

Town of Princeton

Public Safety Building Study



*“DESIGNING AND BUILDING
FOR THE NEXT 50 YEARS”*



*Public Informational Presentation
February 25, 2021*



CAOLO & BIENIEK
ASSOCIATES, INC.

Study Scope of Work

SPACE NEEDS STUDY / DEVELOP BUILDING PROGRAM

- Inventory of Existing Space & Equipment
- Develop Current & Future Space Needs For Staff & Equipment

EXISTING BUILDING ANALYSIS

- Hazardous Material Inspection and Testing

SITE ANALYSIS

- Site Survey
- Geotechnical Inspection & Test Borings

CONCEPTUAL DESIGNS

- Option A – New Construction - Conceptual Building Program
- Option B – New Construction - Reduced Building Program
- Option C – Partial Reuse of the Boylston Ave Center School

PROJECT BUDGET ESTIMATES

- Construction Cost
- Soft Costs (Professional fees, Public bidding, Permitting)
- Furniture, Fixtures and Equipment (FF&E)
- Communication / Data Equipment
- Contingencies
- Compare Recent Public Safety Building Projects



SPACE NEEDS STUDY / DEVELOP BUILDING PROGRAM

SPACE NEEDS STUDY / DEVELOP BUILDING PROGRAM

- Interviews with Police and Fire Department
- Review current department operations
- Apply Industry Standard space allocations for staff and equipment.
- Area required by codes & regulatory agencies
- Allocation for future staffing, equipment & operations

Police Department - Key Building Program Factors:

- Security & safety of staff & public
- DPH compliant booking & holding areas
- Interview space
- Evidence Handling – “Chain of Custody”

Fire Department - Key Building Program Factors:

- Health & safety of staff & public
- Apparatus & equipment indoor facilities
- Training Space/Emergency Operation Center (EOC)
- Office & file space
- Equipment & Staff Decontamination Area

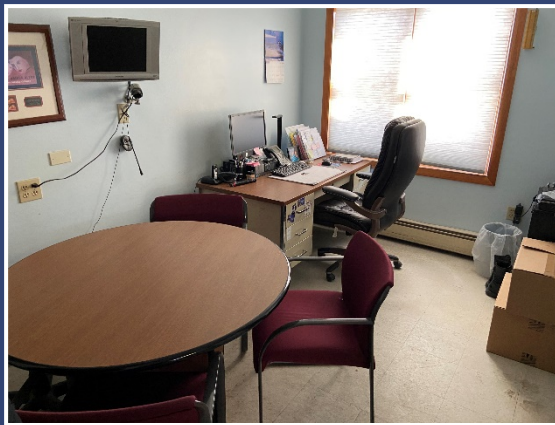
Staff & Space Summary DRAFT							Town Of Princeton				
Option B - New Facility Reduced Building Program							Shared Public Safety Space				
							February 21, 20220				
							Proposed	Conceptual	Proposed	Conceptual	
							sq. ft.	Design	sq. ft.	Design	
100 - Administration											
101 - Admin Offices											
Office - Fire Chief	1	1	Office	1	First	247	180	231	125	147	
Office - Fire Admin & Captains	1	1	Shared Office	1	First	0	450	253	125	101	
									250	148	
200 - Operations											
201 - Vehicles & Equipment											
Apparatus Bay (3 Drive Thru Bays)	34	34	Apparatus Garage	0	First	2069	2,700	3990	250	212	
SCBA	0	0	Bay equipment	0	First	off bays	120	91	150	87	
Decontamination with Laundry	0	0	Bay equipment	0	First	off bays	200	176	150	96	
Hose/Storage	0	0	Bay equipment	0	First	in bays	0	0			
Medical Storage/Equipment	0	0	Bay storage	0	First	0	120	101			
Turn-out Gear	10	10	Bay Storage	0	First	0	50	76			
Hose Drying	0	0	Bay equipment	0	First	in bays	0	0			
General Bay Storage	0	0	Off Bays	0	First	off bays	100	91			
300 - Common Areas											
301 - Lockers, Toilets & Showers											
Bunk rooms (2)	4	4	Beds	4	First	0	200	214	550	528	
<i>See Shared Space Summary for Locker Rms</i>										250	0
400 - Building Services											
401 - Service & Storage											
Office Storage	0	0	Storage		First		50	83			
600 - Circulation											
601 - Fixed Circulation											
Corridors	0	0	Circulation		First	FD dedicated	0	386	70.50	260.70	
Staff & Space Requirements										2,976	2,868
Staff Totals	38	38				Existing Building Actual Square Footage:	2,316				
Staff incl. Vacancies	Varies	0				Building Grossing Factor (10%)	417.00	569.20			
							Total New Building Square Footage:	4,587	6,261	3,212	3,570



CURRENT POLICE & FIRE STATION #1 CONDITIONS



Gun Locker in Office Closet



Interview Room part of Office



Office Space In Truck Bays



Unsafe Prep Areas



Files in General Storage Room



Lack of Clearance in Bays



Bunk Space In Bays



Trucks Don't Fit In Bays

SPACE NEEDS STUDY / DEVELOP BUILDING PROGRAM



Modern Apparatus Bays



Police Evidence Processing Center



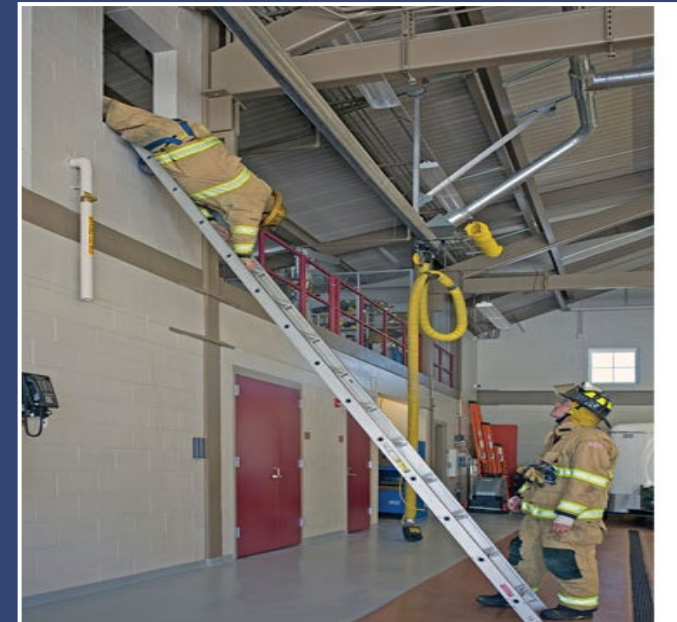
Police Booking Area, Cells & Integration



Training Room / Emergency Operations Center



Communications



Fire Department Training in Bays

EXISTING BOYLSTON AVE SCHOOL FACILITY ANALYSIS

Required Code Upgrades:

- Correct means of egress at stair towers
- Fire rating at Mech & Electrical Rooms
- Accessible entrances and exits
- Accessible rest rooms
- Lack of fire ratings between floors
- Emergency Lighting
- Emergency electrical panels noncompliant
- Fire detection and alarm systems
- Domestic Water Source
- Seismic Structural Upgrades
- Energy Code requirements
- Lack of fire protection system (sprinklers)



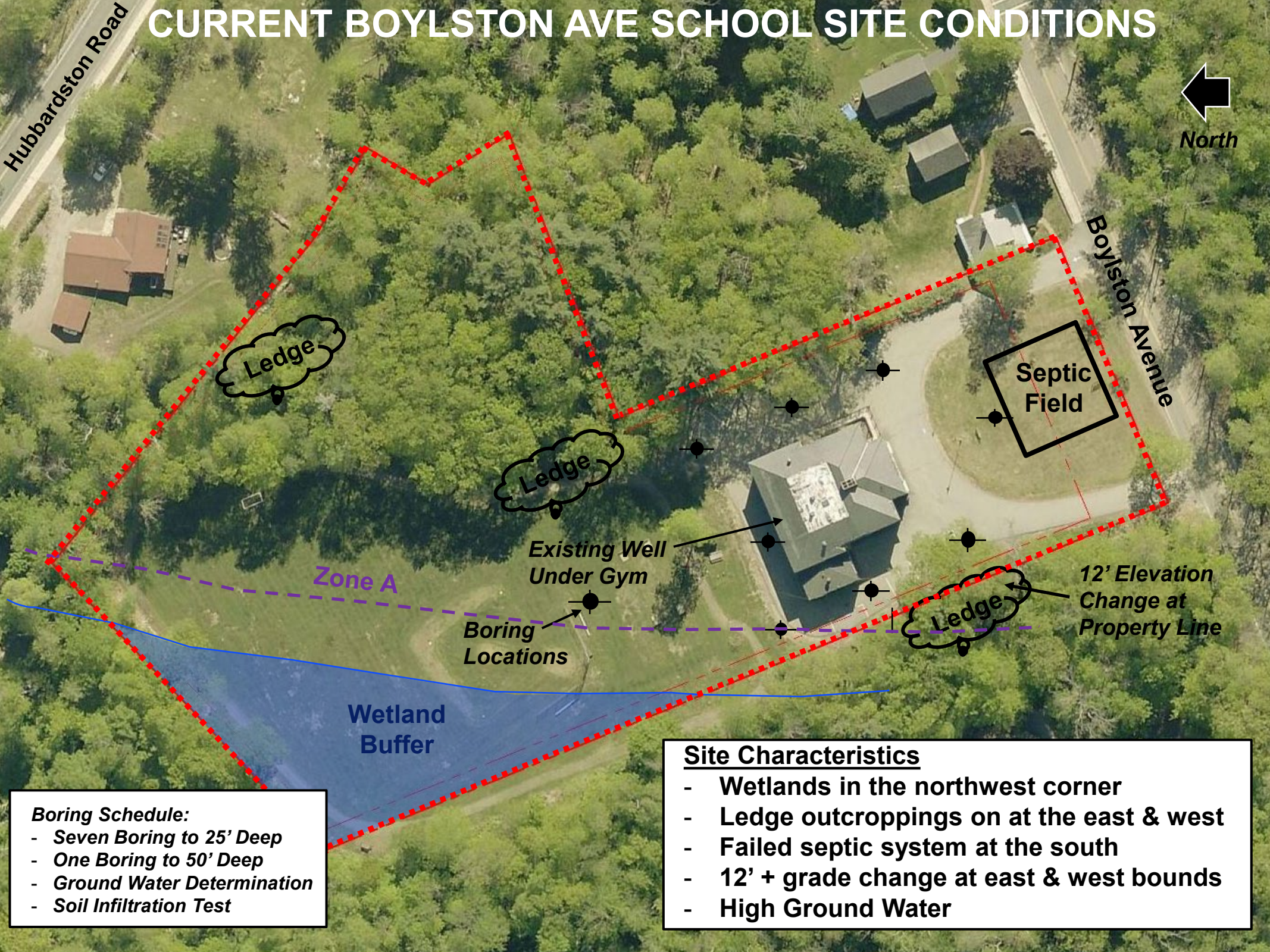
EXISTING BOYLSTON AVE SCHOOL FACILITY ANALYSIS

General Building Upgrades:

- Structural deficiencies at addition
- Foundation cracks & water infiltration
- Building Repointing (stone)
- Replace HVAC System
- Replace plumbing distribution
- Replace Electrical System
- Communication / Data / IT
- Upgrade building finishes
- Exterior siding & wood trim
- Inefficient exterior windows & doors
- Hazardous Building Materials Abatement



CURRENT BOYLSTON AVE SCHOOL SITE CONDITIONS



Ledge

Ledge

Ledge

Septic Field

Existing Well Under Gym

Boring Locations

12' Elevation Change at Property Line

Zone A

Wetland Buffer

Boring Schedule:

- Seven Boring to 25' Deep
- One Boring to 50' Deep
- Ground Water Determination
- Soil Infiltration Test

Site Characteristics

- Wetlands in the northwest corner
- Ledge outcroppings on at the east & west
- Failed septic system at the south
- 12' + grade change at east & west bounds
- High Ground Water

DESIGN OPTION “A”

CONCEPTUAL FULL BUILDING PROGRAM

NEW CONSTRUCTION

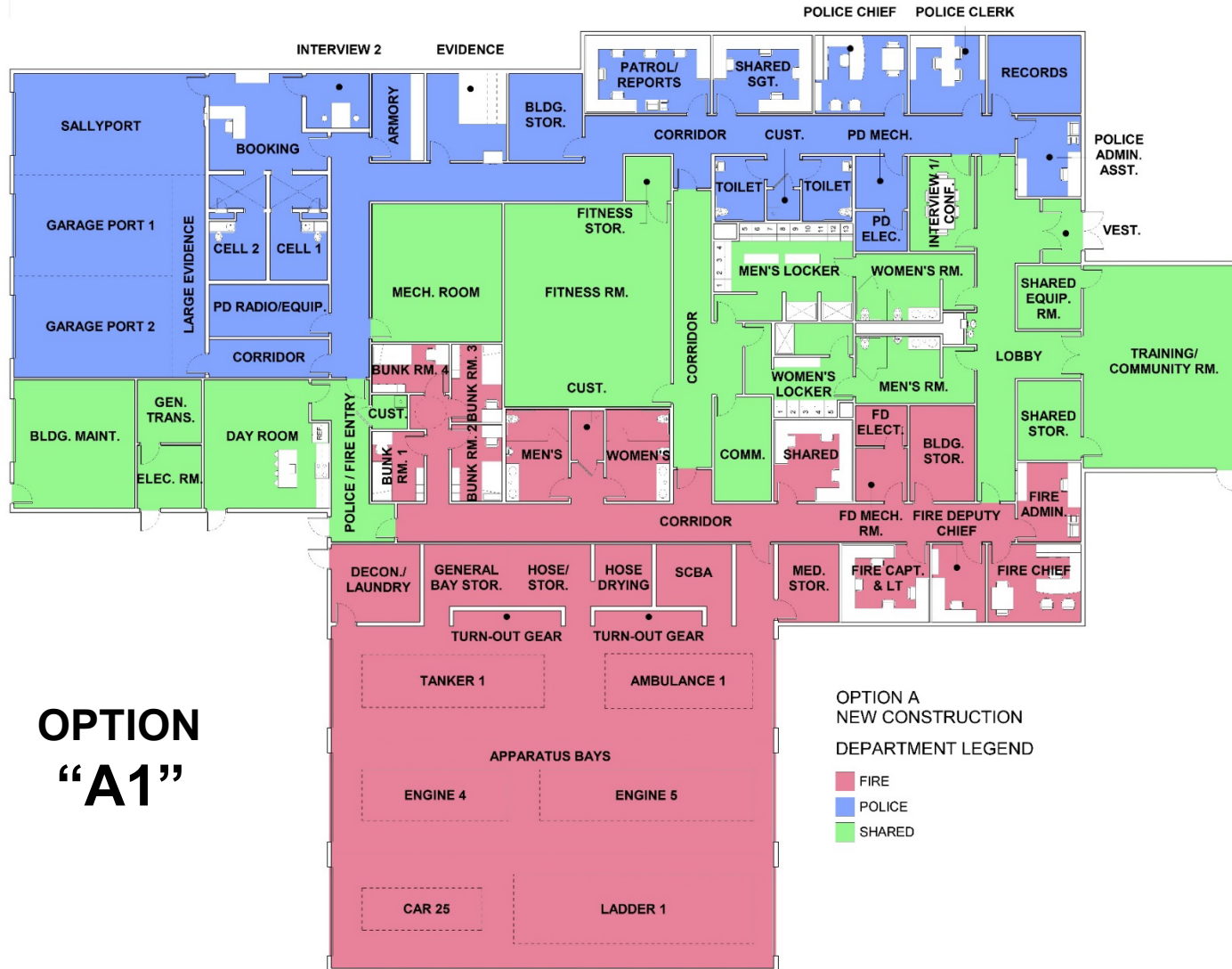


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CONCEPTUAL DESIGN OPTION "A" Conceptual Building Program



OPTION "A1"

OPTION "A" PROGRAM

- 18,642 square feet
- Estimated cost: \$13,061,917.00
- Oversized for existing site

APPROVED BUILDING PROGRAM REDUCTIONS

- Delete one Police Garage Bay
- Breakroom Reduction
- Delete one Bunk Room
- Shared/Reduce Rooms
- Shared/Combined Office Space
- Combined Mechanical, Electrical & Utility Spaces

Building Reduction of 3,146 sq. ft.



DESIGN OPTION “C”

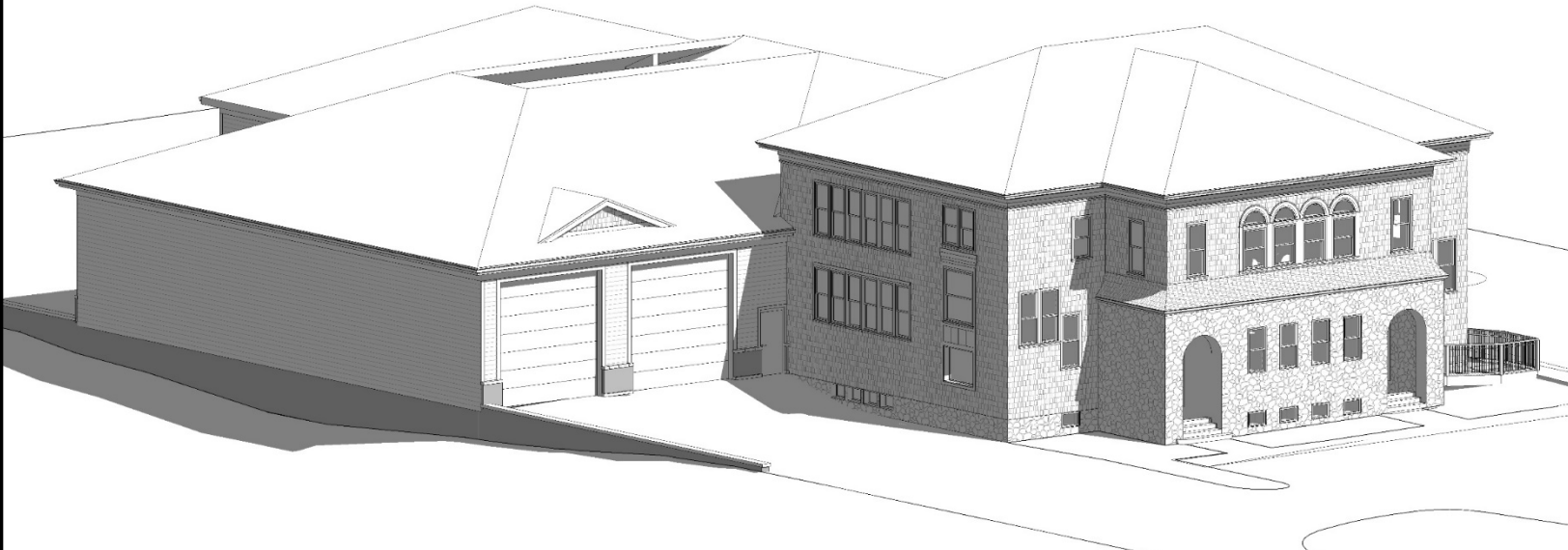
PARTIAL REUSE of the BOYLSTON AVE CENTER SCHOOL BUILDING



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SOUTH WEST PERSPECTIVE

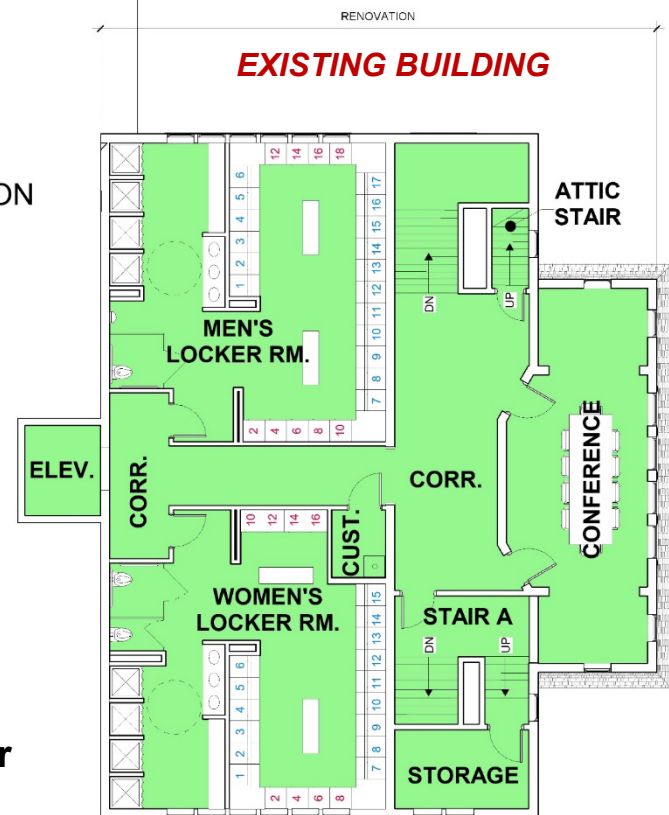
DESIGN OPTION "C"

Basement Level:

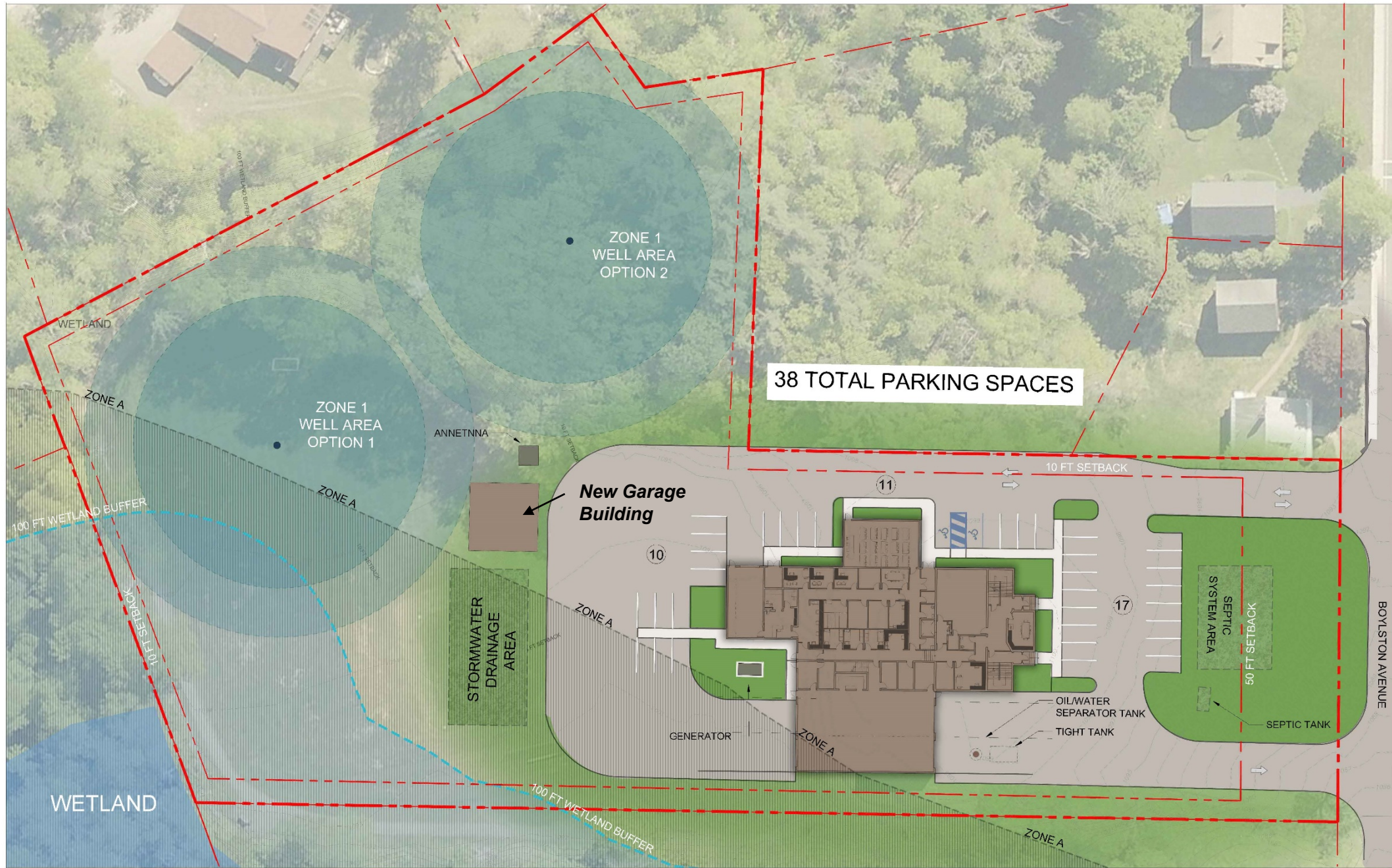
- Radio / Communication Room
- Elevator machine Room
- Electrical Room
- Electrical Transfer Switch
- Mechanical Room
- Storage

OPTION C
RENOVATION / ADDITION
LEVEL 2

OPTION
"C"
Second Floor



CONCEPTUAL DESIGN OPTION "C" Reuse of the Center Building



38 TOTAL PARKING SPACES

New Garage Building

ZONE 1 WELL AREA OPTION 1

ZONE 1 WELL AREA OPTION 2

SEPTIC SYSTEM AREA

SEPTIC TANK

OIL/WATER SEPARATOR TANK
TIGHT TANK

GENERATOR

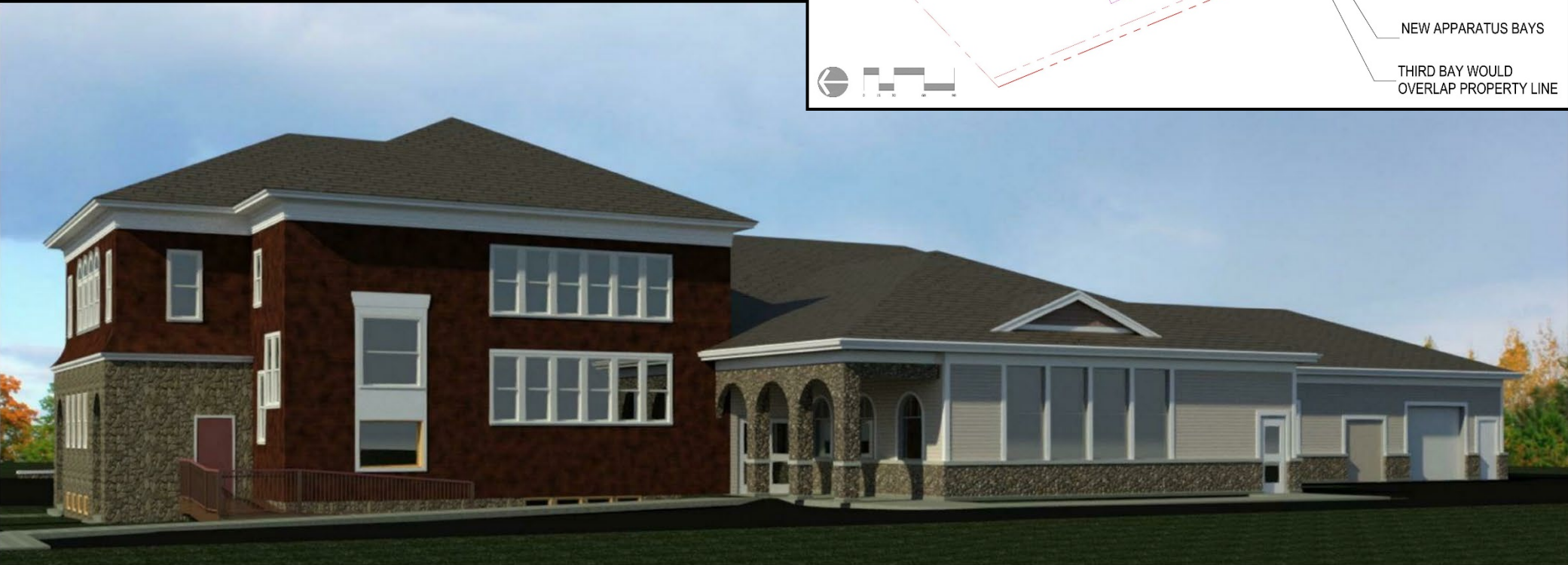
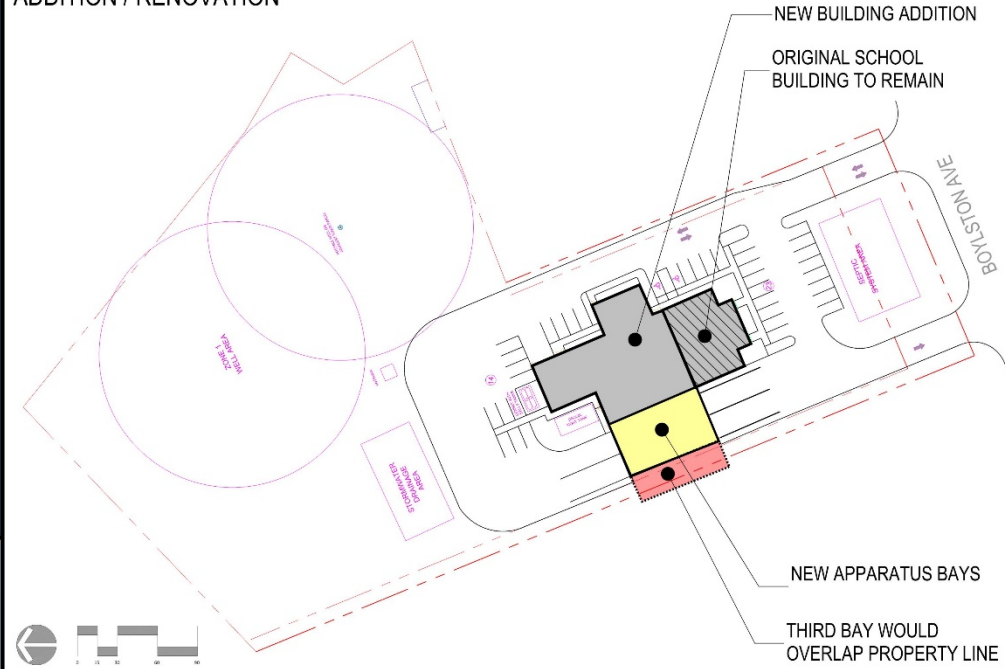
STORMWATER DRAINAGE AREA

CONCEPTUAL DESIGN OPTION "C"

Center Building Design Challenges:

- Present First Floor 5' 0" Above Grade
- Four Floor Level minimum (4 Stop Elevator)
- Basement Low Headroom
- Egress Configuration is Non-Code Compliant
- Inefficient Layout: Multiple Stair Towers and Increased Corridor Square Footage
- Non Cohesive Layout – Dept. Spaces Separated
- Poor Site Circulation
- Central Location Onsite – Prevents 3 Bays

OPTION C ADDITION / RENOVATION



DESIGN OPTION “B”

REDUCED BUILDING PROGRAM

NEW CONSTRUCTION

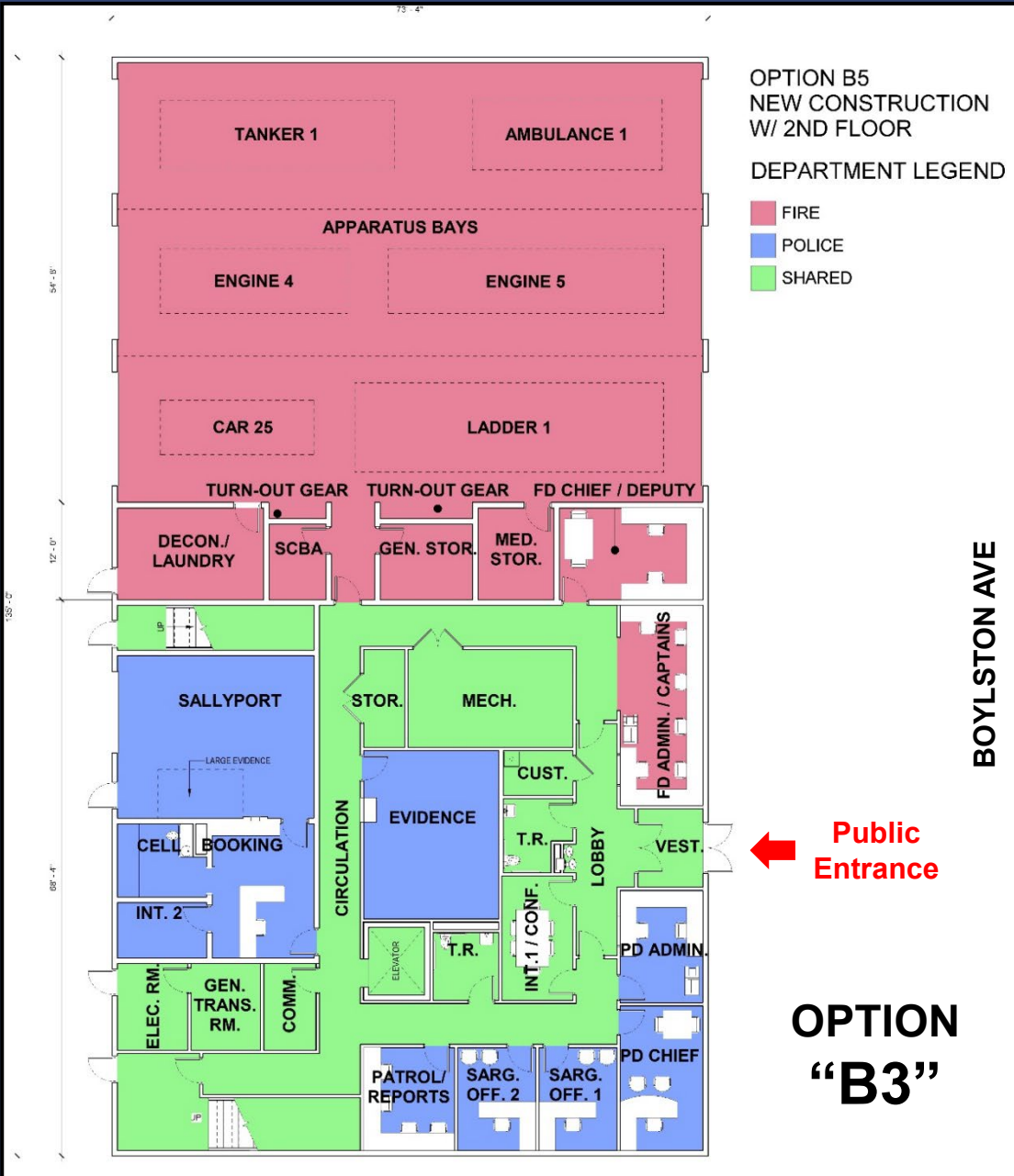


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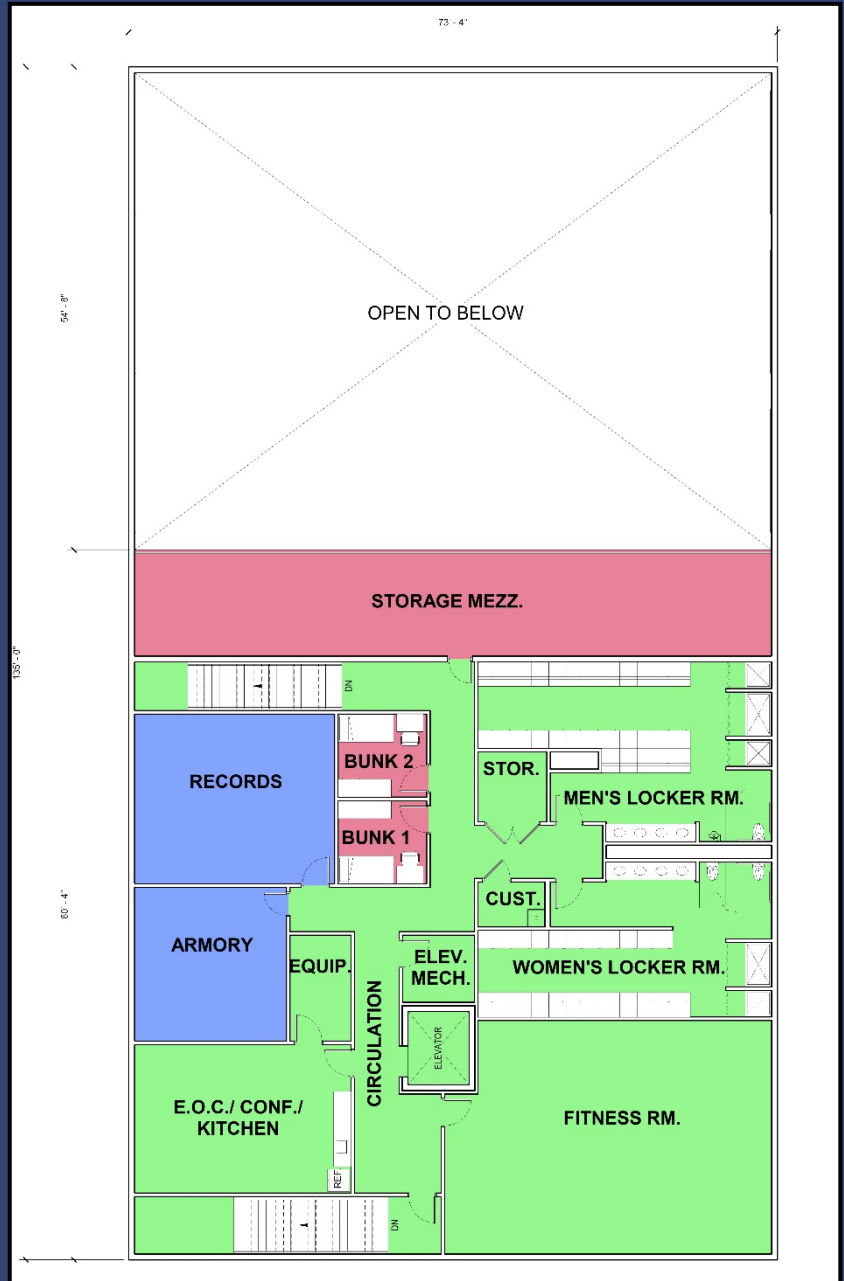
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CONCEPTUAL DESIGN OPTIONS "B3" New / Two Story



FIRST FLOOR

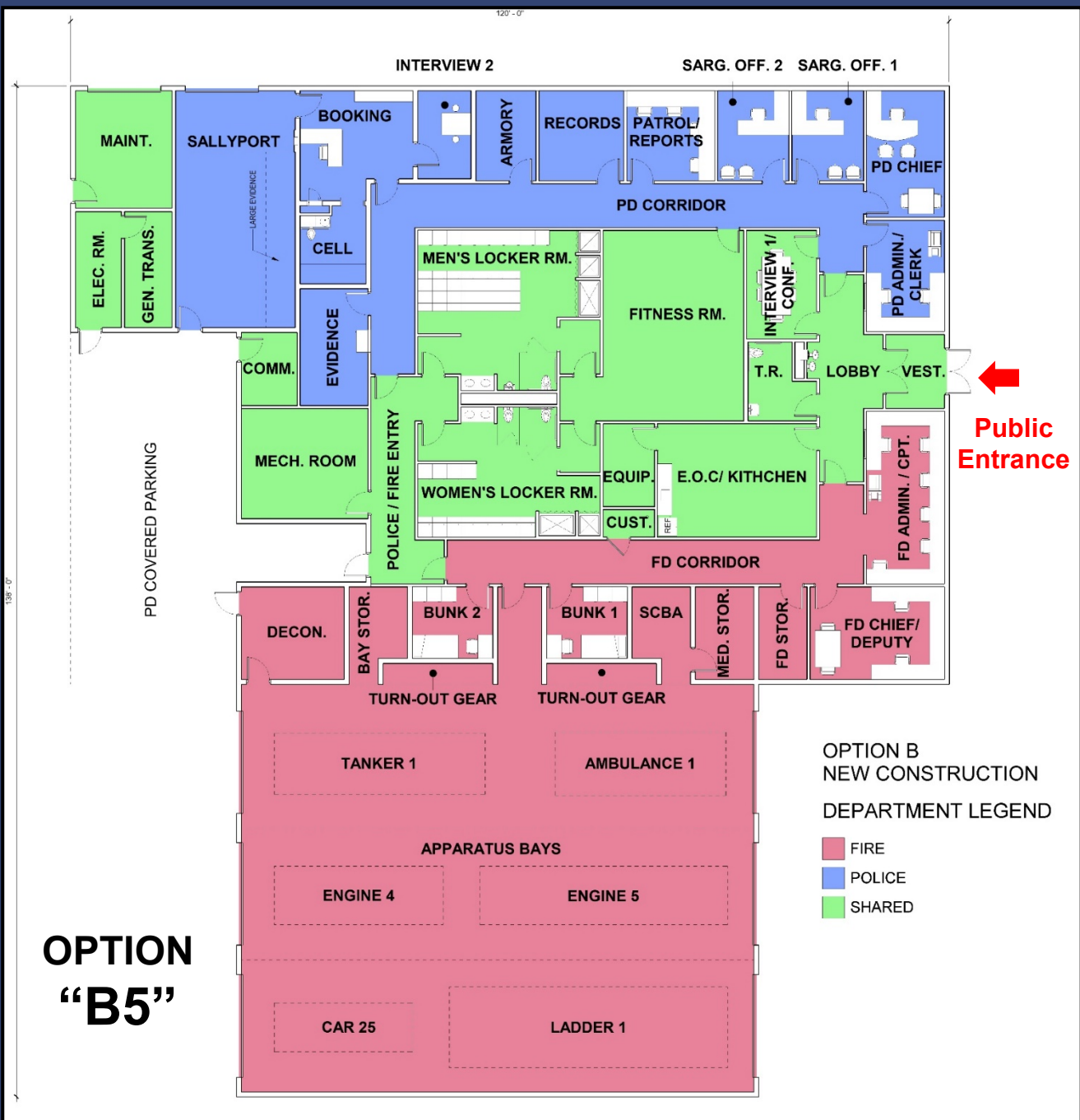


BASEMENT

OPTION
"B3"

BOYLSTON AVE

CONCEPTUAL DESIGN OPTIONS "B5" New Construction



OPTION "B5"

"B" OPTION DEVELOPMENT

- Develop a 50 Year Building Program
- Avoid Costly Elevators
- Increase Sq. Ft. Efficiency
- Contiguous Department Area

DESIGN OPTION “B11”

REDUCED BUILDING PROGRAM NEW CONSTRUCTION *‘Recommended Option’*

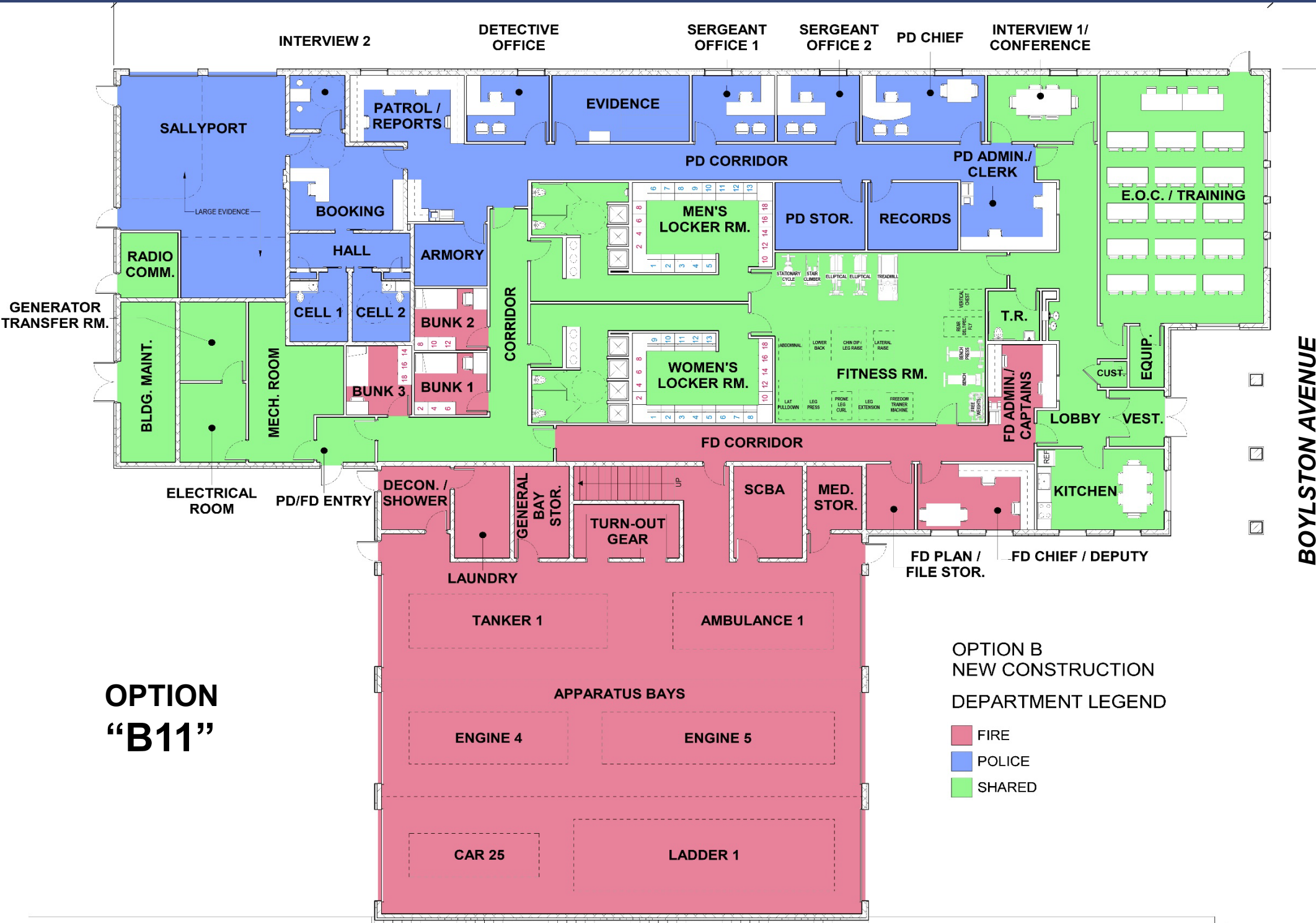


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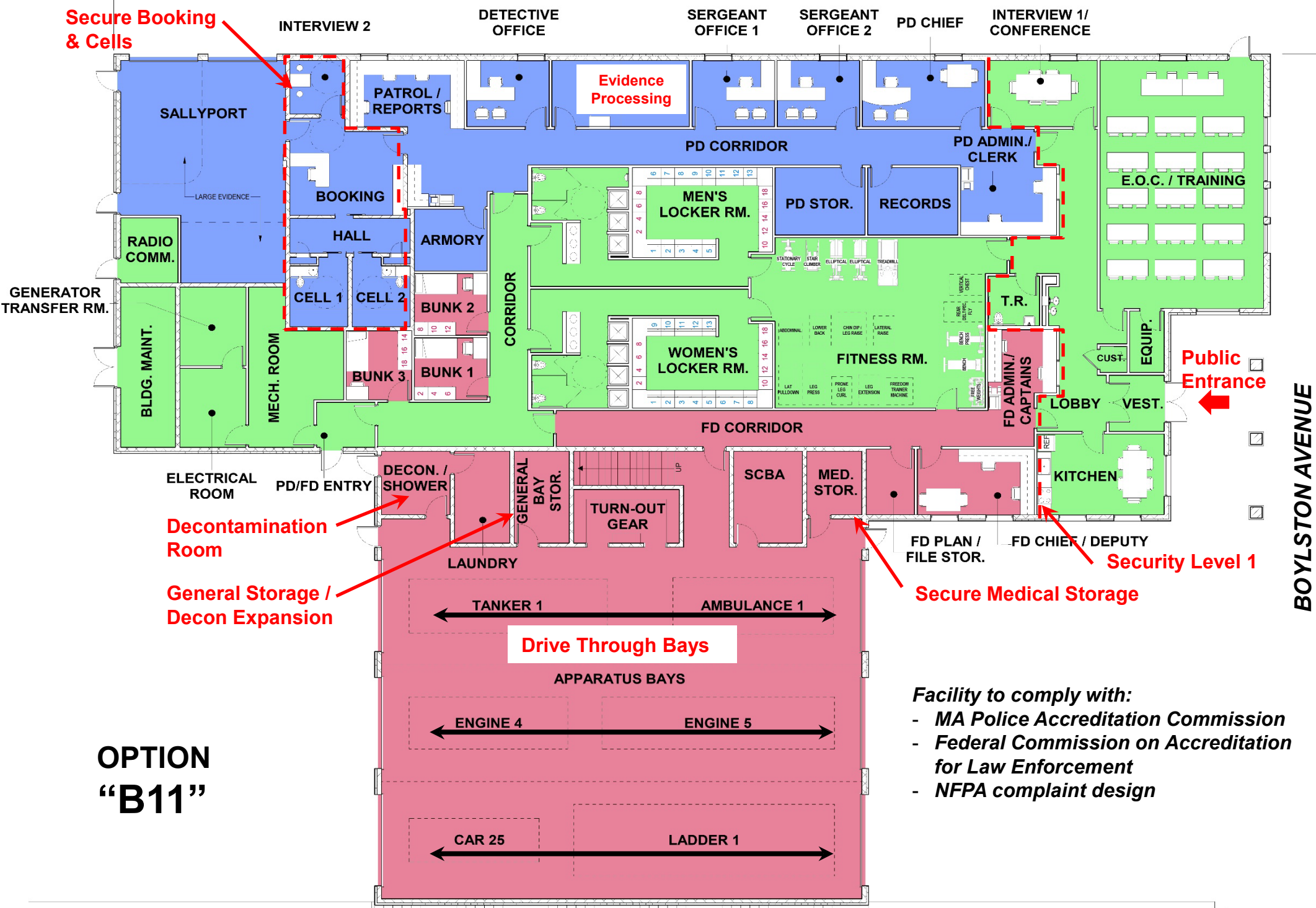
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CONCEPTUAL DESIGN OPTION "B11" New Construction

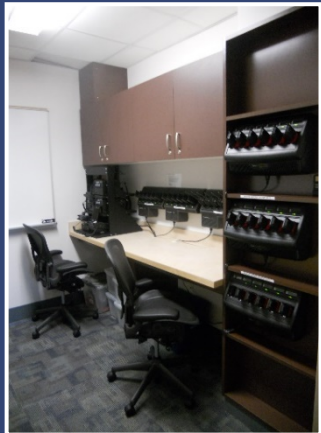
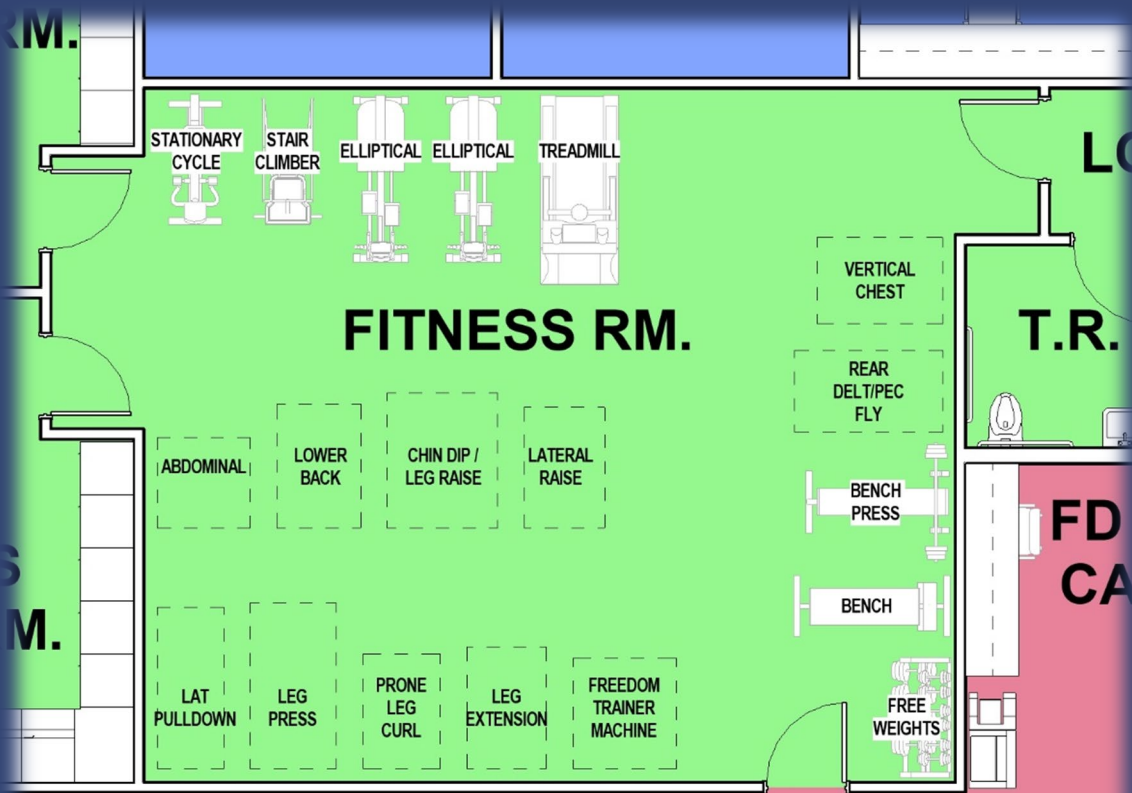


CONCEPTUAL DESIGN OPTION "B" New Construction

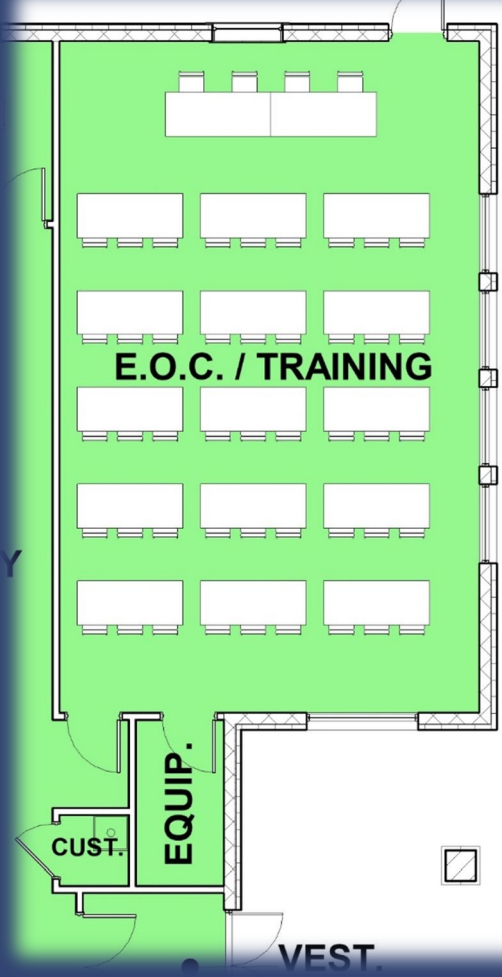


- Facility to comply with:**
- MA Police Accreditation Commission
 - Federal Commission on Accreditation for Law Enforcement
 - NFPA complaint design

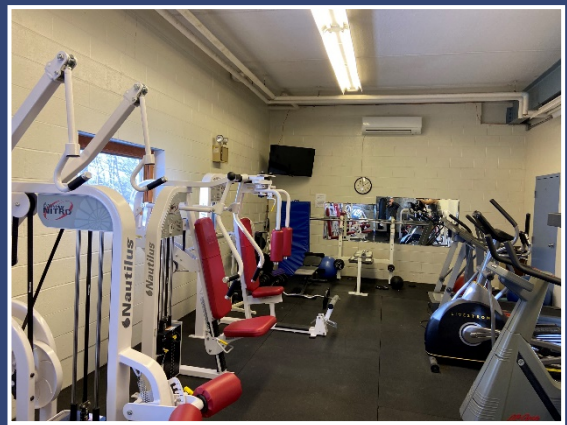
CONCEPTUAL DESIGN OPTION "B"



COMMUNICATION / EQUIPMENT ROOM

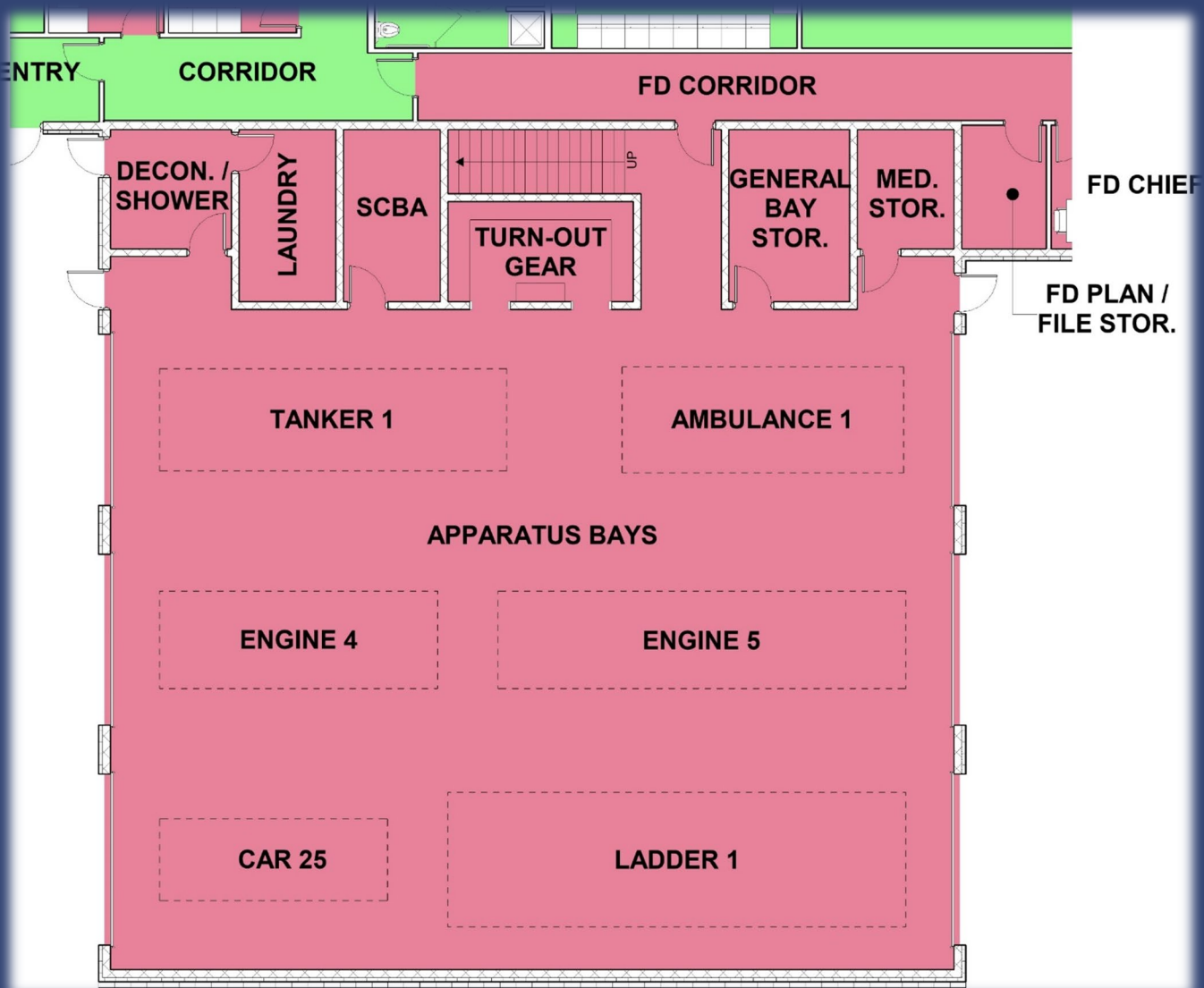


EXISTING PRINCETON FITNESS EQUIPMENT

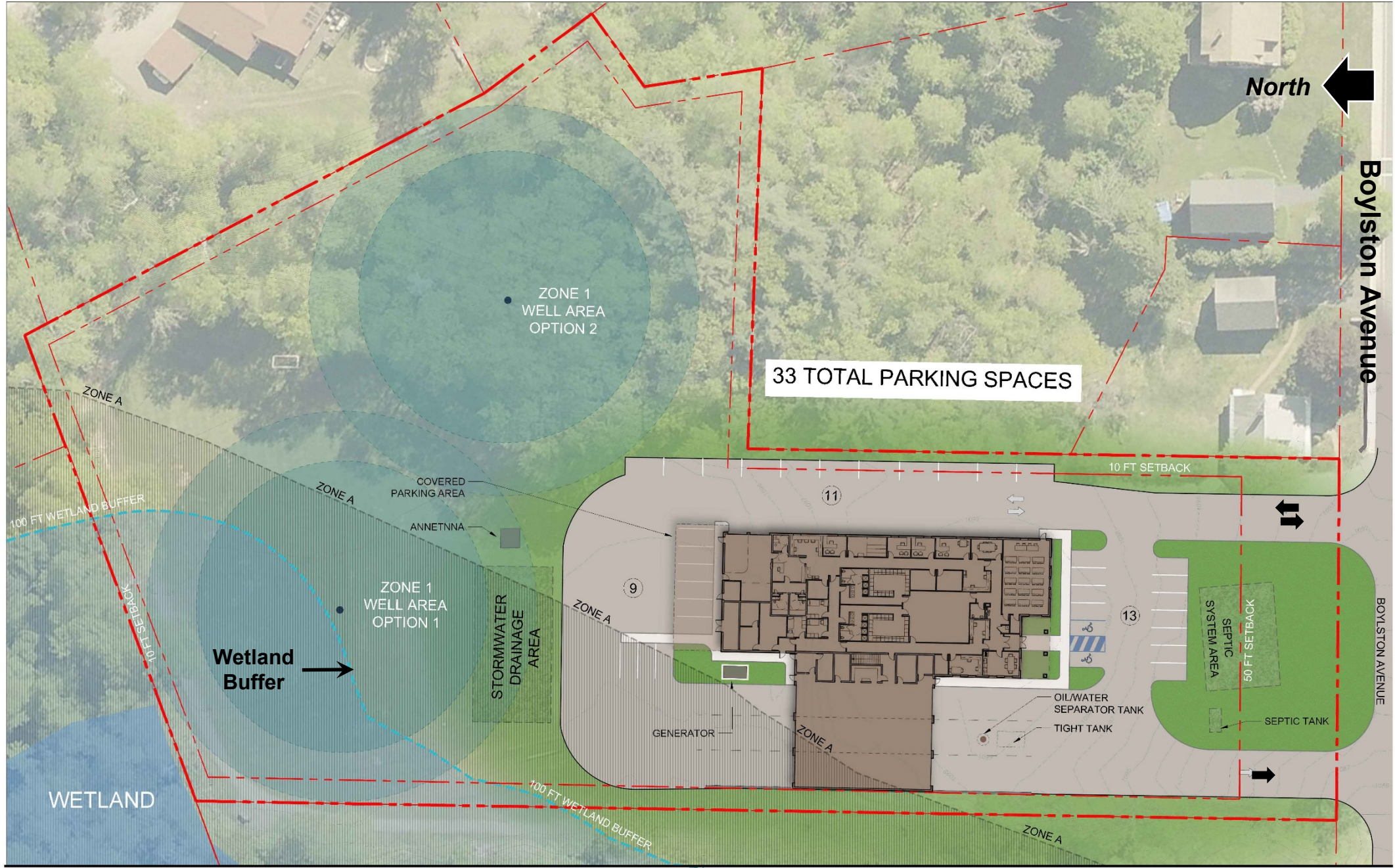


TRAINING / EMERGENCY OPERATION CENTER (EOC)

CONCEPTUAL DESIGN OPTION "B" New Construction



CONCEPTUAL DESIGN OPTION "B" New Construction



North

Boylston Avenue

BOYLSTON AVENUE

33 TOTAL PARKING SPACES

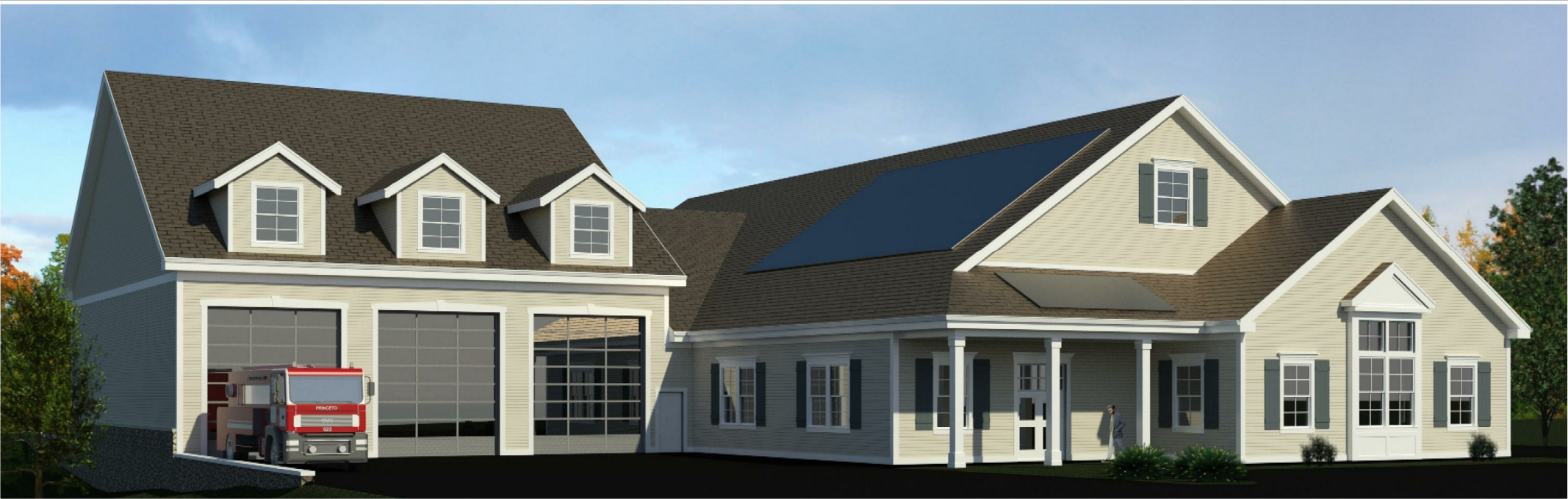
10 FT SETBACK

50 FT SETBACK

Wetland Buffer

WETLAND

CONCEPTUAL DESIGN OPTION "B" New Construction



PROJECT BUDGET ESTIMATES

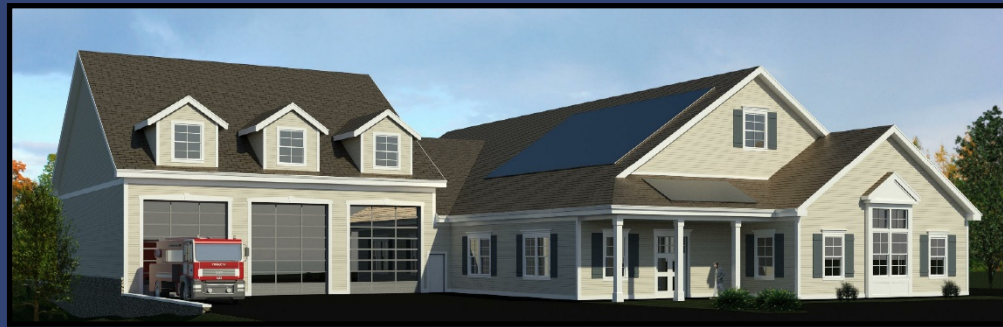
Construction Cost Factors:

- Massachusetts Prevailing Rate for ALL onsite work
- Site Costs:
 - Public Water Well
 - Onsite Septic System & Oil Traps
 - Onsite Storm Water Detention System
 - Rock/Ledge removal
 - Underground Storage Tanks
- Data systems requires MA certified installer
- Separate/dedicated exhaust & HVAC systems
- Code/Approval Agencies material requirements
- High security / Detention equipment
- Onsite fire protection system

Average Homeowner Tax Impact
 * Based on a \$11,766,500 Total Project Cost
 Bond Option (3.0% for 30 years)
 \$400,000 valuation = \$419 yearly increase

Town Of Princeton Public Safety Complex Budget Summary

	Option A	Recommended Option B	Option C
TOTAL CONSTRUCTION COSTS			
Building & Site Construction Cost	10,792,727.00	9,694,888.00	10,580,118.00
<i>Included in the Construction Cost</i>			
Design Contingency: 10%			
Hazardous Material: \$125,000			
Building Demo: \$90,000			
Escalation: 3.5% to Spring 2022			
Ledge Removal Allowance	50,000.00	50,000.00	50,000.00
SOFT COSTS			
Professional Fees (12%)	1,295,127.24	1,163,386.56	1,269,614.16
Legal/Permitting			
Architecture & Engineering			
Owners' Project Manager			
Hazardous Material Monitoring & Testing			
Furniture & Fixtures (FF&E)	323,781.81	290,846.64	317,403.54
3% of Construction Cost			
Communication / Data	150,000.00	150,000.00	150,000.00
Server, Telephone, IT equipment			
Antennas & Radio Equipment			
Utility Fees	40,000.00	40,000.00	40,000.00
Electrical, Telephone, Data/Cable			
Construction Services	35,000.00	35,000.00	35,000.00
Construction Testing, GeoTech			
Soft Costs	50,000.00	50,000.00	50,000.00
Moving			
Advertising & Bidding			
Construction Contingency: New Building (3%)	325,281.81	292,346.64	
Construction Contingency: Renovations (5%)			531,505.90
Total Project Cost	\$13,061,917.86	\$11,766,467.84	\$13,023,641.60
Concept Plan Square Footage	19,279	15,509	18,476
Total Construction Cost	\$10,792,727.00	\$9,694,888.00	\$10,580,118.00



Questions?



**"DESIGNING AND BUILDING
FOR THE NEXT 50 YEARS"**

