



**Town of Lynnfield
Public Safety Building Renovation/Reconstruction – Feasibility Study
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DAI Project # 20-063-2316

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Public Safety Building Renovation/Reconstruction – Feasibility Study

DAI Project # 20-063-2316

FINAL REPORT- *DRAFT*

MAY 4, 2021

1. Executive Summary

Currently the police headquarters and fire headquarters are located at 55 Summer Street, next to the Town Hall building. The fire substation is located at 598 Salem Street in a structure shared with the US Postal Service and a private dance studio.

The objective of the study is to identify current issues, review possible options to right size and accommodate future needs, and make a final recommendation.

Acknowledgement:

On behalf of the Meridien Associates Inc., DiGiorgio Associates/The LiRo Group team, we would like to thank Charlie Richter, Chief Glenn Davis, and Chief Nick Secatore for the many hours meeting with our team, reviewing multiple options and their insights in the workings of the town and the vision of the future of the departments.

2. Methodology

Process:

- Reviewed Documents provided by Town.
 - Survey done at the Townhall/Police Station/Fire Station property
 - South Lynnfield Fire Station, survey plan from 1990 of the proposed renovation but no existing conditions
- Assessed Operational and Space Needs:
 - Visited existing public safety facilities to identify space use and functionality.
 - Discuss current/immediate needs and future goals with Public Safety Building Committee, and Police and Fire Department leadership
 - Prepared space program of existing spaces and right-sized programs based on review of existing plans and walk-throughs.
 - Discussed potential population growth and translated information into future staff projections.
 - Updated space program to accommodate future growth.
- Reviewed and evaluated site options.
 - Analyze response and travel times including current and future growth.
 - Document feasibility and proposed benefits of evaluated sites
 - Selected site and developed plans and narratives
- Prepared block diagrams of 1- story, 2- story and 3- story options
- Developed plan of recommended option.
- Prepared high level pre-schematic construction budget of the proposed building based on architectural, M/E/P/FP narratives.

3. Limitations

This feasibility study is a pre-schematic design effort. Information gathered is general and preliminary. The primary goal of the study is to identify a site and building that best suits the town's short and long-term program needs. This study should be used to define the general scope of the project and a high-level budget for the building. Further investigation and development of the site and building are necessary to fine-tune the project cost.

4. Summary of Vision Session

RESPONSE to 1.a: What do you expect what the complex will be used as in the future?

- Training/development room: Classroom setup, 50-person capacity with audio/video capabilities
 - Currently lack space for large gatherings, so to have multipurpose rooms would be beneficial. There is a good relationship between the departments/no territorial disputes, so comfortable with sharing the building and cohabitating.
 - If there could be a separate entrance, might use it for community training (Wakefield as example, would not disrupt police) - they use training for the Merit Center. FD uses the apparatus floor for training. EOC currently at senior center
- Nearby EOC area for response to small-scale incidents (i.e., winter storm)

RESPONSE to 1.b Do you expect demographic change. And how it may affect public safety services?

- Flexibility to change shifts - currently (3) 11 hours shifts - no sleeping quarters. They sometimes use offices to sleep. Daytime hours 6:30am-6:30pm. 2 members sleep at headquarters. They expect need to be able to house more people at one or both stations.
- Living quarters - Need to plan on more living quarters with flexibility for the future. At least 2 now, but 4-6 in the future.
- Lobby - Neither fire station has a lobby. Police have a very small lobby. Both would like a public lobby that keeps public separate from the employees. Need walk-ins and public to come in for permits etc.
- Police Station - There are not many offices in the building. Chief's office, captain, detective (old interrogation room), & firearms licensing officer offices currently exist. Need more office space for a future department size up to 28 people.
 - Evidence area is adequate - the detective/investigator office should be adjacent.
 - Need more locker space and expand shower. Need facilities for female officers.
 - Dispatch area needs upgrading (on FD site).
 - Equipment needs to be updated and expanded (Security monitors/screens)
 - Seating for 2 consoles (only 1 is staffed, but need space for 2)
 - Need more counter space and wall storage space.
 - Need plenty of outlets for power/telecom.
 - Office has been converted to bunker room.

- Parking - Consider the building's position on the site, emergency vehicles' flow and parking.
 - There is currently ample lot area. The station down south also has parking (though commercial entities may need to leave).
 - Less concerned about size, but they would like a better plan/lay out .
 - Wish list = covered parking for the cruisers

RESPONSE to 1.c: Does the building need to align with a theme or color?

- Model off the colonial buildings in the Lynnfield community and the middle school
- Prefer a softer look to fit in with general themes throughout the community.

RESPONSE to 2: When this project is completed, what word or phrase will describe the result?

- Safe, adaptable for the future/room for growth.
 The town is going for a school project soon, so there is a need for balance, focus on needs instead of wants, and to make sure that the public sees it as sensitive to costs and design.
- "Welcoming/warmth" from the outside
- Integrate "practicality/modesty/efficiency" on the inside.

RESPONSE to 3: What are your top three challenges of this project?

- Need to balance the cost with efficiency, needs with wants.
- The strategic planning committee is concerned about bigger picture.
- Discussed rationale to combine the departments:
 - List pros and cons of both sites and what would happen with the building left behind (how is it being used) what other needs does the town have.
 - Advantage of combined = existing police station could be used for the community space and used by other functions in the town hall
 - How does the placement affect the response times?
 - The railroad tracks are NOT utilized, Any other barriers?
 - If all were at South station, there is an area for development at the Middleton line, where there are no hydrants coverage. This would be furthest travel distance from south fire station.
 - The Police have a substation at market street, would like to keep something small in the main town hall. South is a bit too far away from rest of service area.
 - The town will share the future development areas, listing on Middleton/North Redding side of town.
 - There are also concerns regarding phasing/displacement during construction and the impact on operations. There are not many options for temporary housing for their apparatus.

5. Existing Space Assessment based on June 9, 2020 walk-through.

A. LYNNFIELD POLICE STATION (Headquarters)

1) First Floor (slightly above grade, accessible by ramp or stairs):

{This facility has some security and is monitored in dispatch room.}

*Inadequate Lobby space (for both Police & Fire Depts at HQs facilities)

*Need larger Conference room and/or Community Room/Multi-Purpose Room which could include training and limited EOC uses. This should be considered for a shared use with FD and/or town hall if access, security and availability concerns are addressed.

*Communications Room is too small for current and future needs. Radio hardware last updated over 10 years ago. There is currently only 1 dispatcher/call taker on duty, but two (2) consoles/positions allow for growth but lacks adequate space.

*Police Dept has 21 staff but expects as many as 30 in the future. Currently short on Admin staff and will need space/offices for them.

*Shift Supervisors room is cramped but may have additional space of use if the attached Records room were to be opened.

*The IT/IS room(s) could be combined into one, leaving space available for another small office or other use when combined with adjacent office.

*In need of proper and accessible Female restroom, shower, locker room (or combination room?).

*There are currently 2 Armory rooms, one on first floor and one in basement level near firing range & garage/sally port. The first-floor armory room could be relocated to basement level for ease and gain of space for office use?

*Change "Firearms officer room" to Investigative Services (Detectives) office(s). Confirm space for interview room and cont'd secure evidence storage room/space.

*Firearms officer could be relocated to prev. mentioned Supervisors ofc. or combined with Investigative Services ofc.?

*Captain's office possibly has room to spare.

*Chief's ofc is adequate, as is admin assist. ofc but need for secure personnel files & records storage space (combine into one room in existing records storage room?)

*All of Chief of Dept offices and Conference Room space could be reorganized to have a more efficient utilization.

*Officer's locker space is lacking. There are currently 2 separate rooms for this (next to each other). May need to enlarge space or divide into 2 spaces (male & female)?

*Need for as much as 25% more room for report writing. Current room location is adequate, just need more space.

*Need for dedicated Roll Call room or combine with report writing room in future. Could utilize space from existing kitchen/dayroom.

*Bathroom/Shower (1) facility for male officers (currently only male sworn officers on dept) lacks ventilation, needs updating and consideration to distance to locker room(s).

*Lock up and processing area needs more space and updating to include more security as well as more non-destructive countertop, seating, and processing space.

*Investigative offices as well as interview room are lacking space. (see above "Firearms ofcr" notes)

2) **Basement Level:**

(Police Side-below Police Dept first level @grade in rear of Police Station):

*4 bay sally port with one bay being - deep. As mentioned earlier, possible of combining all firearms related storage, cleaning, and maintenance in a space in this level.

*Vehicle storage space is sufficient in this configuration, but some consideration would have to be made if the space is utilized for another program.

*Consider moving all sally port, booking, processing, and holding to this level.

*The above consideration would likely make the elimination of the firing range a consideration.

*The existing firing range is very limited in its use and capabilities. Used as supplement training. Few municipalities have firing range. Lead-free for 20 years. Go to Bedford for practice.

*This is the home to most utilities, compressors, heating plant, fire alarm batteries and controls.

*There is ample space for storage, just need for updated rack, cabinets, and closets with some level of security and moisture/air control.

B. LYNNFIELD FIRE STATION No.1- HEADQUARTERS STATION:

1) **First Floor/Ground Level:**

(at grade on front side (A side) of Fire Station):

{This firehouse is sprinklered and fire protected. It was not noted if/what building security exists}

*Currently during the daytime (0630hrs-1830hrs) this station is staffed by Fire Chief, Station Fire Officer (Capt. or Lieutenant) and 2 FF's (incl. min. of 1 FF-Paramedic). Formerly (again in future?) Fire prevention officer may be stationed here. Fire Apparatus Mechanic works rotating schedule here and Fire Box Alarm System Maintainer is a call firefighter who utilizes space here.

*Current overnight staffing is 2 FFs (incl. 1 FF-Paramedic). Formerly housed (and poss. again in future) - 1 FF on duty on night shift.

*App. Bay houses 2 Pumper/Class A Engines, 1 Aerial Ladder Tower Unit, 2 Ambulances and 1 Station car.

*This Fire Station has 3 bays, each 2 deep (double bays). There are 3 overhead doors on front/A side of bldg. and there is NO drive thru compatibility. All vehicles that are kept inside bays must back in.

*There is parking for on duty staff, visitors/public and department staff vehicles that are not kept in the apparatus bays. (Fire Chief's car, FMO vehicle, etc.). Apparatus that are at this station from the other fire station must park on front ramp or be squeezed in somewhere on the side or back of fire station, likely impeding traffic flow and/or risk being blocked in by other vehicles, civilian or town owned with numerous depts utilizing the same property.

- *Needs dedicated turnout gear room. Gear is hung on hooks on walls throughout bays (proximal to fire apparatus and equipment exhaust fumes and particles).
- *Need appropriate/secure EMS supply closet (ALS-Paramedic level meds storage).
- *Need for Decontamination room with shower and appropriate rack storage.
- *Need for eyewash station, pref. on app. bay floor near mechanic's room, work room and future Decontamination room.
- *Need for hazardous materials storage.
- *Need for Flamm. liquids storage cabinet.
- *Need for appropriate hose storage (racks).
- *Need for Separate and accessible men's and women's bathroom, shower & locker area.
- *Need for appropriate sleeping quarters, gender appropriate and private/semiprivate.
- *Need update and reconfiguration of front watch room area, to include back up radio system upgrades or replacement (existing equipment is past expected lifespan and is not adequate for desired back up PSAP). This room also has the Gamewell (style) fire box alarm notification system. With proper updating/upgrading, this room could serve as a backup PSAP and/or radio room strictly for Fire Dept Communications uses. This room could also be a potential report writing room or public greeting area if desired in this location of the station. It views most of the front of both the Police and Fire Stations and Summer Street access for traffic. This space is ideal and not always available, but usually desired for the public access to the Fire Department.
- *Need for lobby or customer service entrance/area. Could be shared space with PD or proper signage to direct visitors to side/back entrance to fire station if that is to be the "main public entrance"?
- *Front room off apparatus bays and watch room-radio room, is currently a temp bunkroom for 1 FF. This space could continue as that or be utilized as part of an entrance/office/lobby area and is adjacent to existing PD conference room and entrance.
- *Need for multi-purpose training/community/small scale EOC ops room. Could be shared with PD and town hall.
- *Consider future admin and FMO staff office(s) and needs, incl admin assist. as well as added Chief officers, shift supervisor (Captain/Lieutenant current), Fire Marshall and/or inspectors. FMO needs plan review area, easily accessible to visitors and appropriate to jurisdictional needs.
- *DID NOT INSPECT Fire Chief's office.
- *Mechanic's Room needs updating and poss. reconfiguration of space to bring up to current needs.
- *Fire Alarm system office/room. (Could be at either station).
- *Need for updating and poss. reconfiguration of space in Day room.
- *Need for furniture that is suitable to use in space (Day room).
- *Kitchen updating consideration.
- *Need for appropriate wellness/exercise area, space or room.
- *Appropriate and at least semi-private area for report writing (EPCR's-medical charts) due to nature of HIPPA and expected privacy of personal information.

- *Updated, secure and appropriate to needs, file and records storage area/room.
- *Need updated radio/PA-speaker system as well as appropriate in-house call notification system.
- *Update/replace Telephone system throughout FD, PD and poss. Town Hall? (unknown condition of system in town hall).

2) Basement Level:

(below grade level at rear/C side of fire station):

- *Plenty of storage area that just needs to be reorganized/reconfigured and made appropriate to use, such as proper ventilation, pest control, temp, and moisture control.
- *Shared radio room needs updating.
- *Closet space, storage racks and multi-purpose storage units could be better utilized and organized.
- *Confirm proper radio/PA speaker system in this area.
- *Confirm proper air monitoring, fire/smoke/CO monitoring in this space.

C. FIRE STATION No.2- SOUTH STATION (built in 1960 with rear bays added approx. 1983)

1) Ground/First Floor:

(at grade at front of firehouse and slightly above grade at rear of firehouse):

{firehouse is sprinklered and fire protected. Little or no monitored security noted in this station}

*Current daytime staffing (0630hrs-1830hrs) is 1 Fire Officer (Capt./Lieutenant) and 2 FFs. There is no other regularly scheduled staff here, nor is there overnight staff at this station currently.

*This station currently houses 2 front line, Class A Pumper-Engines, 1 Reserve Ambulance/Rescue Unit, 1 Fire Alarm System Repair/Bucket truck, 1 Shared FD/PD spec. response van, 1 marine unit/small boat, 1 station car, 1 antique fire apparatus, 1 small light trailer and 1 Brush /Forestry truck.

*This station has four (4) overhead doors, 2 bays in front and 2 bays in back with one bay being a drive thru bay but is not utilized for such. Future consideration of utilizing this feature due to the decreased likely hood for damage, injury and/or death to personnel backing up emergency apparatus, esp. when you have a facility with this option.

*Former watch room area is now office to Fire Officer on duty as well as overflow(?) office needs. This space is also the station radio room and if staffed and operating, could act as a secondary radio/dispatch space for the Fire Department. This room has both a base radio unit and a Game well (style) fire box alarm notification system. This room lacks proper HVAC, lacks security and appropriate lighting as well as usable space and potential report writing area.

*Need (same as HQs station) updated and upgraded radio/comms system, esp. if consideration for use as a backup or secondary fire dispatch at this location. As mentioned at HQs station, need for upgraded telephone system, PA-Speaker system, and In-House personnel call alerting/notification system.

- *Need for separate and accessible bathroom, shower, and locker facilities.
- *Need for proper Turn out gear storage (currently on hooks on side walls of station proximal to apparatus and equipment exhaust fumes and particles). Pref. a room specifically just for turnout gear.
- *Need for upgraded HVAC and/or ventilation throughout all occupied spaces.
- *Consider need for future overnight personnel accommodations.
- *Need for ceiling mounted compressed air drop/recoil lines.
- *Need for hose racks and/or multi-purpose storage racks/units.
- *Need for Decontamination Room for gear extractor and contaminated equipment cleaning/disinfecting.
- *Need for clean room for SCBA Compressor and bottle fill, mask fit test area, bottle storage, etc.
- *Need for eyewash station-preferably near work room.
- *Need for Flammable Liquids storage closet.
- *Need for Hazardous Materials safe storage unit/area.
- *Need for appropriate Oxygen bottle storage rack/area.
- *Need for appropriate and secure EMS Supply storage closet.
- *Update/Upgrade Kitchen and Day Room areas.
- *Appropriate furniture/furnishings for Day Room area.
- *Need for Multi-purpose room for training, meetings, community use and shared use with town agencies.
- *Need for updated, appropriate, and healthy wellness area.
- *Update and reorganize work room/storage room space, incl. former fire officers' room off the work room.
- *Need an area for report writing/EPCRS (medical run charts) that is at least semi-private.
- *Need additional and adequate storage area(s), multi-purpose racks.
- *Rec. inspection and consideration to leaking roof? Many ceiling tiles have water stains.
- *Outside storage of misc. vehicles, conex box style storage containers with misc. training props and other dept property. Not totally enclosed on our walk through. Unknown if usually secured and weather resistant/protected.
- *Driveway access to Summer St. @ I-95 underpass.
- *US Post Office occupies an attached space on the western side of building (shared interior wall). Daytime hours with steady vehicle & pedestrian traffic during these hours of operation. Post office occupied in 1994. Prior to that it was part of the fire station. Town owns the entire building and surrounding parking area and lot. Town also owns some portion of the abutting property bounded by I-95 on the north and private business occupancies on the east. Unknown exact amount of land owned in that rear corner.

2) **Basement Level:**

- !! This also houses a dance studio facility with occupancy at various hours/days of week!!
- *This level houses the building compressor, sprinkler system, heating plant, utilities, elec. panels, and generator as well as some minimal storage space shared with the Dance Studio.

** Note: when the generator runs, the dance studio must cease operation and evacuate due to known CO issues. On our walk through, there was pooling of water on the floor near the compressor. There is a sump pump installed but this water had not reached that area yet.

*There is room for minimal storage in this area, but that would certainly need more shelving and attention to the space.

*Unknown if this building has oil separator for the drains in the bay floors and/or if it has a hazardous waste tank for the Gear extractor.

Notes, additions, subtractions, thoughts, etc.... on Fire Station Observations:

It is our understanding from conversation that the Fire Dept is in the process of upgrading/repairing their current radio system. They do have in place a network of repeaters, voter and noted large mast antennas on each fire station.

The Fire Dept still utilizes a town wide, hard wired Game well Fire Box Alarm notification system as well as a Fire Horn notification for its members. Each station has a fire horn on the roof.

6. Space Needs

Based on the floor plans provided by the Town, the site and building survey on June 9, 2020, and conversations with the fire and police representatives, the design team prepared a spreadsheet identifying current room by room space use, areas, floor locations.

Upon further discussions with Town, fire and police leadership, evaluation criteria for future expansion were developed, locations of future locations for fire headquarters and substation were discussed. New spaces, right-sized areas, optimal adjacencies between spaces were identified based on insights and discussions with fire and police leadership. Please refer to Appendix A1: space analysis program dated 8/21/2020.

Descriptions or KEY of abbreviations listed under each Option from 1 through 5 (see Section 6 for descriptions) in the attached space program are listed below:

BOTH =	Both Town Hall and South Lynnfield
SLF =	South Lynnfield
TH =	Town Hall (existing)
THA =	Town Hall Addition (proposed)
TH-FDHQ =	Town Hall, in the former Fire Dept. Head Quarters
NB =	New Building
VS =	Vacated Space (post office/dance studio)
ADDITION =	Proposed addition to South Lynnfield
SLF+ =	South Lynnfield upgrades, that may or may not apply to options 3, 4, 5

Numerous revisions were made during the planning process. The final space program was created to compare the existing spaces and the recommended option. Please refer to Appendix A2: space analysis program dated 8/21/2020.

7. Planning Options

A. Evaluation Criteria

- Site:
 - Improve response time
 - Area and configuration for access, flow and parking
 - Cost of development
 - Future growth- amount and location
 - Risk assessment
- Building:
 - Basic infrastructure upgrade
 - Opportunity for vertical or horizontal growth
 - Phasing complications
 - Cost of construction and re-purposing or renovations
 - Future growth- vertical and horizontal expansion

B. Options Descriptions

5 options and additional sub-options were discussed.

Option 1: Re-purpose South Lynnfield Post Office Branch space (in entirety) and the Chiampa Dance Studio space (also in entirety) freeing up the south-west side and the basement of the South Lynnfield Firehouse building (located at the corner of Salem St and Summer St). Maintain the current fire station space at that location, add the necessary upgrades to become a Fire Headquarters and move the admin, (incl Fire Prevention), some apparatus and select other spaces to that location. Move some select Police Dept spaces to that location but not make it the Police HQs, instead, expanding, reno & upgrade the current PD HQs at Town Hall (Summer St) to meet their needs at their existing site.

- Approx. 362 SF of FD space is freed up for PD at town hall (estimated about 966 SF of additional space would be needed on PD sheet) (360 of PD needed at South Lynnfield Site)
- Need 2,715 SF of the newly vacated space to expand into
Option 1A- Re-purpose Dance Studio only

Option 2: Demo existing Post Office branch and Chiampa Dance Studio space to build a large addition to the existing South Lynnfield Firehouse building. This would become *the new Lynnfield Public Safety facility* encompassing all wanted and needed Police and Fire HQs (admin, staff, apparatus, vehicles, equipment, etc.).

The Fire Dept. would maintain a Central location substation/firehouse with necessary upgrades and desired apparatus & equipment and the Police Dept would maintain a centrally located substation.

The town hall offices could expand into any now vacated/unused space.

(FD and PD vacate Town hall, each keeping only a substation there)

- 2,715 SF needed for FD addition + 7,750SF for PD functions = a total new addition of about 10,000 SF

Option 2A: includes dance studio and P.O.

Option 3: Vacate Town Hall Offices in entirety and expand necessary and desired Fire Dept and Police Dept Headquarters in this former town hall offices space. South Lynnfield Firehouse would receive necessary upgrades??

- If FD and PD were to move into the Town Hall offices space, they would need about 3958 for FD + 950 SF + 2000 SF PD = ~6900 SF total

Option 3A- vacate one of two floors, not both floors.

Option 3B- RE-purpose firing range as additional space.

Option 4: Build an addition (horizontal or vertical) to current Town Hall (Police and Fire Headquarters) facility to accommodate the necessary and desired upgrades and expanded functions.

- South Lynnfield Firehouse would receive necessary upgrades.
- Additional Space needed: 3,958 for FD + 2000 SF PD = ~6000 SF)
- Need additional 2,000 SF if South Lynnfield is to be upgraded.

Option 5: Building a new Fire Headquarters in a different location based on future development and population growth in town.

- Police Dept would expand and upgrade in current location (Town Hall).
- South Lynnfield Firehouse would receive necessary upgrades??
- (All FD moves out of Town Hall; PD takes over that space.)
- New FD Headquarters = 10,000 SF
- FD moving out of town hall would free up 4600SF of space, PD needs additional 2,000 SF. As a result, the Town Hall Offices or other functions may have room to expand into remaining area.
- Conclusion: IT was determined that the current locations work! Adding sleeping quarters will assist reducing response time after hours.

C. Options Evaluation

For Option 1- Relocating the Fire Department Headquarters to the South Lynnfield Site, expanding the Police Department Headquarters in its current location at Town Hall and creating a fire department substation at the existing headquarters site:

Advantages:

- *Right sizing and redefining of Police Department spaces in current location to strengthen the operations and make more efficient and safe use of the facility.
- *Designing new Fire Department facility to meet the needs and standards that are applicable and appropriate for the Lynnfield Fire Department.
- *This will help modernize the Police and Fire Department facility and operational functions for today and well into the future.
- *After completion, offers potential for more flexible Fire Department response profiles. This could reduce response times and therefore provide an even higher level of Fire-Rescue-EMS services to this more recently developed district as well as the highway.

* A Police Department Sub Station could be located at the new South Lynnfield facility if desired- allowing for more flexibility for Police Services in this district.

*Consideration could be given to adding some Fire-Rescue and Police Shared Training space in this same location.

*This option offers the least amount of relocation needs.

Disadvantages:

*There will likely be some impact on the Police Department operations as well as town hall services at the time that necessary and desired upgrades and renovations are made at the current Police and Fire headquarters/town hall. Proper temporary facilities, pre-planning and even design considerations can be utilized to keep these disruptions to a minimum.

*Utilizing only the existing facility for the Police Department upgrades will potentially limit how much additional space and programs could be incorporated into the building, possibly not completely addressing long term needs of the Department.

*There will be a need to keep a centrally located fire station/substation to continue to meet the Fire Department's operational functions, community expectations and to limit any impact on the town's ISO rating.

*Limited space for enlarging a front apron/ramp area for Fire Department operations at the South Lynnfield Location.

*Concern about having enough space remaining at the current fire department headquarters facility for a proper sized fire department substation.

*Future growth of north/east part of community could require increase in services for Fire Department therefore requiring more equipment, apparatus, staffing, etc. This would then require a larger fire department facility somewhere in this section of town.

Option 1A - Design and build an entirely new combined Public Safety Facility at the South Lynnfield Site and keep only a Fire department substation at the current location:

Advantages:

*To be able to design and build a new facility for the town's Public Safety Services as well as consideration of community use space at a location that can meet the entire town's needs now and well into the future. Change and growth are inevitable in these services and in the town and this should be addressed while the potential exists. Covid-19 is a prime example of a need for flexibility, readiness, and future planning.

*Design that can better accommodate the diversity and accommodate the accessibility needs of the work forces as well as the citizens that visit this public facility.

*Minimal disruption to the Police Department Services with this option. (only exception being during the move in/changeover phase which will occur in any option that includes upgrades and renovations).

- *Maintain ease of planning and coordination between departments as well as make a better flow between the departments to strengthen the working bond and promote continued unity between the departments and the community they serve.
- *Potentially making community access easier being in one location that could offer some “one stop shopping” for citizens needing to do business in multiple public safety related offices.
- *Consideration can be given to what training types and numbers of spaces (indoor and outdoor) that could be included at this facility. The possibility exists of shared training spaces for all the emergency services as well as community use.
- *To offer significant program space flexibility. This can be accomplished by renovating or renewing the vacated existing space in town hall. The town can address needs of not only the Police and Fire Departments, but possibly other community services as well.
- *A much more significant amount of parking and storage space would be realized at the Town Hall location under this option.
- *Program space duplication can be realized with this option giving the town some flexibility in case of loss of service to one of the other town services locations. (i.e.: natural disaster, building services failures, etc.).
- *The community’s familiarity with the known location of the town’s emergency services would have to be considered but can be addressed through utilizing the various forms of communication & media. It can even be another opportunity to strengthen the established relationships the Police and Fire Departments have with your community.

Disadvantages:

- *Due to a less central location, more planning and operational considerations would have to be considered such as apparatus, equipment and vehicle response locations and response profiles. There would need to be consideration given to any current or desired standards to be met such as ISO for the Fire Department and Accreditation for the Police Department.
- *As in the first set of options, the Fire Department Services would see some impact during construction, but again, can be addressed properly with good planning and consideration to the needs of the department.
- *Renovations and potential upgrades at the existing fire station would still be there to be addressed as this station would need to be maintained due to its location as part of the town’s fire and emergency services coverage needs as mentioned previously.
- *There would have to be significant pre-planning and coordination of timing to relocate the town’s 911 Communications Center during a switchover when the new facility is completed.
- *Parking and traffic flow could be an issue with limited site space left after a combined facility is built at this location. It would appear that parking needs would eliminate the space for a firearms training area or any outdoor training opportunities.
- *The Existing Dance Studio and Post Office businesses would have to be relocated and those spaces renovated. *Uncertain on current lease terms with these two tenants.*

Option 2- This keeps the Town's Police and Fire Department Headquarters stations in place at their current location with upgrades and renovations to both as well as the South Lynnfield Fire Station:

Advantages:

- *No changes to operational functions as they are today for both departments.
- *Maintain community familiarity with location.
- *Offers the potential to not have to relocate the Post office and/or Dance Studio businesses at the South Lynnfield site therefore maintaining the established relationship that exists with them.
- *Right size the available and added spaces for today's needs of both departments.
- *This option still leaves the consideration of moving the firearms range and any outdoor training to the South Lynnfield site.

Disadvantages:

- *Vertical expansion of one or both facilities could lead to some operational change considerations within those departments.
- *No program space(s) made available for town hall services.
- *Leaving little or no room for future growth in either the Police or Fire Department.
- *Achieving only part of the total needs of both departments and the town.
- *Minimal chance for any true community space gain with this option.
- *There would be significant disruption to most of Police, Fire and Town Hall services to accomplish the needed renovations and expansions within the existing buildings. As mentioned previously, much consideration and planning would occur to minimize this as best possible.
- *There could be functional or operational loss of services as the responsibilities and missions of both departments move forward with no room to meet new expectations or standards.
- *Potential high costs involved for upgrading to comply with ADA standards and structural costs with this option for Police Department, Fire Department and Town Hall buildings.

Option 3- This option keeps the Police Department in its current location with horizontal growth into the existing Fire Department Spaces and building a new facility for the Fire Department Headquarters on the north side of the town hall. South Lynnfield Fire Station would still be upgraded:

Advantages:

- *Many of the same advantages from above option 2 but with more space available to the Police Department in its current location and possible space available for town hall services.
- *Most of the advantages from option 1 and 1a for the fire department- realizing the space and operational needs in a new facility, but still in the known and centralized location.
- *Keeping the impact to a minimum for Fire Department operations and seeing some impact for the Police Department and Town Hall during renovations as in above options 1 and 2.
- *No change in operational functions and responses with this option.

*Consideration could still be given for a Police Substation, Firearms training site and other training needs at the South Lynnfield site.

*Minimal (if any) concern for 911/Emergency communications disruption with no change of location.

*Maintain existing relationships with Dance Studio and Post Office with no change to their location.

*Possibility of having drive-thru apparatus bays and larger work areas in front of and rear of fire headquarters station.

Disadvantages:

*Moderate disruption to the Police Department and Town Hall during extensive renovations to the existing spaces.

*Traffic flow and parking at the Town Hall, Police Department and new Fire Headquarters would have to be given much consideration with the realignment needed to accomplish this option.

*Need to make sure that this option would meet the Police Department's needs well into the future.

**Extensive Site Development involved for this option.*

Option 4- Building an addition (horizontal and/or vertical) to current town hall public safety facilities.

*This option was ruled out due to overall cost effectiveness, lack of space without creating a large impact to surrounding properties and significant impact to architectural look of existing buildings.

Option 5- Building a new Fire Headquarters in a totally different location based on future development and population growth in the town.

*This option was ruled out due to high-cost estimates, lack of available property north and east of the existing fire headquarters and any impact this would have on wetlands, open space or other community concerns.

****Considerations that are known:**

*The future growth and increase in need for the Public Safety Services in the Town of Lynnfield are inevitable.

*Any option you chose will incorporate accessibility, safety needs, consider current standards and future expectations as well as make the town's public safety department's facilities more efficient and effective for their respective missions.

*We are seeing a demand for more or improved community shared spaces within town public safety facilities as an expectation when designing new and/or renovating existing buildings.

*Your citizens have a high level of respect and expectations of the town's Public Safety Services and we will work with that in mind as the town moves forward on any option that is chosen.

D. Cost Comparisons- RANK FROM 1 TO 5, 5 BEING THE HIGHEST

	Site Cost	Building Cost	Site & Building Cost	Note
Option 1				
North- Summer Street	0	1	2	Minor renovations
South- Salem Street	2	2	2	Small addition and fit-out
<i>COMBINED</i>			3	
Option 1A				
North- Summer Street	0	3	2	Major renovations
South- Salem Street	4	4	4	Medium additions & minor renovations
<i>COMBINED</i>			5	
Option 2				
North- Summer Street	2	4	4	Multi-phase renovations
South- Salem Street	3	3	3	Small addition
<i>COMBINED</i>			6	
Option 3				
North- Summer Street	5	5	5	Major renovation & new construction
South- Salem Street	2	2	2	Small addition
<i>COMBINED</i>			7	

ASSUMPTIONS- Due to the status of the projects, there are many unknown factors. The following is a list of assumptions and clarifications:

- Construction start date: Fall 2021
- Percentage of escalation: 3-4 % per annum
- Prevailing wage
- Existing buildings in Summer Street and South Lynnfield have no hazardous material
- New construction cost is based on recent public safety project
- Definitions:
 - Design contingency: due to lack of developed documents, we place a 15-20% contingency on the cost
 - Structural upgrade allowance is applied to Option 2. In order to extend the existing columns for a new floor, the roof will have to be removed, existing columns will have to be strengthened with larger footings, floor slabs will be removed. There is also a strong possibility that lateral reinforcement will be needed. This allowance covers these structural upgrade costs.
 - Site Development allowance: typically, this is the cost involving grading, site utilities connections and re-configuration, grading. We are using 25% to 35% for the new building and 15% to 20% for an addition
- Exclusions:
 - Professional fees and owners project management

- Moving and relocation costs
- Cost of construction phasing and interim rental or relocation
- Material testing
- Furniture, furnishings and equipment (FF&E)
- Hazard materials abatement
- Inclusions:
 - Contractor overhead and profit
 - Construction contingency
 - Building permits and fees
 - GC Performance and Payment Bond

8. Recommended Option

A. Site Process

- MAI will review the legal descriptions and land surveys including all existing conditions, grades, easements, utilities, etc., of the properties, which Lynnfield will provide.
- Integrated existing site design regarding roadway, parking, and site access.
- Confirmed and reviewed readily available zoning compliance, wetlands, flood plain and environmental issues.
- Reviewed two building configurations for South Station to study impact of power pole at apparatus bay exit.

B. Site Descriptions

North Station- Public Safety Facility at 55/59 Summer Street:

- Site contains a large parking lot used to park school buses;
- Site contains several buildings that appear to be used by the DPW;
- There are resource areas located to the west of the site;
- If a new Fire Station building was proposed for the site, it would obstruct traffic flow to the DPW buildings and the bus parking areas and would be located within buffer zones to resource areas;
- The proposed addition to the existing Town Hall building provides the space needed for the required use and does not impact the DPW and bus parking areas;
- The location of the building additions are located primarily in areas that are presently paved and therefore stormwater management requirements would be minimal;

South Station- Fire Headquarters Building at 598 Salem Street:

- The site contains a post office/fire station building/dance studio, with parking areas and an extensive ADA ramp system;
- The removal of the existing fire station allows for additional parking to be provided along with an ADA access path to the Post Office;
- The addition of a new fire station building on the western portion of the site would remove some parking and the ADA ramp system;
- Additional parking would be added in areas that are presently paved;

- Since a majority of the proposed work occurs over existing paved areas, stormwater management requirements would be minimal;
- The location of the proposed Fire Station building will potentially require the relocation of a couple utility poles that have multiple utility lines on them;

C. Apparatus Analysis and Review- See Appendix B

D. Building Descriptions

New Building - Fire Headquarters Building at 598 Salem Street:

- Raze the existing sub-fire station and retain the Post Office and Dance Studio.
- Build a 19,200 square foot building, two story plus basement building.
 - Basement Floor – 4,000 square feet. Building mechanical and support spaces
 - Ground Floor –Fire Station administration offices, vehicle and equipment storage
 - Second Floor – 4,000 square feet. Firefighters living area
- 2 stories.
- Steel frame with concrete slab on grade, concrete floor slab. Wood truss for roof framing.
- Brick veneer with precast concrete trim at openings.
- Roof shingles at steep-pitched roof.
- EPDM flat roof at new Lobby and front addition.
- Punched window openings in addition.
- Store front system in Lobby.

Renovation and Addition - Public Safety Facility at 55/59 Summer Street:

- Renovate the existing Police and Fire Departments (Existing Town Hall outside of project scope).
 - Basement Floor – 16,179 square feet
 - Fire Department: 1,790 square feet of renovation/832 square feet of addition
 - Police Department: 5,367 square feet of renovation/2,144 square feet of addition
 - Town Hall: 6,046 square feet existing, not in project Scope
 - First Floor – 21,407 square feet
 - Fire Department: 7,018 square feet of renovation/832 square feet of addition
 - Police Department: 5,367 square feet of renovation/2,144 square feet of addition
 - Town Hall: 6,046 square feet existing, not in project Scope
- 2 stories. Steel frame with concrete slab on grade, concrete floor slab. Wood truss for roof framing.
- Brick veneer with precast concrete trim at openings.
- Roof shingles at steep-pitched roof.
- EPDM flat roof at new Lobby and front addition.
- Punched window openings in addition.

- Store front system in Lobby.

E. MEP/FP Narrative- see Appendix C

9. Cost Summary- See Appendix D1 and D2

Assumptions used for Conceptual Construction Budget:

- Construction Duration: 12 months (South Lynnfield) and 14 months (Town Hall)
- Construction start date: Fall 2022
- Percentage of escalation: 3-4 % per annum
- Prevailing wage
- Existing buildings in Summer Street and South Lynnfield have no hazardous material.
- Exclusions:
 - Professional fees and owners project management
 - Moving and relocation costs
 - Cost of construction phasing and interim rental or relocation
 - Material testing
 - Furniture, furnishings and equipment (FF&E)
 - Hazard materials abatement
- Inclusions:
 - Contractor overhead and profit
 - Construction contingency
 - Building permits (can be waived by town) and fees
 - GC Performance and Payment Bond

Appendix

- A1: Space analysis program dated 8/21/20
- A2: Space analysis program dated 4/22/21
- B: Apparatus Analysis and Review
- C: MEP/FP Narratives dated 4/30/21
- D1: Pre-schematic Construction Budget PD Headquarters and FD Sub-station dated 4/29/21
- D2: Pre-schematic Construction Budget Fire HQ dated 4/29/21
- E1: Site Plan- Town Hall
- E2: Site Plan- South Lynnfield Concept 1
- E3: Site Plan- South Lynnfield Concept 2
- F1: Floor plans- Town Hall
- F2: Floor plans- South Lynnfield
- G1: Massing – Town Hall
- G2: Massing- South Lynnfield
- H: High Level Code Review

TOWN OF LYNNFIELD
PUBLIC SAFETY BUILDING FEASIBILITY STUDY
REVISED DRAFT SPACE ANALYSIS

DEPARTMENT: FIRE STATION - TOWN HALL (FIRST FLOOR AND BASEMENT)

RM#	EXISTING in SF			PROPOSED in SF		AREA DIFF	OPT. 1	OPT. 2	OPT. 3	OPT. 4	OPT. 5	COMMENTS
	ROOM NAME	STAFF	AREA	STAFF	AREA							
		TOTAL: 0	4642		8600	3958						
F01	DAY / TRAINING RM		384	400	16	BOTH	BOTH	TH	TH	NB	SERVE AS DAY ROOM. TRY NOT TO HAVE PUBLIC ACCESS. ONLY PLACE FOR CREW TO SIT AND DO LUNCH, WORK, NOT OTHER PLACE TO SIT. OPEN HOUSE APPARATUS BAYS ONLY. CPR CLASS WILL BE IN DAY ROOM. LIMITED COMMUNITY PROVIDE 50-PERSON CAPACITY TRAINING SPACE. CLASSROOM SETUP W A/V. CAN BE SHARED BETWEEN DEPTS. IF ACCESSED THROUGH A SEPARATE/PUBLIC ENTRANCE, COULD BE USED BY COMMUNITY.	
NEW	COMMAND CENTER			80	80	SLF	SLF	TH	THA	NB	COUNTER AND STORAGE	
NEW	FIRE ALARM SYSTEM OFFICE			80	80	SLF	SLF	TH	THA	NB		
F01	CHIEF		118	120	2	SLF	SLF	TH	TH	NB		
NEW	PERSONNEL FILES/RECORDS/STORAGE			40	40	SLF	SLF	TH	THA	NB		
F01	CAPTAIN FIRE PREVENTION OFF.		118	100	-18	SLF	SLF	TH	TH	NB	SECOND BUNK ROOM DURING COVID	
NEW	PLAN REVIEW AREA			60	60	SLF	SLF	TH	THA	NB	8' x 7' DEEP	
NEW	CAPTAIN/LIEUTENANT			100	100	BOTH	BOTH	TH	THA	NB		
NEW	DEPUTY CHIEF OFFICER			100	100	SLF	SLF	TH	THA	NB		
NEW	FIRE MARSHALL/INSPECTOR			80	80	SLF	SLF	TH	THA	NB		
NEW	MAIL BOXES			40	40	BOTH	BOTH	TH	THA	NB	HOW MANY MAIL BOXES?	
NEW	SEMI-PRIV REPORT WRITING			40	40	BOTH	BOTH	TH	THA	NB		
NEW	WELLNESS/EXERCISE AREA			300	300	BOTH	BOTH	TH	THA	NB	15' x 20'	
F01	COMPRESSOR & STORAGE		93	100	7	BOTH	BOTH	TH	TH	NB	SIZE ACCEPTABLE	
F01	SUPPLY ROOM		133	140	7	BOTH	BOTH	TH	TH	NB	MECHANICS OFFICE WITH TOOLS. AREA ACCEPTABLE	
F01	LOCKER ROOM		134		-134	BOTH	BOTH	TH	TH	NB		
F01	MEN'S BATHROOM		125	125	0	BOTH	BOTH	TH	TH	NB	INCLUDES SHOWERS; WASHER AND DRYER	
NEW	WOMEN'S BATHROOM			125	125	BOTH	BOTH	TH	THA	NB		
F01	KITCHEN		150	150	0	BOTH	BOTH	TH	TH	NB	SIZE ACCEPTABLE	
F02	FIRE APPARATUS ROOM		2230	2230	0	BOTH	BOTH	TH	TH	NB**	SECONDARY RADIO ROOM AMBULANCE ENGINE 2 LADDER- FRONT; ENGINE 4, SECONDARY AMBULANCE IN REARSPACE IS CURRENTLY USED FOR FIRE DEPT. TRAININGS. NEED # AND TYPE OF TRUCKS **in New Building with Option 5, expand apparatus room size by factor of 1.5	
NEW	PARKING SPACE: FIRE CHIEF			320	320	SLF	SLF	TH	THA	NB		
NEW	PARKING SPACE: FMO			320	320	SLF	SLF	TH	THA	NB		
101	LOCKERS		108	134	26	BOTH	BOTH	TH	TH	NB		
126	FIRE DISPATCH		126	200	74	SLF	SLF	TH	TH	NB	dispatch room last remodeled in 60s. Need portable radios and charges and communication; dispatch console need update. No room for admin person- adjacent lobby; greeter to public. ADD SPACE FOR ADMIN	
127	FIRE DAY ROOM. BUNK ROOM		127	160	33	BOTH	BOTH	TH	TH	NB	ALSO BUNK ROOM 2+, 4 NEXT PHASE TO HOUSE, EMS OFFICE FOR 2 AND SHARE WITH FIRE OFFICER/HOUSE CAPTAIN; AMBULANCE REPORT; INTERIM BED IN FIRE PREVENTION OFFICE	
NEW	BUNK ROOM			4	320	320	BOTH	BOTH	TH	THA	NB	ADD 4 @ 80sf EACH
S01	EMS SUPPLIES; TURNOUT GEAR; RECORD RETENTION		336	336	0	BOTH	BOTH	TH	TH	NB	SMALL STORAGE IN BASEMENT NOW. (3) AT 14'x8'= 336 SF	
S01	HOSE STORAGE		390	390	0	BOTH	BOTH	TH	TH	NB		
S01	SHARED RADIO ROOM		70	80	10	TH	SLF	TH	TH	NB	CURRENTLY SHARED	
NEW	SHARED LOBBY			200	200	BOTH	BOTH	TH	TH	NB	NO FIRE DEPARTMENT LOBBY SPACE CURRENTLY EXISTS	
NEW	SCBA/WORK ROOM			120	120	BOTH	BOTH	TH	THA	NB	SCBA FILLING STATION/COMPRESSOR; TEST/CALIBRATION & CLEANING; WORK BENCH & UTILITY SINK; TOOL CRIB; on apparatus floor has some space. SCBA filling station ok, new compressor, usable now	
NEW	TURN OUT GEAR/PPE			350	350	BOTH	BOTH	TH	THA	NB	TURN-OUT GEAR WIRE RACK; UV FILTERED LIGHTS- on the floor- all exposed to diesel and exhaust	
NEW	LAUNDRY			60	60	BOTH	BOTH	TH	THA	NB	in men's room. Extractor on apparatus floor; on per fire house	
NEW	DECONTAMINATION SHOWER			60	60	BOTH	BOTH	TH	THA	NB	in men's room. No hazmat emergency decontamination	
NEW	STORAGE			120	120	BOTH	BOTH	TH	THA	NB	SECURED, VEHICLE/APPARATUS EQPT; HAZARDOUS MATERIAL STORAGE	
NEW	EMERGENCY MEDICAL STOR.			50	50	BOTH	BOTH	TH	THA	NB	ACCESS CONTROL HARDWARE, EMERGENCY MEDICAL SUPPLIES, IN APPARATUS BAY	
NEW	FLAMMABLE STORAGE			40	40	BOTH	BOTH	TH	THA	NB	no mobile storage racks. Ems storage supplies in basement; flammable storage is needed	
NEW	MOBILE STORAGE RACK			40	40	BOTH	BOTH	TH	THA	NB	oil change inhouse need storage waste oil, hazardous storage	
NEW	HAZARDOUS STORAGE			40	40	BOTH	BOTH	TH	THA	NB		
NEW	EMERGENCY MGMT OFFICE/STOR			100	100	SLF	SLF	TH	THA	NB	NOT PRIORITY; CAN BE CLOSET IN SMALL EOC SPACE. Chief access emergency mgmt. town	
NEW	MEETING/ EMERGENCY OPERATIONS CTR (EOC)			750	750	SLF	SLF	TH	THA	NB	EOC AREA DESIRED FOR SMALL-SCALE INCIDENT RESPONSE. THEY ARE CURRENTLY USING SENIOR CENTER DURING WINTER STORM. FOR SMALL INCIDENT FOR JOINT POLICE AND FIRE OPERATIONS	

**TOWN OF LYNNFIELD
PUBLIC SAFETY BUILDING FEASIBILITY STUDY
DRAFT SPACE ANALYSIS**

DEPARTMENT: SOUTH LYNNFIELD FIRE STATION

EXISTING in SF			PROPOSED in SF		AREA DIFF	OPT. 1	OPT. 2	OPT. 3	OPT. 4	OPT. 5	COMMENTS
ROOM NAME	STAFF	AREA	STAFF	AREA							
TOTAL:			0	4465	7180	2715					
APPARATUS BAY #1		1200		1200	0	SLF	SLF	SLF	SLF	SLF	training space, EMT training classes.5 vehicles: ambulance, near rack; stars, fire alarm buck truck
APPARATUS BAY #2		2520		2520	0	SLF	SLF	SLF	SLF	SLF	engine 1, engine 3, 2 pumps
STORAGE		107		107	0	SLF	SLF	SLF	SLF	SLF	washer dryer, workroom, not gear extractor
OFFICE		58		58	0	SLF	SLF	SLF	SLF	SLF	maintenance
DAY ROOM		370		370	0	SLF	SLF	SLF	SLF	SLF	include kitchen, incident reports, table 4 - 5.
TOILET SHOWER- M		85		85	0	SLF	SLF	SLF	SLF	SLF	unisex, not ADA because of threshold.
OFFICE		125		125	0	SLF	SLF	SLF	SLF	SLF	house captain- payroll scheduling
TOILET/SHOWER- F				85	85	VS	ADDITION	SLF+	SLF+	SLF+	
WELLNESS EXERCISE				320	320	VS	ADDITION	SLF+	SLF+	SLF+	USE SAME AREA AS TOWNHALL PROGRAM
SEMI -PRIV REPORT WRITING				40	40	VS	ADDITION	SLF+	SLF+	SLF+	USE SAME AREA AS TOWNHALL PROGRAM
BUNK ROOM			2	160	160	VS	ADDITION	SLF+	SLF+	SLF+	2 BEDS
HOSE STORAGE				200	200	VS	ADDITION	SLF+	SLF+	SLF+	USE 50% OF TOWNHALL
SECONDARY RADIO ROOM				80	80	VS	ADDITION	SLF+	SLF+	SLF+	MATCH AREA OF TOWN HALL
SHARED LOBBY				200	200	VS	ADDITION	SLF+	SLF+	SLF+	
SCBA/WORK ROOM				120	120	VS	ADDITION	SLF+	SLF+	SLF+	USE SAME AREA AS TOWNHALL PROGRAM
TURN OUT GEAR/PPE				350	350	VS	ADDITION	SLF+	SLF+	SLF+	USE SAME AREA AS TOWNHALL PROGRAM
LAUNDRY				60	60	VS	ADDITION	SLF+	SLF+	SLF+	USE SAME AREA AS TOWNHALL PROGRAM
DECONTAMINATION SHOWER				60	60	VS	ADDITION	SLF+	SLF+	SLF+	USE SAME AREA AS TOWNHALL PROGRAM
STORAGE				120	120	VS	ADDITION	SLF+	SLF+	SLF+	USE SAME AREA AS TOWNHALL PROGRAM
EMERGENCY MEDICAL STOR.				50	50	VS	ADDITION	SLF+	SLF+	SLF+	USE SAME AREA AS TOWNHALL PROGRAM
FLAMMABLE STORAGE				40	40	VS	ADDITION	SLF+	SLF+	SLF+	USE SAME AREA AS TOWNHALL PROGRAM
MOBILE STORAGE RACK				40	40	VS	ADDITION	SLF+	SLF+	SLF+	USE SAME AREA AS TOWNHALL PROGRAM
HAZARDOUS STORAGE				40	40	VS	ADDITION	SLF+	SLF+	SLF+	USE SAME AREA AS TOWNHALL PROGRAM
MEETING/ EMERGENCY OPERATIONS CTR (EOC)				750	750	VS	ADDITION	TH	TH	NB	USE SAME AREA AS TOWNHALL PROGRAM.MAY BE TOO MUCH SPACE, IF THERE IS ANOTHER EOC ROOM.

**TOWN OF LYNNFIELD
PUBLIC SAFETY BUILDING FEASIBILITY STUDY
DRAFT SPACE ANALYSIS**

DEPARTMENT: POLICE STATION - TOWN HALL (FIRST FLOOR AND BASEMENT)

Rm#	EXISTING in SF		PROPOSED in SF		AREA DIFF	OPT. 1	OPT. 2	OPT. 3	OPT. 4	OPT. 5	COMMENTS	
	ROOM NAME	STAFF	AREA	STAFF								AREA
		TOTAL:	1	5991	7950	1999.5						
101	LOCKERS (M)		108	160	52	TH	SLF ADDITION	TH	TH	TH-FDHQ	EXPECTS 50% INCREASE. FROM 21 TO 28/30.	
102	CHIEF		138	138	0	TH	SLF ADDITION	TH	TH	TH-FDHQ	USED AS INTENDED	
103	CONFERENCE		117	117	0	TH	SLF ADDITION	TH	TH	TH-FDHQ	chief's conference. INCL. PERSONNEL FILES	
104	SECRETARY	1	101	101	0	TH	SLF ADDITION	TH	TH	TH-FDHQ		
105	CAPTAIN		120	90	-30	TH	SLF ADDITION	TH	TH	TH-FDHQ	TOO BIG; CONSOLIDATE EVIDENCE STORAGE	
	ADMIN STAFF		0	80	80	TH	SLF ADDITION	TH	THA	TH-FDHQ	ADD 1 STAFF OFFICE	
	LIEUTENANT		0	90	90	TH	SLF ADDITION	TH	THA	TH-FDHQ	ADD 1 STAFF OFFICE	
106	EVIDENCE- STORAGE		53	80	27	TH	SLF ADDITION	TH	TH	TH-FDHQ	large scale stored in garage, need more space. ADEQUATE SIZE. DETECTIVE/INVESTIGATOR OFFICE SHOULD BE ADJACENT	
	INTERVIEW ROOM			80	80	BOTH	BOTH	TH	TH	TH-FDHQ		
107	FD-FIREARM LICENSE & SUPERVISOR		83	160	77	TH	SLF ADDITION	TH	TH	TH-FDHQ	2 SEPARATE OFFICES	
109	RECORD ADMIN STOR.		46	90	44	TH	SLF ADDITION	TH	TH	TH-FDHQ	misc. admin storage. Should be bigger 2X. IS IT SAME THE AS RECORD STORAGE?	
110	INTERROGATION BOOKING		89	180	91	TH	SLF ADDITION	TH	TH	TH-FDHQ	too small for multiple arrests. At least 2X CURRENTLY USED AT DETECTIVE'S OFFICE? Change plan name	
111	BOOKING DETECTIVES/ AV		73	100	27	TH	SLF ADDITION	TH	TH	TH-FDHQ	DEDICATED DETECTIVE OFFICE	
	JUVENILE HOLDING			100	100	TH	SLF ADDITION	TH	THA	TH-FDHQ	don't have one. Nice to have, now sits with sergeant; secured juvenile room	
112	LOCKERS- SUPERVISORS		42	120	78	TH	SLF ADDITION	TH	TH	TH-FDHQ	supervisors locker; no seating area, no shower. access to roof with ladder, not enough lockers need expanded. No privacy. ADD SHWR AND TOILET	
113	GUARD ROOM. SEE BELOW				0			TH	TH	TH-FDHQ	kitchenette, water station; report writing	
	REPORT WRITING		140	180	40	BOTH *S	BOTH *Small ro	TH	THA	TH-FDHQ	3 STATIONS. 25% BIGGER	
	BRIEFING/ROLL CALL		150	150	0	TH	SLF ADDITION	TH	THA	TH-FDHQ	SEPARATE ROOM IN NEW SPACE- 50% CAPACITY	
	LOUNGE		150	150	0	TH	SLF ADDITION	TH	THA	TH-FDHQ	SEPARATE ROOM IN NEW SPACE- 50% CAPACITY	
114	TOILET ROOM (M)		128	128	0	TH	SLF ADDITION	TH	TH	TH-FDHQ		
115	MALE LOCK-UP		217	217	0	TH	SLF ADDITION	TH	TH	TH-FDHQ	3 UNITS	
116	STORAGE ARMORY		28	80	52	TH	SLF ADDITION	TH	TH	TH-FDHQ	close to garage; gun cleaning in basement; should be in same space or close together.	
117	DISPATCH TELECOM		62	65	3	TH	SLF ADDITION	TH	TH	TH-FDHQ	size ok; EXPANSION OF EQUIPMENT; SEPARATE TELE-COM ROOM?	
119	STORAGE/ANTE		21	0	-21	TH	SLF ADDITION	TH	TH	TH-FDHQ	TRANSITION/WALK-THRU SPACE	
120	BARK RM- GUN STORAGE		26	30	4	TH	SLF ADDITION	TH	TH	TH-FDHQ	gun storage; can turn into office; officer to go in to wire report; no secretary records clerk currently in supervisors office	
121	MATRONS RM. F LOCKER		78	120	42	TH	SLF ADDITION	TH	TH	TH-FDHQ	locker room for female; no shower- should have. 3 female dispatchers, all used up. ASSUMES 50% INCREASE	
122	FEMALE LOCKUP		41	217	176	TH	SLF ADDITION	TH	THA	TH-FDHQ	should have at least 2. PLAN 3 UNITS, SAME SIZE AS MALE	
123	TOILET. F/ SHOWER		23	128	105	TH	SLF ADDITION	TH	TH	TH-FDHQ	PART OF LOCK-UP AREA. SAME AS M TOILET/SHOWER	
128	COMMND OFFICES- CONFERENCE/MULTI-PURPOSE		155	400	245	TH	SLF ADDITION	TH	TH	TH-FDHQ	main conf room and interrogation, with AV capabilities. CURRENTLY ALSO A "WALK-THRU". FOR COMMUNITY	
129	POLICE DISPATCH		145	180	35	TH	SLF ADDITION	TH	TH	TH-FDHQ	NEEDS EQUIPMENT UPGRADE, MORE COUNTER SPACE, WALL STORAGE SPACE. NEED ADEQUATE # OF POWER/TELECOMM RECEPTACLES.	
130	LOBBY		53	100	47	TH	SLF ADDITION	TH	TH	TH-FDHQ	EXTG. POLICE LOBBY CAPACITY TO BE EXPANDED. COMBINE W/ FIRE	
NEW	PUBLIC INFORMATION AREA		0	100	100	TH	SLF ADDITION	TH	THA	TH-FDHQ		
NEW	WAITING		0	80	80	BOTH	BOTH	TH	THA	TH-FDHQ	WITH 4 SEATS	
NEW	PUBLIC TOILETS		0	120	120	BOTH	BOTH	TH	THA	TH-FDHQ	2 UNISEX TOILETS. No public toilets access when town hall is closed	
NEW	BRIEFING/ROLL CALL		0	180	180	TH	SLF ADDITION	TH	THA	TH-FDHQ	currently in report wiring space, now in garage. Can be sharec	
131	POLICE SERGEANTS OFFICE		160	230	70	TH	SLF ADDITION	TH	TH	TH-FDHQ	SIZE OK IF INCL. RECORDS ROOM	
132	COPY ROOM/IT SERVER		48	50	2	TH	SLF ADDITION	TH	TH	TH-FDHQ		
133	FILE RECORD CLERK ROOM		70	70	0	TH	SLF ADDITION	TH	TH	TH-FDHQ		
B02	GARAGE. SALLYPORT		1447	1447	0	TH	SLF ADDITION	TH	TH	TH-FDHQ	4 bays	
B02	TIRE & CYCLE STORAGE		459	459	0	TH	SLF ADDITION	TH	TH	TH-FDHQ		
B02	IMPOUNDED STORAGE		156	156	0	TH	SLF ADDITION	TH	TH	TH-FDHQ		
B05A	ARMORY STORAGE		19	19	0	TH	SLF ADDITION	TH	TH	TH-FDHQ		
B11	FIRE RANGE		1130	1130	0	TH	SLF ADDITION	TH	TH	TH-FDHQ	Bedford now- in-house is better.	
B03	FIRE ALARM BATTERY. MISC. POLICE STORAGE		37	40	4	TH	SLF ADDITION	TH	TH	TH-FDHQ	ESTIMATED 25% FOR POLICE STORAGE	
B08	FIRE ARMS OFFICER STORAGE		38	38	0	TH	SLF ADDITION	TH	TH	TH-FDHQ		
B-10	STORAGE		40			BOTH	BOTH	TH	TH	TH-FDHQ	TOWN HALL STORAGE	

**TOWN OF LYNNFIELD
PUBLIC SAFETY BUILDING
FINAL DRAFT SPACE ANALYSIS**

DEPARTMENT: FIRE HEADQUARTERS STATION SOUTH LYNNFIELD

Headquarters

RM#	EXISTING in SF			PROPOSED in SF		AREA DIFF	COMMENTS
	ROOM NAME	STAFF	AREA	STAFF	AREA		
	TOTAL:	0	4,586		15,152	10,659	
F01	DAY / TRAINING RM		384		809	425	
NEW	OFFICER'S BUNK ROOM				148	148	
F01	CHIEF		118		141	23	
NEW	PERSONNEL FILES/RECORDS/STORAGE				0	0	Included in Storage Room
F01	FIRE PREVENTION OFFICE		118		0	-118	Located in town hall fire station
NEW	PLAN REVIEW AREA				0	0	Located in town hall fire station
NEW	CAPT./LIEUTENANT OFFICE				204	204	2 separate offices each 102sf
NEW	DEPUTY CHIEF OFFICE				102	102	
NEW	FIRE INSPECTOR				0	0	Located in town hall fire station
NEW	MAIL BOXES				40	40	
NEW	STUDY ROOM/REPORT WRITING				50	50	
NEW	WELLNESS/EXERCISE AREA				397	397	
F01	COMPRESSOR & STORAGE		93		207	207	
F01	MECHANIC'S ROOM W/MEZZ.		400		353	-47	
F01	LOCKER ROOM		134		0	-134	Locker rooms deleted in favor of lockers in dorm/bunk rooms
F01	MEN'S BATHROOM		125		246	121	
NEW	WOMEN'S BATHROOM				209	209	
F01	KITCHEN		150		224	74	
F02	FIRE APPARATUS ROOM		2230		6594	4364	4.5 bays, 4-dbl deep w/drive through, 1 single (front side).
NEW	PARKING SPACE: FIRE CHIEF				0	0	
NEW	PARKING SPACE: FMO				0	0	
101	LOCKER ROOM		108		0	-108	Locker rooms deleted in favor of lockers in dorm/bunk rooms
126	Watchroom				173	173	Replacing former radio room/office for captain
NEW	DORM/BUNK ROOMS			6	732	732	4 @ 123sf ea. and 2 @ 120sf ea.
S01	EMS STORAGE & SPARE TURNOUT GEAR STORAGE		336		698	362	Basement level- storage
S01	HOSE STORAGE		390		511	121	Basement level- storage
S01	SHARED RADIO ROOM		0		0	0	Replaced by watchroom and by EOC/Multi Purpose Room
NEW	LOBBY				269	269	
NEW	WORK ROOM				269	269	
NEW	TURN OUT GEAR/PPE				518	518	
NEW	LAUNDRY GEAR & UNIFORMS				219	219	2 Separate rooms
NEW	PERSONNEL DECON ROOM x2				201	201	2 Separate rooms
NEW	STORAGE				401	401	
NEW	EMERGENCY MEDICAL STOR.				93	93	
NEW	FLAMMABLE STORAGE				0	0	in cabinets in apparatus bay
NEW	MOBILE STORAGE RACK				0	0	on/next to apparatus bay wall
NEW	HAZARDOUS STORAGE				0	0	in cabinets in apparatus bay
NEW	EMERGENCY MGMT OFFICE/STOR				0	0	Included in Storage Room
NEW	MEETING/TRAINING & MULTI PURPOSE ROOM FOR ALL PS & COMM USE FUNCTIONS. EMERGENCY OPERATIONS CTR (EOC) WHEN NEEDED				864	864	

**TOWN OF LYNNFIELD
PUBLIC SAFETY BUILDING FEASIBILITY STUDY
FINAL DRAFT SPACE ANALYSIS**

DEPARTMENT: TOWN HALL FIRE STATION- SUBSTATION

RM#	EXISTING in SF			PROPOSED in SF		AREA DIFF	COMMENTS
	ROOM NAME	STAFF	AREA	STAFF	AREA		
	TOTAL:	0	2,975	7,241	4,266		
EX	APPARATUS BAY FLOOR AREA		2230		2479	249	
EX	Kitchen & Storage		0		271	271	
EX	STORAGE-EMS		107		78	-29	
EX	OFFICE-Captain		58		129	71	
EX	DAY ROOM		370		527	157	
EX	TOILET SHOWER- M		85		116	31	
EX	OFFICE-Lieutenant		125		0	-125	Removed. Shift officer program space designated as Captain's office.
NEW	TOILET/SHOWER- F				86	86	
NEW	WELLNESS EXERCISE				366	366	Shared PD/FD Wellness Program Space in lower level
NEW	REPORT WRITING/Study Rm				100	100	
NEW	DORM/BUNK ROOM			2	222	222	2 Dorm/Bunk Rooms @ 111sf ea.
NEW	Multi Use Storage Room				882	882	
NEW	Watchroom				145	145	
NEW	SHARED LOBBY				0	0	Shown in Police Station program spaces
NEW	TOOL/WORK ROOM				89	89	
NEW	TURN OUT GEAR/PPE				378	378	
NEW	LAUNDRY- Uniforms,Misc				160	160	
NEW	DECONTAMINATION SHOWER				203	203	
NEW	STORAGE for Equipment				114	114	
NEW	Copy/Mail Room				72	72	
NEW	FLAMMABLE STORAGE				0	0	storage cabinet in apparatus bay, not shown in plan
NEW	MOBILE STORAGE RACK				0	0	storage rack in apparatus bay, not shown in plan
NEW	HAZARDOUS STORAGE				0	0	storage cabinet in apparatus bay, not shown in plan
NEW	OFFICER BUNK ROOM				140	140	
EX	Fire Alarm System Office				83	83	Lower level
NEW	Gear Extractor-Laundry Room				114	114	
NEW	Equipment Decon Room				172	172	
NEW	Plan Review				85	85	
EX	Fire Prevention & Inspection Ofc				149	149	
NEW	Emergency Management Supply Room				81	81	Lower level

TOWN OF LYNNFIELD
PUBLIC SAFETY BUILDING FEASIBILITY STUDY
FINAL DRAFT SPACE ANALYSIS

DEPARTMENT: POLICE STATION - TOWN HALL (FIRST FLOOR AND BASEMENT)

RM#	EXISTING in SF			PROPOSED in SF		AREA DIFF	COMMENTS
	ROOM NAME	STAFF	AREA	STAFF	AREA		
TOTAL:		1	5,991	9,450	2,568		
101	LOCKERS (M)/Showers/Toilets		108	342	234		
102	CHIEF		138	148	10		
103	CONFERENCE		117	159	42		
104	SECRETARY	1	101	77	-24		
105	CAPTAIN		120	115	-5		
NEW	ADMIN STAFF		0	112	112		
NEW	LIEUTENANT		0	110	110		
106	EVIDENCE- STORAGE		53	71	18		
NEW	INTERVIEW ROOMS (121sf & 64 sf)			306	306		Main Level interview room and lower level interview room
107	AD. FIREARM LICENSE & SUPERVISOR		83	106	23		
109	RECORD ADMIN STOR.		46	22	-24		
110	INTERROGATION-BOOKING		89	156	67		
111	BOOKING-DETECTIVES/ AV		73	109	36		
NEW	JUNVENILE HOLDING			63	63		
112	LOCKERS- SUPERVISORS		42	163	121		
113	GUARD ROOM. SEE BELOW			0	0		
NEW	REPORT WRITING		140	225	85		Includes two spaces one per floor. 163+62= 225SF
NEW	BRIEFING/ROLL CALL		150	167	17		
NEW	LOUNGE		150	174	24		
114	TOILET ROOM (M)		128	0	-128		
115	MALE LOCK-UP		217	395	178		
116	STORAGE ARMORY		28	32	4		
117	DISPATCH TELECOM		62	67	5		
119	STORAGE/ANTE behind Sgts offices		21	57	36		
120	DARK RM. GUN STORAGE		26	0	-26		
121	MATRONS RM. F LOCKER		78	264	186		
122	FEMALE LOCKUP		41	209	168		
123	TOILET. F/ SHOWER		23	0	-23		
128	CONFERENCE/MULTI-PURPOSE		155	282	127		
129	Communications Center		145	291	146		
130	LOBBY/*Covered entrance area with ADA ramp-combined for Police & Fire Depts.*		53	747	694		
NEW	PUBLIC INFORMATION AREA		0	129	129		
NEW	WAITING		0	0	0		Included in Public Information Area
NEW	PUBLIC TOILETS		0	122	122		
131	POLICE SARGEANTS OFFICE		160	221	61		
132	COPY ROOM/IT SERVER		48	99	51		
133	FILE RECORD CLERK ROOM		70	80	10		
B02	GARAGE. SALLYPORT		1447	2709	1262		
B02	TIRE & CYCLE STORAGE		459	140	-319		
B02	IMPOUNDED STORAGE		156	89	-67		
B05A	ARMORY STORAGE		19	0	-19		
B11	FIRE RANGE		1130	0	-1130		
B03	FIRE ALARM BATTERY. MISC. POLICE STORAGE		37	0	-37		
B08	FIRE ARMS OFFICER STORAGE		38	0	-38		
B-10	STORAGE Town Hall Room that must have contents relocated in town hall and this room to be secured/interior door that connects to town hall must be removed.		40	0	-40		
NEW	Combined NEW MULTI-PURPOSE MEETING Space			546			
NEW	Potential Additional realized space with addition to lower level & main level in rear of building-marked as "Unassigned"			346			



APPENDIX B
Town of Lynnfield
Public Safety Building Renovation/Reconstruction – Feasibility Study
Apparatus Analysis & Review
DAI Project # 20-063-2316

Headquarters Fire Station (South Lynnfield) will likely house the following apparatus:

- 2 Engines (size is 35' L, 11' W)
- 1 Tower Ladder Truck (size is 48'L, 11'W)
- 2 Rescues {Ambulances} (size is 27'L, 10'W)
- 1 Squad unit {Brush-Forestry} (approx. size is 22'L, 8'W)
- 1 Squad unit {Alarm Truck-Bucket/Utility Truck} (approx. size is 22'L, 8'W)
- 1 Maintenance Truck {Full-size Pick-up truck} (approx. size is 22'L, 8'W)
- 1 Service Unit {Full-size pick-up truck} (approx. size is 20'L, 7'W)
- 1 FD-PD Joint School Response Unit (Box Van style) (approx. size 22'L, 8'W)
- 1 Boat w/trailer (approx. 14'L, 6'W)
- 1 Lighting unit trailer (approx. 10'L, 6'W)
- 1 Model T Antique fire truck (approx.10'L, 6'W)

There will also be 2 Mid-size (Ford Explorer) SUVs assigned to this station but may be kept outside if no room inside.

Town Hall Fire Station apparatus:

- 2 Engines (size is 35'L, 11'W) *It is possible that 1 Engine will be slightly shorter now.*
- 1 Rescue {Ambulance} (size is 27'L, 10'W)
- 1 Fire Prevention Vehicle {Full Size SUV} (approx. size is 17'L, 7'W)

We would be wise to figure in room for at least one more Vehicle here (such as ambulance size) I would think it could be possible that the FD-PD combined school response unit could end up here if desired (or elsewhere at some point) and/or they also could see a 4th Rescue/Ambulance as a possibility in the future. See Below-

****This station's apparatus floor design size would really benefit from adding another 5' length if possible. Even 3' more would give some needed circulation space. If they ever had to house a ladder truck here, it would only fit with no circulation space and that is hazardous to staff & equipment. (current ladder truck is 48'L and some are as long as 50'). This also applies to the above note of other added apparatus.***

Apparatus Doors for both stations should be 14'W x 16'H. This will take modifications at the town hall fire station (which may not be feasible, but any increase in height would be beneficial & welcomed there).

APPENDIX C

MEP Narrative

Lynnfield Town Hall Renovation and Proposed Fire HQ Building

April 30, 2021

Proposed South Lynnfield Fire HQ Building MEP Narrative

Fire Protection Systems

General:

The fire protection Contractor shall fully design the facility fire protection systems based on current codes as well as direction received from the Authorities Having Jurisdiction. Conduct a flow test to serve as the basis of system designs.

Provide complete, tested and operational fire protection systems at the facility and to a point of water entrance 10-feet outside the facility.

Obtain all permits and gain approvals from Authorities Having Jurisdiction for designs and installations.

Sprinkler system designs to be based on the area density method with Light and Ordinary Hazard classifications anticipated.

Fire Sprinkler Systems:

The facility to be fully sprinkled. The floor control valve assembly to include shut-off valve, flow switch, pressure gauge, test & drain valve.

Materials:

Project materials to be UL listed and FM approved for their intended use.

Above ground piping 2-inch and smaller shall be schedule 40 steel with threaded or welded joints.

Above ground piping 2-1/2-inch and larger shall be schedule 10 or 40 steel with roll grooved mechanical joints.

Sprinkler heads to be standard spray, quick response type with the following finishes;

Finished high profile areas / hard ceilings – concealed heads with white cover plates.

Finished areas / suspended ceilings – recessed heads with white finish and escutcheons.

Unfinished areas – rough brass upright and pendent heads.

Areas subject to freezing – dry barrel type with finishes to match adjacent heads.

System valves, flow and pressure switches to be supervised by the facility fire alarm system.

Plumbing Systems

General:

Provide complete plumbing system. Utilities will be piped to all plumbing fixtures indicated on the Architectural plans. A floor drain will be provided for each toilet room.

Plumbing Fixtures:

Kohler, American Standard, Eljer, or approved Equal. All toilets to be flush valve type.

Water closets shall be sensor operated, dual flush, 1.1/1.6 GPF, wall hung, vitreous china. Urinals shall be wall hung, sensor operated, low flow 1/8 gallon per flush, vitreous china. The sensors shall be hardwired into the building electrical system. The plumbing fixtures shall be ADA compliant.

Lavatories: Wall mounted, vitreous china, ADA compliant, 20"x18", 0.5 gpm ultra low flow sensor operated faucet.

Mop Sink: A 24x24 terrazzo mop sink shall be provided in each Janitor's closet.

Sanitary and Vent:

Piping to be no-hub cast iron above grade and PVC below grade.
Preliminary sanitary service size: 6"

Water Service:

The water service for the facility will be tied into the existing municipal system. Water backflow prevention will be provided in accordance with the state and local utility requirements. Water meters shall be installed as required on the domestic water service entrance. The domestic water shall enter the building via a dedicated main serving the building.

Domestic Hot Water:

50 gallon propane gas fired, condensing, storage tank water heaters, a recirculation piping loop, and associated pump will serve all plumbing fixtures. Gas fired water heaters to be vented through the sidewall. Combustion air will be directly piped to outside. Water will be heated to 140°F and then tempered with a thermostatic mixing valve before being supplied to the fixtures. Basis of design: A.O. Smith Cyclone XI BTX 100.

Piping to be Type L copper and insulated per ASHRAE standards.

HVAC Systems

Design Criteria and Applicable Codes

Indoor design conditions:

Winter: 68 – 70 deg. F db, 20-30% relative humidity
Summer: 72 – 75 deg. F db, 40-60% relative humidity

System Capacity:

HVAC system design to be based on 2017 ASHRAE Fundamentals Handbook Climatic design conditions data for Worcester, Massachusetts.
99.6% Winter Frequency of Occurrence: 2.4 deg. F. db.
0.4% Summer Frequency of Occurrence: 85.8 deg. F. db / 70.9 deg. F. wb.

Heating, Ventilating and Cooling:

Occupied Space HVAC: Heating and cooling shall be served by a roof mounted variable refrigerant flow (VRF) heat recovery system designed for low ambient heating. Refrigerant piping shall connect the roof or ground mounted condensing unit to ceiling mounted evaporators configured for space zoning and sized for the calculated heating and cooling load. The VRF system shall be Mitsubishi CITY MULTI high efficiency, heat recovery type, or equal. It is anticipated that the building will require two 26-ton outdoor units. Based on initial space program it is assumed that 14 indoor units comprising a combination of concealed ceiling mounted and wall mounted units will be required.

Support Space Heating System: Two (2) hot water boilers will be provided and located in the mechanical room. Boilers will be a natural gas-fired, high efficiency condensing type. Each boiler will be sized for 50% of the design heat load of the building. Boilers to be Laars Neotherm type, or equal.

Both boilers shall exhausted through a schedule 40 PVC and shall terminate through the mechanical room exterior wall.

Boiler combustion air will be direct connected to each boiler and water heater.

- Apparatus Bay Heating System: Heating for the apparatus bays shall be accomplished with low temperature, in slab, radiant heating equal to Uponor products. This system shall include temperature controls, cross-linked polyethylene tubing and stainless steel manifolds as required. Floor temperatures shall be limited to 85 degrees F at design conditions. Supplemental heating shall be provided by ventilation air introduced into the space.
- Hot water CUH or UH shall be provided to serve vestibules and the mechanical room.

Ventilation: Ventilation rates will meet the most stringent requirement of all applicable codes and will provide all make-up air necessary for building exhaust systems.

Ventilation shall be provided using a total energy recovery type air to air heat exchangers to recover sensible and latent heat energy and transfer the energy to the supply air stream. The 6000 CFM packaged DOAS unit shall be equal Trane Horizon type, or equal. The unit shall have MERV 8 pre-filters, MERV 13 filters, Enthalpy wheel type heat recovery device, supply fan, exhaust fan, variable speed or digital scroll compressors, DX cooling coil, hot gas reheat coil, and modulating gas fired heater. Ventilation air shall be ducted for distribution to the individual spaces.

Apparatus Bay Exhaust: Two 100% redundant fans will be provided with carbon monoxide and NOX sensing for the apparatus bays. Fans to be Greenheck CUE type, or equal.

Pandemic Equipment Option:

Up to three air protection systems that are portable. The units can be stored until needed for air cleaning in the event of a pandemic. The unit shall have a high static EC motor, HEPA filtration, carbon filters, and UVC lights. The HVAC duct can be configured to connect these units to serve multiple spaces. Basis of Design: Air Rover APS2000 or equal.

Piping System:

Piping is to be copper or steel in size 2" in diameter and below. Piping above 2" in diameter to be steel. Steel piping to be threaded or grooved-end type.

Water piping shall be insulated with all service jacketed fiberglass. Shut-off valves shall be provided at all components that require servicing. In addition, shutoff valves shall be strategically located to allow isolating portions of the system piping. Balancing valves shall be provided at all major branches and terminal units.

Hydronic accessories shall include terminal unit isolation valves, air vents, and two-way control valves. Each terminal unit will be piped with a preassembled piping kit which includes shut off valves, strainers, automatic flow control valves, and pete's plugs.

Duct System:

Duct shall be G90 galvanized steel duct and shall meet all SMACNA standards. Duct shall be

sealed to Class A standards regardless of pressure class.

Temperature Controls:

The entire facility shall be provided with a complete direct digital control (DDC) system. The DDC system shall handle all functions of the heating, ventilating and air conditioning systems.

Testing, Adjusting and Balancing:

The air and water systems shall be tested, adjusted and balanced in accordance with current industry standards.

ELECTRICAL SYSTEMS NARRATIVE

A. GENERAL

B. Electrical components shall be seismically restrained to meet the requirements of the Massachusetts State Building Code. Critical Electrical components shall be designed to operate after a design seismic event, documentation shall be provided by equipment suppliers in accordance with ASCE/ANSI 7-05.

C. Electrical systems for this project will be designed consistent with the following documents and other requirements:

1. Massachusetts State Building Code (9th Edition), consisting of:
 - a. International Building Code, 2015 Edition with MA Amendments.
 - b. International Energy Conservation Code, 2015 Edition with MA Amendments.
2. Massachusetts Fire and Electrical Code, consisting of:
 - a. National Electrical Code (NFPA 70), 2020 Edition.
3. NFPA-72 – National Fire Alarm and Signaling Code – current adopted Edition.
4. NFPA-101 - Life Safety Code - current adopted Edition.
5. Illumination Engineering Society of North America, (IESNA) - lighting design handbook.
6. TDMM - BISC I handbook for telephone and data design and integration.

D. ELECTRICAL SERVICE

1. It is anticipated that a new service of 600 Amperes of 120/208V 3-phase power will be required. This will most likely be run from an overhead service drop from the serving utility. Metering will be based on requirements from the serving utility.
2. Main Distribution Panel will be located in electrical room with feeders serving distribution panels. Motors 1/2 horsepower and larger will be fed at 208 volt, 3 phase. Motors smaller than 1/2 horsepower will be fed at 120-volt single phase.
3. Raceways for feeders and branch circuits shall be metallic, rigid metal conduit, intermediate metal conduit (IMC) or electrical metallic tubing

(EMT) subject to the restrictions of the National Electrical Code, minimum size 3/4". EMT shall not be used in concrete construction or where subjected to mechanical damage. Exterior ductbanks shall be comprised of PVC Schedule 40 conduit encased in concrete. Where ductbanks penetrate foundation walls or manholes, galvanized rigid conduit (GRC) shall be used. Ductbank elbows shall be GRC.

4. All 600V feeders shall be single-conductor, copper or aluminum, 600V rated with XHHW or XHHW-2 insulation, feeders shall be color coded using color type at all connections and in all pull and junction boxes. All feeders shall be installed in conduit.
5. Branch circuit conductors shall be single-conductor copper 600V rated with THWN or THHN insulation with continuous color-coding, and installed in conduit.
6. Full size neutrals shall be used for all feeders.
7. Sharing of neutrals is not permitted in feeders or branch circuits.
8. A complete equipment grounding system shall be provided such that all metallic structures, enclosures, raceways, junction boxes, outlet boxes, cabinets, machine frames, metal fences, and all other conductive items operate continuously at ground potential and provide a low impedance path to ground for possible fault currents.
9. The electric equipment room shall be provided with copper ground bus for properly bonding and grounding all electrical panels.
10. A separate insulated green grounding conductor shall be provided for each single and 3-phase feeder and branch circuit. Grounding conductor shall be run with the related phase and neutral conductors. Panel feeders installed in more than (1) raceway shall have individual, full sized, green grounding conductor in each raceway. The equipment grounding system shall not rely on the metallic raceways for grounding continuity.

E. EMERGENCY POWER

1. Emergency power for the building will be provided from a new standby outdoor generator set. Fuel source to be determined. Size of emergency load will determine generator size.
2. There will be one automatic transfer switch which will power all exit lighting, emergency egress lighting, fire and security panels and HVAC systems to maintain a minimum heat setpoint in the building spaces. Other added emergency loads are still to be determined during the design process.

F. SOLAR ELECTRICAL POWER

1. Plan for and document the interconnection pathway to clearly delineate the routing of conduit for a (future) rooftop solar PV system to the electrical panel.
2. System should have a dedicated, clearly labeled breaker for the inverter, in addition to DC (direct current) conduit runs and other electrical wiring and components, as well as equipment for metering per the requirements of the serving utility.

G. LIGHTING

1. Lighting will be provided with foot-candle levels as recommended by the Illuminating Engineering Society (IES). Lighting will be served at 120 volt.

2. Egress lighting will be provided to illuminate the path of egress to an average of 1fc using the emergency power system.
3. Light sources indoors will primarily be energy saving LED fixtures, this shall include linear, recessed troffers and down lights.
4. Lighting controls will consist of line voltage occupancy sensors for small offices, storage rooms and restrooms. Ceiling-mounted occupancy sensors will be used in corridors and large common rooms.

G. RECEPTACLES

1. Receptacles will be provided as required and dictated by furniture and equipment needs.
2. Exterior outlets and outlets within 6' of a sink, regardless of height or location and in restrooms will be GFI type.
3. Receptacles for PC's shall be standard receptacles, not isolated ground receptacles.
4. Ground wires shall be pulled with all receptacle circuits.
5. Tamper proof receptacles shall be installed in all areas as required by the NEC.
6. Cover plates will be primarily nylon or polycarbonate throughout the facility. Color of devices and cover plates will be ivory.
7. Receptacles on the emergency power system shall be red in color with matching red cover plates.

H. TELECOMMUNICATIONS RACEWAY SYSTEMS, PATHWAYS AND SPACES

1. Pathways consisting of conduits, and J-Hooks will be designed to properly support the Structured Cabling System. The design will provide the pathways for both vertical and horizontal cabling.
2. All telephone/data outlets will have 3/4" (for up to 4 cables) or 1-1/4" (for 5-10 cables), conduit stubbed out of the wall to an accessible ceiling.
3. The existing TR room will be used and patch panels provided as required for the number of devices in the project plus 25% spare capacity.

I. TELECOMMUNICATIONS CABLING (OWNER PROVIDED)

1. The telecommunications Structured Cabling System will be designed to meet the current and foreseeable needs for the telecommunications systems
2. CATV distribution will consist of .500 coax from the main equipment room to each of the TR's. Amplifiers and splitters will then distribute the signal to each drop.
3. All data cabling will be designed with category 6e cable. Voice cabling will utilize cat 6e for VoIP systems, cable and jacks will be terminated on wall panels in the respective TR. All cables will be homerun to the closest TR and terminated as required.
4. Distribution of CATV will be over RG6 quad shield coax copper cable. Each cable will be homerun to the closest TR and terminated.
5. Permanent offices will have a minimum of two outlets consisting of at least one voice and one data cable. Flexible workstations will have a minimum of one outlet consisting of one voice and one data cable.

J. FIRE ALARM AND SMOKE DETECTION SYSTEM

1. Fire Alarm system shall be supplied with emergency battery for a minimum

of 24 hours operation.

2. All initiating devices will be individually identified on the system as to its device type and location. Pull stations at locations accessible to the general public will be break glass type. Alarm devices will consist of horns and strobes to meet the requirements of the Americans with Disabilities Act (ADA) and NFPA 72.
3. Smoke detectors shall be photoelectric type. Duct smoke detectors shall be provided for HVAC Equipment over 2,000 CFM and shall be the photoelectric type.
4. Smoke detectors shall be provided in mechanical rooms
5. Heat detectors shall be provided in areas where dust may interfere with the proper function of smoke detectors.

END OF ELECTRICAL SYSTEMS NARRATIVE

**COST BREAKDOWN SUMMARY
PRE-SCHEMATIC BUDGET
LYNNFIELD TOWN HALL
LYNNFIELD, MA**

4/29/21

PROJECT NO:

DIVISION	DESCRIPTION OF WORK	BUDGET
01000	GENERAL CONDITIONS	\$ 840,000
02000	SITework	\$ 360,000
	BUILDING DEMOLITION	\$ 175,000
03000	CONCRETE	\$ 203,000
04000	MASONRY	\$ 355,000
05000	STRUCTURAL STEEL, JOISTS AND DECK	\$ 250,000
	MISC IRON & LINTELS	\$ 60,000
06000	WOOD & PLASTICS	\$ 231,000
07000	THERMAL & MOISTURE PROTECTION	\$ 284,000
08000	DOORS & WINDOWS	\$ 294,000
09000	FINISHES	\$ 950,000
10000	SPECIALTIES	\$ 85,000
11000	EQUIPMENT - (NIC)	\$ -
12000	FURNISHINGS - (NIC)	\$ -
13000	PRE-ENGINEERED BUILDING - (NIC)	\$ -
14000	CONVEYING SYSTEMS	\$ 95,000
15000	FIRE PROTECTION SPRINKLER SYSTEM	\$ 160,000
15400	PLUMBING SYSTEMS	\$ 170,000
15500	HVAC SYSTEMS	\$ 1,115,000
16000	ELECTRICAL SYSTEMS	\$ 885,000
	ALLOWANCE: EMERGENCY GENERATOR	\$ 150,000
	ALLOWANCE: DETENTION EQUIPMENT	\$ 100,000
	ALLOWANCE: WINTER PROTECTION	\$ 50,000
	SUPERVISION, MANAGEMENT & ADMINISTRATION (INCLUDED W/GEN CONDITIONS)	\$ -
	BLDG PERMIT FEE, GEN LIABILITY INSURANCE & BONDS	\$ 186,382
	SUBTOTAL	\$ 6,998,382
	GC CONSTRUCTION CONTINGENCY (15.0%)	\$ 1,036,014
	GC OH & P (3.0%)	\$ 241,033
	SUB-TOTAL SCHEMATIC BUDGET	\$ 8,275,429
	GC PERFORMANCE & PAYMENT BOND	\$ 58,818
	ESCALATION (4.0%)	\$ 331,017
	TOTAL PRE-SCHEMATIC BUDGET	\$ 8,665,263
	COST PER SF	\$ \$361.66

**COST BREAKDOWN SUMMARY
 PRE-SCHEMATIC BUDGET
 SOUTH LYNNFIELD FIRE HEADQUARTERS
 LYNNFIELD, MA**

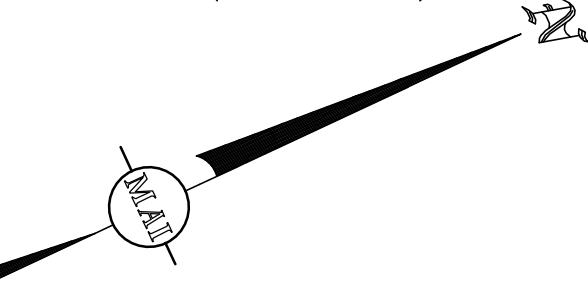
4/28/21

PROJECT NO:

DIVISION	DESCRIPTION OF WORK	BUDGET
01000	GENERAL CONDITIONS	\$ 720,000
02000	SITWORK	\$ 975,000
	BUILDING DEMOLITION	\$ 66,000
03000	CONCRETE	\$ 441,000
04000	MASONRY	\$ 520,000
05000	STRUCTURAL STEEL, JOISTS AND DECK	\$ 440,000
	MISC IRON & LINTELS	\$ 110,000
06000	WOOD & PLASTICS	\$ 160,000
07000	THERMAL & MOISTURE PROTECTION	\$ 464,000
08000	DOORS & WINDOWS	\$ 308,000
09000	FINISHES	\$ 678,000
10000	SPECIALTIES	\$ 52,000
11000	EQUIPMENT - (NIC)	\$ -
12000	FURNISHINGS - (NIC)	\$ -
13000	PRE-ENGINEERED BUILDING - (NIC)	\$ -
14000	CONVEYING SYSTEMS	\$ 140,000
15000	FIRE PROTECTION SPRINKLER SYSTEM	\$ 145,000
15400	PLUMBING SYSTEMS	\$ 483,000
15500	HVAC SYSTEMS	\$ 790,000
16000	ELECTRICAL SYSTEMS	\$ 605,000
	ALLOWANCE: EMERGENCY GENERATOR	\$ 150,000
	ALLOWANCE: LANDSCAPING	\$ 50,000
	ALLOWANCE: WINTER PROTECTION	\$ 75,000
	SUPERVISION, MANAGEMENT & ADMINISTRATION (INCLUDED W/GEN CONDITIONS)	\$ -
	BLDG PERMIT FEE, GEN LIABILITY INSURANCE & BONDS	\$ 213,057
	SUBTOTAL	\$ 7,585,057
	GC CONSTRUCTION CONTINGENCY (15.0%)	\$ 1,122,789
	GC OH & P (3.0%)	\$ 261,236
	SUB-TOTAL SCHEMATIC BUDGET	\$ 8,969,082
	GC PERFORMANCE & PAYMENT BOND	\$ 64,603
	ESCALATION (4.0%)	\$ 358,763
	TOTAL PRE-SCHEMATIC BUDGET	\$ 9,392,448
	COST PER SF	\$ 481.66



LOCUS MAP:
(NOT TO SCALE)



SITE FEATURES

- XX--- XXX FOOT CONTOUR
- XX--- XXX FOOT CONTOUR
- XX--- BORDERING VEGETATED WETLANDS
- XX--- LIMIT OF BUFFER ZONE
- XX--- LIMIT OF RIVERFRONT AREA
- XX--- SETBACK LIMIT
- XX--- COMPILED DRAIN LINE
- XX--- COMPILED DRAIN MANHOLE
- XX--- COMPILED CATCH BASIN

PARSONS AVENUE

PROGRESS PRINT
04/26/2021

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GRAPHIC SCALE
SCALE: 1" = 40'



REVISIONS	DATE	DESCRIPTION	BY

59 SUMMER STREET
CONCEPTUAL SITE PLAN
LOCATED IN
LYNNFIELD, MASSACHUSETTS
(ESSEX COUNTY)
PREPARED FOR
TOWN OF LYNNFIELD

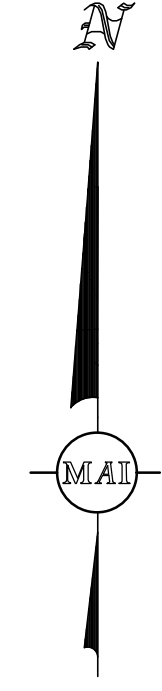
MERIDIAN ASSOCIATES
69 MILK STREET, SUITE 208
BEVERLY, MASSACHUSETTS 01915
WESTBOROUGH, MASSACHUSETTS 01581
TELEPHONE: (978) 299-4447
WWW.MERIDIANASSOC.COM

DESIGNED BY: _____
CHECKED BY: _____

DATE:
APRIL 26, 2021
SCALE:
1" = 40'
SHEET No.
1 OF 1
PROJECT No.
6316



PROGRESS PRINT
04/26/2021



LOCUS MAP:
(NOT TO SCALE)

REVISIONS	DATE	DESCRIPTION	BY

598 SALEM STREET
CONCEPTUAL SITE PLAN 1
LOCATED IN
LYNNFIELD, MASSACHUSETTS
(ESSEX COUNTY)
PREPARED FOR
TOWN OF LYNNFIELD

598 SALEM STREET
CONCEPTUAL SITE PLAN 1
LOCATED IN
LYNNFIELD, MASSACHUSETTS
(ESSEX COUNTY)
PREPARED FOR
TOWN OF LYNNFIELD

MERIDIAN ASSOCIATES
500 CUMMINGS CENTER, SUITE 5950
BEVERLY, MASSACHUSETTS 01915
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WWW.MERIDIANASSOC.COM

69 MILK STREET, SUITE 208
WESTBOROUGH, MASSACHUSETTS 01581
TELEPHONE: (508) 871-7030
WWW.MERIDIANASSOC.COM

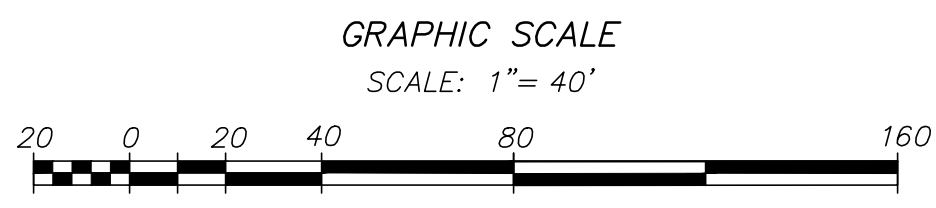
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CHECKED BY: _____

DATE:
APRIL 22, 2021

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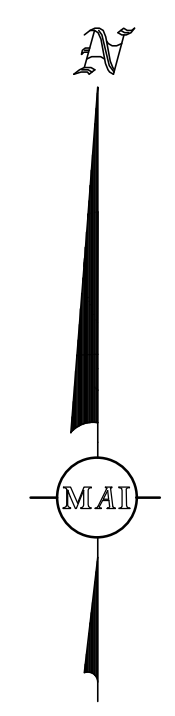
SHEET No.
1 OF 1

PROJECT No.
6316





PROGRESS PRINT
04/26/2021



LOCUS MAP:
(NOT TO SCALE)

REVISIONS	DATE	DESCRIPTION	BY

598 SALEM STREET
CONCEPTUAL SITE PLAN 2
LOCATED IN
LYNNFIELD, MASSACHUSETTS
(ESSEX COUNTY)
PREPARED FOR
TOWN OF LYNNFIELD

MERIDIANS ASSOCIATES
500 CUMMINGS CENTER, SUITE 5950
BEVERLY, MASSACHUSETTS 01915
TELEPHONE: (978) 299-4447
WWW.MERIDIANSASSOC.COM

69 MILK STREET, SUITE 208
WESTBOROUGH, MASSACHUSETTS 01581
TELEPHONE: (508) 871-7030
WWW.MERIDIANSASSOC.COM

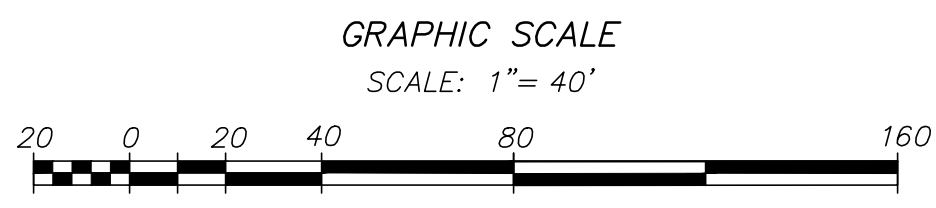
DESIGNED BY: _____
CHECKED BY: _____

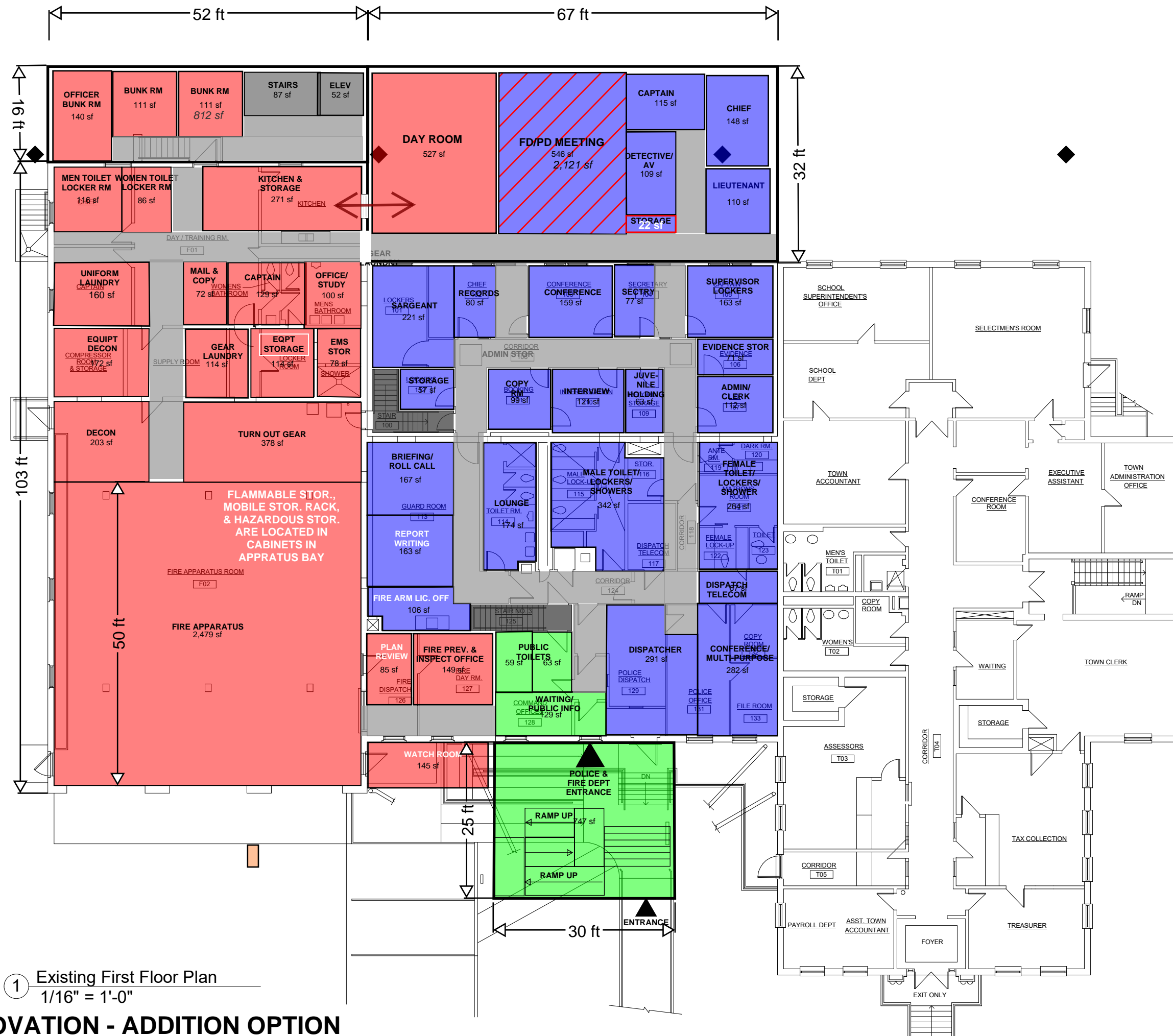
DATE:
APRIL 26, 2021

SCALE:
1" = 40'

SHEET No.
1 OF 1

PROJECT No.
6316



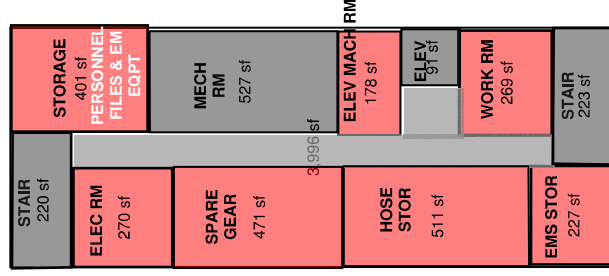
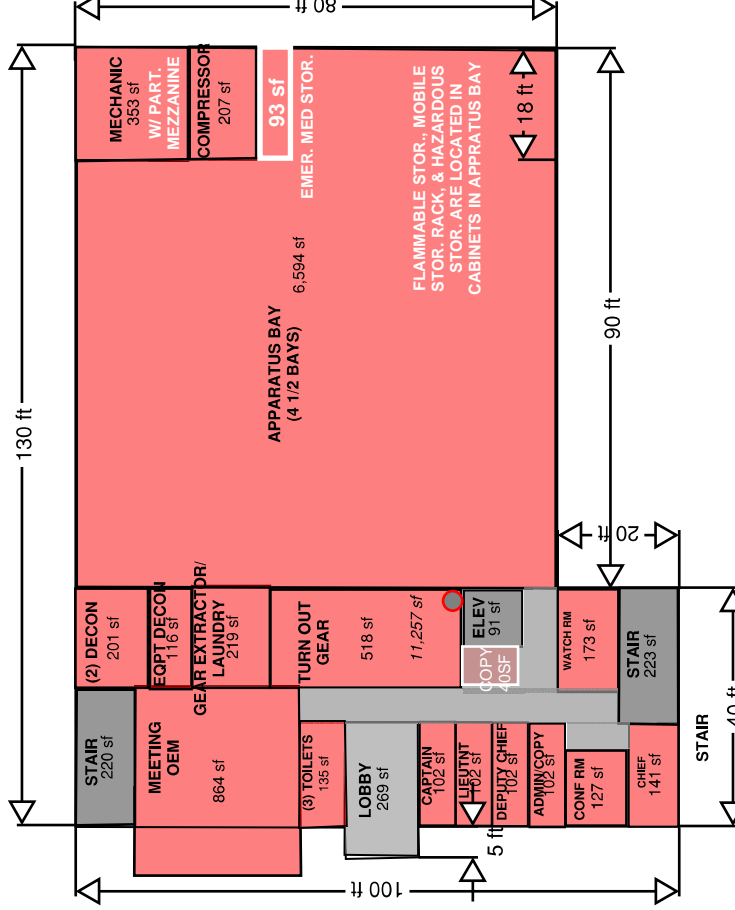
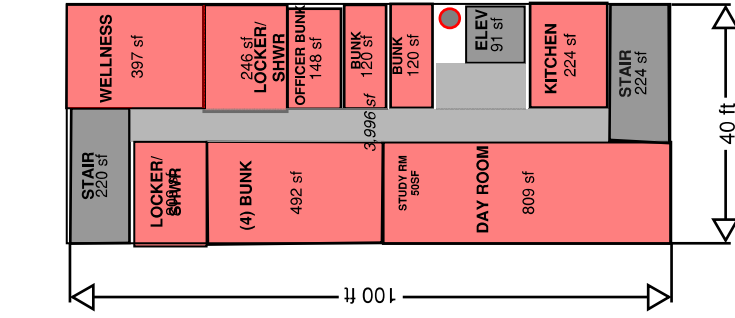


① Existing First Floor Plan
1/16" = 1'-0"

RENOVATION - ADDITION OPTION
REV 12/15/20

REVISED 04/20/21
04/06/2021

TOWN HALL - FIRST FLOOR



SECOND FLOOR PLAN

GROUND FLOOR PLAN

BASEMENT FLOOR PLAN

REVISED 04/20/21

04/06/21

SOUTH LYNNFIELD FIRE HEADQUARTERS



DIGIORGIO ASSOCIATES INCORPORATED
 A LiRo Group Company







APPENDIX H
HIGH-LEVEL CODE REVIEW
April 14, 2021 - DRAFT

Town of Lynnfield
Public Safety Building Renovation/Reconstruction – Feasibility Study
DAI Project # 20-063-2316

Project Background

The Town of Lynnfield has commissioned DAI to evaluate the existing conditions within the Lynnfield public safety building facilities. The study is focused on programming needs of the Police and Fire Departments, and potential development options to satisfy the facilities program needs.

The intent of this High-Level Code Review is to focus on the preferred design option; A new Fire Headquarters Building at 598 Salem Street and renovation/addition to the Public Safety Facility at 55/59 Summer Street.

Executive Summary

New Building – Fire Headquarters Building at 598 Salem Street:

- The new building will have an approved automatic sprinkler system and fire alarm detection systems.
- A fire separation distance greater 30 feet or greater from the existing Post Office will remove the need for exterior wall openings protection.
- The building area allows the construction to be any materials permitted by code. Type of Construction is Type VB; Unprotected/Combustible.

Renovation and Addition – Public Safety Facility at 55/59 Summer Street:

- The new addition and renovated areas will have an approved automatic sprinkler system and fire alarm detection systems.
- The building area allows the construction of the addition to be any materials permitted by code. Type of Construction is Type VB; Unprotected/Combustible.
- Level 3 requires that existing building structural elements be evaluated to determine their capabilities.
- It is assumed that there is a masonry fire separation between the Town Hall and the Police Station. This separation will allow the upgrades to the Fire Station and Police Station and not require the Town Hall portion of the Building to be upgraded.

Feasibility Study Overview

New Building - Fire Headquarters Building at 598 Salem Street:

- Raze the existing sub-fire station and retain the Post Office and Dance Studio.
- Build a 19,200 square foot building, two story plus basement building.
 - Basement Floor – 4,000 square feet
 - Building mechanical and support spaces
 - Ground Floor – 11,200 square feet
 - Fire Station administration offices

- Vehicle and equipment storage
- Second Floor – 4,000 square feet
 - Firefighters living area

Renovation and Addition - Public Safety Facility at 55/59 Summer Street:

Renovate the existing Police and Fire Departments (Existing Town Hall outside of project scope).

- Basement Floor – 16,179 square feet
 - Fire Department: 1,790 square feet of renovation/832 square feet of addition
 - Police Department: 5,367 square feet of renovation/2,144 square feet of addition
 - Town Hall: 6,046 square feet existing, not in project Scope
- First Floor – 21,407 square feet
 - Fire Department: 7,018 square feet of renovation/832 square feet of addition
 - Police Department: 5,367 square feet of renovation/2,144 square feet of addition
 - Town Hall: 6,046 square feet existing, not in project Scope

Code Review for New Building - Fire Headquarters Building at 598 Salem Street

Applicable Building Codes

New Construction

- Building: Massachusetts State Building Code, 9th Edition and incorporates by reference the International Building Code (IBC) – 2015; These together collectively comprise 780 CMR aka, Massachusetts State Building Code, Ninth Edition, Base Volume.
- Accessibility: 521 CMR
- Mechanical: International Mechanical Code and 248 CMR
- Electrical: 527 CMR 12.00
- Plumbing: 248 CMR
- Elevator: 780 CMR and 524 CMR
- Energy: International Energy Conservation Code – 2015 as amended by 780CMR 13.00.

IBC Review for New Building

Chapter 3 - Use and Occupancy Classification

- Fire Station are designed for multiple uses, and therefore have more than one occupancy classification. Because the garage area is classified as:
 - **Use Group S-2; Low-hazard Storage**, enclosed parking garage
 - **Use Group B; Business**, Administrative offices and service-type transactions
 - **Use Group R-2; Residential**, Live/Work area
 - **Use Group A-3; Assembly**, Community Halls
- The building is classified as a Mixed-Use Occupancy.

Chapter 4 – Special Detailed Requirements Based on Use and Occupancy

- Section 406.4.6 Mixed occupancy separation. Parking garages shall be separated from other occupancies in accordance with Section 508.1. Both the vehicle carport and storage garage are determined to be Use Group S-2 Storage and a mixed occupancy separation is not required.

- Section 406.6.2 Ventilation. A mechanical ventilation system shall be provided in accordance with the International Mechanical Code.

Chapter 5 – General Building Height and Areas

- Table 504.3 Allowable Number of Stories Above Grade Plane – Use Group B and Use Group S-2 for type VB construction is **allowed 3 Stories** (without increase).
- Table 506.2 Allowable Area Factor - **Use Group B allows 27,000 sf and Use Group S-2 allows 40,500 sf** for type VB construction (without increase).
- 508.3 Nonseparated Occupancies - Mixed occupancies that are not separated from each other since the building is regulated for the worst-case occupancy; Use Group B
- Parking garages shall be separated from other occupancies in accordance with Section 508.1.

Chapter 6 – Types of Construction

- Table 601 Fire-Resistance Rating Requirements for Building Elements - For the purpose of this code review the Type of Construction is Type VB; Unprotected/Combustible.
- 602.5 Type V. Type V construction is that type of construction in which the structural elements, exterior walls and interior walls are of any materials permitted by this code.

Chapter 7 – Fire and Smoke Protection Features

- Table 705.8 A fire separation distance greater 30 feet or greater from the existing Post Office will remove the need for exterior wall openings protection.

Chapter 10 – Means of Egress

- Table 1004.1.2 Maximum Floor Area Allowances Per Occupant; Accessory storage areas, mechanical equipment room - 300 gross, Assembly Concentrated (chairs only not fixed) - 7 net, Business areas – 100 gross, Parking garages – 200 gross, Dormitories – 50 gross.
- Section 1017 Exit Access Travel Distance – Use Group B; 300 feet, Use Group S-2; 400 feet.
- Table 1020.1 Corridor Fire-Resistance rating – Use Group B and S-2; 0 hour fire-resistance rating.
- Section 1028.1 Exit Discharge – Not more than 50 percent of the number required capacity of interior exit stairways are permitted to egress through areas on the level discharge provided 4 conditions are met.

Code Review for Renovation and Addition - Public Safety Facility at 55/59 Summer Street

Applicable Building Codes

Building: Massachusetts State Building Code, 9th Edition and incorporates by reference the International Building Code – 2015; These together collectively comprise 780 CMR aka, Massachusetts State Building Code, Ninth Edition, Base Volume.

- The Ninth Edition of the Massachusetts State Building Code Chapter 34: Existing Building Code adopts the International Existing Building Code - 2015 (IEBC).
- Accessibility: 521 CMR
- Mechanical: International Mechanical Code and 248 CMR
- Electrical: 527 CMR 12.00
- Plumbing: 248 CMR

- Elevator: 780 CMR and 524 CMR
- Energy: International Energy Conservation Code – 2015 as amended by 780CMR 13.00.

IEBC Review for Renovation and Addition

Classification of Work

Section 504, Alteration - Level 3

- The envisioned Work Area exceeds 50 percent of the building area (19,542 square feet of renovation in 31,634 square feet of existing building). The project Work Area is therefore classified as Alteration Level 3; the work area exceeds one-half of the aggregate building area.
- Section 505.2 states Level 3 alterations shall comply with the provisions of Chapter 7 and 8 for Level 1 and 2 alterations, respectively, as well as the provisions of Chapter 9.

Section 507, Additions

- Section 507.2 states Additions to existing buildings shall comply with the provisions of Chapter 11.

Building Elements and Materials

Section 803.4, Interior Finish

- Interior finish of walls and ceilings of the Work Area shall comply with the requirements of the International Building code for Business occupancy classification.

Fire Protection

Section 804.2.1.1, Supplemental Automatic Sprinkler System Requirements

- Where the work area on any floor exceeds 50 percent of that floor area, sprinklers must be installed throughout the floor.

Means of Egress

Section 805

- The provisions of this section are applicable only when the alteration work area includes exits or corridors shared by more than one tenant.
- It is the intent of the design for newly configured means of egress within the Work Area shall comply with the requirements the IBC.

Accessibility

Section 705

- The Work area alterations shall comply with applicable provisions in IEBC Sections 705.1.1, 705.1.10, 705.1.12, 705.1.13, Chapter 11 of the IBC and CMR 521; Architectural Access Board.

Structural

Section 807.4

- Existing structural members that are subjected to increased loads must be evaluated to determine if these loads decrease the capacity of the existing structural elements.

Section 907.4.3

- Where a building is assigned Seismic Category F, the evaluation and analysis shall demonstrate that the lateral load resisting system of the altered building complies with the IBC.

Electrical

Section 808.1

- Newly installed electrical equipment and wiring relating to work done in the Work Area will comply with all applicable requirements of NFPA 70.

Mechanical

Section 809.1

- All reconfigured spaces within the Work Area will be provided with mechanical ventilation in accordance with the International Mechanical Code.
- Mechanical ventilation systems that are altered, reconfigured, or extended will comply with ventilation air requirements of the IEBC or not less than the amount of ventilation air determined by the Indoor Air Quality Procedure of ASHRAE 62.

Plumbing

Section 810.1

- Where the occupant load of the story is increased by more than 20 percent, plumbing fixtures for the story shall be provided in quantities specified in the International Plumbing Code based on the increased occupant load.

Energy Conservation

Section 908.1

- Any new elements, within the work area, or systems that are extended, are required to meet the applicable energy provisions of the International Energy Conservation Code.

Addition

Section 1101.1

- An addition to a building shall comply with the International Codes as adopted for new construction without requiring the existing building to comply with any requirements of those codes, except as required by Chapter 11.
Section 1102.1, 2
- No addition shall increase the height or area of an existing building beyond that permitted under the applicable provisions of Chapter 5 of the International Building Code.
Chapter 5 – General Building Height and Areas
- Table 504.3 Allowable Number of Stories Above Grade Plane – Use Group B and Use Group S-2 for type VB construction is allowed 3 Stories (without increase).
- Table 506.2 Allowable Area Factor - Use Group B allows 27,000 sf and Use Group S-2 allows 40,500 sf for type VB construction (without increase).
- 508.3 Nonseparated Occupancies - Mixed occupancies that are not separated from each other since the building is regulated for the worst-case occupancy; Use Group B
- Parking garages shall be separated from other occupancies in accordance with Section 508.1.
Section 1102.3
- Sprinklers are required throughout the new addition and renovated areas.

Section 1103, Structural

- Existing structural elements supporting any additional loads as a result of the additions shall comply with the International Building Code.

Section 1105, Accessibility

- Additions must comply with new construction.

Section 1106, Energy Conservation

- Additions to existing buildings shall conform to the energy requirements of the International Energy Conservation Code.

521 CMR: Architectural Access Board

28.1 In all multi-story buildings and facilities, each level including mezzanines, shall be served by a passenger elevator.

28.7 The elevator cab shall be a **minimum of 54" x 68" or 60" x 60"**.

END of HIGH-LEVEL CODE REVIEW