



Watertown Elementary Schools Building Project

Design **Watertown**



WPS Building Committee

**Ai3 Architects, LLC
Hill International, Inc**

July 11, 2019

Schools Project Website: www.watertownschooolsproject.com

Lowell

Agenda

▶ Guiding Principles

▶ Historic Context

▶ Review Lowell Exterior

Learning Commons Addition

Review Previous Design & Renderings

- *Material Choices*
- *Site Context*

New Options

Media Center Bay Curtain Wall

Multi-Purpose Space Addition

Main Entry & Plaza Renovations

Outdoor Learning & Gardens



21st Century Learning

The new Lowell School must create spaces that enable 21st century teaching and learning



Historic Character

Any new additions must respect the architectural character of the historic 1927 building



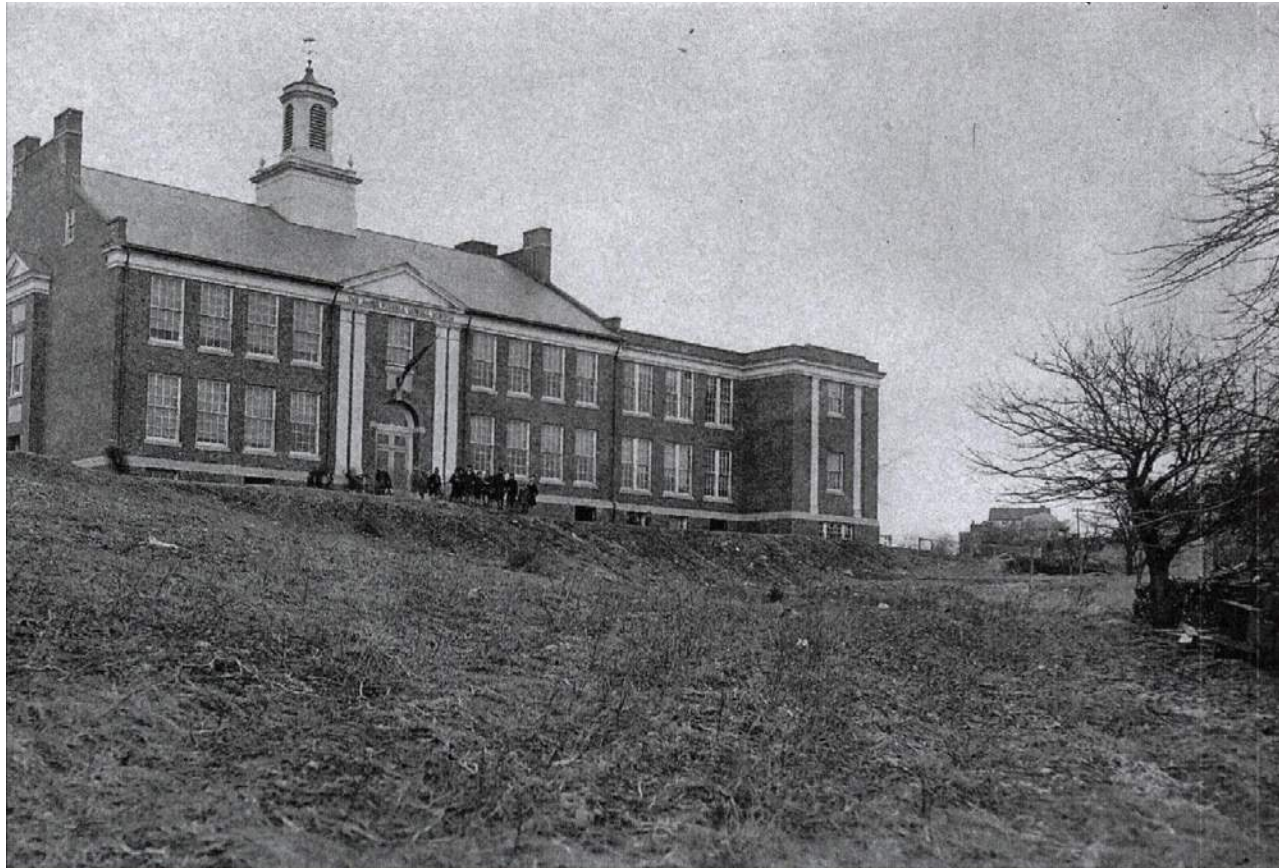
Value Nature

Any new additions must respect the landscaped nature of the site and the current relationship between open space, trees, and built elements



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Historic Context



1930

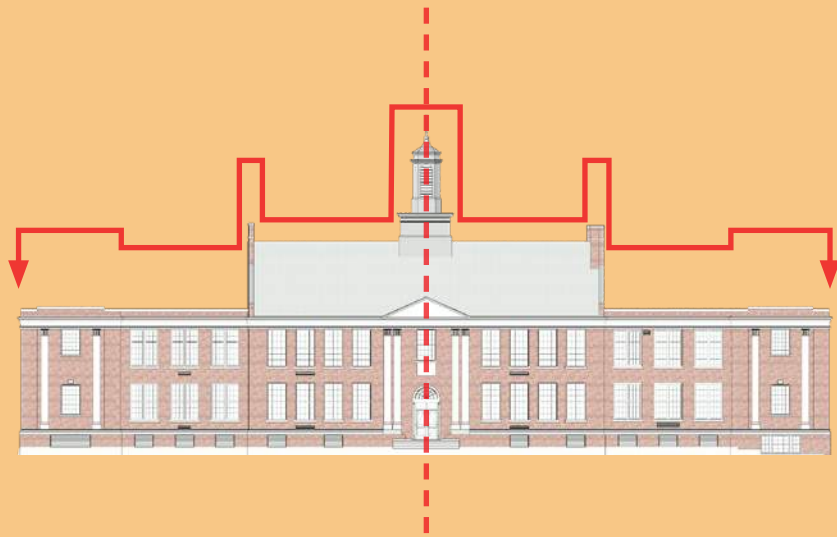


2019

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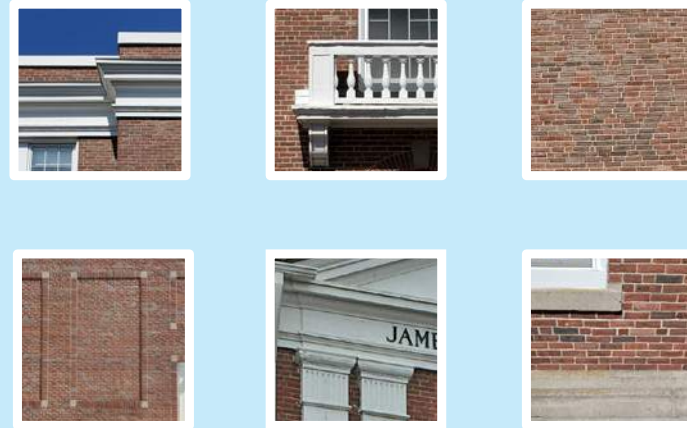
Historic Context

Symmetry



- Building is organized symmetrically with focus on a central entrance framed with a gable and pilasters
- Massing steps down from the center but continues to be flanked by symmetrical elements such as chimneys, pilasters and protruding facades
- Windows are spaced symmetrically rather than grouped to increase the focus on the central elements

Materiality



- Brick field material with accents
- Pre-cast accents at window sills, watertable, and base
- White painted wood trim (cornice, pilasters, and cupola)
- Tall, vertical windows

Construction



- Late 1880s - Carnegie brings the Bessemer process for creating "mild steel" to the US. For the first time steel begins to become strong and ductile enough for use in construction.
- Late 1920s - The Lowell School combines traditional masonry exterior walls with newly developed steel frame construction
- The introduction of steel lintels allowed windows to be wider and taller. This also eliminated the need for a stone or brick lintel, allowing the windows to rise all the way to the entablature.
- Steel framing also allowed for longer spans which created larger classrooms, taller ceilings and an accentuated roof pitch

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Exterior Rendering

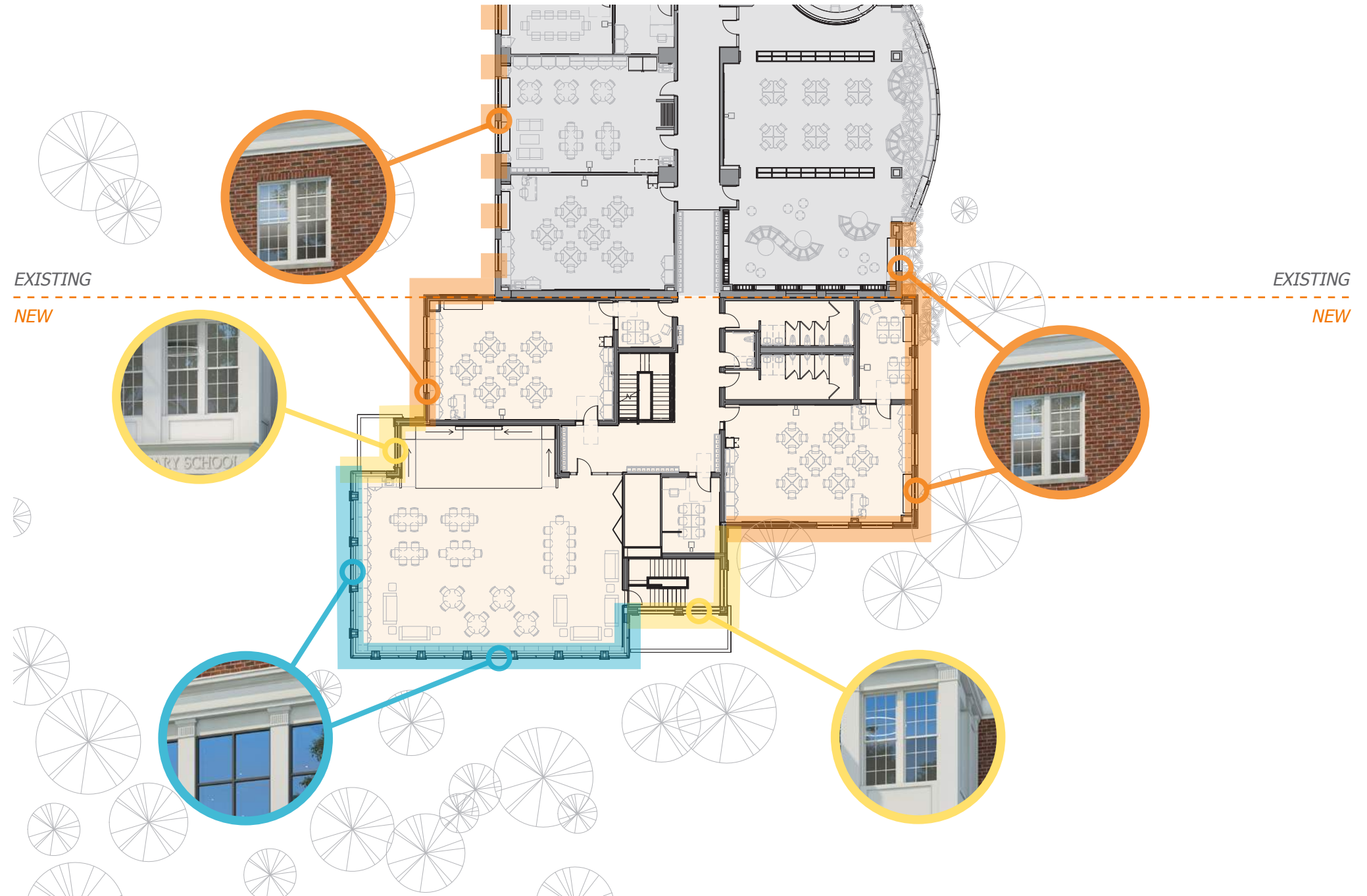


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Materials

New East Academic Wing

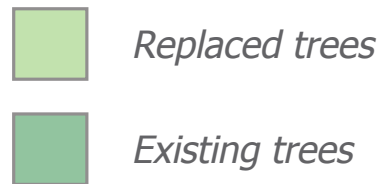
- The majority of the addition uses the same style of construction as the 1996 addition including the use of brick, a white cornice, a pre-cast watertable and tall punched opening-style windows
- Transitional elements are introduced to bridge between the brick and curtain wall. These draw influence from the white cornice, accents and mullions of the 1927 building.
- The Learning Commons incorporates more generous amounts of glazing and modern construction techniques while staying true to the character and massing of the 1927 building



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Site Context

- The majority of trees on the site will be protected during construction
- In addition, diseased or damaged trees and trees that will be compromised by foundation work will be replaced after construction is completed



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Learning Commons

- The large, established grove of trees is not shown in 3D rendering of the learning commons in order to better show the exterior appearance of the addition
- The new addition will be screened by the existing grove of trees, reducing its visual impact on the site and providing shading for the learning commons



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Exterior Rendering



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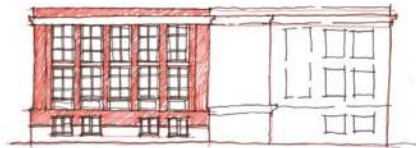
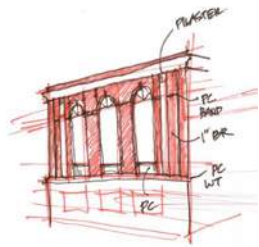
Sketch Rendering



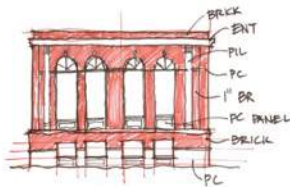
Existing grove of trees reduces visual impact

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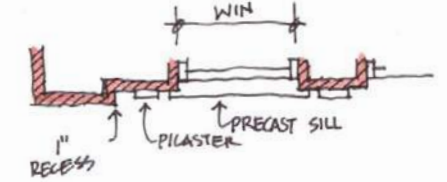
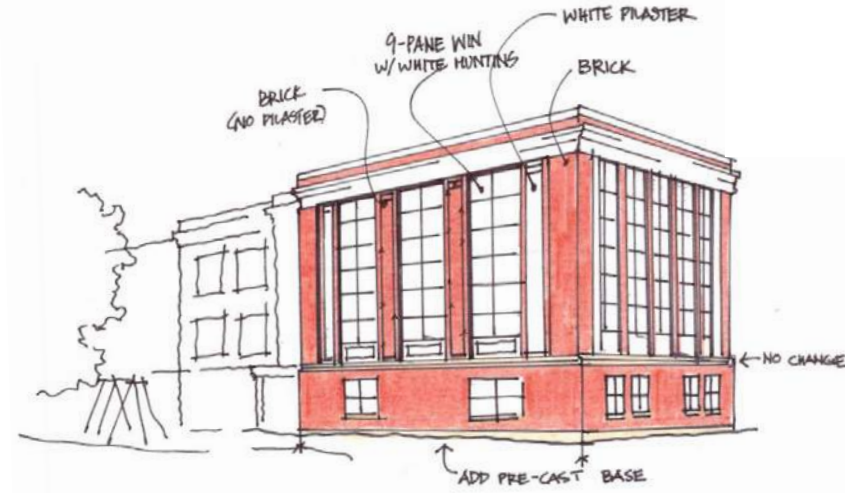
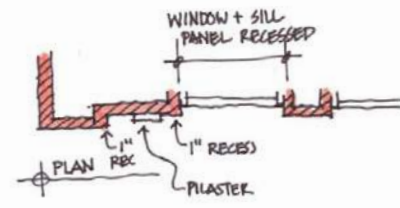
Learning Commons



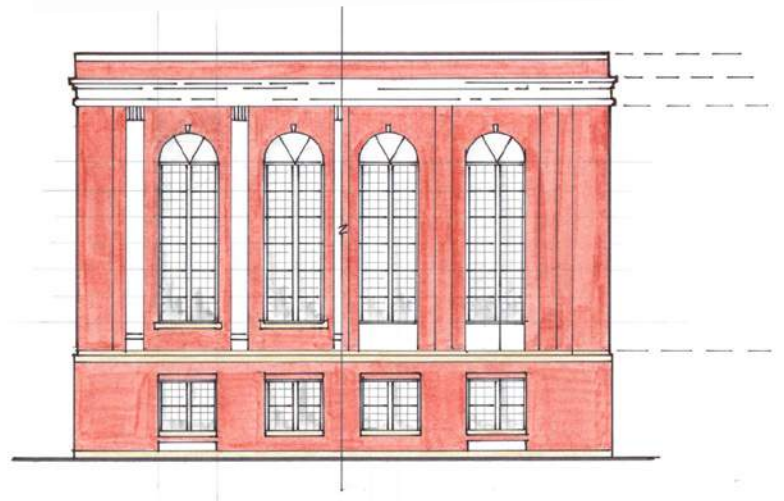
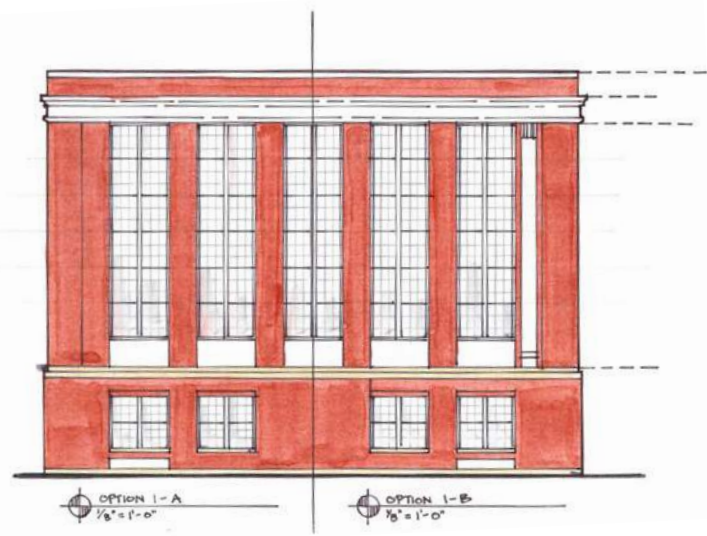
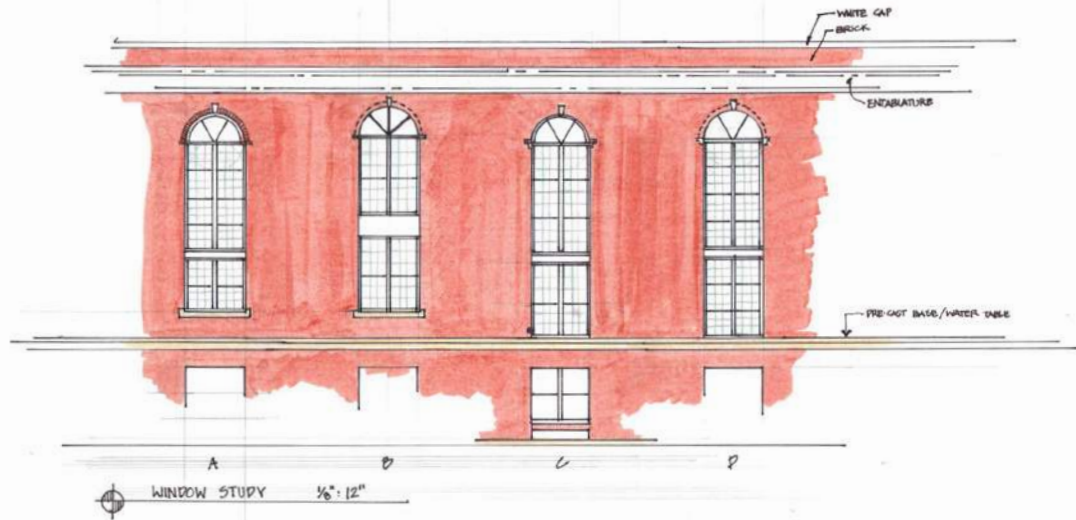
WINDOW WALL
STACKED TRIP HUNG
BRICK CORNERS / NO PLASTER



A WT PLASTER B BRICK PLASTER



OPTION A: WHITE, WD PLASTER
OPTION B: ENGAGED BRICK PLASTER



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Learning Commons



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Learning Commons

- The scale of windows and the mullion pattern is based on the original 1927 building
- Brick relief detailing in lieu of pilasters frames the windows
- Cornice and water table provide horizontal datums consistent with the 1927 building



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Learning Commons



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Learning Commons

- Palladian windows are similar to existing windows in student dining
- The scale of windows and the mullion pattern is based on the 1927 building
- Arch keystones relate to existing details



Existing student dining windows



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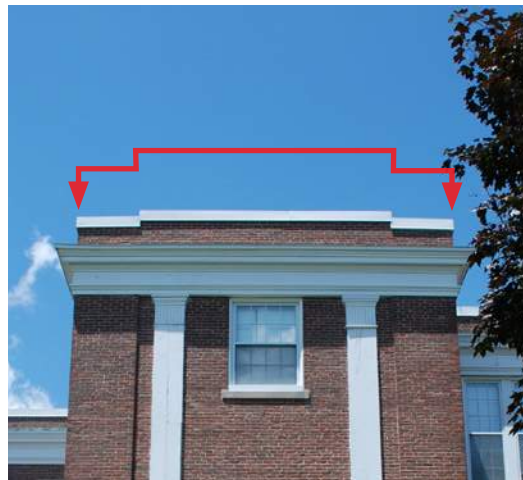
Learning Commons



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Learning Commons

- Palladian windows similar to existing windows in student dining
- Base treatment is similar to existing windows set into pre-cast base
- Pilasters frame the exterior walls of the commons
- Stepped roof provides vertical hierarchy similar to 1927 building



Stepped roof on the 1927 building



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Media Center

Current

- The media center curtain wall provides attractive views from within, but exterior detailing does not relate to the rest of the building



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Media Center

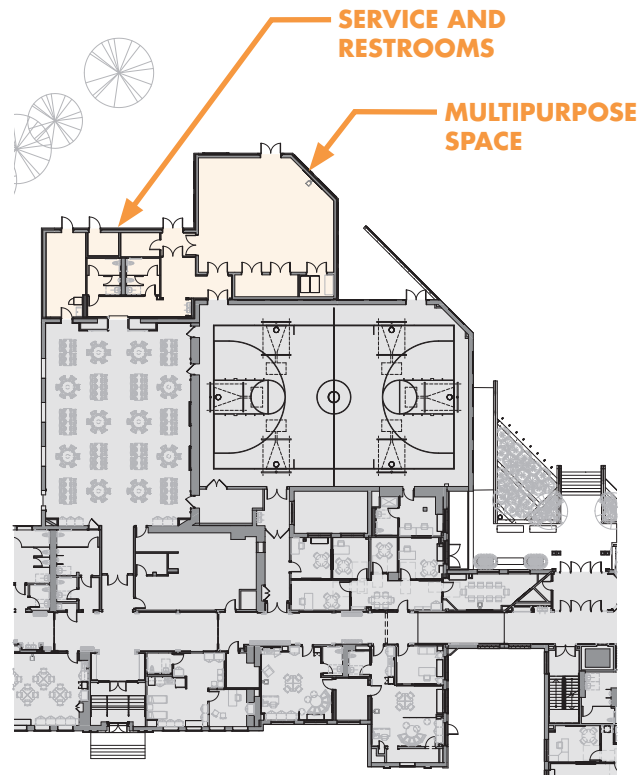
Proposed

- New detailing on media center curtain wall is more appropriate to the context of the historic 1927 building
- Existing trees will be protected or replaced so that this corner continues to be screened from the street



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North Addition

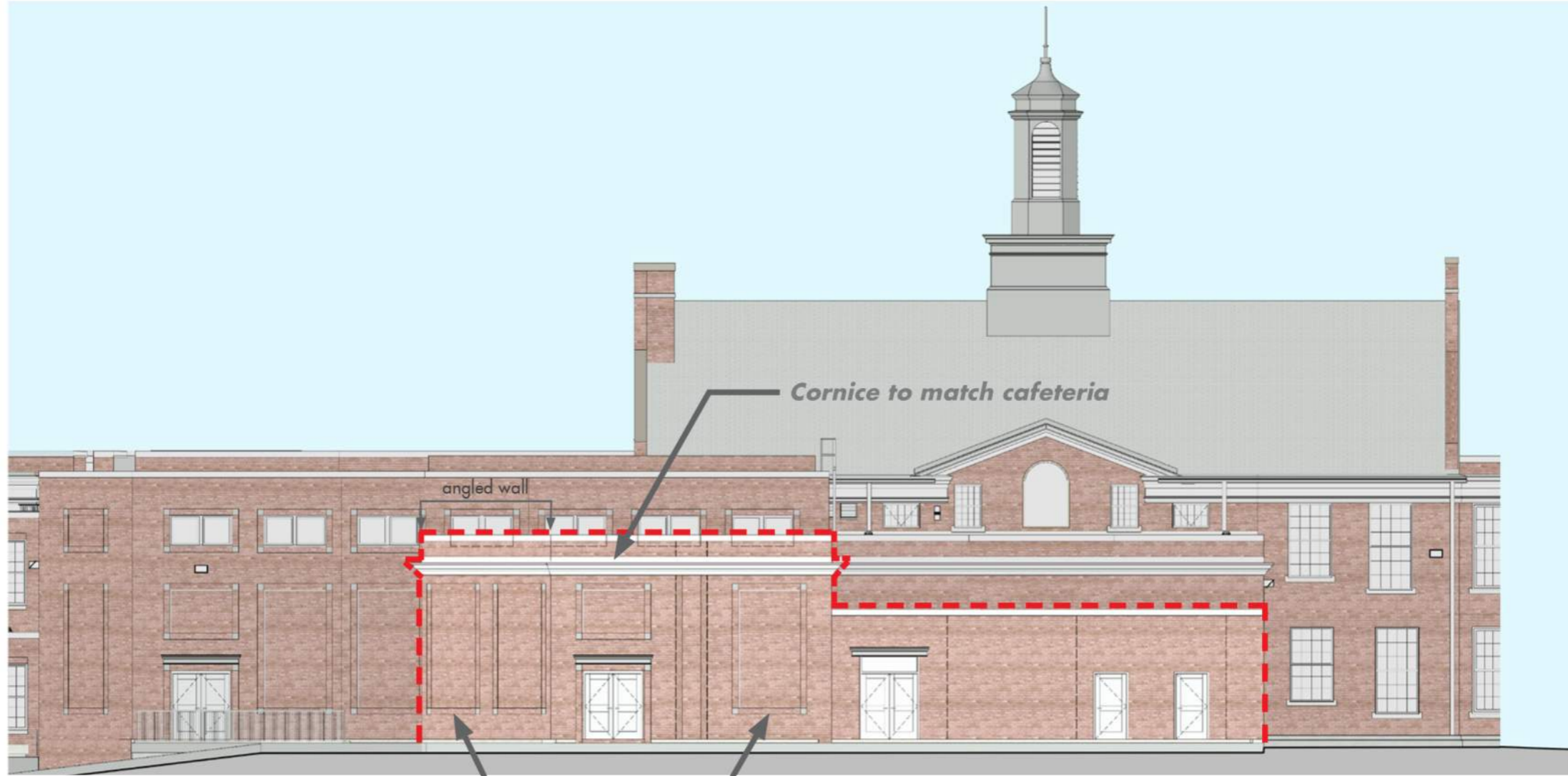


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North Addition

Proposed

- The north addition takes design cues from the existing gymnasium and cafeteria and is shaped to meet setback requirements



New brick relief panels are 8'x 14' to match the size and shape of brick details on the existing gymnasium

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North Addition

Current

Existing
Gymnasium and
Service Area



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North Addition

Proposed

- Consistent appearance with the existing gymnasium lessens the visual impact of the north addition
- Existing trees between the north addition and adjacent neighborhood will be protected
- Both portions of the addition have lower roof heights than existing adjacent spaces to reduce their massing and impact on the site
- New fencing will be introduced, replacing existing chain link fences with white painted wood fencing



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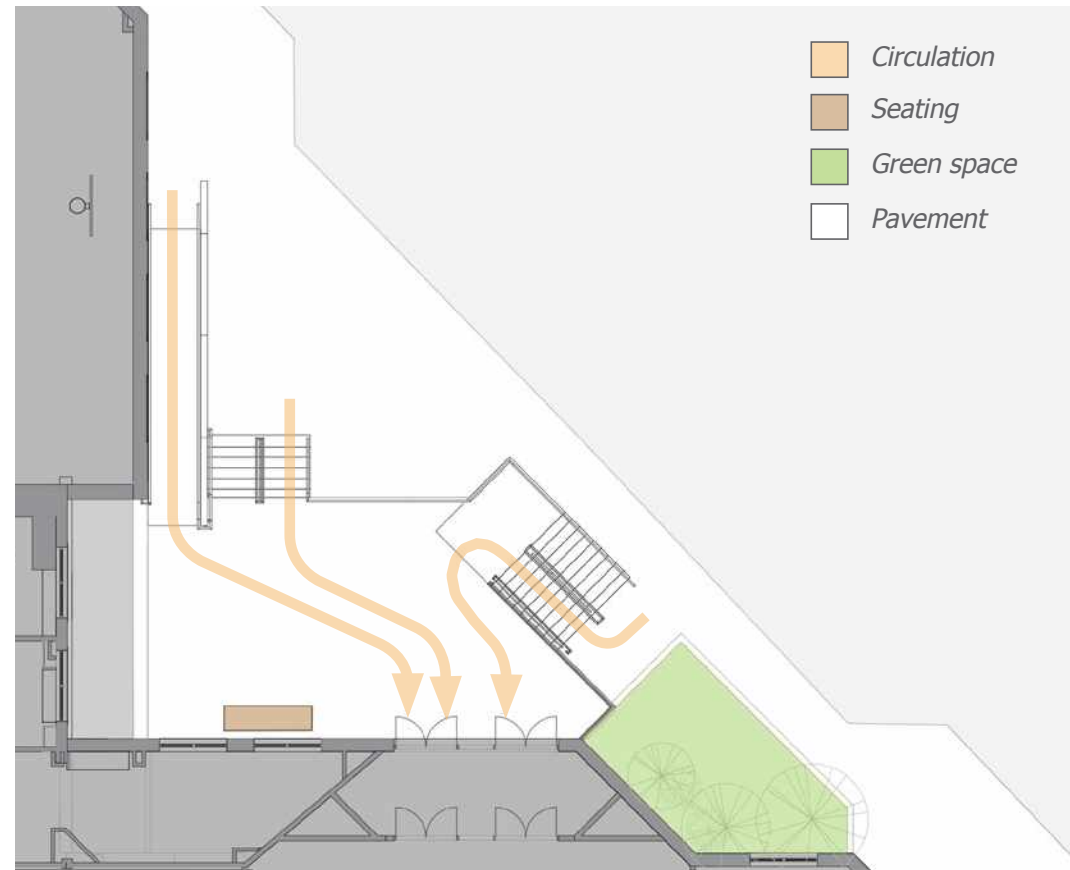
Site Plan

Refinement of
Main Entrance,
Outdoor Classrooms,
Learning Gardens, and
Playground



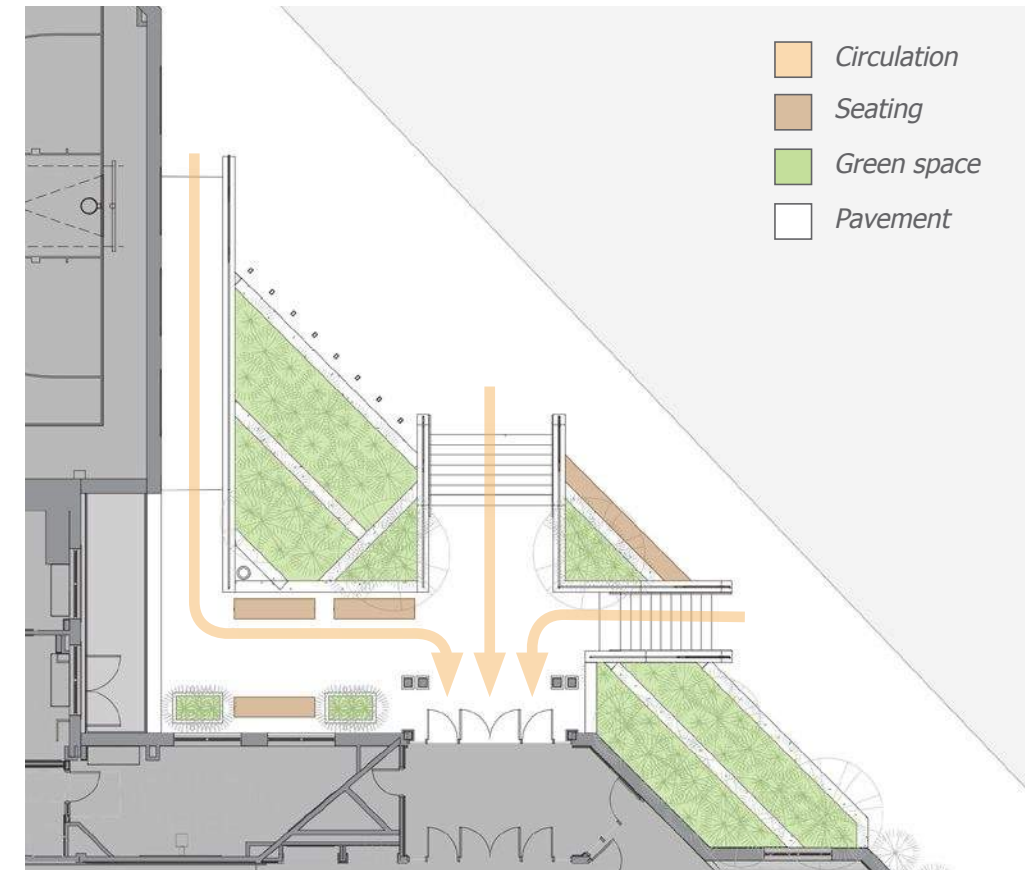
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Main Entrance



Current

- Awkward circulation created by multiple stairs that are not aligned with the entrance
- Lack of formal symmetry
- Urban scale and feel created by lack of green space and presence of tall brick and concrete walls
- Inadequate seating and site amenities



Proposed

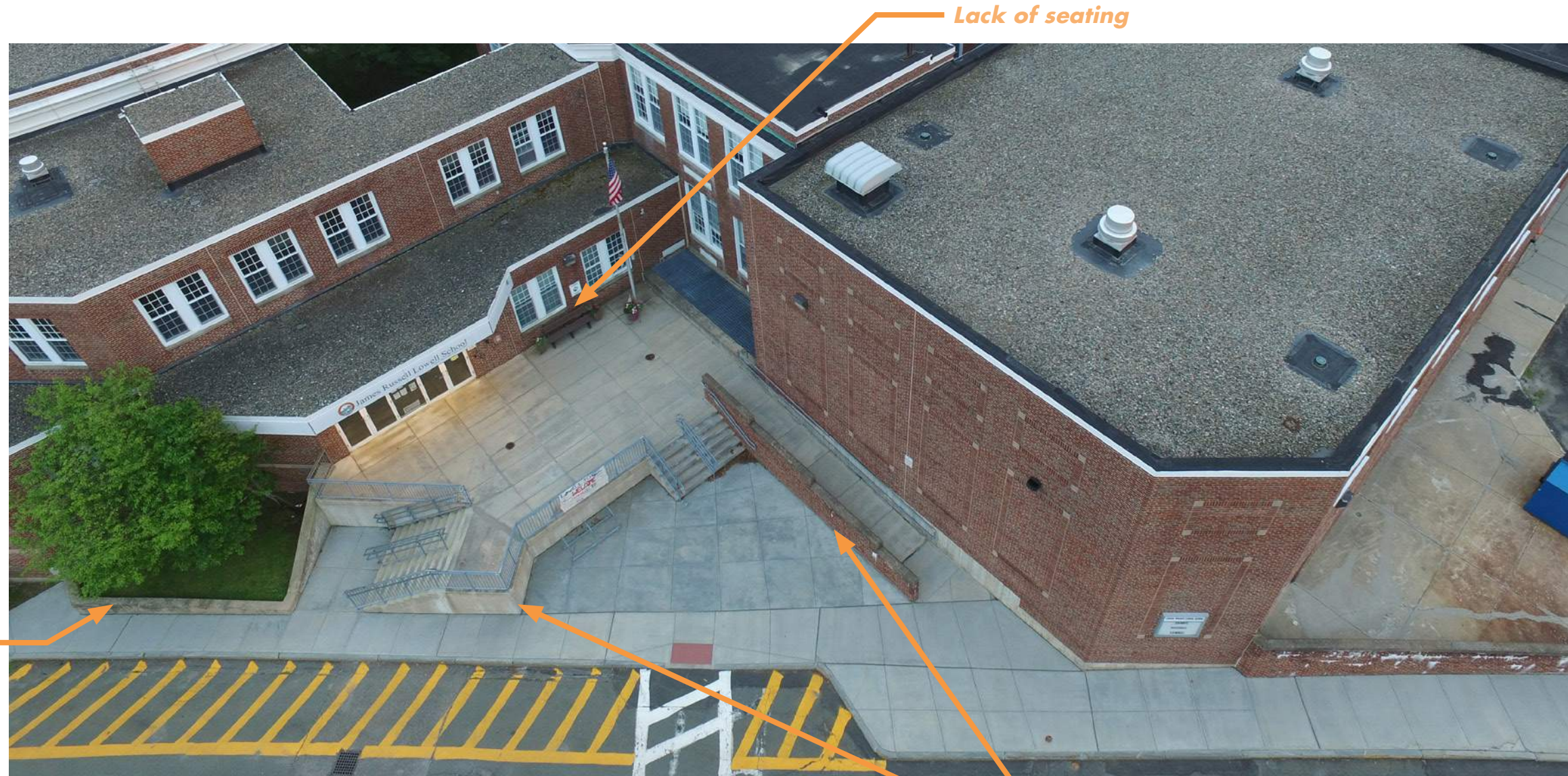
- Clear circulation with central entrance
- Symmetrical elements with formal grand stair more in keeping with historic 1927 building
- Pastoral feel created by introducing more green space and replacing the tall retaining walls with stepped planters

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Main Entrance

Current

Aerial view of existing entrance



Lack of seating

Limited amount of green space

Tall concrete and brick walls are uninviting

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Main Entrance

Proposed

Aerial view showing overall layout



Stepped planter beds

Additional seating

Central grand stair

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Main Entrance

Current

- Unclear circulation with no direct path to the entrance
- Awkward stair alignments and locations
- Students are greeted at street level with a 5' concrete wall



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Main Entrance

Proposed

- New main entrance harmonizes with the style of the historic main entrance on the south lawn
- Main stair has been widened and aligned with the entrance creating better circulation and a more direct, welcoming approach
- Existing high retaining walls have been replaced with low, terraced walls more appropriate to the visual perspective of children



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Main Entrance

Current

- Deteriorating brick wall at ramp blocks the visibility of the plaza and the entrance
- Style of entry canopy does not reflect the prominent role of the main entrance or the historic character of the building



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Main Entrance

Proposed

- Open railing provides ramp users clear views to plaza, entrance, and green spaces
- Introduced historic elements to existing canopy including cornice, pediment, and columns
- Benches provide increased seating in the plaza in addition to new seating at pickup/drop-off level



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Main Entrance

Current

- Excessive paving is both visually unappealing and contributes to stormwater runoff
- Minimal bicycle parking
- Sidewalk has narrow “pinch points”



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Main Entrance

Proposed

- Significant increase in green space at both street level and terraced beds
- Bicycle parking more than doubled
- Wider sidewalk improves circulation at busy drop off and pick up times



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Main Entrance

Current

- Approach from the George Street intersection to the main entrance requires a jog sideways and sharp turn at the top of the stairs



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Main Entrance

Proposed

- Stair facing the George Street intersection is rotated outwards to be more welcoming and support the formal symmetry of the new main entrance
- New approach requires no jogs or sharp turns



Cunniff

Existing Site



Cunniff
School
Playground

Cunniff
Elementary School

Chapman St

Chapman St

Chapman St

Warren St

Warren St

Warren St

Warren St

Cunniff

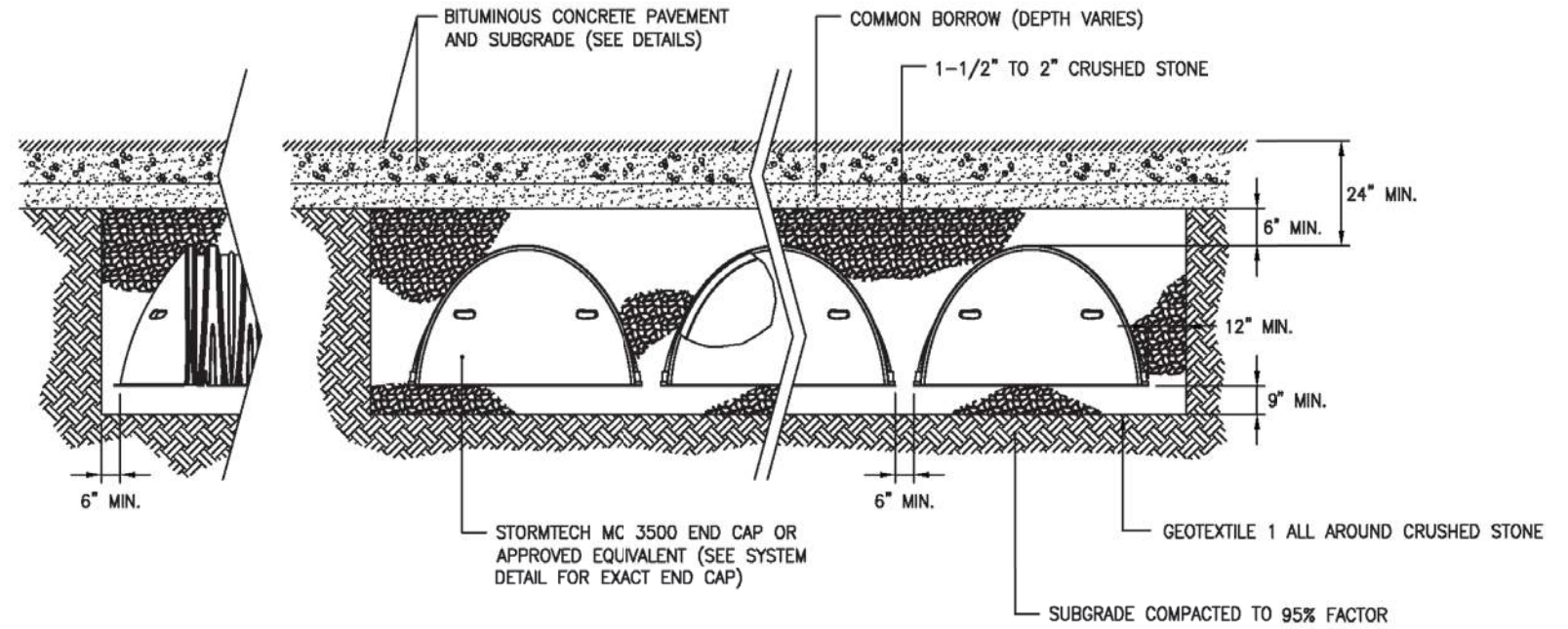
Site Drainage



Cunniff

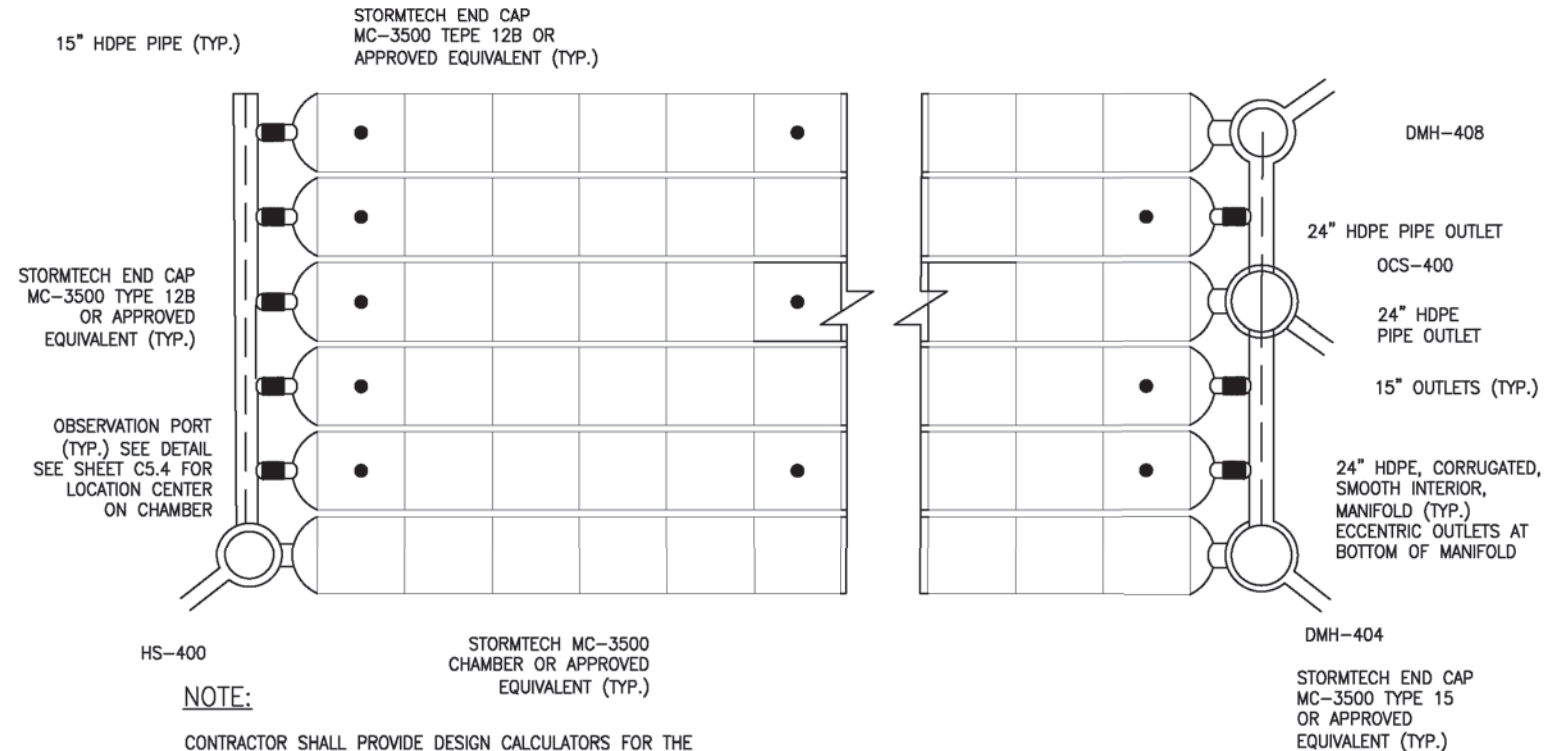
Site Drainage

Typical Infiltration System - Section Detail



TYPICAL INFILTRATION SYSTEM SECTION

NOT TO SCALE



NOTE:

CONTRACTOR SHALL PROVIDE DESIGN CALCULATORS FOR THE SYSTEM DOCUMENTING THAT THE DESIGN INTENT IS MET

UNDERGROUND INFILTRATION SYSTEM

6 ROWS; 25 CHAMBERS PER ROW
 BOTTOM OF STONE ELEV. = 203.00
 BOTTOM OF CHAMBER ELEV. = 203.75

Cunniff

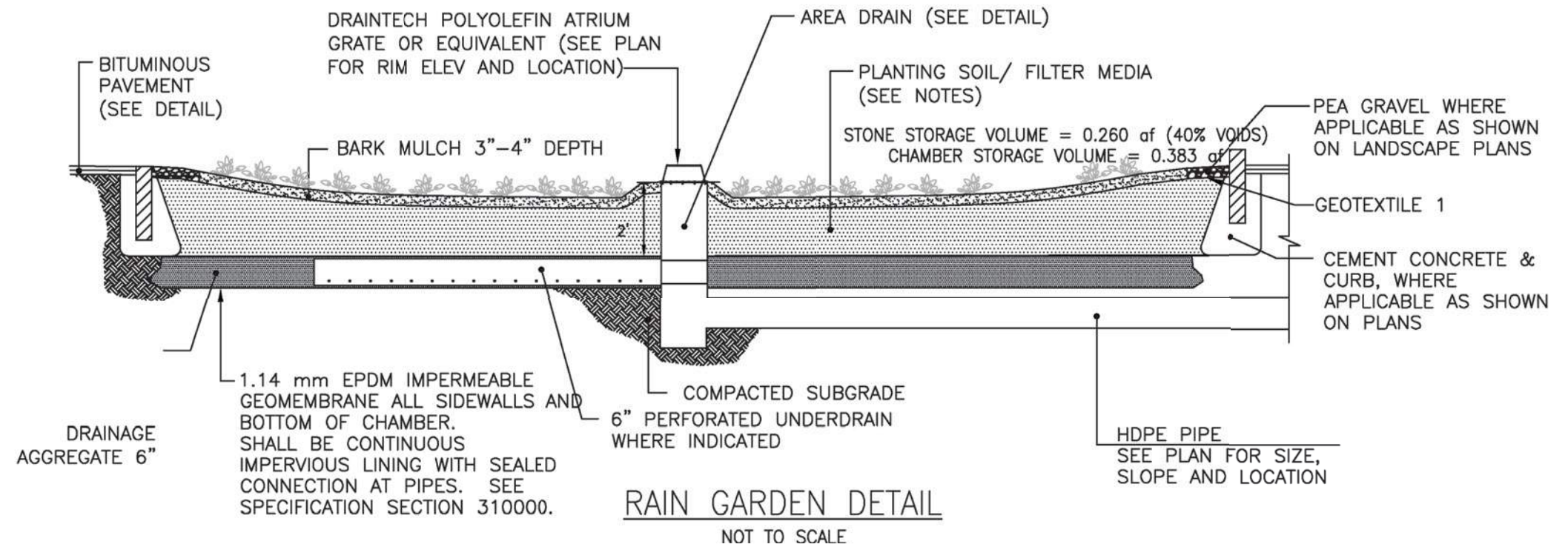
Site Improvements



- Playground
- Bicycle parking
- Playing field
- Outdoor learning (Rain Garden)
- Retaining walls

- Bicycle parking
- Outdoor learning (Rain Garden)
- Public Entrance
- Playing field
- Playground
- Outdoor learning (Rain Garden)
- Paved parking
- Athletic court
- Service area
- Outdoor learning
- Retaining walls

Outdoor Learning Area (Rain Garden) - Section Detail



BIO-RETENTION AREA NOTES:

1. THE PLANTING SOIL/FILTER MEDIA SHOULD BE A MIXTURE OF SAND, COMPOST, AND SOIL:
 - 40% SAND *
 - 20-30% TOPSOIL *
 - 30-40% COMPOST *

* PERCENTAGES BY VOLUMES
2. THE SOIL MIX SHOULD BE UNIFORM, FREE OF STONES, STICKS, STUMPS, ROOTS, LARGER THAN 2 INCHES. CLAY CONTENT SHOULD NOT EXCEED 5%. SOIL PH SHOULD BE BETWEEN 5.5 AND 6.5 AND SHALL MEET ALL OTHER REQUIREMENTS OF SECTION 32.9320
3. THE SAND COMPONENT SHOULD BE GRAVELLY SAND THAT MEETS ASTM D 422.

SIEVE SIZE	PERCENT PASSING
2 INCH	100
3/4 INCH	70-100
1/4 INCH	50-80
No. 40	15-40
No. 200	0-3

4. THE TOPSOIL COMPONENT SHALL BE A SANDY LOAM, LOAMY SAND OR LOAM TEXTURE.
5. THE COMPOST COMPONENT MUST BE PROCESSED FROM YARD WASTE MEETING THE MASSDEP RULES AND REGULATIONS FOR AGRICULTURAL COMPOSTING.
6. PRIOR TO THE INSTALLATION OF RAIN GARDEN MATERIALS, THE SUBGRADE SHOULD BE SCARIFIED AND MACHINERY CONTACT WITH THE SCARIFIED SUBGRADE SHALL BE AVOIDED.

Hosmer

Existing Site



Hosmer

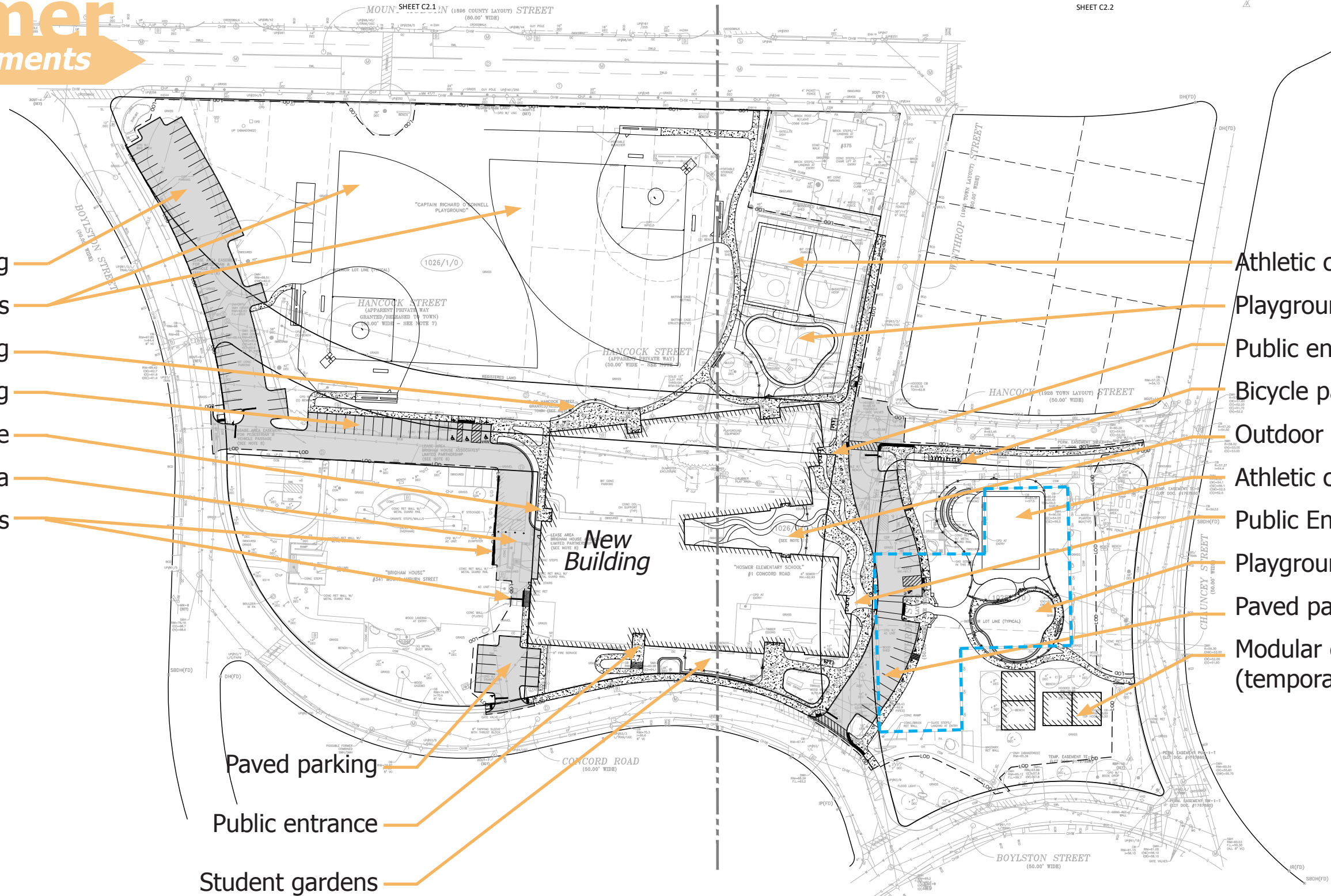
Site Improvements

SHEET C2.2

- Paved parking
- (2) Softball fields
- Outdoor dining
- Paved parking
- Public entrance
- Service area
- Retaining walls

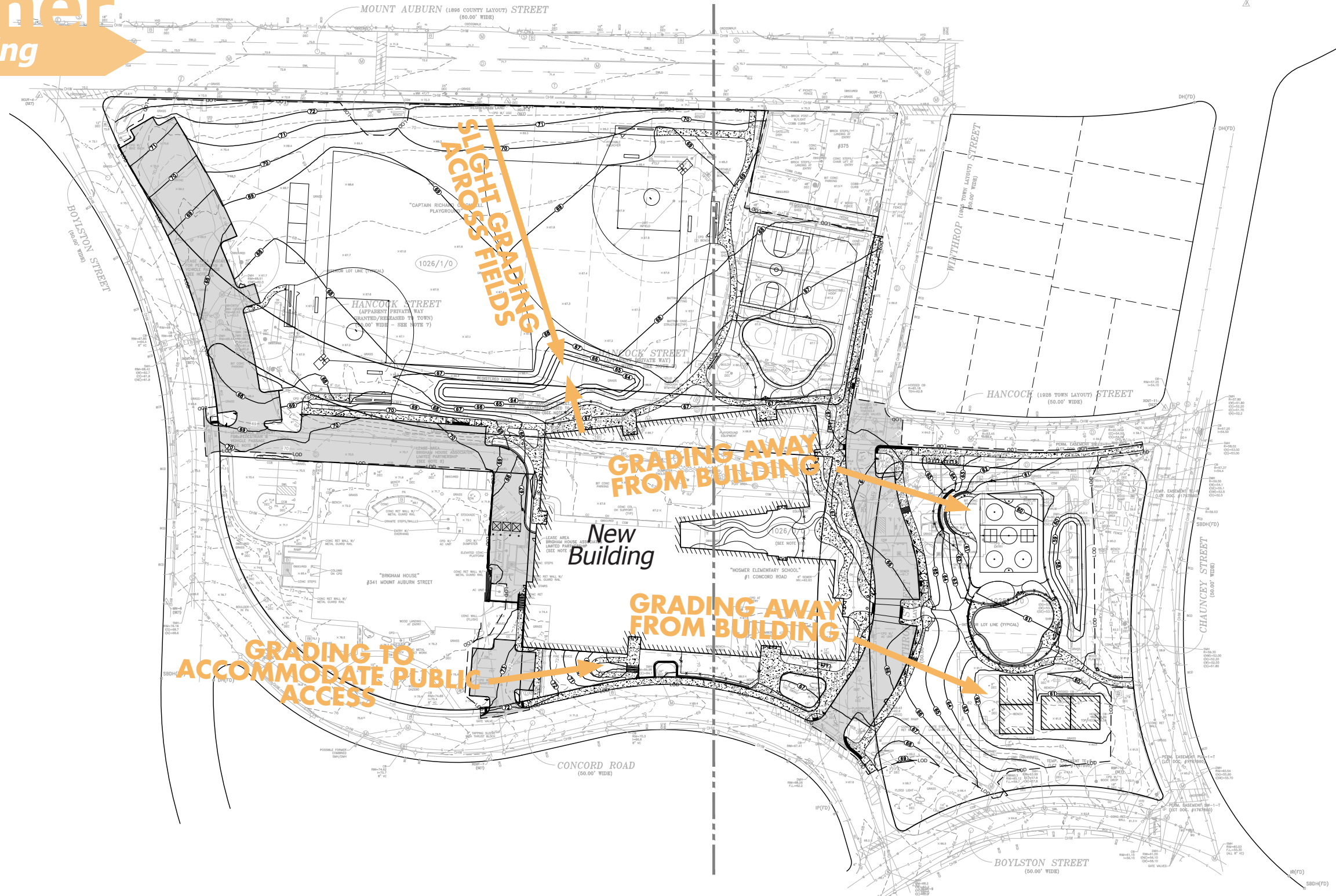
- Athletic courts
- Playground
- Public entrance
- Bicycle parking
- Outdoor learning
- Athletic courts
- Public Entrance
- Playground
- Paved parking/drive
- Modular classrooms (temporary)

- Paved parking
- Public entrance
- Student gardens



Hosmer

Site Grading



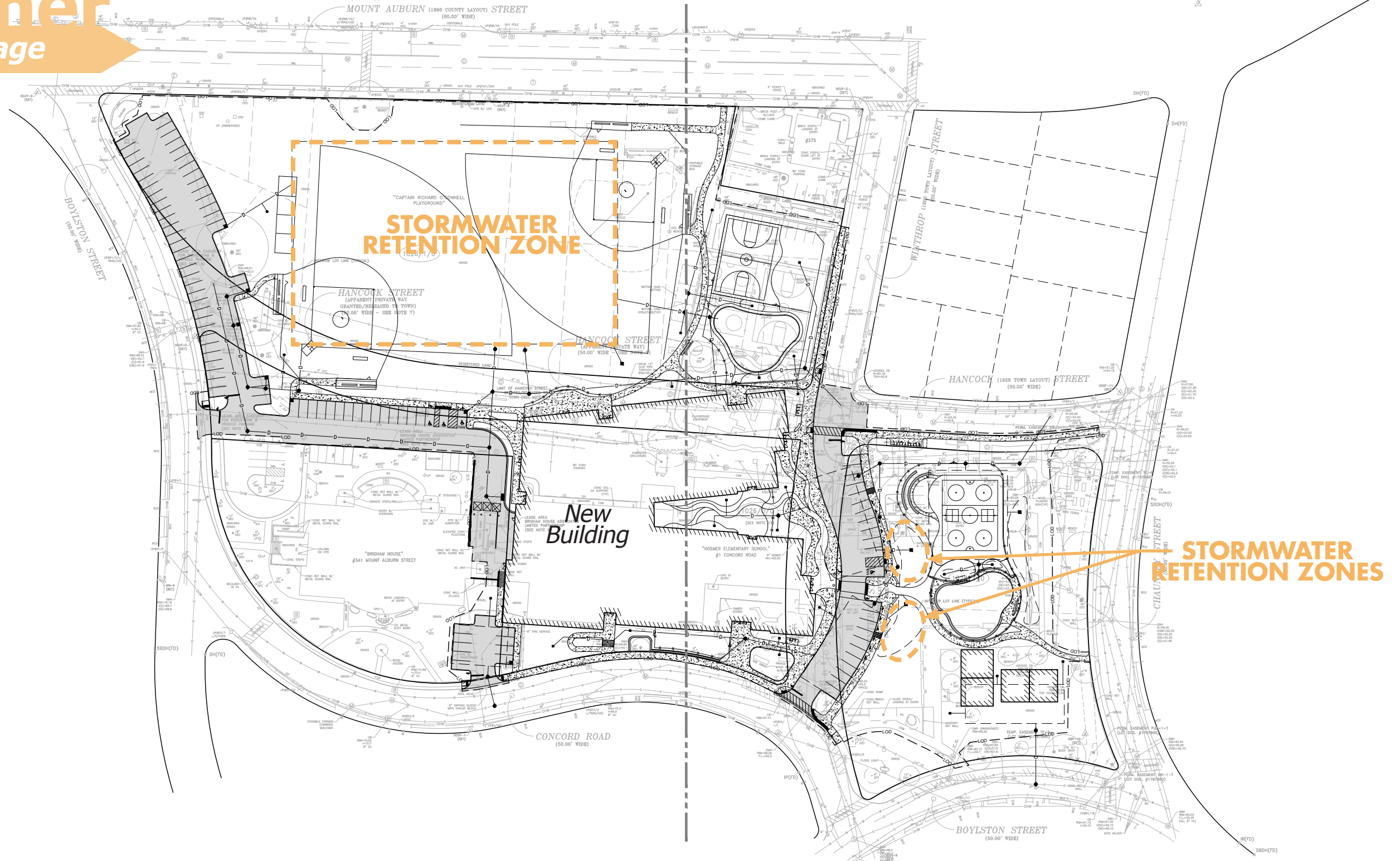
Hosmer

Site Drainage

SHEET C5.1

MOUNT AUBURN (1898 COUNTY LAYOUT) STREET
(80.00' WIDE)

SHEET C5.2

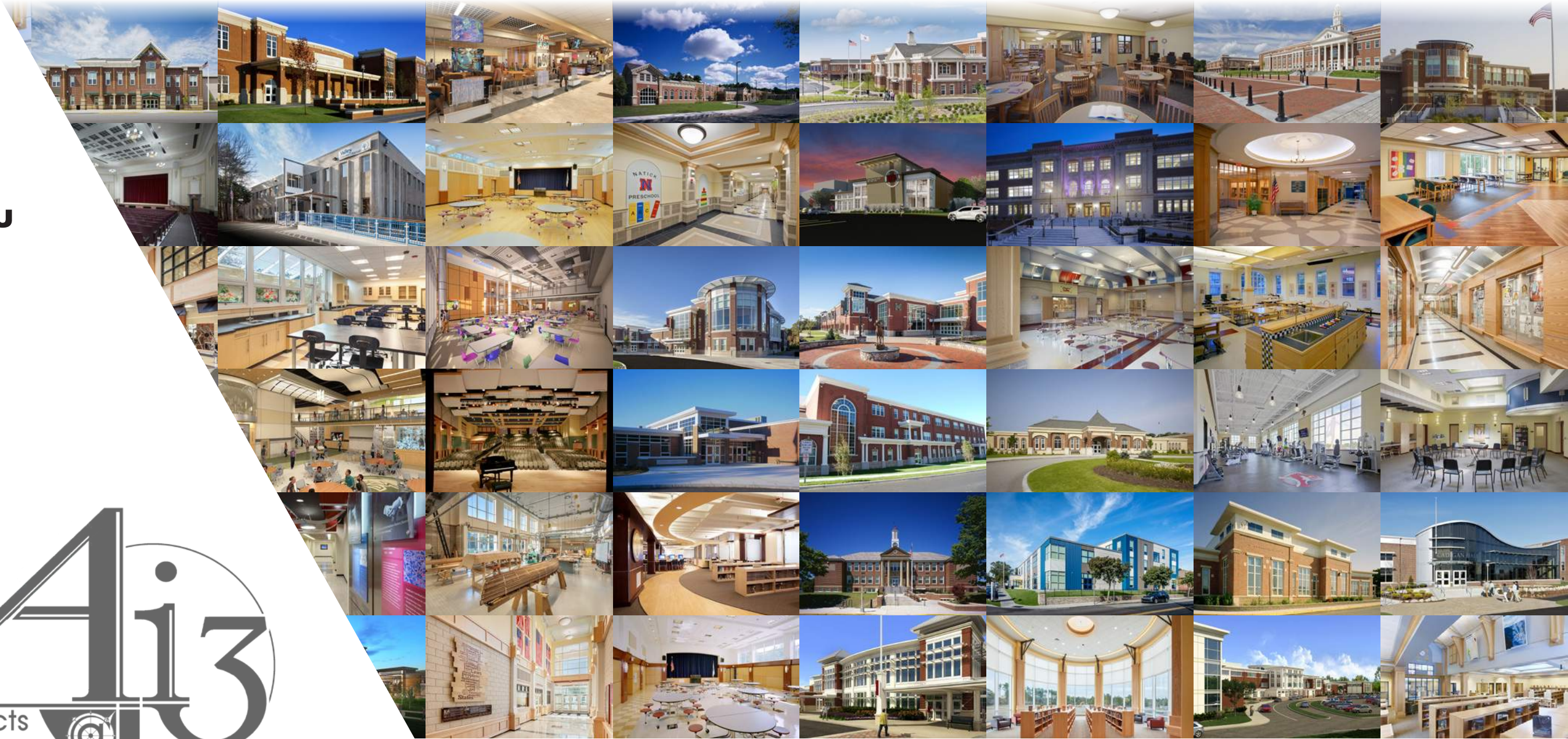


**STORMWATER
RETENTION ZONE**

**New
Building**

**STORMWATER
RETENTION ZONES**

Questions?
Thank you



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Learning Commons



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Learning Commons

