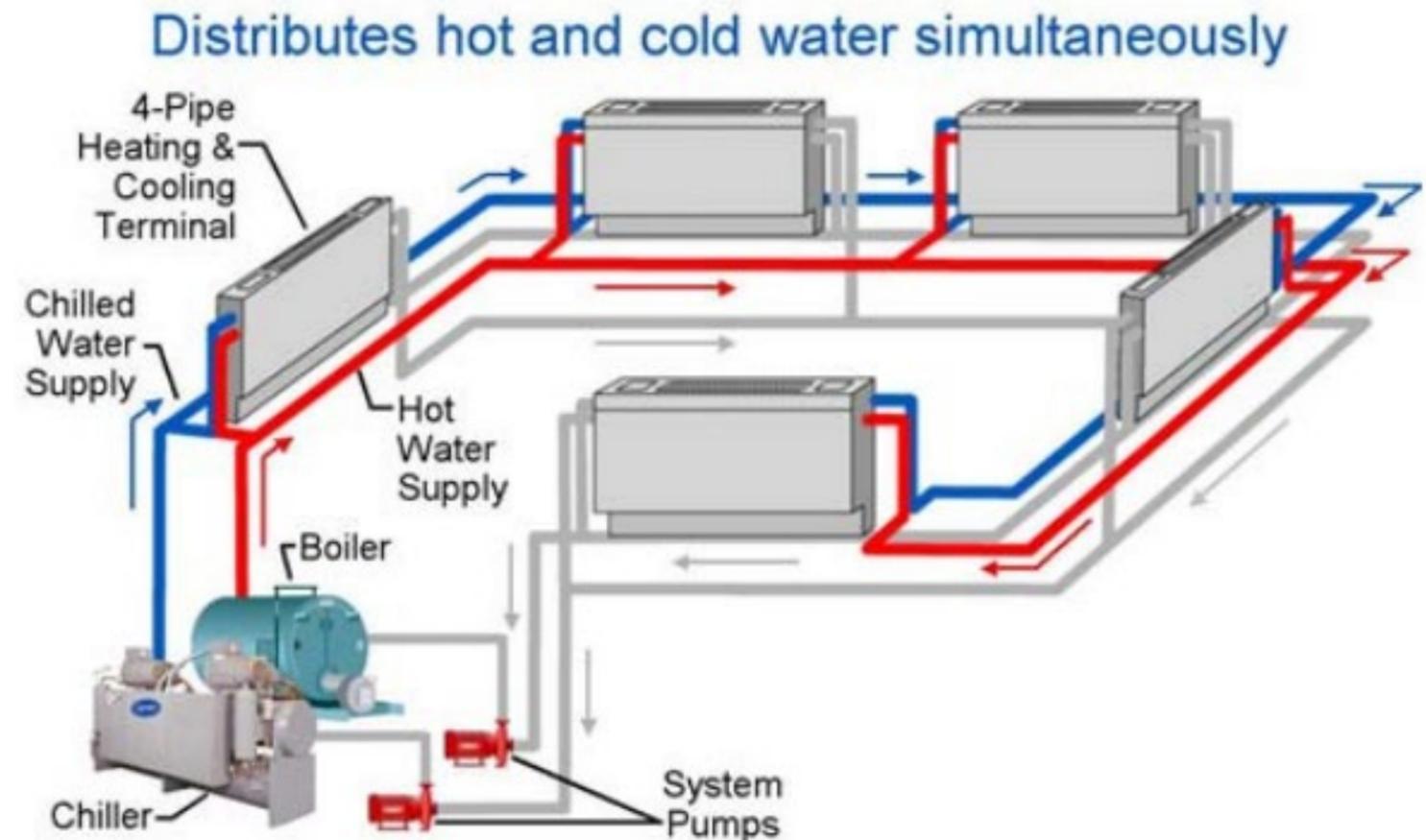
#### Option 2:

#### Hot water/ chilled water fan coil unit system

- » Indoor fan coil units in every room
- » Air cooled chiller
- » Two new **gas fired** hot water boilers
- » Hot water pumps located throughout the building
- » HW/ CW Fan Coil System  
Added Cost: \$163,354

#### Mechanical System Payback Summary:

- » Life cycle cost by yielding approx. **\$110,787** savings over the 30-year study period compared to the baseline system



# 687 Watertown Street

## Mechanical System Payback Summary



**GARCIA • GALUSKA • DESOUSA**  
 Consulting Engineers Inc.  
 370 Faunce Corner Road, Dartmouth, MA 02747-1217

### 687 Watertown Street - 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/dx cooling VAV RTU systems with energy recovery wheels serving terminal VAV boxes with hot water reheat coils 2. Standard efficiency gas-fired boiler plant	\$2,004,900	245,000	2,183.9	\$46,379	\$26,731	\$73,110	\$1.74	71.90	\$15,875	\$88,985	-	-	-

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. Variable refrigerant flow (VRF) terminal evaporator units with air-cooled condensing units and supplemental electric radiation heating 2. Air-cooled heat pump heating/cooling 100% VAV O.A. ventilating units with energy recovery with terminal VAV boxes with CO2 controls providing ventilation 3. Supplemental electric terminal heating units	\$2,048,600	226,750	0.0	\$42,924	\$0	\$42,924	\$1.02	18.42	\$23,300	\$66,224	\$22,761	\$524,606	2
2	1. Chilled/hot water coil fan coil units with supplemental hot water radiation heating 2. Chilled/hot water coil 100% VAV O.A. ventilating units with energy recovery with terminal VAV boxes with CO2 controls providing ventilation 3. High efficiency gas-fired condensing boiler plant 4. High efficiency air-cooled chiller plant	\$2,224,600	191,720	1,541.4	\$36,293	\$18,867	\$55,160	\$1.31	52.27	\$20,250	\$75,410	\$13,575	\$110,787	18

# Newton Early Childhood Program/ Building Performance- Exterior wall Insulation

## OPTION 1 - EXTERIOR INSULATION FINISHING SYSTEM (EIFS)



Exterior Wall (at Upper Level) Brick with EIFS	R-Value
Exterior Air - Avg Summer/Winter	0.17
Synthetic Stucco	0.20
Rigid Insulation (Expanded Polystyrene Insulation - 2")	9.2
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)	0.05
3 5/8" Face Brick	0.44
Interior Air - Vertical	0.68
<b>Assembly Total:</b>	<b>12.18</b>

Exterior envelope upgrades with added EIFS system and waterproofing  
Construction Cost: \$819,294

*\* Our observations of the Building Envelope Payback Summary suggests that adding 2" of rigid insulation to the existing walls **does not result in a payback within the 30 year study period**. 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, and other factors that should be considered.*

# Newton Early Childhood Program/ Building Performance- Exterior wall Insulation

## OPTION 2 - INSULATED RAIN SCREEN SYSTEM



Exterior Wall (at Upper Level) Brick with Metal Rain Screen	R-Value
Exterior Air - Avg Summer/Winter	0.17
Metal Panel	0.15
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)	0.05
3 5/8" Face Brick	0.44
Interior Air - Vertical	0.68
<b>Assembly Total:</b>	<b>12.53</b>

Exterior envelope upgrades with added metal panel rainscreen system, insulation, and waterproofing

Construction Cost: \$1,513,736

*\* Our observations of the Building Envelope Payback Summary suggests that adding 2" of rigid insulation to the existing walls **does not result in a payback within the 30 year study period**. Results in a 48- Year Simple Payback. 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, and other factors that should be considered.*

# 687 Watertown Street

## Building Envelope Payback Summary



**GARCIA • GALUSKA • DESOUSA**  
Consulting Engineers Inc.

370 Faunce Corner Road, Dartmouth, MA 02747-1217

### 687 Watertown Street - Building Envelope Payback Summary

Design	Envelope		Window U-Value	Window SHGC	Curtainwall U-Value	Curtainwall SHGC	Capital Investment Increase*	Annual Elec. Cons. (kWh)	Annual Electric Cost	Combined Utility Cost	Annual Utility \$/s.f.	Annual kBTU/s.f. (EUI)	Combined Utility Savings**	Total Life-Cycle Savings**	Discounted Payback (Years)****
	Roof Assembly R-Value	Wall Assembly R-Value													
-	35.8	2.7 & 4.12	0.43	0.32	0.38	0.39	-	226,750	\$42,924	\$42,924	\$1.02	18.4	-	-	-

Envelope Option	Envelope		Window U-Value	Window SHGC	Curtainwall U-Value	Curtainwall SHGC	Capital Investment Increase*	Annual Elec. Cons. (kWh)	Annual Electric Cost	Combined Utility Cost	Annual Utility \$/s.f.	Annual kBTU/s.f. (EUI)	Combined Utility Savings**	Total Life-Cycle Savings**	Discounted Payback (Years)****
	Roof Assembly R-Value	Wall Assembly R-Value													
A	35.8	12.2 & 13.5	0.43	0.32	0.38	0.39	\$255,200	198,620	\$37,599	\$37,599	\$0.90	16.1	\$5,325	-\$131,503	N/A*****

\*Capital Investment Increase accounts for architectural costs provided by architect and system sizing reduction credits outlined in the cost estimate.

\*\*Combined utility savings is the difference between the combined utility cost of the baseline and system in comparison.

\*\*\*Total life-cycle savings is based on a 30 year study period.

\*\*\*\*Discounted payback years is based upon BLCC5 Life Cycle Analysis.

\*\*\*\*\*Discounted payback never reached within 30 year study period.

## 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

# 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 4/1/2019

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

Task:

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

- Schematic Floor Plans and Preferred Site Plan

*Public Facilities Committee Meeting* *April 10, 2019*

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

*Conservation Commission Meeting* *April 18, 2019*

- Project Introduction

*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

#### Continue 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 our fossil fuel consumption

# Discussion

[www.newtonma.gov/gov/building/capital\\_projects](http://www.newtonma.gov/gov/building/capital_projects)

[www.lincolneliot-necp-projects.com](http://www.lincolneliot-necp-projects.com)

**NEWTON EARLY CHILDHOOD PROGRAM  
687 WATERTOWN STREET**

## **DESIGN REVIEW COMMITTEE MEETING**

Newton Public Schools  
Newton, Massachusetts

April 10, 2019

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