



Watertown Elementary Schools Building Project

Design **Watertown**



WPS Building Committee

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

July 24, 2019

Schools Project Website: www.watertownschooolsproject.com

Lowell

Existing Site



Lowell

Site Plan

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



Lowell

Learning Commons



Lowell

Learning Commons



Design Option 0

Lowell

Learning Commons



Lowell

Learning Commons



Lowell

Learning Commons



Lowell

Learning Commons



Lowell

Learning Commons



Design Option 1

Lowell

Learning Commons



Design Option 1

Lowell

Learning Commons



Lowell

Learning Commons



Design Option 1 - Rev A

Hosmer

Existing Site



Hosmer

Exterior Rendering

6/19/19



Hosmer

Exterior Rendering

Revised 7/24/19



(A)

Wood Composite

PRODUCT INFORMATION

- Available in fade resistant and **stain resistant** finishes
- Composite core **resists rotting**, cracking, insects, and decay, and it is made in the U.S.A.
- Open or closed joint fastening for **simple installation**
- Requires **low-maintenance** - never needs sanding, staining or sealing and comes to the site pre-finished
- Very high **impact resistance** & dimensionally stable

varied wood grain patterns
warm, rich colors
tongue-and-groove install

kit of parts

(sample)



PRECEDENTS

- Editor's Hot 50 Products (*Green Builder* magazine)
- Top 100 Products at the International Builder Show (LBM)
- Most Valuable Product for Building Industry Professionals (*Building Products* magazine)
- Top Product (*Professional Builder* magazine, *Build* magazine)
- 2015 Eco-Leader (*Green Builder* magazine)

Multi-use

Warm

Contemporary



SUSTAINABILITY

94% pre-consumer and post-consumer recycled content (plastics and wood scraps)

00 no toxic chemicals (unlike treated wood products)
no carcinogens released during cutting (unlike fiber-cement products)

70,000+ tons of wood and plastic diverted from landfills and incinerators each year

How it's made:

How it's used:

Cladding

Walls

Soffits

Overhangs

(B)

Wood Appearing ALUMINUM COMPOSITE PANEL (ACP)

- Sandwich panel with high **structural rigidity** and low weight
- Panels are easy to re-size, **durable, flexible**, and efficient
- Core is **not fire resistant**, but construction type will be Type II Unprotected - alternative cores are available for increased cost
- Aluminum sheets can be **coated** or **painted** and are available in metallic or wood-like finishes



ENVIRONMENTAL PRODUCT DECLARATION
as per ISO 14025 and EN 15804

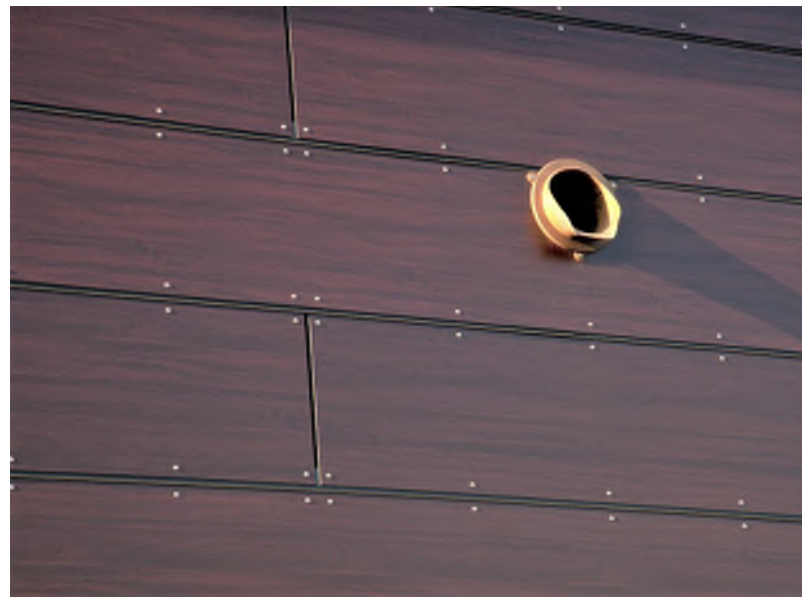
Owner of the Declaration	3A Composites GmbH
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-3AC-20140108-IBG1-EN
Issue date	06.08.2014
Valid to	05.08.2019

ALUCOBOND
3A Composites GmbH

www.bau-umwelt.com / <https://epd-online.com>

Option to choose panel sizes, core thickness, and tones

Coil coated aluminum sheets bonded to non-aluminum core



Includes an Environmental Product Declaration (EPD)

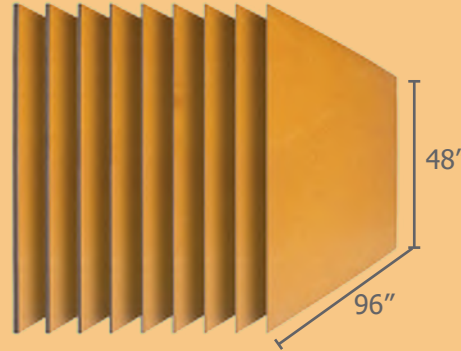
At least **20 EPDs** are required to achieve LEED Credit 3 in the Materials and Resources Category

(C)

Wood Composite

PHENOLIC RESIN COMPOSITE PANEL (PRCP)

- Each panel consists of a **high density** bakelite core, **natural wood** veneer treated with synthetic resin and an exterior polyvinylidene fluoride (PVDF film)
- This composition provides **greater durability**
- Panels have anti-adherent properties; **protects** from solar radiation, dirt, and is **graffiti resistant**
- Its high resistance generally yields **low-maintenance**



Option to choose widths, thicknesses, and tone



Option for exposed fasteners
Option to choose pattern



Harry Parker Boathouse
Brighton, MA

ENVIRONMENTAL PRODUCT DECLARATION

HPL boards with natural wood finish
ProdEX and Neptuno

PCR 2012:01 construction services and products
EPD comply with EN 15804
Registration num.: S-P-00974
Geographical validity: international
Date of revision: 26-10-2016 Validity: 26-10-2021
CPC: 314



Includes an Environmental Product Declaration (EPD)

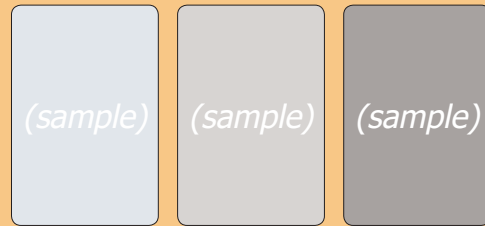
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(A)

Metal

PRODUCT INFORMATION

- High quality, factory finished paints help prevent **corrosion**
- Because shingles are **easier to handle**, they are **easier to replace** if damaged or dented
- Fire resistant, durable, insect-proof, and **unable to rot**
- Available in prime quality **aluminum** (.032-.063), 24 gauge G-90 galvanized steel, 22 gauge galvalume steel, 300-series **stainless steel**



clear, brushed,
& anodized
UV stable
colors
color match
available



aluminum trim



PRECEDENTS

- Aluminum cladding has been embraced by builders and consumers for its reliable performance and low-maintenance characteristics • *(Architect magazine)*
- Manufacturers offer 35 finishes that are rated by the Cool Roof Ratings Council, and 32 colors that are Energy-Star approved •
 - Passes ASTM E283, ASTM E330, ASTM E331, UL 580-1897, AAMA 501.1 •
- Only basic sheet metal tools required for install •



SUSTAINABILITY

100%

recyclable after life of the product
→ products include a high percentage of recycled material

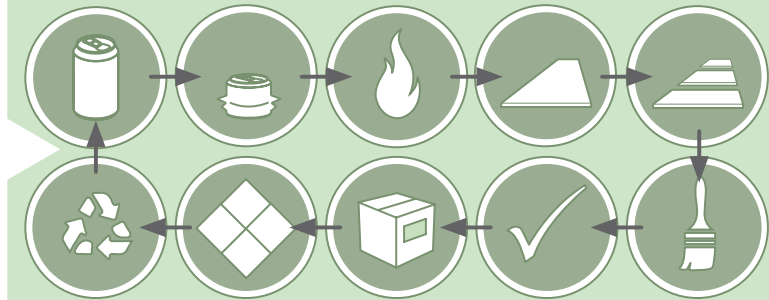
solid waste stream to landfills reduced, the scrap resulting from production is re-melted and processed into new products



32 Energy-Star approved colors; Kynar-coated products can reduce their carbon footprints by reflecting the sun's energy to keep interiors cool during warm weather



How it's made:



How it's used:



(B)

Metal

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Hosmer

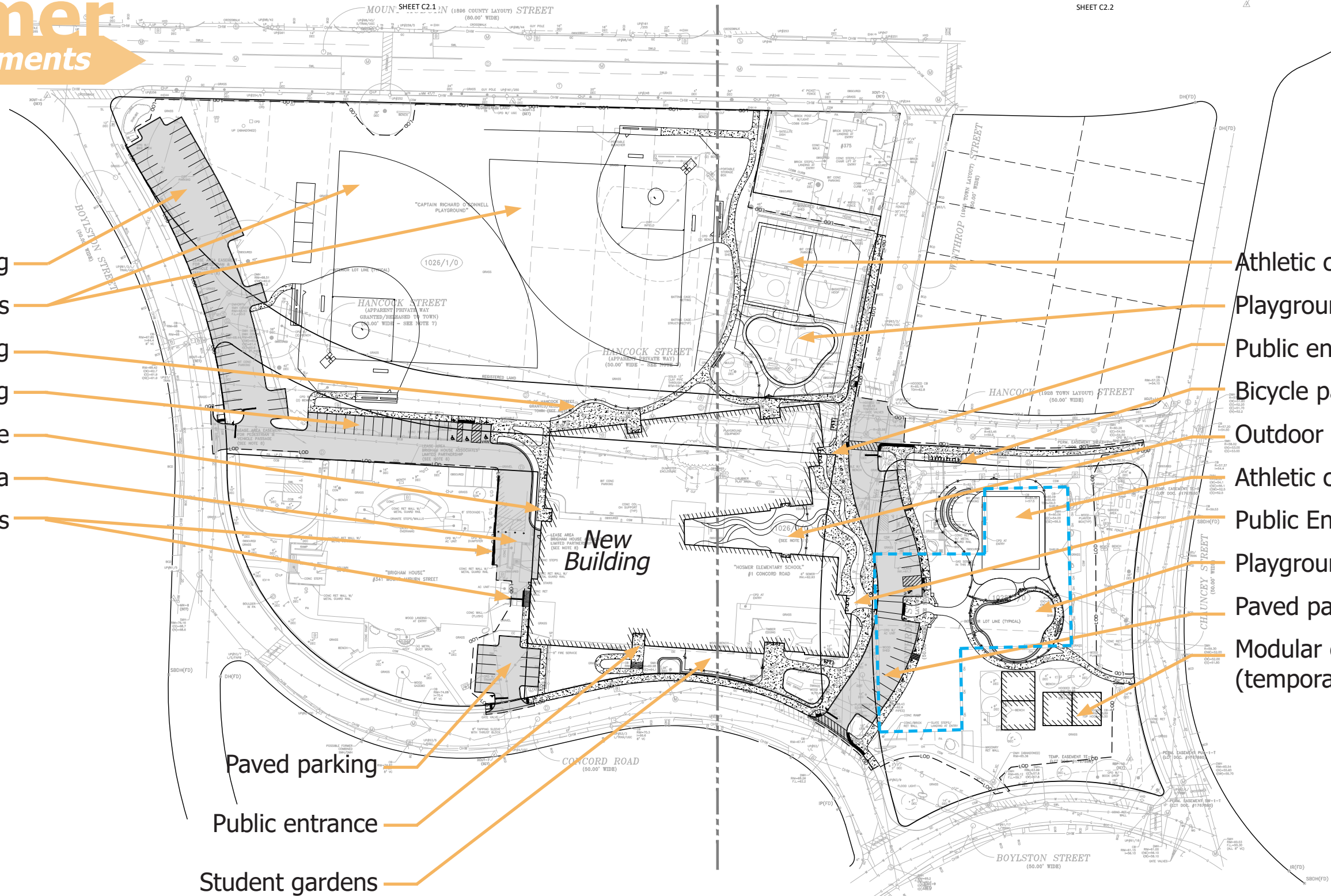
Site Improvements

SHEET C2.2

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

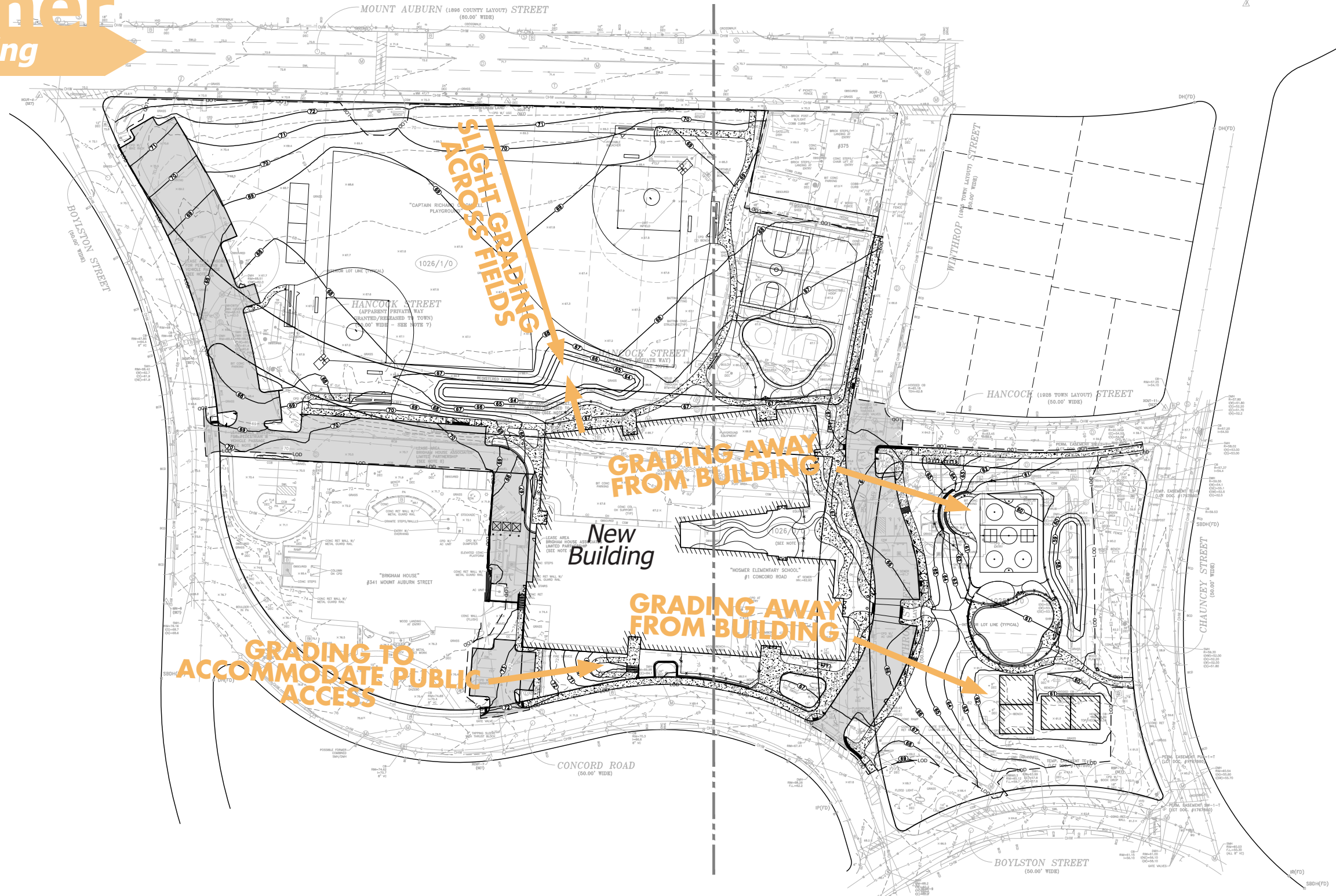
- Athletic courts
- Playground
- Public entrance
- Bicycle parking
- Outdoor learning
- Athletic courts
- Public Entrance
- Playground
- Paved parking/drive
- Modular classrooms (temporary)

- Paved parking
- Public entrance
- Student gardens

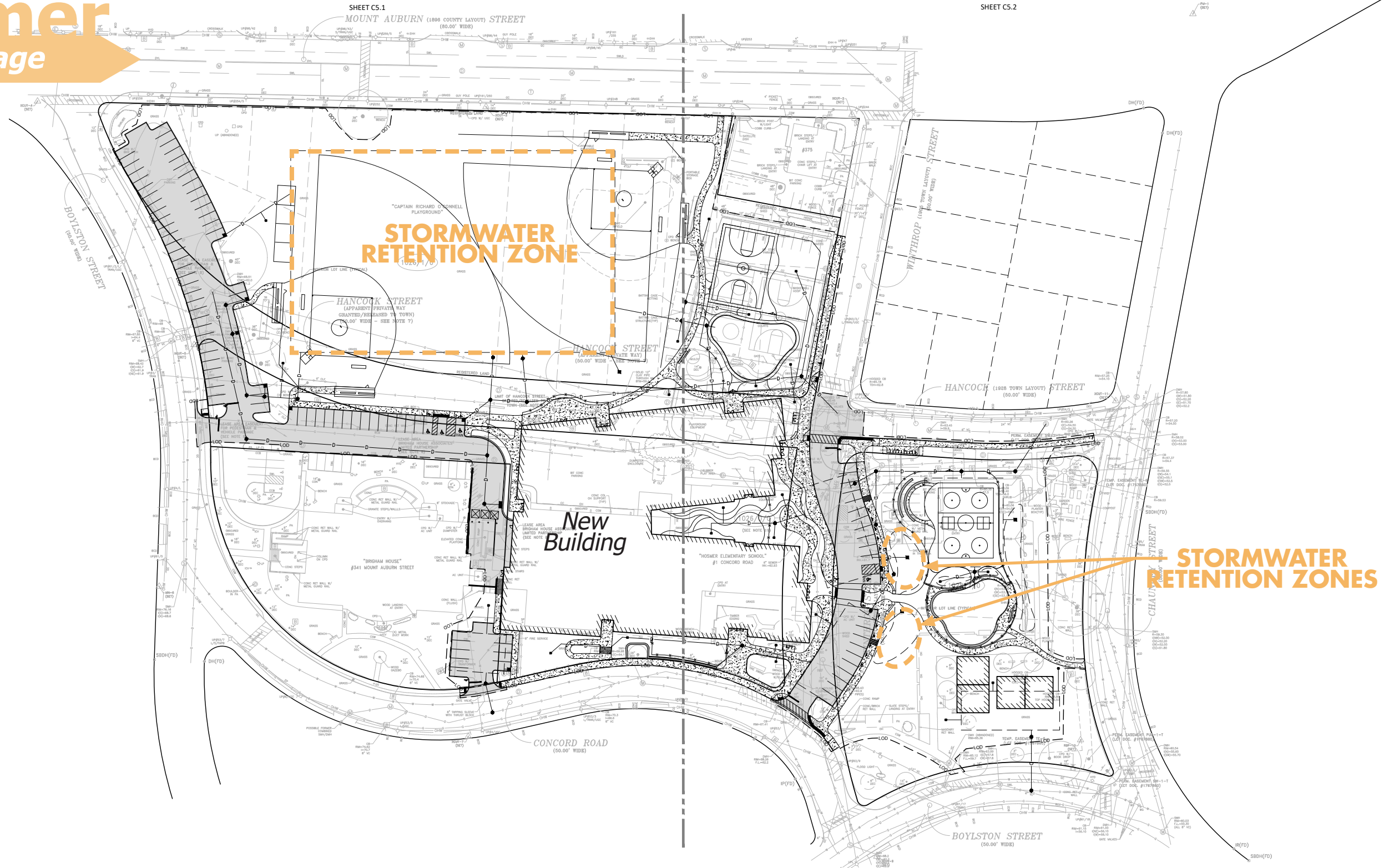


Hosmer

Site Grading



Hosmer Site Drainage



Cunniff

Existing Site



Cunniff

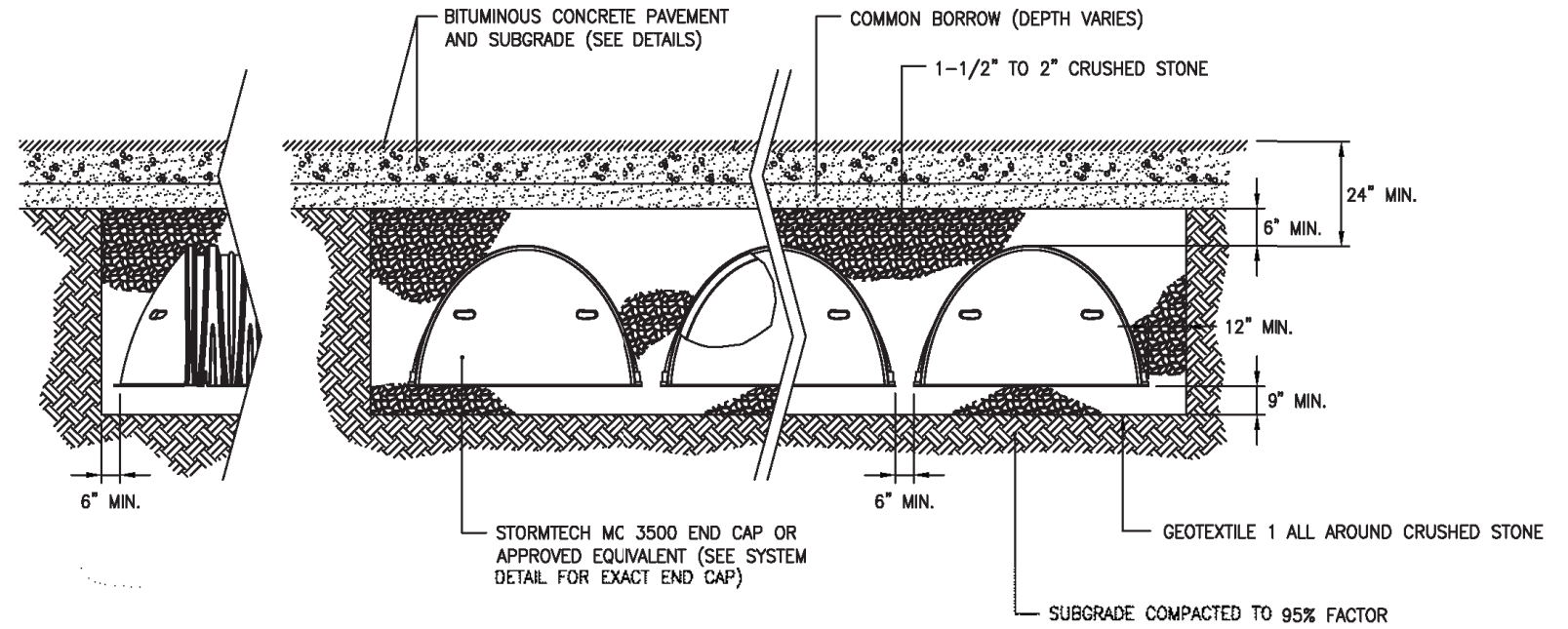
Site Drainage



Cunniff

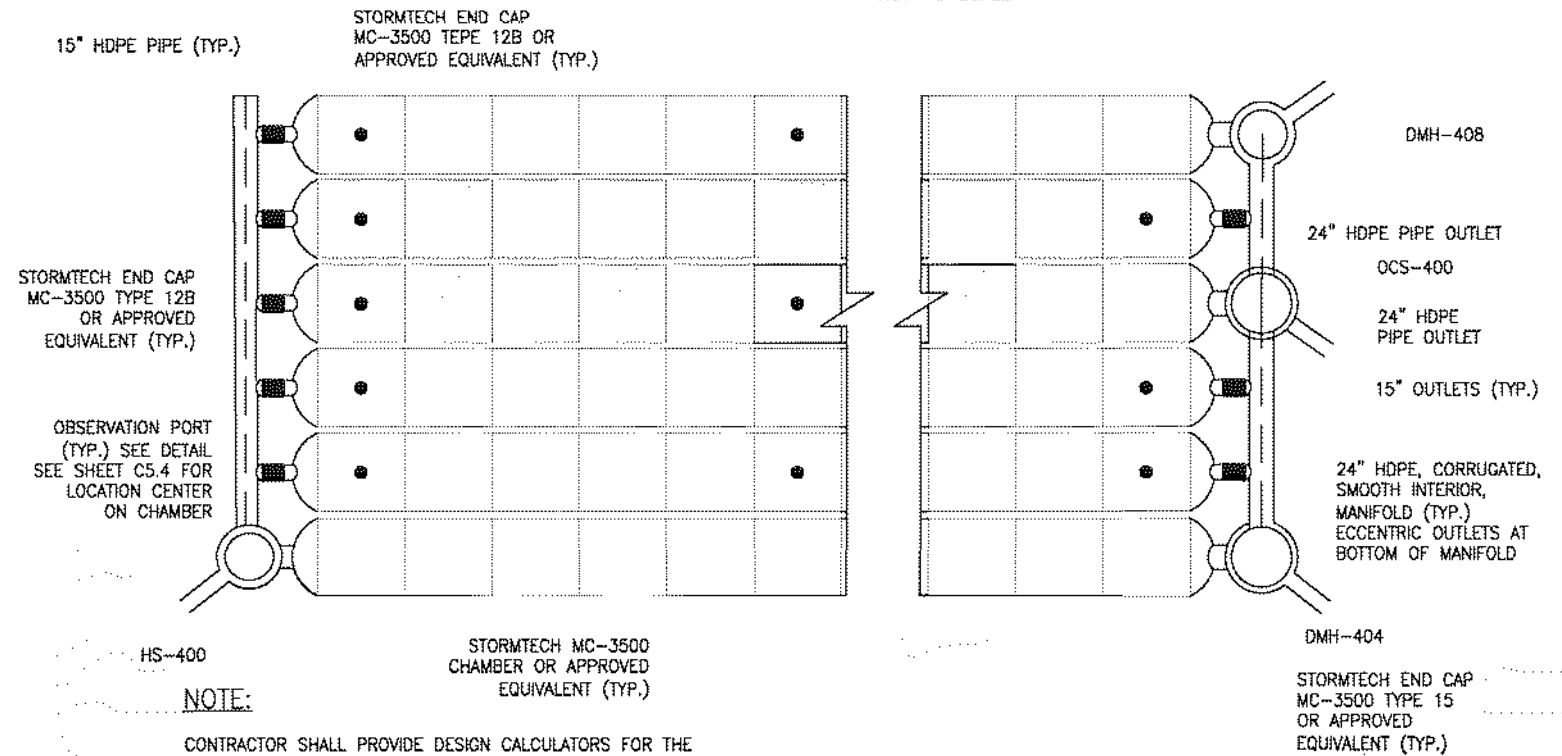
Site Drainage

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

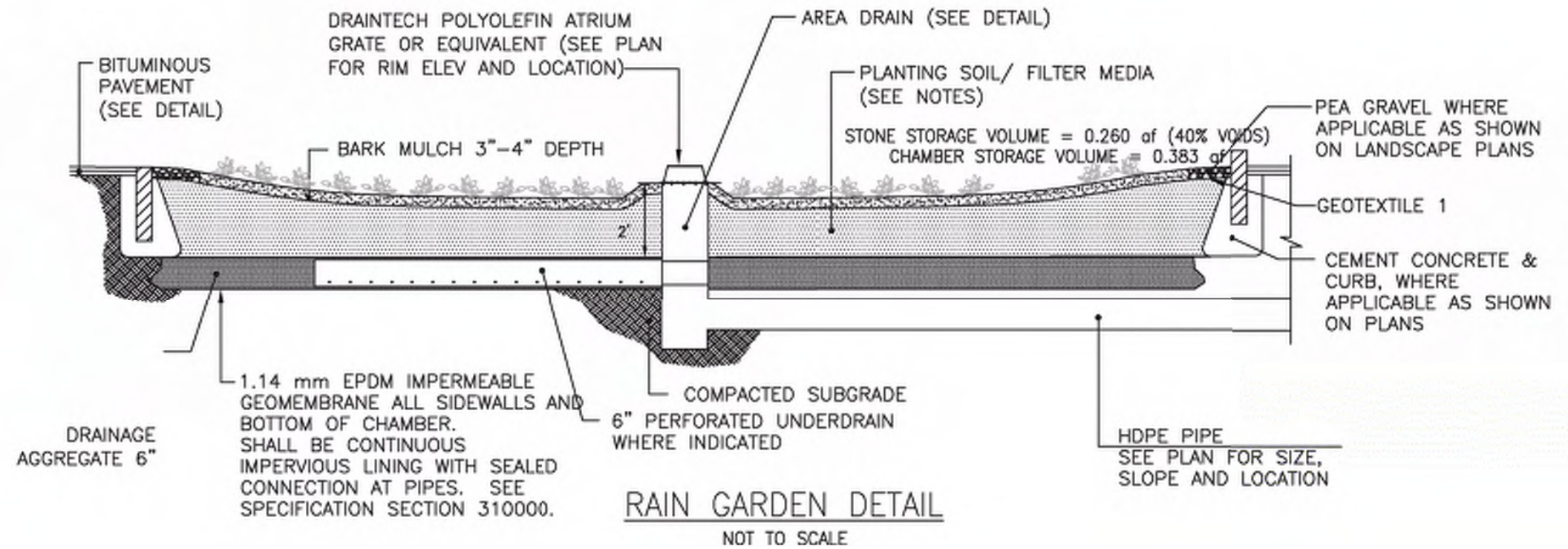
Site Improvements



- 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:

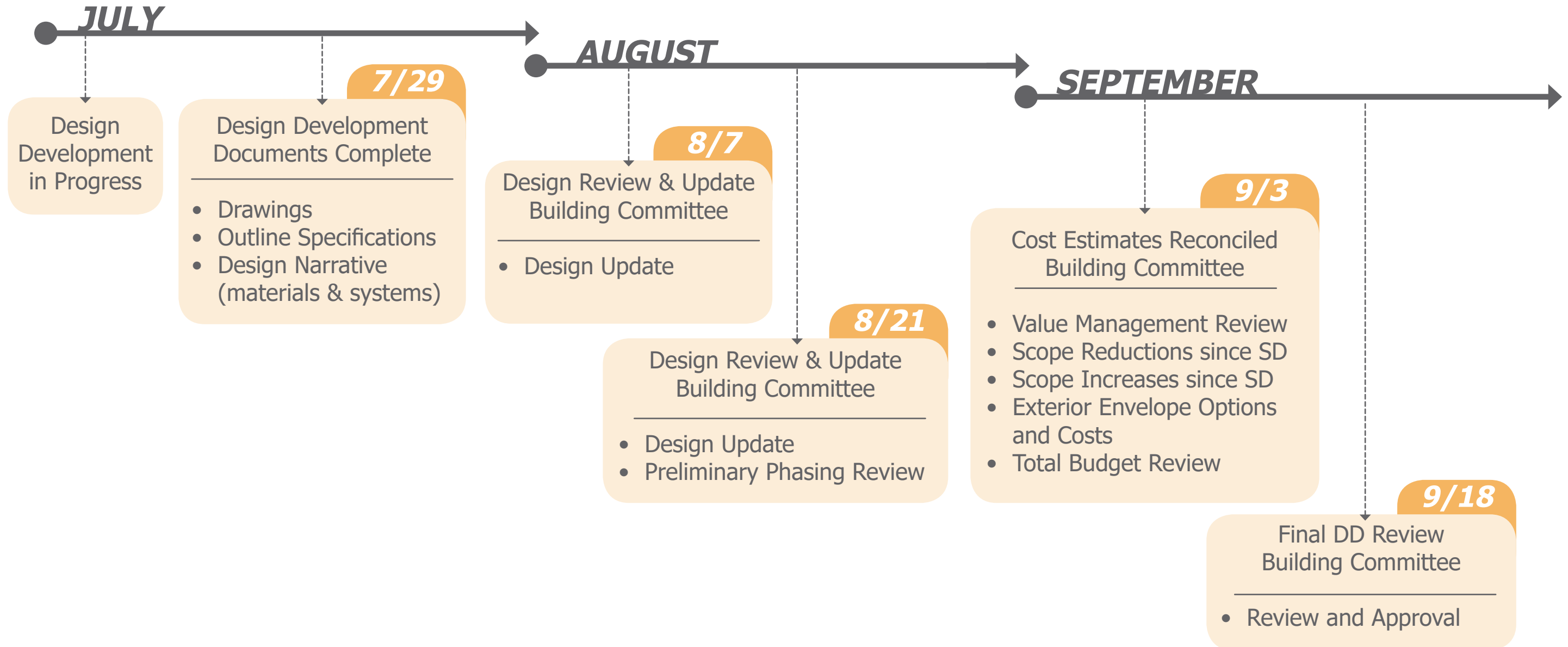
1. THE PLANTING SOIL/FILTER MEDIA SHOULD BE A MIXTURE OF SAND, COMPOST, AND SOIL:
 - 40% SAND *
 - 20-30% TOPSOIL *
 - 30-40% COMPOST *

* 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.

▶ Watertown Elementary Schools: Critical Upcoming Activities



Questions?
Thank you

