



**Department of Public Works Facility
Garage, Facility Analysis and Space
Needs Assessment**

**Harvard, Massachusetts
November 3, 2021**

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Project Team

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November 3, 2021

Mr. Timothy B. Kilhart
Harvard DPW Director
47 Depot Road
Harvard, MA 01451

Tel: (978) 456-4130
Email: tkilhart@harvard.ma.us

Proj: Harvard Department of Public Works Facility
Re: Facility Analysis and Space Needs Assessment
CBI Job No. CB211030

Dear Mr. Kilhart:

CBI Consulting, LLC (CBI), a SOCOTEC company, is pleased to present the following Facility Analysis and Space Needs Assessment for the Department of Public Works in Harvard, Massachusetts.

In accordance with our contract, CBI Consulting, LLC (CBI), a SOCOTEC company has prepared the following report for the Mechanic's Service Garage, DWP Office "Connector" Building, Six Bay Vehicle Storage Garage and the Pole/Barn Storage Building located at 47 Depot Road, Harvard, Massachusetts.

This study was commissioned to identify the current conditions of the buildings, in particular the Mechanical, Electrical, Plumbing and Fire Protection systems, the building envelope for thermal and weather resistance, Structural System, Code compliance and life safety, as well as to document the buildings use and space needs for short term and long-term planning and adequacy of the buildings to service the Town's needs well into the future. We understand, currently there are twelve (12) full time staff and two (2) part time staff. The projected future staff will add one (1) part time administrative staff to the DPW office. In Accordance with the Town's request, this report addresses the pre-defined tasks for each of the four buildings:

Task 1: Existing Conditions (Including MEP/FP)

Task 2: Project Programming and Building Code Requirements

Task 3: Analysis and recommendations

Task 5: Project Priorities Ranking including identified deduct Alternates

Task 6: Schedule and Costs

These sections include architectural design, building envelope and structural analysis by CBI; mechanical, electrical, plumbing, and fire protection analysis by BLW Engineers; programming and code analysis by CBI; a summary of findings and recommendations including conceptual plans; and cost estimates (Construction Cost Estimate by PM&C).

CBI and our consultants have reviewed the existing conditions of the building, including the review of any documents made available by the Town. We also have listened to the Town's concerns including DPW administrative staff, and descriptions of operations central to the facilities. Based on our findings, we have recommended repairs, replacements, and new construction where necessary, all centered around fiscal responsibility, a focus on retaining existing infrastructure where applicable, the promotion of safe and efficient operations, and low maintenance/sustainable solutions. In some cases, relocation and phasing the improvements will be necessary for continuing operation during construction.

Furthermore, we understand the current overall layout of buildings on site, adjacencies and vehicular traffic patterns works well for the operation and function of the DPW department. Also, it is our understanding that there are site constraints around the existing site utilities that must be taken in consideration in the layout of the proposed renovations and expansion of the new facility such as: the

Title V Septic System that is located along the paved entrance driveway between the Pole/Barn Storage Building and the Main Building that must remain in place, undisturbed. There is also the fenced in existing emergency generator and the underground 1,000 gallon propane tank adjacent to the Mechanics Service Garage that must be taken in consideration on any expansion of the service garage. Preferably they would remain undisturbed for cost considerations. In addition, there is an existing tight tank located behind the mechanics garage that serves the floor drainage system in the garage. The tight tank stores melting snow run off from the vehicles in the service garage and it is emptied annually. This is in lieu of an oil and gas separator. In addition, there is a vehicular fuel pump station with associated storage tanks located at one end of the Pole/Barn Storage building that must remain in place.

Therefore, CBI recommends the attached layouts of the proposed renovations to accommodate the current and future programming requirements of the facility.

Based on our non-destructive visual inspections on August 4th and August 11th, 2021, CBI and our consultants have recommended:

- 1) strategic repairs of existing systems that are in need improvement but have years of useful service life with the proper maintenance and upkeep, such as existing propane unit heaters and the existing 100KW propane powered generator. However, a new 175KW propane powered generator would be required to support the additional loads for the proposed renovations.
- 2) replacements based on systems that have reached the end of the expected service life and/or inadequate to meet the department's needs such as the existing 400 Amp electrical service and the existing fire alarm system.
- 3) new systems and components to meet the needs of the operation into the future of the DWP office, repairs, maintenance, storage of vehicles and equipment, storage of materials and ancillary spaces such as the locker rooms, break room and bathrooms.

These recommendations include but are not exclusive of repair and replacement of failing building envelope systems such as roofs, walls, doors, windows and siding, adding or reconfiguring space to provide necessary program elements, and correcting building code and life safety concerns such as accessibility and lack of automatic sprinkler system. The intent of the DPW is to implement new construction such that it will have a service life of at least 50 years. Through meetings with DPW, we have recommended work, which is in some cases prioritized, and phased. We have provided a summary of these findings. Refer to the individual sections for additional information.

Based on our findings and recommendations, and the current construction bidding market, we recommend budgeting \$4,747,333 for all of the proposed work at the Department of Public Works.

As requested, we have included pricing in the cost estimate for deduct alternates identified in the space needs matrix document as moderate priority.

We hope that this report provides the Town of Harvard and the Department of Public Works with a clear understanding of the project scope and budget for the renovations and new facilities associated with the Mechanic's Service Garage, DWP Office "Connector" Building, Six Bay Vehicle Storage Garage and the Pole/Barn Storage Building located at 47 Depot Road, Harvard, Massachusetts.

If should have any questions or comments on the above, please do not hesitate to contact me.

Best regards,

CBI Consulting, LLC



Rick Almeida, NCARB, AIA, LEED AP BD+C
Associate
Rick.almeida@socotec.us



Harvard DPW Facility Study Project Schedule



Task 1 – Investigation & Existing Conditions Assessment

Target Completion Date

Kickoff meeting and interview DPW Director, Staff, and Review Existing Documents Aug. 04

Onsite Building Conditions Assessment: Aug. 04 & Aug 17

Structure

Floor Plan Layouts

Site Layout

Handicap Accessibility

MEP-FP

Code Evaluation

Task 2 – Program & Meetings

CBI to submit current and future space needs matrix Sept. 1

Meeting with DPW and Town to review submitted current, future needs
and review prioritized needs in (3) categories from Highest to lowest priority Sept. 8

Task 3 – Preliminary Design & Meeting

Develop and issue Conceptual layouts along with cost estimates and pros and cons of each Sept. 30

Meeting with DPW and Town to review proposed layouts Oct. 7

CBI to incorporate Comments and Feedback Oct. 8

Prepare and Issue Draft Report Oct. 14

DPW and Town to review Report and submit comments by Oct. 21

CBI to Incorporate Comments and Feedback Oct. 22

Task 4 – Submit Final Analysis & Space Needs Study and Meet with Building Committee

Oct. 28

SECTION 1



Pole Barn / Storage Garage

Existing Conditions

BACKGROUND

The Pole Barn Storage Garage is a single-story wood frame structure in poor condition with various additions over the years to accommodate the increasing variety and quantities of materials and equipment. Date of original construction is unknown and there are no existing documentation of the building.

The building is a standalone unheated/ uninsulated structure located directly across from the main buildings (refer to Photograph 1). The roofs are a combination of gable asphalt shingle roof over the central open space with shed roof over the tool storage crib without any perimeter gutters or downspouts. The walls of the building are a combination wood shingles with sections of vertical plastic rib panels and wood vertical siding. The windows are all fixed wood. The two (2) existing bay doors are manually operated overhead metal doors, and the sliding bay door is made with individual wood boards.

DEFICIENCIES

Roof




In general, the condition of the roof is poor. This description is largely due to the deficiencies found during CBI's review. CBI observed weathered and deteriorated single tab asphalt shingles. Organic growth has accumulated on the surface of the roof shingles (Refer to Photographs 2).



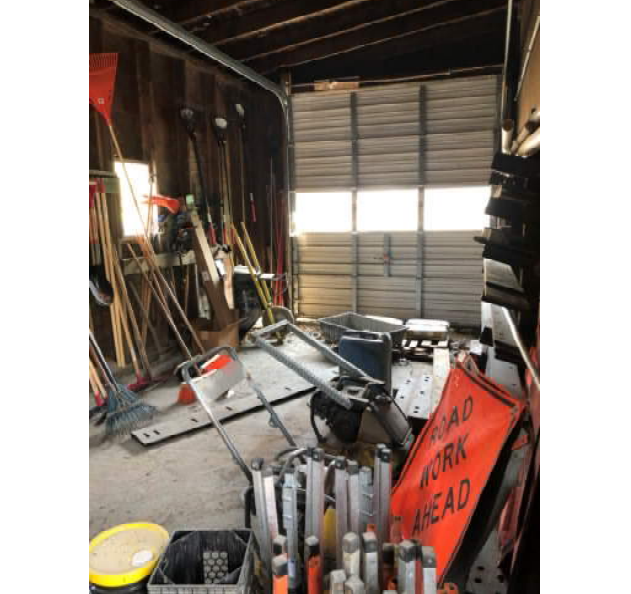
Walls


The condition of the exterior wood shingle walls are in poor condition. There are sections where shingles are missing, deteriorated shingles due to water damage and warped/coupling of shingles. (Refer to Photographs 3 and 4). There are gaps between the vertical wall wood siding allowing water infiltration to reach stored materials. (Refer to Photograph 5).

Windows and Doors

In general, the condition of the windows and doors are poor. The fixed wood windows are missing glazing panels, and also are missing sealant around the framed openings. The sliding bay wood door shows signs of delamination due to weather exposure. The two (2) existing manually operated overhead metal doors bay doors are single ply metal and appear low grade to withstand operation of a material storage garage. (Refer to Photographs 6 and 7).

1.		General view of the Pole Barn / Storage Garage.
2.		Weathered and deteriorated single tab asphalt shingles
3.		Deteriorated wood shingles. Image 1 of 2.

4.		Deteriorated wood shingles. Image 2 of 2.
5.		There are gaps between the vertical wall wood siding allowing water infiltration to reach stored materials.
6.		The manually operated overhead metal door bay doors are single ply metal.

7.		General view of the Pole Barn / Storage Garages sliding wood door
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Space Needs Analysis and Recommendations

CBI met with Harvard DPW on August 4, 2021, to discuss their current operations, as well as opportunities and constraints of the existing spaces. Numerous correspondence follow ups have occurred since then to further discuss the project goals. The following was observed and discussed. Please refer to the attached space needs program for room-by-room identification of existing and proposed program spaces ranked in the highest priority.

The Pole Barn / Storage Garage is outdated, undersize with an overflow of storage. It is approximately 2,168 net sf comprised of multiple sub-divide storage spaces including vehicle tire storage and tool crib. CBI proposes a new facility to meet the current demands of the department including an interior open floor plan concept for easy access to materials and equipment with a lockable separate 12 ft wide tool crib storage room. Based on current operation and projected storage capacity, an increase of approximately 800 net sf should be added, with (5) large overhead doors to be the same size as the overhead doors in the existing storage garage. The new facility should be approximately 2,969 net sf

Please refer to enclosed demolition plan and proposed plan.

Structural

Unsuitable soils should be removed and replaced with structural fill. CBI proposes the foundation system to consist of concrete foundation walls bearing on continuous concrete strip footings 4'-0" minimum below the frost line. Slab on grade with exterior load bearing concrete masonry walls to support the one way "low" sloped long-span open web metal joists with metal roof deck. A combination of reinforced masonry bond beams and galvanized wide flange steel beams will be provided over wall openings

BLW Engineers, Inc., our Mechanical, Electrical, Plumbing and Fire Protection Engineers have reviewed the existing conditions, and their assessment and recommendations are included within this report.

Based on our findings and recommendations, and the current construction and bidding market, we recommend budgeting \$1,096,800.00 including markups for the work at the Pole Barn / Storage Garage. Please refer to the Project Cost Estimate included with this report.

Mechanic's Service Garage

Existing Conditions

BACKGROUND

The mechanic's service garage is the oldest building on site according to DPW. There are no existing conditions drawings to verify date of construction. It is single-story constructed of single wythe concrete masonry block walls with fixed wood single plane glazed windows. (refer to Photograph 1). There is one (1) garage bay with and a motorized overhead metal door. There is a small office in the rear for the mechanic. There are parts and tool storage scattered throughout the garage. The low ceiling in the mechanic garage restricts servicing larger vehicles on the auto floor lifts. (refer to Photograph 2).

The building is connected to the office and locker space via a corridor. (refer to Photograph 3). According to existing documentation. The original "ballasted" roof was replaced with single ply membrane roof and R-30 roof insulation installed around 2010. The roof drains directly grade without perimeter gutters or downspouts. Overall, the building is in a deteriorated condition, it is drafty and uncomfortable for the staff.

DEFICIENCIES

Roof




In general, there were no visible signs of interior water infiltration on the finished hard ceiling. However, based on the documentation reviewed, there is a 10-year warranty on the roof membrane and it expired in 2020.




Walls

The condition of the single uninsulated wythe concrete masonry block walls appears to be in fair condition. There are areas of individual block interior surfaces not aligned with adjacent blocks thus creating uneven mortar joints which eventually will allow water into the building. (refer to Photograph 4).

Windows and Doors

In general, the condition of the windows are poor. The windows are drafty fixed wood frame single plane glazed windows with deteriorated putty around the wood muntins. (refer to Photograph 5). The exterior metal door appears to be in fair condition. The one (1) bay overhead metal door is manually operated and appears to be in good condition (refer to Photograph 6).

1.		General view of mechanic's service garage.
2.		The low ceiling in the mechanic garage restricts servicing larger vehicles on the auto floor lifts.
3.		Wood door from garage to the office locker space/corridor.

4.		<p>There are areas of individual concrete masonry block interior surfaces not aligned with adjacent blocks.</p>
5.		<p>View of one of the wood frame single plane glazed windows with deteriorated putty around the wood muntins.</p>
6.		<p>The one (1) bay overhead metal door is manually operated and appears to be in good condition.</p>

Space Needs Analysis and Recommendations

CBI met with Harvard DPW on August 4, 2021, to discuss their current operations, as well as opportunities and constraints of the existing spaces. Numerous correspondence follow ups have occurred since then to further discuss the project goals. The following was observed and discussed. Please refer to the attached space needs program for room-by-room identification of existing and proposed program spaces ranked in the highest priority.

The mechanic's service garage is outdated, undersized with an overflow of storage. It is approximately 1,606 net sf comprised of a single bay garage and office space located in the rear. The proposed mechanic's office would be kept at the same size. CBI proposes a new facility to meet the current and future demands of the department to accommodate side by side two (2) dump trucks, each approximately 9ft wide x 24 ft deep with space for tools and parts storage cabinets along the exterior walls. The ceiling headroom must be the same height of 21 ft as the adjacent vehicular storage garage to accommodate servicing larger vehicles on the auto floor lifts located on the proposed two (2) bay garage. Based on current operation and projected storage capacity, an increase of approximately 991 net sf should be added, with (2) large overhead doors to be the same size as the overhead doors in the existing vehicle storage garage. The new facility should be approximately 2,597 net sf.

The building envelope including wall, roof, exterior doors and windows should be meet the current energy code requirements under 2018 International Energy Conservation Code as well as accessibility and all applicable building code requirements.

Please refer to enclosed demolition plan and proposed plan.

Structural

Unsuitable soils should be removed and replaced with structural fill. CBI proposes the foundation system to consist of concrete foundation walls bearing on continuous concrete strip footings 4'-0" minimum below the frost line. Slab on grade with an exterior wall assembly consisting of a load bearing back-up concrete masonry walls with insulation, air cavity and split face CMU veneer to match the existing the six bay vehicle storage garage. The proposed roof is a two way "low" sloped long-span open web metal joists with metal roof deck. A combination of reinforced masonry bond beams and galvanized wide flange steel beams will be provided over wall openings

BLW Engineers, Inc., our Mechanical, Electrical, Plumbing and Fire Protection Engineers have reviewed the existing conditions, and their assessment and recommendations are included within this report.

Based on our findings and recommendations, and the current construction and bidding market, we recommend budgeting \$1,457,388.00 including markups for the work at the mechanic's service garage. Please refer to the Project Cost Estimate included with this report.

DPW Office “Connector” Building

Existing Conditions

BACKGROUND

The DPW office “connector” building is single-story constructed of single wythe concrete masonry block walls. The building is the shortest in height in the campus with low ceiling heights of approximately 6'-8" which does not meet code. (refer to Photograph 1). The office has a slider wood single plane glazed window and an office entrance wood door directly to the exterior, and a wood door to the corridor. The DPW office includes two (2) desks for the DPW director and the foreman, and filing storage and copy machine. All administrative activities and interaction with local community occur in the office, (refer to Photograph 2). The corridor located behind the office connecting the mechanics' service garage and the six (6) bay vehicle storage also as serves the changing locker room and storage for miscellaneous office supplies including cleaning supplies, (refer to Photograph 3). The floor elevation in the corridor leading from the “connector” building to the large vehicle storage garage contains a step and does not meet accessibility requirement (refer to Photograph 4).

According to existing documentation, the original “ballasted” roof was replaced with single ply membrane roof and R-30 roof insulation installed around 2010. The roof drains directly grade without perimeter gutters or downspouts.

Overall, the building is deteriorated, drafty, and uncomfortable for the staff. It lacks adequate office space, storage, and dedicated locker rooms.

DEFICIENCIES

Roof

In general, there were no visible signs of interior water infiltration on finished ceiling or reported active roof leaks. However, based on the documentation reviewed, there is a 10-year warranty on the roof membrane and it expired in 2020.

Walls




The condition of the single uninsulated wythe concrete masonry block walls appears to be in fair condition. There are areas of individual block interior surfaces not aligned with adjacent blocks thus creating uneven and mortar joint failure.



Windows and Doors

In general, the condition of the window is poor. The sliding wood window is drafty with a single glazed plane. The exterior office entrance wood door is a residential wood grade door not suitable for weather exposure. (refer to Photograph 6).

Storage and furnishings

In general, the office storage capacity is inadequate with the office storage overflow located in the corridor. The use of the corridor for locker room changing area and for storage creates an egress safety hazardous condition. There is also the use of lack of privacy for the location of the lockers in the corridor.

1.		<p>General view of the DPW Office "Connector" Building</p>
2.		<p>The DPW office includes two (2) desks for the DPW director and the foreman, and filing storage and copy machine</p>
3.		<p>The use of the corridor for locker room changing area and for storage creates an egress safety hazardous condition. There is also the lack of privacy for staff uniform changing.</p>

4.		<p>The floor elevation in the corridor leading from the “connector” building to the large vehicle storage garage contains a step and does not meet accessibility requirements.</p>
5.		<p>View of the office exterior main entrance residential wood grade door.</p>

Space Needs Analysis and Recommendations

CBI met with Harvard DPW on August 4, 2021, to discuss their current operations, as well as opportunities and constraints of the existing spaces. Numerous correspondence follow ups have occurred since then to further discuss the project goals. The following was observed and discussed. Please refer to the attached space needs program for room-by-room identification of existing and proposed program spaces ranked in the highest priority for the office and dedicated male locker room, and moderate priority for the dedicated female locker room and supply storage room.

The DPW office “connector” building is outdated, undersized and has an overflow of storage. It is approximately 492 net sf comprised of the DPW office and the corridor located behind the office connecting the mechanics’ service garage and the six (6) bay vehicle storage space. CBI proposes a new structure with an open office space concept for collaboration for the DPW Director, Foreman and to accommodate a desk for a future, part-time administrative position. There should be a space to greet and assistant community members and an airlock vestibule to allow mail delivery when no one is in the office and also to reduce cold and hot air infiltration into the office. Filing storage wall cabinets and a secured place for the internet router are needed. Also, a dedicated room for (12) lockers for the staff uniforms and a storage closet for cleaning and other miscellaneous items is needed as well. A dedicated space for female lockers is also required. The raised floor elevation leading from the connector building to the six (6) bay vehicle storage building should be removed and a new concrete floor installed to be flush with adjacent floors to comply with accessibility requirements.

The new DPW office “connector” building should be approximately 895 net sf total. The building envelope including wall, roof, exterior doors and windows should be meet the current energy code requirements under 2018 International Energy Conservation Code as well as accessibility and all applicable building code requirements.

Please refer to enclosed demolition plan and proposed plan

Structural

Unsuitable soils should be removed and replaced with structural fill. CBI proposes the foundation system to consist of concrete foundation walls bearing on continuous concrete strip footings 4’-0” minimum below the frost line. Slab on grade with an exterior wall assembly consisting of a load bearing back-up concrete masonry walls with insulation, air cavity and split face CMU veneer to match the existing the six bay vehicle storage garage. The proposed roof is a “low” sloped open web metal joists with metal roof deck. Reinforced masonry bond beams will be provided over wall openings.

BLW Engineers, Inc., our Mechanical, Electrical, Plumbing and Fire Protection Engineers have reviewed the existing conditions, and their assessment and recommendations are included within this report.

Based on our findings and recommendations, and the current construction and bidding market, we recommend budgeting \$532,876.00 including markups for the work at the new DPW office “connector” building. Please refer to the Project Cost Estimate included with this report.

Vehicle Storage Garage

Existing Conditions

BACKGROUND

The six (6) bay vehicle storage garage is the largest at approximately 7,318 net sf and the newest building on site, built in 1984, with subsequent renovation to the bathrooms in 1999. The garage is used for storage of utility trucks, pickup trucks, dump trucks, front loaders and other heavy duty vehicles and equipment, (refer to Photograph 1). It is single-story high space with a mechanical/storage mezzanine above the break room, the male multi-user toilet room, unisex single user toilet room, and the abandoned boiler room, all located at one end of the vehicle storage building, (refer to Photograph 2). The facility is constructed of exterior single wythe concrete masonry block walls with Styrofoam insulation inserts and vertical steel reinforcing. There are (6) motorized overhead metal doors.

According to existing documentation. The original "ballasted" roof was replaced with single ply membrane roof and R-30 roof insulation installed around 2010. The roof drains directly grade without perimeter gutters or downspouts.

DEFICIENCIES

Roof

In general, there were no visible signs of interior water infiltration under the exposed metal roof deck or reported active roof leaks. However, based on the documentation reviewed, there is a 10-year warranty on the roof membrane and it has expired in 2020.

Floor

There are large, deteriorated sections of the traffic epoxy floor finish and pitted concrete floor in the garage caused by water and de-icing salts. (refer to Photograph 3). The male multi-user toilet room 12"x12" ceramic tiles are in fair condition with deteriorated tile joints. The radial rubber floor in the break room and the unisex bathroom appears to be in good condition.

Walls

The condition of the exterior single wythe concrete masonry block walls with Styrofoam insulation inserts and vertical steel reinforcing walls appears to be good condition, without any sign of cracks or settlement. Also, the interior painted concrete masonry block walls appear in good condition.



Windows and Doors


The seven (7) motorized overhead metal doors were replaced in 2020 and are new like condition. The interior metal doors and frames leading to the break room, multi-user toilet and unisex toilet exhibit signs of rust. (refer to Photograph 4).




Interior Spaces



The male multi-user toilet room plumbing fixtures appear to be fair but are outdated. (refer to Photograph 5). The existing ramp leading to the unisex bathroom exceeds the slope requirements of 1/12 pitch. It also lack handrails on both sides. (refer to Photograph 6). The 7-1/2" raised floor elevation from the break

room to the garage floor does not meet accessibility requirements, (refer to Photograph 7). The unisex toilet room does not meet ADA accessibility requirements including maneuver clearances within the toilet partition and the shower stall approach and there is no shower seating as required by the accessibility code. (refer to Photograph 8 & 9).

1.		View of the Six Bay Vehicle Storage Garage adjacent to the Office "Connector" Building
2.		The mechanical/storage mezzanine above the break room, the male multi-user toilet room, unisex single user toilet room.

3.		<p>Deteriorated sections of the traffic epoxy floor finish and pitted concrete floor in the garage caused by water and de-icing salts.</p>
4.		<p>The unisex toilet interior metal door and frame and exhibit signs of rust.</p>

5.		<p>The male multi-user toilet room plumbing fixtures appear to be fair but are outdated. The fixtures and heights are not handicap accessible.</p>
6.		<p>The existing ramp leading to the unisex bathroom exceeds the slope requirements of 1/12 pitch. It also lack handrails on both sides.</p>
7.		<p>The 7-1/2" raised floor elevation from the break room to the garage floor does not meet accessibility requirements and it also creates a tripping hazard.</p>

8.		<p>The unisex toilet room does not meet ADA accessibility requirements for the maneuver clearances within the toilet partition</p>
9.		<p>The unisex toilet room does not meet ADA accessibility for the shower stall approach and lack of seating</p>

Space Needs Analysis and Recommendations

CBI met with Harvard DPW on August 4, 2021, to discuss their current operations, as well as opportunities and constraints of the existing spaces. Numerous correspondence follow ups have occurred since then to further discuss the project goals. The following was observed and discussed. Please refer to the attached space needs program for room-by-room identification of existing and proposed program spaces ranked in the highest priority for the new unisex accessible bathroom, new ramp to the break room as required by the accessibility code, and moderate priority to the scope of work for six bay vehicle storage garage, male multipurpose bathroom and mechanical room.

The six (6) bay vehicle storage garage building appears to be in good condition and the DPW is not looking to expand its footprint. However, accessibility upgrades are required in the unisex toilet room to comply with ADA code regulations, including reconfiguration of toilet partition, new plumbing fixture and accessories and reconfiguration of the shower stall. Also, the existing ramp and rails is required be reconfigured to comply with slope and handrails requirements. The male multi-user toilet room plumbing fixtures and finishes appear to be fair, are outdated and should be replaced. A new ramp with handrails and a new door approach clearance is required for accessibility from the garage to the break room. The entire traffic epoxy floor finish in the garage should be removed, the pitted concrete areas should be patched and a new heavy duty traffic epoxy finish applied to the entire floor.

Please refer to enclosed demolition plan and proposed plan

Structural

The existing raised corridor floor from the existing six Bay Vehicle Storage Garage to the DPW office is proposed to be lowered to comply with accessibility requirements, which will include removal and replacement of the slab on grade. Underpinning will be required of the flanking existing masonry bearing wall foundations of the corridor. Unsuitable soils would be removed and replaced with structural fill. A new concrete slab-on-grade is proposed.

BLW Engineers, Inc., our Mechanical, Electrical, Plumbing and Fire Protection Engineers have reviewed the existing conditions, and their assessment and recommendations are included within this report.

Based on our findings and recommendations, and the current construction and bidding market, we recommend budgeting \$1,036,814.00 including markups for the work at the vehicle storage garage. Please refer to the Project Cost Estimate included with this report.



DPW SPACE NEEDS ANALYSIS- Revision 1

EXISTING PROGRAMMED SPACE	EXISTING NET SF	PROPOSED PROGRAMMED SPACE	PROPOSED NET SF	TOTAL NET	PRIORITY			CURREN T STAFF	PROJECTE D STAFF	Remarks
					HIGHEST	MODERATE	LOWEST			
MECHANICS SERVICE GARAGE										
(1) Garage	1,485	(2) Bay Garage	560	2,045	X			1	1	Space for tool storage cabinets along the walls required
Office	121		0	121		X				Office used by mechanic
Proposed Open Space for Tool Storage			431	431	X					
CONNECTOR BUILDING										
Office	270	Office with vestibule	268	538	X			2	3	Additional desk for part-time administrative staff
Corridor / Lockers / material Supplies Storage	222	Dedicated Male Locker Room	94	357	X			14	14	Total number of all male staff which includes 12 full time and 2 part time staff. The total 357 sf is from adding 135 sf + 222
		Dedicated Female Locker Room	70			X				Need for (2) female lockers and 18x12x60 metal lockers
		Dedicated Supply Storage Closet	76			X				
		Corridor	117							
		total added net sf to existing 222 sf	135							
(6) BAY STORAGE GARAGE										
(6) Bays Storage Garage	6,654		0	6,654		X				Remove existing deteriorated traffic coating and apply new traffic coating. Provide exhaust air and make up air system. Provide additional supplemental propane unit heaters. Refer to demo and electrical new work
Break Room	347		0	347		X				add VRF heating and cooling.
Unisex HC Toilet Room	117		0	117	X					add VRF heating and cooling.
Men's Toilet Room	122		0	122		X				add VRF heating and cooling.
Mech	78	Convert to storage	0	78		X				Removed abandoned boiler and associated pipe. Epoxy flooring. New metal door and frame. Paint walls and concrete ceiling
POLE BARN / GARAGE STORAGE										
Tool Crib	295	Square off tool crib in with building in the corner. Added 136 sf	136	431	X					
Multiple Sub-Divided Storage Spaces	1,305	Combined sub-divided storage and tire storage space and added 20ft wide bay sf	665	2,538	X					
Tire Storage	568									
TOTAL	11,584		2,195	13,779						

FOR ADDITIONAL INFORMATION: REFER TO DEMOLITION PLANS, PROPOSED PLANS, ARCHITECTURAL, STRUCTURAL AND MEP-FP NARRATIVES

SECTION 2





Department of Public Works Facility Garage Harvard, MA

MEPFP Evaluation

Prepared For:

**Rick Almeida, AIA, NCARB, LEED AP
CBI Consulting, LLC - A SOCOTEC COMPANY
250 Dorchester Avenue
Boston, MA 02127**

November 3, 2021



FIRE PROTECTION

Fire Protection Existing Conditions

- There is currently no sprinkler system within the building. There is an existing fire alarm system. Further information regarding the fire alarm system, is in the Electrical section of this report.

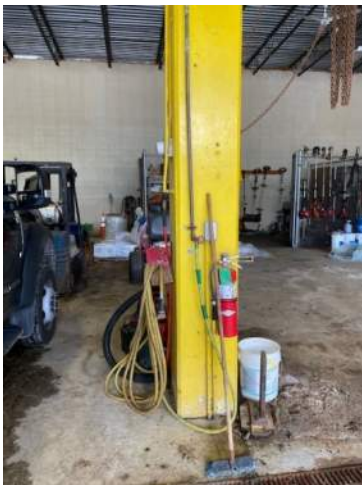
Fire Protection Recommendations

- Given this extent of the renovations, the Town will require a sprinkler system, a new NFPA-13 system would be installed. As the site is provided domestic water with a well located off the DPW campus site, it is likely a 15,000-gallon cistern and 50 HP fire pump would be required to supply the sprinkler system. A dry system would be provided for both the Service Bay and Six Bay Vehicle Storage Garage areas. A wet system would be provided for heated spaces within the Office, Breakroom, Bathrooms, Locker Rooms, Hallway-Renovation, Addition or other conditioned areas.

End of Fire Protection Section

PLUMBING***Plumbing Existing Conditions***

- A 1" water service is provided to serve the building's water needs. Water is sourced via well located approx. ¼ mile from the DPW site. The water line enters the building through the slab under the Mechanic's Service Bay and is distributed via copper piping.
- Commercial grade urinals are provided in the bathrooms, tank type water closets and commercial grade sinks. The fixtures did not appear to be ADA complaint or water conservation type. A floor drain was not provided in the bathroom which would be a code requirement.
- A (50) gal electric tank type hot water heater is located off the break room and service the hot water for the facility.
- Both the Mechanic's Service Bay and Six Bay Vehicle Storage Garage areas are provided with floor drains which terminate to tight tank(s).
- An air compressor, related piping and hose drops are provided throughout both the Service Bay and Six Bay Vehicle Storage Garage areas.
- An underground propane tank provides the building's fuel for unit heaters and the generator.



Compressed Air Reel and Water Spigot at the Six Bay Vehicle Storage Garage



Electric Hot Water Heater at the Breakroom



Exterior Tight Tank Manhole Cover located at the Mechanic's Service Garage



Garage Trench Drain located at the Six Bay Vehicle Storage Garage



Plumbing Fixtures at the multi user Men's bathroom



Propane Service Entrance located at the fenced in area adjacent to the Mechanic's Service Garage

Plumbing Recommendations

- The Handicapped bathroom does not appear to be ADA compliant, and should be renovated to meet ADA requirements. In general both the men bathroom and the handicap bathroom plumbing fixtures appear to be in fair, and served their useful life and do not meet current codes for accessibility and water conservation.
- The domestic hot water heater appears to be out of warranty and would recommend replacing.
- As the Mechanic's Service Garage is proposed to be demolished/rebuilt, considerations should be taken that air compressor, propane line and water service are sourced from that location and would require re-routing.
- New Mechanic's Service Garage – provide new floor drains, related vents and connection to existing tight tank. Tight tank shall be inspected by certified personnel to confirm it is suitable for reuse. If it is not, a new tight tank shall be provided. Utilities shall be extended/reconfigured as required to accommodate the addition inclusive of but not limited to: domestic water, sanitary/garage waste and propane. Portions of the building shall be provided with flat roofs, gutters, downspouts and scuppers. This storm water must be discharged to the site storm drain system and cannot terminate to the sanitary or tight tank systems.

- New Pole Barn Storage – shall be provided with new garage drains and a new tight tank. The building shall be provided with flat roofs, gutters and downspouts. This storm water must be discharged to the site storm drain system and cannot terminate to the sanitary or tight tank systems.

End of Plumbing Section

HEATING, VENTILATING AND AIR CONDITIONING

HVAC Existing Conditions

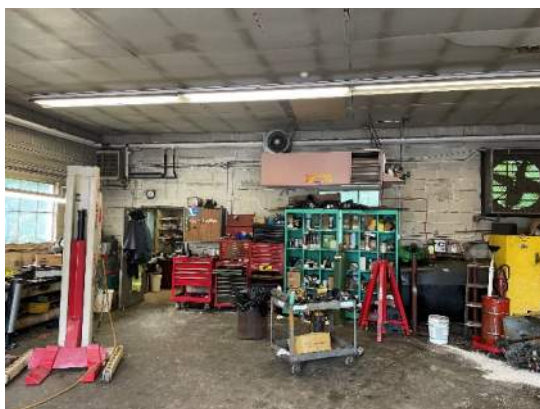
The original building heating and ventilating system utilized an oil fired hot water boiler, hot water circulating pumps, hot water distribution piping system, hot water unit heaters, fintube radiation, exhaust fans and an underground oil storage tank. The hot water system has failed and has been abandoned in place.

The system has been replaced with propane furnaces, waste oil furnaces and through wall air conditioning units; the system has retained some of the exhaust fans. The current heating, ventilating and air conditioning systems are as follows:

1. **Mechanic's Service Garage:** The repair garage is currently heated by a Reznor Venturion 225 waste oil heater and has a propeller wall exhaust fan. The waste oil heater is rated for 225 MBH input capacity, direct blows recirculated air into the space and is vented through the rear wall.
2. **Office:** The office is provided with a propane wall furnace for heating, a through wall air conditioning unit for cooling and operable windows and doors for ventilation. The propane wall heater is located at the front entry door is a Rinnai model EX22CP rated for 20.7 MBH input heating capacity and is interconnected to the propane piping distribution system.
3. **Hall/Lockers:** The office is provided with a propane wall furnace for heating, a through wall air conditioning unit for cooling and operable windows and doors for ventilation. The propane wall heater is located at the front entry door is a Rinnai model EX11CP rated for 11.0 MBH input heating capacity and is interconnected to the propane piping distribution system.
4. **Breakroom:** The breakroom is provided with a propane wall furnace for heating, a through wall air conditioning unit for cooling, ceiling exhaust fan ducted to the outdoors, sidewall exhaust fan to the adjacent bathroom and operable windows and doors for ventilation. The propane wall heater is located at the front entry door is a Rinnai model RHFE471FA rated for 16.7 MBH input heating capacity and is interconnected to the propane piping distribution system.
5. **Bathrooms:** The two (2) bathrooms are provided with ceiling exhaust fans ducted to the outdoors; the bathroom adjacent to breakroom gets some transfer heat from the break room wall fan, the other bathroom has no source of heat.
6. **Six Bay Vehicle Storage Garage:** The Six Bay Vehicle Storage Garage is currently heated by a Reznor RA350 waste oil heater and has a propeller wall exhaust fan rated for 5,900 cfm; two of the original propeller exhaust fans have been covered over and are not operable. The waste oil heater is rated for 350 MBH input capacity, direct blows recirculated air into the space and is vented through the roof; It should be noted that the output capacity of the waste oil heater is approximately 280MBH, located at one side of the space and the former hot water unit heater system was capable of 364 MBH more distributed at the six unit heater locations. Reportedly the heating capacity of the waste oil heater is not adequate.
7. **Pole Barn/Storage:** There currently are no heating, ventilating or air conditioning provisions for the ancillary building.

HVAC Recommendations

1. New Mechanic's Service Garage: Provide an exhaust air and tempered make up air system to provide 0.75 cfm/sf exhaust air to the space as required by code; the system should be provided a control system to modulate air from 0.05 cfm/sf to maximum code exhaust air flow. The makeup air system for the existing waste oil system would also provide heating to the space; the automatic control system will modulate the outside air and return air dampers based on the exhaust air requirements of the space.
2. Six Bay Vehicle Storage Garage (Existing to remain): Provide an exhaust air and tempered make up air system to provide 0.75 cfm/sf exhaust air to the space as required by code; the system should be provided a control system to modulate air from 0.05 cfm/sf to maximum code exhaust air flow. The makeup air system for the existing waste oil system would also provide heating to the space; the automatic control system will modulate the outside air and return air dampers based on the exhaust air requirements of the space.
3. Six Bay Vehicle Storage Garage (Existing to remain): Provide additional supplemental propane unit heaters extended from the existing propane gas piping system for the space.
4. New Office/Existing Breakroom/Renovated Bathrooms/New Locker Rooms/New Hallway: Consider adding Variable Refrigerant Flow (VRF) heating and cooling consisting of an outdoor heat pump interconnected by insulated refrigerant piping to ductless wall mounted units in space, energy recovery unit to provide ventilation/exhaust to each space in accordance with applicable codes and electric supplemental heat in bathrooms/entries.
5. New Pole Barn: No heating, ventilating or air conditioning is planned.
6. Existing boiler, piping, etc. that has been abandoned in place in the mechanical room will be removed in its entirety.



***Mechanic's Service Garage Shop Waste Oil Heater
Propeller Exhaust Fan***



***Six Bay Vehicle Storage Garage Propeller Wall Fan
Abandoned Hot Water System
Covered Propeller Wall Fan***



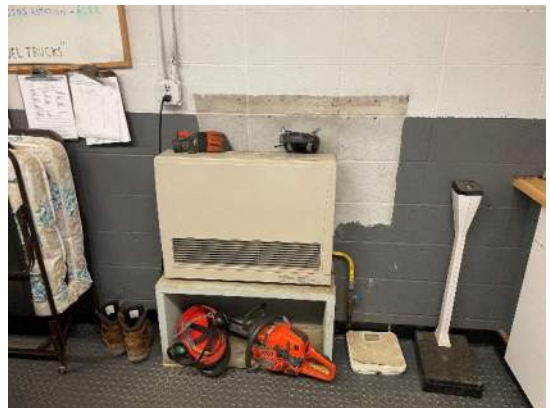
Bathroom Transfer Fan from Breakroom



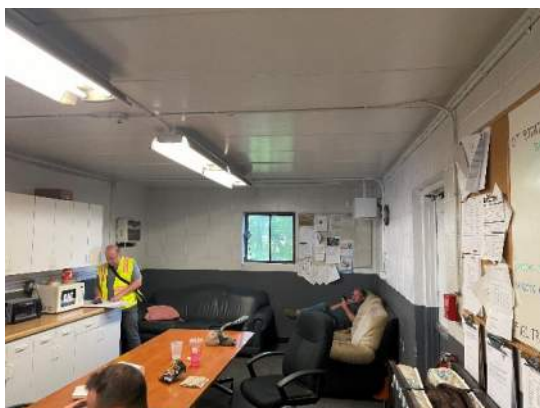
Bathroom Ceiling Exhaust Fan



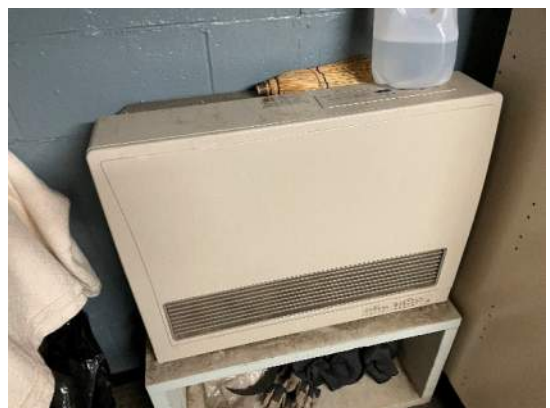
Six Bay Vehicle Storage Waste Heater



Breakroom Propane Wall Furnace



***Breakroom Exhaust Fan
Through Wall Air Conditioning Unit***



Locker Room/Hall Wall Propane Wall Furnace



Office Propane Wall Furnace



Office Through Wall Air Conditioner



Abandoned Boiler

End of HVAC Section

Electrical Existing Conditions

- Main electrical service is fed overhead from a National Grid pole-mounted transformer and terminates in the main service circuit breaker/current transformer cabinet (400A, 120/240V, 1-phase, 3W, manufactured by Federal Pacific Electric located on the mezzanine of the Six Bay Vehicle Storage Garage. There is one existing meter for the entire building. The CTC cabinet and distribution panels were installed in 1983 and have all reached their expected useful lives.
- The fire alarm system is an addressable control panel manufactured by Silent Knight IntelliKnight. The system detection included system smoke detectors, in office, heat detectors in corridors and bathrooms, system horn/strobes, strobe-only devices in bathrooms, system manual pull stations at egress doors. The notification coverage appeared to be adequate. The existing system has approached its expected useful life. The system is connected to the fire department through a Sigcom digital communicator. The fire alarm system and Digital Communicator are located on the Mezzanine level of the Six Bay Vehicle Storage Garage.
- Lighting consisted of inefficient fluorescent 2'x4' recessed fixtures, 4' industrial fixtures, 8' industrial fixtures, surface 1'x4' fixtures. All fixtures have exceeded their expected lifespan and are inefficient. All fixtures are controlled by wall switches.
- Exit signs are illuminated (with the exception of one) but coverage is not adequate. The exit signs have approached their expected useful life.
- There is an existing exterior weatherproof enclosed propane generator, located in the exterior fenced-in area adjacent to the Mechanic's Service Garage. The generator was manufactured by Kohler. The rating of the generator is 100KW, 120/240V, 1-phase. The generator backs up the entire facility except the air compressors. The employees manually shut off the breakers for the compressors. It appears to be in good working condition, is maintained annually, exercised weekly, was installed in 2000. Continuing the maintenance and exercising, the generator has an additional 12 to 15 years of expected life. The generator turns on automatically when there is a utility outage, via the existing 400 Amp Kohler Automatic Transfer Switch. The ATS also appears to be in good condition with an additional 12 to 15 years remaining.
- The building has exterior lighting consisting of wall packs. These fixtures are inefficient and have reached their expected lifespan.
- The existing pole barn storage has minimal electrical components; all electrical components have surpassed their expected lifespan and should be replaced.



Service Transformer on Depot Road



Service Entrance – Exterior of Six Bay Vehicle Storage Garage



Electric Meter – Six Bay Vehicle Storage Garage



400 Amp, 240 V1, 1-Phase Main Building Disconnect – Mezzanine of Six Bay Vehicle Service Storage Garage



Service Equipment - Six Bay Vehicle Storage Garage



Panelboards – Mechanic's Service Garage



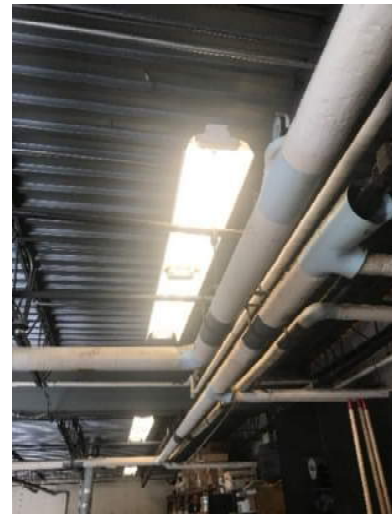
Panelboards – Mechanic's Service Garage



Fire Alarm System – Six Bay Vehicle Storage Garage



Non-Illuminated Exit Sign - Corridor



Industrial Fluorescent Strip Lighting – Six Bay Vehicle Storage Garage



Industrial Fluorescent Fixture - Corridor



100 KW, 120/240V 1-Phase Generator – Exterior Fenced -In Area



Industrial Fixture/Heat Detector – Six Bay Vehicle Storage Garage



400 Amp Automatic Transfer Switch – Mezzanine of Six Bay Vehicle Storage Garage



Exterior Wall Pack - Six Bay Vehicle Storage Garage



Exterior Wall Pack – Office Building

Electrical Recommendations

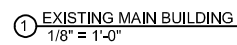
- The existing 400 Amp service has reached its useful life and is inadequate for a proposed : new office, locker room, corridor, mechanic's service garage and the Pole Barn storage garage. The services should be upgraded to a minimum of 600 amp, 120/208V, 3-phase, 4-wire service.
- The electrical switchgear shall be provided with provisions in the gear, to accept power from future or proposed solar photovoltaic system.
- GFCI receptacles shall be provided for all garage bays.

- The Fire alarm control panel should be upgraded to a new addressable fire alarm control panel, and new notification devices (horn/strobes and strobe-only devices) and actuation devices (pull stations, heat and smoke detectors).
- Illuminated exit signs should be added to replace all the existing exit signs.
- Exterior emergency lights should be provided at all egress doors.
- Exterior wall packs should be replaced with LED efficient wall packs.
- Interior light fixtures should all be replaced with similar type fixtures containing LED lamps.
- The generator and automatic transfer switch should continually be maintained and exercised. The existing generator size would not support any additional load, for a building addition. They presently need to shut the compressors off, to maintain power for the remainder of the building, during an outage. A new 175KW, 120/208 volt 3-phase generator and 600 amp, 208 volt 3-phase 4-pole automatic transfer switch would be required to support the entire facility.
- Automatic lighting controls (sensors) should be provided for all interior light fixtures.
- The proposed Pole Barn Storage building should be provided with a 60 amp, 120/208 volt service 3-phase service, from the proposed new 600 amp service at the main building. A new 60 amp, 120/208 volt 3-phase, main circuit breaker, 24 circuit panelboard should be provided. New lighting consisting of cold-weather-rated LED 4 foot vaportight light fixtures should be provided. The fixtures shall be provided with occupancy sensors built into the fixtures for control. New self-contained exit signs and wall-mounted emergency lights should be provide for emergency illumination. GFCI outlets shall be provided for general power requirements. Power for any HVAC equipment should be provided. Exterior wallpacks with emergency modules should be provided on all exterior doorways.

End of Electrical Section

SECTION 3





— REMOVE EMERGENCY
GENERATOR AND TURN
OVER TO OWNER

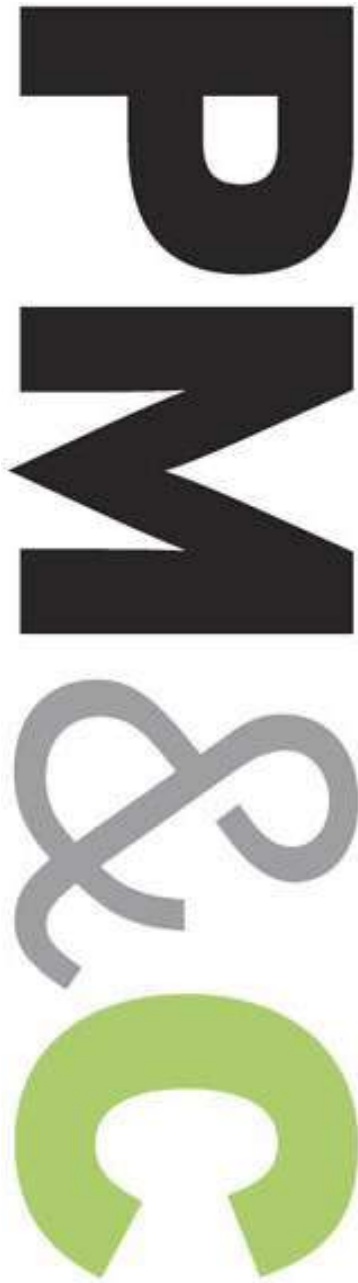
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SECTION 4





PM&C LLC
20 Downer Ave, Suite 5
Hingham, MA 02043
(T) 781-740-8007
(F) 781-740-1012

FEASIBILITY STUDY ESTIMATE

Harvard DPW
New Additions/Renovation
Harvard, MA

Prepared for:

CBI Consulting

October 4, 2021



Harvard DPW
New Additions/Renovation
 Harvard, MA

04-Oct-21

MAIN CONSTRUCTION COST SUMMARY

HARVARD DPW

	Construction Start	Gross Floor Area	\$/sf	Estimated Cost
	Jun-22			
TRADE COSTS				
NEW MECHANIC'S SERVICE GARAGE		2,950	\$357.13	\$1,053,540
NEW CONNECTOR BUILDING		1,030	\$373.99	\$385,214
SIX BAY STORAGE GARAGE RENOVATION		7,870	\$95.24	\$749,509
NEW POLE BARN & GARAGE STORAGE		3,228	\$245.62	\$792,872
HAZMAT REMOVAL ALLOWANCE		5,089	\$16.00	\$81,424
SITEWORK				\$428,255
SUBTOTAL TRADE COSTS				\$3,490,814
Design and Estimating Contingency		15.0%		\$523,622
Escalation to Start		3.0%		\$104,724
SUBTOTAL				\$4,119,160
General Conditions	8.0%			\$329,533
Insurances - GLI/Builders Risk	1.25%			\$51,490
Bond	1.00%			\$41,192
Building Permit				Waived
Overhead & Fee	5.0%			\$205,958
TOTAL ESTIMATED CONSTRUCTION COST		15,078	\$315	\$4,747,333



Harvard DPW
New Additions/Renovation
Harvard, MA

04-Oct-21

ALTERNATES (INCLUDING MARKUPS)

Eliminate Female Locker and Storage Room Scope	DEDUCT	(\$54,385)
Eliminate 6 Bay Storage Garage Scope	DEDUCT	(\$816,617)
Eliminate Break Room Scope	DEDUCT	(\$27,371)
Eliminate Men's Toilet Room Scope	DEDUCT	(\$37,507)
Eliminate Mech Room Scope	DEDUCT	(\$4,080)



Harvard DPW
New Additions/Renovation
Harvard, MA

04-Oct-21

This cost estimate was produced from drawings, specifications and other documentation prepared by CBI Consulting and their design team dated 9.8.2021. 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, GC's overhead and profit and design contingency. Cost escalation is included until start date indicated.

Bidding conditions are expected to be public bidding under C.149 to pre-qualified General Contractors, open bidding for sub-contractors, open specifications for materials and manufacturers.

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 INCLUDED IN THIS ESTIMATE

Items not included in this estimate are:

- All professional fees and insurance
- Site or existing conditions surveys investigations costs, including to determine subsoil conditions
- 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. technology, furniture and equipment, etc.)
- Rock excavation; special foundations (unless indicated by design engineers)
- Utility company back charges, including work required off-site
- Work to City streets and sidewalks, (except as noted in this estimate)



Harvard DPW
New Additions/Renovation
Harvard, MA

FEASIBILITY STUDY ESTIMATE

GFA

2,950 GFA

1,030 GFA

7,870 GFA

3,228

CONSTRUCTION COST SUMMARY IN CSI FORMAT												
DIVISION	<i>Mechanics Service Garage</i>		<i>Connector Building</i>		<i>Six Bay Storage Garage</i>		<i>Pole Barn & Garage Storage</i>		<i>Sitework</i>		<i>Total Project</i>	
	Subtotal	Total	Subtotal	Total	Subtotal	Total	Subtotal	Total	Subtotal	Total	Subtotal	Total
DIV. 2 DEMOLITION		\$21,588		\$12,360		\$23,780		\$27,120				\$84,848
024000 Demolition	\$21,588		\$12,360		\$23,780		\$27,120				\$84,848	
DIV. 3 CONCRETE		\$97,006		\$48,901		\$74,800		\$128,013				\$348,720
033000 Cast-in-Place Concrete	\$97,006		\$48,901		\$74,800		\$128,013				\$348,720	
DIV. 4 MASONRY		\$282,389		\$84,327		\$7,200		\$181,035				\$554,951
040001 Masonry (FSB)	\$282,389		\$84,327		\$7,200		\$181,035				\$554,951	
DIV. 5 METALS		\$114,213		\$36,437		\$18,927		\$108,515				\$278,092
051000 Structural Steel	\$100,600		\$30,750		\$10,000		\$94,560				\$235,910	
055000 Metal Fabrications	\$13,613		\$5,687		\$8,927		\$13,955				\$42,182	
DIV. 6 WOODS & PLASTICS		\$7,878		\$3,842		\$347		\$5,799				\$17,866
061000 Rough Carpentry	\$7,878		\$3,842		\$347		\$5,799				\$17,866	
062000 Finish Carpentry												
066100 Solid Surfacing Fabrications												
DIV. 7 THERMAL & MOISTURE PROTECTION		\$144,084		\$39,605		\$63,976		\$125,676				\$373,341
070001 Dampproofing & Sealant (FSB)	\$53,173		\$8,005		\$53,976		\$62,392				\$177,546	
070002 Roofing & Flashing (FSB)	\$79,025		\$29,355		\$10,000		\$62,664				\$181,044	
072100 Exterior Thermal Insulation	\$11,886		\$2,245				\$620				\$14,751	
DIV. 8 DOORS & WINDOWS		\$39,143		\$14,840		\$6,350		\$62,254				\$122,587
080001 Glass & Glazing (FSB)	\$6,400		\$3,840								\$10,240	
081113 Doors, Frames and Hardware	\$3,250		\$10,250		\$5,600		\$9,250				\$28,350	
083000 Access Doors			\$750		\$750						\$1,500	
083300 Overhead Doors	\$27,993						\$52,254				\$80,247	
089000 Architectural Louvers & Vents	\$1,500						\$750				\$2,250	
DIV. 9 FINISHES		\$14,165		\$27,920		\$23,130		\$18,004				\$83,219
090003 Acoustical Tile			\$5,850								\$5,850	
090005 Resilient Flooring (FSB)												
090007 Painting (FSB)	\$14,165		\$7,510		\$19,306		\$18,004				\$58,985	
096723 Resinous Flooring			\$14,560		\$3,824						\$18,384	
DIV 10 SPECIALTIES		\$9,310		\$14,500		\$9,004		\$4,320				\$37,134
101400 Signage	\$5,870		\$1,350		\$1,230		\$3,620				\$12,070	
102110 Toilet Compartments					\$4,500						\$4,500	
102600 Wall Protection	\$590				\$1,574						\$2,164	
102800 Toilet & Bathroom Accessories					\$1,000						\$1,000	
104400 Safety Specialties	\$2,850		\$350		\$700		\$700				\$4,600	
105100 Lockers			\$12,800								\$12,800	



Harvard DPW
New Additions/Renovation
Harvard, MA

FEASIBILITY STUDY ESTIMATE

GFA

2,950 GFA

1,030 GFA

7,870 GFA

3,228

CONSTRUCTION COST SUMMARY IN CSI FORMAT												
DIVISION	Mechanics Service Garage		Connector Building		Six Bay Storage Garage		Pole Barn & Garage Storage		Sitework		Total Project	
	Subtotal	Total	Subtotal	Total	Subtotal	Total	Subtotal	Total	Subtotal	Total	Subtotal	Total
DIV. 12 FURNISHINGS		\$10,595										\$10,595
122000 Window Treatment												
123553 Casework	\$10,595										\$10,595	
124800 Mats												
DIV. 21 FIRE PROTECTION		\$17,700		\$6,180		\$47,220						\$71,100
210000 Fire Protection	\$17,700		\$6,180		\$47,220						\$71,100	
DIV. 22 PLUMBING		\$65,000		\$12,000		\$41,280		\$35,000				\$153,280
220000 Plumbing	\$65,000		\$12,000		\$41,280		\$35,000				\$153,280	
DIV. 23 HVAC		\$88,500		\$56,650		\$268,750						\$413,900
230000 HVAC	\$88,500		\$56,650		\$268,750						\$413,900	
DIV. 26 ELECTRICAL		\$129,700		\$20,980		\$164,745		\$81,192				\$396,617
260000 Electrical	\$129,700		\$20,980		\$164,745		\$81,192				\$396,617	
DIV. 31 EARTHWORK		\$12,269		\$6,672				\$15,944		\$52,430		\$87,315
311000 Site Preparation									\$37,630		\$37,630	
312000 Earth Moving	\$12,269		\$6,672				\$15,944				\$34,885	
312500 Erosion Control									\$14,800		\$14,800	
DIV. 32 EXTERIOR IMPROVEMENTS										\$13,150		\$13,150
320000 Paving									\$8,250		\$8,250	
321600 Curbs, Gutters, Sidewalks, & Driveways												
323000 Site Furnishings									\$4,900		\$4,900	
329000 Planting												
DIV. 33 UTILITIES										\$362,675		\$362,675
331000 Water Utilities									\$322,675		\$322,675	
333000 Sanitary Sewerage									\$40,000		\$40,000	
334000 Stormwater Utilities												
335000 Gas Utilities												
336000 Hydronic & Steam Utilities												
337000 Electrical Utilities												
SUBTOTAL DIRECT (TRADE) COST	Building	\$1,053,540	Building	\$385,214	Building	\$749,509	Building	\$792,872	Site	\$428,255		\$3,409,390



Harvard DPW
New Additions/Renovation
Harvard, MA

04-Oct-21

GFA 2,950

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Mechanics Service Garage

GROSS FLOOR AREA CALCULATION

Ground Level 2,950

TOTAL GROSS FLOOR AREA (GFA) 2,950 sf

02 DEMOLITION

024000 DEMOLITION

Demolish existing service garage in its entirety	1,799	sf	8.00	14,392	
Allowance to excavate existing foundations to allow for new structure	1,799	sf	4.00	7,196	
SUBTOTAL					\$ 21,588

TOTAL, DIVISION 2 - DEMOLITION \$21,588

03 CONCRETE

Strip Footings	21	CY
Foundation Walls	48	CY
Spread Footings	6	CY
Pilasters	2	CY
Total Foundation Concrete	77	CY

Continuous Footings & Walls

Continuous footings - 26" wide x 18" thick	174	lf		
Formwork	522	sf	15.00	7,830
Re-bar	1,426	lbs.	2.00	2,852
Concrete material	21	cy	140.00	2,940
Placing concrete	21	cy	120.00	2,520
Foundation walls - 4'-0" high	174	lf		
Formwork	1,392	sf	20.00	27,840
Re-bar	1,190	lbs.	2.00	2,380
Concrete material	48	cy	140.00	6,720
Placing concrete	48	cy	120.00	5,760
Form shelf	174	lf	3.30	574

Spread Footings & Piers:

Spread footings at OH door locations				
Formwork	120	sf	16.00	1,920
Re-bar	900	lbs.	2.00	1,800
Concrete material	6	cy	140.00	840
Placing concrete	6	cy	150.00	900
Pilasters	2	cy	750.00	1,500

Lowest Floor Construction

Slab on grade, 6" thick - Building	2,950	sf		
Vapor barrier, heavy duty, 15 mil	2,950	sf	1.00	2,950
WWF reinforcement	3,393	sf	1.50	5,090
Concrete - 6" thick	38	cy	140.00	5,320
Placing concrete	38	cy	120.00	4,560
Finishing and curing concrete	2,950	sf	3.50	10,325
Sawcut control joints	2,950	sf	0.30	885
Slab on grade - Existing		sf		
Patch/Repairs to existing slab on grade		sf	2.00	NR

Miscellaneous

Moisture mitigation additive			assumed not required	
Equipment pads	1	ls	1,500.00	1,500
SUBTOTAL				97,006



Harvard DPW
New Additions/Renovation
Harvard, MA

04-Oct-21

GFA 2,950

<i>CSI CODE</i>	<i>DESCRIPTION</i>	<i>QTY</i>	<i>UNIT</i>	<i>UNIT COST</i>	<i>EST'D COST</i>	<i>SUB TOTAL</i>	<i>TOTAL COST</i>
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Mechanics Service Garage

<i>TOTAL - CONCRETE</i>	\$97,006
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Harvard DPW
New Additions/Renovation
Harvard, MA

04-Oct-21

GFA 2,950

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Mechanics Service Garage

04 MASONRY

040001 MASONRY

Exterior Wall

3-5/8" thick split face veneer	3,526	sf	38.00	133,988	
12" CMU backup wall	3,526	sf	34.00	119,884	
Flashings at exterior masonry	3,526	sf	0.50	1,763	
Staging to exterior wall	3,606	sf	3.00	10,818	

Interior Partitions

12" CMU	498	sf	32.00	15,936	
SUBTOTAL					282,389

TOTAL, DIVISION 4 - MASONRY

\$282,389

05 METALS

051000 STRUCTURAL STEEL

Floor/Roof Structure

1 1/2" deep Type B x 22 gage galvanized corrugated metal roof deck	3,000	sf	5.00	15,000	
Allowance to support roof hanging mechanical units per narrative	1	ls	10,000.00	10,000	
Double pitched open web metal joists, 30" deep x 15#/LF	3,000	sf	20.00	60,000	
Galvanized structural steel columns and headers at OH door locations	1.8	tns	8,000.00	14,400	
Moment connections	4	ea	300.00	1,200	
SUBTOTAL					100,600

055000 Metal Fabrications

Exterior

Miscellaneous metals; lintels, flashings etc.	3,526	sf	2.00	7,052	
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Interior

Seismic clips	6	ea	150.00	900	
Misc. metals to CMU	498	sf	1.00	498	
Miscellaneous metals throughout building	2,950	gsf	1.75	5,163	
SUBTOTAL					13,613

TOTAL, DIVISION 5 - METALS

\$114,213

06 - WOOD, PLASTICS AND COMPOSITES

061000 ROUGH CARPENTRY

Rough blocking at exterior window and door openings	210	lf	4.00	840	
Rough blocking at roof	220	lf	16.00	3,520	
Wood blocking at interior openings	17	lf	4.00	68	
Backer panels in electrical closets	1	ls	500.00	500	
Miscellaneous wood blocking at interiors	2,950	gsf	1.00	2,950	
SUBTOTAL					7,878

TOTAL - WOOD, PLASTICS AND COMPOSITES

\$7,878



Harvard DPW
New Additions/Renovation
Harvard, MA

04-Oct-21

GFA 2,950

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Mechanics Service Garage

07 THERMAL & MOISTURE PROTECTION

070001 WATERPROOFING, DAMPPROOFING AND CAULKING

Waterproofing at basement slab assumed not required
Waterproofing at basement walls assumed not required

Exterior Walls

Air and vapor barrier 3,526 sf 7.50 26,445
AVB at window and door openings 210 lf 5.00 1,050
Backer rod & double sealant at openings 210 lf 10.00 2,100

Interiors

Backer rod & double sealant at interior doors 17 lf 2.50 43
Miscellaneous sealants throughout building 2,950 gsf 1.00 2,950
Traffic coating 2,655 sf 7.00 18,585

SUBTOTAL 51,173

070002 ROOFING AND FLASHING

Flat Roof

EPDM roof membrane 2,950 sf 9.50 28,025
Insulation; 5 1/2" rigid insulation 2,950 sf 7.00 20,650
1/2" density cover board 2,950 sf 3.00 8,850
Vapor barrier 2,950 sf 2.00 5,900
Roof blocking included above

Miscellaneous Roofing

Roof edge 220 lf 30.00 6,600
Flashing at walls common to membrane roofing 38 lf 25.00 950
Gutter /downspouts 170 lf 30.00 5,100
Miscellaneous flashing 2,950 sf 1.00 2,950

SUBTOTAL 79,025

072100 THERMAL INSULATION

2" Rigid insulation + protection board at foundation walls, allo 870 sf 2.15 NR
2" Rigid insulation around perimeter of slab 348 sf 2.25 783
3" Rigid insulation at exterior closure 3,526 sf 3.00 10,578
Insulation at roof included with roofing
Insulation at window/door openings 210 lf 2.50 525

SUBTOTAL 11,886

078100 FIREPROOFING & FIRE STOPPING

Fireproofing to floor/roof deck assumed not required
Intumescent paint to exposed beams assumed not required

Fire stopping 1 ls 2,000.00 2,000

SUBTOTAL 2,000

TOTAL, DIVISION 7 - THERMAL AND MOISTURE PROTECTION

\$144,084



Harvard DPW
New Additions/Renovation
Harvard, MA

04-Oct-21

GFA 2,950

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Mechanics Service Garage

08 DOORS & WINDOWS

080001 WINDOWS

New aluminum fixed window

80 sf 80.00 6,400 6,400

SUBTOTAL

081100 DOORS, FRAMES AND HARDWARE

Exterior Doors

Frame, single

1 ea 450.00 450

Flush HM door - single

1 ea 500.00 500

Hardware

1 leaf 900.00 900

Interior Doors

Frame, single

1 ea 300.00 300

HM door - single

1 ea 350.00 350

Hardware

1 leaf 750.00 750

SUBTOTAL

3,250

083000 ACCESS DOORS

Access doors

1 ls 750.00 NR

SUBTOTAL

-

083300 OVERHEAD DOORS

14' x 13'-4" OH metal insulated motorized door

2 ea 13,996.50 27,993

SUBTOTAL

27,993

089000 FIXED LOUVERS

Aluminum louvers; allowance

1 ls 1,500.00 1,500

SUBTOTAL

1,500

TOTAL, DIVISION 8 - DOORS AND WINDOWS

\$39,143



Harvard DPW
New Additions/Renovation
Harvard, MA

04-Oct-21

GFA 2,950

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Mechanics Service Garage

09 - FINISHES

090003 ACT

2' x 4' ACT		sf	6.50	NR	
SUBTOTAL					-

090005 RESILIENT FLOORS

Resilient Base	250	lf	2.50	NR	
SUBTOTAL					-

090007 PAINTING

Finish doors and frames	2	ea	200.00	400	
Paint to CMU	4,522	sf	2.00	9,044	
Paint to exposed structure	2,655	sf	1.50	3,983	
Miscellaneous painting/ touch-up	2,950	gsf	0.25	738	
SUBTOTAL					14,165

096723 RESINOUS FLOORING

Epoxy flooring with integral base		sf	16.00	NR	
SUBTOTAL					-

TOTAL - FINISHES

\$14,165

10 - SPECIALTIES

101400 SIGNAGE

Building mounted signage; allowance	1	ls	5,000.00	5,000	
Room Signs	1	loc	120.00	120	
Other signage/graphics	1	ls	750.00	750	
SUBTOTAL					5,870

102110 TOILET COMPARTMENTS

ADA		ea	1,600.00	NR	
Standard		ea	1,400.00	NR	
Urinal screens		ea	650.00	NR	
SUBTOTAL					-

102600 WALL PROTECTION

Corner guards/Wall protection; allowance	2,950	gsf	0.20	590	
SUBTOTAL					590

102800 TOILET ACCESSORIES

Gang bathroom; includes electric handdryers		rms	2,500.00	NR	
Shower seat		ea	500.00	NR	
Shower curtain and rod		ea	225.00	NR	
SUBTOTAL					-

104400 FIRE EXTINGUISHER CABINETS

Fire extinguisher cabinets	1	ea	350.00	350	
AED	1	ea	2,500.00	2,500	
SUBTOTAL					2,850

105100 LOCKERS

Lockers; 18x12x60		ea	700.00	NR	
Benches		lf	90.00	NR	
SUBTOTAL					-

TOTAL - SPECIALTIES

\$9,310



Harvard DPW
New Additions/Renovation
Harvard, MA

04-Oct-21

GFA 2,950

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Mechanics Service Garage

12 - FURNISHINGS

122410 WINDOW TREATMENT

Window treatments	80	sf	7.50	assumed NR	
SUBTOTAL					-

123553 CASEWORK

Office					
Base cabinet with solid surface countertop	13	lf	525.00	6,825	
Upper cabinets	13	lf	290.00	3,770	
SUBTOTAL					10,595

124810 ENTRANCE MATS

Recessed entry mats & frames		sf	42.00	assumed NR	
SUBTOTAL					-

TOTAL - FURNISHINGS							\$10,595
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21 - FIRE SUPPRESSION

210000 FIRE PROTECTION

New dry sprinkler system (Fire pump and cistern with site); allowance	2,950	gsf	6.00	17,700	
SUBTOTAL					17,700

TOTAL - FIRE SUPPRESSION							\$17,700
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22 - PLUMBING

220000 PLUMBING

Domestic water, sanitary/garage waste and propane to be extended from existing building to new addition	1	ls	50,000.00	50,000	
New floor drains, related vents and connections to new tight tank	1	ls	15,000.00	15,000	
New tight tank	1	ls		w/ site	
SUBTOTAL					65,000

TOTAL - PLUMBING							\$65,000
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23 - HVAC

230000 HVAC

Provide an exhaust air and tempered make up air system to provide 0.75 cfm/sf exhaust air to the space as required by code; the system should be provided a control system to modulate air from 0.05 cfm/sf to maximum code exhaust air flow	2,950	gsf	30.00	88,500	
SUBTOTAL					88,500

TOTAL - HVAC							\$88,500
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Harvard DPW
New Additions/Renovation
Harvard, MA

04-Oct-21

GFA 2,950

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Mechanics Service Garage

26 - ELECTRICAL

260000 ELECTRICAL

175KW, 120/208 volt 3-phase generator and 600 amp, 208 volt 3-phase 4-pole automatic transfer switch would be required to support the entire facility	1	ls	75,000	75,000		
Exterior emergency lights provided at all egress doors	3	loc	2,500.00	7,500		
GFCI receptacles and LED light fixtures with automatic lighting controls	2,950	gsf	10.00	29,500		
New addressable fire alarm control panel, and new notification devices (horn/strobes and strobe-only devices) and actuation devices (pull stations, heat and smoke detectors)	2,950	gsf	3.00	8,850		
Equipment wiring allowance, HVAC	2,950	gsf	1.00	2,950		
Temp power/support/commissioning etc.	2,950	gsf	2.00	5,900		
SUBTOTAL						129,700

TOTAL -ELECTRICAL

\$129,700

31 - EARTHWORK

312000 EARTHWORK

Strip footings/foundation walls

Excavation	155	cy	11.00	1,705		
Remove off site	155	cy	17.60	2,728		
Backfill with imported material	86	cy	32.00	2,752		
Premium for contaminated soils removal					assumed not required	
SOE					assumed not required	
Structural fill at unexcavated areas					assumed not required	

Column footings

Excavation	7	cy	14.00	98		
Remove off site	7	cy	17.60	123		
Backfill with imported material	1	cy	32.00	32		

Miscellaneous

Gravel fill beneath footings, 6"	9	cy	32.00	288		
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Slab on grade

Gravel base, 8"	73	cy	40.00	2,920		
Compact sub-grade	2,950	sf	0.55	1,623		

SUBTOTAL						12,269
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TOTAL - EARTHWORK

\$12,269



Harvard DPW
New Additions/Renovation
Harvard, MA

04-Oct-21

GFA 1,030

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Connector Building

GROSS FLOOR AREA CALCULATION

Ground Level 1,030

TOTAL GROSS FLOOR AREA (GFA) 1,030 sf

02 DEMOLITION

024000 DEMOLITION

Demolish existing connector in its entirety	1,030	sf	8.00	8,240
Allowance to excavate existing foundations to allow for new structure	1,030	sf	4.00	4,120
SUBTOTAL				\$ 12,360

TOTAL, DIVISION 2 - DEMOLITION \$12,360

03 CONCRETE

Strip Footings	6	CY
Foundation Walls	32	CY
Total Foundation Concrete	38	CY

Continuous Footings & Walls

Continuous footings - 26" wide x 18" thick	52	lf		
Formwork	156	sf	15.00	2,340
Re-bar	426	lbs.	2.00	852
Concrete material	6	cy	140.00	840
Placing concrete	6	cy	120.00	720
Continuous footings - 28" wide x 18" thick	62	lf		
Formwork	186	sf	15.00	2,790
Re-bar	508	lbs.	2.00	1,016
Concrete material	8	cy	140.00	1,120
Placing concrete	8	cy	120.00	960
Foundation walls - 4'-0" high	114	lf		
Formwork	912	sf	20.00	18,240
Re-bar	356	lbs.	2.00	712
Concrete material	32	cy	140.00	4,480
Placing concrete	32	cy	120.00	3,840
Form shelf	114	lf	3.30	376

Spread Footings & Piers:

No work in this section #REF!

Lowest Floor Construction

Slab on grade, 6" thick - Building	1,030	sf		
Vapor barrier, heavy duty, 15 mil	1,030	sf	1.00	1,030
WWF reinforcement	1,185	sf	1.50	1,778
Concrete - 6" thick	13	cy	140.00	1,820
Placing concrete	13	cy	120.00	1,560
Finishing and curing concrete	1,030	sf	3.50	3,605
Sawcut control joints	1,030	sf	0.30	309
Slab on grade - Existing		sf		
Patch/Repairs to existing slab on grade		sf	2.00	NR

Miscellaneous

Moisture mitigation additive			assumed not required	
SUBTOTAL				48,388

TOTAL - CONCRETE \$48,388



Harvard DPW
New Additions/Renovation
Harvard, MA

04-Oct-21

GFA 1,030

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Connector Building

04 MASONRY

040001 MASONRY

Exterior Wall

3-5/8" thick split face veneer

714 sf 38.00 27,132

10" CMU backup wall

714 sf 30.00 21,420

Flashings at exterior masonry

714 sf 0.50 357

Staging to exterior wall

746 sf 3.00 2,238

Interior Partitions

10" CMU

1,106 sf 30.00 33,180

SUBTOTAL

\$ 84,327

TOTAL, DIVISION 4 - MASONRY

\$84,327

05 METALS

051000 STRUCTURAL STEEL

Floor/Roof Structure

1 1/2" deep Type B x 18 gage galvanized corrugated metal roof deck

1,030 sf 5.00 5,150

Allowance to support roof hanging mechanical units per narrative

1 ls 5,000.00 5,000

Double pitched open web metal joists, 20" deep x 15#/LF

1,030 sf 20.00 20,600

SUBTOTAL

30,750

055000 Metal Fabrications

Exterior

Miscellaneous metals; lintels, flashings etc.

714 sf 2.00 1,428

Interior

Seismic clips

9 ea 150.00 1,350

Misc. metals to CMU

1,106 sf 1.00 1,106

Miscellaneous metals throughout building

1,030 gsf 1.75 1,803

SUBTOTAL

\$ 5,687

TOTAL, DIVISION 5 - METALS

\$36,437

06 - WOOD, PLASTICS AND COMPOSITES

061000 ROUGH CARPENTRY

Rough blocking at exterior window and door openings

41 lf 4.00 164

Rough blocking at roof

140 lf 16.00 2,240

Wood blocking at interior openings

102 lf 4.00 408

Miscellaneous wood blocking at interiors

1,030 gsf 1.00 1,030

SUBTOTAL

3,842

TOTAL - WOOD, PLASTICS AND COMPOSITES

\$3,842



Harvard DPW
New Additions/Renovation
Harvard, MA

04-Oct-21

GFA

1,030

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Connector Building

07 THERMAL & MOISTURE PROTECTION

070001 WATERPROOFING, DAMPPROOFING AND CAULKING

Waterproofing at basement slab assumed not required
Waterproofing at basement walls assumed not required

Exterior Walls

Air and vapor barrier 714 sf 7.50 5,355
AVB at window and door openings 41 lf 5.00 205
Backer rod & double sealant at openings 41 lf 10.00 410

Interiors

Backer rod & double sealant at interior doors 102 lf 2.50 255
Miscellaneous sealants throughout building 1,030 gsf 1.00 1,030

SUBTOTAL 7,255

070002 ROOFING AND FLASHING

Flat Roof

EPDM roof membrane 1,030 sf 9.50 9,785
Insulation; 5 1/2" rigid insulation 1,030 sf 7.00 7,210
Premium for tapered insulation 1,030 sf 1.00 1,030
1/2" density cover board 1,030 sf 3.00 3,090
Vapor barrier 1,030 sf 2.00 2,060

Roof blocking included above

Miscellaneous Roofing

Roof edge 140 lf 30.00 4,200
Flashing at walls common to membrane roofing 38 lf 25.00 950
Gutter /downspouts lf 30.00 NR
Miscellaneous flashing 1,030 sf 1.00 1,030

SUBTOTAL 29,355

072100 THERMAL INSULATION

2" Rigid insulation + protection board at foundation walls, allo 570 sf 2.15 NR
2" Rigid insulation around perimeter of slab 228 sf 2.25 513
3" Rigid insulation at exterior closure 714 sf 3.00 2,142
Insulation at roof included with roofing
Insulation at window/door openings 41 lf 2.50 103

SUBTOTAL 2,758

078100 FIREPROOFING & FIRE STOPPING

Fireproofing to floor/roof deck assumed not required
Intumescent paint to exposed beams assumed not required

Fire stopping 1 ls 750.00 750

SUBTOTAL 750

TOTAL, DIVISION 7 - THERMAL AND MOISTURE PROTECTION \$40,118



Harvard DPW
New Additions/Renovation
Harvard, MA

04-Oct-21

GFA 1,030

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Connector Building

08 DOORS & WINDOWS

080001 WINDOWS

New aluminum sliding window	32	sf	120.00	3,840	
SUBTOTAL					3,840

081100 DOORS, FRAMES AND HARDWARE

Exterior Doors

Frame, single	1	ea	450.00	450	
Flush HM door - single	1	ea	500.00	500	
Hardware	1	leaf	900.00	900	

Interior Doors

Frame, single	6	ea	300.00	1,800	
HM door - single	6	ea	350.00	2,100	
Hardware	6	leaf	750.00	4,500	
SUBTOTAL					10,250

083000 ACCESS DOORS

Access doors	1	ls	750.00	750	
SUBTOTAL					750

089000 FIXED LOUVERS

Aluminum louvers; allowance		ls		assumed NR	
SUBTOTAL					-

TOTAL, DIVISION 8 - DOORS AND WINDOWS				-			\$14,840
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09 - FINISHES

090003 ACT

2' x 4' ACT	900	sf	6.50	5,850	
SUBTOTAL					5,850

090007 PAINTING

Finish doors and frames	7	ea	200.00	1,400	
Paint to CMU	2,926	sf	2.00	5,852	
Miscellaneous painting/ touch-up	1,030	gsf	0.25	258	
SUBTOTAL					7,510

096723 RESINOUS FLOORING

Epoxy flooring with integral base	910	sf	16.00	14,560	
SUBTOTAL					14,560

TOTAL - FINISHES							\$27,920
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Harvard DPW
New Additions/Renovation
Harvard, MA

04-Oct-21

GFA 1,030

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Connector Building

10 - SPECIALTIES

101400 SIGNAGE

Room Signs	5	loc	120.00	600	
Other signage/graphics	1	ls	750.00	750	
SUBTOTAL					1,350

104400 FIRE EXTINGUISHER CABINETS

Fire extinguisher cabinets	1	ea	350.00	350	
SUBTOTAL					350

105100 LOCKERS

Lockers; assumed single tier metal 18x12x60	17	ea	700.00	11,900	
Benches	10	lf	90.00	900	
SUBTOTAL					12,800

TOTAL - SPECIALTIES							\$14,500
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12 - FURNISHINGS

122410 WINDOW TREATMENT

Window treatments	32	sf	7.50	assumed NR	
SUBTOTAL					-

124810 ENTRANCE MATS

Recessed entry mats & frames		sf	42.00	assumed NR	
SUBTOTAL					-

TOTAL - FURNISHINGS							
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21 - FIRE SUPPRESSION

210000 FIRE PROTECTION

New wet sprinkler system (Fire pump and cistern with site); allowance	1,030	gsf	6.00	6,180	
SUBTOTAL					6,180

TOTAL - FIRE SUPPRESSION							\$6,180
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22 - PLUMBING

220000 PLUMBING

New roof drains connected to site storm drainage	1	ls	12,000.00	12,000	
SUBTOTAL					12,000

TOTAL - PLUMBING							\$12,000
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23 - HVAC

230000 HVAC

VRF heating and cooling consisting of an outdoor heat pump interconnected by insulated refrigerant piping to ductless wall mounted units in space, energy recovery unit to provide ventilation/exhaust to each space in accordance with applicable codes and electric supplemental heat in bathrooms/entries	1,030	gsf	55.00	56,650	
					56,650

TOTAL - HVAC							\$56,650
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Harvard DPW
New Additions/Renovation
Harvard, MA

04-Oct-21

GFA 1,030

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Connector Building

26 - ELECTRICAL

260000 ELECTRICAL

Exterior wall packs	1	loc	2,000.00	2,000	
Exterior emergency lights provided at all egress doors	1	loc	2,500.00	2,500	
LED light fixtures with automatic lighting controls and GFCI receptacles	1,030	gsf	10.00	10,300	
New addressable fire alarm control panel, and new notification devices (horn/strobes and strobe-only devices) and actuation devices (pull stations, heat and smoke detectors)	1,030	gsf	3.00	3,090	
Equipment wiring allowance, HVAC	1,030	gsf	1.00	1,030	
Temp power/support/commissioning etc.	1,030	gsf	2.00	2,060	
SUBTOTAL					20,980

TOTAL -ELECTRICAL

\$20,980

31 - EARTHWORK

312000 EARTHWORK

Strip footings/foundation walls

Excavation	101	cy	11.00	1,111	
Remove off site	101	cy	17.60	1,778	
Backfill with imported material	63	cy	32.00	2,016	
Premium for contaminated soils removal				assumed not required	
SOE				assumed not required	
Structural fill at unexcavated areas				assumed not required	

Miscellaneous

Gravel fill beneath footings, 6"	5	cy	32.00	160	
Slab on grade					
Gravel base, 8"	26	cy	40.00	1,040	
Compact sub-grade	1,030	sf	0.55	567	
SUBTOTAL					6,672

TOTAL - EARTHWORK

\$6,672



Harvard DPW
New Additions/Renovation
Harvard, MA

04-Oct-21

GFA 7,870

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Six Bay Storage Garage

GROSS FLOOR AREA CALCULATION

Ground Level 7,870

TOTAL GROSS FLOOR AREA (GFA) 7,870 sf

02 DEMOLITION

024000 DEMOLITION

Remove existing deteriorated traffic coating	6,605	sf	2.00	13,210	
Remove existing doors, single	5	ea	150.00	750	
Remove existing doors, single exterior	3	ea	150.00	450	
Remove existing SOG at vehicle storage garage corridor to lower area	60	sf	25.00	1,500	
Miscellaneous demolition/ protect existing finishes	7,870	gsf	1.00	7,870	
SUBTOTAL					23,780

TOTAL, DIVISION 2 - DEMOLITION \$23,780

03 CONCRETE

Lowest Floor Construction

Slab on grade, 6" thick infill at corridor	60	sf			
Vapor barrier, heavy duty, 15 mil	60	sf	1.00	60	
WWF reinforcement	69	sf	1.50	104	
Concrete - 6" thick	1	cy	140.00	140	
Placing concrete	1	cy	120.00	120	
Finishing and curing concrete	60	sf	3.50	210	
Slab on grade - Existing					
Patch/Repairs to existing slab on grade; allowance	7,083	sf	2.00	14,166	
Underpinning					
Underpinning of extg masonry bearing wall foundations around perimeter of corridor, assumed by hand with confined space	40	lf	1,500.00	60,000	
SUBTOTAL					74,800

TOTAL - CONCRETE \$74,800

04 MASONRY

040001 MASONRY

Exterior Wall					
Repairs to existing exterior masonry		sf		NR	
Interior Partitions					
Infill walls at storage garage; assumed 10" CMU	150	sf	48.00	7,200	
SUBTOTAL					7,200

TOTAL, DIVISION 4 - MASONRY \$7,200



Harvard DPW
New Additions/Renovation
Harvard, MA

04-Oct-21

GFA 7,870

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Six Bay Storage Garage

05 METALS

051000 STRUCTURAL STEEL

Floor/Roof Structure

Allowance to reinforce existing openings in walls and roof per narrative

1 ls 10,000.00 10,000

SUBTOTAL

10,000

055000 Metal Fabrications

Interior

Ramp handrails

44 lf 150.00 6,600

Seismic clips

11 ea 150.00 1,650

Misc. metals to CMU

150 sf 1.00 150

Miscellaneous metals at affected areas

301 gsf 1.75 527

SUBTOTAL

\$ 8,927

TOTAL, DIVISION 5 - METALS

\$18,927

06 - WOOD, PLASTICS AND COMPOSITES

061000 ROUGH CARPENTRY

Wood blocking at interior and exterior openings

68 lf 4.00 272

Miscellaneous wood blocking at affected areas

301 gsf 0.25 75

SUBTOTAL

347

TOTAL - WOOD, PLASTICS AND COMPOSITES

\$347

07 THERMAL & MOISTURE PROTECTION

070001 WATERPROOFING, DAMPPROOFING AND CAULKING

Backer rod & double sealant at doors

68 lf 2.50 170

Miscellaneous sealants at affected areas

301 gsf 1.00 301

Floor prep at existing vehicle storage garage

6,605 sf 1.00 6,605

Traffic coating

6,700 sf 7.00 46,900

SUBTOTAL

53,976

070002 ROOFING AND FLASHING

Miscellaneous repairs to roofing including at HVAC work; allowance

1 ls 10,000.00 10,000

SUBTOTAL

10,000

072100 THERMAL INSULATION

Insulation at window/door openings

lf 2.50 NR

SUBTOTAL

-

078100 FIREPROOFING & FIRE STOPPING

Fireproofing to floor/roof deck

assumed not required

Intumescent paint to exposed beams

assumed not required

SUBTOTAL

-

TOTAL, DIVISION 7 - THERMAL AND MOISTURE PROTECTION

\$63,976



Harvard DPW
New Additions/Renovation
Harvard, MA

04-Oct-21

GFA 7,870

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Six Bay Storage Garage

08 DOORS & WINDOWS

081100 DOORS, FRAMES AND HARDWARE

Exterior Doors

Frame, single	ea	450.00	NR	
Flush HM door - single	ea	500.00	NR	
Hardware	leaf	900.00	NR	

Interior Doors

Frame, single	4	ea	300.00	1,200	
HM door - single	4	ea	350.00	1,400	
Hardware	4	leaf	750.00	3,000	
SUBTOTAL					5,600

083000 ACCESS DOORS

Access doors	1	ls	750.00	750	
SUBTOTAL					750

TOTAL, DIVISION 8 - DOORS AND WINDOWS							\$6,350
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09 - FINISHES

090003 ACT

2' x 4' ACT	sf	6.50	NR	
SUBTOTAL				-

090007 PAINTING

Finish doors and frames	4	ea	200.00	800	
Prime and paint to existing CMU	8,040	sf	2.00	16,080	
Paint to exposed structure	305	sf	1.50	458	
Miscellaneous painting/ touch-up	7,870	gsf	0.25	1,968	
SUBTOTAL					19,306

096723 RESINOUS FLOORING

Epoxy flooring with integral base	239	sf	16.00	3,824	
SUBTOTAL					3,824

TOTAL - FINISHES							\$23,130
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Harvard DPW
New Additions/Renovation
Harvard, MA

04-Oct-21

GFA 7,870

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Six Bay Storage Garage

10 - SPECIALTIES

101400 SIGNAGE

Room Signs	4	loc	120.00	480	
Other signage/graphics	1	ls	750.00	750	
SUBTOTAL					1,230

102110 TOILET COMPARTMENTS

ADA	2	ea	1,600.00	3,200	
Urinal screens	2	ea	650.00	1,300	
SUBTOTAL					4,500

102600 WALL PROTECTION

Corner guards/Wall protection; allowance	7,870	gsf	0.20	1,574	
SUBTOTAL					1,574

102800 TOILET ACCESSORIES

Gang bathroom; includes electric handdryers	2	rms	2,500.00	NR	
Shower accessories including curtain and rod, seat and grab bars	1	ea	1,000.00	1,000	
SUBTOTAL					1,000

104400 FIRE EXTINGUISHER CABINETS

Fire extinguisher cabinets	2	ea	350.00	700	
SUBTOTAL					700

TOTAL - SPECIALTIES \$9,004

12 - FURNISHINGS

124810 ENTRANCE MATS

Recessed entry mats & frames		sf	42.00	assumed NR	
SUBTOTAL					-

TOTAL - FURNISHINGS

21 - FIRE SUPPRESSION

210000 FIRE PROTECTION

New dry sprinkler system (Fire pump and cistern with site); allowance	7,870	gsf	6.00	47,220	
SUBTOTAL					47,220

TOTAL - FIRE SUPPRESSION \$47,220



Harvard DPW
New Additions/Renovation
Harvard, MA

04-Oct-21

GFA 7,870

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Six Bay Storage Garage

22 - PLUMBING

220000 PLUMBING

Remove existing non code compliant plumbing fixtures and accessories	2	rms	2,000.00	4,000	
New hot water heater including piping	1	ea	16,000.00	16,000	
Shower	1	ea	1,300.00	1,300	
Lavatory	2	ea	1,440.00	2,880	
Water closet	2	ea	1,750.00	3,500	
Urinal	2	ea	1,800.00	3,600	
Misc. plumbing/conditions at toilet rooms	1	ls	10,000.00	10,000	
SUBTOTAL					41,280

TOTAL - PLUMBING

\$41,280

23 - HVAC

230000 HVAC

Additional supplemental propane unit heaters extended from existing propane gas piping system for the space	1	ls	15,000.00	15,000	
Provide an exhaust air and tempered make up air system to provide 0.75 cfm/sf exhaust air to the space as required by code; the system should be provided a control system to modulate air from 0.05 cfm/sf to maximum code exhaust air flow	7,284	gsf	30.00	218,520	
VRF heating and cooling to break room, unisex HC toilet room and men's toilet room; complete	586	gsf	55.00	32,230	
Existing boiler, piping etc. currently abandoned in place to be removed	1	ls	3,000.00	3,000	
SUBTOTAL					268,750

TOTAL - HVAC

\$268,750

26 - ELECTRICAL

260000 ELECTRICAL

Exterior emergency lights provided at all egress doors	2	ea	2,500.00	5,000	
Exterior wall packs	8	ea	2,000.00	16,000	
New 600 amp, 120/208V, 3 phase 4 wire service	1	ls	30,000.00	30,000	
New illuminated exit signs	3	ea	1,500.00	4,500	
Replacement LED light fixtures and GFCI receptacles	7,870	gsf	7.50	59,025	
The Fire alarm control panel should be upgraded to a new addressable fire alarm control panel, and new notification devices (horn/strobes and strobe-only devices) and actuation devices (pull stations, heat and smoke detectors)	7,870	gsf	3.00	23,610	
Equipment wiring allowance, HVAC	7,870	gsf	1.00	7,870	
Temp power/support/commissioning etc.	7,870	gsf	2.00	15,740	
Demolition	1	ls	3,000.00	3,000	
SUBTOTAL					164,745

TOTAL -ELECTRICAL

\$164,745



Harvard DPW
New Additions/Renovation
Harvard, MA

04-Oct-21

GFA 3,228

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Pole Barn & Garage Storage

GROSS FLOOR AREA CALCULATION

Ground Level 3,228

TOTAL GROSS FLOOR AREA (GFA) 3,228 sf

02 DEMOLITION

024000 DEMOLITION

Demolish existing pole barn in its entirety	2,260	sf	8.00	18,080
Allowance to excavate existing foundations to allow for new structure	2,260	sf	4.00	9,040
SUBTOTAL				\$ 27,120

TOTAL, DIVISION 2 - DEMOLITION \$27,120

03 CONCRETE

Strip Footings	29	CY
Foundation Walls	66	CY
Spread Footings	12	CY
Pilasters	3	CY
Total Foundation Concrete	95	CY

Continuous Footings & Walls

Continuous footings - 26" wide x 18" thick	244	lf		
Formwork	732	sf	15.00	10,980
Re-bar	2,000	lbs.	2.00	4,000
Concrete material	29	cy	140.00	4,060
Placing concrete	29	cy	120.00	3,480
Foundation walls - 4'-0" high	244	lf		
Formwork	1,952	sf	20.00	39,040
Re-bar	1,668	lbs.	2.00	3,336
Concrete material	66	cy	140.00	9,240
Placing concrete	66	cy	120.00	7,920
Form shelf	244	lf	3.30	805

Spread Footings & Piers:

Spread footings at OH door locations				
Formwork	240	sf	16.00	3,840
Re-bar	1,800	lbs.	2.00	3,600
Concrete material	12	cy	140.00	1,680
Placing concrete	12	cy	150.00	1,800
Pilasters	3	cy	750.00	2,250

Lowest Floor Construction

Slab on grade, 6" thick - Building	3,228	sf		
Vapor barrier, heavy duty, 15 mil	3,228	sf	1.00	3,228
WWF reinforcement	3,712	sf	1.50	5,568
Concrete - 6" thick	42	cy	140.00	5,880
Placing concrete	42	cy	120.00	5,040
Finishing and curing concrete	3,228	sf	3.50	11,298
Sawcut control joints	3,228	sf	0.30	968
Slab on grade - Existing		sf		
Patch/Repairs to existing slab on grade		sf	2.00	NR

Miscellaneous

Moisture mitigation additive				assumed not required
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SUBTOTAL 128,013



Harvard DPW
New Additions/Renovation
Harvard, MA

04-Oct-21

GFA 3,228

<i>CSI CODE</i>	<i>DESCRIPTION</i>	<i>QTY</i>	<i>UNIT</i>	<i>UNIT COST</i>	<i>EST'D COST</i>	<i>SUB TOTAL</i>	<i>TOTAL COST</i>
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Pole Barn & Garage Storage

<i>TOTAL - CONCRETE</i>	\$128,013
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Harvard DPW
New Additions/Renovation
Harvard, MA

04-Oct-21

GFA 3,228

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Pole Barn & Garage Storage

04 MASONRY

040001 MASONRY

Exterior Wall

12" thick split face CMU

4,541 sf 32.00 145,312

Staging to exterior wall

4,541 sf 3.00 13,623

Interior Partitions

12" CMU; reinforced

650 sf 34.00 22,100

SUBTOTAL

\$ 181,035

TOTAL, DIVISION 4 - MASONRY

\$181,035

05 METALS

051000 STRUCTURAL STEEL

Floor/Roof Structure

1 1/2" deep Type B x 22 gage galvanized corrugated metal roof deck

3,228 sf 5.00 16,140

Single pitched open web metal joists, 30" x 11#/LF

3,228 sf 15.00 48,420

Galvanized structural steel columns and headers at OH door locations

3.6 tns 8,000.00 28,800

Moment connections

4 ea 300.00 1,200

SUBTOTAL

94,560

055000 Metal Fabrications

Exterior

Miscellaneous metals; lintels, flashings etc.

3,228 gsf 2.00 6,456

Interior

Seismic clips

8 ea 150.00 1,200

Misc. metals to CMU

650 sf 1.00 650

Miscellaneous metals throughout building

3,228 gsf 1.75 5,649

SUBTOTAL

\$ 13,955

TOTAL, DIVISION 5 - METALS

\$108,515

06 - WOOD, PLASTICS AND COMPOSITES

061000 ROUGH CARPENTRY

Rough blocking at exterior door openings

248 lf 4.00 992

Rough blocking at roof

250 lf 16.00 4,000

Miscellaneous wood blocking at interiors

3,228 gsf 0.25 807

SUBTOTAL

5,799

TOTAL - WOOD, PLASTICS AND COMPOSITES

\$5,799



Harvard DPW
New Additions/Renovation
Harvard, MA

04-Oct-21

GFA 3,228

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Pole Barn & Garage Storage

07 THERMAL & MOISTURE PROTECTION

070001 WATERPROOFING, DAMPPROOFING AND CAULKING

Waterproofing at basement slab assumed not required
Waterproofing at basement walls assumed not required

Exterior Walls

Air and vapor barrier 4,541 sf 7.50 34,058
AVB at window and door openings 248 lf 5.00 1,240
Backer rod & double sealant at openings 248 lf 10.00 2,480

Interiors

Miscellaneous sealants throughout building 3,228 gsf 0.50 1,614
Traffic coating 3,000 sf 7.00 21,000

SUBTOTAL 60,392

070002 ROOFING AND FLASHING

Flat Roof

EPDM roof membrane 3,228 sf 9.50 30,666
Insulation; 5 1/2" rigid insulation 3,228 sf 7.00 NR
1/2" density cover board 3,228 sf 3.00 9,684
Vapor barrier 3,228 sf 2.00 6,456
Roof blocking included above

Miscellaneous Roofing

Roof edge 250 lf 30.00 7,500
Gutter /downspouts 171 lf 30.00 5,130
Miscellaneous flashing 3,228 sf 1.00 3,228

SUBTOTAL 62,664

072100 THERMAL INSULATION

2" Rigid insulation + protection board at foundation walls, allo 1,220 sf 2.15 NR
2" Rigid insulation under slab on grade, allow 3,228 sf 2.25 NR
Insulation at window/door openings 248 lf 2.50 620

SUBTOTAL 620

078100 FIREPROOFING & FIRE STOPPING

Fireproofing to floor/roof deck assumed not required
Intumescent paint to exposed beams assumed not required

Fire stopping 1 ls 2,000.00 2,000

SUBTOTAL 2,000

TOTAL, DIVISION 7 - THERMAL AND MOISTURE PROTECTION \$125,676



Harvard DPW
New Additions/Renovation
Harvard, MA

04-Oct-21

GFA 3,228

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Pole Barn & Garage Storage

08 DOORS & WINDOWS

081100 DOORS, FRAMES AND HARDWARE

Exterior Doors

Frame, single

5 ea 450.00 2,250

Flush HM door - single

5 ea 500.00 2,500

Hardware

5 leaf 900.00 4,500

SUBTOTAL

9,250

083300 OVERHEAD DOORS

14' x 13'-4" OH metal motorized door

4 ea 13,063.40 52,254

SUBTOTAL

52,254

089000 FIXED LOUVERS

Aluminum louvers; allowance

1 ls 750.00 750

SUBTOTAL

750

TOTAL, DIVISION 8 - DOORS AND WINDOWS

\$62,254

09 - FINISHES

090005 RESILIENT FLOORS

Resilient Base

310 lf 2.50 NR

SUBTOTAL

-

090007 PAINTING

Finish doors and frames

5 ea 200.00 1,000

Paint to CMU

5,841 sf 2.00 11,682

Paint to exposed structure

3,010 sf 1.50 4,515

Miscellaneous painting/ touch-up

3,228 gsf 0.25 807

SUBTOTAL

18,004

TOTAL - FINISHES

\$18,004

10 - SPECIALTIES

101400 SIGNAGE

Building mounted signage; allowance

1 ls 3,000.00 3,000

Room Signs

1 loc 120.00 120

Other signage/graphics

1 ls 500.00 500

SUBTOTAL

3,620

104400 FIRE EXTINGUISHER CABINETS

Fire extinguisher cabinets

2 ea 350.00 700

SUBTOTAL

700

TOTAL - SPECIALTIES

\$4,320

12 - FURNISHINGS

124810 ENTRANCE MATS

Recessed entry mats & frames

sf 42.00 assumed NR

SUBTOTAL

-

TOTAL - FURNISHINGS



Harvard DPW
New Additions/Renovation
Harvard, MA

04-Oct-21

GFA 3,228

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Pole Barn & Garage Storage

21 - FIRE SUPPRESSION

210000 FIRE PROTECTION

New sprinkler system	3,228	gsf	6.00	NR	
SUBTOTAL					-

TOTAL - FIRE SUPPRESSION

22 - PLUMBING

220000 PLUMBING

Garage drains	1	ls	15,000.00	15,000	
Piping from downspouts to existing storm drainage system	4	loc	5,000.00	20,000	
SUBTOTAL					35,000

TOTAL - PLUMBING \$35,000

23 - HVAC

230000 HVAC

No work in this section		gsf			
SUBTOTAL					-

TOTAL - HVAC

26 - ELECTRICAL

260000 ELECTRICAL

60 amp, 120/208 volt service 3-phase service from the proposed 600 amp service at main building	1	ea	25,000.00	25,000	
A new 60 amp, 120/208 volt 3-phase, main circuit breaker, 24 circuit panel	1	ea	5,000.00	5,000	
Exterior wallpacks with emergency modules at exterior doorways	5	ea	1,200.00	6,000	
LED light fixtures with automatic lighting controls, GFCI receptacles	3,228	gsf	10.00	32,280	
Power to HVAC	3,228	gsf	1.00	3,228	
Equipment wiring allowance, HVAC	3,228	gsf	1.00	3,228	
Temp power/support/commissioning etc.	3,228	gsf	2.00	6,456	
SUBTOTAL					81,192

TOTAL -ELECTRICAL \$81,192



Harvard DPW
New Additions/Renovation
Harvard, MA

04-Oct-21

GFA 3,228

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Pole Barn & Garage Storage

31 - EARTHWORK

312000 EARTHWORK

Strip footings/foundation walls

Excavation	217	cy	11.00	2,387	
Remove off site	217	cy	17.60	3,819	
Backfill with imported material	122	cy	32.00	3,904	
Premium for contaminated soils removal					assumed not required
SOE					assumed not required
Structural fill at unexcavated areas					assumed not required

Column footings

Excavation	13	cy	14.00	182	
Remove off site	13	cy	17.60	229	
Backfill with imported material	1	cy	32.00	32	

Miscellaneous

Gravel fill beneath footings, 6"	13	cy	32.00	416	
<u>Slab on grade</u>					
Gravel base, 8"	80	cy	40.00	3,200	
Compact sub-grade	3,228	sf	0.55	1,775	

SUBTOTAL 15,944

TOTAL - EARTHWORK

\$15,944



CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Sitework

SITEWORK

311000 SITE PREPARATION

Site construction fence/barricades; allowance	900	lf	18.00	16,200	
Site construction fence gates	1	ea	2,500.00	2,500	
Stabilized construction entrance	500	sf	4.00	2,000	
Sawcut existing pavement to allow for new electrical and water to pole barn	500	lf	10.00	5,000	
Remove existing pavement to allow for new electrical and water to pole barn	750	sf	3.00	2,250	
Excavate at backfill subgrade at concrete and bit. pavement locations to allow for new water service	42	cy	40.00	1,680	
Allowance for saw cutting existing asphalt pavement at new pole barn and mechanics service garage	1	ls	3,000.00	3,000	
Miscellaneous demolition of site items	1	ls	5,000.00	5,000	
SUBTOTAL					37,630

312000 EARTHWORK

No work in this section
SUBTOTAL

-

312500 EROSION CONTROL

Silt fence/erosion control, wash bays, stock piles	900	lf	12.00	10,800	
Silt fence maintenance and monitoring	1	ls	1,500.00	1,500	
Drain-Inlet protection	1	ls	2,500.00	2,500	
SUBTOTAL					14,800

TOTAL, DIVISION 31 - EARTHWORK

\$52,430

32 EXTERIOR IMPROVEMENTS

320000 SITE PAVING

Patching after new water and electrical service

gravel base; 12" thick	28	cy	45.00	1,260	
asphalt; 3" thick	83	sy	30.00	2,490	
Restriping allowance	1	ls	1,500.00	1,500	
Generator pad	1	ls	3,000.00	3,000	
SUBTOTAL					8,250

323000 SITE IMPROVEMENTS

Fenced enclosure at propane tank and generator	70	lf	70.00	4,900	
SUBTOTAL					4,900

329000 LANDSCAPING

No work in this section
SUBTOTAL

-

TOTAL, DIVISION 32 - EXTERIOR IMPROVEMENTS

\$13,150



CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Sitework

33 UTILITIES

331000 Water Utilities

New water line to pole barn	125	lf	45.00	5,625		
Water- tee	1	ea	800.00	800		
Water- Valve	1	ea	1,000.00	1,000		
Water- tap existing	1	ea	4,000.00	4,000		
Connect downspout storm water from mechanics service garage to existing storm drainage system including E&B	2	ea	5,000.00	10,000		
Connect downspout storm water from pole barn to existing storm drainage system including E&B	4	ea	5,000.00	20,000		
Water line to pole barn	125	lf	130.00	16,250		
Fire water service from existing well to proposed cistern; allowance	1	ls	15,000.00	15,000		
15,000 gal cistern from well source water to supply proposed sprinkler system	1	ls	160,000.00	160,000		
50 HP Fire pump including electrical connections	1	ls	90,000.00	90,000		
SUBTOTAL					\$	322,675

333000 Sanitary Sewerage

Tight tank, assumed removal and replacement of existing unit	1	ls	40,000.00	40,000		
SUBTOTAL					\$	40,000

334000 Stormwater Utilities

Work carried with each breakout						
SUBTOTAL					\$	-

337000 Electrical Utilities

All work carried within separate breakouts						
SUBTOTAL					\$	-

TOTAL, DIVISION 33 - UTILITIES						\$362,675
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TRADE SUBTOTAL SITEWORK

\$428,255



Harvard DPW
CSI SUMMARY
Harvard, MA

04-Oct-21

GFA (190)

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Eliminate Female Locker and Storage Room Scope

GROSS FLOOR AREA CALCULATION

Female Locker Room and Supply Storage (190)

TOTAL GROSS FLOOR AREA (GFA) (190) sf

02 DEMOLITION

024000 DEMOLITION

Demolish existing connector in its entirety	(190)	sf	8.00	(1,520)
Allowance to excavate existing foundations to allow for new structure	(190)	sf	4.00	(760)
SUBTOTAL				\$ (2,280)

TOTAL, DIVISION 2 - DEMOLITION (\$2,280)

03 CONCRETE

Strip Footings	2	CY
Foundation Walls	6	CY
Total Foundation Concrete	8	CY

Continuous Footings & Walls

Continuous footings - 26" wide x 18" thick	13	lf		
Formwork	39	sf	15.00	585
Re-bar	107	lbs.	2.00	214
Concrete material	2	cy	140.00	280
Placing concrete	2	cy	120.00	240
Foundation walls - 4'-0" high	13	lf		
Formwork	104	sf	20.00	2,080
Re-bar	90	lbs.	2.00	180
Concrete material	6	cy	140.00	840
Placing concrete	6	cy	120.00	720
Form shelf	13	lf	3.30	43

Spread Footings & Piers:

No work in this section

Lowest Floor Construction

Slab on grade, 6" thick - Building	(190)	sf		
Vapor barrier, heavy duty, 15 mil	(190)	sf	1.00	(190)
WWF reinforcement	(219)	sf	1.50	(329)
Concrete - 6" thick	(2)	cy	140.00	(280)
Placing concrete	(2)	cy	120.00	(240)
Finishing and curing concrete	(190)	sf	3.50	(665)
Slab on grade - Existing		sf		
Patch/Repairs to existing slab on grade		sf	2.00	NR

Miscellaneous

Moisture mitigation additive			med not required	
SUBTOTAL				3,478

TOTAL - CONCRETE \$3,478

04 MASONRY

040001 MASONRY

Exterior Wall

3-5/8" thick split face veneer	175	sf	38.00	6,650
10" CMU backup wall	175	sf	30.00	5,250



Harvard DPW
CSI SUMMARY
Harvard, MA

04-Oct-21

GFA (190)

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Eliminate Female Locker and Storage Room Scope

Flashings at exterior masonry	175	sf	0.50	88		
Staging to exterior wall	175	sf	3.00	525		
<u>Interior Partitions</u>						
10" CMU	(546)	sf	30.00	(16,380)		
SUBTOTAL					\$	(3,867)

TOTAL, DIVISION 4 - MASONRY (\$3,867)

05 METALS

051000 STRUCTURAL STEEL

<u>Floor/Roof Structure</u>						
1 1/2" deep Type B x 18 gage galvanized corrugated metal roof deck	(190)	sf	5.00	(950)		
Allowance to support roof hanging mechanical units per narrative	1	ls	(922.33)	(922)		
Double pitched open web metal joists, 20" deep x 15#/LF	(190)	sf	20.00	(3,800)		
SUBTOTAL						(5,672)

055000 Metal Fabrications

<u>Exterior</u>						
Miscellaneous metals; lintels, flashings etc.	175	sf	2.00	350		
<u>Interior</u>						
Seismic clips	(10)	ea	150.00	(1,500)		
Misc. metals to CMU	(546)	sf	1.00	(546)		
Miscellaneous metals throughout building	(190)	gsf	1.75	(333)		
SUBTOTAL					\$	(2,029)

TOTAL, DIVISION 5 - METALS (\$7,701)

06 - WOOD, PLASTICS AND COMPOSITES

061000 ROUGH CARPENTRY

Rough blocking at roof	13	lf	16.00	208		
Wood blocking at interior openings	(34)	lf	4.00	(136)		
Miscellaneous wood blocking at interiors	(190)	gsf	1.00	(190)		
SUBTOTAL						(118)

TOTAL - WOOD, PLASTICS AND COMPOSITES (\$118)

07 THERMAL & MOISTURE PROTECTION

070001 WATERPROOFING, DAMPPROOFING AND CAULKING

<u>Exterior Walls</u>						
Air and vapor barrier	175	sf	7.50	1,313		
<u>Interiors</u>						
Backer rod & double sealant at interior doors	(34)	lf	2.50	(85)		
Miscellaneous sealants throughout building	(190)	gsf	1.00	(190)		
SUBTOTAL						1,038

070002 ROOFING AND FLASHING

<u>Flat Roof</u>						
EPDM roof membrane	(190)	sf	9.50	(1,805)		
Insulation; 5 1/2" rigid insulation	(190)	sf	7.00	(1,330)		
Premium for tapered insulation	(190)	sf	1.00	(190)		
1/2" density cover board	(190)	sf	3.00	(570)		
Vapor barrier	(190)	sf	2.00	(380)		
Roof blocking					included above	
<u>Miscellaneous Roofing</u>						



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GFA (190)

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Eliminate Female Locker and Storage Room Scope

121	Roof edge	13	lf	30.00	390		
122	Miscellaneous flashing	(190)	sf	1.00	(190)		
123	SUBTOTAL					(4,075)	
124							
125	072100 THERMAL INSULATION						
126	2" Rigid insulation + protection board at foundation walls, allo	65	sf	2.15	NR		
127	3" Rigid insulation at exterior closure	175	sf	3.00	525		
128	Insulation at roof				included with roofing		
129	SUBTOTAL					525	
130							
131	TOTAL, DIVISION 7 - THERMAL AND MOISTURE PROTECTION						(\$2,512)
132							
133							
134	08 DOORS & WINDOWS						
135							
136	081100 DOORS, FRAMES AND HARDWARE						
137							
138	Interior Doors						
139	Frame, single	(2)	ea	300.00	(600)		
140	HM door - single	(2)	ea	350.00	(700)		
141	Hardware	(2)	leaf	750.00	(1,500)		
142	SUBTOTAL					(2,800)	
143							
144	TOTAL, DIVISION 8 - DOORS AND WINDOWS						(\$2,800)
145							
146							
147	09 - FINISHES						
148							
149	090003 ACT						
150	2' x 4' ACT	(146)	sf	6.50	(949)		
151	SUBTOTAL					(949)	
152							
153	090007 PAINTING						
154	Finish doors and frames	(2)	ea	200.00	(400)		
155	Paint to CMU	(917)	sf	2.00	(1,834)		
156	Miscellaneous painting/ touch-up	(190)	gsf	0.25	(48)		
157	SUBTOTAL					(2,282)	
158							
159	096723 RESINOUS FLOORING						
160	Epoxy flooring with integral base	(146)	sf	16.00	(2,336)		
161	SUBTOTAL					(2,336)	
162							
163	TOTAL - FINISHES						(\$5,567)
164							
165							
166	10 - SPECIALTIES						
167							
168	101400 SIGNAGE						
169	Room Signs	(2)	loc	120.00	(240)		
170	SUBTOTAL					(240)	
171							
172	105100 LOCKERS						
173	Lockers; assumed single tier metal	(5)	ea	700.00	(3,500)		
174	Benches	(5)	lf	90.00	(450)		
175	SUBTOTAL					(3,950)	
176							
177	TOTAL - SPECIALTIES						(\$4,190)
178							
179							
180	21 - FIRE SUPPRESSION						
181							
182	210000 FIRE PROTECTION						



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Harvard, MA

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GFA (190)

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Eliminate Female Locker and Storage Room Scope

New wet sprinkler system (Fire pump and cistern with site); allowance (190) gsf 6.00 (1,140)

SUBTOTAL (1,140)

TOTAL - FIRE SUPPRESSION (\$1,140)

23 - HVAC

230000 HVAC

VRF heating and cooling consisting of an outdoor heat pump interconnected by insulated refrigerant piping to ductless wall mounted units in space, energy recovery unit to provide ventilation/exhaust to each space in accordance with applicable codes and electric supplemental heat in bathrooms/entries (190) gsf 55.00 (10,450)

(10,450)

TOTAL - HVAC (\$10,450)

26 - ELECTRICAL

260000 ELECTRICAL

LED light fixtures with automatic lighting controls and GFCI receptacles (190) gsf 10.00 (1,900)

New addressable fire alarm control panel, and new notification devices (horn/strobes and strobe-only devices) and actuation devices (pull stations, heat and smoke detectors) (190) gsf 3.00 (570)

Equipment wiring allowance, HVAC (190) gsf 1.00 (190)

Temp power/support/commisioning etc. (190) gsf 2.00 (380)

SUBTOTAL (3,040)

TOTAL - ELECTRICAL (\$3,040)

31 - EARTHWORK

312000 EARTHWORK

Strip footings/foundation walls

Excavation 12 cy 11.00 132

Remove off site 12 cy 17.60 211

Backfill with imported material 4 cy 32.00 128

Premium for contaminated soils removal assumed not required

SOE assumed not required

Structural fill at unexcavated areas assumed not required

Miscellaneous

Gravel fill beneath footings, 6" 1 cy 32.00 32

Slab on grade

Gravel base, 8" (5) cy 40.00 (200)

Compact sub-grade (190) sf 0.55 (105)

SUBTOTAL 198

TOTAL - EARTHWORK \$198

TOTAL - FEMALE LOCKER ROOM & SUPPLY STORAGE ALTERNATE (without markups) (\$39,989)



CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Eliminate 6 Bay Storage Garage Scope

GROSS FLOOR AREA CALCULATION

Ground Level (Not including Men;s Toilet room) (7,748)

TOTAL GROSS FLOOR AREA (GFA) (7,748) sf

02 DEMOLITION

024000 DEMOLITION

Remove existing deteriorated traffic coating	(6,605)	sf	2.00	(13,210)	
Remove existing doors, single	(5)	ea	150.00	(750)	
Remove existing doors, single exterior	(3)	ea	150.00	(450)	
Remove existing SOG at vehicle storage garage to lower area	60	sf	25.00	1,500	
Miscellaneous demolition/ protect existing finishes	(7,748)	gsf	1.00	(7,748)	
SUBTOTAL					(20,658)

TOTAL, DIVISION 2 - DEMOLITION (\$20,658)

03 CONCRETE

Lowest Floor Construction

Slab on grade, 6" thick infill at corridor	60	sf			
Vapor barrier, heavy duty, 15 mil	60	sf	1.00	w/ base estimate	
WWF reinforcement	69	sf	1.50	w/ base estimate	
Concrete - 6" thick	1	cy	140.00	w/ base estimate	
Placing concrete	1	cy	120.00	w/ base estimate	
Finishing and curing concrete	60	sf	3.50	w/ base estimate	
Slab on grade - Existing		sf			
Patch/Repairs to existing slab on grade; allowance	(6,973)	sf	2.00	(13,946)	
Underpinning					
Underpinning of extg masonry bearing wall foundations around perimeter of corridor, assumed by hand with confined space	40	lf	1,500.00	w/ base estimate	
SUBTOTAL					(13,946)

TOTAL - CONCRETE (\$13,946)

04 MASONRY

040001 MASONRY

Exterior Wall					
Repairs to existing exterior masonry		sf		NR	
Interior Partitions					
Infill walls at storage garage; assumed 10" CMU	(325)	sf	48.00	(15,600)	
SUBTOTAL					(15,600)

TOTAL, DIVISION 4 - MASONRY (\$15,600)



Harvard DPW
New Additions/Renovation
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GFA (7,748)

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Eliminate 6 Bay Storage Garage Scope

05 METALS

051000 STRUCTURAL STEEL

Floor/Roof Structure

Allowance to reinforce existing openings in walls and roof per narrative

(1) ls 10,000.00 (10,000)

SUBTOTAL

(10,000)

055000 Metal Fabrications

Interior

Ramp handrails

44 lf 150.00 w/ base estimate

Seismic clips

(11) ea 150.00 (1,650)

Misc. metals to CMU

(325) sf 1.00 (325)

Miscellaneous metals throughout building

(301) gsf 1.75 (527)

SUBTOTAL

\$ (2,502)

TOTAL, DIVISION 5 - METALS

(\$12,502)

06 - WOOD, PLASTICS AND COMPOSITES

061000 ROUGH CARPENTRY

Wood blocking at interior and exterior openings

(68) lf 4.00 (272)

Miscellaneous wood blocking at interiors

(301) gsf 0.25 (75)

SUBTOTAL

(347)

TOTAL - WOOD, PLASTICS AND COMPOSITES

(\$347)

07 THERMAL & MOISTURE PROTECTION

070001 WATERPROOFING, DAMPPROOFING AND CAULKING

Backer rod & double sealant at doors

(68) lf 2.50 (170)

Miscellaneous sealants throughout building

(301) gsf 1.00 (301)

Floor prep at existing vehicle storage garage

(6,605) sf 1.00 (6,605)

Traffic coating

(6,605) sf 7.00 (46,235)

SUBTOTAL

(53,311)

070002 ROOFING AND FLASHING

Miscellaneous repairs to roofing including at HVAC work; allowance

(1) ls 10,000.00 (10,000)

SUBTOTAL

(10,000)

072100 THERMAL INSULATION

Insulation at window/door openings

lf 2.50 NR

SUBTOTAL

-

078100 FIREPROOFING & FIRE STOPPING

Fireproofing to floor/roof deck

assumed not required

Intumescent paint to exposed beams

assumed not required

SUBTOTAL

-

TOTAL, DIVISION 7 - THERMAL AND MOISTURE PROTECTION

(\$63,311)



Harvard DPW
New Additions/Renovation
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GFA (7,748)

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Eliminate 6 Bay Storage Garage Scope

08 DOORS & WINDOWS

081100 DOORS, FRAMES AND HARDWARE

Exterior Doors

Frame, single	ea	450.00	NR	
Flush HM door - single	ea	500.00	NR	
Hardware	leaf	900.00	NR	

Interior Doors

Frame, single	(4)	ea	300.00	(1,200)	
HM door - single	(4)	ea	350.00	(1,400)	
Hardware	(4)	leaf	750.00	(3,000)	
SUBTOTAL					(5,600)

083000 ACCESS DOORS

Access doors	(1)	ls	750.00	(750)	
SUBTOTAL					(750)

TOTAL, DIVISION 8 - DOORS AND WINDOWS

(\$6,350)

09 - FINISHES

090003 ACT

2' x 4' ACT	(85)	sf	6.50	NR	
SUBTOTAL					-

090005 RESILIENT FLOORS

Ramp rubber flooring	(95)	sf	12.00	NR	
SUBTOTAL					-

090007 PAINTING

Finish doors and frames	(4)	ea	200.00	(800)	
Prime and paint to existing CMU	(8,040)	sf	2.00	(16,080)	
Paint to exposed structure	(305)	sf	1.50	(458)	
Miscellaneous painting/ touch-up	(7,748)	gsf	0.25	(1,937)	
SUBTOTAL					(19,275)

096723 RESINOUS FLOORING

Epoxy flooring with integral base	(122)	sf	16.00	(1,952)	
SUBTOTAL					(1,952)

TOTAL - FINISHES

(\$21,227)



Harvard DPW
New Additions/Renovation
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GFA (7,748)

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Eliminate 6 Bay Storage Garage Scope

10 - SPECIALTIES

101400 SIGNAGE

Room Signs	(3)	loc	120.00	(360)	
Other signage/graphics	(1)	ls	750.00	(750)	
SUBTOTAL					(1,110)

102600 WALL PROTECTION

Corner guards/Wall protection; allowance	(7,748)	gsf	0.20	(1,550)	
SUBTOTAL					(1,550)

102800 TOILET ACCESSORIES

Gang bathroom; includes electric handryers	(1)	rms	2,500.00	(2,500)	
Shower accessories including curtain and rod, seat and grab bars	(1)	ea	1,000.00	(1,000)	
SUBTOTAL					(3,500)

104400 FIRE EXTINGUISHER CABINETS

Fire extinguisher cabinets	(2)	ea	350.00	(700)	
SUBTOTAL					(700)

TOTAL - SPECIALTIES (\$6,860)

12 - FURNISHINGS

124810 ENTRANCE MATS

Recessed entry mats & frames		sf	42.00	assumed NR	
SUBTOTAL					-

TOTAL - FURNISHINGS

21 - FIRE SUPPRESSION

210000 FIRE PROTECTION

New dry sprinkler system (Fire pump and cistern with site); allowance	7,748	gsf	6.00	w/ base estimate	
SUBTOTAL					-

TOTAL - FIRE SUPPRESSION



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GFA (7,748)

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Eliminate 6 Bay Storage Garage Scope

22 - PLUMBING

220000 PLUMBING

Remove existing non code compliant plumbing fixtures and accessories	(1)	rms	2,000.00	(2,000)	
New hot water heater including piping	(1)	ea	16,000.00	(16,000)	
Lavatory	(1)	ea	1,440.00	(1,440)	
Water closet	(1)	ea	1,750.00	(1,750)	
Misc. plumbing/conditions at toilet rooms	(1)	ls	5,000.00	(5,000)	
SUBTOTAL					(26,190)

TOTAL - PLUMBING (\$26,190)

23 - HVAC

230000 HVAC

Additional supplemental propane unit heaters extended from existing propane gas piping system for the space	(1)	ls	15,000.00	(15,000)	
Provide an exhaust air and tempered make up air system to provide 0.75 cfm/sf exhaust air to the space as required by code; the system should be provided a control system to modulate air from 0.05 cfm/sf to maximum code exhaust air flow	(7,631)	gsf	30.00	(228,930)	
VRF heating and cooling to unisex HC toilet; complete	(117)	gsf	55.00	(6,435)	
SUBTOTAL					(250,365)

TOTAL - HVAC (\$250,365)

26 - ELECTRICAL

260000 ELECTRICAL

Exterior emergency lights provided at all egress doors	(2)	ea	2,500.00	(5,000)	
Exterior wall packs	(8)	ea	2,000.00	(16,000)	
New 600 amp, 120/208V, 3 phase 4 wire service	(1)	ls	30,000.00	(30,000)	
New illuminated exit signs	(3)	ea	1,500.00	(4,500)	
Replacement LED light fixtures and GFCI receptacles	(7,748)	gsf	7.50	(58,110)	
The Fire alarm control panel should be upgraded to a new addressable fire alarm control panel, and new notification devices (horn/strobes and strobe-only devices) and actuation devices (pull stations, heat and smoke detectors)	(7,748)	gsf	3.00	(23,244)	
Equipment wiring allowance, HVAC	(7,748)	gsf	1.00	(7,748)	
Temp power/support/commissioning etc.	(7,748)	gsf	2.00	(15,496)	
Demolition	(1)	ls	3,000.00	(3,000)	
SUBTOTAL					(163,098)

TOTAL -ELECTRICAL (\$163,098)

TOTAL - SIX BAY STORAGE GARAGE ALTERNATE (without markups) (\$600,454)



CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Eliminate Break Room Scope

GROSS FLOOR AREA CALCULATION

Break Room 347

TOTAL GROSS FLOOR AREA (GFA) 347 sf

23 - HVAC

230000 HVAC

VRF heating and cooling to break room, unisex HC toilet
room and men's toilet room; complete

(347) gsf 55.00 (19,085)

SUBTOTAL (19,085)

TOTAL - HVAC (\$19,085)

26 - ELECTRICAL

260000 ELECTRICAL

Equipment wiring allowance, HVAC

(347) gsf 1.00 (347)

Temp power/support/commissioning etc.

(347) gsf 2.00 (694)

SUBTOTAL (1,041)

TOTAL -ELECTRICAL (\$1,041)

TOTAL - BREAK ROOM ALTERNATE (without markups) (\$20,126)



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Eliminate Men's Toilet Room Scope

04 MASONRY

040001 MASONRY

Interior Partitions

Infill walls ; assumed 10" CMU

(87) sf 48.00 (4,176)
\$ (4,176)

SUBTOTAL

TOTAL, DIVISION 4 - MASONRY (\$4,176)

06 - WOOD, PLASTICS AND COMPOSITES

061000 ROUGH CARPENTRY

Wood blocking at interior and exterior openings

(17) lf 4.00 (68)
(68)

SUBTOTAL

TOTAL - WOOD, PLASTICS AND COMPOSITES (\$68)

07 THERMAL & MOISTURE PROTECTION

070001 WATERPROOFING, DAMPPROOFING AND CAULKING

Backer rod & double sealant at doors

(17) lf 2.50 (43)
(43)

SUBTOTAL

TOTAL, DIVISION 7 - THERMAL AND MOISTURE PROTECTION (\$43)

08 DOORS & WINDOWS

081100 DOORS, FRAMES AND HARDWARE

Interior Doors

Frame, single

(1) ea 300.00 (300)

HM door - single

(1) ea 350.00 (350)

Hardware

(1) leaf 750.00 (750)

SUBTOTAL

(1,400)

TOTAL, DIVISION 8 - DOORS AND WINDOWS (\$1,400)

09 - FINISHES

090007 PAINTING

Finish doors and frames

(1) ea 200.00 (200)

SUBTOTAL

(200)

096723 RESINOUS FLOORING

Epoxy flooring with integral base

(122) sf 16.00 (1,952)

SUBTOTAL

(1,952)

TOTAL - FINISHES (\$2,152)

10 - SPECIALTIES

101400 SIGNAGE

Room Signs

(1) loc 120.00 (120)

SUBTOTAL

(120)

102110 TOILET COMPARTMENTS

ADA

(1) ea 1,600.00 (1,600)



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Eliminate Men's Toilet Room Scope

Urinal screens (2) ea 650.00 (1,300)
SUBTOTAL (2,900)

102800 TOILET ACCESSORIES

Gang bathroom; includes electric handdryers (1) rms 2,500.00 NR
SUBTOTAL -

TOTAL - SPECIALTIES (\$3,020)

22 - PLUMBING

220000 PLUMBING

Remove existing non code compliant plumbing fixtures and accessories (1) rms 2,000.00 (2,000)
Lavatory (1) ea 1,440.00 (1,440)
Water closet (1) ea 1,750.00 (1,750)
Urinal (2) ea 1,800.00 (3,600)
Misc. plumbing/conditions at toilet rooms (122) sf 10.00 (1,220)
SUBTOTAL (10,010)

TOTAL - PLUMBING (\$10,010)

23 - HVAC

230000 HVAC

VRF heating and cooling to break room, unisex HC toilet room and men's toilet room (122) gsf 55.00 (6,710)
SUBTOTAL (6,710)

TOTAL - HVAC (\$6,710)

26 - ELECTRICAL

260000 ELECTRICAL

Replacement LED light fixtures and GFCI receptacles (122) gsf 7.50 (915)
Demolition 1 ls 3,000.00 3,000
SUBTOTAL 2,085

TOTAL - ELECTRICAL \$2,085

TOTAL - MEN'S TOILET ROOM ALTERNATE (without markups) (\$27,579)



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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Eliminate Mech Room Scope

23 - HVAC

230000 HVAC

Existing boiler, piping etc. currently abandoned in place to be removed

(1)

ls

3,000.00

(3,000)

SUBTOTAL

(3,000)

TOTAL - HVAC (\$3,000)

TOTAL - MECHANICAL ROOM ALTERNATE (without markups) (\$3,000)