Bristol Warren Regional School District

RIDE Necessity of School Construction

PMA Consultants | PERKINS EASTMAN

BRISTOL PLANNING BOARD | 10.10.2024

OVERVIEW

- ❑ Project Timeline / Public Outreach
- ❑ Construction logistics
- ❑ Parking Capacity
- ❑ Stormwater Management
- ❑ Athletics Fields / Irrigation

PROJECT TIMELINE

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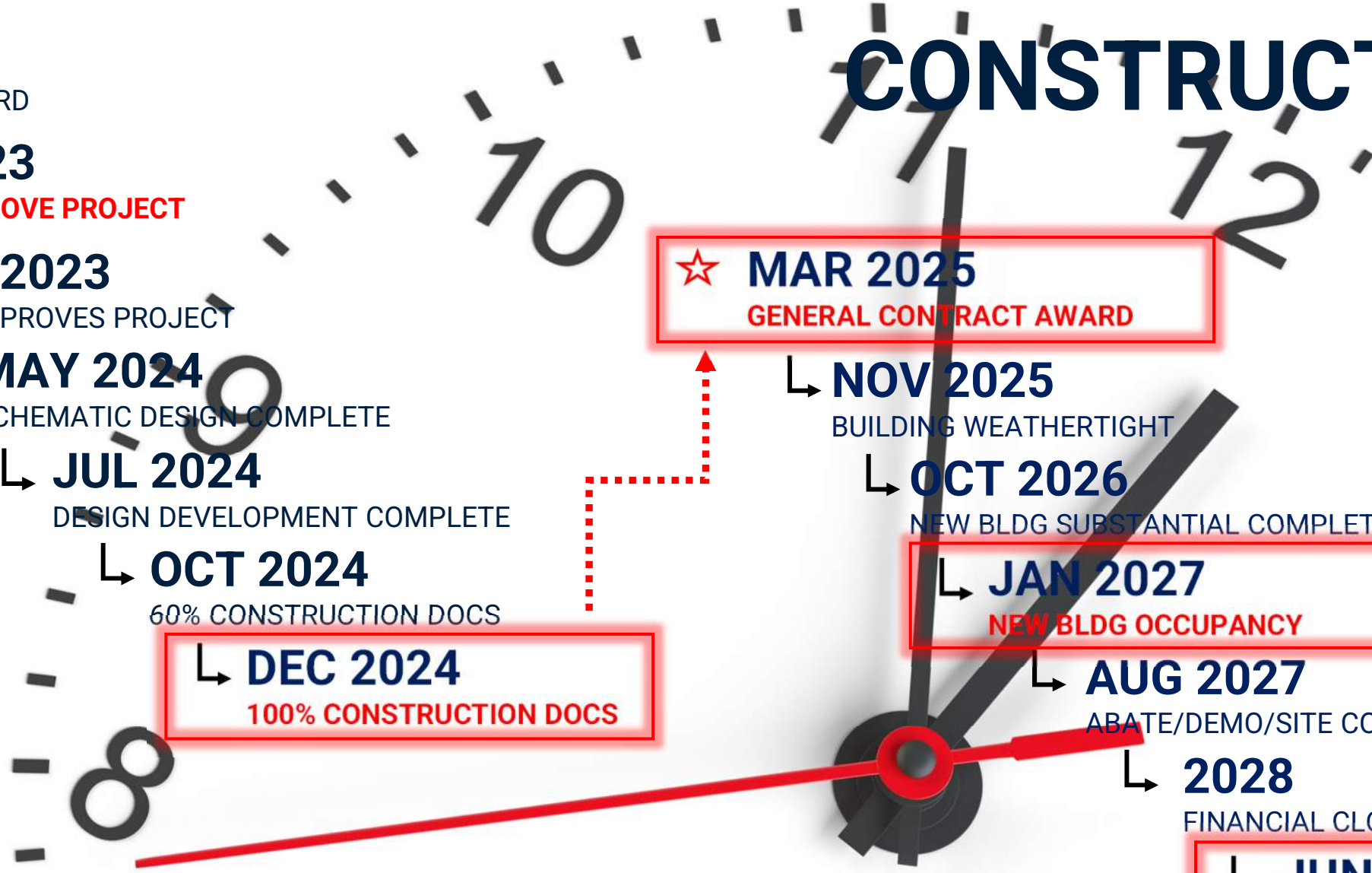
PROJECT TIMELINE



DESIGN

☆ **JUN 2023**
ARCHITECT ONBOARD

NOV 2023
VOTERS APPROVE PROJECT

DEC 2023
RIDE APPROVES PROJECT

MAY 2024
SCHEMATIC DESIGN COMPLETE

JUL 2024
DESIGN DEVELOPMENT COMPLETE

OCT 2024
60% CONSTRUCTION DOCS

DEC 2024
100% CONSTRUCTION DOCS

CONSTRUCTION

☆ **MAR 2025**
GENERAL CONTRACT AWARD

NOV 2025
BUILDING WEATHERTIGHT

OCT 2026
NEW BLDG SUBSTANTIAL COMPLETE

JAN 2027
NEW BLDG OCCUPANCY

AUG 2027
ABATE/DEMO/SITE COMPLETE

2028
FINANCIAL CLOSEOUT

JUN 2029
RIDE DEADLINE

COMMUNITY OUTREACH

SINCE RIDE STAGE II:

- **School Building Committee**
  - May-23-Set-24
    - 26 Public Meetings
- **School Committee**
  - May-23-Sep-24
    - 20 Public Meetings
- **Community Outreach**
  - Bristol Town Council
  - Joint Finance Committee
  - Abutters Meetings
    - 10-11-2023
    - 11-01-2023
    - 09-16-2024
  - Community Forums Events
    - 21 Events
  - Community Forum Meeting's
    - 10-2-2023
    - 11-1-2023

70+ Public Events Since Stage II

CONSTRUCTION LOGISTICS

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CONSTRUCTION LOGISTICS PLAN

PARKING CAPACITY

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PARKING CAPACITY

- **FRIDAY 9/13/24 10:45AM**
  - **84 VACANT SPACES**
    - 63 STUDENT
    - 21 TEACHER

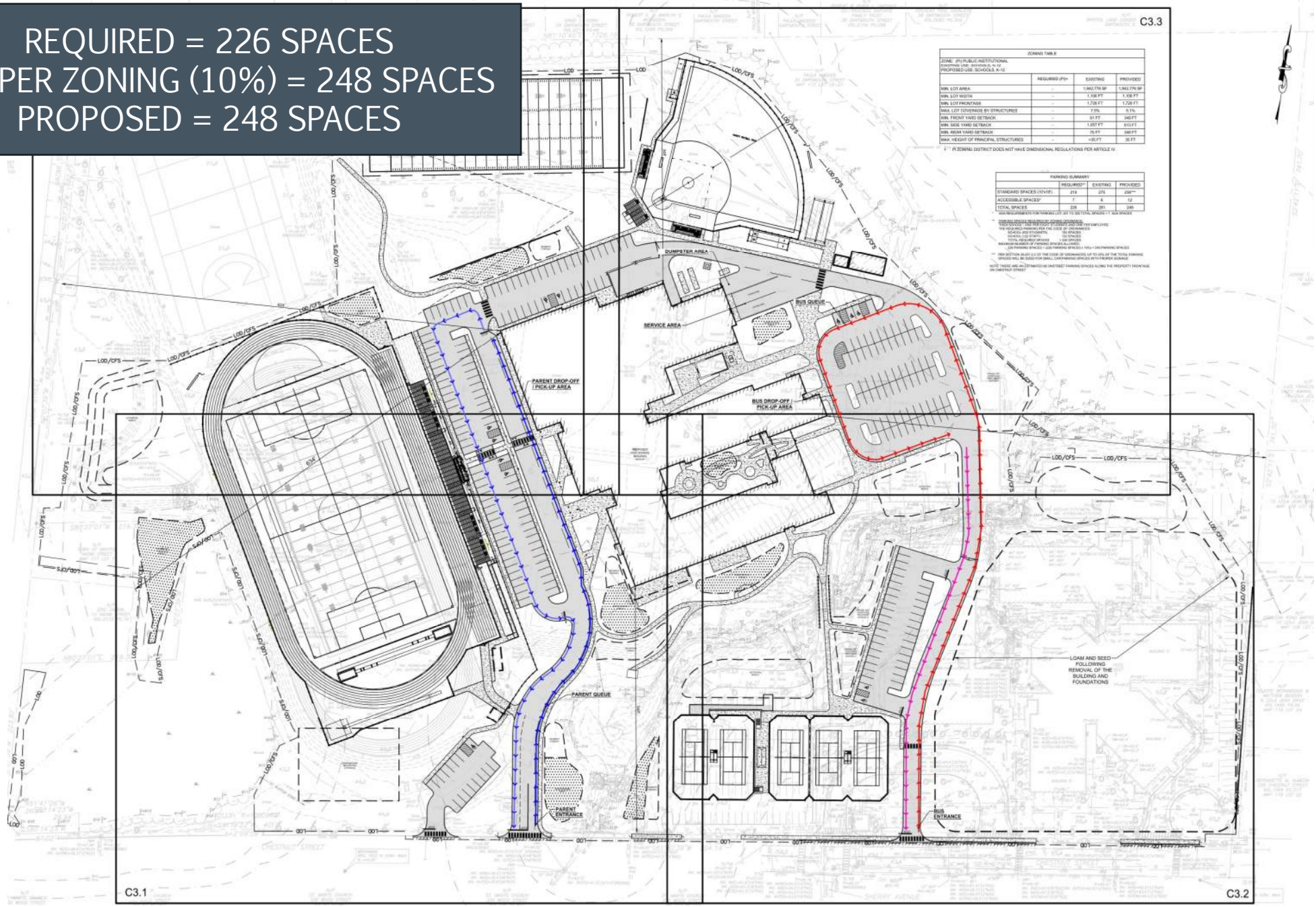
- **THURSDAY 9/19/24 11:00AM**
  - **107 VACANT SPACES**
    - 74 STUDENT
    - 33 TEACHER

- **FRIDAY 10/3/24 8:30PM** (MHHS Football Game)
  - **64 VACANT SPACES** (w/ 4 BUSES)
    - 52 STUDENT
    - 12 TEACHER

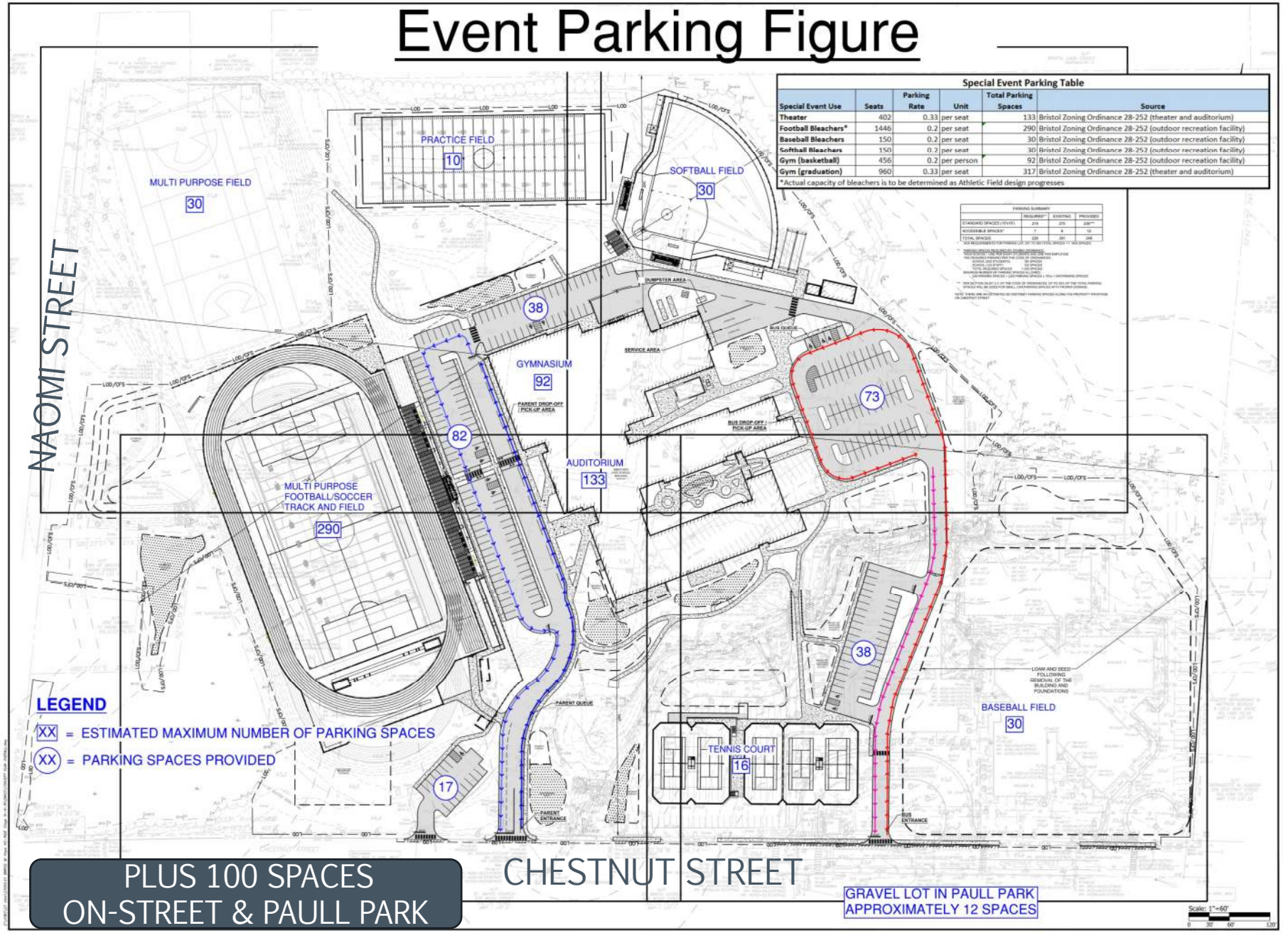
- **TUESDAY 10/8/24 1:00PM**
  - **88 VACANT SPACES**
    - 60 STUDENT
    - 28 TEACHER

PROPOSED – OFF-STREET PARKING

REQUIRED = 226 SPACES
MAX PER ZONING (10%) = 248 SPACES
PROPOSED = 248 SPACES



PROPOSED – PARKING DISTRIBUTION



PLUS 100 SPACES
ON-STREET & PAULL PARK

FLOODPLAIN

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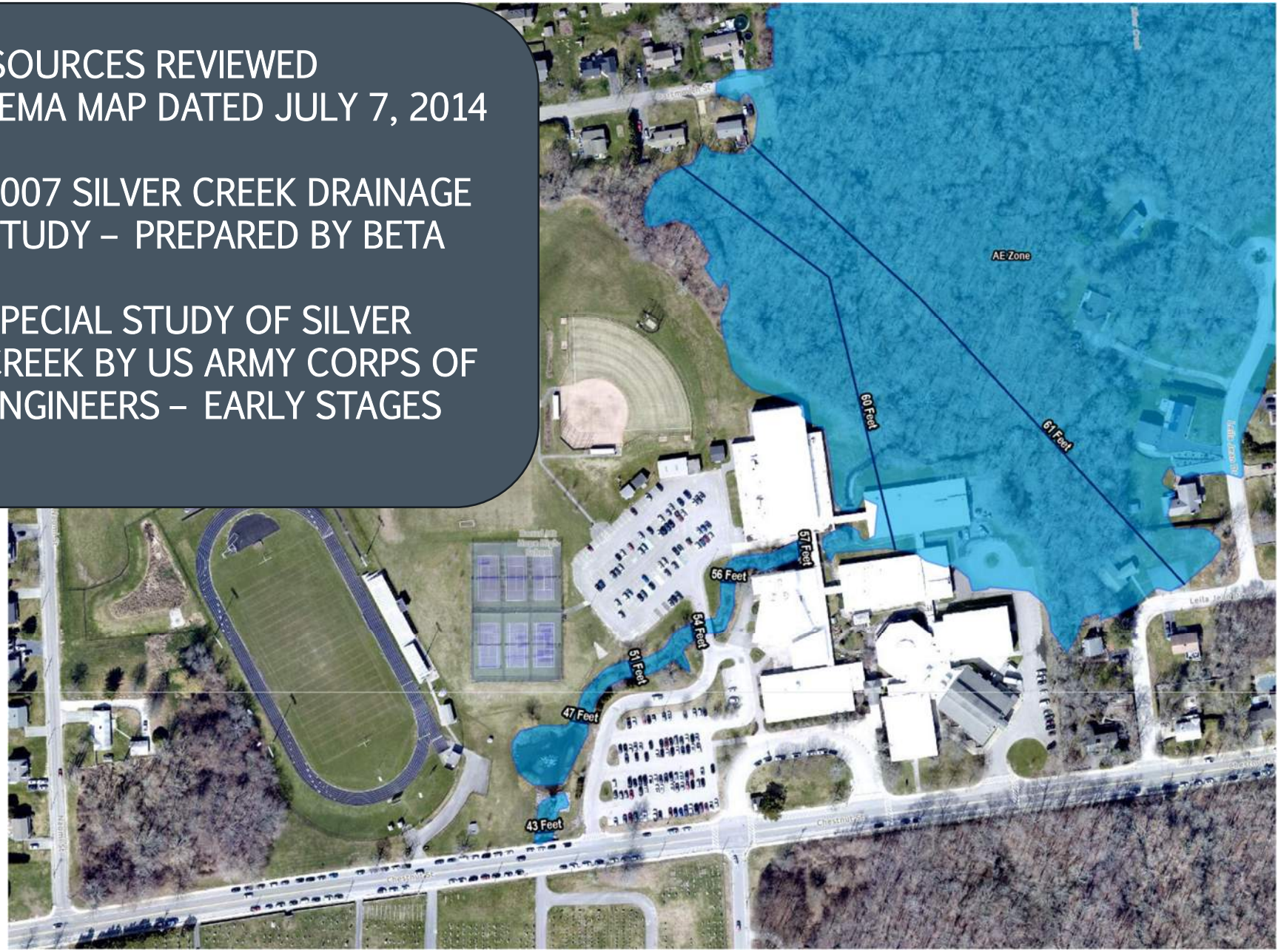
FLOOD PLAIN

DATA SOURCES REVIEWED

- FEMA MAP DATED JULY 7, 2014
- 2007 SILVER CREEK DRAINAGE STUDY – PREPARED BY BETA
- SPECIAL STUDY OF SILVER CREEK BY US ARMY CORPS OF ENGINEERS – EARLY STAGES



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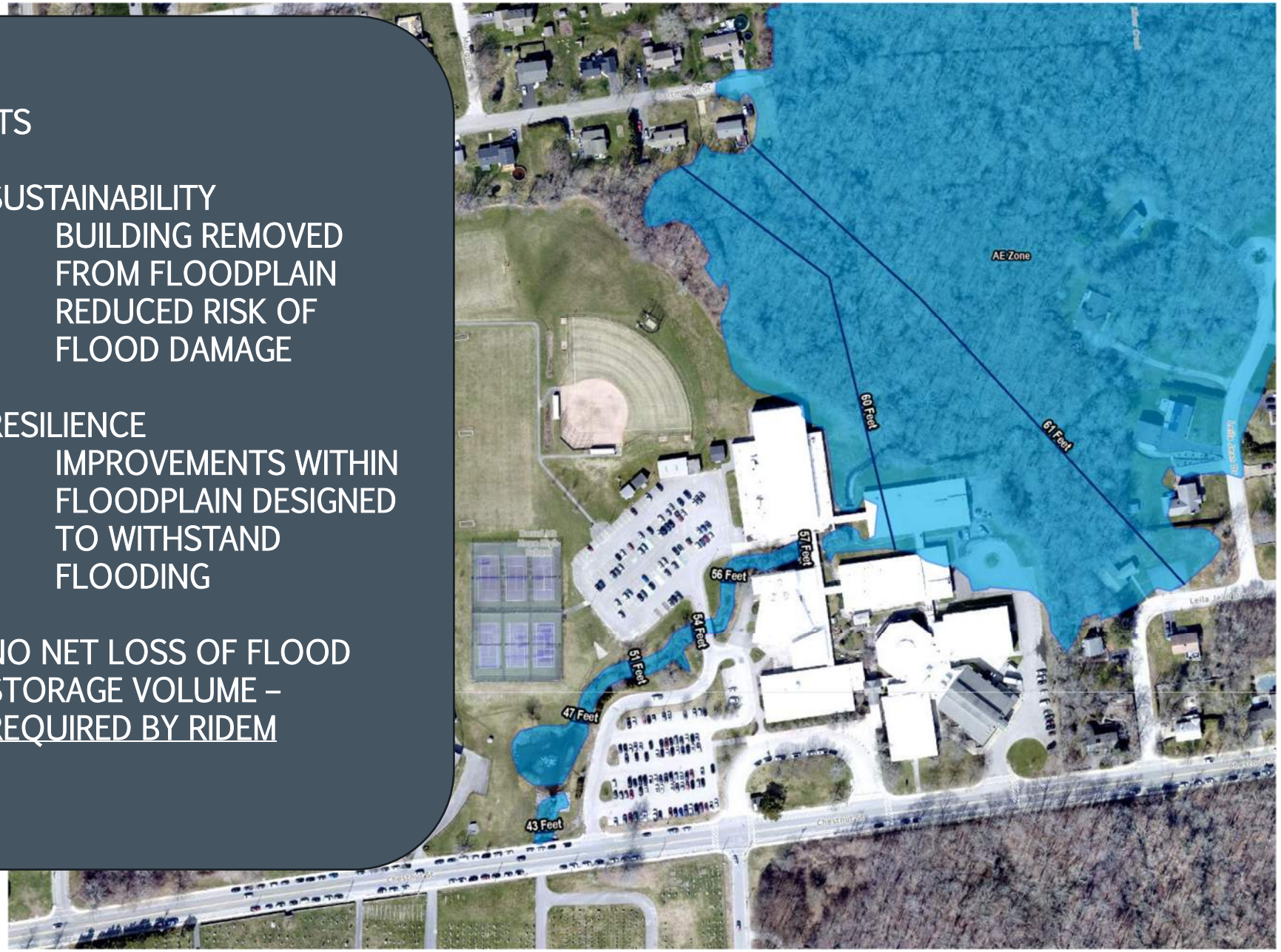
FLOOD PLAIN

BENEFITS

- SUSTAINABILITY
  - BUILDING REMOVED FROM FLOODPLAIN
  - REDUCED RISK OF FLOOD DAMAGE
- RESILIENCE
  - IMPROVEMENTS WITHIN FLOODPLAIN DESIGNED TO WITHSTAND FLOODING
- NO NET LOSS OF FLOOD STORAGE VOLUME – <u>REQUIRED BY RIDEM</u>



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FLOODPLAIN

BENEFITS

- SUSTAINABILITY
  - BUILDING REMOVED FROM FLOODPLAIN
  - REDUCED RISK OF FLOOD DAMAGE
- RESILIENCE
  - LIMITED IMPROVEMENTS WITHIN FLOODPLAIN
  - IMPROVEMENTS WITHIN FLOODPLAIN DESIGNED TO WITHSTAND (EX. CROSSINGS)
- NO NET LOSS OF FLOOD STORAGE VOLUME – <u>REQUIRED BY RIDEM</u>

STORMWATER MANAGEMENT

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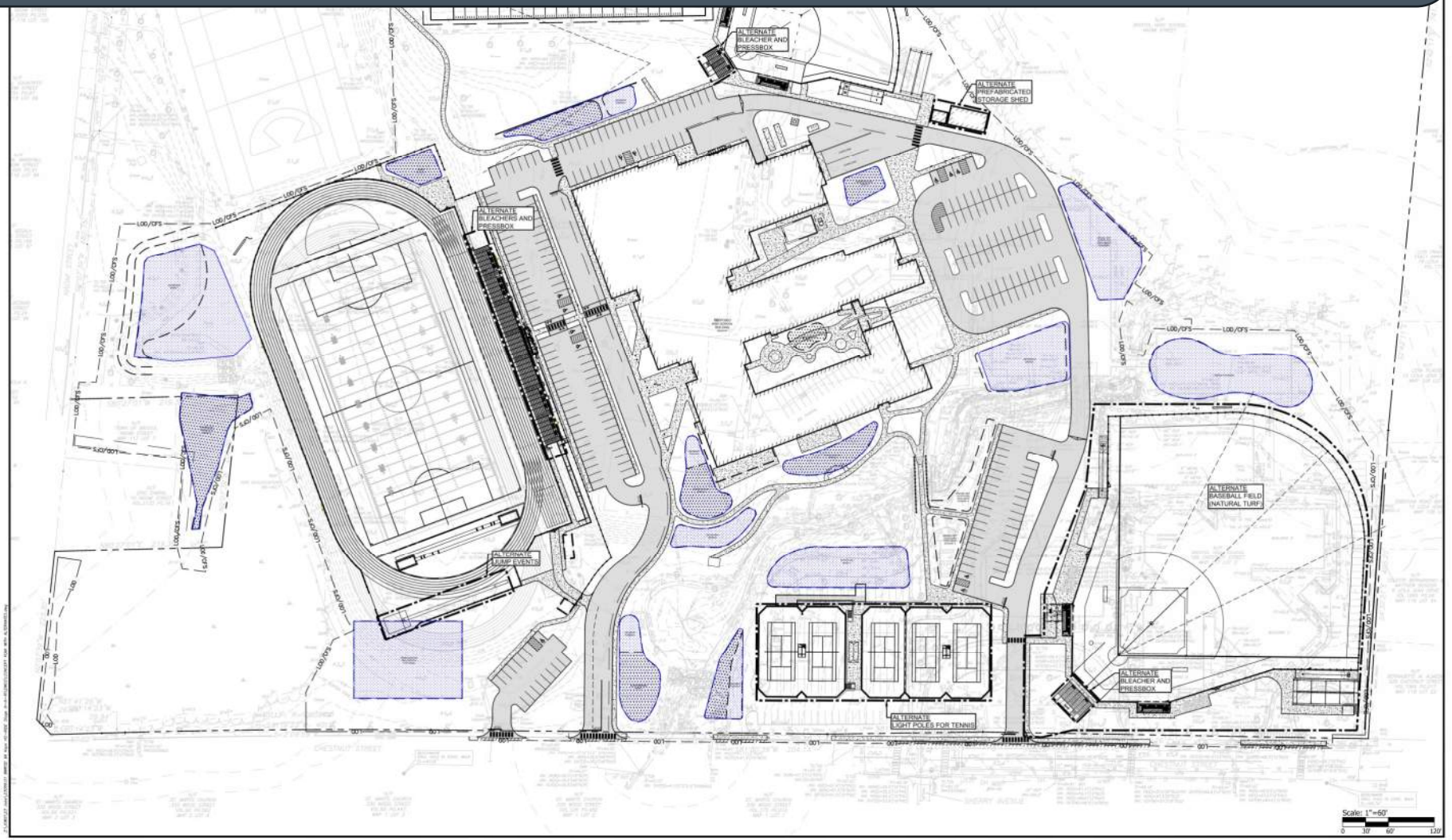
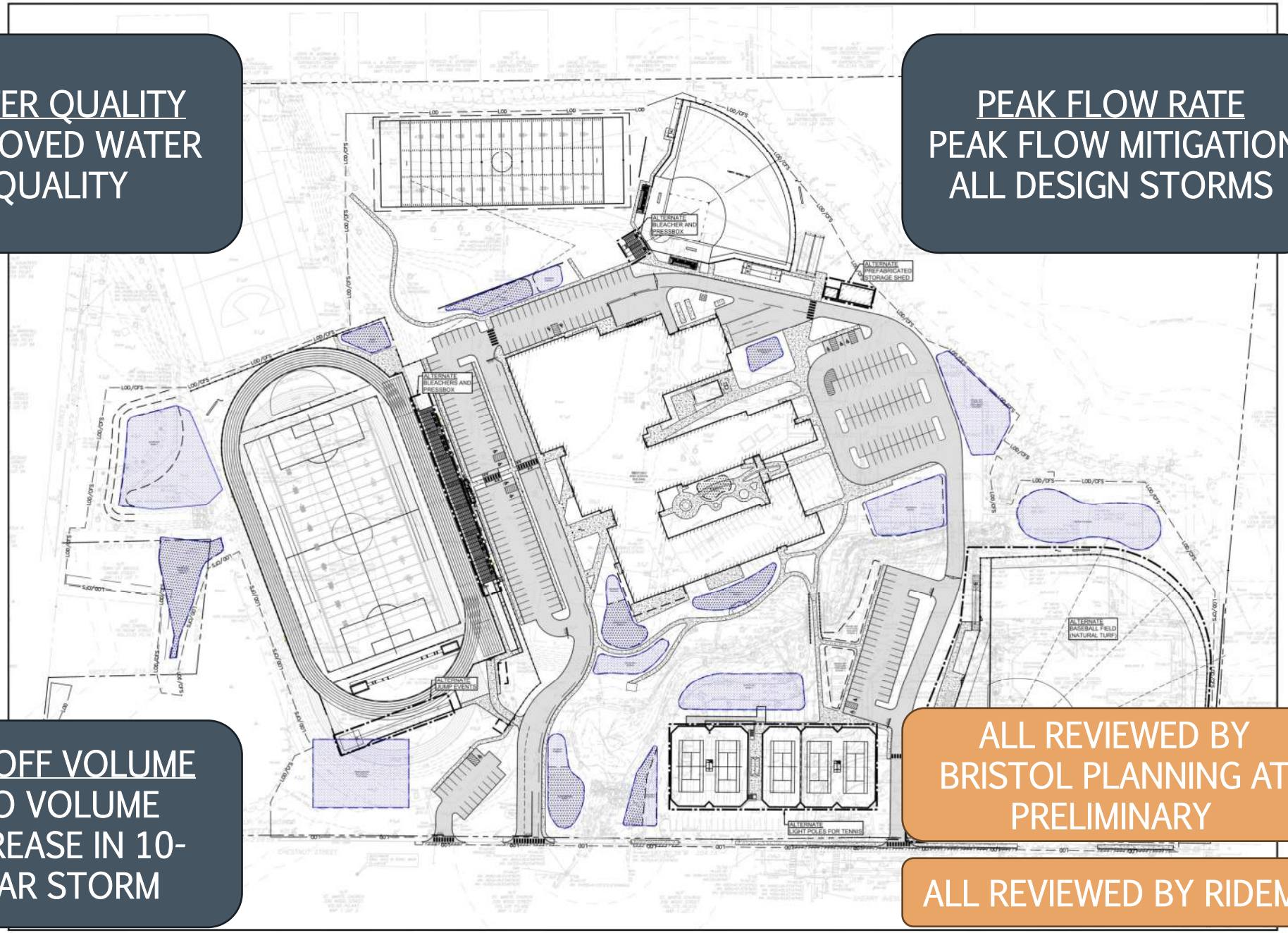
PROPOSED STORMWATER – BENEFITS TO SILVER CREEK WATERSHED

MITIGATING IMPACT OF NEW IMPERVIOUS SURFACES

IMPROVING MANAGEMENT OF EXISTING IMPERVIOUS SURFACES



PROPOSED STORMWATER – BENEFITS TO SILVER CREEK WATERSHED



WATER QUALITY
IMPROVED WATER QUALITY

PEAK FLOW RATE
PEAK FLOW MITIGATION
ALL DESIGN STORMS

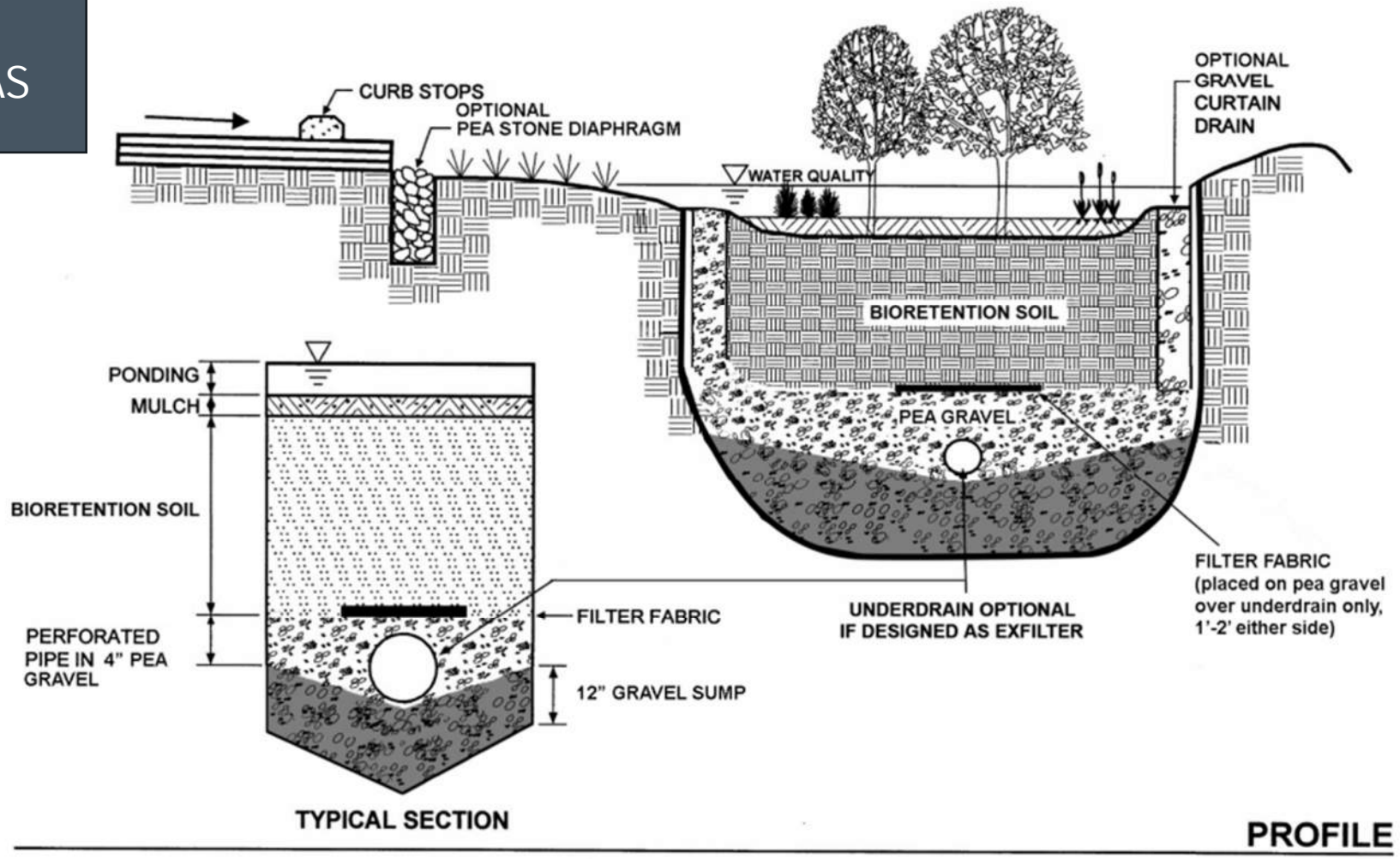
RUNOFF VOLUME
NO VOLUME INCREASE IN 10-YEAR STORM

ALL REVIEWED BY BRISTOL PLANNING AT PRELIMINARY

ALL REVIEWED BY RIDEM

WATER QUALITY

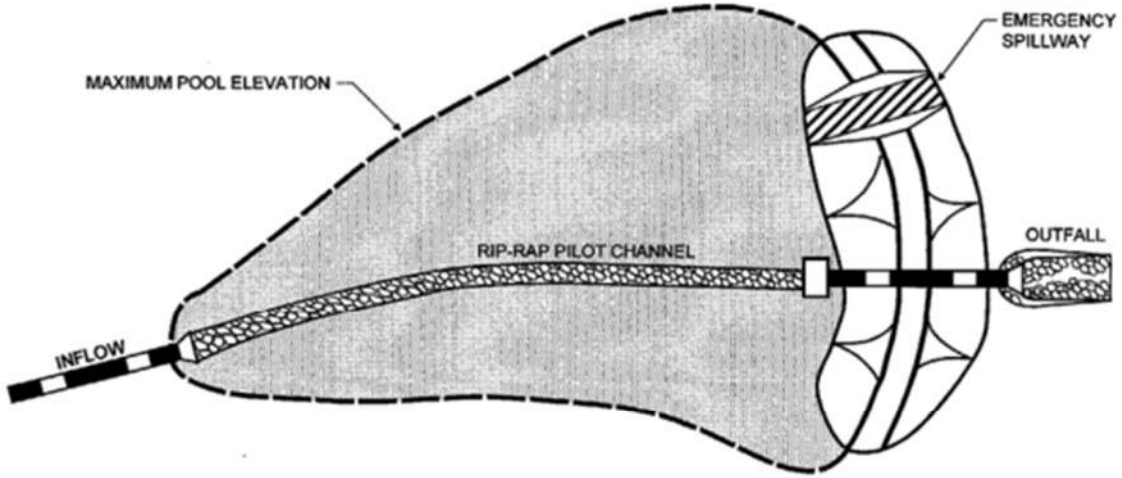
SAND FILTERS
BIORETENTION AREAS



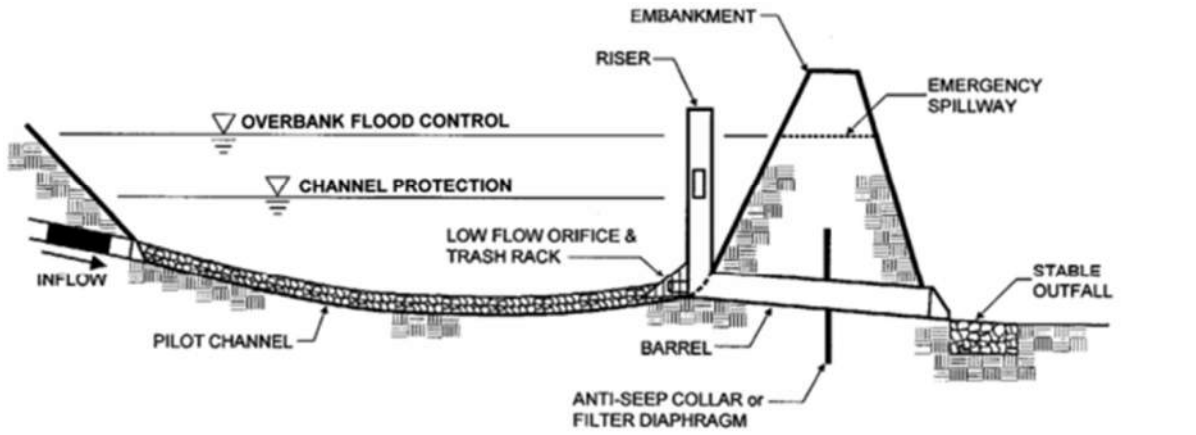
Adapted from MDE, 2000

PEAK FLOW RATE

DETENTION BASIN



PLAN VIEW



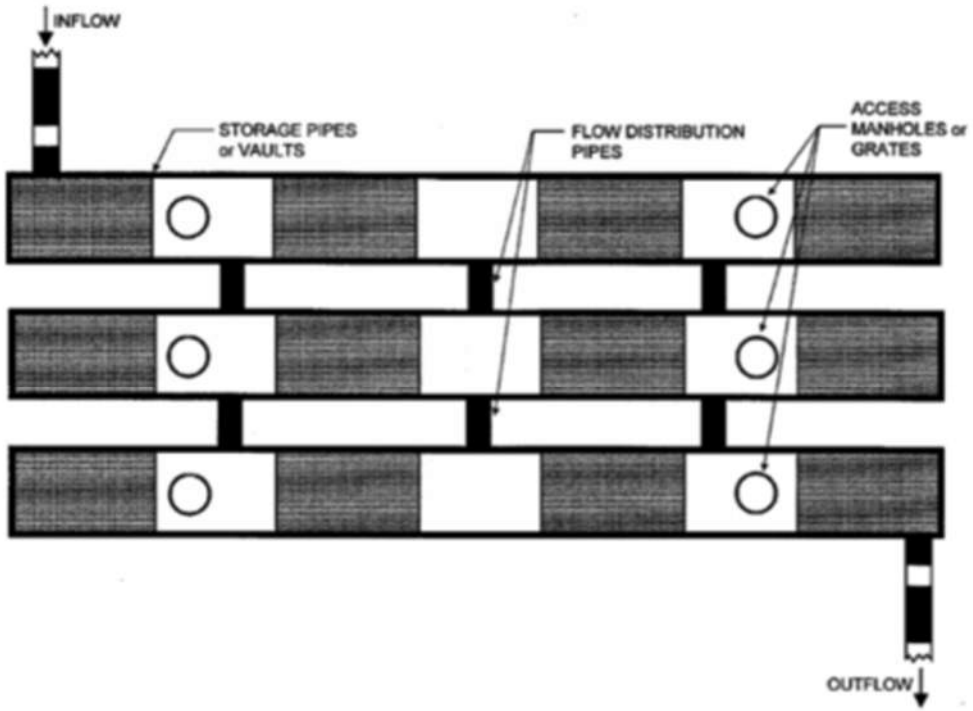
PROFILE

Adapted from MDE, 2000

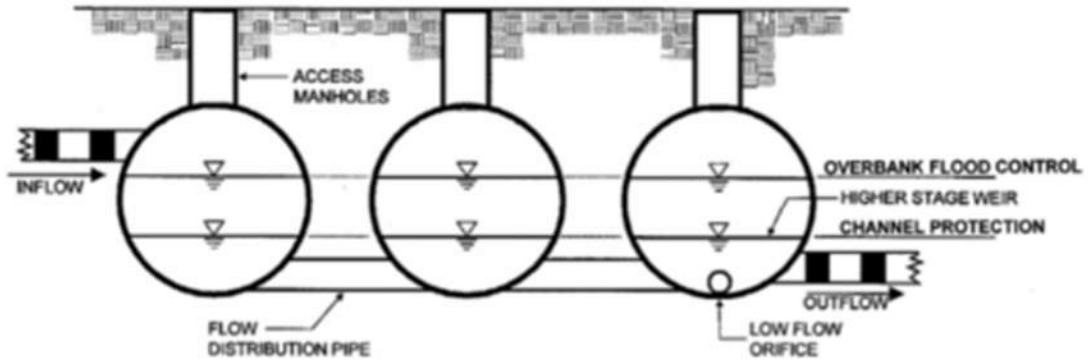
RUNOFF VOLUME

UNDERGROUND INFILTRATION SYSTEM

Figure 7-3 Underground Storage Vault



PLAN VIEW



TYPICAL SECTION

STORMWATER – RIDEM & SYNTHETIC TURF

RIDEM
PREAPPLICATION MEETING JULY 2024

CONTACTED RIDEM STORMWATER
SEPTEMBER 2023

<u>SYNTHETIC TURF FIELDS DESIGNED BY PARE PERMITTED BY RIDEM FWW</u>

CASS PARK – WOONSOCKET

EAST PROVIDENCE

NORTH KINGSTOWN

LINCOLN HIGH SCHOOL

MAX READ PAWTUCKET

JOHNSTON HIGH SCHOOL

SMITHFIELD HIGH SCHOOL

CUMBERLAND HIGH SCHOOL

BUCKLIN PARK PROVIDENCE

STATE OF RHODE ISLAND
Department of Environmental Management

PROPOSED STORMWATER – OPERATION AND MAINTENANCE

OPERATION AND MAINTENANCE

TYPICAL MAINTENANCE REQUIREMENTS

- REMOVE TRASH, LITTER, SEDIMENT, AND DEBRIS
- MOW GRASS
- MULCH

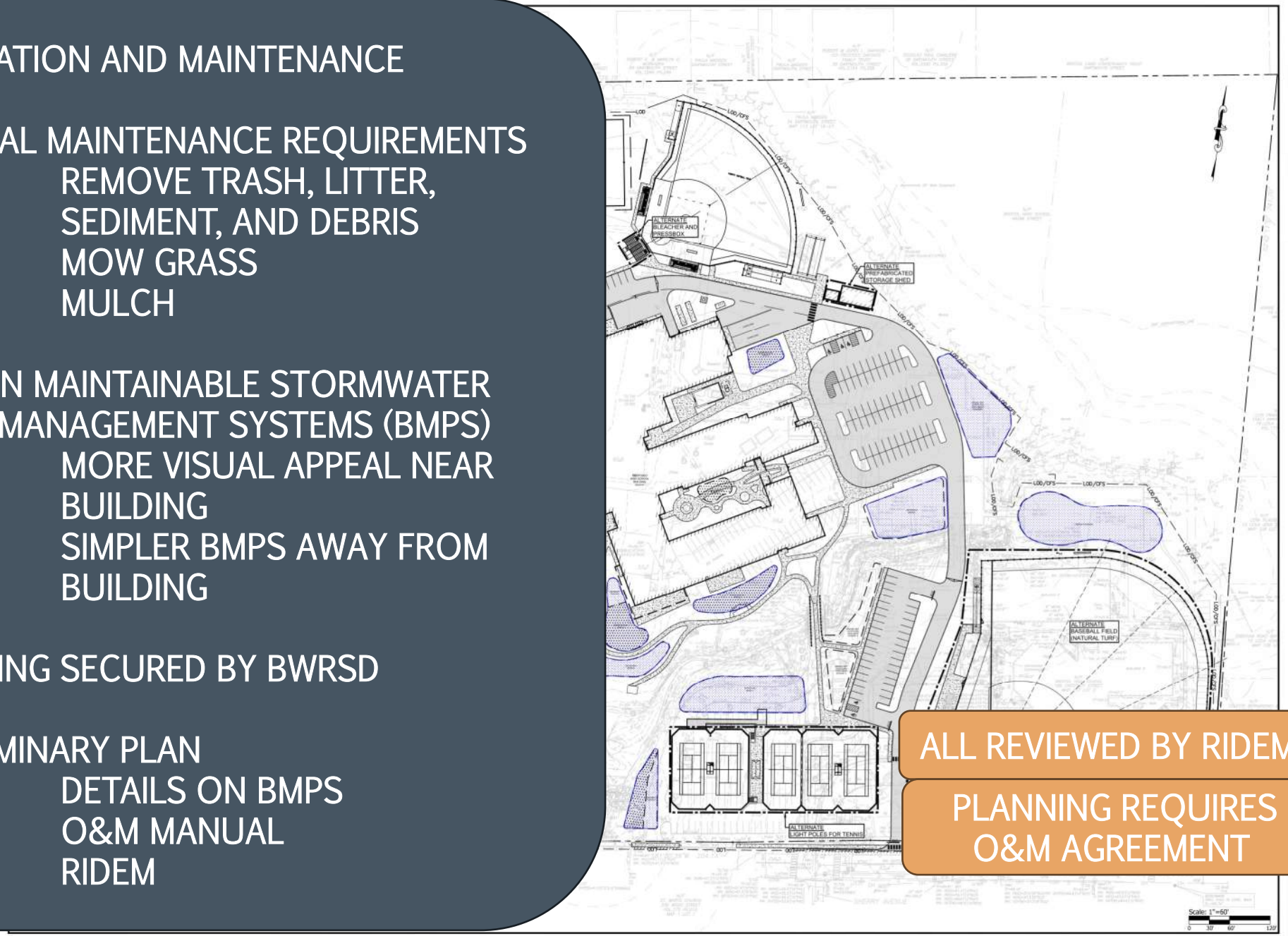
DESIGN MAINTAINABLE STORMWATER BEST MANAGEMENT SYSTEMS (BMPS)

- MORE VISUAL APPEAL NEAR BUILDING
- SIMPLER BMPS AWAY FROM BUILDING

FUNDING SECURED BY BWRSD

PRELIMINARY PLAN

- DETAILS ON BMPS
- O&M MANUAL
- RIDEM



ALL REVIEWED BY RIDEM

PLANNING REQUIRES O&M AGREEMENT

ATHLETIC PROGRAM

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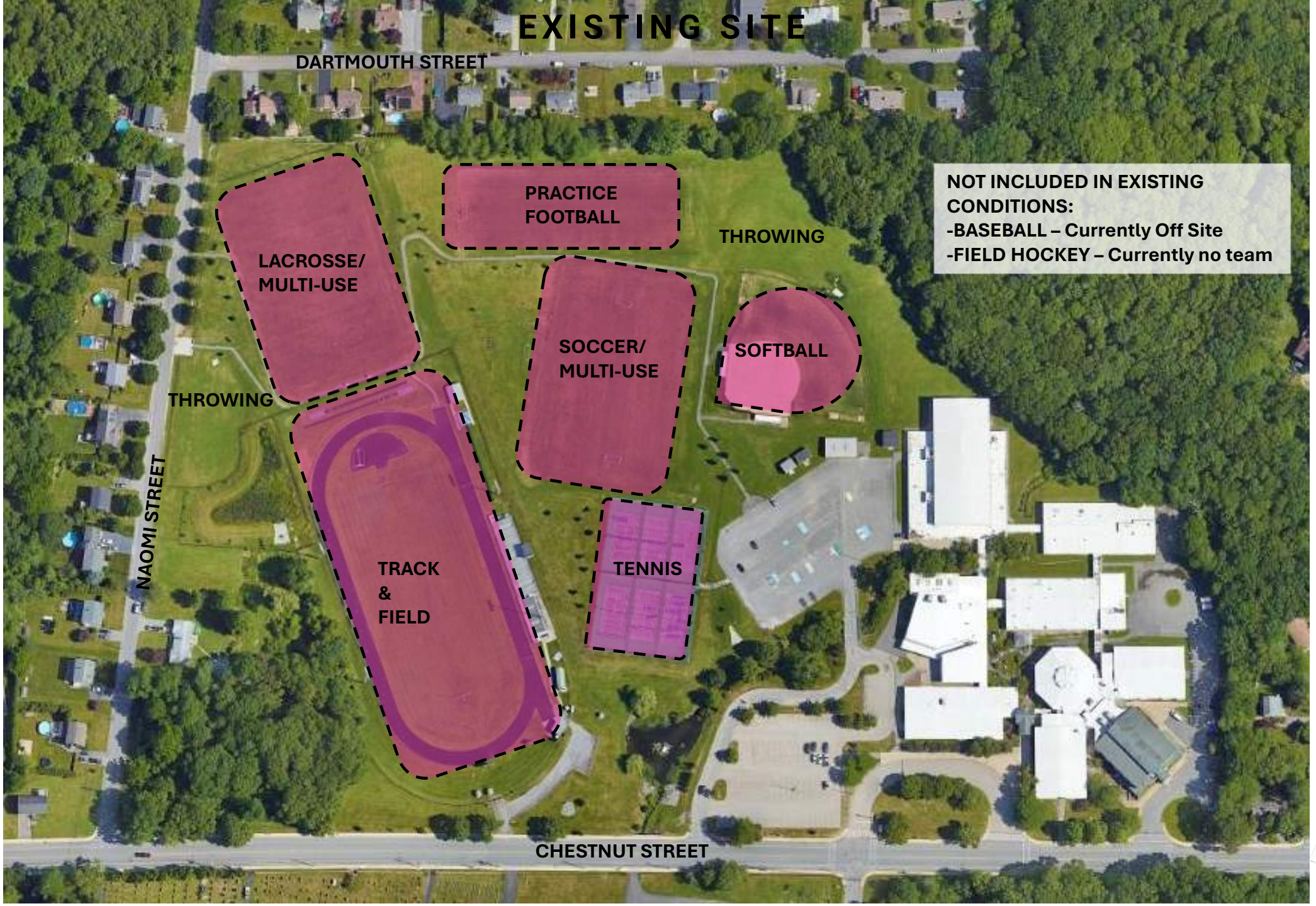
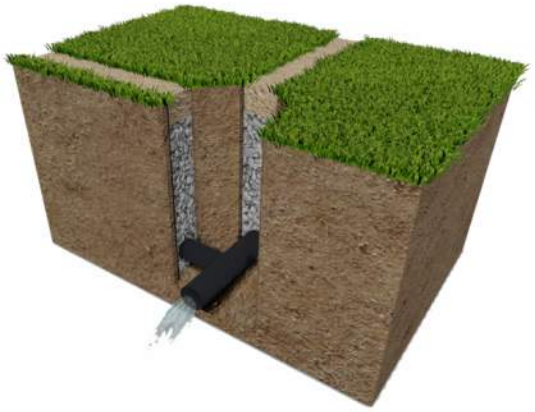

EXISTING SITE
DARTMOUTH STREET
PRACTICE FOOTBALL
LACROSSE/ MULTI-USE
THROWING
SOCCER/ MULTI-USE
SOFTBALL
THROWING
NAOMI STREET
TRACK & FIELD
TENNIS
CHESTNUT STREET
NOT INCLUDED IN EXISTING CONDITIONS:
-BASEBALL – Currently Off Site
-FIELD HOCKEY – Currently no team


PROPOSED SITE
PRACTICE FOOTBALL
SOFTBALL
EXISTING LACROSSE/ MULTI-USE
THROWING
NOT INCLUDED IN -PURPOSED -ONE TENNIS COURT
NEW MT HOPE HIGH SCHOOL
THROWING
TRACK & SYNTHETIC FIELD -SOCCER/ -LACROSSE/ -FOOTBALL - Potential for new FIELD HOCKEY/
NAOMI STREET
BASEBALL [ALTERNATE]
TENNIS
CHESTNUT STREET

MHHS PROGRAM NEEDS FOR SYNTHETIC TURF

- ✓ Increased playing time for all sports
- ✓ Not limited by climate - teams can begin practicing in early spring
- ✓ Allows students more field time to develop skills
- ✓ Overflow use for sports without turf such as baseball & softball
- ✓ Can allow for other sports to be added to the program (ie. field hockey)
- ✓ Reduces the need to cancel and reschedule games
- ✓ Allows the physical education program to have an outdoor space year round
- ✓ Flag team and Celebrated MHHS band use without getting goose poop and dirt on instruments
- ✓ Can create revenue when not being used by the high school
- ✓ Community use for kids and adult leagues when available (currently cannot host Pop-Warner or Lincoln Club)
- ✓ Baseball's location is dependent on synthetic turf (Guiteras or MHHS)

	Low-End Grass Field	High-End Grass Field	Synthetic Turf Field
Installation Cost	$300,000-400,000	$700,000-800,000	$1,200,000-1,600,000
Annual Maintenance Cost	$35,000-40,000	$50,000-55,000	$15,000 -18,000
Hours of Use	550-850	850	3,000+



LOW END GRASS

Construction Cost
$400,000

Annual Maintenance
$40,000

10-Year Total
$800,000

Annual Hrs of Use
550

Cost/Hour of Use
$127.27

HIGH END GRASS

Construction Cost
$800,000

Annual Maintenance
$55,000

10-Year Total
$1,350,000

Annual Hrs of Use
850

Cost/Hour of Use
$158.82

SYNTHETIC TURF

Construction Cost
$1,600,000

Annual Maintenance
$18,000

10-Year Total
$1,780,000

Annual Hrs of Use
3000+

Cost/Hour of Use
$59.33

EVOLUTION OF SYNTHETIC TURF

Generation 1- 1960's

- Nylon fibers (abrasive)
- Short pile heights
- Glued over asphalt or concrete
- Small cushion layer

Generation 2- 1970's

- Polypropylene fibers (less abrasive)
- Short pile heights
- Sand Infill
- Small cushion layer

Generation 3- 2000's

- Introduction of softer Polyethylene fibers.
- Sand and rubber used to improved traction, safety and softness underfoot
- Tall pile height 2-2 1/2"

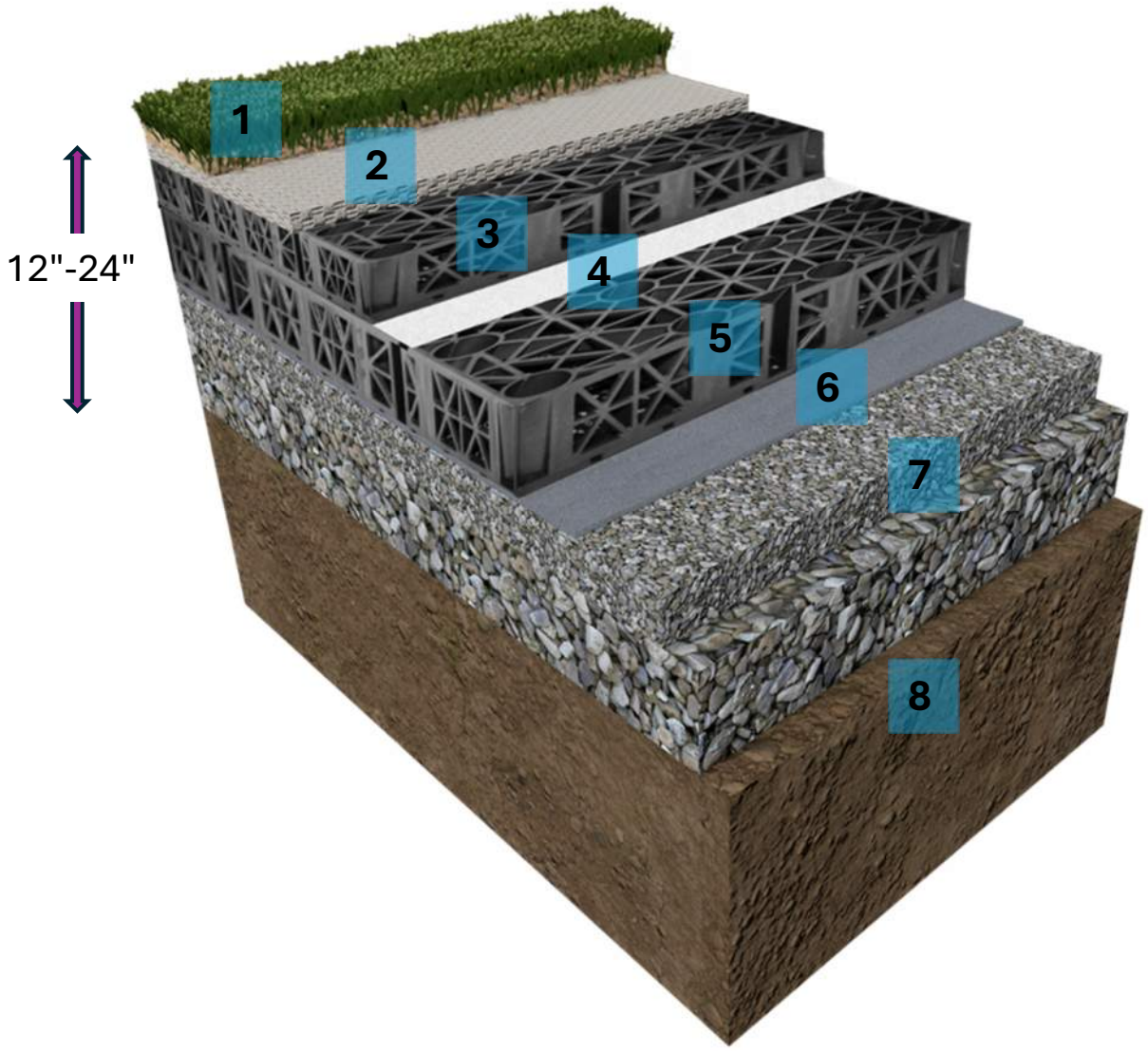
Generation 4- 2010's

- Cont. use of Polyethylene fibers.
- Sand Rubber infill
- Tall Pile Heights 2-2 ½"
- Introduction of shock pad for improved safety

Generation 5- Present

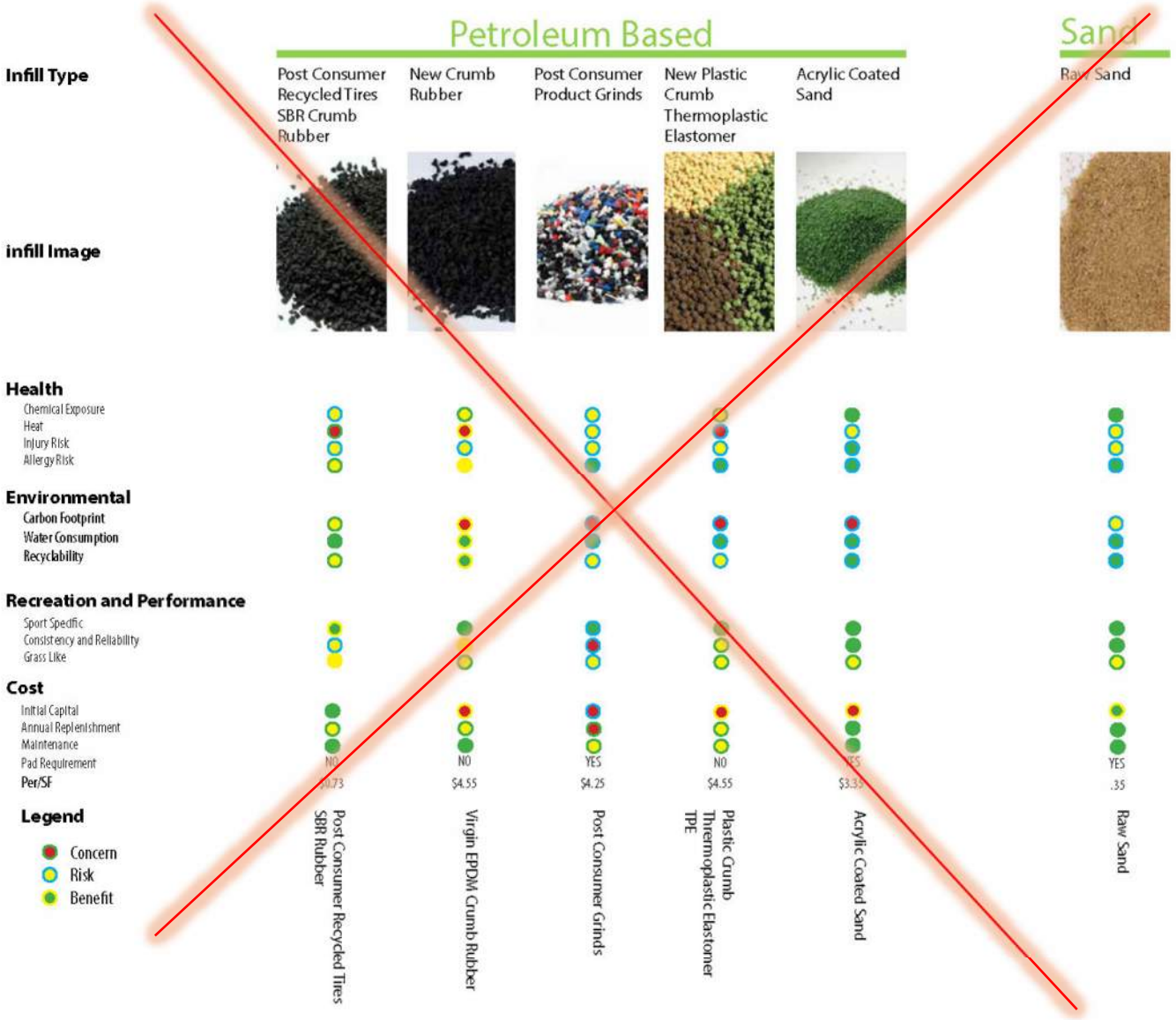
- Cont. use of Polyethylene fibers.
- Sand and Alternative infills
- Tall Pile Heights 1.75"-2"
- Performance pad for safety and fine tuning of systems based on field and biometric testing

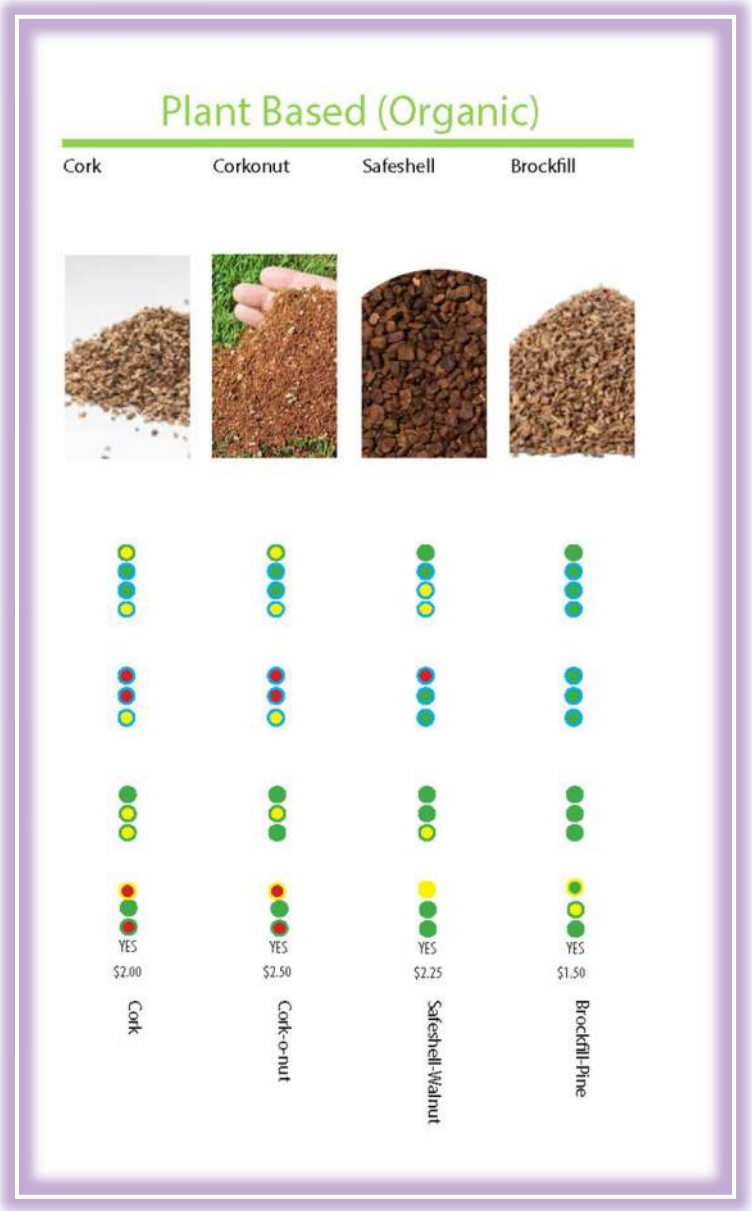
SYNTHETIC TURF SYSTEM



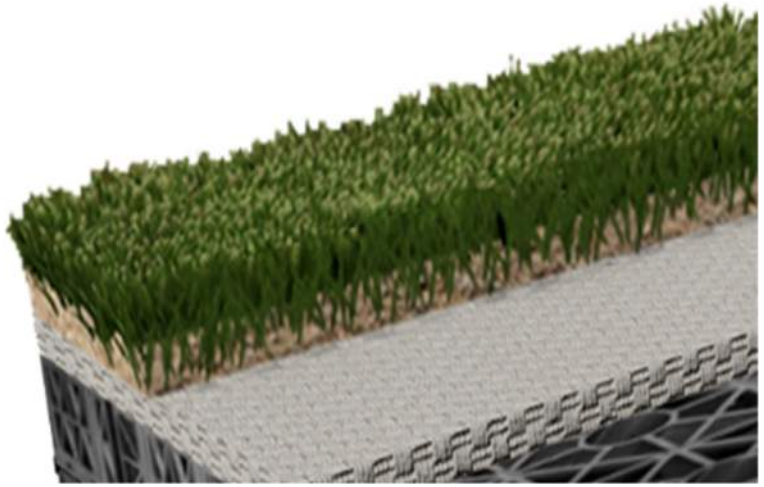
1. CARPET WITH INFILL
2. SHOCK PAD
3. AIR DRAIN (12-24 inches)
4. GEOTEXTILE
5. STORMWATER MODULE
6. GEO-MEMBRANE
7. STONE BASE
8. SUBGRADE

SYNTHETIC TURF INFILL SYSTEMS





ENVIRONMENTAL CONCERNS



1. SYNTHETIC TURF– Based on RI legislate State of Rhode Island General Assembly Legislation (2024-H 7356Aaa, 2024-S 2152Aaa) PFAS will not be allowed in synthetic turf.

2. INFILL – This project will have an organic-based material made from natural material. Recycled crumb rubber will not be used.

3. BACTERIA – The UV rays and higher temps in an exterior environment does not allow for bacteria to live very long.

ATHLETE SAFETY

Gmax

HIC (Head Injury Criteria)

Vertical Deformation

Force Reduction

Rotational Resistance

Abrasion

Ball Rebound/Ball Roll

Planarity

Infill Depth

Maintenance

Equipment

Any synthetic turf system designed as part of the Mt. Hope High School project will be required to meet the standards of World Rugby Regulation 22, FIH and FIFA.

These organizations have combined resources known as “One Turf” to identify best practices for multi-use, community-based fields in the areas of player welfare, performance, sustainability and longevity.

These standards and tests are derived from and are also used for certification of natural grass fields.

The benchmark for athletic safety testing is a high-end natural grass field.

There is much more to athlete safety than the surface they play on. <u>Maintenance and Athlete Equipment are essential to Athlete Safety</u>

IRRIGATION WELL

- ❑ **Well test locations Identified (2 locations)**
- ❑ **Well test scheduled week of Oct 28th**
  (Subject to SDR11 Lead Time)
- ❑ **Well test to evaluate water condition and capacity**
- ❑ **Well design based on findings**


THANK YOU
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