FACILITIES STUDY
TOWN OF BRIMFIELD, MA
FINAL REPORT

MAY 16, 2016

JWA JONES WHITSETT ARCHITECTS

JONES WHITSETT ARCHITECTS

TO The Town Of Brimfield

PROJECT Facilities Study - Town of Brimfield, MA

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JONES WHITSETT ARCHITECTS

Brimfield Library
Brimfield, MA

JONES WHITSETT ARCHITECTS

1. INTRODUCTION

EXECUTIVE SUMMARY

Jones Whitsett Architects (JWA) was retained by the town of Brimfield in January, 2016 to assess the space needs and existing conditions of 5 town buildings.

- Brimfield Library
- Old Town Hall
- Town Hall Annex
- Public Safety Building
- Highway Department

These 5 buildings are situated on two distinct sites within Brimfield – a downtown site, and a site just south of the school. Numerous town departments currently occupy – or could potentially occupy – these five buildings:

- Library
- Senior Center
- Town Offices (numerous departments within this category)
- Police Department
- Fire Department
- Ambulance Department
- Highway Department

Jones Whitsett Architects was tasked with evaluating the 5 town buildings, documenting the programmatic needs of the various town entities, and working with the building committee, coming up with solutions that are cost effective, and bring these buildings up to current codes and standards.

JONES WHITSETT ARCHITECTS

Conclusion:

Over a six month process, JWA and the building committee first arrived at a solution that was deemed too expensive. With a total project cost of approximately $21.8 million dollars, the building committee asked JWA to revise the recommended approach to reduce the projected tax burden. Working with department heads, and reducing scope across the board, the design team arrived at a solution for all 5 buildings, with a reduced total estimated project cost of $12.3 million. A brief summary of the recommendations is as follows:

- General
    - New potable water supply to all town buildings
    - New septic systems at all town buildings
    - Improved site circulation at downtown site, with additional parking
    - Improved site circulation at Highway / Fire / Ambulance site, with some formalized parking areas
- Library
    - Minimal intervention – focusing on improving accessibility within the existing structure
    - The addition of a lift at the meeting room
    - Expansion of the bathroom to make it MAAB compliant
    - Modifying the rear entrance to make it accessible
- Old Town Hall
    - This is where the bulk of the work is expected to take place.
    - Thorough renovation of the existing structure, including gutting the basement and improving water-proofing and drainage
    - New kitchen and other facilities in order to locate the Senior Center within Old Town Hall and take advantage of its current spaces.
    - Addition to the south and west to include:
        - Accessible bathrooms
        - Elevator
        - Town Offices
        - Police Department
        - Shared facilities between Senior Center, Town Offices & Police Department to capitalize on construction costs (bathrooms, meeting rooms, vertical circulation, etc.)

JONES WHITSETT ARCHITECTS

- Town Hall Annex
    - Demolish
    - Significantly improve the site layout of this downtown area with additional parking and better vehicular and pedestrian circulation, while providing for an expanded open town green.
- Public Safety Building
    - New drive-through vehicle bays to the north, as well as new bathrooms and laundry facilities
    - Police department is moved to Town Hall – freeing up additional office space.
    - Renovation of existing space – to allow for more privacy, better segregation of publicly accessible spaces, and improved office space for both Fire and Ambulance.
- Highway Department
    - New wash bay
    - Renovation of interior - addressing all code and safety concerns

The Brimfield Facilities Building Committee worked with the design team to make sure that all buildings were addressed. Each of the buildings is in need of upgrades – and deferred maintenance cannot be postponed any longer. By upgrading all 4 of these town resources, the town of Brimfield has the opportunity to invest in its infrastructure and continue the successful use of these facilities for another 50 years.

JONES WHITSETT ARCHITECTS

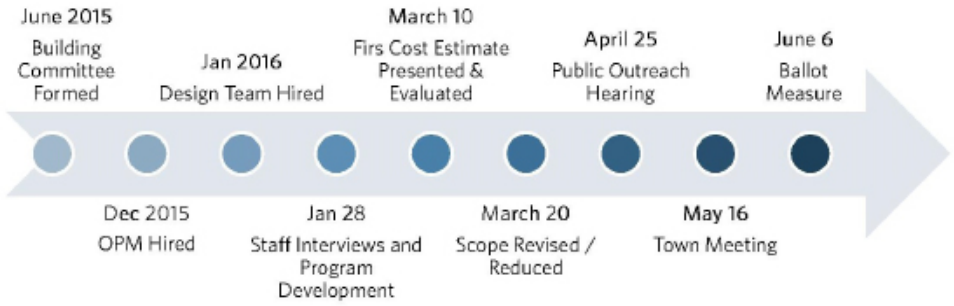
BRIMFIELD BUILDING COMMITTEE

Charles Kuss	**Co Chair-Police Chief**
Michael Miller	**Co Chair-Resident/Selectman**
Paul Adams	Resident
Andrea Beaudry	Treasurer/Resident
Nelson Burlingame	Building Inspector
Mark Connors	Resident/Historic Commission
Anne Dutka	Resident
Amy Gerrish	Resident
David Girouard	Resident
Zach Lemieux	Highway Supervisor
Brendan McCarthy	Ambulance/Resident
Fred Piechota	Fire Chief/Resident
Eva Pittsinger	Senior Center Director/Resident
Mike Wales	Resident
Rebecca Wells	Librarian/Resident
Dave Carpenter	Non Voting/Finance Committee/Resident

PREVIOUS STUDIES

- **2003** — ADA Self-Evaluation and 504 Transition Plan
- **2004** — Community Development Fund 1
- **2006** — MBLC Planning and Design Grant
  - Library only
- **2007** — Architectural Barriers Removal Project
- **2014** — Building Assessment & Capital Master Plan
  - 6 Buildings, 7 programs
- **2016** — Plan & Cost Estimate Development
  - 4 buildings, 7 programs

RECENT TIME LINE




DO NOT BLOCK GARAGE DOOR

JONES WHITSETT ARCHITECTS

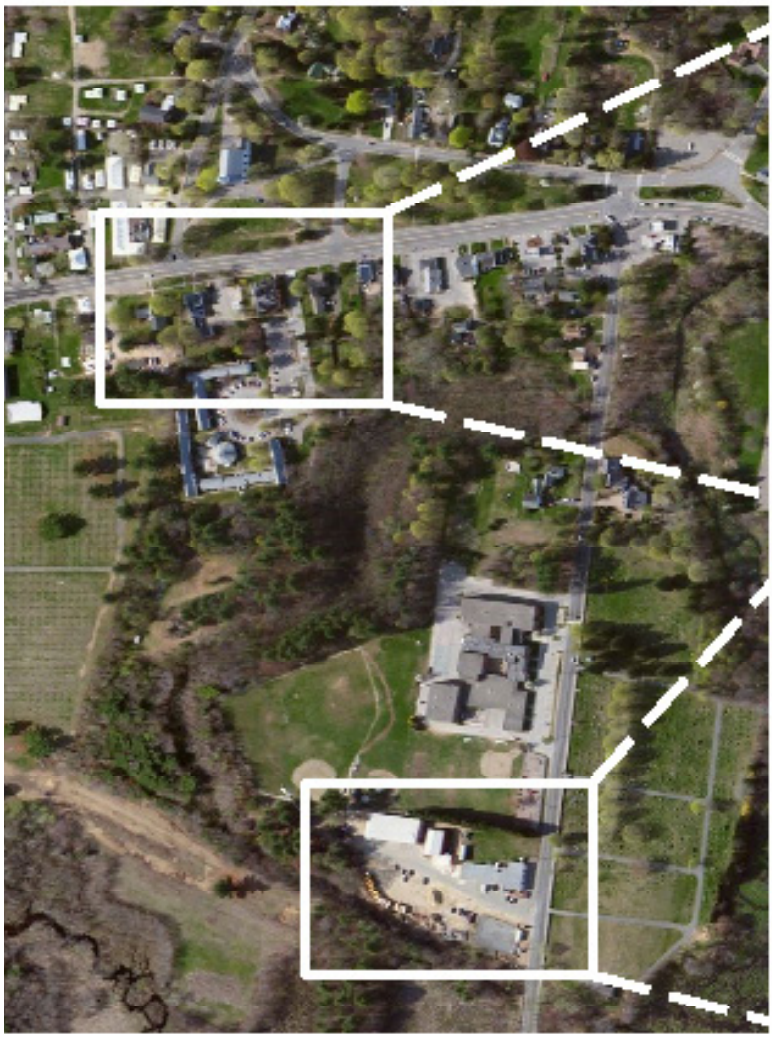
2. EXISTING CONDITIONS

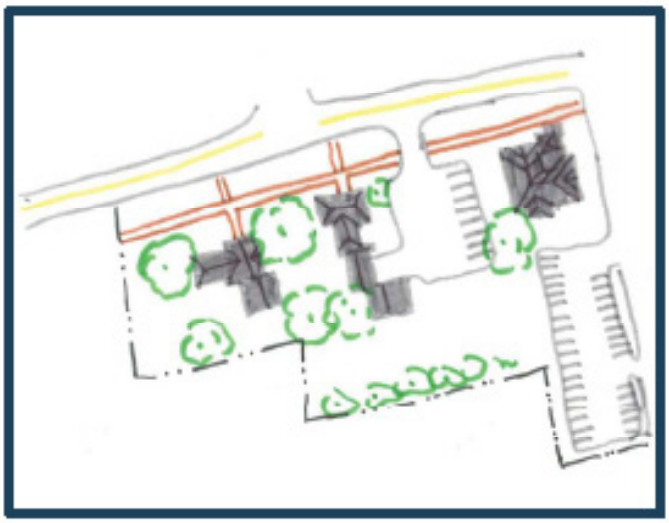
1. Site Plans
2. Library
3. Old Town Hall
4. Police/Fire/Ambulance
5. Annex
6. Highway Department

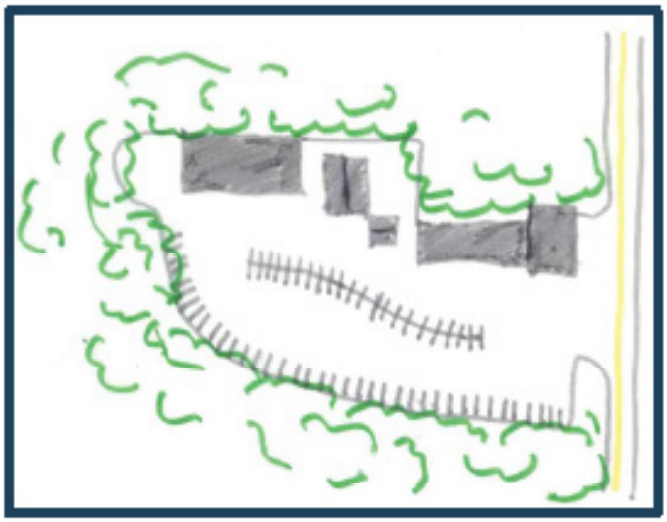
JONES WHITSETT ARCHITECTS

SITE PLANS

2 sites, 5 buildings, 7 programs







Brimfield Municipal Buildings Study

EXISTING FACILITIES OVERVIEW

Brimfield, Massachusetts

2.3.2016

SCALE 1"=60'-0" (if printed full size @ 24" x 36")

0' 30' 60' 120' 180'

The Berkshire Design Group, Inc.

JONES WHITSETT ARCHITECTS

LIBRARY

Deficiencies

1. No potable water
2. Not accessible
3. Fire alarm / smoke detection needs upgrade
4. Outdated mechanical, electrical and plumbing systems
5. Moisture issues in basement
6. Room for historic display is shared with Community Room
7. Undersized areas - Children's area, young adult, etc.
8. Parking

JONES WHITSETT ARCHITECTS

OLD TOWN HALL

Deficiencies

1. No potable water
2. Masonry repair required
3. Fire alarm / smoke detection needs upgrade
4. Accessibility concerns - existing lift is outdated and difficult to use
5. New septic system required
6. Outdated mechanical, electrical and plumbing systems
7. Moisture issues in basement
8. Second floor not accessible - under utilized

JONES WHITSETT ARCHITECTS

POLICE / FIRE / AMBULANCE

Deficiencies

1. No potable water
2. Not accessible
3. No private area / no defined area for public
4. No facilities for Police - holding area, storage, etc.
5. No sleeping area
6. HVAC safety concerns - CO
7. Vehicle bays undersized
8. Roof too low for large fire equipment
9. Many code deficiencies
10. Septic replacement required

JONES WHITSETT ARCHITECTS

ANNEX

Deficiencies

1. No potable water
2. Not accessible
3. Not structurally sound
4. Confusing layout
5. Outdated HVAC system

JONES WHITSETT ARCHITECTS

3. SPACE NEEDS ANALYSIS

1. Library
2. Fire and Emergency
3. Police
4. Town Offices
5. Highway Department
6. Senior Center

LIBRARY SPACE SUMMARY

SPACE	REQUIREMENTS	ADJACENT TO	EXIST SF	MIN	DESIRED
Circulation Space	Additional space needed due to lack of accessibility		1465	1600	1700
Children's Area	Additional space needed. This area should not be viewable from the entry			300	350
Event Room	Sink needed. To serve 25 to 50 as Community Room (or smaller w/ large one at nearby location)			750	1500
Staff Workspace	(E) are in Sherman Room is a bit too large, but an area is necessary		110	250	300
Computer Work Area	4 desktops and space for work and printing station			250	300
Sherman Room (Local History)	Historical materials. Need climate control. Could be smaller than existing, if just dedicated to historic collection. May also serve as Quiet Room		700	400	500
Director's Office	"Storage #2" right now		45	200	250
Quiet Room	Homework and research area.		0	400	500
Staff Lounge	Not a requirement, but a wish			0	120
Reading Room	Reading area by fireplace. Used to exist, but needed the space for books.			500	600
Young Adult Area	Not a requirement, but a wish. At least some shelving for books that is separated from the Children's area.			80	100
Storage	Basement is good for storage, but floods and is not currently utilized (806 SF). Possible water intrusion at bulkhead?		890	300	400
TOTAL NET SF			3210	5030	6620
TOTAL GROSS SF			4134		

SITE REQUIREMENTS

Parking: 8 spots currently. This has been sufficient if overflow parking is relatively nearby

Accessible Entrance

Need for potable water

Outdoor programming space (Town Green?) would be utilized

Additional Considerations

5 employees (2 FTE)

Library is open 24 hours/week. Library events include: monthly bookclub, Friends of the Library meetings (2x/month), homework help (2x/week) and special events, including painting and cooking.

Brimfield was awarded a $40K planning and development grant from the MBLC which has not yet been expeneded. The town is concerned that they would not meet the current MBLC guidelines for library design and are mostly interested in modifications to accommodate accessibility and minor increases in sizes in some areas. If these changes can be made as part of the municipal facilities project, that would be the town's preference. Otherwise, the next grant round does not occur until 2022.
Rebecca to follow up with number of volumes and MBLC grant information

1904 Building with 1965 concrete block 860 SF addition

Central AC would be important for an expanded facility

FIRE AND EMERGENCY SPACE SUMMARY

SPACE	REQUIREMENTS	ADJACENT TO	EXIST SF	MIN	DESIRED
Entry/Lobby	With vestibule. Public comes to facility for fire permits, general questions and for emergencies. Entry must be securable/surveilled.	Ambulance Mgr.	90	150	200
Day/Training Room	Space for congregating: soft seating, tables & chairs, TV, projector Space for 30 for training sessions. Training occurs 2x/month. Not near public entry.		538	600	700
Chief's Office	Private office for 1		230	200	240
Ambulance Mgr. Office	Private office for 1. EMS staff typically responds to public.	Entry	145	200	240
Fire Inspector Office	Small office for 1, lockable to secure records.		0	100	120
Officers' Office	Space for 4 officers and 1 private EMS Manager Cots can be placed here if required		50	260	300
Men's Toilet & Locker Room	Open gear storage Separate bathrooms for EMS Shower		75	200	250
Women's Toilet & Locker Room	Open gear storage Separate bathrooms for EMS Shower		30	100	150
Laundry Room		Toilet/Locker Rms	0	50	50
Kitchen	Can be kitchenette.	Day/Training	90	80	120
Clean Utility Room	Air Compressor/Air Bottle Storage and breathing air cylinders. Size similar to private office. Outside wall for clean air		0	80	100
Record Storage	Accommodate in office spaces in file cabinets?		0	0	150
Communications/Dispatch	Accommodate 2 people	Entry	0	100	150
Sleeping Rooms	To accommodate 4: 2 male, 2 female for EMS Not required for Fire		0	200	320
Double depth vehicle bays	3 preferred, but need 2 minimum. Approx. length: 75' Drive-through		0	2250	3375
TOTAL NET SF			1248	4570	6465
GROSS SF					

SITE REQUIREMENTS

Parking: Ambulance employees: 4
Fire personnel: 8-10 in an emergency situation

Rescue boat and brush vehicle stored in carport currently. Inside storage is preferred, but not essential.

Traffic light in front of bldg needed

Exterior lighting

Potable water

Maintain clear area on site for training exercises.

Retain sand storage areas for public access

Additional Considerations

Fire equipment: 3 large trucks: 2 pumpers (1,000 gal each) and 1 tanker (3,000 gal)

Ambulance equipment: 2 ambulances

Hose storage and drying

Goal: all fire assets sould be in one area of the building

Whole Building Vehicle Ventilation System is needed for Fire and Ambulance. Fred noted that a state grant is avaiable for this system but only for professional fire departments.

POLICE SPACE SUMMARY

SPACE	REQUIREMENTS	ADJACENT TO	EXIST SF	MIN	DESIRED
Entry	Surveillable with intercom	Reception	88	30	40
Reception/Lobby	Space for 8-10 waiting people Secure space: use of CMU walls, bullet-proof glass Space for future Public Information Officer? Connected to a secure passageway. Access to public restroom. Access to Community Room? Space for posting notices.	Entry	0	350	450
Chief's Office	Private office for 1: desk, files, small conference area Closet, natural light (though also relatively private)		130	180	225
Lieutenant's Office	Private office for 1 Closet, natural light		235	180	225
Firearms Licensing Area	May also be used as Interview room Securable, video and audio ability. 2-way mirror optional For use as interview room, need a back way in to this space.	Entry/Reception	0	120	180
Officer Report Room/Meeting	To accommodate 10 people min. (20 ideal) with kitchenette (doubles as Break Room)		0	300	450
Firearms Storage Room	Containing large safe. Currently storing 50 firearms. Securable with 4-hour rated construction. Need workbench near storage area.		0	100	150
Men's Toilet & Locker Room	24" wide x 6' high lockers Shower needed		0	370	250
Women's Toilet & Locker Room	24" wide x 6' high lockers		0	250	250
Interview Room/Holding Area	See Firearms Licensing Area.		0	0	80
Files Storage Room	Securable		0	100	140
Break Room	See Officer Report Room		0	0	100
Holding Cell	Not a current need, but may be included in future. Would really need (3), not just (1) (minors, men & women)		0	0	100
Community Room	A wish, not a requirement. Could also be the Officer Report Room?		0	0	350
Parking Bays	Interior to building for 2-3 vehicles, if program allows.		0	0	700
Sally Port	Interior to building for 2 vehicles, pull-through, if program allows.		0	0	600
Evidence Storage	Securable within police station			200	300
Bulk Evidence Storage	May be separate building not necessarily adjacent to the Police Department.			0	500
TOTAL NET SF			453	2180	2990
TOTAL GROSS SF	Grossing factor of 1.40 assumed Includes: mechanical & electrical rooms, toilet rooms, circulation			3052	4186

SITE REQUIREMENTS
Parking: 4 police vehicles plus 1 truck. Parking for public: 1-2 spaces

Additional Considerations
Police force employs 14 people on a part-time basis, amounting to 6 FTEs.
Police officers utilize bikes to patrol during the antiques fair, which takes place 3x/year. Old Town Hall is used as a logical officer briefing point for the fair.
If Police remain as part of the Public Safety Complex, Chief would prefer to occupy the center part of the building.
Any arrests are brought to State Police Barracks in Sturbridge, or Palmer or Hampden Correctional. A cell is not needed at this time.
Phone/intercom in entry vestibule (vandal proof) should connect to centralized dispatch in New Braintree.

TOWN OFFICES SPACE SUMMARY

SPACE	REQUIREMENTS	ADJACENT TO	EXIST SF	MIN	DESIRED
Reception	Space for information, forms Space for future staff member to work	Main entry	0	200	300
Selectmen's Office**	Space for files, and small waiting area. Work space for 5 Selectmen. Counter preferred with private work area behind	Selectman's Asst.'s Office	275	580	680
Selectmen's Meeting Room	Selectmen meet 2x/month. Could be part of Public Conference Room (see below) Wired for Community TV w/ space for storage cart Room for 10 people.	Kitchen	215	250	300
Selectmen's Asst.'s Office	Small office that may be Town Adminstrator Office in the future	Selectman's Office	0	100	120
Assessor's Office**	Public counter, Assessors' desks (3), storage, and small private office. Large work table for review of maps.	Tax Collector & Treasurer	274	400	500
Tax Collector	Accommodate additional future staff. Storage Counter - to serve as buffer	Assessor & Treasurer	167	250	300
Board of Health**	Board meets 1x/month. Space for Food Inspector and Health Agent. Min. SF assumes shared review area.		172	300	350
Cemetery/Highway/Harding Fund	Map/plan table File storage		106	230	270
Building Department	Large office; space for 11 file cabinets, 2 desks and table for review of drawings. Counter needed.		128	370	420
Conservation Office	Conservation Commission meets 2x/month. Could potentially pair with Planning?	Planning	260	120	150
Planning Committee	Planning Committee meets monthly. Office with record storage. Could potentially pair with Conservation?	Conservation	0	100	120
Treasurer/Asst. Treasurer/Accountant**	Space for 3 staff. Storage, security and privacy are concerns. Accountant function currently outsourced. Not much public interaction.	Assesor & Tax Collector	250	270	360
Town Clerk	Counter needed with private work space beyond. Types of file storage required: 1) Vault for archives (need 2x existing) 2) Active files (past 5 years)= (5) 4-dwr vertical files 3) Archive Files per MA guidelines	Entry	800	500	600
Public Conference Room	Single conference room to accommodate all board meetings and office staff daily needs. Room larger than existing (which is also used as copier and break room). Accommodate 10-12. Near main entry with ability to secure rest of building when only conference room is in use.	Entry	0	300	375
Copier/Mail/Kitchen	Centrally located. Could be turned into a "Common Office" for town committees with file storage & work space?		0	180	250
Storage for Town Committees	Town office space needed to house files for the following: Cultural Council, Historical Committee, Park & Recreation, Finance, Trail, Open Space, Agricultural By-law Committees and Emergency Management. A small meeting space in center of the room is needed.		0	200	300
Records Storage	Humidity controlled per State requirements (currently in trailers outside) SF included with Town Clerk		0	0	0
Community TV	Can be located wherever there is space. Current location is sufficient. Need a small space with a green screen for filming.		550	0	550
TOTAL NET SF			3197	4350	5945

TOWN OFFICES SPACE SUMMARY

SITE REQUIREMENTS
Outdoor Staff Area desired for lunch.
Parking - More parking is needed when to accommodate public meeting attendees. Otherwise, the size of the existing lot is sufficient for day-to-day use.

Additional Considerations
** = Full Time Position
It is likely that the Selectboard will increase from 3 to 5 members in the near future. This will enable the group to get more done in subcommittee format. The town is also considering a Town Manger or Town Adminiatrator position in the future. Currently, town commitetees report directly to the public (de-centralized goverment)
A space for Recreation Department sign-ups would be helpful. Currently this happens at folding tables in parking lots.
Need for a building security system.
Large lobby to serve as a self-serve area seems like a good idea. Where the public can get information on permits, hours, etc. since many of the offices are part-time.
Need a smaller meeting space other than Great Hall for voting, etc. 1/2 or 1/3 the size.
Could there be shared "review areas" to save on SF?

HIGHWAY DEPARTMENT SPACE SUMMARY

Interviewed: Zach Lemieux

SPACE	REQUIREMENTS	ADJACENT TO	EXIST SF	MIN	DESIRED
Highway Surveyor Office	Space for 1 person: desk, chair, file storage, guest chairs Clerk office currently in Town Hall Annex which works well. An office separate from Tantasqua Transport office is needed.		186	120	160
Tantasqua Regional Transportation Office	Similar to Highway Surveyor office needs		0	100	120
Break Room	Larger than existing if possible. Re-paint at the least		178	250	350
Storage	Currently undersized as Mechanical Room is also used for storage.		1625	1700	1900
Vehicle Bays	Current quantity sufficient		4410	4410	4410
Mechanic's Bays	Currently 2: (1) for Highway and (1) for Tantasqua Regional Transport.		1565	1565	1565
Wash Bay	Needed. Will need a floor drain with oil/water separator. Need to evaluate impact on existing septic.		0	480	480
TOTAL NET SF			7964	8625	8985

SITE REQUIREMENTS

Parking: 5 parking spaces for Highway Department
20 small school buses
15-20 school vans
Parking spaces for bus and van drivers

Maintain storage sheds for salt & sand

Accommodate planned new above ground fuel tanks into new plan (info from Tighe & Bond provided). Existing in-ground tanks must be removed by 2017.

Potable water - high manganese content. Water is "hard" and "slimy"

Update septic to include Tantasqua Regional Transport usage

Trash currently handled by 1 large dumpster with weekly pick-up. This is sufficient.

Provide a fully paved parking lot with designated parking areas

Additional Considerations

Heat in back bays for equipment - consider infrared

Heat detectors in equipment bays

Toxic gas detection system should be added. As well as Vehicle Exhaust Removal system.

Inspect roof - there is a 40' section that leaks. Department has had to shovel roof in heavy snows. Zach noted grommets had "rotted."

Surveillance system is needed.

Request made to improve energy efficiency

Stairs to mezzanine not to code. Mezzanine storage includes files, extra parts, paints and degreasers.

Request for air conditioning for offices and breakroom. Could equipment be salvaged from Town Hall Annex if the building is not reused? (4) mini-splits that might move easily

Replace 2 doors. New tracks needed for all doors (high-bay)

Some cosmetic damage to front of building - should be addressed in this scope.

Existing vehicles include: 4 dump trucks, 1 sand truck, 2 small dump trucks, 2 pick-up trucks, 2 loaders, 1 roadside mower, and 1 chipper all stored inside. Additionally, 1 street sweeper is parked outside.

SENIOR CENTER SPACE SUMMARY

SPACE	REQUIREMENTS	ADJACENT TO	EXIST SF	MIN	DESIRED
Multi-Purpose Room	To accommodate 100 people for lunch/dinner Accommodate fitness classes (mirror desired) Sub-dividable	Entry		1800	2000
Reception / Clerk	Welcoming, accessible, with help counter	Entry		120	200
Director's Office	Private office for 1 staff: desk, file storage and small conference space for private meetings.			200	250
Activity Coordinator's Space	Private office not required; this position should be located as part of spaces where programs happen. File storage for van info, etc.			60	80
Quiet Room	For massages and foot care. Large enough to accommodate massage table.			100	150
Kitchen	Certified for food preparation for lunches and parties. No portable food warmers are needed. General equipment: large oven, convection oven, refrigerator and freezer.	Multi-Purpose		300	350
Crafts/Conference Room	Accommodate 10 for COA meetings. Include space for storage of materials.			200	250
Exercise Room	Not a requirement, but would be great to have a few treadmills, etc.			0	400
Break Room				100	140
Storage	For storage for tables and chairs (to seat 100) and fitness equipment (steps, handweights, small balls, and bands, e.g.).			200	300
TOTAL NET SF				3080	4120
TOTAL GROSS SF	Grossing factor of 1.33 assumed Includes: mechanical space, toilet rooms, circulation		2860	4096	5480

SITE REQUIREMENTS

Parking needs to include parking for 20 cars and 1 van (with overflow nearby for parties). Van drop off near entry is also required.
If new Senior Center is located next to Senior Housing, fewer spaces may be needed.

Outdoor Program Space: picnics, fitness classes.

Additional Considerations

General Information: the Senior Center currently operates in the church across from Old Town Hall during the hours 9 am - 1 pm weekdays with monthly parties.
A new center would be able offer more programs and would operate for more hours per day. Lunch is served 2x/week.
Seniors from Brimfield, Holland, Wales, Palmer and Monson are served at this center due to its great programming.
Center receives some funding from town, donations and grants.

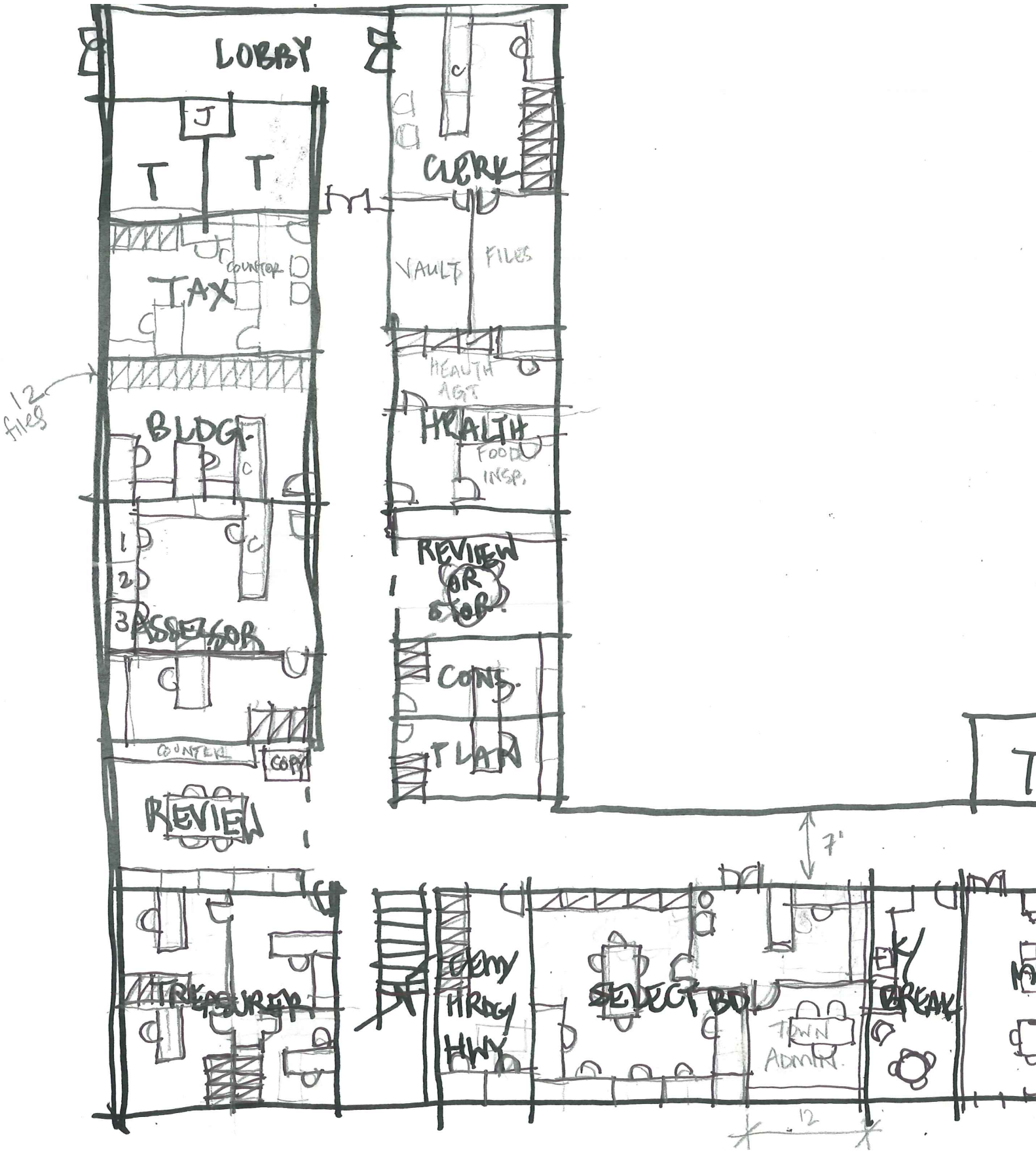
The Hitchcock Free Academy does not have any connection with the Senior Center and is privately owned.

Senior Center offers many different fitness classes, including strength training and Tai Chi. In addition, there is a walking club, book and conversation groups.

If Senior Center were to be located in a renovated Old Town Hall, the following would need consideration: accessbility; accommodating a certified kitchen; preference for a single-story facility.

Accessible restrooms are needed: min. 2 for each gender

Spaces that could be shared with other town buildings: Common Area / Conference Room, Exercise Room (Police and Fire?), and Toilet Rooms.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PLAN
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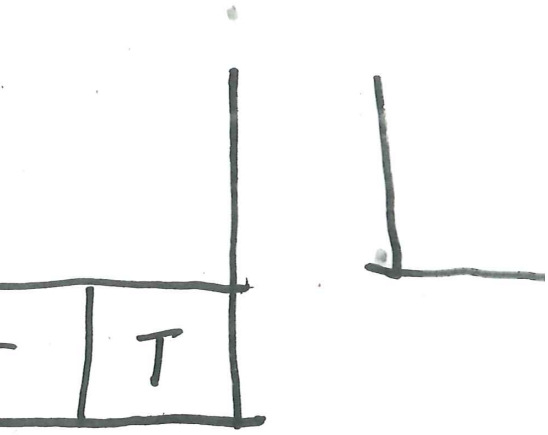
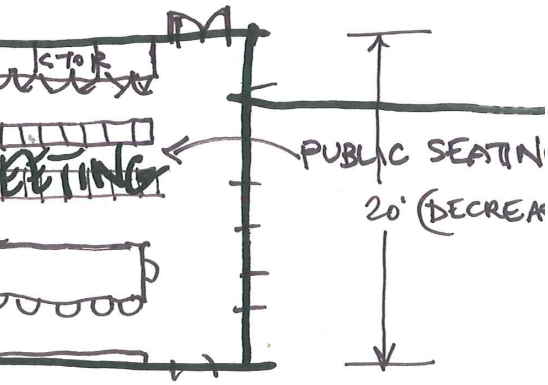
TREASURER
HWY
SELECT BD
TOWN ADMIN.
BREAK
12

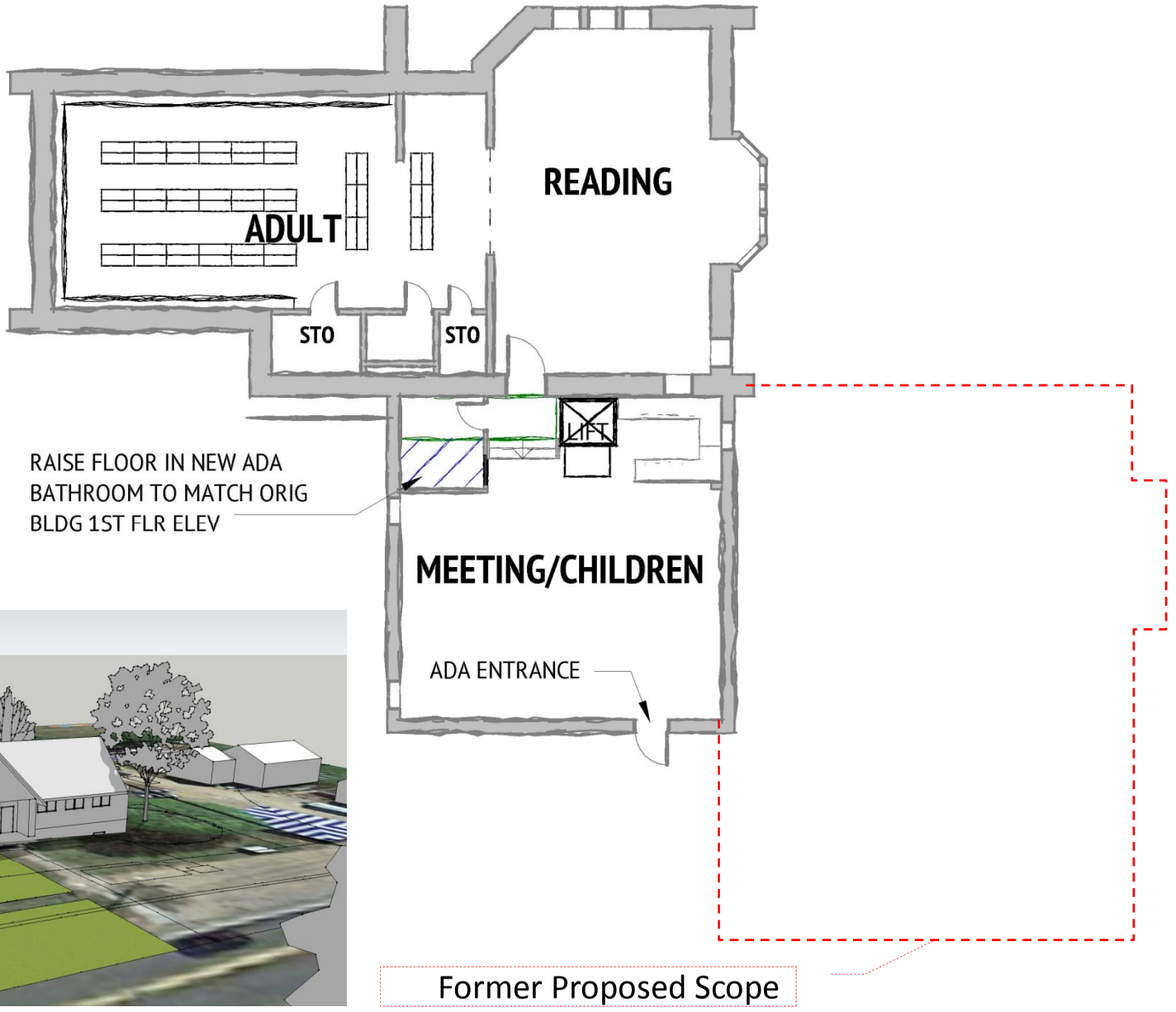
4. PROPOSED PLANS

1. Library
2. Public Safety
3. Town Hall
4. Highway Department
5. Site Plans
6. 3D Views

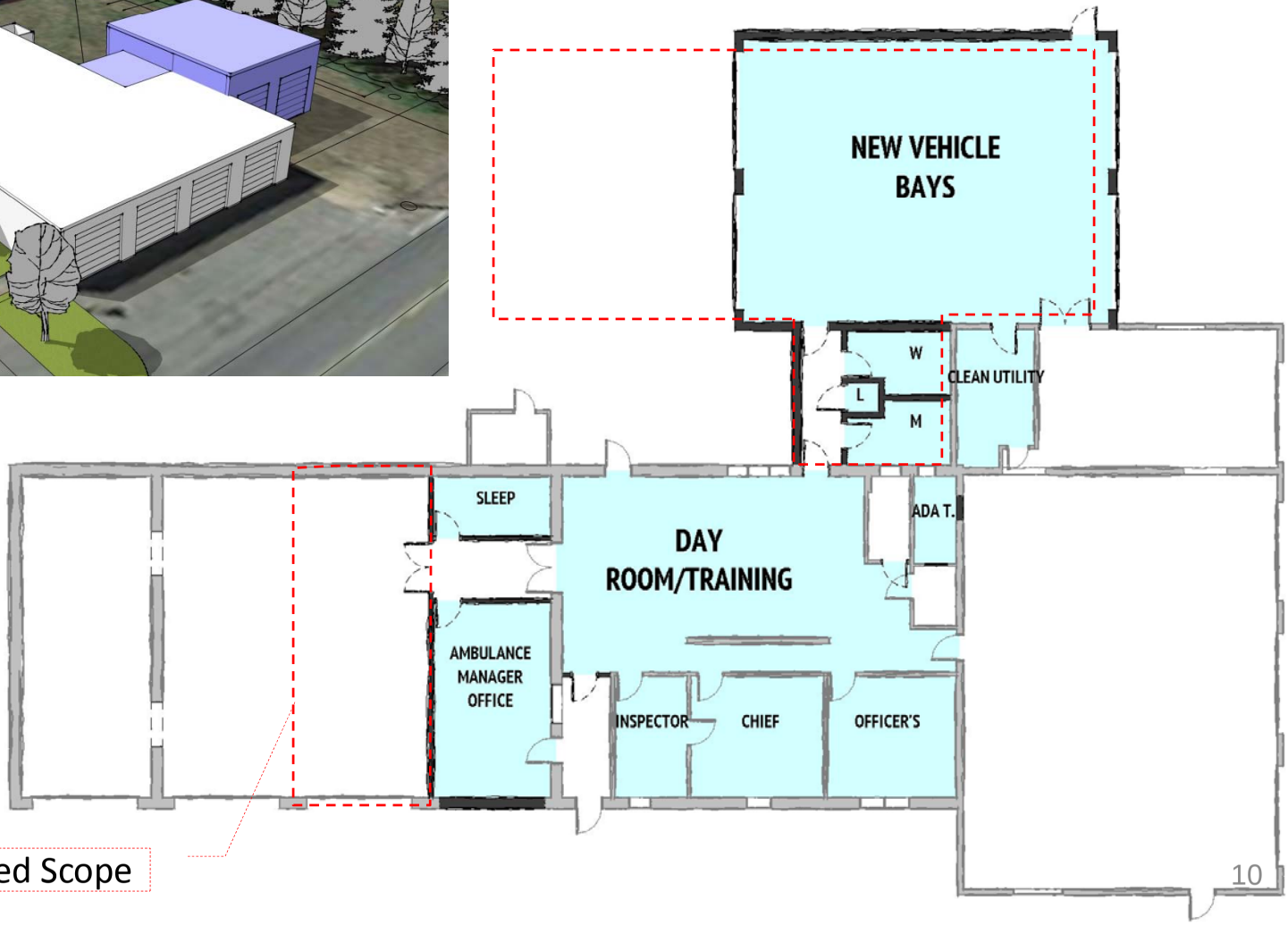




LIBRARY

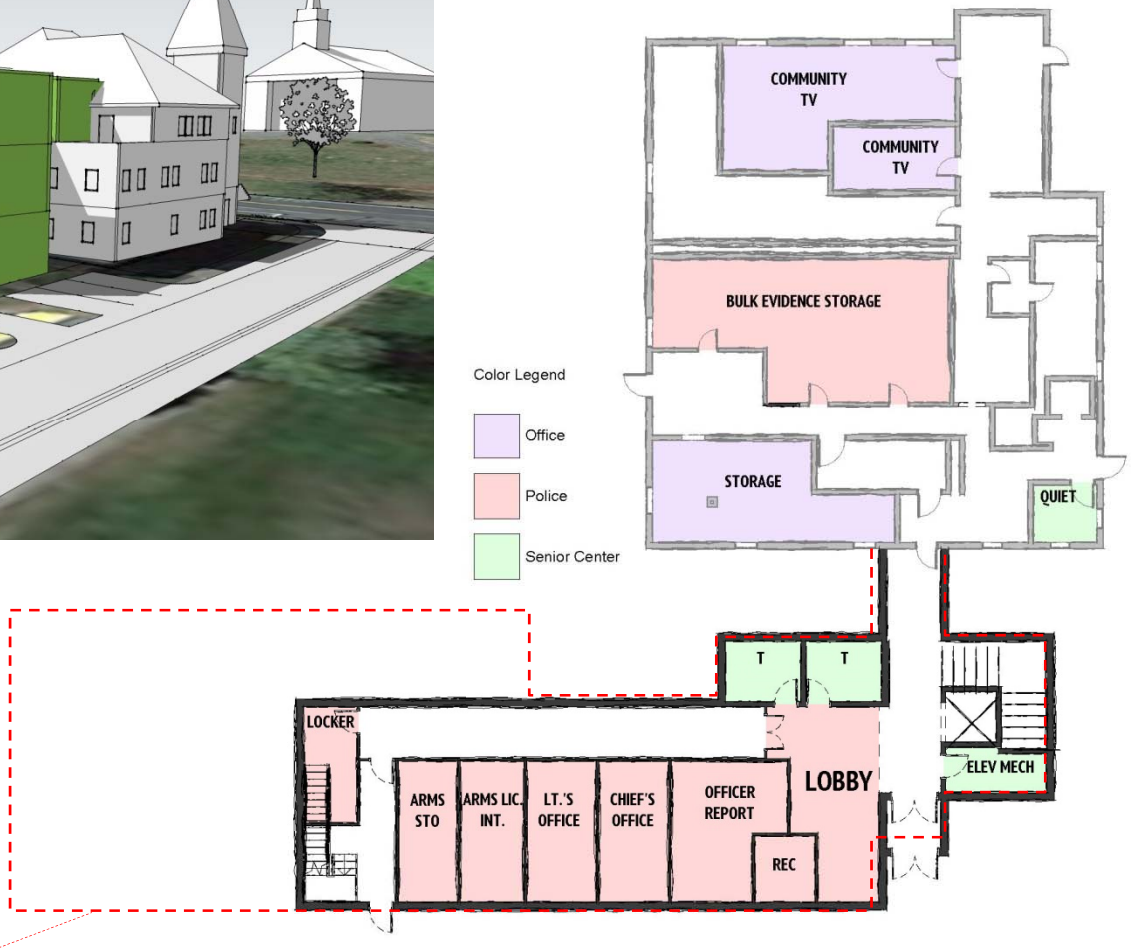

ADULT
READING
STO
STO
LIFT
RAISE FLOOR IN NEW ADA
BATHROOM TO MATCH ORIG
BLDG 1ST FLR ELEV
MEETING/CHILDREN
ADA ENTRANCE
Former Proposed Scope

PUBLIC SAFTEY



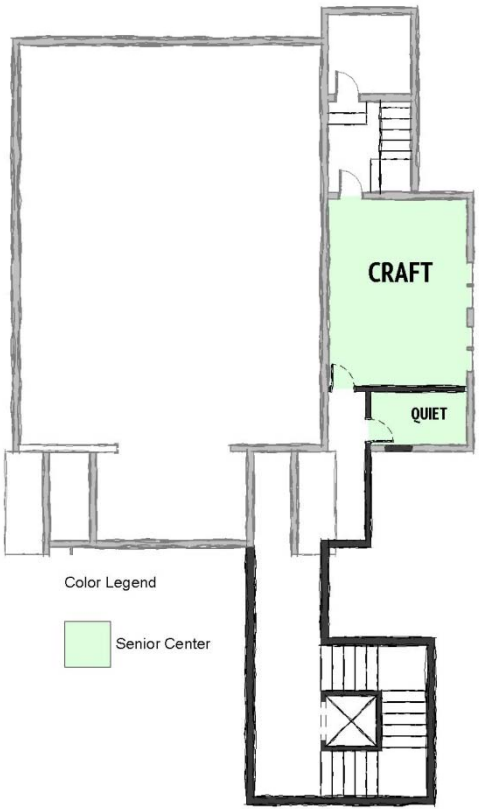
Former Proposed Scope

TOWN HALL: ADD/RENO – GROUND FLOOR



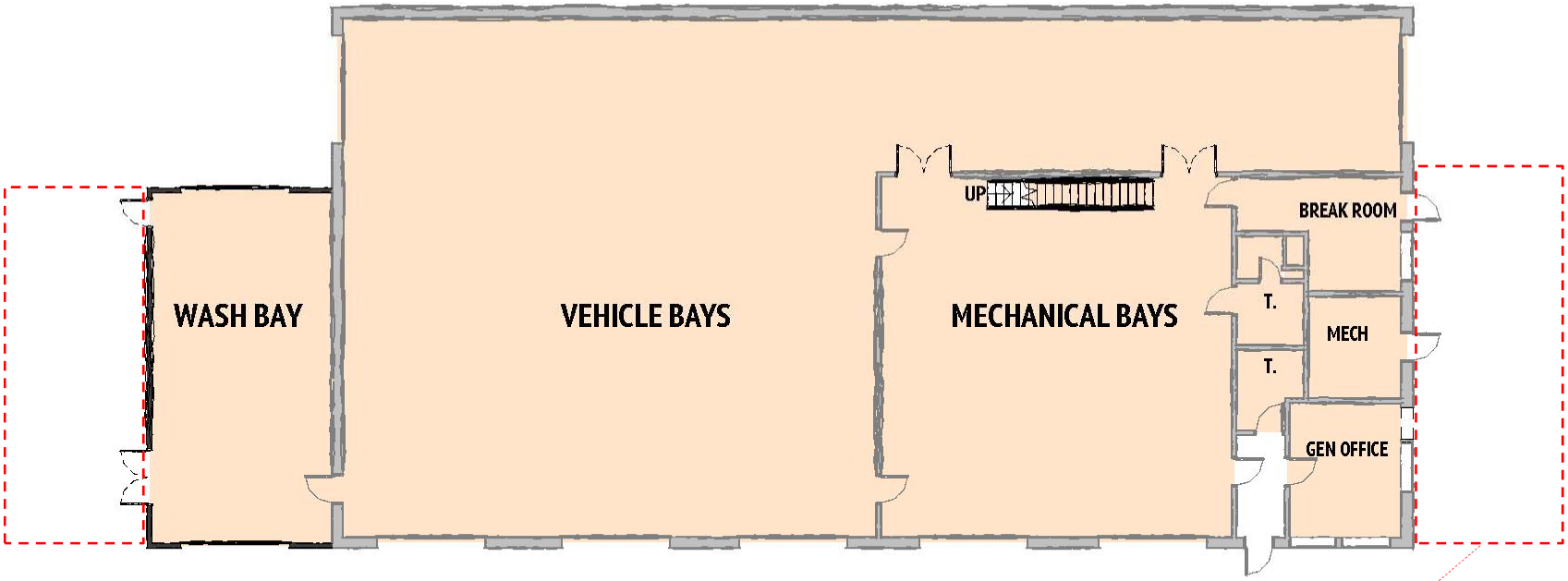
Former Proposed Scope

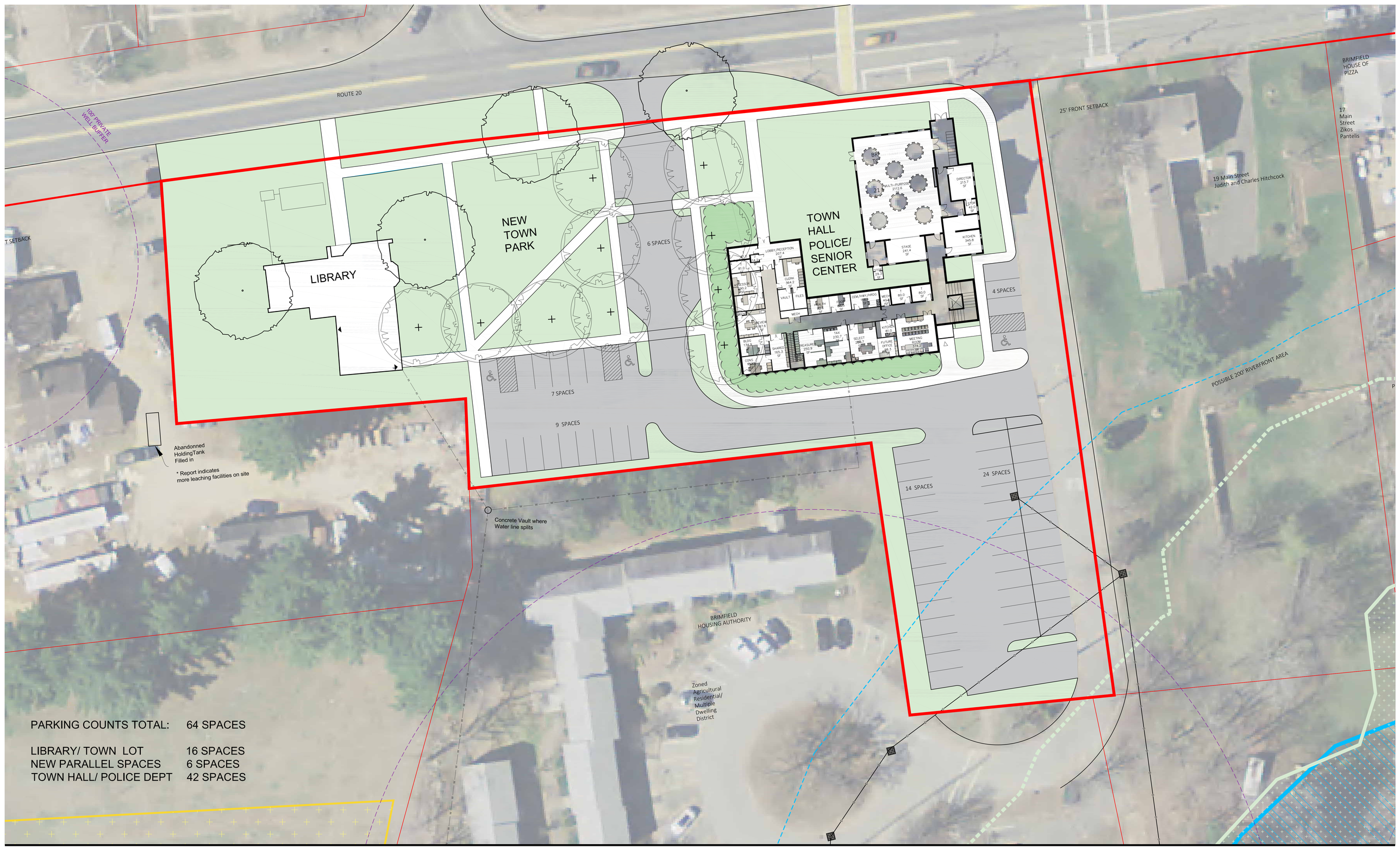
TOWN HALL: ADD/RENO - FIRST & SECOND FLOOR



Former Proposed Scope

HIGHWAY DEPARTMENT





PARKING COUNTS TOTAL: 64 SPACES

LIBRARY/ TOWN LOT	16 SPACES
NEW PARALLEL SPACES	6 SPACES
TOWN HALL/ POLICE DEPT	42 SPACES

Brimfield Municipal Buildings Study

Brimfield, Massachusetts

4.4.2016

ADD RENO TOWN HALL WITH POLICE AND SENIOR CENTER; REMOVE TOWN ANNEX & BARN
ADDITION TO LIBRARY; DRIVE BETWEEN ANNEX AND LIBRARY

SCALE 1"=20'-0" (if printed full size @ 24" x 36")

0' 10' 20' 40' 60'

The Berkshire Design Group, Inc.

Brimfield Municipal Buildings Study : REVISED 4.4.2016- VALUE ENGINEERING

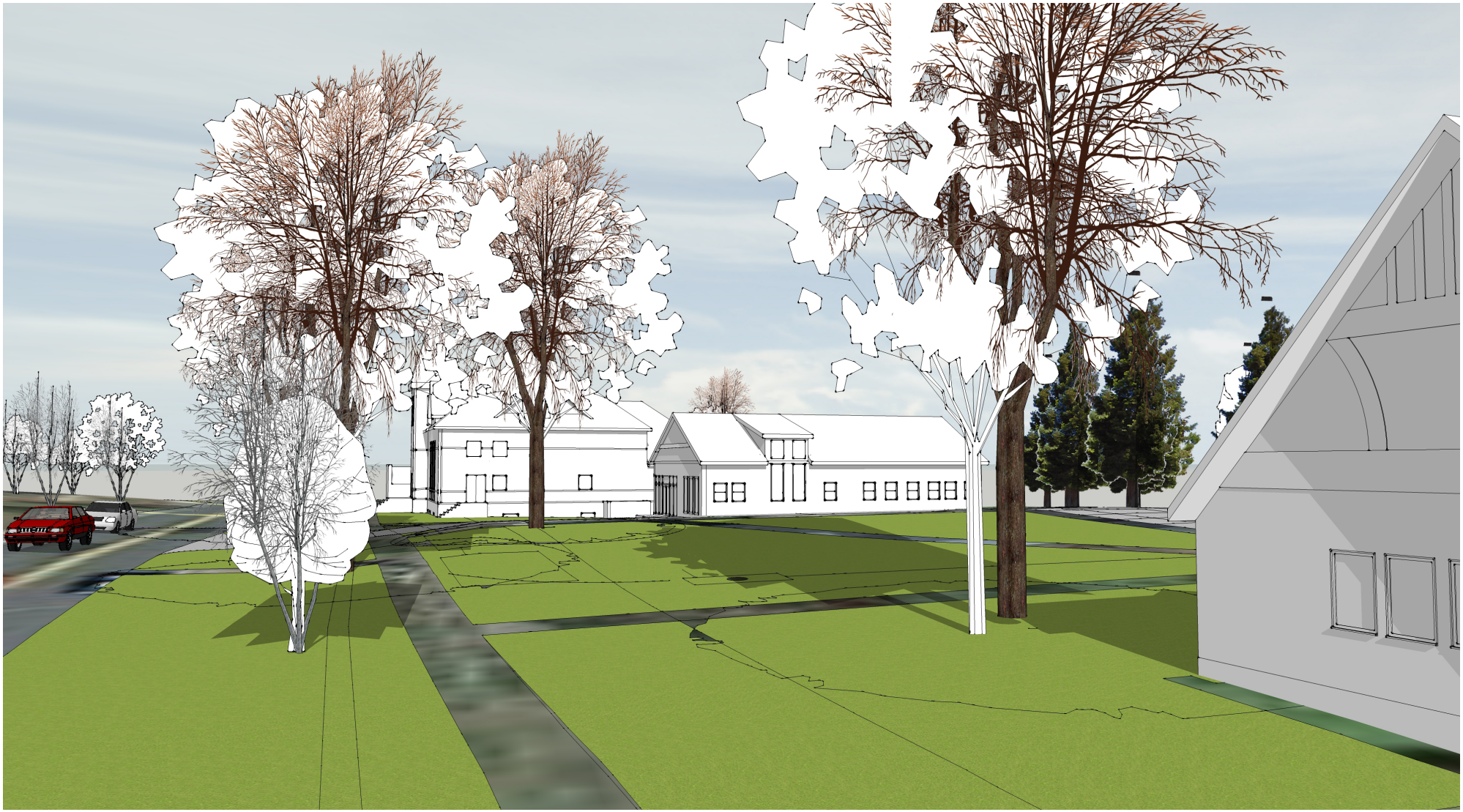
Brimfield, Massachusetts

HWY DEPARTMENT/ FIRE DEPARTMENT/ EMS

SCALE 1"=20'-0" (if printed full size @ 24" x 36")

0' 10' 20' 40' 60'

The Berkshire Design Group, Inc.



JONES WHITSETT ARCHITECTS

5. NARRATIVES

1. General Items
2. Library
3. Fire and Emergency
4. Police / Offices / Senior Center
5. Highway Department

JONES WHITSETT ARCHITECTS

Brimfield Municipal Buildings Study

Conceptual Design Narrative – General

POTABLE WATER

None of the Municipal buildings currently have potable water: Town Library, Town Annex, Town Hall, the DPW Building, and Fire Station. These buildings are supplied by two water sources, the Town Annex well and the Town Barn well. Both water sources do not meet drinking water standards according to DEP. Berkshire Design Group, in consultation with DEP, has determined that the well located behind the elementary school is an acceptable source for supplying all of these buildings. The scope will include:

- Water Main North Spur- existing site water piping to replace 910 LF (connects northern buildings to water source)
- New connection from Elem School Vault to Water Main North- new piping- 500LF
- New connection from Elem School Vault to Water Main south- 433 LF
- Replace all existing water line piping inside all buildings
- Provide new pressurizer and pressure tank in fire building
- Provide new vault and filter next to the elementary school well.

Replacement of water piping from north and south spurs to each building shall be included with pricing for that scheme.

PRIMARY PLUMBING

Use Elementary School Well For Potable Water To All Fixtures except urinals, water closets, and irrigation.
Use local well water as grey water for urinals, water closets, and irrigation.
Replace plumbing fixtures with low water consumption fixtures.

STORMWATER MANAGEMENT AT NEW PARKING

Stormwater Underground Detention Structures in Parking Lot and water treatment structure for the northern sites (Library, Town Hall, Senior Center) are to be provided.

DEMOLITION OF TOWN HALL ANNEX – Please provide budget number for this item

Town Hall Annex is listed on the National Historic Register.
Construction Type: VB

Basement:	644 SF
First Floor:	3,022 SF
Second Floor:	1,330 SF
TOTAL:	5,042 SF

JONES WHITSETT ARCHITECTS

Brimfield Municipal Buildings Study

Conceptual Design Narrative – Library
Options 1 & 2

Library (L1)
L1 is a small, approximately 2,300 GSF addition that reuses the existing Sherman Room (1965 addition) with the assumption that the floor will be raised in that space to match that of the original building. A new accessible entry will be part of this addition.

Library (L2)
L2 is a larger 5,450 GSF addition that demolishes the Sherman Room and includes more desired program area. It also includes a new accessible entry.

The Library is listed on the National Historic Register.

General Information:

Area: See Plans

Floors: 1

Construction Type: IIIB, non-sprinklered (historic portion)
VB, non-sprinklered (addition)

Occupancy Type: A3

Addition:

Floors: 1st Floor: Concrete slab on grade

Roof: Asphalt shingles

Exterior Walls: Brick base to 4' H; stucco facing above
From exterior to interior:

- exterior finish
- air space
- air vapor barrier
- Sheathing
- 2x6 studs at exterior
- 2" between studs (11" of cellulose w/ gap and studs)
- 2x4 studs at interior
- Interior finish - GWB

Roof: Asphalt shingle

Windows:	Insulated aluminum frames with double pane glass
Doors:	Interior: Solid core, wood veneer Exterior: Aluminum w/ glazing

Existing Building:

Exterior Repairs to existing building:

- Replace rotted wood trim soffit and fascia boards
- Repoint stone façade
- Replace gutters
- Replace bulkhead doors
- Remove damaged areas of stucco and replace incorporating expansion joints to reduce further cracking (500 SF)

Roof:	Option 1 only: Replace roof with asphalt shingle roof over 1965 addition Options 1 & 2: Repair slate tile roof
Windows:	Insulated aluminum frames with double pane glass
Doors:	Interior: Solid core, wood veneer Exterior: Aluminum w/ glazing

Finishes:

Floors:	Entry: Walk off mats and grill Community Room, Computer Area, History, Young Adult (Y/A), Director and Staff: Carpet tile Toilet Rooms: Ceramic Tile
Interior Walls:	High impact gypsum board with wood studs Ceramic wall tile wainscot at corridor
Ceilings:	New Ceilings: 2x2 Suspended ACT Existing Ceilings: repair plaster cracks, re-paint

Site/Civil:

Site Demolition

- Remove parking area from Route 20
- Scarify subgrade, loam and seed
- Limb up large shade tree
- Tree protection fencing
- Move guy wire for utility pole (may not need to)
- Remove cesspool

Site Work

- New site water piping 85 LF
- New asphalt parking lot with parking for 8 cars
- 5’ wide sidewalks approximately
- New asphalt parking lot with parking for 8 cars
- ADA curb cut, detectable warning strip, and striping and sign for 1 car
- Accessible ramp with handrails
- New raised septic field and Dbox with 1000 gallon septic tank
- New rain garden
- New storm piping allowance connect to wetlands
- New storm manholes every 250 LF
- New catch basins 4 in parking lot
- New Site lights 4 qty in parking lot
- Install a “tight tank” to collect any fuel spills from basement boiler
- New sidewalk at all entries Cast in place concrete 4”thick, over frost wall footings at entrance

Structural:

L1:

- Raised floor to be wood construction with intermediate bearing walls that bear on the existing slab. Depending on the existing slab thickness, new continuous reinforced concrete footings may be required below the bearing walls.
- Addition to be wood construction for the roof. Roof framing to bear on exterior and interior wood stud bearing walls / shear walls and wood beams/columns along interior bearing lines where required. Foundation to include a reinforced concrete foundation wall and continuous reinforced concrete footing. Slab-on-grade to be a 4” concrete slab reinforced with w.w.f. Additional to be kept structurally separated from the existing building.

L2:

- Addition to be wood construction for the roof. Roof framing to bear on exterior and interior wood stud bearing walls / shear walls and wood beams/columns along interior bearing lines where required. Foundation to include a reinforced concrete foundation wall and continuous reinforced concrete footing. Slab-on-grade to be a 4” concrete slab reinforced with w.w.f. Additional to be kept structurally separated from the existing building.

Mechanical/Plumbing/FP:

- L1:
  - Replace existing old fuel oil boiler with new forced hot water boiler.
  - Refurbish existing old fuel oil furnace and ductwork. Add Split System Cooling with Energy Recovery Ventilation (ERV). Add Honeywell TrueZone zoning system controls, dampers, and thermostats.
  - Building addition HVAC shall have two 4-Ton Split Systems coupled to a 1600CFM, 65MBH Heating Hot air Furnaces each with a 300 CFM ERV located in a 1-hour fire rated mechanical room.
- L2:
  - Same as L1 except we have five 4-Ton Split Systems coupled to a 1600CFM, 65MBH Heating Hot air Furnaces each with a 300 CFM ERV located in a 1-hour fire rated mechanical room.
- Plumbing:

- Use Elementary School Well For Potable Water To All Fixtures except urinals, water closets, and irrigation.
- Use local well water as grey water for urinals, water closets, and irrigation.
- Replace plumbing fixtures with low water consumption fixtures.

Electrical:

L1:

Primary:

- Utility Power - Utilize existing 200A service
- Circuited Power will be added to all ADA compliant doors for automatic door openers
- ADA compliant push plate door controllers will be added to all ADA compliant egress doors.
- F/A pull stations will be added to any new egress pathway and ADA
- Egress lighting will be added to any new egress pathways.
- Power provided to any FCU (heat) in the case of vestibule heating requirements.

Optional:

- Data and power floor boxes added to the raised floor to support electric or data feeds for furniture.

L2:

Primary:

- Utility Power - Utilize existing 200A service
- Circuited Power will be added to all ADA compliant doors for automatic door openers
- ADA compliant push plate door controllers will be added to all ADA compliant egress doors.
- F/A pull stations will be added to any new egress pathway and ADA
- Egress lighting will be added to any new egress pathways.
- Power provided to any FCU (heat) in the case of vestibule heating requirements
- New ADA compliant Fire Alarm throughout.
- New LED lighting throughout and localized lighting control (no network lighting)

Optional:

- Data and power floor boxes added to the raised floor to support electric or data feeds for furniture.

JONES WHITSETT ARCHITECTS

Brimfield Municipal Buildings Study

Conceptual Design Narrative – Fire & Ambulance

Fire/Ambulance (FA)

The proposed scheme for the Fire/Ambulance building includes the addition of 2 double-depth vehicle bays fronting Route 19, and a small addition connecting the new bays to the existing building. A new septic system will be required. Renovation of the center portion of the building to respond to programmatic needs for a larger day room, offices, locker and sleeping spaces is included.

General Information:

Area:	See plans
Floors:	1
Construction Type:	Existing: IIB Addition: IIB – engineered metal building
Occupancy Type:	S3 (Vehicle bays), B (Offices), R (Sleeping areas)

Addition:

Floors:	1st Floor: Concrete slab on grade Ceramic tile in bathrooms VCT in hall
Roof:	Membrane Roof (flat) • Sarnafil or equal
Exterior Walls:	Metal building package from Steelway or equal with batt insulation
Interior Walls:	Painted GWB; tile wainscot in bathrooms
Windows:	Insulated aluminum frames with double pane glass
Doors:	Interior: Solid core, wood veneer Exterior: Aluminum w/ glazing
Ceiling:	New 2x2 ACT (Hall, Toilets and Laundry)

Renovation:

Exterior Walls:	Re-point CMU and brick (10%) Replace aprons at overhead doors at front of building with concrete aprons with frost walls. Replace damaged brick (100 SF) Replace deteriorated wood siding with new cement board siding
Interior:	Repair cracked concrete flooring (200 SF)
Floors:	Offices, Sleeping Areas: VCT Ceramic Tile in Men and Women bathroom / locker / shower areas
Interior Walls:	High impact gypsum board with wood studs Ceramic tile wainscot in bathrooms
Ceilings:	2x2 Suspended ACT in new bathrooms, ambulance office, and sleeping rooms

Site/Civil:

Site Demolition:	Remove septic field, dbox, and septic tank Relocate electric pole further to the north Relocate the communication tower Relocate the fire department storage trailer Demo existing paving and scarify subgrade for areas to receive planting Replacement of fuel station tanks?
Site Prep:	Replace Water Main South site piping-with access to DPW and Fire-340 LF New pavement for double-bay drive through area New planted areas without curbs Pave all parking areas with 4" thick asphalt and a 12" compacted gravel borrow Regrade all parking areas to drain to new stormwater swales. Provide piping to storm outlet with level spreader New septic field, Dbox, and 1000 gallon septic tank Bollards 2 Shade Trees for Parking Islands (Qty 16) Import new soil for rain gardens 12" deep sandy loam mix Loam and seed other areas- 6" loam New sidewalk at main entry- Cast in place concrete 4"thick, over frost wall footings at entrance.

Structural:

- Repair the cracked CMU block below a joist pocket in the existing garage.
- Addition to be steel construction with metal deck, steel joists at 5'0"o.c., steel girder beams, steel columns, diagonal steel braced frames, and a reinforced concrete foundation wall and continuous footing with isolated reinforced concrete footings and piers at column locations. The first floor to be a 10" concrete slab-on-grade reinforced with two layers of rebar. Addition to be kept structurally separated from the existing building.

Mechanical/Plumbing/FP:

- All new plumbing fixtures - piping to remain
- New heating in vehicle bays - oil fired infra-red
- New vehicle exhaust removal system – UL listed
- Ducted Fresh Air To All (E) Furnaces at 10 to 15% of their rated airflow
- Refurbish existing old fuel oil furnace and ductwork. Add Split System Cooling with Energy Recovery Ventilation (ERV). Add Honeywell TrueZone zoning system controls, dampers, and thermostats.
- Plumbing:
    - Use Elementary School Well For Potable Water To All Fixtures except urinals, water closets, and irrigation.
    - Use local well water as grey water for urinals, water closets, and irrigation.
    - Replace plumbing fixtures with low water consumption fixtures.

Electrical:

Primary:

- Utility Power - Add new 150A service
- Circuited Power will be added throughout and include power to all ADA compliant doors for automatic door openers
- ADA compliant push plate door controllers will be added to all ADA compliant egress doors along with card access system
- New ADA compliant fire alarm system with CO detection.
- Egress lighting will be added to any new egress pathways.
- New LED lighting throughout.

Optional:

- Data and power floor boxes added to the raised floor to support electric or data feeds for furniture. Default design includes perimeter electrical outlets and data.
- Full Standby Generator sized for continuous operations of DPW and Fire/Ambulance.

JONES WHITSETT ARCHITECTS

Brimfield Municipal Buildings Study

Conceptual Design Narrative – Police + Town Offices + Senior Center
Option 1 – Add/Reno

Police + Town Offices + Senior Center (POSC1)

This option combines three town functions; police, town offices and senior center in one complex that involves reuse of the Old Town Hall. The new portion of the building will be connected to Old Town Hall by a lobby that includes elevator, stair tower and restrooms. The Senior Center program will be accommodated in the Old Town Hall. Police will orient to the south towards a new parking lot.

Old Town Hall is listed on the National Historic Register.

General Information:

Area:	See Plans
Floors:	3
Construction Type:	Existing Building: VB, non-sprinklered (to be sprinklered) Addition: VB, Sprinklered
Occupancy Type:	A-3 (Senior Center) B

Addition:

Floors: 1st Floor: Concrete slab on grade

Roof: Metal Roof (sloped)

- Merchant & Evans or equal

Exterior Walls:

From exterior to interior:

- Fiber Cement board, painted
- air space
- air vapor barrier
- Sheathing
- 2x6 studs at exterior
- 2” between studs (11” of cellulose w/ gap and studs)
- 2x4 studs at interior
- Interior finish - GWB

Foundation Wall	North and West walls of Ground Floor (Police Station Addition) to be concrete foundation walls, furred out with GWB finish
Windows:	Insulated aluminum frames with double pane glass
Doors:	Interior: Solid core, wood veneer Exterior: Aluminum w/ glazing
Special Construction:	Sally Port, Interview/Holding Room, and Reception / Lobby interior wall to be constructed of 6" wide reinforced core filled glazed masonry units from the floor deck to the ceiling and reinforced core filled concrete masonry units above to the overhead structural deck; mortar is a Portland cement/lime/sand mix.

Existing Building – Historic Town Hall:

Foundation:	Insulate • Install foundation drain around perimeter of building with pump and discharge to a catch basin.
Ground Floor:	Pour new thin slab over existing concrete ground floor. Remove some plywood and carpeted floor areas (2,000 sf)
Roof:	Repair roof and cupola (source of water infiltration)
Ceiling:	Repair ceilings damaged by water (500 SF)
Windows:	Add storm panels to existing single pane windows (34)
Doors:	Replace all door hardware with accessible hardware
Accessibility:	Remove existing lift (serving ground floor and first floor only) Provide new lift to serve existing stage Replace handrails at existing stair for accessibility
Stage:	Replace stage curtain
Floors:	Sand and refinish all wood floors
Walls:	Repair and paint all existing plaster walls

Finishes:

Floors:	Entry: Walk off mats and grill Offices: Carpet tile Corridors: Linoleum Toilet Rooms: Ceramic Tile
Interior Walls:	High impact gypsum board with wood studs

Ceramic wall tile wainscot at corridor

Ceilings: 2x2 Suspended ACT

Site/Civil:

Site Demolition

- Remove (2) Private wells in parking lot
- Remove Town Annex Parking lot
- Remove leaching pit from parking lot
- Remove storage containers from parking lot

Site Prep

- Connect building water with new water line connection serving library and town hall, approx. 300 LF
- Replace existing septic field (if town annex is to stay long term) raised septic with 1000 gallon septic tank, and dbox
- Repave new Town Annex Parking lot for 18 spaces
- Provide a 6' high cast in place retaining wall with guard rails between the parking lot and the Town Hall
- Provide a trench drain and catch basins 4 at the base of the wall to collect stormwater
- Pipe stormwater to catch basins down slope in parking lot.
- Provide 4 site lights in parking lot
- Granite curbing for parking areas
- Connect new water lines to senior center
- Build new septic field under parking lot
- Provide 4 catch basins in parking lot
- Connect catch basins to raingarden behind senior center; provide overflow connection to existing stormdrain system
- New ada parking spaces, bollards, curb cuts, and detectable warning strips (2)
- Install a new "tight tank" to collect any fuel spills in the Old Town Hall basement
- New sidewalk at main entry- Cast in place concrete 4"thick, over frost wall footings at entrance.
- Repave parking lot
- Repave sidewalks out front of Town hall
- Replace existing water line to Town hall
- New sidewalk at main entry- Cast in place concrete 4"thick, over frost wall footings at entrance.

Structural:

Addition to be wood construction for the floor and roof framing. Floor and roof framing to bear on exterior and interior wood stud bearing walls / shear walls and wood beams/columns along interior bearing lines where required. Foundation to include a reinforced concrete foundation wall and continuous reinforced concrete footing. Slab-on-grade to be a 4" concrete slab reinforced with w.w.f. Addition to be kept structurally separated from the existing building.

- Existing roof may require some reinforcing.

- If the existing foundation wall is bowed at any locations (limited access when I was onsite), then reinforced CMU buttresses on concrete footings can be strategically placed along the inside face of the foundation wall. (assume (4) 4' CMU buttress walls)
- Apply water proofing or perimeter drainage along the existing foundation wall to control water infiltration

Mechanical/Plumbing/FP:

- Replace existing old fuel oil boiler with new forced hot water boiler.
- Refurbish existing old fuel oil furnace and ductwork. Add Split System Cooling with Energy Recovery Ventilation (ERV). Add Honeywell TrueZone zoning system controls, dampers, and thermostats.
- Building addition HVAC shall have thirteen 4-Ton Split Systems coupled to a 1600CFM, 65MBH Heating Hot air Furnaces each with a 300 CFM ERV located in a 1-hour fire rated mechanical room.
- Please itemize out a rough cost to sprinkler both buildings
- Plumbing:
    - Use Elementary School Well For Potable Water To All Fixtures except urinals, water closets, and irrigation.
    - Use local well water as grey water for urinals, water closets, and irrigation.
    - Replace plumbing fixtures with low water consumption fixtures.

Electrical

Primary:

- Utility Power - Add new 200A service and full Stand-By Generator.
- Circuited Power will be added throughout and include power to all ADA compliant doors for automatic door openers
- ADA compliant push plate door controllers will be added to all ADA compliant egress doors along with card access system
- New ADA compliant fire alarm system with mass notification.
- Egress lighting will be added to any new egress pathways.
- New LED lighting throughout.
- Default design includes perimeter electrical outlets and data.

Optional:

- New low maintenance LED lighting throughout the Old Town Hall. Localized vacancy sensors to manage energy usage.

JONES WHITSETT ARCHITECTS

Brimfield Municipal Buildings Study

Conceptual Design Narrative – Police + Town Offices + Senior Center Option 2 – All New

Police + Town Offices + Senior Center (POSC2)

This option combines three town functions; police, town offices and senior center in a new, free-standing building of approximately 18,900 GSF. Because this scheme will leave Old Town Hall without a consistent use, the building committee is interested in knowing what costs they should expect to incur to stabilize and maintain Old Town Hall for: 1) infrequent large town meetings, and 2) storage in the ground floor. The building committee will assemble historic cost information on repairs and energy use, but other envelope improvements should be considered.

General Information:

Area:	See Plans
Floors:	3
Construction Type:	Type IIB,
Occupancy Type:	A-3 (Senior Center) B

Proposed New Construction:

Floors:	Ground Floor: Concrete slab on grade
Roof:	Metal Roof (sloped) • Merchant & Evans or equal Membrane Roof (flat) • Sarnafil or equal
Exterior Walls:	From exterior to interior: • Fiber Cement board, painted • air space • air vapor barrier • Sheathing • 2x6 studs at exterior • 2” between studs (11” of cellulose w/ gap and studs) • 2x4 studs at interior • Interior finish - GWB
Windows:	Insulated aluminum frames with double pane glass

Doors:	Interior: Solid core, wood veneer Exterior: Aluminum w/ glazing
Special Construction:	Sally Port, Interview/Holding Room, and Reception / Lobby interior wall to be constructed of 6" wide reinforced core filled glazed masonry units from the floor deck to the ceiling and reinforced core filled concrete masonry units above to the overhead structural deck; mortar is a Portland cement/lime/sand mix.

Finishes:

Floors:	Entry: Walk off mats and grill Offices: Carpet tile Corridors: Linoleum Toilet Rooms: Ceramic Tile
Interior Walls:	High impact gypsum board with wood studs
Ceilings:	2x2 Suspended ACT 5/8" GWB

Site/Civil:

Site Demolition

- Remove (2) Private wells in parking lot
- Remove Town Annex Parking lot

Site Prep

- Connect building water with new water line connection serving library and town hall, approx.. 300 LF
- Replace existing septic field (if town annex is to stay long term) raised septic with 1000 gallon septic tank, and dbox
- Repave new Town Annex Parking lot for 18 spaces
- Provide a 6' high cast in place retaining wall with guard rails between the parking lot and the Town Hall
- Provide a trench drain and catch basins 4 at the base of the wall to collect stormwater
- Pipe stormwater to catch basins down slope in parking lot.
- Provide 4 site lights in parking lot
- Granite curbing for parking areas
- Connect new water lines to senior center
- Build new septic field under parking lot
- Provide 4 catch basins in parking lot
- Connect catch basins to raingarden behind senior center; provide overflow connection to existing stormdrain system
- New ADA parking spaces, bollards, curb cuts, and detectable warning strips (2)
- Does new Senior center have a boiler in the basement? If so will need to install a new "tight tank" to collect any fuel spills in the basement.
- New sidewalk at main entry- Cast in place concrete 4"thick, over frost wall footings at entrance.

Structural:

Free-standing building:

- Building would be steel construction (metal deck, steel joists @ 5'-0"o.c., steel girder beams, and steel columns for the roof framing; concrete slab on metal deck, steel beams @ 4'-0"o.c., steel girder beams, and steel columns for the floor framing; diagonal steel braced frames) and a reinforced concrete foundation wall and continuous footing with isolated reinforced concrete footings at the column locations. First floor to be a 4" concrete slab-on-grade reinforced with w.w.f.

Mechanical/Plumbing/FP:

- Same as POSC1, except building addition HVAC shall have *fifteen* 4-Ton Split Systems coupled to a 1600CFM, 65MBH Heating Hot air Furnaces each with a 300 CFM ERV located in a 1-hour fire rated mechanical room.
- Please itemize out a rough cost to sprinkler the new building
- Plumbing:
    - Use Elementary School Well For Potable Water To All Fixtures except urinals, water closets, and irrigation.
    - Use local well water as grey water for urinals, water closets, and irrigation.
    - Replace plumbing fixtures with low water consumption fixtures.

Electrical:

Primary:

- Utility Power - Add new 200A service and full Stand-By Generator.
- Circuited Power will be added throughout and include power to all ADA compliant doors for automatic door openers
- ADA compliant push plate door controllers will be added to all ADA compliant egress doors along with card access system
- New ADA compliant fire alarm system with mass notification.
- Egress lighting will be added to any new egress pathways.
- New LED lighting throughout.
- Default design includes perimeter electrical outlets and data.

JONES WHITSETT ARCHITECTS

Brimfield Municipal Buildings Study

Conceptual Design Narrative – Highway

Highway (H)

The Highway Department building scheme includes 2 additions to accommodate a new wash bay to the west end, and a small addition to accommodate offices. Renovations will be made to this building to the toilet rooms, break room and office spaces.

General Information:

Area:	See plans
Floors:	1 + Storage Mezzanine
Construction Type:	VB (due to mezzanine)
Occupancy Type:	S2 (Vehicle Bays), Vehicle Repairs (S1), B (Offices)

Addition:

Floors:	Concrete slab on grade – sealed (Wash Bay and Storage) VCT (Offices)
Roof:	Membrane Roof (flat) • Sarnafil or equal
Exterior Walls:	Metal building package from Steelway or equal with batt insulation
Interior Walls:	Painted GWB
Windows:	Insulated aluminum frames with double pane glass (offices)
Doors:	Interior: Solid core, wood veneer Exterior: Aluminum w/ glazing
Ceiling:	New 2x2 ACT (Offices and Break Room)

Renovation:

Stair to Mezzanine:	Reconstruct the stair to the Storage Mezzanine per current code
Accessibility:	Replace all locksets with lever hardware for accessibility

Finishes:
- Replace deteriorated ceiling tiles and VCT with new ACT and VCT – in Gen Office, Toilet, and Break Room area only
- Existing concrete floors in vehicle bays to remain
- Repaint all interior walls

Guardrail: Replace existing guardrail at mezzanine with new metal guardrail

Miscellaneous:

- Budget 2 new garage doors
- Budget all new garage door tracks (re-use existing doors) to a "high bay" system. (current system is too low for trucks)
- Budget for 12 new bollards in front of existing garage door bays
- Budget for 500 sq ft of metal building repair / repaint

Site/Civil:

Site Demolition:
Remove septic field, dbox, and septic tank
Demo existing paving and scarify subgrade for areas to receive planting
New sidewalk at main entry- Cast in place concrete 4"thick, over frost wall footings at entrance.
Remove existing in-ground fuel tanks.

Site Prep:
New connection from Water Main south spur to wash bay (non-potable source) – 33 LF
New pavement for double-bay drive through area
New planted areas without curbs
Pave all parking areas with 4" thick asphalt and a 12" compacted gravel borrow
Regrade all parking areas to drain to new stormwater swales. Provide piping to storm outlet with level spreader
New septic field, Dbox, and 1000 gallon septic tank
Bollards 2
Shade Trees for Parking Islands (Qty 16)
Site lighting (Qty 14) and electric trenching
Import new soil for rain gardens 12" deep sandy loam mix
Loam and seed other areas- 6" loam
Catch basins 10
Stormceptors 3
Tight Tank- Wastewater Containment Tank for wash bays
Tight Tank- Wastewater containment tank for fuel spills
New 8,000 gal above ground fuel tank, subdivided for gas and diesel

Structural:

- Repair / replace the existing corroded / rotted steel channels at the existing overhead garage door openings.
- Office addition can be a wood construction (wood roof rafters bearing on wood stud bearing walls). Foundation to be reinforced concrete foundation wall and continuous footing. The first

floor to be a 4" concrete slab-on-grade reinforced with w.w.f. Addition to be kept structurally separated from the existing building.

- Wash bay addition to be steel construction. If steel construction, roof framing to be comprised of metal deck, steel beams @ 5'-0"o.c., steel girder beams, steel columns, diagonal steel braced frames and a reinforced concrete foundation wall and continuous footing with isolated reinforced concrete footings and piers at the column locations (pre-engineered metal building). First floor to be a 6" concrete slab-on-grade reinforced with w.w.f.

Mechanical/Plumbing/FP:

- All new plumbing fixtures - piping to remain
- New heating in vehicle bays - oil fired infra-red
- New drain in wash/bay to separate tank – (not into septic)
- New vehicle exhaust removal system – UL listed
- Ducted Fresh Air To All (E) Furnaces at 10 to 15% of their rated airflow
- Refurbish existing old fuel oil furnace and ductwork. Add Split System Cooling with Energy Recovery Ventilation (ERV). Add Honeywell TrueZone zoning system controls, dampers, and thermostats.
- Plumbing:
    - Use Elementary School Well For Potable Water To All Fixtures except urinals, water closets, and irrigation.
    - Use local well water as grey water for urinals, water closets, and irrigation.
    - Replace plumbing fixtures with low water consumption fixtures.

Electrical:

Primary:
Utility Power - Utilize existing 200A service
New ADA compliant fire alarm system with CO detection.
Egress lighting will be added to any new egress pathways.
New LED lighting throughout.

Optional:
Data and power added to support electric or data feeds for offices. Default design included perimeter electrical outlets and data per Owner needs.
Full Standby Generator sized for continuous operations of DPW and Fire/Ambulance.

JONES WHITSETT ARCHITECTS

6. COST ESTIMATE

1. PM&C Cost Estimate

Feasibility Study

Brimfield Municipal Buildings

Design Options

Brimfield, MA

PM&C LLC
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Prepared for:

Jones Whitsett Architects

April 5, 2016

PM&C

Brimfield Municipal Buildings
Design Options
Brimfield, MA

05-Apr-16

Feasibility Study

MAIN CONSTRUCTION COST SUMMARY

		Gross Floor Area	$/sf	Estimated Construction Cost
FIRE AND AMBULANCE				
ADDITION		1,970	$230.85	$454,779
RENOVATION		7,480	$25.51	$190,786
HAZARDOUS MATERIAL ABATEMENT				NIC
SITEWORK				$398,768
SUB-TOTAL		9,450	$110.51	$1,044,333
GENERAL CONDITIONS	10%			$104,433
BONDS	1.00%			$10,443
INSURANCE	1.25%			$13,054
PERMIT				NIC
OVERHEAD AND FEE	5%			$52,217
ESCALATION - assumed 12 months	4%			$46,891
DESIGN AND PRICING CONTINGENCY	12%			$146,938
TOTAL OF ALL CONSTRUCTION		9,450	$150.09	**$1,418,309**
HIGHWAY				
ADDITION/RENOVATIONS		8,835	$43.12	$380,949
HAZARDOUS MATERIAL ABATEMENT				NIC
SITEWORK				$401,516
SUB-TOTAL		8,835	$88.56	$782,465
GENERAL CONDITIONS	10%			$78,247
BONDS	1.00%			$7,825
INSURANCE	1.25%			$9,781
PERMIT				NIC
OVERHEAD AND FEE	5%			$39,123
ESCALATION - assumed 12 months	4%			$35,133
DESIGN AND PRICING CONTINGENCY	12%			$110,093
TOTAL OF ALL CONSTRUCTION		8,835	$120.28	**$1,062,667**
LIBRARY				
RENOVATION		2,980	$40.11	$119,525

Brimfield Municipal Buildings
Design Options 05-Apr-16
Brimfield, MA

Feasibility Study

HAZARDOUS MATERIAL ABATEMENT				NIC
SITEWORK				$125,000
SUB-TOTAL		2,980	$82.06	$244,525
GENERAL CONDITIONS	10%			$24,453
BONDS	1.00%			$2,445
INSURANCE	1.25%			$3,057
PERMIT				NIC
OVERHEAD AND FEE	5%			$12,226
ESCALATION - assumed 12 months	4%			$10,979
DESIGN AND PRICING CONTINGENCY	12%			$34,405
TOTAL OF ALL CONSTRUCTION		2,980	$111.44	**$332,090**

POSC

ADDITION		9,440	$270.81	$2,556,458
RENOVATION		8,960	$144.43	$1,294,108
HAZARDOUS MATERIAL ABATEMENT				NIC
SITEWORK				$729,066
SUB-TOTAL		18,400	$248.89	$4,579,632
GENERAL CONDITIONS	10%			$457,963
BONDS	1.00%			$45,796
INSURANCE	1.25%			$57,245
PERMIT				NIC
OVERHEAD AND FEE	5%			$228,982
ESCALATION - assumed 12 months	4%			$205,625
DESIGN AND PRICING CONTINGENCY	12%			$644,354
TOTAL OF ALL CONSTRUCTION		18,400	$338.02	**$6,219,597**

REPLACE POTABLE WATER SUPPLY	ADD	**$621,709**

[1.] Assumed C. 149 procurement.

This feasibility study was produced from drawings and project criteria narrative prepared by Jones Whitsett Architects and their design team received March 8, 2016. Design and engineering changes occurring subsequent to the issue of these documents have not been incorporated in this estimate.

This estimate includes all direct construction costs, general contractors overhead and profit and design contingency. Cost escalation

Feasibility Study

assumes start dates indicated.

Bidding conditions are expected to be public bidding under Chapter 149 of the Massachusetts General Laws to pre-qualified general contractors, and pre-qualified sub-contractors, open specifications for materials and manufactures.

The estimate is based on prevailing wage rates for construction in this market and represents a reasonable opinion of cost. It is not a prediction of the successful bid from a contractor as bids will vary due to fluctuating market conditions, errors and omissions, proprietary specifications, lack or surplus of bidders, perception of risk, etc. Consequently the estimate is expected to fall within the range of bids from a number of competitive contractors or subcontractors, however we do not warrant that bids or negotiated prices will not vary from the final construction cost estimate.

ITEMS NOT CONSIDERED IN THIS ESTIMATE

Items not included in this estimate are:

- All professional fees and insurance
- Building Permit costs
- Land acquisition, feasibility, and financing costs
- All Furnishings, Fixtures and Equipment
- Items identified in the design as Not In Contract (NIC)
- Items identified in the design as by others
- Owner supplied and/or installed items (e.g. draperies, furniture and equipment)
- Relocate existing culvert
- Utility company back charges, including work required off-site
- Work to City streets and sidewalks, (except as noted in this estimate)

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Brimfield Municipal Buildings 05-Apr-16
Design Options
Brimfield, MA

Feasibility Study GFA 1,970

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
FIRE AND AMBULANCE BUILDING - ADDITION						
A10	**FOUNDATIONS**					
	A1010	Standard Foundations	$79,023			
	A1020	Special Foundations	$0			
	A1030	Lowest Floor Construction	$43,402	**$122,425**	$62.14	26.9%
A20	**BASEMENT CONSTRUCTION**					
	A2010	Basement Excavation	$0			
	A2020	Basement Walls	$0	**$0**	$0.00	0.0%
B10	**SUPERSTRUCTURE**					
	B1010	Upper Floor Construction	$0			
	B1020	Roof Construction	$0	**$0**	$0.00	0.0%
B20	**EXTERIOR CLOSURE**					
	B2010	Exterior Walls	$0			
	B2020	Windows	$8,160			
	B2030	Exterior Doors	$54,066	**$62,226**	$31.59	13.7%
B30	**ROOFING**					
	B3010	Roof Coverings	$0			
	B3020	Roof Openings	$0	**$0**	$0.00	0.0%
C10	**INTERIOR CONSTRUCTION**					
	C1010	Partitions	$19,360			
	C1020	Interior Doors	$4,500			
	C1030	Specialties/Millwork	$5,153	**$29,013**	$14.73	6.4%
C20	**STAIRCASES**					
	C2010	Stair Construction	$0			
	C2020	Stair Finishes	$0	**$0**	$0.00	0.0%
C30	**INTERIOR FINISHES**					
	C3010	Wall Finishes	$11,076			
	C3020	Floor Finishes	$7,038			
	C3030	Ceiling Finishes	$4,181	**$22,295**	$11.32	4.9%
D10	**CONVEYING SYSTEMS**					
	D1010	Elevator	$0	**$0**	$0.00	0.0%
D20	**PLUMBING**					
	D20	Plumbing	$36,595	**$36,595**	$18.58	8.0%
D30	**HVAC**					
	D30	HVAC	$61,070	**$61,070**	$31.00	13.4%

Brimfield Municipal Buildings 05-Apr-16
Design Options
Brimfield, MA

Feasibility Study GFA 1,970

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
FIRE AND AMBULANCE BUILDING - ADDITION						
D40	**FIRE PROTECTION**					
	D40	Fire Protection	$8,865	**$8,865**	$4.50	1.9%
D50	**ELECTRICAL**					
	D5010	Complete Electrical System	$43,340	**$43,340**	$22.00	9.5%
E10	**EQUIPMENT**					
	E10	Equipment	$0	**$0**	$0.00	0.0%
E20	**FURNISHINGS**					
	E2010	Fixed Furnishings	$0			
	E2020	Movable Furnishings	NIC	**$0**	$0.00	0.0%
F10	**SPECIAL CONSTRUCTION**					
	F10	Special Construction	$68,950	**$68,950**	$35.00	15.2%
F20	**HAZMAT REMOVALS**					
	F2010	Building Elements Demolition	$0			
	F2020	Hazardous Components Abatement	$0	**$0**	$0.00	0.0%
TOTAL DIRECT COST (Trade Costs)				***$454,779***	*$230.85*	*100.0%*

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Brimfield Municipal Buildings 05-Apr-16
Design Options
Brimfield, MA

Feasibility Study GFA 1,970

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
FIRE AND AMBULANCE BUILDING - ADDITION							
	GROSS FLOOR AREA CALCULATION						
	First Floor			1,970			
	TOTAL GROSS FLOOR AREA (GFA)				**1,970**	***sf***	
A10	***FOUNDATIONS***						
A1010	**STANDARD FOUNDATIONS**						
	Strip footings to foundation walls - 2'-0" x 1'-0"						
	Excavation	**145**	cy	15.00	2,175		
	Store on site for reuse	**145**	cy	8.00	1,160		
	Backfill with existing fill	**130**	cy	12.00	1,560		
	Formwork	**392**	sf	14.00	5,488		
	Re-bar; 150 lbs per CY	**2,250**	lbs	1.20	2,700		
	Concrete material; 3,000 psi	**15**	cy	120.00	1,800		
	Placing concrete	**15**	cy	100.00	1,500		
	Foundation walls at exterior - 12" thick						
	Formwork	**1,568**	sf	14.00	21,952		
	Re-bar; 150 lbs per CY	**4,500**	lbs	1.20	5,400		
	Concrete material; 3,000 psi	**30**	cy	120.00	3,600		
	Placing concrete	**30**	cy	100.00	3,000		
	Damp proofing foundation wall and footing	**1,176**	sf	1.60	1,882		
	Insulation to foundation walls; 2" thick	**1,176**	sf	3.00	3,528		
	Form shelf	**196**	lf	8.00	1,568		
	Spread Footings - allowance						
	Excavation	**80**	cy	16.00	1,280		
	Remove off site	**60**	cy	14.00	840		
	Backfill with selected existing material	**80**	cy	12.00	960		
	Formwork	**360**	sf	12.00	4,320		
	Re-bar	**1,800**	lbs	1.20	2,160		
	Concrete material; 4,000 psi	**20**	cy	140.00	2,800		
	Placing concrete	**20**	cy	55.00	1,100		
	Miscellaneous						
	Allowance for work at connection to existing building	**55**	lf	150.00	8,250		
	SUBTOTAL					79,023	
A1020	**SPECIAL FOUNDATIONS**						
	No items in this section						
	SUBTOTAL					-	
A1030	**LOWEST FLOOR CONSTRUCTION**						
	Slab on Grade, 10" thick	**1,970**	sf				
	Compacted fill - 12"	**73**	cy	38.00	2,774		
	Rigid insulation, 2"	**1,970**	sf	2.50	4,925		
	Vapor barrier	**1,970**	sf	1.00	1,970		
	Mesh reinforcing 15% lap x 2 layers	**3,940**	sf	0.75	2,955		
	Concrete - 10" thick	**67**	cy	140.00	9,380		
	Barrier one additive to concrete	**67**	cy	60.00	4,020		
	Placing concrete	**67**	cy	65.00	4,355		
	Finishing and curing concrete	**1,970**	sf	2.50	4,925		
	Control joints - saw cut	**1,970**	sf	1.00	1,970		
	Trench drain	**64**	lf	25.00	1,600		
	Allowance for perimeter drain	**196**	lf	18.00	3,528		
	Allowance for equipment pads	**1**	ls	1,000.00	1,000		
	SUBTOTAL					43,402	
	TOTAL - FOUNDATIONS						**$122,425**

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Brimfield Municipal Buildings 05-Apr-16
Design Options
Brimfield, MA

Feasibility Study GFA 1,970

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	FIRE AND AMBULANCE BUILDING - ADDITION						
	A20 BASEMENT CONSTRUCTION						
A2010	**BASEMENT EXCAVATION**						
	No Work in this section						
	SUBTOTAL						
A2020	**BASEMENT WALLS**						
	No Work in this section						
	SUBTOTAL					-	
	TOTAL - BASEMENT CONSTRUCTION						
	B10 SUPERSTRUCTURE						
B1010	**FLOOR CONSTRUCTION**						
	SUBTOTAL						
B1020	**ROOF CONSTRUCTION**						
	w/ Pre-engineered building - Special Construction				w/ F10		
	SUBTOTAL					-	
	TOTAL - SUPERSTRUCTURE						
	B20 EXTERIOR CLOSURE						
B2010	**EXTERIOR WALLS**	***1,970***	sf		w/ F10		
	w/ Pre-engineered building - Special Construction						
	SUBTOTAL					-	
B2020	**WINDOWS**						
	Windows - allowance	**96**	sf	85.00	8,160		
	SUBTOTAL					8,160	
B2030	**EXTERIOR DOORS**						
	Apparatus bay doors 14' x 14' sectional , electrically operated	**4**	ea	11,760.00	47,040		
	Single leaf egress door, aluminum w/ glazing	**2**	ea	2,200.00	4,400		
	Backer rod & double sealant	**202**	lf	9.00	1,818		
	Wood blocking at openings	**202**	lf	4.00	808		
	SUBTOTAL					54,066	
	TOTAL - EXTERIOR CLOSURE						**$62,226**
	B30 ROOFING						
B3010	**ROOF COVERINGS**						
	w/ Pre-engineered building - Special Construction						
	SUBTOTAL					-	
B3020	**ROOF OPENINGS**						
	No items in this section						
	SUBTOTAL						
	TOTAL - ROOFING						

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Brimfield Municipal Buildings 05-Apr-16
Design Options
Brimfield, MA

Feasibility Study GFA 1,970

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
FIRE AND AMBULANCE BUILDING - ADDITION							
C10	***INTERIOR CONSTRUCTION***						
C1010	**PARTITIONS**						
	Interior gwb partitions	**880**	sf	14.00	12,320		
	Allowance for work to walls at connection to existing building	**880**	sf	8.00	7,040		
	SUBTOTAL					19,360	
C1020	**INTERIOR DOORS**						
	Single leaf, wood door, hm frame and hardware	**3**	ea	1,500.00	4,500		
	SUBTOTAL					4,500	
C1030	**SPECIALTIES / MILLWORK**						
	Room Signs	**3**	ea	130.00	390		
	Fire extinguisher cabinets	**1**	ea	350.00	350		
	Accessories in toilet rooms	**2**	ea	750.00	1,500		
	Miscellaneous metals throughout building	**1,970**	sf	0.50	985		
	Miscellaneous sealants throughout building	**1,970**	sf	0.75	1,478		
	Casework						
	Laundry						
	Adjustable plywood shelving	**6**	lf	75.00	450		
	SUBTOTAL					5,153	
	TOTAL - INTERIOR CONSTRUCTION						**$29,013**
C20	***STAIRCASES***						
C2010	**STAIR CONSTRUCTION**						
	No items in this section						
	SUBTOTAL						
C2020	**STAIR FINISHES**						
	No items in this section						
	SUBTOTAL						
	TOTAL - STAIRCASES						
C30	***INTERIOR FINISHES***						
C3010	**WALL FINISHES**						
	Wall finishes, paint	**3,730**	sf	1.20	4,476		
	Ceramic tile at toilet rooms	**300**	sf	22.00	6,600		
	SUBTOTAL					11,076	
C3020	**FLOOR FINISHES**						
	Sealed concrete at apparatus bay and hallway	**1,491**	sf	2.00	2,982		
	Ceramic tile in toilet rooms	**176**	sf	22.00	3,872		
	VCT in laundry	**46**	sf	4.00	184		
	SUBTOTAL					7,038	
C3030	**CEILING FINISHES**						
	Paint exposed ceilings at apparatus bay	**1,491**	sf	1.50	2,237		
	ACT ceilings	**324**	sf	6.00	1,944		
	SUBTOTAL					4,181	
	TOTAL - INTERIOR FINISHES						**$22,295**
D10	***CONVEYING SYSTEMS***						
D1010	**ELEVATOR**						
	No Work in this section						
	SUBTOTAL						

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Brimfield Municipal Buildings 05-Apr-16
Design Options
Brimfield, MA

Feasibility Study GFA 1,970

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
FIRE AND AMBULANCE BUILDING - ADDITION							
	TOTAL - CONVEYING SYSTEMS						
	D20 PLUMBING						
D20	**PLUMBING, GENERALLY**						
	Oil/Gas separator	**1**	ls	10,000.00	10,000		
	Plumbing allowance	**1,970**	gsf	13.50	26,595		
	SUBTOTAL					36,595	
	TOTAL - PLUMBING						**$36,595**
	D30 HVAC						
D30	**HVAC, GENERALLY**						
	HVAC Allowance	**1,970**	gsf	31.00	61,070		
	SUBTOTAL					61,070	
	TOTAL - HVAC						**$61,070**
	D40 FIRE PROTECTION						
D40	**FIRE PROTECTION, GENERALLY**						
	Sprinkler allowance	**1,970**	gsf	4.50	8,865		
	SUBTOTAL					8,865	
	TOTAL - FIRE PROTECTION						**$8,865**
	D50 ELECTRICAL						
D5010	**SERVICE & DISTRIBUTION**						
	Electrical allowance; complete	**1,970**	gsf	22.00	43,340		
	SUBTOTAL					43,340	
	TOTAL - ELECTRICAL						**$43,340**
	E10 EQUIPMENT						
E10	**EQUIPMENT, GENERALLY**						
	Allowance for wall and corner guards, removable hose rack, wall hooks etc	**1,970**	sf	2.00	NIC		
	Allowance for washer/dryer	**1**	ls	5,000.00	NIC		
	SUBTOTAL					-	
	TOTAL - EQUIPMENT						
	E20 FURNISHINGS						
E2010	**FIXED FURNISHINGS**						
	No items in this section						
	SUBTOTAL					-	
E2020	**MOVABLE FURNISHINGS**						
	All movable furnishings to be provided and installed by owner						
	SUBTOTAL					NIC	
	TOTAL - FURNISHINGS						
	F10 SPECIAL CONSTRUCTION						
F10	**SPECIAL CONSTRUCTION**						

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
FIRE AND AMBULANCE BUILDING - ADDITION							
	Pre-Engineered Building	**1,970**	sf	35.00	68,950		
	SUBTOTAL					$68,950	
	TOTAL - SPECIAL CONSTRUCTION						**$68,950**
F20	***SELECTIVE BUILDING DEMOLITION***						
F2010	**BUILDING ELEMENTS DEMOLITION**						
	No items in this section						
	SUBTOTAL					-	
F2020	**HAZARDOUS COMPONENTS ABATEMENT**						
	See main summary for HazMat allowance				See Summary		
	SUBTOTAL						
	TOTAL - SELECTIVE BUILDING DEMOLITION						

PM&C

Brimfield Municipal Building 10-Mar-16
Brimfield, MA

Design Options GFA 7,480

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
FIRE AND AMBULANCE BUILDING - RENOVATION						
A10	**FOUNDATIONS**					
	A1010	Standard Foundations	$0			
	A1020	Special Foundations	$0			
	A1030	Lowest Floor Construction	$0	**$0**	$0.00	0.0%
A20	**BASEMENT CONSTRUCTION**					
	A2010	Basement Excavation	$0			
	A2020	Basement Walls	$0	**$0**	$0.00	0.0%
B10	**SUPERSTRUCTURE**					
	B1010	Upper Floor Construction	$0			
	B1020	Roof Construction	$0	**$0**	$0.00	0.0%
B20	**EXTERIOR CLOSURE**					
	B2010	Exterior Walls	$6,000			
	B2020	Windows	$4,080			
	B2030	Exterior Doors	$0	**$10,080**	$1.35	5.3%
B30	**ROOFING**					
	B3010	Roof Coverings	$0			
	B3020	Roof Openings	$0	**$0**	$0.00	0.0%
C10	**INTERIOR CONSTRUCTION**					
	C1010	Partitions	$20,380			
	C1020	Interior Doors	$9,900			
	C1030	Specialties/Millwork	$520	**$30,800**	$4.12	16.1%
C20	**STAIRCASES**					
	C2010	Stair Construction	$0			
	C2020	Stair Finishes	$0	**$0**	$0.00	0.0%
C30	**INTERIOR FINISHES**					
	C3010	Wall Finishes	$4,470			
	C3020	Floor Finishes	$8,905			
	C3030	Ceiling Finishes	$8,180	**$21,555**	$2.88	11.3%
D10	**CONVEYING SYSTEMS**					
	D1010	Elevator	$0	**$0**	$0.00	0.0%
D20	**PLUMBING**					
	D20	Plumbing	$0	**$0**	$0.00	0.0%
D30	**HVAC**					
	D30	HVAC	$44,880	**$44,880**	$6.00	23.5%

Brimfield Municipal Building 10-Mar-16
Brimfield, MA

Design Options GFA 7,480

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
FIRE AND AMBULANCE BUILDING - RENOVATION						
D40	**FIRE PROTECTION**					
	D40	Fire Protection	$33,660	**$33,660**	$4.50	17.6%
D50	**ELECTRICAL**					
	D5010	Electrical; Complete system	$37,400	**$37,400**	$5.00	19.6%
E10	**EQUIPMENT**					
	E10	Equipment	$0	**$0**	$0.00	0.0%
E20	**FURNISHINGS**					
	E2010	Fixed Furnishings	$0			
	E2020	Movable Furnishings	NIC	**$0**	$0.00	0.0%
F10	**SPECIAL CONSTRUCTION**					
	F10	Special Construction	$0	**$0**	$0.00	0.0%
F20	**HAZMAT REMOVALS**					
	F2010	Building Elements Demolition	$12,411			
	F2020	Hazardous Components Abatement	$0	**$12,411**	$1.66	6.5%
	TOTAL DIRECT COST (Trade Costs)			***$190,786***	*$25.51*	*100.0%*

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
FIRE AND AMBULANCE BUILDING - RENOVATION							
	GROSS FLOOR AREA CALCULATION						
		TOTAL GFA		Renovated	No work		
	Ground level	7,480	SF	2,980	4,500		
	TOTAL GROSS FLOOR AREA (GFA)				**7,480** ***sf***		
	A10 FOUNDATIONS						
A1010	**STANDARD FOUNDATIONS**						
	No items in this section						
	SUBTOTAL					-	
A1020	**SPECIAL FOUNDATIONS**						
	No items in this section						
	SUBTOTAL					-	
A1030	**LOWEST FLOOR CONSTRUCTION**						
	Repair cracked concrete floor	**200**	sf	10.00	NIC		
	Allowance for new concrete floor at shower/ toilet rooms disturbed mby new MEP work	**282**	sf	15.00	NIC		
	SUBTOTAL					-	
	TOTAL - FOUNDATIONS						
	A20 BASEMENT CONSTRUCTION						
A2010	**BASEMENT EXCAVATION**						
	No Work in this section						
	SUBTOTAL						
A2020	**BASEMENT WALLS**						
	No Work in this section						
	SUBTOTAL					-	
	TOTAL - BASEMENT CONSTRUCTION						
	B10 SUPERSTRUCTURE						
B1010	**FLOOR CONSTRUCTION**						
	Allowance to repair cracked CMU block below joist pocket in existing garage	**1**	ls	5,000.00	NIC		
	SUBTOTAL						
B1020	**ROOF CONSTRUCTION**						
	Allowance for new penetrations in existing roof structure	**1**	ls	2,000.00	NIC		
	SUBTOTAL					-	
	TOTAL - SUPERSTRUCTURE						
	B20 EXTERIOR CLOSURE						
B2010	**EXTERIOR WALLS**	*6,560*	sf				
	Repoint CMU and brick - allowance 10%	**656**	sf	30.00	no work		
	Replace aprons at overhead doors w/ concrete aprons w/ frost walls	**56**	lf	600.00	NIC		
	Remove and replace damaged brick	**100**	sf	90.00	no work		

	CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	FIRE AND AMBULANCE BUILDING - RENOVATION							
58		Remove and replace deteriorated wood siding w/ new cement board siding - allowance	**200**	sf	30.00	6,000		
59		SUBTOTAL					6,000	
60								
61	**B2020**	**WINDOWS**						
62		Allowance for new window opes at toilet rooms and ambulance manager office	**48**	sf	85.00	4,080		
63		SUBTOTAL					4,080	
64								
65	**B2030**	**EXTERIOR DOORS**						
66		Existing doors to remain				no work		
67		SUBTOTAL					-	
68								
69		***TOTAL - EXTERIOR CLOSURE***						**$10,080**
70								
71								
72	***B30***	***ROOFING***						
73								
74	**B3010**	**ROOF COVERINGS**						
75		Allowance to patch roofing at new work penetrations	**1**	ls	1,000.00	no work		
76		SUBTOTAL					-	
77								
78	**B3020**	**ROOF OPENINGS**						
79		No Work in this section						
80		SUBTOTAL						
81								
82		***TOTAL - ROOFING***						
83								
84								
85	***C10***	***INTERIOR CONSTRUCTION***						
86								
87	**C1010**	**PARTITIONS**						
88		Interior wood stud partitions w/ impact resistant gwb	**1,200**	sf	14.00	16,800		
89		Patch existing partitions to remain disturbed by new work/ infill at opes	**2,980**	gfa	1.00	2,980		
90		Blocking and sealants to interior partitions	**1,200**	sf	0.50	600		
91		SUBTOTAL					20,380	
92								
93	**C1020**	**INTERIOR DOORS**						
94		New interior wood veneer doors, hollow metal frames and hardware, single leaf	**4**	ea	1,600.00	6,400		
95		New interior wood veneer doors, hollow metal frames and hardware, double leaf	**1**	pr	3,500.00	3,500		
96		Existing doors to remain				assume no work		
97		SUBTOTAL					9,900	
98								
99	**C1030**	**SPECIALTIES / MILLWORK**						
100		Bathrooms/ shower rooms accessories	**2**	ea	1,500.00	no work		
101		Marker boards/tackboards	**1**	ls	500.00	NIC		
102		Dorm room lockers	**12**	ea	300.00	assume ETR		
103		Room Signs	**4**	ea	130.00	520		
104		Fire extinguisher cabinets				assume ETR		
105		Casework						
106		*Kitchen / Dining*						
107		Base cabinet w/ solid surface countertops	**18**	lf	400.00	no work		
108		Wall cabinets	**18**	lf	250.00	no work		
109		Kitchen storage cabinets; 24"x84"	**2**	ea	1,200.00	no work		
110		*Radio room*						
111		Work counter	**6**	lf	150.00	no work		
112		Wood veneer transaction window shelf & window	**1**	ea	1,000.00	no work		
113		Allowance for miscellaneous casework	**12**	lf	500.00	no work		
114		Vanity counters in bathrooms	**8**	lf	250.00	no work		

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
FIRE AND AMBULANCE BUILDING - RENOVATION							
	SUBTOTAL					520	
	TOTAL - INTERIOR CONSTRUCTION						**$30,800**
C20	***STAIRCASES***						
C2010	**STAIR CONSTRUCTION**						
	No items in this section						
	SUBTOTAL						
C2020	**STAIR FINISHES**						
	No items in this section						
	SUBTOTAL						
	TOTAL - STAIRCASES						
C30	***INTERIOR FINISHES***						
C3010	**WALL FINISHES**						
	Wall finishes, paint to new and existing	**2,980**	gsf	1.50	4,470		
	Ceramic tile at bathrooms	**660**	sf	22.00	no work		
	SUBTOTAL					4,470	
C3020	**FLOOR FINISHES**						
	Ceramic tile in toilet/shower/locker rooms	**284**	sf	20.00	no work		
	VCT in sleep and office	**567**	sf	4.00	2,268		
	Allowance to patch flooring at existing areas disturbed by new work	**2,049**	sf	2.50	5,123		
	Allowance to prep and level existing floors for new finishes	**567**	sf	2.00	1,134		
	Resilient base	**190**	lf	2.00	380		
	SUBTOTAL					8,905	
C3030	**CEILING FINISHES**						
	Acoustical ceiling tile, 2x2	**851**	sf	6.00	5,106		
	Allowance to patch ceilings at existing areas disturbed by new work	**2,049**	sf	1.50	3,074		
	SUBTOTAL					8,180	
	TOTAL - INTERIOR FINISHES						**$21,555**
D10	***CONVEYING SYSTEMS***						
D1010	**ELEVATOR**						
	No Work in this section						
	SUBTOTAL						
	TOTAL - CONVEYING SYSTEMS						
D20	***PLUMBING***						
D20	**PLUMBING, GENERALLY**						
	Plumbing allowance; New fixtures, piping to remain	**7,480**	gsf	5.40	no work		
	SUBTOTAL					-	
	TOTAL - PLUMBING						
D30	***HVAC***						
D30	**HVAC, GENERALLY**						
	HVAC Allowance; modify/upgrade existing	**7,480**	gsf	6.00	44,880		
	SUBTOTAL					44,880	

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
FIRE AND AMBULANCE BUILDING - RENOVATION							
	TOTAL - HVAC						**$44,880**
	D40 FIRE PROTECTION						
D40	**FIRE PROTECTION, GENERALLY**						
	Sprinkler allowance	**7,480**	gsf	4.50	33,660		
	SUBTOTAL					33,660	
	TOTAL - FIRE PROTECTION						**$33,660**
	D50 ELECTRICAL						
D5010	**SERVICE & DISTRIBUTION**						
	Electrical allowance; complete	**7,480**	gsf	5.00	37,400		
	SUBTOTAL					37,400	
	TOTAL - ELECTRICAL						**$37,400**
	E10 EQUIPMENT						
E10	**EQUIPMENT, GENERALLY**						
	Projection screen in Training room	**1**	ea	1,500.00	NIC		
	Allowance for kitchen appliances	**1**	ls	15,000.00	NIC		
	SUBTOTAL					-	
	TOTAL - EQUIPMENT						
	E20 FURNISHINGS						
E2010	**FIXED FURNISHINGS**						
	No items in this section						
	SUBTOTAL					-	
E2020	**MOVABLE FURNISHINGS**						
	All movable furnishings to be provided and installed by owner						
	SUBTOTAL					NIC	
	TOTAL - FURNISHINGS						
	F10 SPECIAL CONSTRUCTION						
F10	**SPECIAL CONSTRUCTION**						
	No items in this section						
	SUBTOTAL						
	TOTAL - SPECIAL CONSTRUCTION						
	F20 SELECTIVE BUILDING DEMOLITION						
F2010	**BUILDING ELEMENTS DEMOLITION**						
	Remove existing doors	**6**	ea	100.00	600		
	Remove existing partitions	**840**	sf	5.00	ETR		
	Remove existing floor, wall and ceiling finishes	**851**	sf	6.00	5,106		
	Miscellaneous interior and exterior demolition including making opes in existing and at connection to new	**2,980**	sf	1.25	3,725		
	MEP demolition	**2,980**	sf	1.00	2,980		
	SUBTOTAL					12,411	

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
FIRE AND AMBULANCE BUILDING - RENOVATION							
244 **F2020**	**HAZARDOUS COMPONENTS ABATEMENT**						
245	See main summary for HazMat allowance				See Summary		
246	SUBTOTAL						
247							
248	***TOTAL - SELECTIVE BUILDING DEMOLITION***						**$12,411**

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
FIRE AND AMBULANCE BUILDING - SITEWORK							
	G SITEWORK						
G10	**SITE PREPARATION & DEMOLITION**						
	Site construction fence/barricades	**1,000**	lf	12.00	12,000		
	Site construction fence gates	**1**	ea	2,500.00	2,500		
	Stabilized construction entrance	**1**	ls	5,000.00	5,000		
	Pavement/curbing demo, scarify for areas to receive plantings	**50,000**	sf	0.50	25,000		
	Remove and dispose of existing septic system	**1**	ls	15,000.00	15,000		
	Site Earthwork						
	Strip topsoil and store on site - allowance	**139**	cy	12.00	1,668		
	Cuts/Fills	**2,130**	cy	6.00	12,780		
	Fine grading	**6,389**	sy	0.95	6,070		
	Silt fence/erosion control, wash bays, stock piles	**500**	lf	9.50	4,750		
	Silt fence maintenance and monitoring	**1**	ls	5,000.00	5,000		
	Hazardous Waste Remediation						
	Remove existing underground fuel storage tank				assume ETR		
	Dispose/treat contaminated soils/water				NIC		
	SUBTOTAL					89,768	
G20	**SITE IMPROVEMENTS**						
	Roadways, Parking Lots and Apparatus bays	*32,000*	*sf*				
	gravel base; 12" thick	**1,185**	cy	32.00	37,920		
	bituminous concrete; 4" thick	**3,556**	sy	27.00	96,012		
	VGC (no curbs at planted areas per narrative)	**675**	lf	35.00	23,625		
	Single solid lines, 4" thick	**61**	space	25.00	1,525		
	Wheelchair Parking	**2**	space	75.00	150		
	Sidewalk at Main Entry						
	Concrete paving	**1,000**	sf				
	gravel base; 8" thick	**25**	cy	38.00	950		
	Concrete paving	**1,000**	sf	7.00	7,000		
	Entry pads	**150**	sf	15.00	2,250		
	Relocate fire department storage trailer including new concrete pad	**1**	ls	3,000.00	NIC		
	New concrete pad at relocated communication tower	**1**	ls	1,500.00	NIC		
	Site Improvements						
	Bollards (per narrative)	**2**	ea	850.00	1,700		
	Landscaping						
	Spread stored soil/ import new; 12" soil at Raingardens, 6" soil at remaining areas	**444**	cy	22.00	9,768		
	Seed at lawn areas	**10,000**	sf	0.10	1,000		
	Shade trees	**8**	ea	1,000.00	8,000		
	Groundcover plantings/ shrubs - allowance	**1**	ls	5,000.00	NIC		
	SUBTOTAL					189,900	
G30	**CIVIL MECHANICAL UTILITIES**						
	Water supply						
	Replace water main piping w/ access to DPW and Fire station	**340**	lf	90.00	30,600		
	Connect to existing	**1**	loc	3,000.00	3,000		
	FD connection	**1**	ea	2,000.00	2,000		
	Gate valves	**2**	ea	750.00	1,500		
	Sanitary						
	New septic system; Dbox, 1000 gal tank and septic field	**1**	ls	30,000.00	30,000		
	Manholes	**2**	ea	4,000.00	8,000		
	6" PVC	**50**	lf	50.00	2,500		
	Storm water - allowance						
	15" CPP	**300**	lf	65.00	19,500		
	Catch basin	**4**	ea	3,500.00	14,000		

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
FIRE AND AMBULANCE BUILDING - SITEWORK							
	OCS	**1**	ea	8,000.00	8,000		
	SUBTOTAL					119,100	
G40	**ELECTRICAL UTILITIES**						
	Power						
	Primary ductbank - ETR						
	Remove and relocate electric pole	**1**	ea	3,000.00	By Others		
	Remove and relocate Communication tower	**1**	ls	60,000.00	By Others		
	Site Lighting						
	Allowance for site lighting	**6**	fxt	3,000.00	ETR		
	SUBTOTAL					-	
	TOTAL - SITE DEVELOPMENT						***$398,768***

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Brimfield Municipal Buildings 05-Apr-16
Design Options
Brimfield, MA

Feasibility Study GFA 8,835

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
HIGHWAY BUILDING ADDITIONS/RENOVATIONS						
A10	**FOUNDATIONS**					
	A1010	Standard Foundations	$69,911			
	A1020	Special Foundations	$0			
	A1030	Lowest Floor Construction	$9,788	**$79,699**	$9.02	20.9%
A20	**BASEMENT CONSTRUCTION**					
	A2010	Basement Excavation	$0			
	A2020	Basement Walls	$0	**$0**	$0.00	0.0%
B10	**SUPERSTRUCTURE**					
	B1010	Upper Floor Construction	$0			
	B1020	Roof Construction	$0	**$0**	$0.00	0.0%
B20	**EXTERIOR CLOSURE**					
	B2010	Exterior Walls	$30,148			
	B2020	Windows	$1,040			
	B2030	Exterior Doors	$26,011	**$57,199**	$6.47	15.0%
B30	**ROOFING**					
	B3010	Roof Coverings	$0			
	B3020	Roof Openings	$0	**$0**	$0.00	0.0%
C10	**INTERIOR CONSTRUCTION**					
	C1010	Partitions	$23,500			
	C1020	Interior Doors	$8,001			
	C1030	Specialties/Millwork	$1,873	**$33,374**	$3.78	8.8%
C20	**STAIRCASES**					
	C2010	Stair Construction	$16,500			
	C2020	Stair Finishes	$2,156	**$18,656**	$2.11	4.9%
C30	**INTERIOR FINISHES**					
	C3010	Wall Finishes	$6,163			
	C3020	Floor Finishes	$3,518			
	C3030	Ceiling Finishes	$2,113	**$11,794**	$1.33	3.1%
D10	**CONVEYING SYSTEMS**					
	D1010	Elevator	$0	**$0**	$0.00	0.0%

PM&C

Brimfield Municipal Buildings 05-Apr-16
Design Options
Brimfield, MA

Feasibility Study GFA 8,835

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
HIGHWAY BUILDING ADDITIONS/RENOVATIONS						
D13	**SPECIAL CONSTRUCTION**					
	D1313	Special Construction	$39,575	**$39,575**	$4.48	10.4%
D20	**PLUMBING**					
	D20	Plumbing	$30,468	**$30,468**	$3.45	8.0%
D30	**HVAC**					
	D30	HVAC	$83,587	**$83,587**	$9.46	21.9%
D40	**FIRE PROTECTION**					
	D40	Fire Protection	$0	**$0**	$0.00	0.0%
D50	**ELECTRICAL**					
	D5010	Service & Distribution	$4,183			
	D5020	Lighting & Power	$6,659			
	D5030	Communication & Security Systems	$4,377			
	D5040	Other Electrical Systems	$1,883	**$17,102**	$1.94	4.5%
E10	**EQUIPMENT**					
	E10	Equipment	$0	**$0**	$0.00	0.0%
E20	**FURNISHINGS**					
	E2010	Fixed Furnishings	$1,125			
	E2020	Movable Furnishings	NIC	**$1,125**	$0.13	0.3%
F20	**HAZMAT REMOVALS**					
	F2010	Building Elements Demolition	$8,370			
	F2020	Hazardous Components Abatement	$0	**$8,370**	$0.95	2.2%
TOTAL DIRECT COST (Trade Costs)				***$380,949***	*$43.12*	*100.0%*

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
HIGHWAY BUILDING ADDITIONS/RENOVATIONS							
	GROSS FLOOR AREA CALCULATION						
	Level 1 - existing			7,990			
	Level 1 - New			845			
	TOTAL GROSS FLOOR AREA (GFA)				**8,835** ***sf***		
A10	***FOUNDATIONS***						
A1010	**STANDARD FOUNDATIONS**						
033000	*CONCRETE*						
	Strip Footings	*17*	*CY*				
	Foundation Walls	*34*	*CY*				
	Spread Footings	*26*	*CY*				
	Total Foundation Concrete	*77*	*CY*				
	Strip footings						
	Formwork	**400**	sf	11.00	4,400		
	Re-bar	**1,530**	lbs.	1.20	1,836		
	Concrete material; 3,000 psi	**17**	cy	120.00	2,040		
	Placing concrete	**17**	cy	49.50	842		
	Foundation walls at exterior						
	Formwork	**1,600**	sf	13.20	21,120		
	Re-bar	**4,000**	lbs.	1.20	4,800		
	Concrete material; 3,000 psi	**34**	cy	120.00	4,080		
	Placing concrete	**34**	cy	49.50	1,683		
	Spread Footings						
	Formwork	**480**	sf	12.10	5,808		
	Re-bar	**3,640**	lbs.	1.20	4,368		
	Concrete material; 3,000 psi	**26**	cy	120.00	3,120		
	Placing concrete	**26**	cy	49.50	1,287		
	Set anchor bolts grout plates	**12**	ea	165.00	1,980		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Dampproofing foundation wall and footing				NIC		
072100	*THERMAL INSULATION*						
	Insulation	**800**	sf	2.15	1,720		
312000	*EARTHWORK*						
	Strip footings						
	Excavation	**153**	cy	11.00	1,683		
	Remove off site	**153**	cy	17.60	2,693		
	Backfill with imported material	**102**	cy	32.00	3,264		
	Spread footings						
	Excavation	**64**	cy	13.20	845		
	Remove off site	**64**	cy	17.60	1,126		
	Backfill with imported material	**38**	cy	32.00	1,216		
	Miscellaneous						
	Perimeter drain				NIC		
	SUBTOTAL					69,911	
A1020	**SPECIAL FOUNDATIONS**						
	No work in this section						
	SUBTOTAL						
A1030	**LOWEST FLOOR CONSTRUCTION**						
033000	*CONCRETE*						

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
HIGHWAY BUILDING ADDITIONS/RENOVATIONS							
	Slab on grade, 6" thick	*845*	*sf*		-		
	Vapor barrier, heavy duty, 15 mil	**845**	sf	0.94	794		
	WWF reinforcement	**972**	sf	0.99	962		
	Concrete - 6" thick; 4,000 psi	**16**	cy	137.50	2,200		
	Placing concrete	**16**	cy	49.50	792		
	Finishing and curing concrete	**845**	sf	1.65	1,394		
	Sawcut full depth control joints	**845**	sf	0.22	186		
072100	*THERMAL INSULATION*						
	Insulation, 2"	**845**	sf	2.15	1,817		
312000	*EARTHWORK*						
	Slab on grade						
	Gravel base, 12"	**31**	cy	38.00	1,178		
	Compact sub-grade	**845**	sf	0.55	465		
	SUBTOTAL					9,788	
	TOTAL - FOUNDATIONS						**$79,699**
A20	***BASEMENT CONSTRUCTION***						
A2010	**BASEMENT EXCAVATION**						
	No work in this section						
	SUBTOTAL						
A2020	**BASEMENT WALLS**						
	No work in this section						
	SUBTOTAL					-	
	TOTAL - BASEMENT CONSTRUCTION						
B10	***SUPERSTRUCTURE***						
B1010	**FLOOR CONSTRUCTION**						
	No work in this section						
	SUBTOTAL					-	
B1020	**ROOF CONSTRUCTION**						
	Wash Bay Included in Pre-engineered building costs						
	SUBTOTAL					-	
	TOTAL - SUPERSTRUCTURE						
B20	***EXTERIOR CLOSURE***						
B2010	**EXTERIOR WALLS**						
052000	*MISC. METALS*						
	Infill existing openings in exterior wall	**1**	ls	1,000.00		1,000	
	Patch existing exterior wall at new openings	**1**	ls	1,500.00		1,500	
	Exterior metal siding at office addition	**1,005**	sf	25.00	NIC		
	Exterior metal siding at wash bay addition; part of pre-engineered building costs						
092900	*GYPSUM BOARD ASSEMBLIES*						

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
HIGHWAY BUILDING ADDITIONS/RENOVATIONS							
	6" stud	**2,560**	sf	8.00	20,480		
	GWB lining	**2,560**	sf	2.80	7,168		
	SUBTOTAL					30,148	
B2020	**WINDOWS**						
061000	*ROUGH CARPENTRY*						
	Wood blocking at openings	**80**	lf	4.00	320		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Backer rod & double sealant	**80**	lf	9.00	720		
080001	*METAL WINDOWS*						
	Windows	**100**	sf	85.00	Incl in Building		
	SUBTOTAL					1,040	
B2030	**EXTERIOR DOORS**						
061000	*ROUGH CARPENTRY*						
	Wood blocking at openings	**37**	lf	4.00	148		
079200	*JOINT SEALANTS*						
	Backer rod & double sealant	**37**	lf	9.00	333		
081110	*HOLLOW METAL*						
	Frames, single	**1**	ea	450.00	450		
	Frames, double	**1**	pr	680.00	680		
	HM door	**3**	leaf	500.00	1,500		
083050	*OVERHEAD DOORS*						
	OH; 16' x 12' Insulated overhead sectional door; new tracks re-use existing doors	**6**	ea	4,800.00	NIC		
	OH; 14' x 14' Insulated overhead sectional door	**2**	ea	9,800.00	19,600		
087100	*DOOR HARDWARE*						
	Hardware	**3**	leaf	900.00	2,700		
090007	*PAINTING*						
	Finish doors and frames	**3**	ea	200.00	600		
	SUBTOTAL					26,011	
	TOTAL - EXTERIOR CLOSURE						**$57,199**
B30	***ROOFING***						
B3010	**ROOF COVERINGS**						
	New PVC roofing	**845**	sf	22.00	Incl in Building		
	SUBTOTAL					-	
B3020	**ROOF OPENINGS**						
	Included in Pre-engineered building costs						
	SUBTOTAL					-	
	TOTAL - ROOFING						
C10	***INTERIOR CONSTRUCTION***						

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
HIGHWAY BUILDING ADDITIONS/RENOVATIONS							
C1010	**PARTITIONS**						
042000	*MASONRY*						
	CMU, 8" at wash bay	**840**	sf	22.00	18,480		
	Create new double door opening in CMU walls	**1**	loc	3,000.00	3,000		
	Widen single door opening into a new double door opening in CMU walls	**1**	loc	1,600.00	1,600		
055000	*MISCELLANEOUS METALS*						
	Seismic clips	**40**	ea	120.00	NIC		
	Misc metals to CMU	**840**	sf	0.50	420		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Miscellaneous sealants at partitions	**977**	sf	0.30	NIC		
092900	*GYPSUM BOARD ASSEMBLIES*						
	6" MS w/ 1 lyr GWB es, insulated	**977**	sf	12.50	NIC		
	SUBTOTAL					23,500	
C1020	**INTERIOR DOORS**						
061000	*ROUGH CARPENTRY*						
	Wood blocking at openings	**54**	lf	4.00	216		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Backer rod & double sealant	**54**	lf	2.50	135		
081110	*HOLLOW METAL DOOR FRAMES*						
	Frames, single	**2**	ea	450.00	900		
	Frames, double	**1**	pr	600.00	600		
	HM door	**4**	leaf	500.00	2,000		
	Premium for vision panel	**2**	ea	75.00	150		
087100	*DOOR HARDWARE*						
	Hardware	**4**	leaf	800.00	3,200		
	Hardware; replace existing	**10**	leaf	500.00	NIC		
090007	*PAINTING*						
	Finish doors and frames	**4**	ea	200.00	800		
	SUBTOTAL					8,001	
C1030	**SPECIALTIES / MILLWORK**						
055000	*MISCELLANEOUS METALS*						
	Wire mesh guardrail at mezzanine	**46**	lf	150.00	NIC		
061000	*ROUGH CARPENTRY*						
	Wood blocking at interiors	**1**	ls	750.00	750		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Miscellaneous sealants throughout building	**845**	sf	0.50	423		
102601	*CORNER GUARDS*						
	PVC Corner Guards	**4**	ea	60.00	NIC		
102600	*WALL PROTECTION*						
	Wall mounted high density plastic crash rail	**134**	lf	28.00	NIC		

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
HIGHWAY BUILDING ADDITIONS/RENOVATIONS							
102110	*TOILET COMPARTMENTS*						
	ADA	**1**	ea	1,600.00	NIC		
	Standard	**1**	ea	1,200.00	NIC		
	Urinal screen	**1**	ea	400.00	NIC		
102800	*TOILET ACCESSORIES*						
	Single bathroom	**2**	rms	1,100.00	NIC		
104400	*FIRE PROTECTION SPECIALTIES*						
	Fire extinguisher cabinets	**2**	ea	350.00	700		
	SUBTOTAL					1,873	
	TOTAL - INTERIOR CONSTRUCTION						**$33,374**
C20	***STAIRCASES***						
C2010	**STAIR CONSTRUCTION**						
033000	*CONCRETE*						
	Concrete fill to stairs	**1**	flt	2,500.00	2,500		
055000	*MISCELLANEOUS METALS*						
	Metal pan stairs at mezzanine	**1**	flt	14,000.00	14,000		
	SUBTOTAL					16,500	
C2020	**STAIR FINISHES**						
090005	*RESILIENT FLOORS*						
	Rubber to stair	**98**	lfr	22.00	2,156		
	SUBTOTAL					2,156	
	TOTAL - STAIRCASES						**$18,656**
C30	***INTERIOR FINISHES***						
C3010	**WALL FINISHES**						
090007	*PAINTING*						
	Paint to CMU	**1,680**	sf	1.25	2,100		
	Paint to GWB	**4,514**	sf	0.90	4,063		
	Allowance to re-paint existing	**7,990**	sf	2.00	NIC		
	SUBTOTAL					6,163	
C3020	**FLOOR FINISHES**						
033000	*CONCRETE*						
	Sealed concrete	**1,407**	sf	2.50	3,518		
090005	*RESILIENT FLOORS*						
	Vinyl tile	**1,038**	sf	4.00	NIC		
	Resilient Base	**384**	lf	2.50	NIC		
	SUBTOTAL					3,518	
C3030	**CEILING FINISHES**						
090003	*ACOUSTICAL TILE*						

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
HIGHWAY BUILDING ADDITIONS/RENOVATIONS							
	2' x 2'	**1,038**	sf	6.00	NIC		
090007	*PAINTING*						
	Paint to exposed ceilings	**845**	sf	2.50	2,113		
	SUBTOTAL					2,113	
	TOTAL - INTERIOR FINISHES						**11,794**
D10	***CONVEYING SYSTEMS***						
D1010	**ELEVATOR**						
	No work in this section						
	SUBTOTAL					-	
	TOTAL - CONVEYING SYSTEMS						
D13	***SPECIAL CONSTRUCTION***						
D1313	**SPECIAL CONSTRUCTION**						
	Repairs to existing metal building	**500**	sf	20.00	10,000		
	Pre-Engineered Building at wash bay addition	**845**	sf	35.00	29,575		
	SUBTOTAL					39,575	
	TOTAL - SPECIAL CONSTRUCTION						**$39,575**
D20	***PLUMBING***						
D20	**PLUMBING, GENERALLY**						
	Equipment						
	Water meter assembly	**1**	ea	2,700.00	2,700		
	Reduce pressure backflow preventer	**1**	ea	2,700.00	2,700		
	Allowance for misc backflow preventers	**1**	ls	2,700.00	2,700		
	Allowance for water heater	**1**	ea	4,500.00	4,500		
	Plumbing Fixtures						
	P-1; WC	**2**	ea	961.00	1,922		
	P-2A; ADA urinal	**2**	ea	1,016.00	2,032		
	P-7; Break room sink	**1**	ea	900.00	900		
	Domestic Water Piping						
	Existing piping to remain						
	Non-Potable Water						
	Existing piping to remain						
	Sanitary Waste And Vent						
	Existing piping to remain						
	Allowance for Oil/sand separator	**1**	ea	10,000.00	10,000		
	Storm Drainage, Hubless Cast Iron Pipe						
	Allowance for storm water pipework, roof drains, etc	**845**	sf	1.85	1,563		
	Miscellaneous						
	Sub-Contract Trade General Conditions / Requirements	**1**	ls	1,450.85	1,451		
	SUBTOTAL					30,468	
	TOTAL - PLUMBING						**$30,468**
D30	***HVAC***						

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	HIGHWAY BUILDING ADDITIONS/RENOVATIONS						
	D30 HVAC, GENERALLY						
	Equipment						
	Allowance to refurbish furnace	**1**	ls	4,500.00	4,500		
	Heating Hot Water Pipework						
	Allowance for heating hot water pipework	**845**	sf	3.15	2,662		
	Ductless Split Systems						
	Ductless split systems; 3 ton	**1**	ea	9,000.00	9,000		
	Terminal Equipment						
	Allowance for harsh environment radiant heaters; 30' long	**4**	ea	2,475.00	9,900		
	Allowance for baseboard to offices	**7**	ea	450.00	3,150		
	Fans						
	Allowance for fans	**1**	ls	1,800.00	1,800		
	Plymovent System						
	Allowance for vehicle exhaust system	**2**	ea	9,000.00	18,000		
	Sheet metal & Accessories						
	Allowance for ductwork	**507**	lbs	10.35	5,247		
	Duct insulation	**355**	sf	3.15	1,118		
	Controls (DDC)						
	Controls to unit heaters; 4# points per unit	**24**	pts	900.00	21,600		
	Allowance for coordinating controls requirements for Plymovent system	**1**	ls	2,250.00	2,250		
	Balancing						
	System testing & balancing	**845**	sf	0.45	380		
	Miscellaneous						
	Sub-Contract Trade General Conditions / Requirements	**1**	ls	3,980.35	3,980		
	SUBTOTAL					83,587	
	TOTAL - HVAC						**$83,587**
	D40 FIRE PROTECTION						
	D40 FIRE PROTECTION, GENERALLY						
	Assumed not required						
	SUBTOTAL					-	
	TOTAL - FIRE PROTECTION						
	D50 ELECTRICAL						
	D50 ELECTRICAL						
	D5010 SERVICE & DISTRIBUTION						
	Gear & Distribution						
	Switchgear						
	Allowance for switchgear, feeders, panelboards, etc				ETR		
	New emergency generator and feeders	**845**	sf	2.25	1,901		
	Equipment Wiring						
	Allowance for equipment feeds & connections	**845**	sf	2.70	2,282		
	SUBTOTAL					4,183	
	D5020 LIGHTING & POWER						
	Lighting						
	Allowance for lighting; LED	**845**	sf	5.40	4,563		
	Lighting Control						
	Allowance for lighting controls	**845**	sf	1.13	955		
	Branch Power						
	Allowance for branch power	**845**	sf	1.35	1,141		

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	HIGHWAY BUILDING ADDITIONS/RENOVATIONS						
	SUBTOTAL					6,659	
D5030	**COMMUNICATION & SECURITY SYSTEMS**						
	Voice & Data; Conduit drop, back box and pull wire only						
	Rough-in;	**845**	sf	0.45	380		
	Fit-Out;	**845**	sf	2.25	1,901		
	Fire Alarm						
	Allowance for fire alarm system	**845**	sf	2.48	2,096		
	SUBTOTAL					4,377	
D5040	**OTHER ELECTRICAL SYSTEMS**						
	Miscellaneous						
	Grounding & bonding	**845**	sf	0.32	270		
	Lightning protection system, allow	**845**	sf	0.45	380		
	Temp power and lights	**845**	sf	0.68	575		
	Sub-Contract Trade General Conditions / Requirements	**1**	ls	657.76	658		
	SUBTOTAL					1,883	
	TOTAL - ELECTRICAL						**$17,102**
E10	***EQUIPMENT***						
E10	**EQUIPMENT, GENERALLY**						
113100	*APPLIANCES*						
	Cook top	**1**	ea	2,500.00	By Owner		
	Recessed oven	**1**	ea	1,500.00	By Owner		
	Refrigerator	**1**	ea	1,200.00	By Owner		
	Range hood	**1**	ea	2,500.00	By Owner		
	SUBTOTAL					-	
	TOTAL - EQUIPMENT						
E20	***FURNISHINGS***						
E2010	**FIXED FURNISHINGS**						
123553	*CASEWORK*						
	Break Room						
	Upper cabinets	**11**	lf	230.00	By Owner		
	Base cabinets	**11**	lf	380.00	By Owner		
124810	*ENTRANCE FLOOR MAT AND FRAMES*						
	Recessed floor grille	**25**	sf	45.00	1,125		
	SUBTOTAL					1,125	
E2020	**MOVABLE FURNISHINGS**						
	All movable furnishings to be provided and installed by owner						
	SUBTOTAL					NIC	
	TOTAL - FURNISHINGS						**$1,125**
F20	***SELECTIVE BUILDING DEMOLITION***						
F2010	**BUILDING ELEMENTS DEMOLITION**						

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Brimfield Municipal Buildings 05-Apr-16
Design Options
Brimfield, MA

Feasibility Study GFA 8,835

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
HIGHWAY BUILDING ADDITIONS/RENOVATIONS							
	Remove MZ stair	**1**	flt	2,000.00	2,000		
	Remove floor/ceilings	**570**	sf	4.00	2,280		
	Remove MEP	**845**	sf	2.00	1,690		
	Form opening in exterior walls	**300**	sf	8.00	2,400		
	SUBTOTAL					8,370	
F2020	**HAZARDOUS COMPONENTS ABATEMENT**						
	See main summary for HazMat allowance				See Summary		
	SUBTOTAL						
	TOTAL - SELECTIVE BUILDING DEMOLITION						**$8,370**

SITEWORK HIGHWAY BUILDING

	CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
		G SITEWORK						
		G10 SITE PREPARATION & DEMOLITION						
	311000	Site construction fence/barricades	**663**	lf	12.00	7,956		
	311000	Site construction fence gates	**1**	ea	2,500.00	2,500		
	311000	Stabilized construction entrance	**1**	ls	5,000.00	5,000		
	311000	Pavement/curbing removal, crush and re-use for sub-base	**20,000**	sf	0.50	10,000		
	311000	Remove and dispose of existing septic system	**1**	ls	15,000.00	15,000		
		Site Earthwork						
	312000	Strip topsoil and store on site	**200**	cy	12.00	2,400		
	312000	Cuts/Fills	**1,111**	cy	6.00	6,666		
	312000	Fine grading	**3,333**	sy	0.95	3,166		
	312500	Silt fence/erosion control, wash bays, stock piles	**663**	lf	9.50	6,299		
	312500	Silt fence maintenance and monitoring	**1**	ls	5,000.00	5,000		
		Hazardous Waste Remediation						
		Remove existing underground fuel storage tank	**1**	ls	30,000.00	NIC		
		Dispose/treat contaminated soils/water				NIC		
		SUBTOTAL					63,987	
		G20 SITE IMPROVEMENTS						
		Roadways and Parking Lots	*18,192*					
	320000	gravel base; 12" thick	**674**	cy	38.00	25,612		
	320000	bituminous concrete; 4" thick	**2,021**	sy	27.00	54,567		
	320000	VGC	**600**	lf	35.00	21,000		
	320000	Single solid lines, 4" thick	**29**	space	25.00	725		
	320000	Wheelchair Parking	**2**	space	75.00	150		
#REF!		Pedestrian Paving						
#REF!		Concrete paving						
#REF!	320000	gravel base; 8" thick	**15**	cy	38.00	570		
#REF!	320000	Concrete paving	**625**	sf	7.00	4,375		
#REF!	320000	6" concrete pad	**225**	sf	12.00	2,700		
#REF!		Site Improvements						
#REF!	323000	Flag pole 35' high	**1**	ea	4,500.00	4,500		
#REF!	323000	Dumpster enclosure	**62**	lf	80.00	4,960		
#REF!	323000	Bollards	**12**	ea	850.00	10,200		
#REF!	323000	8,000 gal fuel tank with diesel and gas pumps	**1**	ls	60,000.00	By Others		
#REF!		Landscaping						
#REF!	329000	Topsoil - amended	**200**	cy	20.00	4,000		
#REF!	329000	Lawn - loam & seed	**4,000**	sf	0.25	1,000		
#REF!	329000	Trees	**8**	ea	1,000.00	8,000		
#REF!		SUBTOTAL					142,359	
#REF!								
#REF!		**G30 CIVIL MECHANICAL UTILITIES**						
#REF!		Water supply						
#REF!	330000	New DI piping; 8"	**33**	lf	90.00	2,970		
#REF!	330000	Connect to existing	**1**	loc	3,000.00	3,000		
#REF!	330000	FD connection	**1**	ea	2,000.00	2,000		
#REF!	330000	Gate valves	**2**	ea	750.00	1,500		
#REF!	330000	Sanitary						
#REF!	330000	New septic system; Dbox, 1000 gal tank and septic field	**1**	ls	30,000.00	30,000		
#REF!	330000	Manholes	**2**	ea	3,500.00	7,000		
#REF!	330000	6" PVC	**200**	lf	50.00	10,000		
#REF!	330000	Storm water						
#REF!	330000	15" CPP	**300**	lf	65.00	19,500		
#REF!	330000	Catch basin	**10**	ea	3,500.00	35,000		
#REF!	330000	DMH	**2**	ea	4,100.00	8,200		
#REF!	330000	OCS	**2**	ea	8,000.00	16,000		
#REF!	330000	Connect to existing drain	**1**	ea	3,000.00	3,000		
#REF!	330000	Infiltration basin	**2,000**	sf	8.00	16,000		
#REF!	330000	Tight tanks	**1**	ls	20,000.00	20,000		
#REF!		SUBTOTAL					174,170	
#REF!								
#REF!		**G40 ELECTRICAL UTILITIES**						

Brimfield Municipal Buildings 05-Apr-16
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Brimfield, MA

Feasibility Study

	CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
		SITEWORK HIGHWAY BUILDING						
#REF!		**Public Safety Building**						
#REF!		Power						
#REF!		Primary ductbank - ETR						
#REF!	260000	Site Lighting						
#REF!	260000	Allowance for site lighting	7	fxt	3,000.00	21,000		
#REF!		SUBTOTAL					21,000	
#REF!								
#REF!		**TOTAL - SITE DEVELOPMENT**						***$401,516***

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Brimfield Municipal Buildings
Design Options
Brimfield, MA

05-Apr-16

Feasibility Study

GFA 2,980

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
LIBRARY- RENOVATION						
A10	**FOUNDATIONS**					
	A1010	Standard Foundations	$0			
	A1020	Special Foundations	$0			
	A1030	Lowest Floor Construction	$22,300	**$22,300**	$7.48	18.7%
B10	**SUPERSTRUCTURE**					
	B1010	Upper Floor Construction	$0			
	B1020	Roof Construction	$0	**$0**	$0.00	0.0%
B20	**EXTERIOR CLOSURE**					
	B2010	Exterior Walls	$0			
	B2020	Windows/Curtainwall	$0			
	B2030	Exterior Doors	$7,140	**$7,140**	$2.40	6.0%
B30	**ROOFING**					
	B3010	Roof Coverings	$0			
	B3020	Roof Openings	$0	**$0**	$0.00	0.0%
C10	**INTERIOR CONSTRUCTION**					
	C1010	Partitions	$2,500			
	C1020	Interior Doors	$3,400			
	C1030	Specialties/Millwork	$1,470	**$7,370**	$2.47	6.2%
C20	**STAIRCASES**					
	C2010	Stair Construction	$0			
	C2020	Stair Finishes	$0	**$0**	$0.00	0.0%
C30	**INTERIOR FINISHES**					
	C3010	Wall Finishes	$5,960			
	C3020	Floor Finishes	$6,021			
	C3030	Ceiling Finishes	$4,014	**$15,995**	$5.37	13.4%
D10	**CONVEYING SYSTEMS**					
	D1010	Elevator	$0	**$0**	$0.00	0.0%
D20	**PLUMBING**					
	D20	Plumbing	$2,980	**$2,980**	$1.00	2.5%
D30	**HVAC**					
	D30	HVAC	$26,820	**$26,820**	$9.00	22.4%
D40	**FIRE PROTECTION**					
	D40	Fire Protection	$0	**$0**	$0.00	0.0%
D50	**ELECTRICAL**					
	D5010	Electrical Systems	$23,432	**$23,432**	$7.86	19.6%

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Brimfield Municipal Buildings
Design Options
Brimfield, MA

05-Apr-16

Feasibility Study

GFA 2,980

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
LIBRARY- RENOVATION						
E10	**EQUIPMENT**					
	E10	Equipment	$0	**$0**	$0.00	0.0%
E20	**FURNISHINGS**					
	E2010	Fixed Furnishings	NIC			
	E2020	Movable Furnishings	NIC	**$0**	$0.00	0.0%
F10	**SPECIAL CONSTRUCTION**					
	F10	Special Construction	$0	**$0**	$0.00	0.0%
F20	**SELECTIVE BUILDING DEMOLITION**					
	F2010	Building Elements Demolition	$13,488			
	F2020	Hazardous Components Abatement	$0	**$13,488**	$4.53	11.3%
TOTAL DIRECT COST (Trade Costs)				***$119,525***	*$40.11*	*100.0%*

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	LIBRARY- RENOVATION						
	GROSS FLOOR AREA CALCULATION						
	First Floor			2,980			
	TOTAL GROSS FLOOR AREA (GFA)				**2,980** ***sf***		
	A10 FOUNDATIONS						
	A1010 STANDARD FOUNDATIONS						
	No work in this section						
	SUBTOTAL					-	
	A1020 SPECIAL FOUNDATIONS						
	No work in this section						
	SUBTOTAL					-	
	A1030 LOWEST FLOOR CONSTRUCTION						
	Raise existing floor with new wood framing and support columns	**892**	sf	25.00	22,300		
	SUBTOTAL					22,300	
	TOTAL - FOUNDATIONS						**$22,300**
	B10 SUPERSTRUCTURE						
	B1010 FLOOR CONSTRUCTION						
	No work in this section						
	SUBTOTAL					-	
	B1020 ROOF CONSTRUCTION						
	No work in this section						
	SUBTOTAL					-	
	TOTAL - SUPERSTRUCTURE						
	B20 EXTERIOR CLOSURE						
	B2010 EXTERIOR WALLS						
	Exterior skin						
	Replace rotted wood trim and soffit/fascia boards	**203**	lf	20.00	No Work		
	Repoint stone façade	**1**	ls	10,000.00	No Work		
	Replace existing stucco	**500**	sf	30.00	No Work		
	Miscellaneous						
	Staging to exterior wall	**1**	ls	2,000.00	No Work		
	SUBTOTAL					-	
	B2020 WINDOWS/CURTAINWALL						
	Remove and replace windows	**180**	sf	95.00	No Work		
	SUBTOTAL					-	
	B2030 EXTERIOR DOORS						
	Replace entrance doors and frame; single door	**1**	ea	4,000.00	4,000		
	Replace bulkhead doors	**1**	loc	1,500.00	No Work		
	ADA door openers	**1**	loc	3,000.00	3,000		
	Backer rod & double sealant	**20**	lf	4.00	80		
	Wood blocking at openings	**20**	lf	3.00	60		
	SUBTOTAL					7,140	

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	LIBRARY- RENOVATION						
	TOTAL - EXTERIOR CLOSURE						**$7,140**
	B30 ROOFING						
	B3010 ROOF COVERINGS						
	Pitched Roof						
	Replace gutters	**203**	lf	50.00	No Work		
	Asphalt shingle including nailable insulation	**1,070**	sf	22.00	No Work		
	Repair slate roof	**1**	ls	15,000.00	No Work		
	SUBTOTAL					-	
	B3020 ROOF OPENINGS						
	No work in this section						
	SUBTOTAL					-	
	TOTAL - ROOFING						
	C10 INTERIOR CONSTRUCTION						
	C1010 PARTITIONS						
	New wood frame gwb walls w/ sound insulation	**390**	sf	12.00	No Work		
	Patch existing walls	**1**	ls	2,500.00	2,500		
	SUBTOTAL					2,500	
	C1020 INTERIOR DOORS						
	New double door	**1**	pr	3,400.00	3,400		
	SUBTOTAL					3,400	
	C1030 SPECIALTIES / MILLWORK						
	New window trim to interior windows	**180**	sf	5.00	No Work		
	Room Signs	**8**	loc	140.00	1,120		
	Library shelving				ETR		
	Fire extinguisher cabinets	**1**	ea	350.00	350		
	Miscellaneous metals throughout building	**2,980**	sf	1.50	No Work		
	Miscellaneous sealants throughout building	**2,980**	sf	1.00	No Work		
	SUBTOTAL					1,470	
	TOTAL - INTERIOR CONSTRUCTION						**$7,370**
	C20 STAIRCASES						
	C2010 STAIR CONSTRUCTION						
	No work in this section						
	SUBTOTAL					-	
	C2020 STAIR FINISHES						
	No work in this section						
	SUBTOTAL					-	
	TOTAL - STAIRCASES						
	C30 INTERIOR FINISHES						

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	LIBRARY- RENOVATION						
	C3010 WALL FINISHES						
	Paint to walls	**2,980**	gsf	2.00	5,960		
	SUBTOTAL					5,960	
	C3020 FLOOR FINISHES						
	Carpet	**892**	sf	5.50	4,906		
	Floor prep	**892**	sf	1.25	1,115		
	SUBTOTAL					6,021	
	C3030 CEILING FINISHES						
	New acoustic ceiling 2x2	**892**	sf	4.50	4,014		
	SUBTOTAL					4,014	
	TOTAL - INTERIOR FINISHES						**$15,995**
	D10 CONVEYING SYSTEMS						
	No work in this section						
	SUBTOTAL					-	
	TOTAL - CONVEYING SYSTEMS						
	D20 PLUMBING						
	D20 PLUMBING, GENERALLY						
	Plumbing allowance	**2,980**	gsf	1.00	2,980		
	SUBTOTAL					2,980	
	TOTAL - PLUMBING						**$2,980**
	D30 HVAC						
	D30 HVAC, GENERALLY						
	HVAC allowance; modify existing	**2,980**	gsf	9.00	26,820		
	SUBTOTAL					26,820	
	TOTAL - HVAC						**$26,820**
	D40 FIRE PROTECTION						
	D40 FIRE PROTECTION, GENERALLY						
	New sprinkler system				ETR		
	SUBTOTAL					-	
	TOTAL - FIRE PROTECTION						
	D50 ELECTRICAL						
	D5010 SERVICE & DISTRIBUTION						
	Normal Power						
	Gear and distribution						
	200A distribution panelboard				ETR		
	Associated panelboards and feeders				ETR		
	Equipment Wiring						

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	LIBRARY- RENOVATION						
	Electrical feed and connections to HVAC and building equipment	**2,980**	sf	0.50	1,490		
	SUBTOTAL					1,490	
D5020	**LIGHTING & POWER**						
	Lighting & Branch Power						
	Meeting/children room lighting	**892**	sf	4.00	3,568		
	Exit and egress lighting	**2,980**	sf	0.35	1,043		
	Lighting controls						
	Automated Lighting control system with occupancy sensors and photo sensing	**892**	sf	1.50	1,338		
	Branch devices						
	Duplex and GFI receptacles	**892**	sf	0.50	446		
	Lighting and branch circuitry						
	Lighting and branch circuitry. Conduit and MC cable wiring methods.	**892**	sf	6.00	5,352		
	SUBTOTAL					11,747	
D5030	**COMMUNICATION & SECURITY SYSTEMS**						
	Fire Alarm						
	Addressable fire alarm and detection system with battery back-up. Conduit and MC cable wiring methods.	**2,980**	sf	2.50	7,450		
	SUBTOTAL					7,450	
D5040	**OTHER ELECTRICAL SYSTEMS**						
	Miscellaneous						
	Demolition and make safe	**1**	ls	1,000.00	1,000		
	Temp power and lights	**2,980**	ls	0.25	745		
	Fees & Permits	**1**	ls	1,000.00	1,000		
	SUBTOTAL					2,745	
	TOTAL - ELECTRICAL						**$23,432**
E10	***EQUIPMENT***						
E10	**EQUIPMENT, GENERALLY**						
	No items in this section						
	SUBTOTAL						
	TOTAL - EQUIPMENT						
E20	***FURNISHINGS***						
E2010	**FIXED FURNISHINGS**						
	Roller shades	**180**	sf	7.00	1,260		
	SUBTOTAL					NIC	
E2020	**MOVABLE FURNISHINGS**						
	All movable furnishings to be provided and installed by owner						
	SUBTOTAL					NIC	
	TOTAL - FURNISHINGS						

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Brimfield Municipal Buildings 05-Apr-16
Design Options
Brimfield, MA

Feasibility Study **GFA** 2,980

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	LIBRARY- RENOVATION						
	F10 SPECIAL CONSTRUCTION						
	F10 SPECIAL CONSTRUCTION						
	No items in this section						
	SUBTOTAL					-	
	TOTAL - SPECIAL CONSTRUCTION						
	F20 SELECTIVE BUILDING DEMOLITION						
	F2010 BUILDING ELEMENTS DEMOLITION						
	Removing roof finishes	**1,070**	sf	3.00	3,210		
	Remove floor finishes	**2,980**	sf	2.00	5,960		
	Remove ceiling finishes	**892**	sf	1.50	1,338		
	Remove windows	**180**	sf	8.00	NIC		
	MEP/FP demolition	**2,980**	gsf	1.00	2,980		
	SUBTOTAL					13,488	
	F2020 HAZARDOUS COMPONENTS ABATEMENT						
	Allowance for Haz Mat removal				NIC		
	SUBTOTAL					-	
	TOTAL - SELECTIVE BUILDING DEMOLITION						**$13,488**

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Brimfield Municipal Buildings 05-Apr-16
Design Options
Brimfield, MA

Feasibility Study GFA 9,440

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
POSC - ADDITIONS TO EXISTING						
A10	**FOUNDATIONS**					
	A1010	Standard Foundations	$192,351			
	A1020	Special Foundations	$0			
	A1030	Lowest Floor Construction	$55,184	**$247,535**	$26.22	9.7%
A20	**BASEMENT CONSTRUCTION**					
	A2010	Basement Excavation	$0			
	A2020	Basement Walls	$0	**$0**	$0.00	0.0%
B10	**SUPERSTRUCTURE**					
	B1010	Upper Floor Construction	$70,560			
	B1020	Roof Construction	$129,720	**$200,280**	$21.22	7.8%
B20	**EXTERIOR CLOSURE**					
	B2010	Exterior Walls	$290,196			
	B2020	Windows	$221,533			
	B2030	Exterior Doors	$22,380	**$534,109**	$56.58	20.9%
B30	**ROOFING**					
	B3010	Roof Coverings	$160,128			
	B3020	Roof Openings	$0	**$160,128**	$16.96	6.3%
C10	**INTERIOR CONSTRUCTION**					
	C1010	Partitions	$128,071			
	C1020	Interior Doors	$39,300			
	C1030	Specialties/Millwork	$57,185	**$224,556**	$23.79	8.8%
C20	**STAIRCASES**					
	C2010	Stair Construction	$75,000			
	C2020	Stair Finishes	$11,610	**$86,610**	$9.17	3.4%
C30	**INTERIOR FINISHES**					
	C3010	Wall Finishes	$36,404			
	C3020	Floor Finishes	$51,596			
	C3030	Ceiling Finishes	$30,735	**$118,735**	$12.58	4.6%
D10	**CONVEYING SYSTEMS**					
	D1010	Elevator	$120,000	**$120,000**	$12.71	4.7%
D20	**PLUMBING**					
	D20	Plumbing	$113,280	**$113,280**	$12.00	4.4%
D30	**HVAC**					
	D30	HVAC	$339,840	**$339,840**	$36.00	13.3%

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Brimfield Municipal Buildings 05-Apr-16
Design Options
Brimfield, MA

Feasibility Study GFA 9,440

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
POSC - ADDITIONS TO EXISTING						
D40	**FIRE PROTECTION**					
	D40	Fire Protection	$47,200	**$47,200**	$5.00	1.8%
D50	**ELECTRICAL**					
	D5010	Service & Distribution	$113,280			
	D5020	Lighting & Power	$103,840			
	D5030	Communication & Security Systems	$93,540			
	D5040	Other Electrical Systems	$10,664	**$321,324**	$34.04	12.6%
E10	**EQUIPMENT**					
	E10	Equipment	$0	**$0**	$0.00	0.0%
E20	**FURNISHINGS**					
	E2010	Fixed Furnishings	$42,861			
	E2020	Movable Furnishings	NIC	**$42,861**	$4.54	1.7%
F10	**SPECIAL CONSTRUCTION**					
	F10	Special Construction	$0	**$0**	$0.00	0.0%
F20	**HAZMAT REMOVALS**					
	F2010	Building Elements Demolition	$0			
	F2020	Hazardous Components Abatement	$0	**$0**	$0.00	0.0%
TOTAL DIRECT COST (Trade Costs)				***$2,556,458***	*$270.81*	*100.0%*

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Brimfield Municipal Buildings 05-Apr-16
Design Options
Brimfield, MA

Feasibility Study GFA 9,440

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
POSC - ADDITIONS TO EXISTING							
	GROSS FLOOR AREA CALCULATION						
	Level 0			3,030			
	Level 1			5,520			
	Level 2			890			
	TOTAL GROSS FLOOR AREA (GFA)				**9,440** ***sf***		
A10	***FOUNDATIONS***						
A1010	**STANDARD FOUNDATIONS**						
	Strip footings to exterior walls - 2'-0" x 1'-0"						
	Excavation	**240**	cy	11.00	2,640		
	Remove off site	**240**	cy	17.60	4,224		
	Backfill with imported fill	**212**	cy	32.00	6,784		
	Formwork	**720**	sf	13.20	9,504		
	Re-bar	**756**	lbs	1.20	907		
	Concrete material; 3,000 psi	**28**	cy	11.00	308		
	Placing concrete	**28**	cy	17.60	493		
	Foundation walls at exterior - 8" thick - 4' high						
	Formwork	**2,880**	sf	13.20	38,016		
	Re-bar	**5,760**	lbs	1.20	6,912		
	Concrete material; 4,000 psi	**38**	cy	120.00	4,560		
	Placing concrete	**38**	cy	49.50	1,881		
	Waterproofing foundation wall and footing				NIC		
	Insulation to foundation walls; 2" thick	**2,880**	sf	2.15	6,192		
	Foundation walls at retaining - 8" thick - 13' high						
	Formwork	**3,302**	sf	13.20	43,586		
	Re-bar	**6,604**	lbs	1.20	7,925		
	Concrete material; 4,000 psi	**43**	cy	120.00	5,160		
	Placing concrete	**43**	cy	49.50	2,129		
	Waterproofing foundation wall and footing	**1,016**	sf	6.00	6,096		
	Insulation to foundation walls; 2" thick	**1,016**	sf	2.15	2,184		
	Column footings 5' x 5' x 2'-0" -allowance						
	Excavation	**238**	cy	13.20	3,142		
	Remove off site	**238**	cy	17.60	4,189		
	Backfill with imported fill	**189**	cy	32.00	6,048		
	Formwork	**1,000**	sf	12.10	12,100		
	Re-bar	**2,450**	lbs	1.20	2,940		
	Concrete material; 3,000 psi	**49**	cy	120.00	5,880		
	Placing concrete	**49**	cy	49.50	2,426		
	Set anchor bolts grout plates	**25**	ea	165.00	4,125		
	Miscellaneous						
	Tie into existing foundations	**1**	ls	2,000.00	2,000		
	SUBTOTAL					192,351	
A1020	**SPECIAL FOUNDATIONS**						
	No work in this section						
	SUBTOTAL						
A1030	**LOWEST FLOOR CONSTRUCTION**						
	New Slab on grade, 5" thick						
	Gravel fill, 8"	**137**	cy	38.00	5,206		
	Rigid insulation, 2"	**5,520**	sf	2.15	11,868		
	Vapor barrier	**5,520**	sf	0.94	5,189		
	Compact existing sub-grade	**5,520**	sf	0.55	3,036		
	Mesh reinforcing 15% lap	**6,348**	sf	0.99	6,285		
	Concrete - 4" thick; 4,000 psi	**71**	cy	137.50	9,763		
	Placing concrete	**71**	cy	49.50	3,515		
	Finishing and curing concrete	**5,520**	sf	1.65	9,108		

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
POSC	**- ADDITIONS TO EXISTING**						
	Control joints - saw cut	**5,520**	sf	0.22	1,214		
	SUBTOTAL					55,184	
	TOTAL - FOUNDATIONS						**$247,535**
A20	***BASEMENT CONSTRUCTION***						
A2010	**BASEMENT EXCAVATION**						
	No work in this section						
	SUBTOTAL					-	
A2020	**BASEMENT WALLS**						
	No work in this section						
	SUBTOTAL					-	
	TOTAL - BASEMENT CONSTRUCTION						
B10	***SUPERSTRUCTURE***						
B1010	**FLOOR CONSTRUCTION**						
	Floor Structure - Wood:						
	Wood frame construction; including sheathing and gypcrete	**3,920**	sf	18.00	70,560		
	SUBTOTAL					70,560	
B1020	**ROOF CONSTRUCTION**						
	Roof Structure - Wood:						
	Wood frame construction to new roof structure; including sheathing	**5,520**	sf	22.00	121,440		
	Misc. metals to roof	**5,520**	sf	1.50	8,280		
	SUBTOTAL					129,720	
	TOTAL - SUPERSTRUCTURE						**$200,280**
B20	***EXTERIOR CLOSURE***						
B2010	**EXTERIOR WALLS**						
	Exterior skin	*6,143*	*sf*		-		
	Fiber cement board siding; painted including all trim	**6,143**	sf	22.00	135,146		
	New 4" wood framing	**6,143**	sf	3.80	23,343		
	New 6" wood framing	**6,143**	sf	5.00	30,715		
	Cellulose insulation, 11"	**6,143**	sf	2.39	14,682		
	Sheathing	**6,143**	sf	2.90	17,815		
	Air barrier	**6,143**	sf	6.00	36,858		
	New gwb	**6,143**	sf	3.00	18,429		
	New gwb and furring at basement wall	**1,651**	sf	8.00	13,208		
	Miscellaneous						
	Staging to exterior wall	**8,926**	sf	1.50	Incl		
	SUBTOTAL					290,196	
B2020	**WINDOWS/CURTAINWALL**	*2,783*	*sf*		-		
	Windows; aluminum	**2,633**	sf	75.00	197,475		
	Storefront	**150**	sf	80.00	12,000		
	Backer rod & double sealant	**1,855**	lf	4.00	7,420		
	Wood blocking at openings	**1,855**	lf	2.50	4,638		
	SUBTOTAL					221,533	

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
POSC - ADDITIONS TO EXISTING							
B2030	**EXTERIOR DOORS**						
	New glazed entrance doors and frames including frame and hardware; double door- including vestibule	**2**	pr	8,000.00	16,000		
	HM exterior door, frame and hardware	**1**	ea	2,100.00	2,100		
	ADA door openers	**1**	loc	4,000.00	4,000		
	Backer rod & double sealant	**40**	lf	4.00	160		
	Wood blocking at openings	**40**	lf	3.00	120		
	SUBTOTAL					22,380	
	TOTAL - EXTERIOR CLOSURE						**$534,109**
B30	***ROOFING***						
B3010	**ROOF COVERINGS**						
	Pitched Roof						
	Asphalt roof including nailable insulation	**6,624**	sf	22.00	145,728		
	Miscellaneous Roofing						
	Roof edge metal/flashings/ gutters	**360**	lf	40.00	14,400		
	SUBTOTAL					160,128	
B3020	**ROOF OPENINGS**						
	Now work in this section						
	SUBTOTAL					-	
	TOTAL - ROOFING						**$160,128**
C10	***INTERIOR CONSTRUCTION***						
C1010	**PARTITIONS**						
	CMU walls; grouted and reinforced	**2,179**	sf	23.00	50,117		
	CMU walls; grouted and reinforced at elevator shaft	**1,131**	sf	26.00	29,406		
	Misc metals to CMU	**3,310**	sf	2.00	6,620		
	New wood frame gwb walls w/ sound insulation	**3,494**	sf	12.00	41,928		
	SUBTOTAL					128,071	
C1020	**INTERIOR DOORS**						
	New double door	**2**	pr	3,400.00	6,800		
	Wood doors/ frames and hardware	**15**	loc	1,600.00	24,000		
	Cell door	**1**	loc	8,500.00	8,500		
	SUBTOTAL					39,300	
C1030	**SPECIALTIES / MILLWORK**						
	Toilet accessories	**6**	rms	600.00	3,600		
	Room Signs	**18**	ea	140.00	2,520		
	Fire extinguisher cabinets	**3**	ea	350.00	1,050		
	Reception counter	**19**	lf	500.00	9,500		
	New window trim to interior windows	**2,783**	sf	5.00	13,915		
	Interior wood trim allowance	**9,440**	sf	1.00	9,440		
	Firearm storage lockers	**2**	loc	1,500.00	3,000		
	Locker room lockers 2'-6" x 2'-0" x 7-0" with integral bench with internal gun storage: space saver	**30**	ea	1,800.00	FF&E		
	Allowance for evidence lockers-Pass thru lockers for keyless deposit-3'-0" wide units with refrigerated section	**3**	ea	2,200.00	FF&E		
	Weapons storage (movable) and shelving	**2**	ea	5,000.00	FF&E		
	Allowance for booking lockers; vented	**8**	ea	900.00	FF&E		
	7'-0" high Unitized mobile metal shelving units on rollers (per specification), manually operated w/ mechanical assist				FF&E		

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
POSC	**- ADDITIONS TO EXISTING**						
	Miscellaneous metals throughout building	**9,440**	sf	0.50	4,720		
	Miscellaneous sealants throughout building	**9,440**	sf	1.00	9,440		
	SUBTOTAL					57,185	
	TOTAL - INTERIOR CONSTRUCTION						**$224,556**
C20	***STAIRCASES***						
C2010	**STAIR CONSTRUCTION**						
	Metal pan staircase	**3**	flt	25,000.00	75,000		
	SUBTOTAL					75,000	
C2020	**STAIR FINISHES**						
	Rubber tread and risers to stairs	**330**	lfr	27.00	8,910		
	Rubber tile to landings	**150**	sf	18.00	2,700		
	SUBTOTAL					11,610	
	TOTAL - STAIRCASES						**$86,610**
C30	***INTERIOR FINISHES***						
C3010	**WALL FINISHES**						
	Paint to walls	**14,782**	sf	0.90	13,304		
	CT to bathrooms	**1,050**	sf	22.00	23,100		
	Wainscoting	**1,868**	sf	30.00	NIC		
	SUBTOTAL					36,404	
C3020	**FLOOR FINISHES**						
	Porcelain tile at bathroom	**300**	sf	20.00	6,000		
	Porcelain tile base	**150**	lf	18.00	2,700		
	Sealed concrete	**2,829**	sf	2.00	5,658		
	Epoxy flooring	**802**	sf	11.00	8,822		
	VCT flooring at corridors	**1,403**	sf	3.50	4,911		
	Carpet	**3,162**	sf	5.00	15,810		
	Rubber base	**2,798**	lf	2.75	7,695		
	SUBTOTAL					51,596	
C3030	**CEILING FINISHES**						
	Security ceiling	**80**	sf	35.00	2,800		
	New ceilings; ACT	**5,587**	sf	5.00	27,935		
	Paint exposed ceilings	**2,829**	sf	2.00	NIC		
	SUBTOTAL					30,735	
	TOTAL - INTERIOR FINISHES						**$118,735**
D10	***CONVEYING SYSTEMS***						
D1010	**ELEVATOR**						
	Elevator; three stop	**1**	ea	120,000.00	120,000		
	SUBTOTAL					120,000	
	TOTAL - CONVEYING SYSTEMS						**$120,000**
D20	***PLUMBING***						
D20	**PLUMBING, GENERALLY**						
	Plumbing	**9,440**	gsf	12.00	113,280		
	SUBTOTAL					113,280	
	TOTAL - PLUMBING						**$113,280**
D30	***HVAC***						
D30	**HVAC, GENERALLY**						

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
POSC	**- ADDITIONS TO EXISTING**						
	HVAC	**9,440**	gsf	36.00	339,840		
	SUBTOTAL					339,840	
	TOTAL - HVAC						**$339,840**
D40	***FIRE PROTECTION***						
D40	**FIRE PROTECTION, GENERALLY**						
	Fire protection	**9,440**	gsf	5.00	47,200		
	SUBTOTAL					47,200	
	TOTAL - FIRE PROTECTION						**$47,200**
D50	***ELECTRICAL***						
D5010	**SERVICE & DISTRIBUTION**						
	Gear & Distribution						
	Normal Power						
	Gear and distribution						
	Associated panelboards and feeders	**9,440**	sf	5.00	47,200		
	Emergency power						
	Associated panelboards and feeders	**9,440**	sf	4.00	37,760		
	Equipment Wiring						
	Electrical feed and connections to HVAC and building equipment	**9,440**	sf	3.00	28,320		
	SUBTOTAL					113,280	
D5020	**LIGHTING & POWER**						
	Lighting & Branch Power						
	Lighting	**9,440**	sf	6.00	56,640		
	Lighting controls						
	Automated Lighting control system with occupancy sensors and photo sensing	**9,440**	sf	1.00	9,440		
	Branch devices						
	Duplex and GFI receptacles	**9,440**	sf	1.00	9,440		
	Lighting and branch circuitry						
	Lighting and branch circuitry. Conduit and MC cable wiring methods.	**9,440**	sf	3.00	28,320		
	SUBTOTAL					103,840	
D5030	**COMMUNICATION & SECURITY SYSTEMS**						
	Fire Alarm						
	Initiating and reporting devices, conduit and MC cable wiring methods.	**9,440**	sf	3.00	28,320		
	Telephone/Data/CATV						
	MDF Fit-out	**1**	ls	1,500.00	1,500		
	Devices & cabling	**9,440**	sf	2.00	18,880		
	Rough-in, conduit stubs and backboxes	**9,440**	sf	0.75	7,080		
	Security System						
	CCTV system monitoring corridors, stairwells, large assembly locations and exterior building perimeter	**9,440**	sf	2.00	18,880		
	Intrusion detection system comprising keypads, motion detectors and door contacts	**9,440**	sf	1.00	9,440		
	Card access and proximity reader system	**9,440**	sf	1.00	9,440		
	SUBTOTAL					93,540	
D5040	**OTHER ELECTRICAL SYSTEMS**						
	Miscellaneous						
	Temp power and lights	**9,440**	sf	0.60	5,664		
	Fees & Permits	**1**	ls	5,000.00	5,000		
	SUBTOTAL					10,664	

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
POSC	**- ADDITIONS TO EXISTING**						
	TOTAL - ELECTRICAL						**$321,324**
E10	***EQUIPMENT***						
E10	**EQUIPMENT, GENERALLY**						
	Detention bed-6'-9" long allowance of one per cell - 12" high cast in place concrete	**1**	loc	750.00	By Others		
	Floor mounted detention table at booking interview - 3'-6"	**1**	loc	3,600.00	By Others		
	Floor mounted detention table at booking - 3'-6"	**1**	loc	3,600.00	By Others		
	Booking interview room-provide 1 stool	**1**	loc	600.00	By Others		
	Booking room-provide 2 stools	**1**	loc	600.00	By Others		
	Detention cuffing bars; 2' long	**1**	loc	500.00	By Others		
	Fume hood	**1**	loc	6,000.00	By Others		
	SUBTOTAL					-	
	TOTAL - EQUIPMENT						
E20	***FURNISHINGS***						
E2010	**FIXED FURNISHINGS**						
	Entry mats & frames - recessed with carpet/rubber strips	**100**	sf	45.00	4,500		
	Casework allowance	**9,440**	sf	2.00	18,880		
	Window blinds	**2,783**	sf	7.00	19,481		
	SUBTOTAL					42,861	
E2020	**MOVABLE FURNISHINGS**						
	All movable furnishings to be provided and installed by owner						
	SUBTOTAL					NIC	
	TOTAL - FURNISHINGS						**$42,861**
F10	***SPECIAL CONSTRUCTION***						
F10	**SPECIAL CONSTRUCTION**						
	No items in this section						
	SUBTOTAL						
	TOTAL - SPECIAL CONSTRUCTION						
F20	***SELECTIVE BUILDING DEMOLITION***						
F2010	**BUILDING ELEMENTS DEMOLITION**						
	See main summary for demolition of existing buildings						
	SUBTOTAL						
F2020	**HAZARDOUS COMPONENTS ABATEMENT**						
	See main summary for HazMat allowance				See Summary		
	SUBTOTAL						
	TOTAL - SELECTIVE BUILDING DEMOLITION						

PM&C

Brimfield Municipal Buildings
Design Options
Brimfield, MA

05-Apr-16

Feasibility Study

GFA 8,960

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
POSC - RENOVATION						
A10	**FOUNDATIONS**					
	A1010	Standard Foundations	$54,978			
	A1020	Special Foundations	$0			
	A1030	Lowest Floor Construction	$12,000	**$66,978**	$7.48	5.2%
B10	**SUPERSTRUCTURE**					
	B1010	Upper Floor Construction	$0			
	B1020	Roof Construction	$20,000	**$20,000**	$2.23	1.5%
B20	**EXTERIOR CLOSURE**					
	B2010	Exterior Walls	$21,222			
	B2020	Windows/Curtainwall	$40,800			
	B2030	Exterior Doors	$0	**$62,022**	$6.92	4.8%
B30	**ROOFING**					
	B3010	Roof Coverings	$50,000			
	B3020	Roof Openings	$0	**$50,000**	$5.58	3.9%
C10	**INTERIOR CONSTRUCTION**					
	C1010	Partitions	$26,948			
	C1020	Interior Doors	$21,500			
	C1030	Specialties/Millwork	$29,050	**$77,498**	$8.65	6.0%
C20	**STAIRCASES**					
	C2010	Stair Construction	$2,000			
	C2020	Stair Finishes	$0	**$2,000**	$0.22	0.2%
C30	**INTERIOR FINISHES**					
	C3010	Wall Finishes	$44,800			
	C3020	Floor Finishes	$39,852			
	C3030	Ceiling Finishes	$10,000	**$94,652**	$10.56	7.3%
D10	**CONVEYING SYSTEMS**					
	D1010	Elevator	$38,000	**$38,000**	$4.24	2.9%
D20	**PLUMBING**					
	D20	Plumbing	$107,520	**$107,520**	$12.00	8.3%
D30	**HVAC**					
	D30	HVAC	$268,800	**$268,800**	$30.00	20.8%
D40	**FIRE PROTECTION**					
	D40	Fire Protection	$35,840	**$35,840**	$4.00	2.8%
D50	**ELECTRICAL**					
	D5010	Electrical Systems	$353,616	**$353,616**	$39.47	27.3%

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Brimfield Municipal Buildings
Design Options
Brimfield, MA

05-Apr-16

Feasibility Study

GFA 8,960

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
POSC - RENOVATION						
E10	**EQUIPMENT**					
	E10	Equipment	$30,000	**$30,000**	$3.35	2.3%
E20	**FURNISHINGS**					
	E2010	Fixed Furnishings	$0			
	E2020	Movable Furnishings	NIC	**$0**	$0.00	0.0%
F10	**SPECIAL CONSTRUCTION**					
	F10	Special Construction	$0	**$0**	$0.00	0.0%
F20	**SELECTIVE BUILDING DEMOLITION**					
	F2010	Building Elements Demolition	$87,182			
	F2020	Hazardous Components Abatement	$0	**$87,182**	$9.73	6.7%
TOTAL DIRECT COST (Trade Costs)				***$1,294,108***	*$144.43*	*100.0%*

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	POSC - RENOVATION						
	GROSS FLOOR AREA CALCULATION						
	Level 0			3,980			
	Level 1			3,980			
	Level 2			1,000			
	TOTAL GROSS FLOOR AREA (GFA)				**8,960**	***sf***	
	A10 FOUNDATIONS						
	A1010 STANDARD FOUNDATIONS						
	Buttress existing foundations walls with CMU walls and footings	**4**	loc	3,000.00	12,000		
	Excavate and expose existing foundation wall and waterproof; backfill with gravel and install perimeter drain	**262**	lf	164.04	42,978		
	SUBTOTAL					54,978	
	A1020 SPECIAL FOUNDATIONS						
	No work in this section						
	SUBTOTAL					-	
	A1030 LOWEST FLOOR CONSTRUCTION						
	New concrete topping slab	**2,000**	sf	6.00	12,000		
	SUBTOTAL					12,000	
	TOTAL - FOUNDATIONS						**$66,978**
	B10 SUPERSTRUCTURE						
	B1010 FLOOR CONSTRUCTION						
	No work in this section						
	SUBTOTAL					-	
	B1020 ROOF CONSTRUCTION						
	Reinforce existing roofing	**1**	ls	20,000.00	20,000		
	SUBTOTAL					20,000	
	TOTAL - SUPERSTRUCTURE						**$20,000**
	B20 EXTERIOR CLOSURE						
	B2010 EXTERIOR WALLS						
	Exterior skin						
	Insulate existing basement walls	**2,358**	sf	9.00	21,222		
	SUBTOTAL					21,222	
	B2020 WINDOWS/CURTAINWALL						
	Add storm windows	**34**	loc	1,200.00	40,800		
	SUBTOTAL					40,800	
	B2030 EXTERIOR DOORS						
	SUBTOTAL					-	
	TOTAL - EXTERIOR CLOSURE						**$62,022**
	B30 ROOFING						

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Brimfield Municipal Buildings 05-Apr-16
Design Options
Brimfield, MA

Feasibility Study **GFA** 8,960

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
POSC - RENOVATION							
B3010	**ROOF COVERINGS**						
	Repair roof and cupola	**1**	ls	50,000.00	50,000		
	SUBTOTAL					50,000	
B3020	**ROOF OPENINGS**						
	No work in this section						
	SUBTOTAL					-	
	TOTAL - ROOFING						**$50,000**
C10	***INTERIOR CONSTRUCTION***						
C1010	**PARTITIONS**						
	New wood frame gwb walls w/ sound insulation	**1,079**	sf	12.00	12,948		
	Infill doors	**2**	loc	2,000.00	4,000		
	Patch existing walls	**1**	ls	10,000.00	10,000		
	SUBTOTAL					26,948	
C1020	**INTERIOR DOORS**						
	Wood doors/ frames and hardware	**5**	loc	1,600.00	8,000		
	Replace hardware	**27**	set	500.00	13,500		
	SUBTOTAL					21,500	
C1030	**SPECIALTIES / MILLWORK**						
	Room Signs	**8**	loc	140.00	1,120		
	Fire extinguisher cabinets	**3**	ea	350.00	1,050		
	Miscellaneous metals throughout building	**8,960**	sf	2.00	17,920		
	Miscellaneous sealants throughout building	**8,960**	sf	1.00	8,960		
	SUBTOTAL					29,050	
	TOTAL - INTERIOR CONSTRUCTION						**$77,498**
C20	***STAIRCASES***						
C2010	**STAIR CONSTRUCTION**						
	Replace stair handrails	**1**	ls	2,000.00	2,000		
	SUBTOTAL					2,000	
C2020	**STAIR FINISHES**						
	No work in this section						
	SUBTOTAL					-	
	TOTAL - STAIRCASES						**$2,000**
C30	***INTERIOR FINISHES***						
C3010	**WALL FINISHES**						
	Paint/repair to walls	**8,960**	gsf	5.00	44,800		
	SUBTOTAL					44,800	
C3020	**FLOOR FINISHES**						
	Carpet	**1,950**	sf	5.50	10,725		
	Sealed concrete	**1,040**	sf	2.00	2,080		
	Sand and refinish wood floors	**2,521**	sf	4.00	10,084		
	Linoleum flooring at corridors	**1,660**	sf	7.50	12,450		
	Floor prep	**3,610**	sf	1.25	4,513		
	SUBTOTAL					39,852	

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	POSC - RENOVATION						
	C3030 CEILING FINISHES						
	Paint and patch existing ceilings damaged by water	**500**	sf	20.00	10,000		
	SUBTOTAL					10,000	
	TOTAL - INTERIOR FINISHES						**$94,652**
	D10 CONVEYING SYSTEMS						
	Decommission existing lift	**1**	ls	10,000.00	10,000		
	New stage HC lift	**1**	loc	28,000.00	28,000		
	SUBTOTAL					38,000	
	TOTAL - CONVEYING SYSTEMS						**$38,000**
	D20 PLUMBING						
	D20 PLUMBING, GENERALLY						
	Plumbing allowance	**8,960**	gsf	12.00	107,520		
	SUBTOTAL					107,520	
	TOTAL - PLUMBING						**$107,520**
	D30 HVAC						
	D30 HVAC, GENERALLY						
	HVAC allowance; modify existing	**8,960**	gsf	30.00	268,800		
	SUBTOTAL					268,800	
	TOTAL - HVAC						**$268,800**
	D40 FIRE PROTECTION						
	D40 FIRE PROTECTION, GENERALLY						
	New sprinkler system	**8,960**	gsf	4.00	35,840		
	SUBTOTAL					35,840	
	TOTAL - FIRE PROTECTION						**$35,840**
	D50 ELECTRICAL						
	D5010 SERVICE & DISTRIBUTION						
	Gear & Distribution						
	Normal Power						
	Gear and distribution						
	Associated panelboards and feeders	**8,960**	sf	5.00	44,800		
	Emergency power						
	Associated panelboards and feeders	**8,960**	sf	3.00	26,880		
	Equipment Wiring						
	Electrical feed and connections to HVAC and building equipment	**8,960**	sf	4.00	35,840		
	SUBTOTAL					107,520	
	D5020 LIGHTING & POWER						
	Lighting & Branch Power						
	Lighting	**8,960**	sf	8.00	71,680		
	Lighting controls						

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	POSC - RENOVATION						
	Automated Lighting control system with occupancy sensors and photo sensing	**8,960**	sf	2.00	17,920		
	Branch devices						
	Duplex and GFI receptacles	**8,960**	sf	1.00	8,960		
	Lighting and branch circuitry						
	Lighting and branch circuitry. Conduit and MC cable wiring methods.	**8,960**	sf	5.00	44,800		
	SUBTOTAL					143,360	
D5030	**COMMUNICATION & SECURITY SYSTEMS**						
	Fire Alarm						
	Initiating and reporting devices, conduit and MC cable wiring methods.	**8,960**	sf	3.00	26,880		
	Telephone/Data/CATV						
	Devices & cabling	**8,960**	sf	2.00	17,920		
	Rough-in, conduit stubs and backboxes	**8,960**	sf	0.75	6,720		
	Security System						
	CCTV system monitoring corridors, stairwells, large assembly locations and exterior building perimeter	**8,960**	sf	2.00	17,920		
	Intrusion detection system comprising keypads, motion detectors and door contacts	**8,960**	sf	1.00	8,960		
	Card access and proximity reader system	**8,960**	sf	1.00	8,960		
	SUBTOTAL					87,360	
D5040	**OTHER ELECTRICAL SYSTEMS**						
	Miscellaneous						
	Temp power and lights	**8,960**	sf	0.60	5,376		
	Fees & Permits	**1**	ls	10,000.00	10,000		
	SUBTOTAL					15,376	
	TOTAL - ELECTRICAL						**$353,616**
E10	***EQUIPMENT***						
E10	**EQUIPMENT, GENERALLY**						
	Replace stage curtain	**1**	ls	30,000.00	30,000		
	SUBTOTAL					$30,000	
	TOTAL - EQUIPMENT						**$30,000**
E20	***FURNISHINGS***						
E2010	**FIXED FURNISHINGS**						
	SUBTOTAL					-	
E2020	**MOVABLE FURNISHINGS**						
	All movable furnishings to be provided and installed by owner						
	SUBTOTAL					NIC	
	TOTAL - FURNISHINGS						
F10	***SPECIAL CONSTRUCTION***						
F10	**SPECIAL CONSTRUCTION**						
	No items in this section						

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	POSC - RENOVATION						
238	SUBTOTAL					-	
239							
240	***TOTAL - SPECIAL CONSTRUCTION***						
241							
242							
243	***F20 SELECTIVE BUILDING DEMOLITION***						
244							
245	**F2010 BUILDING ELEMENTS DEMOLITION**						
246	Misc demo/protection	**8,960**	sf	5.00	44,800		
247	Remove floor finishes	**3,610**	sf	3.00	10,830		
248	Remove walls	**2,158**	sf	4.00	8,632		
249	Form openings	**1**	ls	5,000.00	5,000		
250	MEP/FP demolition	**8,960**	gsf	2.00	17,920		
251	SUBTOTAL					87,182	
252							
253	**F2020 HAZARDOUS COMPONENTS ABATEMENT**						
254	Allowance for Haz Mat removal				NIC		
255	SUBTOTAL					-	
256							
257	***TOTAL - SELECTIVE BUILDING DEMOLITION***						**$87,182**

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Brimfield Municipal Buildings 05-Apr-16
Design Options
Brimfield, MA

Feasibility Study

SITEWORK POSC

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	G SITEWORK						
	G10 SITE PREPARATION & DEMOLITION						
311000	Site construction fence/barricades	**1,087**	lf	12.00	13,044		
311000	Site construction fence gates	**1**	ea	2,500.00	2,500		
311000	Stabilized construction entrance	**1**	ls	5,000.00	5,000		
311000	Pavement/curbing removal, crush and re-use for sub-base	**30,000**	sf	1.00	30,000		
311000	Remove and dispose of existing septic system	**1**	ls	15,000.00	15,000		
311000	Miscellaneous demolition	**1**	ls	20,000.00	20,000		
	Site Earthwork						
312000	Strip topsoil and store on site	**500**	cy	12.00	6,000		
312000	Cuts/Fills	**1,111**	cy	6.00	6,666		
312000	Fine grading	**3,333**	sy	0.95	3,166		
312500	Silt fence/erosion control, wash bays, stock piles	**1,087**	lf	9.50	10,327		
312500	Silt fence maintenance and monitoring	**1**	ls	5,000.00	5,000		
	Hazardous Waste Remediation						
	Dispose/treat contaminated soils/water				NIC		
	SUBTOTAL					116,703	
	G20 SITE IMPROVEMENTS						
	Roadways and Parking Lots	*29,362*					
320000	gravel base; 12" thick	**1,087**	cy	38.00	41,306		
320000	bituminous concrete; 4" thick	**3,262**	sy	29.00	94,598		
320000	VGC	**1,271**	lf	35.00	44,485		
320000	Single solid lines, 4" thick	**18**	space	25.00	450		
320000	Wheelchair Parking	**2**	space	75.00	150		
320000	Other road markings	**1**	ls	5,000.00	5,000		
320000	HC curb cuts	**2**	loc	350.00	700		
320000	Signage	**1**	ls	2,000.00	2,000		
	Pedestrian Paving						
	Concrete paving						
320000	gravel base; 8" thick	**28**	cy	38.00	1,064		
320000	Concrete paving	**1,250**	sf	7.00	8,750		
320000	6" concrete pad	**225**	sf	12.00	2,700		
	Site Improvements						
323000	Flag pole 35' high	**1**	ea	4,500.00	4,500		
323000	Dumpster enclosure	**62**	lf	80.00	4,960		
323000	Concrete retaining wall; 6ft high with guardrail	**100**	lf	900.00	90,000		
323000	Bollards	**10**	ea	850.00	8,500		
	Landscaping						
329000	Topsoil - amended	**200**	cy	20.00	4,000		
329000	Lawn - loam & seed	**4,000**	sf	0.25	1,000		
329000	Trees	**16**	ea	1,000.00	16,000		
329000	Groundcover plantings	**1**	ls	5,000.00	5,000		
	SUBTOTAL					335,163	
	G30 CIVIL MECHANICAL UTILITIES						
	Water supply						
330000	New DI piping; 8"	**300**	lf	90.00	27,000		
330000	Connect to existing	**1**	loc	3,000.00	3,000		
330000	FD connection	**1**	ea	2,000.00	2,000		
330000	Gate valves	**2**	ea	750.00	1,500		
330000	Sanitary						
330000	New septic system; Dbox, 1000 gal tank and septic field	**1**	ls	50,000.00	50,000		
330000	Manholes	**2**	ea	4,000.00	8,000		
330000	6" PVC	**200**	lf	50.00	10,000		
330000	Storm water						
330000	15" CPP	**300**	lf	65.00	19,500		
330000	Trench drain	**100**	lf	110.00	11,000		
330000	Catch basin	**4**	ea	3,500.00	14,000		
330000	DMH	**2**	ea	4,100.00	8,200		
330000	OCS	**3**	ea	8,000.00	24,000		
330000	Connect to existing drain	**1**	ea	3,000.00	3,000		

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Brimfield Municipal Buildings 05-Apr-16
Design Options
Brimfield, MA

Feasibility Study

	CSI CODE		DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	SITEWORK POSC								
65	330000		Infiltration basin/rainwater garden	**3,000**	sf	8.00	24,000		
66	330000		Tight tank	**1**	loc	20,000.00	20,000		
67			SUBTOTAL					225,200	
68									
69		**G40**	**ELECTRICAL UTILITIES**						
70			Power						
71			Allowance for new service	**1**	ls	40,000.00	40,000		
72	260000		Site Lighting						
73	260000		Allowance for site lighting	**4**	fxt	3,000.00	12,000		
74			SUBTOTAL					52,000	
75									
76			**TOTAL - SITE DEVELOPMENT**						***$729,066***

CSI CODE	*DESCRIPTION*	*QTY*	*UNIT*	*UNIT COST*	*EST'D COST*	*SUB TOTAL*	*TOTAL COST*
NEW WATER SUPPLY							
	G SITEWORK						
G30	**CIVIL MECHANICAL UTILITIES**						
	Water supply						
	Water main at North Spur	**910**	lf	250.00	227,500		
	Connection from ES to North WM	**500**	lf	150.00	75,000		
	Connection from ES to South WM	**433**	lf	150.00	64,950		
	New pressurizer and pressure tank	**1**	ls	50,000.00	50,000		
	New vault and filter	**1**	ea	30,000.00	30,000		
	Connections	**2**	ea	10,000.00	20,000		
	SUBTOTAL					467,450	
	TOTAL - SITE DEVELOPMENT						***$467,450***

JONES WHITSETT ARCHITECTS

7. CONCLUSION

1. Deficiencies Addressed
2. Project Costs Over Time
3. Project Cost Summary
4. Tax Impact
5. Schedule

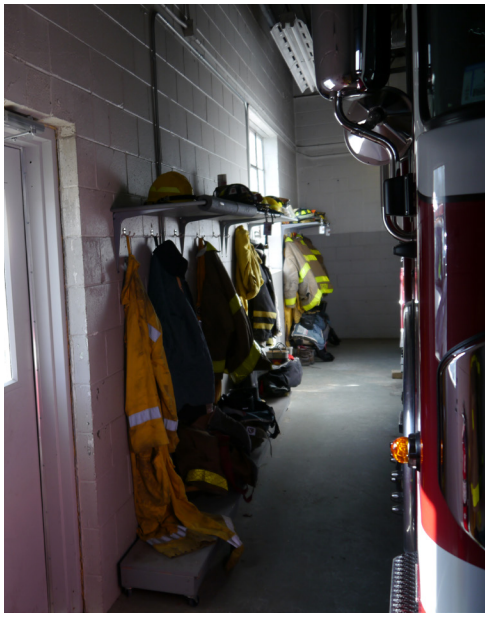
JONES WHITSETT ARCHITECTS

DEFICIENCIES ADDRESSED

LIBRARY

1. Potable water
2. Accessibility
3. Fire alarm and smoke detection upgrade
4. New septic system

PUBLIC SAFETY



1. Potable water
2. Accessibility
3. Private area provided
4. Police facilities expanded (holding area, storage, etc.)
5. Locker, laundry and shower facilities
6. HVAC saftey issues addressed
7. Expansion of emergency vehicle bays
8. Code deficiencies
9. New septic system

JONES WHITSETT ARCHITECTS

DEFICIENCIES ADDRESSED

TOWN HALL

1. Potable water
2. Accessibility, including new lift
3. Masonry repair
4. Fire alarm and smoke detection upgrade
5. Outdated mechanical, electrical and plumbing systems
6. Moisture issues in basement
7. Second floor accessibility
8. New septic system

HIGHWAY DEPARTMENT

1. Potable water
2. Heat in vehicle bay area
3. Exhaust collection system
4. Wash bay
5. HVAC safety issues addressed
6. Accessibility
7. Safety issues regarding the portable generator
8. New septic system

JONES WHITSETT ARCHITECTS

PROJECT COSTS OVER TIME

BUILDING	TOTAL
Public Safety	$ 4,022,928
Highway	$ 2,981,967
Library Opt 1	$ 2,388,897
Town Hall	$ 11,589,802
Potable Water Supply	$ 808,222
TOTAL	$ 21,791,816

BUILDING	TOTAL
Public Safety	$ 1,633,278
Highway	$ 1,378,156
Library	$ 431,746
Town Hall	$ 8,083,766
Potable Water Supply	$ 808,222
TOTAL	$ 12,335,168

- Assumes Project Costs at 1.3 x Construction Costs
- Does not include Hazardous Material Abatement
- Assumes bidding in 12 months – 4% Escalation
- Assumes a 12% Design and Pricing Contingency

PROJECT COSTS SUMMARY

	Addition	Renovation	Sitework	Const. Total	Project Cost
Public Safety	$ 616,216	$ 254,320	$ 544,000	$ 1,414,536	$ 1,838,897
Highway	$ 298,792	$ 217,328	$ 544,000	$ 1,060,120	$ 1,378,156
Library		$ 162,112	$ 170,000	$ 332,112	$ 431,746
Town Hall	$ 3,466,368	$ 1,760,384	$ 991,530	$ 6,218,282	$ 8,083,767
Potable Water Supply				$ 621,709	$ 808,222
TOTAL					$ 12,540,787

JONES WHITSETT ARCHITECTS

TAX IMPACT

Costs to Brimfield	**$ 12,550,000**

Assume Borrowing of:	**$ 12,700,000**

Tax Impact: *	
• Estimate Impact on Taxes per $100,000 Assessed Home Valuation	**$ 202 / year ****

* Based on current information
** Starting year 6. Tax rate will be lower for first 5 years

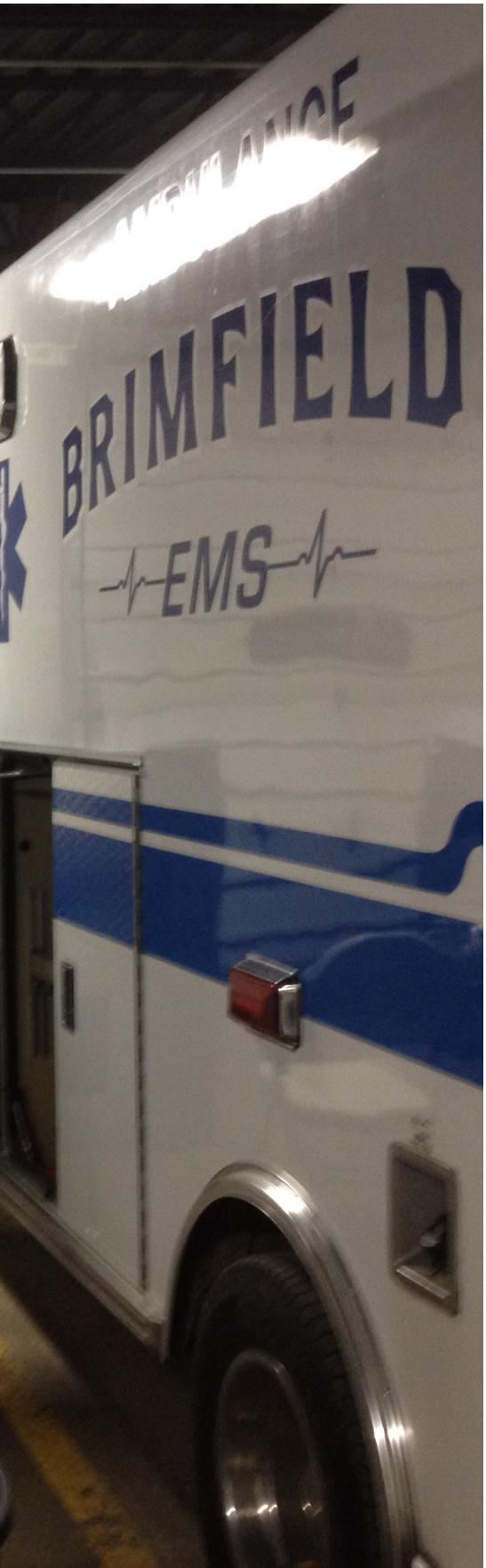
SCHEDULE KEY DATES

• June 2015	Building Committee Formed
• December 2015	Owner's Project Manager Hired
• January 2016	Design Team Hired
• April 25th 2016	Public Presentation
• April 29th 2016	Senior Center Presentation
• May 16th 2016	Town Meeting
• February 2017	Complete Design & Const. Documents
• April 2017	Bidding Complete & Construction Starts
• July 2018	Substantial Completion


BRIMFIELD
EMS
AMBULANCE

JONES WHITSETT ARCHITECTS

8. APPENDIX



1. Annex Structural Report
2. HVAC Report

JSE JOHNSON STRUCTURAL ENGINEERING, INC.
101 Huntoon Memorial Highway (Rt. 56), Rochdale, MA 01542 (508) 892-4884 Fax (508) 892-0477

August 3, 2016

Jones Whitsett Architects
308 Main Street
Greenfield, MA 01301
Attn: Kristian Whitsett

Re: Structural Review
Town Hall Annex
Brimfield, MA

Dear Mr. Whitsett:

Travis Alexander of Johnson Structural Engineering performed a site visit on July 18, 2016 at the Town Hall Annex located at 23 Main Street in Brimfield, Massachusetts. The purpose of the site visit was to review the existing building structure, and to comment the building's condition. The following report summarizes what was observed during the site visit.

The original building is approximately 21'-0" by 40'-0", and is a two-story structure with a full basement. It appears that multiple additions were constructed. The first addition is approximately 29'-0" by 32'-0", and is a two-story structure with a crawl space below. The second addition is approximately 16'-0" by 32'-0", and is a two-story structure with a crawl space below. In the rear of the building, there is a one-story connector between the building and the barn structure. Attached is a markup indicating the original building and the various additions. The markups are marked on the existing floor plans that were originally prepared by Drummey Rosane Anderson, Inc. and dated April 17, 2013.

The following list summarizes the issues that were discovered during the site visit. Please reference the attached markups for the locations of the rooms referenced in the list.

1. The roof for the original building is a wood framed hip roof structure. The roof rafters are 4" by 4" members that are spaced at approximately 2'-6" on center. The roof rafter and hip beam connections to the ridge beam are mortise and tenon joints (see photograph #1). The hip beams have large cracks at the tenon ends. At each end of the roof, the wood planking is severely cracked around the existing roof vent openings (see photograph #2).
2. The wood framed roof above the "Storage #2" room is comprised of 2-3/4" by 8" (assumed) rafters spaced at approximately 2'-1 1/2" on center. The rafters span from a 6" deep wood beam along the exterior walls to a single ridge member. The ridge member appears to be scabbed together with multiples wood pieces (see photographs #3 through #5). The 6" deep wood beam along the exterior walls has rotated (see photograph #6). The exterior walls in the "Storage #2" room are approximately 2" out of plumb (see photograph #6.1). The beam rotation and the

wall being out of plumb is most likely due to the outward thrust of the roof rafters due to the lack of a true ridge beam.

3. It is unknown whether the ceiling framing in the "Kitchen" room is a decorative finish or whether it is the framing for the attic above. Access to the attic space was not accessible. The framing is comprised of 2" by 7" wood joists spaced at 2'-0" on center that are supported by 8" wide by 7" deep wood beams. There is a noticeable downward slope in the framing to the center beam line. The joist to beam connections are mortise and tenon joints, and are pulling apart (see photograph #7). The mortise and tenon beam to beam connections are also pulling apart (see photograph #8). Some of the joists are irregular along their top surface and provide minimal support for the planking (see photograph #9).
4. The second floor in the "Storage #1" room is severely sloped (see photograph #10, which shows the varying gap width between two adjacent filing cabinets due to the floor slope). There is a high point in the second floor along the two exterior walls and along an assumed center beam. The low points are at the approximate middle of the "Storage #1" room and next to the wall between the "Storage #1" room and the "Toilet & Shower #2" room. The second floor structure was not accessible due to a hard ceiling. However, the exposed timber columns in "Storage #1" have large vertical cracks (see photograph #10.1 and #10.2).
5. The second floor in the "Treasurer" office is severely sloped (see photograph #11, which shows the varying gap between the bottom of the desk and the flooring). The floor slopes downward from the exterior wall to the interior corridor wall. The second floor structure was not accessible due to a hard ceiling.
6. The second floor in the "Conservation" office is severely sloped. The floor slopes downward from the exterior wall to the interior corridor wall, and also slopes downward from the masonry fireplace hearth to the interior of the room (see photograph #12). It appears that the masonry hearth has cracked due to the floor slope (see photograph #13).
7. The main stairs between the first and second floors have a noticeable pitch towards the hallway wall.
8. There is a sign posted on the door limiting the number of people in the "Meeting Room" (see photograph #14). The perimeter first floor beam below the exterior door in the "Meeting Room" is rotted (see photograph #14.1).
9. The first floor corridor is severely sloped downward at the front door (see photograph #15).
10. The first floor corridor in front of the Assessor's Office is sloped (see photograph #16). When accessed through an opening to the crawl space in the basement, the existing floor framing in this area is comprised of 1-1/2" by 6" joists spaced at approximately 1'-8" on center. A structural analysis was performed, which indicates the floor joists have minimal live load capacity (approximately 30 pounds per square foot).
11. The first floor in the "Board of Health" room slopes downward from exterior wall to the interior corridor wall (see photograph #17, which shows the varying gap width between two adjacent filing cabinets due to the floor slope). The first floor framing below at this location was not accessible at the time of the site visit.

12. The roof structure at the "Storage" room is comprised of 3" by 3-3/4" rafters spaced at 2'-0" on center. The rafters span from a single ridge member to an 8" by 8" perimeter wood beam along the exterior wall facing the library and a four-ply 2x8 wood beam along the exterior wall facing the parking lot. No collar ties were observed. The ceiling joists are comprised of 2x8 members spaced at 2'-0" on center that span approximately 15'-8" between the beams. A structural analysis was performed, which indicates that the existing roof rafters do not comply with the current design snow load including drifted snow.
13. The barn is in severe disrepair and should not be accessed.
14. The first floor framing for the original building is comprised of round logs of various sizes that are supported by 7-1/2" wide by 6-3/4" deep wood beams. The first floor framing is severely cracked (see photograph #18). Based on how the upper floors sloped in the original building, it is likely that the first floor corridor walls, which align with the two main first floor beams lines, are bearing walls for the second floor framing. A structural analysis was not performed on the round logs due to their irregular shape (the top of the logs were plained flat to support the floor planking).
15. Temporary screw type shoring jacks were previously installed throughout to support the first floor framing (see photograph #18.1). Some of the shoring jacks were installed along the length of various joists and beams, and some where installed below beam connections. The shoring jacks bear on cinder blocks and stones (see photograph #19). Note that temporary screw type shoring jacks are not meant to be used as permanent supports.
16. Wood shims were previously installed between an existing wood beam to wood column connection (see photograph #20). The wood column is partially sitting on a concrete slab and a portion of the column is unsupported (see photograph #21). The concrete slab has cracked around where the post bears on the slab.
17. Portions of the field stone foundation below the "Storage" room is missing (see photograph #22).
18. The chimney is deteriorating (see photograph #23).
19. There is a large bow in the front exterior wall adjacent to the front door (see photograph #24 and #25).

Substantial structural repairs and reinforcing will be required to address the issues noted above. Due to the extent and severity of the issues, it is our professional opinion that a decision be made in the near future whether to proceed with repairing and reinforcing the existing structure or looking for a new facility.

If you have any questions regarding this report, please do not hesitate to call.

Sincerely Yours,
Johnson Structural Engineering, Inc.

Robert A. Johnson, P.E.

Robert A. Johnson, P.E.
President

Photograph #1 – Existing Roof Framing (Original Building)

Photograph #2 – Cracked Roof Sheathing

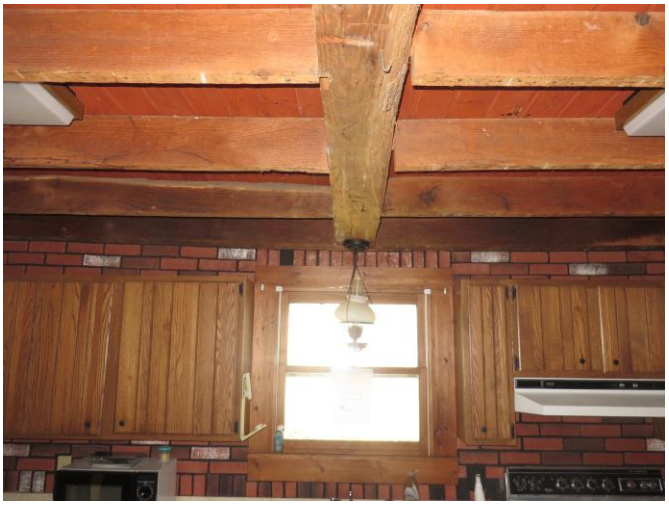
Photograph #3 – "Storage" Ridge Member

Photograph #4 – “Storage” Ridge Member

Photograph #5 – “Storage” Ridge Member

Photograph #6 – “Storage” Perimeter Roof Beam

Photograph #6.1 – Exterior Bowed Wall at “Storage 1”



Photograph #7 – “Kitchen” Ceiling/Attic Framing

Photograph #8 – “Kitchen” Beam-Beam Connection

Photograph #9 – “Kitchen” Ceiling/Attic Joist

Photograph # 10 – "Storage 1" Sloped Floor

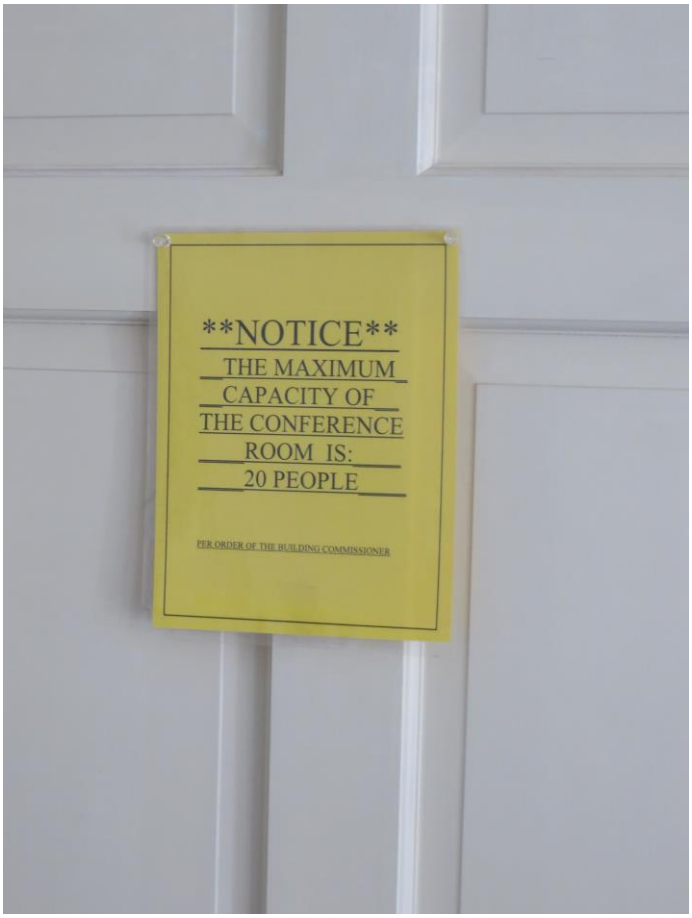
Photograph #10.1 – "Storage 1" Cracked Wood Column

Photograph #10.2 – "Storage 1" Cracked Wood Column

Photograph #11 – "Treasurer" Sloped Floor

Photograph #12 – "Conservation" Sloped Floor

Photograph #13 – "Conservation" Cracked Masonry Hearth



Photograph #14 – "Meeting Room" Sign


Photograph #14.1 – Rotted Sill at "Meeting" Exterior Door

Photograph #15 – First Floor Hallway Slope

Photograph #16 – Sloped Hallway in front of Assessor's Office

Photograph #17 – "Board of Health" Sloped Floor

Photograph #18 – First Floor Framing (Cracked)

Photograph #18.1 – First Floor Shoring Jacks

Photograph #19 – First Floor Shoring Jacks

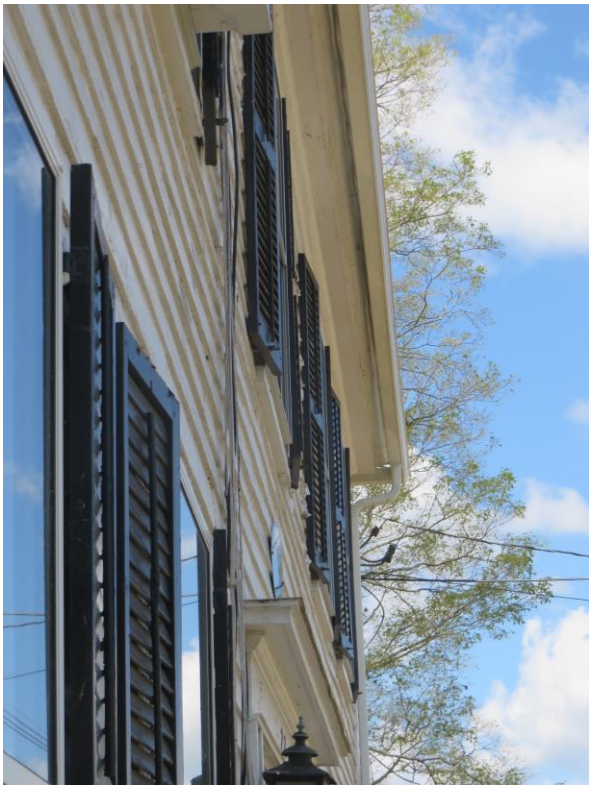
Photograph #20 – First Floor Beam-Column Connection

Photograph #21 -Cracked Wood Column and Concrete Slab

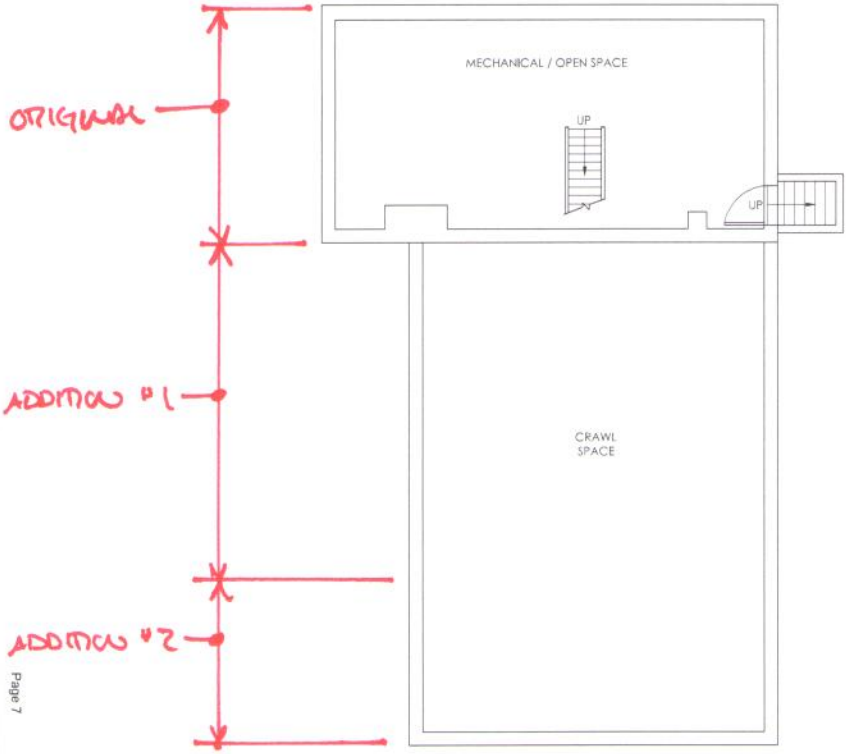
Photograph #22 – Missing “Storage” Foundation

Photograph #23 – Chimney

Photograph #24 – Bowed Front Exterior Wall



Photograph #25 – Bowed Front Exterior Wall



BASEMENT PLAN

GRAPHIC SCALE
(IN FEET)
5 0 10 30

EX-THA1

Scale: 3/32"=1'-0"
Drown by: AJ/CGH
Job No. 13002.00
Date: 4/17/13

Town Of Brimfield
Municipal Facilities Study and Planning
Brimfield, Massachusetts

EXISTING TOWN HALL ANNEX BASEMENT PLAN

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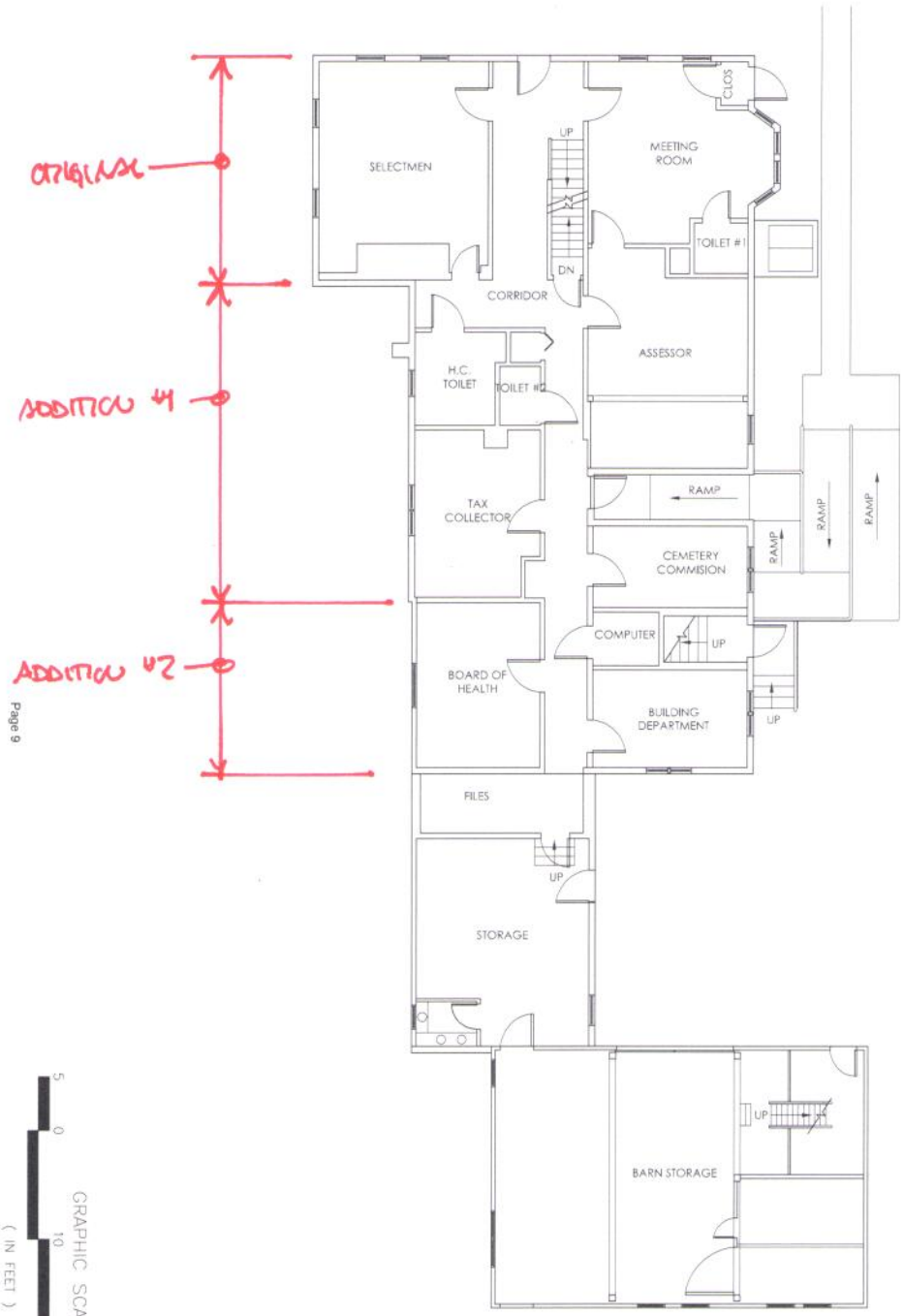

FIRST FLOOR PLAN

EX-THA2

Scale: 3/32"=1'-0"
Drawn by: AJ/CGH
Job No. 13002.00
Date: 4/17/13

Town Of Brimfield
Municipal Facilities Study and Planning
Brimfield, Massachusetts

EXISTING TOWN HALL ANNEX FLOOR PLANS

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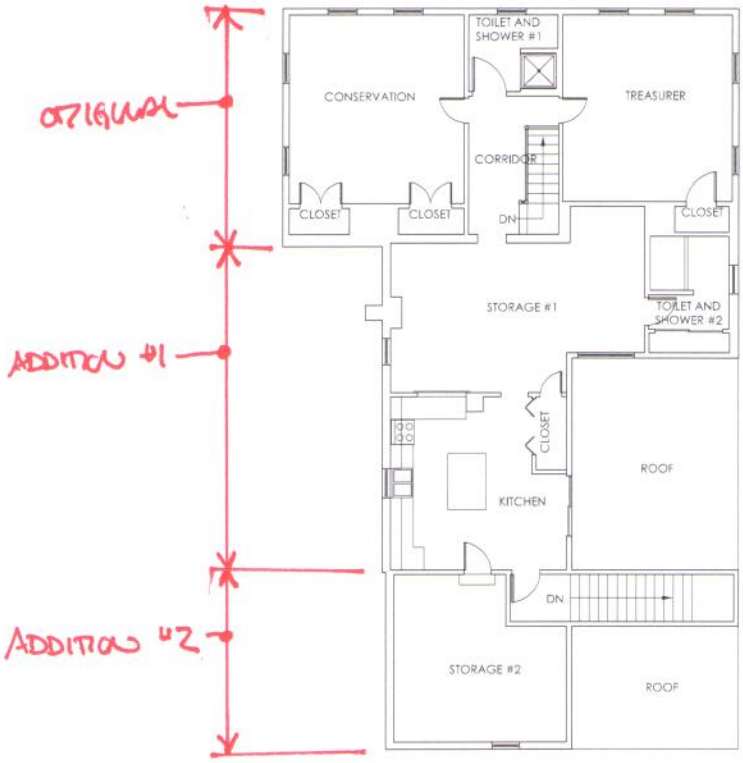

SECOND FLOOR PLAN

5 0 10 30
GRAPHIC SCALE
(IN FEET)

EX-THA3

Scale: 3/32"=1'-0"
Drawn by: AJ/CGH
Job No. 13002.00
Date: 4/17/13

Town Of Brimfield
Municipal Facilities Study and Planning
Brimfield, Massachusetts

EXISTING TOWN HALL ANNEX SECOND FLOOR PLAN

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Town of Brimfield Highway Department Garage Building
HVAC Site Assessment Report
January 28th, 2016
Prepared By
New England Engineering, Inc.

Overview:
The existing Highway Department building is separated into three spaces, an unconditioned garage, a conditioned garage with a mezzanine, and a conditioned office space. The office space has a mechanical room accessible from the outside.

The HVAC equipment for the office space is a Lennox oil fired furnace. The furnace was noted to have a fresh air intake and combustion air intake, but the fresh air intake is likely too close to the exhaust air from the restrooms which is a code violation. The flue for the furnace exhausts through the roof. This furnace only has one thermostat in the office that is non-programmable. This furnace is in good condition, but was installed in 1995 according to the serial number and is likely needing maintenance that is typical of an aging furnace, such as replacing the heat exchanger. The windows for the office and break room were noted to be operable and of sufficient free area for natural ventilation, so the fresh air connection to the furnace is not necessary.

The HVAC equipment for the conditioned garage space is a Boyertown Furnace Company oil fired furnace hung on the mezzanine level and a homemade exhaust system. This furnace has all supply and return air coming from the same space the furnace is located in as well as a separate exhaust system that exhausts air out of the garage. This setup can cause problems with incomplete combustion with the furnace, great care should be taken when exhausting air out of the same space a furnace is located in as the negative pressure can cause the products of combustion from a running furnace to enter the space and lead to carbon monoxide poisoning for the occupants. This occurs when the negative pressure from the exhaust fan overpowers the smaller combustion air fan in the furnace. This furnace only has one thermostat that is non-programmable. This furnace was recently installed and is in good condition. No carbon monoxide detector was noted on site. No fresh air connection was noted, so no fresh air is entering the space when the garage doors are closed.

The unconditioned garage space only has a propeller exhaust fan that is controlled by a rotary switch; the dampers for the exhaust fan do not close when the exhaust fan is off. No carbon monoxide detector was noted in the space.

In the event of a future renovation an air conditioner system can very easily and affordably be added onto the existing furnaces. A heat pump system should also be considered as heat pump heating during mildly cold days is significantly more efficient than oil fired heating.

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www.neecorp.com

Main issues observed during the January 28th, 2016 site visit are:

1. The Lennox furnace for the office space, while in good condition, is still an aging furnace from 1995 that will likely need some maintenance. In particular the heat exchanger should be replaced if it hasn't recently. A Lennox technician should be involved to check the status of the furnace and diagnose any problems.

2. The furnace for the conditioned garage space shares the same space as an exhaust fan. This exhaust fan could negatively pressurize the space which will in turn draw the products of combustion from the furnace into the space.

3. No carbon monoxide detectors were noticed in the garage spaces, which could pose a carbon monoxide threat if cars are on and the garage doors are closed. The unconditioned garage space has the large exhaust fan which doesn't fully close when off, which keeps an opening to the outside to let carbon monoxide escape. The conditioned garage space has no opening or fresh air connection.

4. The thermostats for the furnaces are non-programmable. By replacing the thermostats with programmable thermostats there will be energy savings and possible rebates from the utility if the systems are converted to provide cooling.

5. The temporary vehicle exhaust system is not listed as required by state mechanical code. To be in compliance with state mechanical code, a listed vehicle exhaust system is required.

HVAC:

The existing Lennox oil fired furnace for the office space shown below, in fair condition:

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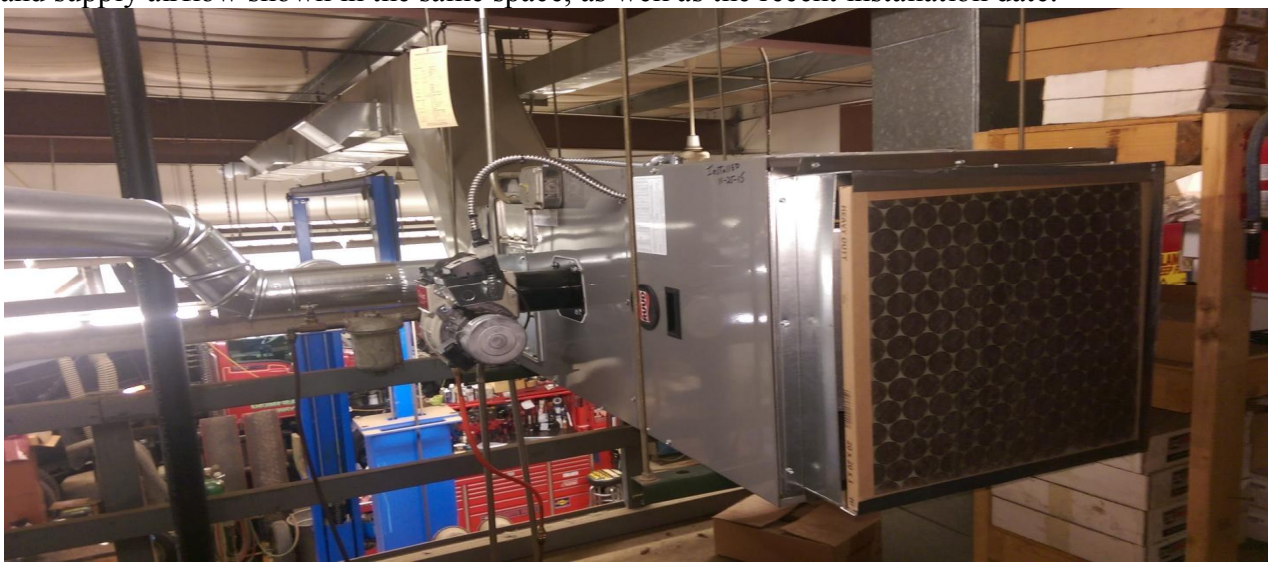
Shown below is the existing furnace in the mezzanine that heats the conditioned garage. Return and supply airflow shown in the same space, as well as the recent installation date:



The exhaust of this furnace has been combined with that of the mechanical room water heater:

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Whenever the garage doors are closed and either the temporary vehicle exhaust system or garage exhaust fan is operated it will cause the garage to have negative pressure. This in turn will have negative effects with carbon monoxide entering the garage whenever either the water heater or furnace is operating due to the furnace flue vent barometric relief.

For this reason alone ducted fresh air no more than 10% of the furnaces rating should be added to help make the garage positive until a more permanent solution has been determined.

The report addresses safety and code concerns based from our readily visible observations during our site visit. This report does not address the performance of the HVAC systems.

Sincerely,

John Kitsalis, PE
LEED Accredited Professional

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www.neecorp.com

Town of Brimfield Public Safety Headquarters
HVAC Site Assessment Report
January 28th, 2016
Prepared By
New England Engineering, Inc.

Overview:
The public safety headquarters is divided up into three spaces, the fire equipment garage, the ambulance garage, and general offices with lounge. There are two oil fired furnaces in the building, one in the fire equipment garage that heats the garage and another in the lounge of the office area that also feeds the ambulance garage. A Mitsubishi split system air conditioner also exists in the lounge area.

The oil fired furnace for the lounge/offices is a Hallmark furnace that is in good condition. It has no fresh air connection, but the windows of the spaces it feed are operable and appear to be sufficient size to meet ventilation demands. The furnace also has a duct that extends over to the ambulance garage to provide heat to that space. The furnace is hung inside of a plenum which is also plenum return, this is a code violation as fossil fuel fired equipment cannot be located in a return plenum. The thermostat for the lounge furnace is non-programmable and is a separate thermostat from the Mitsubishi split system that conditions the same space. The oil fired furnace in the lounge is in good condition.

The fire equipment garage also has an oil fired furnace hung from the ceiling that conditions the fire equipment garage. No model number or manufacturer was visible from the floor, but the furnace appeared to be the same make/model of the lounge furnace. The return for the furnace is in the same space as the furnace, which has the potential for the negative pressure of the furnace fan to drive the products of combustion into the space instead of out the flue which can lead to carbon monoxide in the space. A carbon monoxide plug in detector with audio alarm was noted on site. The thermostat for the fire equipment garage furnace is non-programmable. The oil fired furnace in the fire equipment garage is in good condition. No fresh air connection was noticed, when the garage doors are closed the space receives no fresh air, this can cause carbon monoxide problems if the truck are on while the doors are closed.

The ambulance garage is mostly heated by a duct from the lounge furnace, but it also has hanging electric heaters that activate when the garage doors are open. No fresh air connection or exhaust fan was noticed so the space receives no fresh air when the garage doors are closed, this can cause carbon monoxide problems if the trucks are on while the doors are closed. No carbon monoxide detector was noticed.

In the event of a future renovation an air conditioner system can very easily and affordably be added onto the existing furnaces. A heat pump system should also be considered as heat pump heating during mildly cold days is significantly more efficient than oil fired heating.

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Main issues observed during the January 28th, 2016 site visit are:

1. The furnace located in the lounge is hung in the plenum which is a return plenum. This is a code violation, but can be easily resolved by adding return ductwork to a nearby return. However, the flue barometric relief does discharge into the existing plenum, and the furnace does draw its combustion air from the building volume. There is no ducted fresh air into the furnace.

2. The furnace for the fire equipment garage space shares the same space as its return opening. This could negatively pressurize the space which will in turn draw the products of combustion from the furnace into the space. The flue barometric relief does discharge into the existing garage, and the furnace does draw its combustion air from the garage volume. There is no ducted fresh air into the furnace.

3. No carbon monoxide detectors were noticed in the ambulance garage space, which could pose a carbon monoxide threat if cars are on and the garage doors are closed.

4. The thermostats for the furnaces are non-programmable. By replacing the thermostats with programmable thermostats there will be energy savings and possible rebates from the utility if the systems are converted to provide cooling.

HVAC:

The existing Hallmark furnace hung in the return plenum shown below, in good condition:

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Shown below is the existing furnace in the fire equipment garage that heats the fire equipment garage. The furnace is in good condition:

Both furnaces need ducted fresh air between 10 to 15% of each furnaces rating to provide ventilation, combustion air and reduce carbon monoxide spillage from the flue vent barometric relief.

The ambulance garage has electric unit heaters. If a backup generator is used, then the electric unit heaters should be replaced by oil-fired heat that uses considerable less electrical power to operate and has stored oil fuel to provide heating during prolonged power outages.

The report addresses safety and code concerns based from our readily visible observations during our site visit. This report does not address the performance of the HVAC systems.

Sincerely,

John Kitsalis, PE
LEED Accredited Professional

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