

TOWN OF DEERFIELD
FACILITIES CONDITION ASSESSMENT
OF
TOWN BUILDINGS

**Department of
Public Works**



Gorman Richardson Lewis Architects

239 South Street
Hopkinton, MA 01748
(508) 544-2600

grlarchitects.com



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Executive Summary

The following Executive Summary provides a high-level commentary regarding the **Deerfield Public Works Garage** addressing the physical condition and functional adequacy of the existing building (based upon the detailed findings in the report) and recommendations for action. A general summary of the overall description of the assessment content, contributing engineers and consultants, list of buildings studies, methodology and organization follows thereafter.

DPW Commentary

Observations of the existing building, building systems (structural, MEP/FP) and adjacent site, as well as input from occupants/ users of the building, revealed that the DPW Garage has a number of physical deficiencies and 2 limited functional deficiencies.

Physical deficiencies include:

Interior Finishes:

- Damaged gypsum wallboard due to water infiltration from building envelope.

Building Envelope:

- Deterioration of roof membrane system installed in 2014.
- Deterioration of window perimeter sealant.
- Damage to exterior bollards

Mechanical/ Electrical/ Plumbing/ Fire Protection:

- Mechanical:
 - One of the two boilers was lock-out. Reason undetermined.
- Electrical:
 - Light fixtures to be replaced with more efficient LED type;

Structural:

- No structural issues were observed.

Code:

- No code issues were observed.

Hazardous Materials:

- Confirm compliance with limitations of flammable liquids at the maintenance bay.

Two **functional deficiencies** were noted by the DPW Director, including:

- Office areas and Lunchroom are too small for current staff, which will be exacerbated by an increase of staff over time.
- Insufficient general storage; required to use Women’s Room for general storage.

The following is a summary of the **2 approaches** to address the deficiencies as noted in the Commentary section of the Architectural (Interior) report, including the benefits and limitations of each approach and a final recommendation.

| Option | Description | Benefits | Limitations | Recommendation |
|--------|---|--|--|--|
| 1 | Implement scheduled maintenance program for all equipment and interior finishes. And address current physical deficiencies noted in the matrices. | <ul style="list-style-type: none"> • Improve the service life of the building, building systems and building envelope (exterior); • Improve the safety and comfort of all occupants , both staff and public; | <ul style="list-style-type: none"> • None | <p>Recommended:</p> <ul style="list-style-type: none"> • Maintains integrity of building. |
| 2 | Plan and implement a future addition to the Administrative Area (Offices and Lunchroom) to accommodate increase of staff over time. | <ul style="list-style-type: none"> • Improves current and future space needs with addition. | <ul style="list-style-type: none"> • None | <p>Recommended for future:</p> <ul style="list-style-type: none"> • Provides needed space for the growth of the Department |

General Summary

Gorman Richardson Lewis Architects and our consultants were retained by the Town of Deerfield to provide a comprehensive study of 5 Town-owned buildings with the goal to provide key information for each building outlining the condition of:

- Site and Landscape Elements
- Architectural Elements / Building Envelope Elements
- Structural Components
- Mechanical, Plumbing, Electrical and Fire Protection Systems
- Hazardous Materials
- Accessibility / Code Compliance

This Final Report will include summaries of each building for the disciplines noted above, prioritization of the recommended repairs or replacement of any element or system and estimated costs for each characterized by level of timeliness of the improvement(s): immediate (0 to 12 months), short term (1 to 3 years), medium term (4 to 10 years), and long term (11 to 20+ years) as a basis to assist the town in its planning for capital improvements.

The architectural / engineering team consists of:

- Gorman Richardson Lewis Architects – Architecture and Building Envelope, Site, Landscape, Hazmat, Cost Estimating
- RRC Engineering – Structural
- Garcia/Galuska/DeSousa Consulting Engineers – Mechanical, Plumbing, Electrical, Fire Protection Systems

The Town-owned buildings addressed in the Report include:

| | Building | Location | Bldg. Sq Footage | Year Built | Year Renovated | Additions |
|---|--------------------------------------|-----------------|------------------|------------|----------------|--------------------------|
| 1 | Municipal Office Building - Police | 8 Conway Street | 12,046 SF | 1950 | 1993 | 1996 Police Dept |
| 2 | Municipal Office Building - Police | 8 Conway Street | 4,375 SF | 1950 | - | 1996 Police Dept |
| 3 | Old Grammar School Building - Senior | 67 North Main | 8,990 SF | 1888 | 1960s - 1970s | - |
| 4 | Public Works Garage | 9 Merrigan Way | 13,392 SF | 2014 | - | - |
| 5 | Congregational Church | 71 North Main | 13,065 SF | 1821 | 1990 & | 1960 Kitchen and Meeting |

Methodology

During the months of March and May, 2020, GRLA and our consultants visited the **Police Department** on multiple occasions and made visual observations of the condition of the interior architecture of the building, including walls, ceilings, flooring, doors, windows/glazing, casework/furnishings, miscellaneous equipment, mechanical-electrical-plumbing finish components and fixtures, as well as code issues regarding building code and accessibility code and to assess the presence of suspected hazardous materials. In addition, a visual structural survey was undertaken to identify any significant structural issues or deficiencies.

Information gathering, field notes, and photography for this section of the Conditions Assessment Report were accomplished using Microsoft Teams to access floor plans on site, Microsoft Excel for recording field notes, PDF Viewer for annotating floor plans, and iPhone camera and Samsung Gear 360 for photos.

Condition Assessment Matrix

The objective of the Condition Assessment Matrix included in each section of the Report, is to provide a detailed summary of each condition/deficiency observed regarding the aforementioned disciplines for each building, a level of priority as to when the condition should be addressed, a time-range relating to the remaining service life of the item, a commentary describing action (if any) to be taken, an approximate quantity and an estimate of cost to implement the recommended action:

- **Issue #:** Each observed condition is assigned an issue number relating to the floor level where it is located (*e.g.*: 1F-17 = First Floor – Item 17).
- **Discipline:** one of the 5 primary areas of concentration:
 - Site/ Civil
 - Architecture
 - Building Envelope
 - Structural
 - Mechanical-Electrical-Plumbing-Fire Protection (MEP/FP)
- **Room Name:** Specific room or area where the item is located in the building floor plan.
- **System/ Component:** one of the 22 categories describing the type of building component being addressed (wall, ceiling, flooring, etc.)
- **Existing Description:** detailed description of each observation.

- **Photo #:** address of photo pertaining to the specific issue.
- **Commentary/ Proposed Work:** Recommended action to be taken (if any).
- **Quantity:** quantity of the component/ system to be addressed and acted upon (*e.g.: 7,500 sf, 1 LS (Lump Sum), etc.*), used as a basis for the cost estimate.
- **Unit:** unit of quantity (each, square feet, etc.)
- **Repair/ Replace Priority: 0-11 months/ 1-5 yrs/ 5-10 yrs/ 11-20 yrs:** level of priority for addressing each condition with estimate of anticipated construction cost to implement the recommended action within the timeframe relating to the level of priority (including Contractors' General Conditions, fees, etc. and escalation factors relative to 2020 dollars).

GRLA and our consultants want to thank the Town of Deerfield for the opportunity to work with you on this Town Building Assessment. After having reviewed the information and findings herein, please contact us with any questions or follow-up information required.

Sincerely,

GORMAN RICHARDSON LEWIS ARCHITECTS, INC.



Scott Richardson, AIA, LEED AP
Principal

DPW - Total Estimated Costs

| Discipline | Cost Estimate | | | |
|-------------------|----------------|-----------------|-----------------|-----------------|
| | 1 yr | 5 yr | 10 yr | 20 yr |
| Architecture | \$0 | \$32,900 | \$18,000 | \$30,400 |
| Building Envelope | \$4,000 | \$3,000 | \$10,000 | \$0 |
| MEP/FP/Hazmat | TBD | \$0 | TBD | TBD |
| Structural | \$0 | \$0 | \$0 | \$0 |
| Site & Landscape | \$0 | \$6,000 | \$0 | \$0 |
| | \$4,000 | \$41,900 | \$28,000 | \$30,400 |

Building Summary / Narratives

Facilities Condition Assessment Narrative

Building Summary

Deerfield Department of Public Works Garage

Address: 9 Merrigan Way, Deerfield, MA 01373
 Constructed: 2014
 Renovations: N/A
 2020 Assessed Value: \$999,200
 (Building Only)

Building Characteristics

Gross Floor Area:
 First Floor: 13,567 gsf
 Mezzanine: 671 gsf
 Total Building Area: 14,238 gsf

780 CMR Mass. Building Code:

Use Group Classification: B (Business-Civic Administration)
 S-2 (Vehicle Garaging)
 S-1 (Vehicle Repair)

Construction Type: II-B

Building Envelope: *(see Building Envelope Section for more detailed information)*

Exterior Wall Assembly: Concrete Block
 Windows: Aluminum Storefront
 Roofing: Johns Manville SBS Roofing System

HVAC: *(see MEP/FP Section for more detailed information)*

Heating Fuel: Natural gas

Fire Protection: Fully sprinkled with a wet system and dry system



Architecture – Interior

OVERVIEW

In this section of the Facilities Condition Assessment Report, Gorman Richardson Lewis Architects (GRLA) presents a summary of observations regarding the condition of the interior architecture of the **Deerfield Department of Public Works Garage** including commentary and recommendations for action to be taken. These observations of the interior architecture are organized according to the following “categories” in order to address the various components, systems and issues comprising the existing condition of the **Deerfield Department of Public Works Garage** Interior:

1. General
2. Floors
3. Walls
4. Doors
5. Windows
6. Casework/ Furnishings
7. Ceilings
8. Equipment
9. Electrical/ Lighting Fixtures
10. Mechanical Fixtures
11. Plumbing Fixtures
12. Code Issues
13. Hazardous Materials

Built in 2014, the **Deerfield Department of Public Works Garage** is situated on Merrigan Way in South Deerfield. The building is comprised of one main level with an open mezzanine level within the maintenance bay area providing storage space as well as access to the rooftop. The Deerfield DPW building has been able to meet the current needs of the DPW but administrative space for additional staff has become an issue for future growth and expansion. Currently there is not sufficient space to accommodate additional staff. After talking with DPW personnel it has become apparent that they lack the necessary storage space and have needed to use the currently unoccupied women’s locker room as additional storage space. If / when they take on a female employee they will be required to relocate all stored items to other locations throughout the DPW, which there is currently no space available elsewhere. The DPW building is also currently experiencing problems with the roofing membrane, which is discussed in depth in the Building Envelope section of this report.

OBSERVATIONS

First Floor (see floor plan included in the Appendix of this report):

- Specific conditions are noted in the Conditions Summary Matrix included in this report, but a general summary can be described as follows:
 - **Vestibule [100]** is the main entryway for both the public and DPW staff to enter and exit building. Being an entrance that is used often it has experienced the most foot traffic throughout the building. The walking path within the Vestibule is a walk off foot grille which is in need of being replaced as it is currently falling off the insert as well as the members bow at the center when enough weight is applied. 12 x 12 VCT continues to the extent of the vestibule and are in good condition. The exterior as well as the interior doors are both 3' wide aluminum doors with full vision panels, exit device, locking mechanism, card reader, and door handle, all in good condition. The two exterior walls are aluminum storefront systems in good condition. The interior walls are painted gypsum wallboard in good condition with typical scuffs and dirt. The ceiling is a painted gypsum wallboard in good condition. The vestibule serves its purpose as the main entryway with the expected scuffs of a DPW vestibule; replacing the walk off mat should be considered in the near future.
 - **Highway Office [101]** is intended to be used by three occupants, but is only able to fit two comfortably. The flooring consists of 12 x 12 VTC typical of the building in good condition. The walls are painted gypsum wallboard with a minor crack but overall, in good condition. The windows are a matching aluminum storefront system – comparable to the one seen in the vestibule – and includes a single operable window. The door entering into the office is a 3' wide solid wood door with a square vision panel, door handle hardware, kick plate, door stopper, and door locking mechanism in good condition. The ceiling consists of 24 x 24 acoustical ceiling tiles standard throughout the building and in good condition.
 - **Foremen's Office [102]** is office space used by the employees of the DPW building. The flooring consists of 12 x 12 VTC typical of the building in good condition. The walls are painted gypsum wallboard in good condition. The windows are a matching aluminum storefront system and consisting of one operable window. The door entering into the office is a 3' wide solid wood door with a square vision panel, door handle hardware, kick plate, door stopper, and door locking mechanism in good condition. The ceiling consists of 24 x 24 acoustical ceiling tiles standard throughout the building and in good condition.
 - **Conference / Lunchroom [103]** is currently not large enough to occupy all employees of the DPW at the same time. Therefore, some members of the department are forced to stand in order to attend meetings, and in the case of numerous employees taking their lunch break at the same time there is not enough room throughout the space. The flooring is 12 x 12 VCT typical of the DPW in good condition. The walls are painted gypsum wallboard in good condition with the exception of the corner next to the exterior door which was chipped paint due to water exposure. The exterior door is a 3' wide steel door with full vision panel, door push bar, locking mechanism, card reader, and door handle all in good

condition. The interior door from the corridor is a 3' wide wood door with a square vision panel, door handle, kick plate, door stopper, and door locking mechanism all in good condition. The windows are the steel window system seen in the neighboring offices, featuring one operable window in good condition. The ceiling is 24 x 24 acoustical ceiling tiles in good condition with the exception of the following tiles. Above the chipping paint is the current water infiltration in which the ceiling tile has been water stained. Also the ceiling tiles around the HVAC supply / return vents are dirty and should be cleaned / replaced.

- **Corridor [104]** serves as the main hallway throughout the front of the DPW. It has 12 x 12 VCT flooring typical of the building and in good condition. The walls are painted gypsum wallboard with minimal scuffs. The ceiling is 24 x 24 acoustical ceiling tiles in good condition. Corridor 104 is the main hallway that occupants will visit when first entering the DPW, it was brought to our attention that more control over the lighting conditions would be preferred (see the MEP/FP section of this report).
- **Men's Room [105]** consists of restroom accommodations as well as serving as the men's locker room. Currently the size of the locker room meets the needs of the current number of male employees. The flooring consists of epoxy flooring with proper wall transitions in good condition throughout. The walls are plastic panel walls which are clean and in good condition throughout the men's room. Separating the toilet stall is 1 ½" plastic partition walls in good condition. The plumbing fixtures in the men's room include: a water closet with proper grab bars and spacing, two (2) wall mounted urinals, two (2) single bowl sinks on a 4'-9" laminate countertop, and a 36" shower stall. There are 7 metal lockers that are in good condition. The ceiling inside the men's room is 24 x 24 acoustical tile ceiling in good condition.
- **Women's Room [106]** consists of restroom accommodations as well as serving as the women's locker room. Currently the women's room is being used as storage space since the DPW does not have any female employees. The flooring consists of epoxy flooring with proper wall transitions in good condition throughout. The walls are plastic panel walls which are clean and in good condition throughout the women's room. Separating the toilet stall is 1 ½" plastic partition walls in good condition. The plumbing fixtures in the women's room include; a water closet with proper grab bars and spacing, a single bowl sinks on a 3'-7" laminate countertop, and a 36" shower stall. There are 2 metal lockers that are in good condition and currently unoccupied. The ceiling inside the men's room is 24 x 24 acoustical tile ceiling in good condition.
- **Janitor [107]** is a typical custodial / janitor room located off of Corridor 110. The flooring is epoxy similar to that seen in the men's and women's rooms. The walls consist of plastic panel walls 4' high which are dirty, and then the remainder of the wall is painted gypsum wallboard in good condition. The entry door is a 4'-8" wide steel double doors in good condition. In the janitor room is a stackable washer and dryer as well as a mop sink. The ceiling consists of 24 x 24 acoustical ceiling tiles in good condition.
- **Electrical Room [108]** is the location of all the electrical equipment and panels which keep the DPW operational. The flooring throughout is smooth concrete which is in good condition. The walls are painted gypsum wallboard in good condition with a few minor scuffs. The entry door

is a 3' wide wood door with door handle hardware and a locking mechanism in good condition. The ceiling is a painted conventional ceiling in good condition.

- **Tel / Data [108A]** includes necessary tel / data equipment but is also being used as additional storage space for the DPW building. The flooring consists of 12 x 12 VCT typical of the DPW building and in good condition. The walls are painted gypsum wallboard in good condition. The entry door is a 5' wide wood double door with door handle hardware as well as locking mechanism all in good condition. The ceiling is 24 x 24 acoustical ceiling tiles in which a few are dirty or have water staining.
- **Mechanical Ref. Room [109]** is located off of Maintenance 111 and is the main storage for tools and equipment used by the DPW. The flooring in the coated concrete in good condition. The walls are painted CMU blocks as well as painted gypsum wallboard both in good condition. The entry door is a 3' wide steel door with a vision panel, kick plate, door handle hardware, and locking mechanism in good condition. The ceiling is a painted conventional ceiling in good condition.
- **Corridor [110]** is the connection corridor between Corridor 104 and the Maintenance and Vehicle Storage rooms. The flooring consists of 12 x 12 VCT in good condition. The walls are painted gypsum wallboard with minimal scuffs observed and in good condition. There are two 3' wide steel doors at each end of the hallway. These doors have a vision panel, kick plate, door handles, and door locking mechanism and are in good condition. The ceiling is 24 x 24 acoustical tile ceilings in which a few tiles are dirty but majority are in good condition.
- **Maintenance [111]** consists of 2 vehicle bays with two vehicle lifts as well as additional space for required maintenance equipment. The flooring is 13'-6" x 13'-6" concrete slab / panel flooring in good condition with occasional cracks and staining similar to Vehicle Storage [115]. The walls consist of a mix of painted CMU blocks and metal paneling, both in good condition. The door from Corridor 110 is a 3' wide steel door with a vision panel, kick plate, door handle hardware, and locking mechanism in good condition. The exterior door is a 3' wide steel door with a vision panel, card access, door handle and push bar hardware, kick plate, and locking mechanism in good condition. There are 2 overhead garage doors which are 14' x 14'-8" steel doors with vision panels in good condition. The ceiling is 28' high and consists of the exposed structure and metal deck above which has been painted and finished in good condition.
- **Mechanical / Compressor [112]** is the mechanical room for the DPW building, it is also utilized as storage. The flooring is coated concrete in good condition. The walls are painted CMU blocks in good condition. The door from Maintenance 111 is a 3' wide steel door with knob type hardware and locking mechanism in good condition. The ceiling is the painted exposed underside of the roof deck above and in good condition.

- **Small Equipment Workshop [113]** is an extension of Mechanical 105 which is utilized as a workshop with a central metal workbench and equipment throughout. The flooring is 13'-6" x 13'-6" concrete slab / panel flooring in good condition. The walls are painted CMU blocking in good condition. The ceiling the exposed underside and structure of the second floor space above, in good condition.
- **Fluid Storage [114]** is used to store various lubricant fluids, oils, and other liquids. The flooring consists of a sloped concrete floor which leads to a 24 x 24 drain, the flooring is dirty but in good condition. The walls are painted concrete blocking in good condition. The entry door is a 6' wide double steel door with door handle hardware and locking mechanism in good condition. The ceiling is a painted conventional ceiling in good condition.
- **Vehicle Storage [115]** feature 10 bays as well as central space for storage of tool kit and other equipment of the DPW. The flooring is coated concrete slab with joints at 13'-6" in each direction and is in good condition with occasional cracks and staining typical wear of a vehicle space. The walls consist of a mix of painted CMU blocks and metal paneling, both in good condition. There are 3 exterior passage doors throughout the space which are similar 3' wide steel doors with vision panel, door handle and push bar hardware, card access, kick plate, and locking mechanism all in good condition. The door from Corridor 110 is a 3" wide steel door with a vision panel, kick plate, door handles, and locking mechanisms all in good condition. Regarding the 10 vehicle bays, there are eight (8) slightly smaller overhead doors and two (2) larger overhead doors on the end of each elevation. The eight (8) overhead doors are 14' x 14'-8" steel doors with vision panels and the other two (2) are 16' x 15'-6" steel doors with vision panels, all are in good condition. The ceiling of the vehicle storage is 23' high and consists of exposed structure and metal deck above which has been painted and finished and in good condition.

COMMENTARY

As noted above, the overall condition of the DPW is in good condition. Although the condition of the DPW is good, there are some improvements that would help make the DPW building more efficient, including:

- Additional storage space.
- A larger Conference Room / Lunch Room to be able to accommodate all employees at the same time.
- More office space to accommodate the necessary desks / office space needed by the DPW.
- Deteriorated condition of the building envelope, particularly the roof membrane and perimeter sealant at the 3 aluminum window systems (*see Building Envelope Assessment section of this report*).

RECOMMENDATIONS

- In general, the DPW Garage appears to be in good physical condition. No violations of the Massachusetts State Building Code and accessibility code were observed.
- Functional improvements to be considered as the staff increases and for the future needs of the Department include:
 - Additional space for storage
 - Larger Conference Room / Lunch Room
 - Additional office space
- For additional comments regarding the building envelope, see the Building Envelope and MEP/FP sections of this report.

The issues addressed in each Narrative category above are further itemized in the attached Condition Assessment Matrix with priority level (0-11 months/ 1- 4 year/ 5- 10 years/ 11- 20 years) and associated costs for repair or replacement included for each issue. At the bottom of each matrix is a summary of the costs-- by building-- for each of the priority levels, providing a summary of anticipated costs—by building—for capital planning purposes for the next 20 fiscal years: 2020 through 2040.

Architecture – Exterior Building Envelope

OVERVIEW:

In this section of the Facilities Condition Assessment Report, Gorman Richardson Lewis Architects (GRLA) presents a summary of observations regarding the condition of the Exterior architecture of the **DPW** including commentary and recommendations for action to be taken. These observations of the exterior architecture are organized according to the following “categories” in order to address the various components, systems and issues comprising the existing condition of the **DPW** exterior:

1. General
2. Foundation
3. Cladding
4. Doors (exterior)
5. Windows (exterior)
6. Sealant
7. Flashing
8. Roof
9. Penetrations
10. Walkways/stairs/ramps
11. Code Issues
12. Site

OBSERVATIONS

Foundation

The foundation was observed to be in sound condition.

Cladding

The cladding is comprised of CMU block walls and insulated metal panels. Both are in satisfactory condition with the exception that at the front of the building the CMU blocks have some lime run in a few locations. These locations should be investigated to determine the source and resolve the issue.

Doors

The doors in general are in serviceable condition with no significant signs of issues. At the rear of the building some of the garage door panels do have a black sediment that should be removed. The sources of the sediment being deposited on the garage door panels require further investigation to be mitigated.

Windows

The office wing aluminum frame windows appear to be in satisfactory condition from the exterior. The clerestory windows were observed from the ground as being in satisfactory condition. There were no reports of any issues with the clerestory windows.

Walkways/Stairs/Ramps

See *Site observations* below.

Sealant

The sealant around the perimeter of the windows were observed to be delaminated from at least one of the two adjacent materials they are intended to be adhering to. This suggests there is movement in the joint that the sealant is not able to accommodate. Remove all sealant around window and door perimeters and inspect joint for backer rod. Install new backer rod as required. Install new high elastic sealant that is compatible with adjacent materials in the joint.

Expansion joints overall where observed to be in serviceable condition. They will need to be replaced with the next 5-10 years are part of normal maintenance.

Roof

The existing roof system is showing signs of degradation. Visual observation of the roof system revealed cracking at the membrane surface, holes in the corners of the parapet wall membrane and weathering away of white ceramic coating on the cap sheet. The condition of one sheet to another in the same location varied widely in the cap sheet, which may indicate inconsistencies in the material from one sheet to the next. Holes in the cap sheet in the corners of the parapet walls consistently occur.

GRLA understands the Deerfield DPW Director has recently met with the roofing manufacturer (Johns Manville) and the installing roof contractor (Titan) to review the condition of the roof and implement repairs under the existing roofing warranty. Outcome of that meeting is pending at the time of this report.

Site

The site has defined parking and travel lanes with painted markings. Concrete sidewalks to and from building are in satisfactory condition. The surround building area has lighting for nighttime. Drainage around the building is not sloped significantly. No ponding was observed at the time of the field survey. Some bollards around the building and site have concrete pushing up out of the steel tube due to moisture getting inside. Pooling water in the steel tube should be removed and the tube should be filled and capped to prevent further infiltration of moisture.

Commentary

As noted above, the overall condition of the DPW is in good condition, with the exception of the roofing system which has significant deterioration of the membrane as well as a number of and punctures which, at the time of this report, are being reviewed by the DPW Director in consultation with the roof manufacturer and installing roofer. The roof is under warranty. A number of the other building envelope as well as interior issues addressed in the report, including lime run/ efflorescence at the exterior masonry and interior water infiltration damage may be the caused by deficiencies in the roofing system. Therefore, the primary focus should be on resolving the roof system damage and deterioration. The other area of concern is the degradation of the exterior perimeter sealant at the aluminum window system. Once these issues are addressed, the building envelope should perform well for years to come.

RECOMMENDATIONS

- The 3 primary building envelope issues note above that should be addressed immediately include :
 - Detailed assessment of roofing system and implementation of a repair program
 - Detailed assessment of flashing assemblies in and around the areas of masonry wall cladding showing signs of efflorescence and lime run (heavy build-up of mineral salts from the masonry and mortar due to moisture infiltration within the wall assembly;
 - Repair of concrete-filled bollards

Facilities Condition Assessment Narrative

Overview:

In this section of the Facilities Condition Assessment Report, the MEP/FP Consultant presents a summary of observations regarding the condition of the DPW site, including commentary and recommendations for action to be taken. The observations are organized according to the following “categories” in order to address the various components comprising the existing condition of the DPW site:

1. Electrical
2. HVAC
3. Plumbing
4. Fire Protection

Facilities Condition Assessment Narrative

Electrical

1. Observations:

- i. The electrical service for this facility consists of a 800amp, 120/208V, 3 phase, 4wire service main breaker/ CT section which comes from a pad mounted transformer. The serve feeder runs underground from the pad mounted transformer to the main breaker.
- ii. The electrical distribution system consists of a 800amp, 120/208V, 3phase, 4wire main distribution panel located in the main electric room. There is an automatic transfer switch adjacent to the main circuit breaker/circuit section. There are panels located throughout the building.
- iii. Branch Circuits: Outlets are provided throughout the building. Quantity of receptacles appears adequate for current needs. Receptacles are recessed mounted. Break room outlets above the counter are GFI type as required. Cord drops are provided in the vehicle bay.
- iv. Lighting in maintenance garage is generally 2'x4' surface high bay fluorescent fixtures with T8 lamps. The offices, break room, and corridors have 2'x2' recessed basket fixtures with T8 lamps. The shop area consists of pendant wraparound fluorescent fixtures. Toilet rooms, breakroom, storage rooms, and some offices have occupancy sensors. Lighting control is provided by a light leader relay panel and low voltage switch throughout the building.
- v. Emergency Lighting System: There is an emergency exterior Cummins diesel generator present. The generator is new and is in good condition. The generator is rated at 200 kW, 1120/208V, 3phase, 4wire and serves the entire building. The automatic transfer switch is located in the main electric room. The emergency panels are not in a 2-hour rated room and do not provide the emergency lighting throughout the building. There are emergency battery units throughout the building for the emergency lighting. Exit signs are provided at exits throughout the building.
- vi. The exterior lighting consists of pole mounted and wall mounted perimeter lighting which lights the entrances and walkways. Fixtures are LED type.
- vii. The fire alarm control panel is addressable and located in the main electric room with a remote annunciator in the vestibule at the main entrance. Smoke detectors are provided in corridors, lobbies, storage room, and electric room. Manual pull stations and horn/strobe units are provided throughout the building.

Facilities Condition Assessment Narrative

2. Commentary/Recommendation:

- i. Electric service and automatic transfer switch are new and are in good condition.
- ii. All panels and automatic transfer switch are new and in good condition.
- iii. All devices are new and in good condition.
- iv. All existing fluorescent lighting should be replaced with new energy saving LED type fixtures.
- v. All equipment is relatively new and in good condition.
- vi. Fixtures are LED type and are in good condition.
- vii. The coverage of fire alarm devices appears to be adequate. The present system is new and in good condition.

Facilities Condition Assessment Narrative

HVAC

1. Observations:

- i. The heating system for the building is comprised of two (2) natural gas fired, high efficiency, wall mounted, condensing boilers (approximately 94% efficient). The boilers are Lochinvar Knight Series.
- ii. The building has two (2) Roof top units, one has Energy Recovery and the other has Package DX. The RTUs are connected to terminal fan powered boxes downstream which also have reheat coils. The fan powered boxes determine space heating and cooling requirements.
- iii. Ventilation is provided from the Roof top units to each fan powered box. Exhaust fans provide code required exhaust from spaces such as maintenance, storage and toilet rooms and dryer exhaust.

2. Commentary:

- i. Heating Equipment:
 - Boiler: The existing boilers are high efficiency, wall mounted condensing boilers. Each boiler is manufactured by Lochinvar, model WH-115, with an approximate input capacity of 115 CFH an approximate output of 109 MBH. Boiler 2 was in lockout at the time of our site visit.
 - The primary hot water heating pumps are Bell and Gossett Inline pumps with premium efficiency motors and variable frequency drives.
 - Hydronic unit heaters and the gas fired infrared heater in the vehicle storage area appear in good condition.
- ii. Cooling Equipment:
 - Two (2) Roof top units provide primary OA to fan power terminal boxes throughout the building. One RTU has energy recovery and is manufactured by Greenheck, Model VER-4510-15L. The unit supplies 2,000 CFM. The second RTU

Facilities Condition Assessment Narrative

was manufactured by McQuay, Model DPS007AHMY2DV. This unit provides 2425 CFM of supply air and 1100 CFM of outside air. Both Units appear to be in good operating condition.

- Fan power terminal boxes appear to be operating to design standards. Sizes and models vary throughout the building. Fan boxes were manufactured by Titus, Model DTFS and have hot water reheat coils for heating as well.
 - Ductless split system heat pump was provided for supplemental cooling in the IT Closet. This unit was manufactured by Fujitsu. The unit has a capacity of 12000 BTU cooling and a heating capacity of 16000 BTU. This unit was designed to be provided with a low ambient kit to provide cooling year round if needed. The unit does not have wind baffles that provide this, it's unclear if there are any internal parameters providing low ambient capabilities.
- iii. Controls:
- The building has a building management system manufactured by Johnson Controls connecting equipment and thermostats to a central location. The system is used for monitoring adjustment and alarm points.

3. Recommendations:

- i. Overall the building and HVAC systems are relatively new and appear to be operating at design conditions. Only regular equipment maintenance, such as investigation as to why boiler 2 was locked out would be recommended at this time.

Facilities Condition Assessment Narrative

Plumbing

1. Observations:

- i. Existing building is served by municipal water and municipal sewer services. Domestic water service is 4-inch in size and reduces to 2-inch water meter.
- ii. Domestic Hot Water Service: hot water is generated by two wall mounted gas fired tankless water heaters. Each water heater has a natural gas input of 380,000 BTUH. Water heaters are rated at 10 GPM at 60 deg F rise. System includes an expansion tank and recirculation pump.
- iii. Natural Gas: Building gas meter is located on the exterior of the building adjacent to the mechanical room. Natural gas piping is black steel with threaded joints. Natural gas is supplied to the domestic water heaters, heating boiler and garage unit heaters.
- iv. Sanitary: The existing sanitary, waste and vent system is made up of cast iron pipe with no-hub coupling fittings. Smaller pipe sizes are copper tubing. Storm drainage from flat roof areas is cast iron with no-hub fittings. All storm drainage piping is insulated. Garage waste system consists of trench drains in garage drains which are directed to exterior oil separator prior to discharge to sanitary system.
- v. Compressed air is provided in garage areas. Compressor is 15 HP and includes a separate storage tank. Hose reel and quick disconnect connections are provided in various areas of the building. Compressed air piping is black steel with threaded joints.
- vi. Fixtures:
 - Floor mounted water closets with manually operated dual flush valves.
 - Wall hung urinal with manually operated flush valves.
 - Wall hung lavatories with manual faucets.
 - Break Room sink is double bowl stainless steel with gooseneck faucet.
 - Showers are fiberglass stalls with pressure balanced shower valves.
 - Mop receptor is floor mounted with wall faucet,
 - Combination emergency shower/eyewash is located in Garage.

Facilities Condition Assessment Narrative

2. Commentary:

- i. Building was constructed in 2014 and all plumbing systems are in good condition.

3. Recommendations:

- i. None

Facilities Condition Assessment Narrative

Fire Protection

1. Observations:

- i. The building is fully sprinkled with a wet system and dry system. The system was installed in 2014 and is in good condition.
- ii. The fire service is 8" ductile that reduces to a 4" that serves the entire building.
- iii. Sprinkler piping is Schedule 10 and Schedule 40 steel with grooved fittings for piping 2" and larger, and threaded fittings for piping 1-1/2" and smaller. The dry system piping is galvanized.
- iv. Sprinkler heads are quick response type. Heads are semi-recessed pendent type in ceiling areas and upright where no ceilings exist.
- v. There is an existing 4" Storz Fire Department Connection just outside of the existing Mechanical Room.

2. Commentary:

- i. Sprinkler system is approximately 6 years old and in good condition.

3. Recommendations:

- i. Continue inspections and maintenance per NFPA 25.

In this section of the Facilities Condition Assessment Report, RRC Engineering presents a summary of observations regarding the condition of the DPW building, including summary description of structural systems and recommendations for action to be taken.

OVERVIEW PHOTOGRAPH



STRUCTURAL SYSTEMS SUMMARY

| Component | Description | |
|-----------------------|---|--|
| Foundation/Floor Slab | Concrete frost walls around perimeter of building with a concrete slab-on-grade. | |
| Upper Floors | Partial second floor, concrete slab on metal deck supported by steel beams or CMU wall. | |
| Roof | Structural steel bar joists with metal roof deck. | |

| | | |
|----------------|---------------------------------------|--|
| Exterior Walls | CMU with metal panels. | |
| Other | Bridge crane within maintenance shop. | |

DEFICIENCIES

Unless specifically identified below, no major deficiencies were observed.

| Component | Deficiency | Description | Photograph |
|-----------------------|--|--|---|
| Foundation/Floor Slab | <input type="checkbox"/> Deterioration <input type="checkbox"/> Weakness <input type="checkbox"/> Settlement <input type="checkbox"/> Other | <ul style="list-style-type: none"> No deficiencies noted. |  |
| Upper Floors | <input type="checkbox"/> Deterioration <input type="checkbox"/> Weakness <input type="checkbox"/> Settlement <input type="checkbox"/> Other | <ul style="list-style-type: none"> No deficiencies noted. | |

| | | | |
|----------------|--|--|--|
| Roof | <input type="checkbox"/> Deterioration <input type="checkbox"/> Weakness <input type="checkbox"/> Settlement <input type="checkbox"/> Other | <ul style="list-style-type: none">• No deficiencies noted. |  |
| Exterior Walls | <input type="checkbox"/> Deterioration <input type="checkbox"/> Weakness <input type="checkbox"/> Settlement <input type="checkbox"/> Other | <ul style="list-style-type: none">• No deficiencies noted. |  |
| Other | <input type="checkbox"/> Deterioration <input type="checkbox"/> Weakness <input type="checkbox"/> Settlement <input type="checkbox"/> Other | <ul style="list-style-type: none">• No deficiencies noted. |  |

Matrices

Condition Assessment Matrix

| | | | | |
|-------------------|--|----------------------|-----------------|--|
| Building Name | | DPW | | |
| Discipline | | Architectural | Interior | |
| Floor / Elevation | | | | |

| Issue # | Room Name / Elev. | System/ Component | Existing Description | Photo # | Commentary/ Proposed Work | Quantity | Units | Repair/ Replace Priority by | | | |
|---------|--|-----------------------------|--|---------|---|----------|-------|-----------------------------|---------------|----------------|-----------------|
| | | | | | | | | 0-11 mths Costs | 1-5 yrs Costs | 5-10 yrs Costs | 11-20 yrs Costs |
| 1 | Vestibule 100 | Floor | Walk off mat falling off track and bows when weight applied to the center | A-6 | Replace existng walk-off mat | 40 | SF | | \$ 2,000 | | \$ 2,200 |
| 2 | Vestibule 100 | Walls | Painted gypsum wallboard with some scuffs | | Repaint gypsum wallboard | 322 | SF | | \$ 1,300 | | \$ 1,500 |
| 3 | Corridor 104 | Walls | Painted gypsum wallboard with some scuffs | A-4 | Repaint gypsum wallboard | 1,037 | SF | | \$ 3,000 | | \$ 3,300 |
| 4 | Highway Office 101 | Windows/ Glazing (interior) | Fixed aluminum window system with two operable windows - water staining observed | | Repair and repaint existing wall | 608 | SF | | \$ 2,000 | | \$ 2,200 |
| 5 | Highway Office 101; Foreman Office 102; Lunch Room 103 | General/ Other | Insufficient size to accommodate increase in staff | | Implement addition to provide additional space | 370 | SF | | | TBD | |
| 6 | Foreman Office 102 | Walls | Painted gypsum wallboard with minor crack observed | | Repair and repaint existing wall | 470 | SF | | \$ 1,500 | | \$ 1,700 |
| 7 | Conference / Lunchroom 103 | Walls | Chipped paint from water exposure (see photo); good-fair condition | | Repair and repaint painted gypsum wallboard | 610 | SF | | \$ 2,000 | | \$ 2,200 |
| 8 | Conference / Lunchroom 103 | Ceiling | ACT near exterior door water staining on wall | A-8 | Replace water stained ACT | 1 | Allow | | | \$ 5,000 | |
| 9 | Throughout Admin Area | Ceiling | ACT tiles around HVAC supply are dirty | | Implement program to replace ACT tiles | 1,970 | SF | | | \$ 5,000 | |
| 10 | Conference / Lunchroom 103 | General/ Other | Break room is not big enough to be occupied by entire DPW staff at one time | | See item 5 above | | | | | TBD | |
| 11 | Electrical 108 | Walls | Painted gypsum wallboard with minor scuffs observed | | Repair, clean, and repaint painted gypsum wallboard | 436 | SF | | | \$ 1,200 | |
| 12 | Men's 105 | Walls | Painted gypsum wallboard with minor scuffs observed | | Repair, clean, and repaint painted gypsum wallboard | 1,138 | SF | | \$ 3,000 | | \$ 3,300 |
| 13 | Women's 106 | Walls | Painted gypsum wallboard with minor scuffs observed | | Repair, clean, and repaint painted gypsum wallboard | 723 | SF | | \$ 2,100 | | \$ 2,300 |
| 14 | Tel / Data 108A | Ceiling | 2x2 ACT some dirt or water staining observed | | Implement program to replace ACT tiles | | | | | \$ 500 | |
| 15 | Tel/Data 108A | Walls | Painted gypsum wallboard with minor scuffs observed | | Repair, clean, and repaint painted gypsum wallboard | 200 | SF | | | \$ 500 | \$ 700 |
| 16 | Corridor 110 | Walls | Painted gypsum wallboard with minor scuffs observed | | Repair, clean, and repaint painted gypsum wallboard | 510 | SF | | \$ 1,500 | \$ 1,700 | x |
| 17 | Corridor 110 | Ceiling | 2x2 ACT some dirt or water staining observed | | Implement program to replace ACT tiles | | | | | \$ 500 | |
| 18 | Janitor 107 | Walls | Plastic panel walls up 4' - dirty | | Clean existing plastic panels | 236 | SF | | | \$ 100 | |

Condition Assessment Matrix

| Building Name | | DPW | | | | | | | | | |
|-----------------------------------|-------------------------|-------------------|--|--------------|---|----------|-------|-----------------------------|------------------|------------------|------------------|
| Discipline | | Architectural | Interior | | | | | | | | |
| Floor / Elevation | | | | | | | | | | | |
| Issue # | Room Name / Elev. | System/ Component | Existing Description | Photo # | Commentary/ Proposed Work | Quantity | Units | Repair/ Replace Priority by | | | |
| | | | | | | | | 0-11 mths Costs | 1-5 yrs Costs | 5-10 yrs Costs | 11-20 yrs Costs |
| 19 | Mech. Ref Room 109 | Walls | Painted gypsum wallboard with minor scuffs observed | | Repair, clean, and repaint painted gypsum wallboard | 550 | SF | | | \$ 500 | |
| 20 | Vehicle Storage 115 | Floor | Concrete floor with typical staining and cracks from vehicle storage | A-23 | Repair cracks in floor to prevent further damage | 8,459 | SF | | \$ 3,000 | | |
| 21 | Vehicle Storage 115 | Walls | Painted CMU with minor scuffs observed | A-19 A-20 | Repaint CMU walls | 2,716 | SF | | \$ 5,000 | | \$ 5,500 |
| 22 | Maintenance 105 | Floor | Concrete floor with typical staining and cracks from vehicle storage | A-26 | Repair cracks in floor to prevent further damage | 2,164 | SF | | \$ 1,500 | | |
| 23 | Maintenance 105 | Walls | Painted CMU with minor scuffs observed | A-29 A-30 | Repaint CMU walls | 2,338 | SF | | \$ 5,000 | | \$ 5,500 |
| 24 | Mech. Compressor 112 | Walls | Painted CMU with minor scuffs observed | | Repaint CMU walls | 700 | SF | | | \$ 1,000 | |
| 25 | Slamm Equip. Repair 113 | Walls | Painted CMU with minor scuffs observed | A-25 A-28 | Repaint CMU walls | 610 | SF | | | \$ 1,000 | |
| 26 | Fluid Storage 114 | Walls | Painted CMU with minor scuffs observed | | Repaint CMU walls | 506 | SF | | | \$ 1,000 | |
| ARCHITECTURAL SCOPE TOTALS | | | | | | | | \$ - | \$ 32,900 | \$ 18,000 | \$ 30,400 |
| | | | | | | | | 0-11 mths Costs | 1-5 yrs Costs | 5-10 yrs Costs | 11-20 yrs Costs |

Condition Assessment Matrix

| | | | | |
|---------------|--|-------------------|----------|--|
| Building Name | | DPW | | |
| Discipline | | Building Envelope | Exterior | |
| | | | | |

| Issue # | Room Name / Elev. | System/ Component | Existing Description | Photo # | Commentary/ Proposed Work | Quantity | Unit | Repair/ Replace Priority by | | | | |
|---------|-----------------------------------|-------------------|---|-----------------|--|----------|------|-----------------------------|---------------|----------------|-----------------|--|
| | | | | | | | | 0-11 mths Costs | 1-5 yrs Costs | 5-10 yrs Costs | 11-20 yrs Costs | |
| 1 | lower roof over offices | Roof | the existing roof assembly appears to be in serviceable condition with minor wear on the ceramic white coating showing some signs of degradation | B1 B8 B11 | review manufacturer's warranties and maintenance instructions to determine if maintenance is required | 1960 | SQ | TBD | | | | |
| 2 | lower roof over offices | Roof | roof membrane runs up side of wall more than 30" high | B2 | review manufacturer's installation requirements to determine max height and fastening requirements | 60 | LF | TBD | | | | |
| 3 | lower roof over offices | Roof | non continuous flashing detailing around corner. Cap sheet in this corner is failing in relation to adjacent cap sheets | B3 B4 | review flashing in this area with manufacturer's installation requirements to determine better solution. Replace cap sheet and inspect roof system during repair for any additional degradation. | 1 | LS | TBD | | | | |
| 4 | Middle roof over general garage | Roof | 2 corners in this roof were found to have holes in the cap sheet. In one location cracks in the cap sheet were found in standing water. Stepping in this area would force water to percolate up from under the cap sheet. The general field of the roof is showing degradation of the ceramic white coating | B4 B5 B6 | review manufacturer's warranties and maintenance instructions to determine proper actions for required maintenance | 8680 | SQ | TBD | | | | |
| 5 | Upper roof over mechanic's garage | Roof | variations in the cap sheet wear patterns from one sheet to another vary widely. On some sheet the ceramic white coating is about 70-80% deteriorated. In other sheets | B7 | review manufacturer's warranties and maintenance instructions to determine proper actions for required maintenance | 2870 | SQ | TBD | | | | |

Condition Assessment Matrix

| | | | | |
|---------------|--|--------------------------|-----------------|--|
| Building Name | | DPW | | |
| Discipline | | Building Envelope | Exterior | |
| | | | | |

| Issue # | Room Name / Elev. | System/ Component | Existing Description | Photo # | Commentary/ Proposed Work | Quantity | Unit | Repair/ Replace Priority by | | | | |
|---------|---------------------|-----------------------------|--|-------------------|--|----------|------|-----------------------------|---------------|----------------|-----------------|-----|
| | | | | | | | | 0-11 mths Costs | 1-5 yrs Costs | 5-10 yrs Costs | 11-20 yrs Costs | |
| 6 | flat roof overhangs | Roof | small over hang roofs have similar wear patterns in the caps sheet with loss of the ceramic coating. Closer visual inspection can be done to determine if there is any cracking | B9 | review manufacturer's warranties and maintenance instructions to determine if maintenance is required | 950 | SQ | TBD | | | | |
| 7 | general | Cladding | the building cladding is mostly CMU block walls. In general the CMU blocks and mortar beds are in good condition. At the front of the building by the parking garage and in front of the offices lime run was present in mutiple locations | B12 B13 B14 | further investigation is needed to determine source of lime run. | 2890 | SQ | TBD | | | | |
| 8 | general | Cladding | insulated metal panels are in satisfactory condtion. Plastic shims used for leveling metal panels were observed falling out at the bottom of the panel system. Clean panels and reseal joints within 10 years | B17 B18 | review requirement for plastic shims and sealant program | 5940 | SQ | | | \$ 10,000 | | |
| 9 | general | Windows/ Glazing (exterior) | clerestory windows were observed from the ground as in satisfactory condition. There were no reports of any issues with them. Replacement may be necessary in 20 years. | B16 B17 | | 2160 | SQ | | | | | TBD |
| 10 | general | Windows/ Glazing (exterior) | the office windows look to be in satisfactory condition. Replacement may be needed in 20 years | B18 | | 480 | SQ | | | | | TBD |
| 11 | office space | General/ Other | it was reported that there was an active leak in the office area on an exterior wall. | B18 | further examination and possible exploratory is needed to locate the source of the water infiltration. | 1 | LS | TBD | | | | |

Condition Assessment Matrix

| | | |
|---------------|--------------------------|-----------------|
| Building Name | DPW | |
| Discipline | Building Envelope | Exterior |
| | | |

| Issue # | Room Name / Elev. | System/ Component | Existing Description | Photo # | Commentary/ Proposed Work | Quantity | Unit | Repair/ Replace Priority by | | | | |
|---------------------------------------|-------------------|-------------------|--|-------------------|--|----------|------|-----------------------------|----------------------|-----------------------|------------------------|-----|
| | | | | | | | | 0-11 mths Costs | 1-5 yrs Costs | 5-10 yrs Costs | 11-20 yrs Costs | |
| 12 | general | Sealant | The sealant around the perimeter of the windows were observed to be delaminated from at least one of the two adjacent materials they are intended to be adhering to. This suggests there is movement in the joint that the sealant is not able to accommodate. | B19 B20 B21 | Remove all sealant around window and door perimeters and inspect joint for backer rod. Install new backer rod as required. Install new high elastic sealant that is compatible with adjacent materials in the joint. | 290 | LF | \$ 3,000 | | | | |
| 13 | general | Sealant | control joints and expansion joints in the CMU walls are showing signs of cracking and the sealant is losing its elasticity | | remove sealant and backer rod from control joint and install new sealant and backer rod | 200 | LF | | \$ 3,000 | | | |
| 14 | general | Doors | In general the garage doors were observed to be in satisfactory condition. Some of the doors were noted to have some grey/ black sediment staining at the upper panels. | B22 | grey/ black sediment staining at the upper panels should be removed and the source should be determined to eliminate further staining. (12qty) - about 14'-6"x14'-0"; repalcment may be required in 20 years. | 12 | unit | \$ 1,000 | | | | TBD |
| BUILDING EXTERIOR SCOPE TOTALS | | | | | | | | \$ 4,000 | \$ 3,000 | \$ 10,000 | \$ - | |
| | | | | | | | | 0-11 mths Costs | 1-5 yrs Costs | 5-10 yrs Costs | 11-20 yrs Costs | |

Condition Assessment Matrix

| | | | | |
|---------------|--|--------|----------|--|
| Building Name | | DPW | | |
| Discipline | | MEP-FP | Interior | |
| | | | | |

| Issue # | Room Name / Elev. | System/ Component | Existing Description | Photo # | Commentary/ Proposed Work | Quantity | Units | Repair/ Replace Priority by | | | |
|---------|-------------------|-------------------|---|------------|---|----------|-------|-----------------------------|---------------|----------------|-----------------|
| | | | | | | | | 0-11 mths Costs | 1-5 yrs Costs | 5-10 yrs Costs | 11-20 yrs Costs |
| 1 | | Life Safety | An existing 8" Ductile Iron Fire Service enters the building Mechanical Room. System was installed in 2013/2014. | MEP 1 | The existing fire service appears to be in good condition. Recommend normal maintenance at this time. | 1 | EA | | | | |
| 2 | | Life Safety | There is a 4-inch double check valve assembly and wet riser check valve with flow switch and a dry alarm valve. Dry system air compressor is mounted on riser. Equipment is located in the Mechanical Room. | MEP 2 & 3 | System appears to be in good condition. Recommend normal maintenance at this time. | 1 | EA | | | | |
| 3 | | Life Safety | Existing Sprinkler piping is Schedule 10 and Schedule 40 steel with grooved fittings for piping 2" and larger, and threaded fittings for piping 1-1/2" and smaller. The dry system piping is galvanized. | MEP 4 & 5 | The existing sprinkler heads appear to be in good condition. Recommend normal maintenance at this time. | 1 | LS | | | | |
| 4 | | Life Safety | There is an existing 4" Storz Fire Department Connection just outside of the existing Mechanical Room. | MEP 6 | The existing Fire Department Connection appears to be in good condition. Recommend normal maintenance at this time. | 1 | EA | | | | |
| 5 | | Life Safety | Sprinkler heads are quick response type. Heads are semi-recessed pendent type in ceiling areas and upright where no ceilings exists. | MEP 7 | Sprinkler heads are in good condition. Recommned normal inspections at this time. | 14,238 | SF | | | | |
| 6 | | Plumbing Fixtures | Existing building is served by municipal water and municipal sewer services. Domestic water service is 4-inch in size and reduces to 2-inch water meter. Building was constructed in 2014 and is in good condition. | MEP 8 | Services appear to be in good condition. | 1 | LS | | | | |
| 7 | | Plumbing Fixtures | Existing domestic water piping is copper with sweat fittings. Domestic water piping where exposed is insulated. | MEP 9 & 10 | Piping appears to be in good condition . | 1 | LS | | | | |

Condition Assessment Matrix

| | | |
|---------------|------------------------|--|
| Building Name | DPW | |
| Discipline | MEP-FP Interior | |
| | | |

| Issue # | Room Name / Elev. | System/ Component | Existing Description | Photo # | Commentary/ Proposed Work | Quantity | Units | Repair/ Replace Priority by | | | |
|---------|-------------------|-------------------|---|-------------|---|----------|-------|-----------------------------|---------------|----------------|-----------------|
| | | | | | | | | 0-11 mths Costs | 1-5 yrs Costs | 5-10 yrs Costs | 11-20 yrs Costs |
| 8 | | Plumbing Fixtues | The existing sanitary, waste and vent system is made up of cast iron pipe with no-hub coupling fittings. Smaller pipe sizes are copper tubing. Sotrm drainage from flat roof areas is cast iron with no-hub fittings. All storm drainage piping is insulated. Garage waste system consists of trench drains in garage drains which are directed to exterior oil separator prior to discharge to sanitary system. | MEP 11 - 13 | Piping appears to be in good condition. | 1 | LS | | | | |
| 9 | | Plumbing Fixtues | Domestic hot water heater is generated by two wall mounted gas fired tankless water heaters. Each water heater has a natural gas input of 380,000 BTUH. Water heaters are rated at 10 GPM at 60 deg F rise. System includes an expansion tank and recirculation pump. | MEP 14 | Water heaters appear to be in good condition. | 2 | EA | | | | |
| 10 | | Plumbing Fixtues | Existing Plumbing Fixtures include: floor mounted water closets with manually perated dual flush valves, wall hung urinal with manually operated flush valves, wall hung lavatories with manual faucets, Break Room snk is double bowl stainless steel with gooseneck faucet, showers are fiberglass stalls with pressure balnced shower valves, mop receptro is floor mounted with wall faucet, combination emergency shower/eyewash is located in Garage. | MEP 15 - 21 | Plumbing fixtures are in good condition. | 10 | EA | | | | |

Condition Assessment Matrix

| | | | |
|---------------|--|---------------|-----------------|
| Building Name | | DPW | |
| Discipline | | MEP-FP | Interior |
| | | | |

| Issue # | Room Name / Elev. | System/ Component | Existing Description | Photo # | Commentary/ Proposed Work | Quantity | Units | Repair/ Replace Priority by | | | |
|---------|-------------------|---------------------|--|-------------|---|----------|-------|-----------------------------|---------------|----------------|-----------------|
| | | | | | | | | 0-11 mths Costs | 1-5 yrs Costs | 5-10 yrs Costs | 11-20 yrs Costs |
| 11 | | Plumbing Fixtures | Building is served with natural gas. Building gas meter is located on the exterior of the building adjacent to the mechanical room. Natural gas piping is black steel with threaded joints. Natural gas is supplied to the domestic water heaters, heating boiler and garage unit heaters. | MEP 21 - 24 | Gas piping is in good condition and can remain. | 1 | LS | | | | |
| 12 | | Plumbing Fixtures | Compressed air is provided in garage areas. Compressor is 15 HP and includes a separate storage tank. Hose reel and quick disconnect connections are provided in various areas of the building. Compressed air piping is black steel with threaded joints. | MEP 25 - 27 | Compressor and related equipment appears to be in good condition. | 1 | EA | | | | |
| 13 | | Mechanical Fixtures | Heating Boilers | MEP 28 | one boiler was locked out | 2 | EA | TBD | | | TBD |
| 14 | | Mechanical Fixtures | Heating Pumps | MEP 29 | Recently Installed | 2 | EA | | | | TBD |
| 15 | | Mechanical Fixtures | Piping and Insulation | MEP 30 | Recently Installed | 1 | LS | | | | TBD |
| 16 | | Mechanical Fixtures | Terminal Heat | MEP 31 | Recently Installed | 1 | LS | | | | TBD |
| 17 | | Mechanical Fixtures | General Exhaust | MEP 32 | Recently Installed | 1 | LS | | | | TBD |
| 18 | | Mechanical Fixtures | RTUs | MEP 33 | Recently Installed | 2 | EA | | | | TBD |
| 19 | | Mechanical Fixtures | Fan Powered Boxes | none | Fan Powered Box with RH Coil | 1 | EA | | | | TBD |
| 20 | | Mechanical Fixtures | Ductless Heat Pumps | MEP 34 | Ductless Heat Pumps | 4 | EA | | | | TBD |
| 21 | | Mechanical Fixtures | DDC Controls System | MEP 35 | Recently Installed | 1 | LS | | | | TBD |
| 22 | | General/ Other | The electrical service for this facility consists of a 800amp, 120/208V, 3 phase, 4wire service main breaker/ CT section which comes from a pad mounted transformer. The serve feeder runs underground from the pad mounted transformer to the main breaker. | MEP 36 & 37 | Electric service and automatic transfer switch are new and are in good condition. | 1 | LS | | | TBD | |

Condition Assessment Matrix

| | | | |
|---------------|--|---------------|-----------------|
| Building Name | | DPW | |
| Discipline | | MEP-FP | Interior |

| Issue # | Room Name / Elev. | System/ Component | Existing Description | Photo # | Commentary/ Proposed Work | Quantity | Units | Repair/ Replace Priority by | | | |
|---------|-------------------|-------------------------------|---|-------------|--|----------|-------|-----------------------------|---------------|----------------|-----------------|
| | | | | | | | | 0-11 mths Costs | 1-5 yrs Costs | 5-10 yrs Costs | 11-20 yrs Costs |
| 23 | | Equipment | The electrical distribution system consists of a 800amp, 120/208V, 3phase, 4wire main distribution panel located in the main electric room. There is a automatic transfer switch adjacent to the main circuit breaker/circuit section. There are panels located throughout the building. | MEP 38 - 40 | All panels and automatic transfer switch are new and in good condition. | 1 | LS | | | | TBD |
| 24 | | Equipment | Branch Circuits: Outlets are provided throughout the building. Quantity of receptacles appears adequate for current needs. Receptacles are recessed mounted. Break room outlets above the counter are GFI type as required. Cord drops are provided in the vehicle bay. | MEP 41 - 43 | All devices are new and in good condition. | 14,238 | SF | | | | TBD |
| 25 | | Electrical/ Lighting Fixtures | Lighting in maintenance garage is generally 2'x4' surface high bay flourescent fixtures with T8 lamps. The offices, break room, and corridors have 2'x2' recessed basket fixtures with T8 lamps. The shop area consists of pendant wraparound flourescent fixtures. Toilet rooms, breakroom, storage rooms, and some offices have occupancy sensors. Lighting control is provided by a light leeder relay panel and low voltage switch throughout the building. | MEP 44 - 47 | All existing flourescent lighting should be repalced with new energy saving LED type fixtures. | 14,238 | SF | | | TBD | |

Condition Assessment Matrix

| | | | |
|---------------|--|--------|----------|
| Building Name | | DPW | |
| Discipline | | MEP-FP | Interior |

| Issue # | Room Name / Elev. | System/ Component | Existing Description | Photo # | Commentary/ Proposed Work | Quantity | Units | Repair/ Replace Priority by | | | |
|----------------------------|-------------------|-------------------------------|--|-------------|---|----------|-------|-----------------------------|----------------------|-----------------------|------------------------|
| | | | | | | | | 0-11 mths Costs | 1-5 yrs Costs | 5-10 yrs Costs | 11-20 yrs Costs |
| 26 | | Life Safety | Emergency Lighting System: There is an emergency exterior Cummins diesel generator present. The generator is new and is in good condition. The generator is rated at 200 kW, 1120/208V, 3phase, 4wire and and serves the entire building. The automatic transfer switch is located in the main electric room. The emergency panels are not in a 2-hour rated room and do not provide the emergency lighting throughout the building. There are emergency battery units throughout the building for the emergency lighting. Exit signs are provided at exits throughout the building. | MEP 48 - 51 | All equipment is relatively new and in good condition. | 14,238 | SF | | | | TBD |
| 27 | | Electrical/ Lighting Fixtures | The exterior lighting consists of pole mounted and wall mounted perimeter lighting which lights the entrances and walkways. Fixtures are LED type. | MEP 52 - 55 | Fixtures are LED type and are in good condition. | 8 | EA | | | | TBD |
| 28 | | Life Safety | The fire alarm control panel is addressable and located in the main electric room with a remote annunciator in the vestibule at the main entrance. Smoke detectors are provided in corridors, lobbies, storage room, and electric room. Manual pull stations and horn/strobe units are provided throughout the building. | MEP 56 - 59 | The coverage of fire alarm devices appears to be adequate. The present system is new and in good condition. | 1 | LS | | | | TBD |
| MEP/FP SCOPE TOTALS | | | | | | | | TBD | \$ - | TBD | TBD |
| | | | | | | | | 0-11 mths Costs | 1-5 yrs Costs | 5-10 yrs Costs | 11-20 yrs Costs |

Condition Assessment Matrix

| Building Name | | DPW | | | | | | | | | |
|---------------------------------------|-------------------|-------------------|---|---------|---------------------------|----------|------|-----------------------------|---------------|----------------|-----------------|
| Discipline | | Site | Exterior | | | | | | | | |
| Issue # | Room Name / Elev. | System/ Component | Existing Description | Photo # | Commentary/ Proposed Work | Quantity | Unit | Repair/ Replace Priority by | | | |
| | | | | | | | | 0-11 mths Costs | 1-5 yrs Costs | 5-10 yrs Costs | 11-20 yrs Costs |
| 1 | general site | general site | the site has defined parking and travel lanes. Concrete sidewalks to and from building are in satisfactory condition. The surround building area has lighting. Drainage around the building is not sloped significantly. No ponding was observed at the time of the field survey. | B24 | no action required | | | | | | |
| 2 | general site | general site | Some bollards around the building and site have concrete pushing up out of the steel tube due to moisture getting inside. | B25 | Replace bollards with new | 6 | unit | | \$ 6,000 | | |
| BUILDING EXTERIOR SCOPE TOTALS | | | | | | | | \$ - | \$ 6,000 | \$ - | \$ - |
| | | | | | | | | 0-11 mths Costs | 1-5 yrs Costs | 5-10 yrs Costs | 11-20 yrs Costs |

**Representative Existing
Conditions Photographs**

Department of Public Works Garage
Representative Existing Conditions Photographs



A-1



A-2

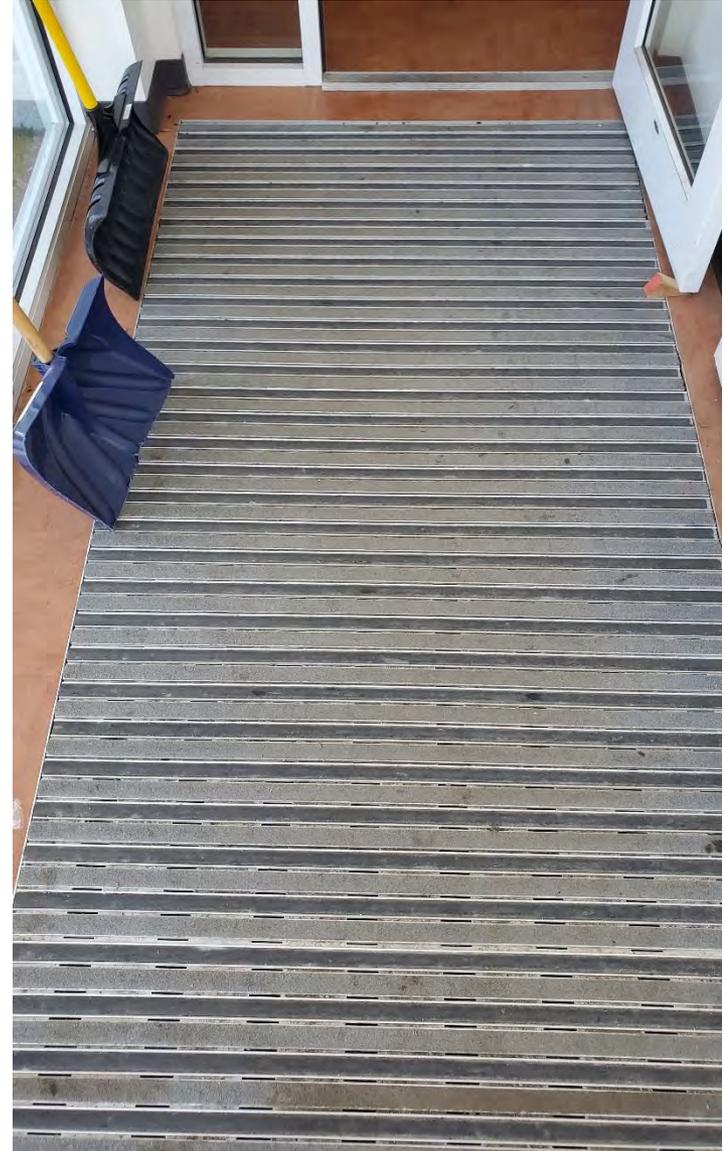


A-3

Department of Public Works Garage
Representative Existing Conditions Photographs



A-4



A-6

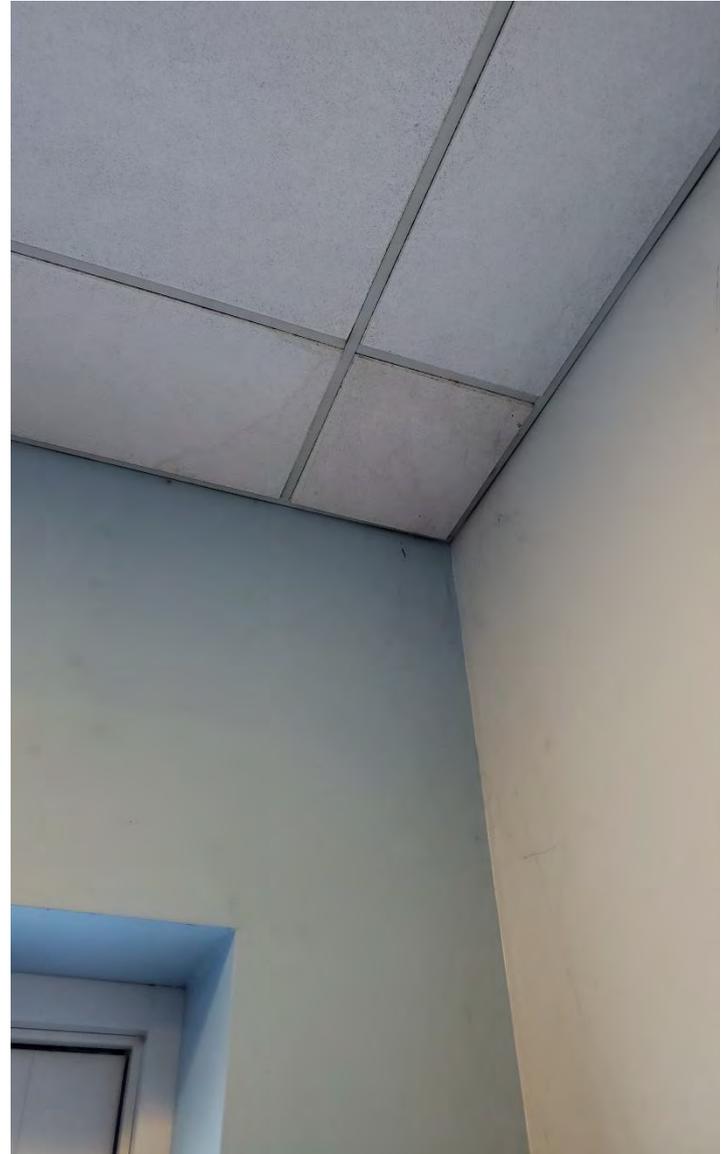


A-5

Department of Public Works Garage
Representative Existing Conditions Photographs



A-7



A-8

Department of Public Works Garage
Representative Existing Conditions Photographs



A-9



A-10

Department of Public Works Garage
Representative Existing Conditions Photographs



A-11



A-12



A-13



A-14

Department of Public Works Garage
Representative Existing Conditions Photographs



A-15



A-16



A-17



A-18

Department of Public Works Garage
Representative Existing Conditions Photographs



A-19



A-20

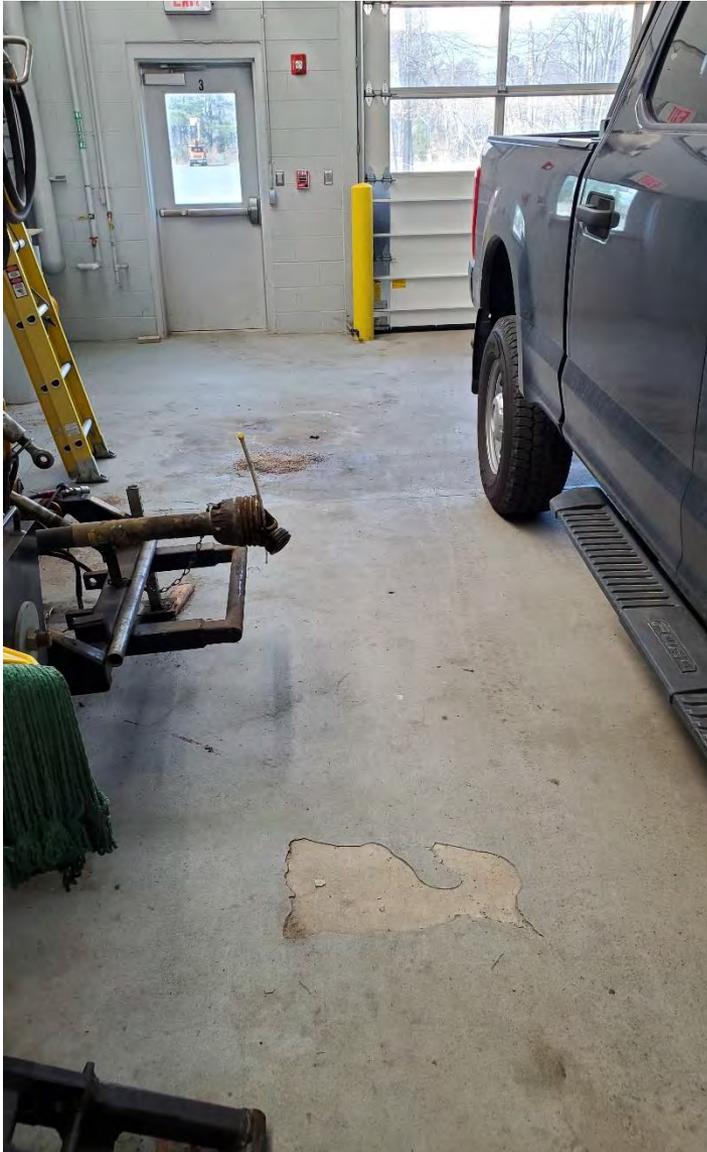


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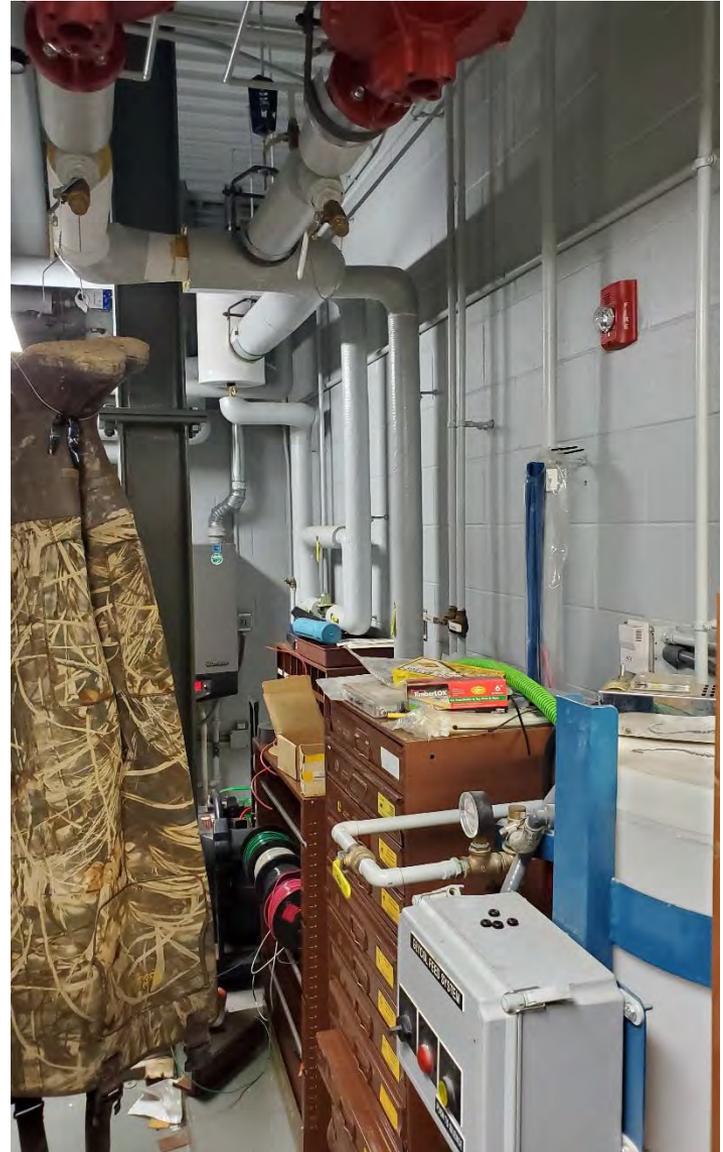


A-22

Department of Public Works Garage
Representative Existing Conditions Photographs



A-23



A-24

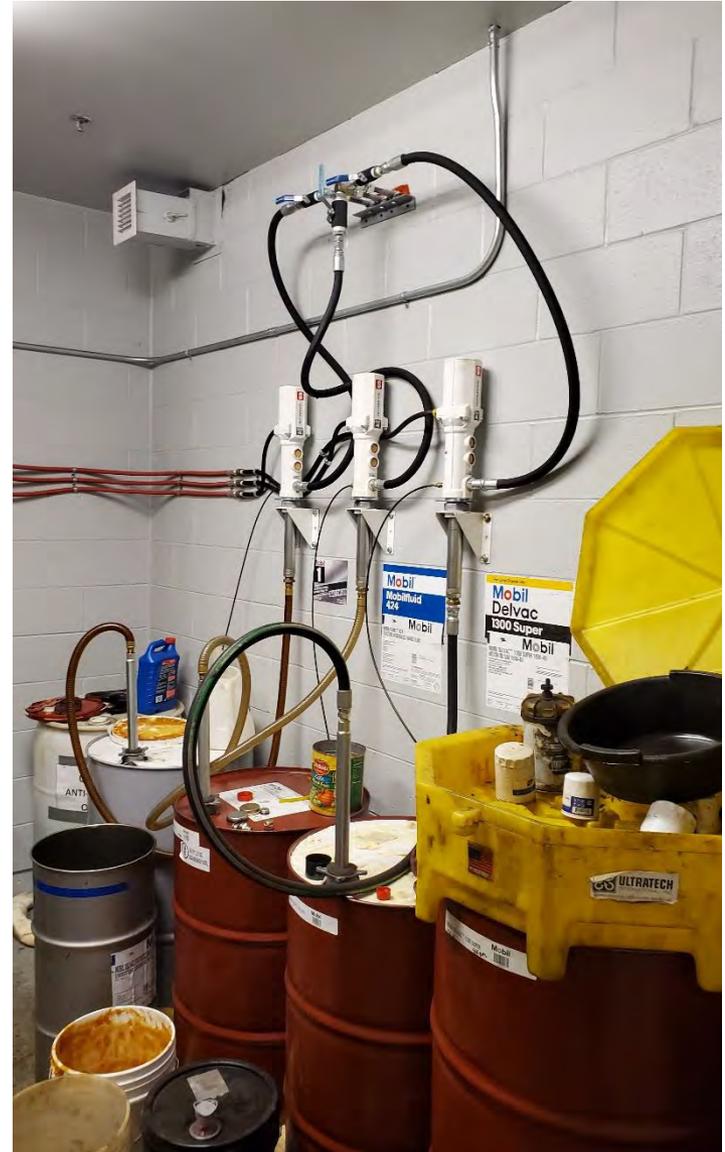
Department of Public Works Garage
Representative Existing Conditions Photographs



A-25



A-26



A-27

Department of Public Works Garage
Representative Existing Conditions Photographs



A-28



A-29



A-30



A-31

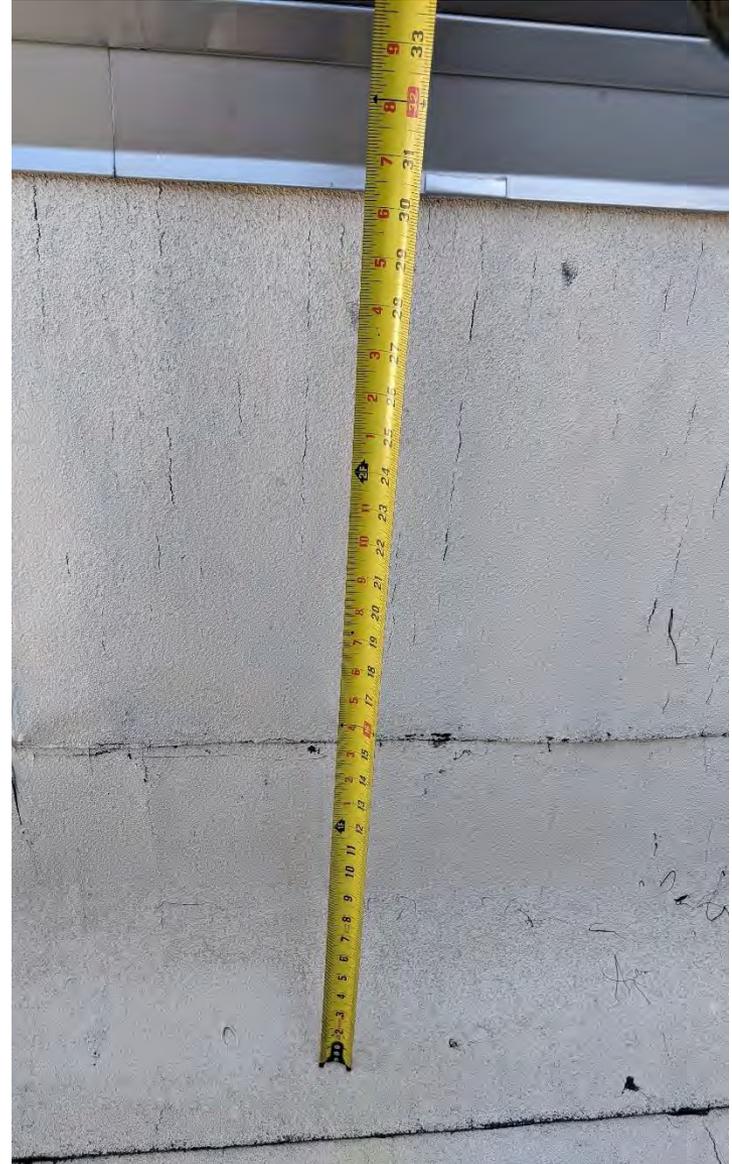
Department of Public Works Garage – Building Envelope
Representative Existing Conditions Photographs



B1



B3



B2

Department of Public Works Garage – Building Envelope
Representative Existing Conditions Photographs



B4



B5



B6



B7

Department of Public Works Garage – Building Envelope
Representative Existing Conditions Photographs



B8



B9



B10



B11

Department of Public Works Garage – Building Envelope
Representative Existing Conditions Photographs



B12



B13



B14



B15

Department of Public Works Garage – Building Envelope
Representative Existing Conditions Photographs



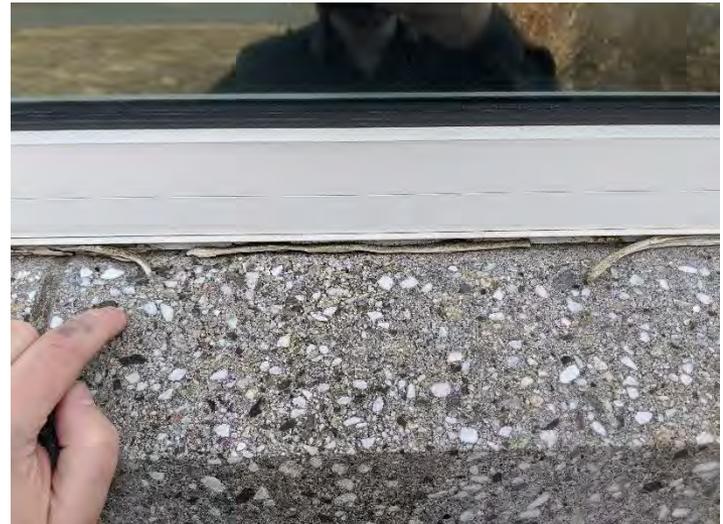
B16



B17

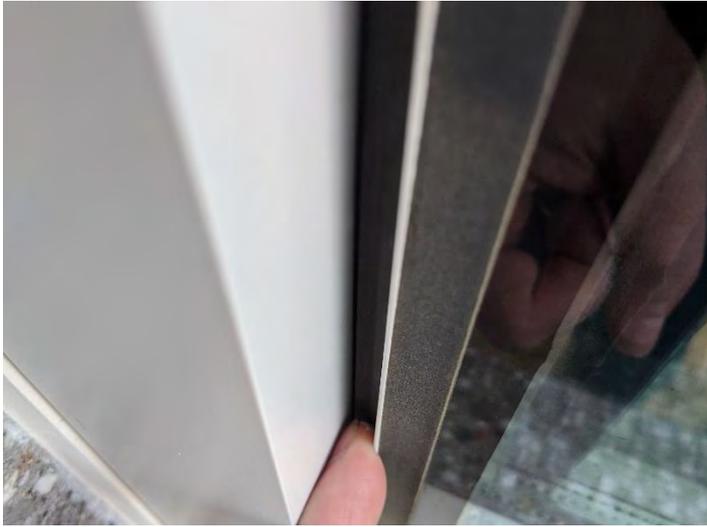


B18



B19

Department of Public Works Garage – Building Envelope
Representative Existing Conditions Photographs



B20



B21



B22



B23

Department of Public Works Garage – Building Envelope
Representative Existing Conditions Photographs



B24



B25

Department of Public Works Garage – MEP/FP
Representative Existing Conditions Photographs



MEP 1



MEP 2



MEP 3



MEP 4

Department of Public Works Garage – MEP/FP
Representative Existing Conditions Photographs



MEP 5



MEP 6



MEP 7



MEP 8

Department of Public Works Garage – MEP/FP
Representative Existing Conditions Photographs



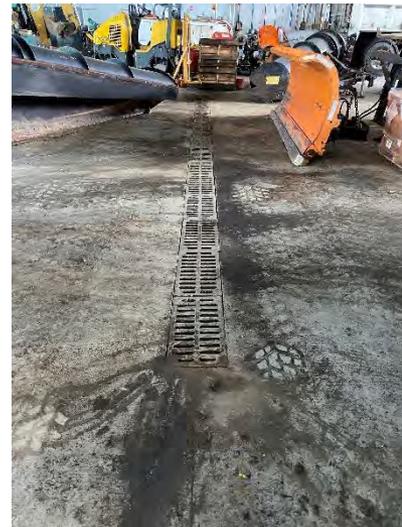
MEP 9



MEP 10



MEP 11



MEP 12

Department of Public Works Garage – MEP/FP
Representative Existing Conditions Photographs



MEP 13



MEP 14



MEP 15



MEP 16

Department of Public Works Garage – MEP/FP
Representative Existing Conditions Photographs



MEP 17



MEP 18



MEP 19

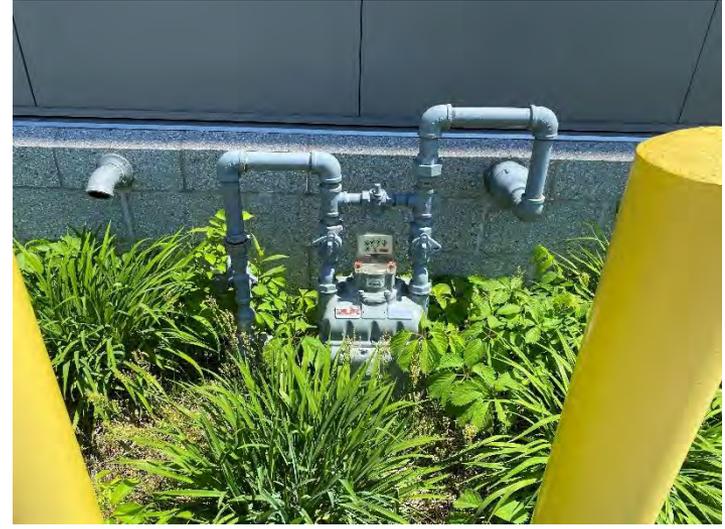


MEP 20

Department of Public Works Garage – MEP/FP
Representative Existing Conditions Photographs



MEP 21



MEP 22



MEP 23



MEP 24

Department of Public Works Garage – MEP/FP
Representative Existing Conditions Photographs



MEP 25



MEP 26



MEP 27



MEP 28

Department of Public Works Garage – MEP/FP
Representative Existing Conditions Photographs



MEP 29



MEP 30



MEP 31



MEP 32

Department of Public Works Garage – MEP/FP
Representative Existing Conditions Photographs



MEP 33



MEP 34



MEP 35



MEP 36

Department of Public Works Garage – MEP/FP
Representative Existing Conditions Photographs



MEP 37



MEP 38



MEP 39



MEP 40

Department of Public Works Garage – MEP/FP
Representative Existing Conditions Photographs



MEP 41



MEP 42

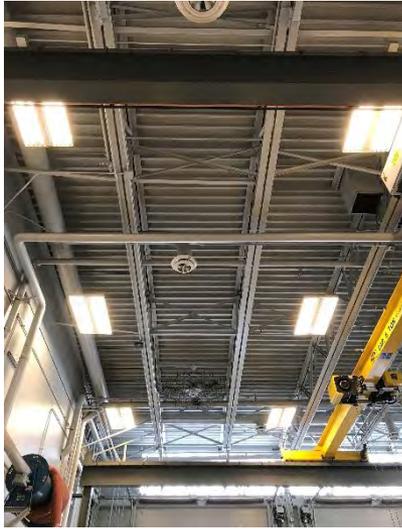


MEP 43



MEP 44

Department of Public Works Garage – MEP/FP
Representative Existing Conditions Photographs



MEP 45



MEP 46



MEP 47



MEP 48

Department of Public Works Garage – MEP/FP
Representative Existing Conditions Photographs



MEP 49



MEP 50



MEP 51



MEP 52

Department of Public Works Garage – MEP/FP
Representative Existing Conditions Photographs



MEP 53



MEP 54



MEP 55



MEP 56

Department of Public Works Garage – MEP/FP
Representative Existing Conditions Photographs



MEP 57



MEP 58



MEP 59

Appendix A: Floor Plans

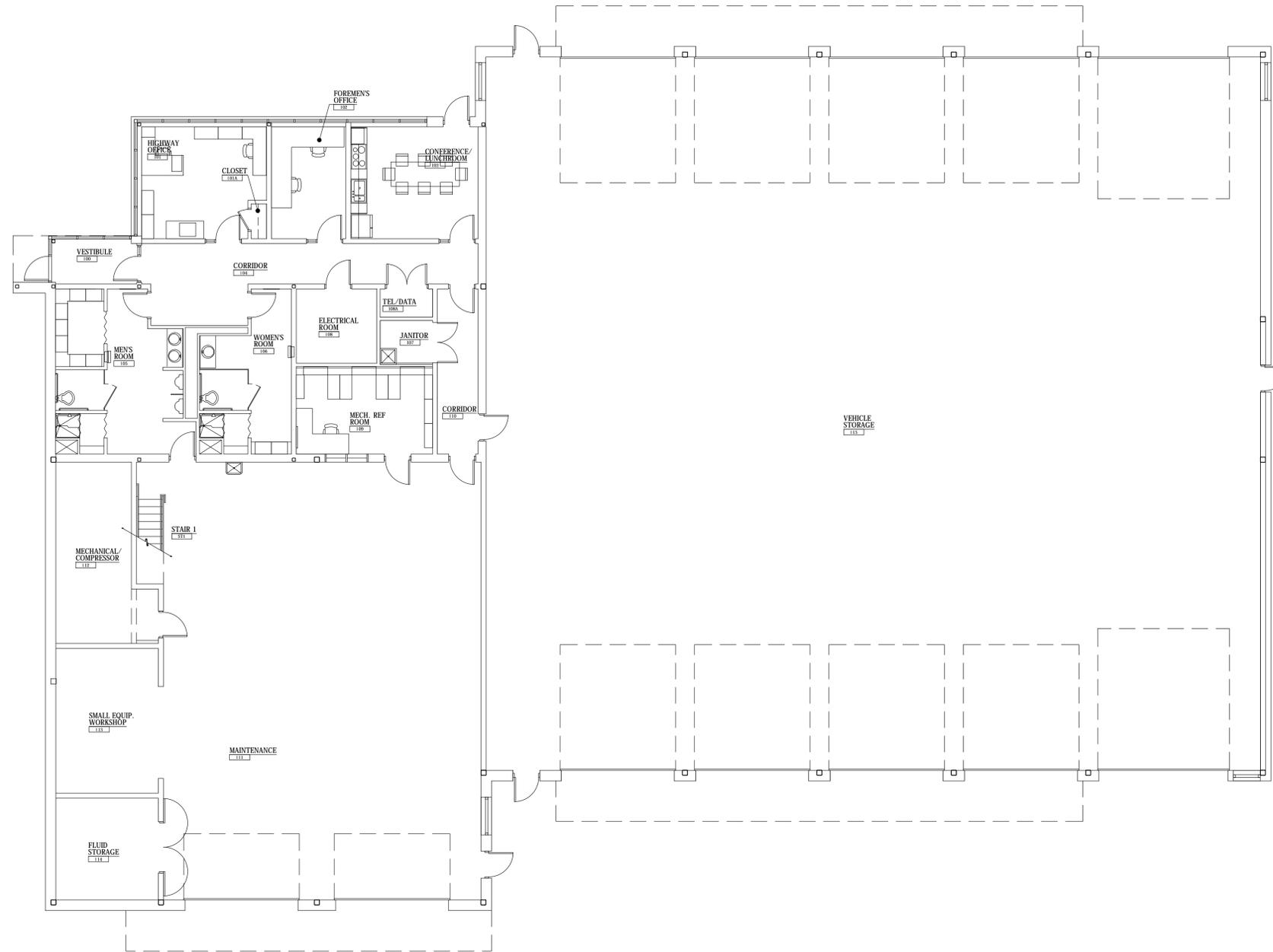
**DEERFIELD
DPW BUILDING
STUDY**

9 MERRIGAN WAY
DEERFIELD, MA 01373

8 CONWAY STREET
SOUTH DEERFIELD, MA 01373

G | R | L | A

Gorman Richardson Lewis Architects
239 South Street Hopkinton, MA 01748
T - 508.544.2600 F - 508.435.0072
www.grlarchitects.com



PROJECT

CLIENT

FIRM

KEY PLAN

REMARKS

REVISIONS

COPYRIGHT

SEAL / ORIENTATION

DATA

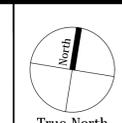
TITLE

SHEET

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Date: MARCH, 2020
Proj. No.: 2019051.01
Scale: 1/8"=1'-0"
Drawn By: BAG
Checked By: GEO
File Name: EX1-1.dwg

**EXISTING
FIRST FLOOR
PLAN**

EX1.1

2019051.01 - TOWN OF DEERFIELD BUILDINGS STUDY - DEERFIELD DPW BUILDING - MARCH, 2020

T:\PROJ\2019\2019051-TownofDeerfield\01_Existing_Conditions\Drawings\DPW_Building\EX1.dwg, 3/13/2020 11:30:47 AM, hggulin

Appendix B: EagleView

Precise Aerial Measurement Report

Prepared by Gorman Richardson Lewis Architects



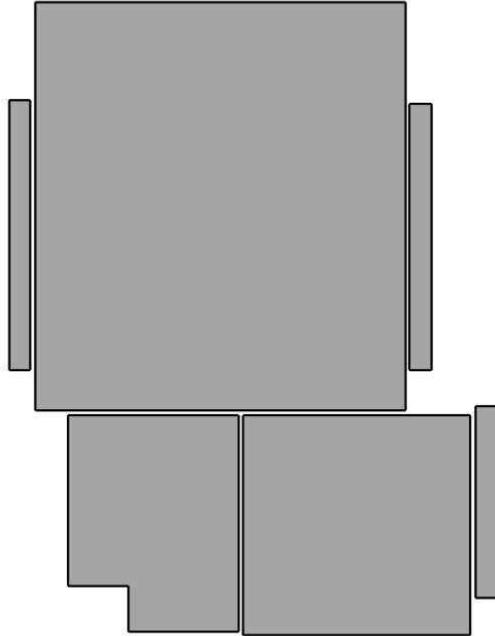
9 Merrigan Way, South Deerfield, MA 01373-1106

G | R | L | A
Gorman Richardson Lewis Architects

Gorman Richardson Lewis Architects
239 South St
Hopkinton, MA 01748-2249

Robert Gutmann
tel. 508-544-2600
email: rgutmann@grlarchitects.com
www.grlarchitects.com

9 Merrigan Way, South Deerfield, MA 01373-1106



In this 3D model, facets appear as semi-transparent to reveal overhangs.

Report Details

Report: 32484531

Roof Details

Total Roof Area = 14,445 sq ft
 Total Roof Facets = 6
 Predominant Pitch = 0/12
 Number of Stories >1
 Total Ridges/Hips = 0 ft
 Total Valleys = 0 ft
 Total Rakes = 0 ft
 Total Eaves = 208 ft
 Total Penetrations = 26
 Total Penetrations Perimeter = 437 ft
 Total Penetrations Area = 469 sq ft

Report Contents

Images2
 Length Diagram.....5
 Pitch Diagram6
 Area Diagram7
 Notes Diagram8
 Penetrations Diagram9
 Report Summary10

Contact: Chris Paszko
 Company: Gorman Richardson Lewis Architects
 Address: 239 South St
 Hopkinton MA 01748-2249
 Phone: 508-544-2600

Measurements provided by www.eagleview.com



Certified Accurate

www.eagleview.com/Guarantee.aspx

Images

The following aerial images show different angles of this structure for your reference.



North Side



South Side



East Side



West Side

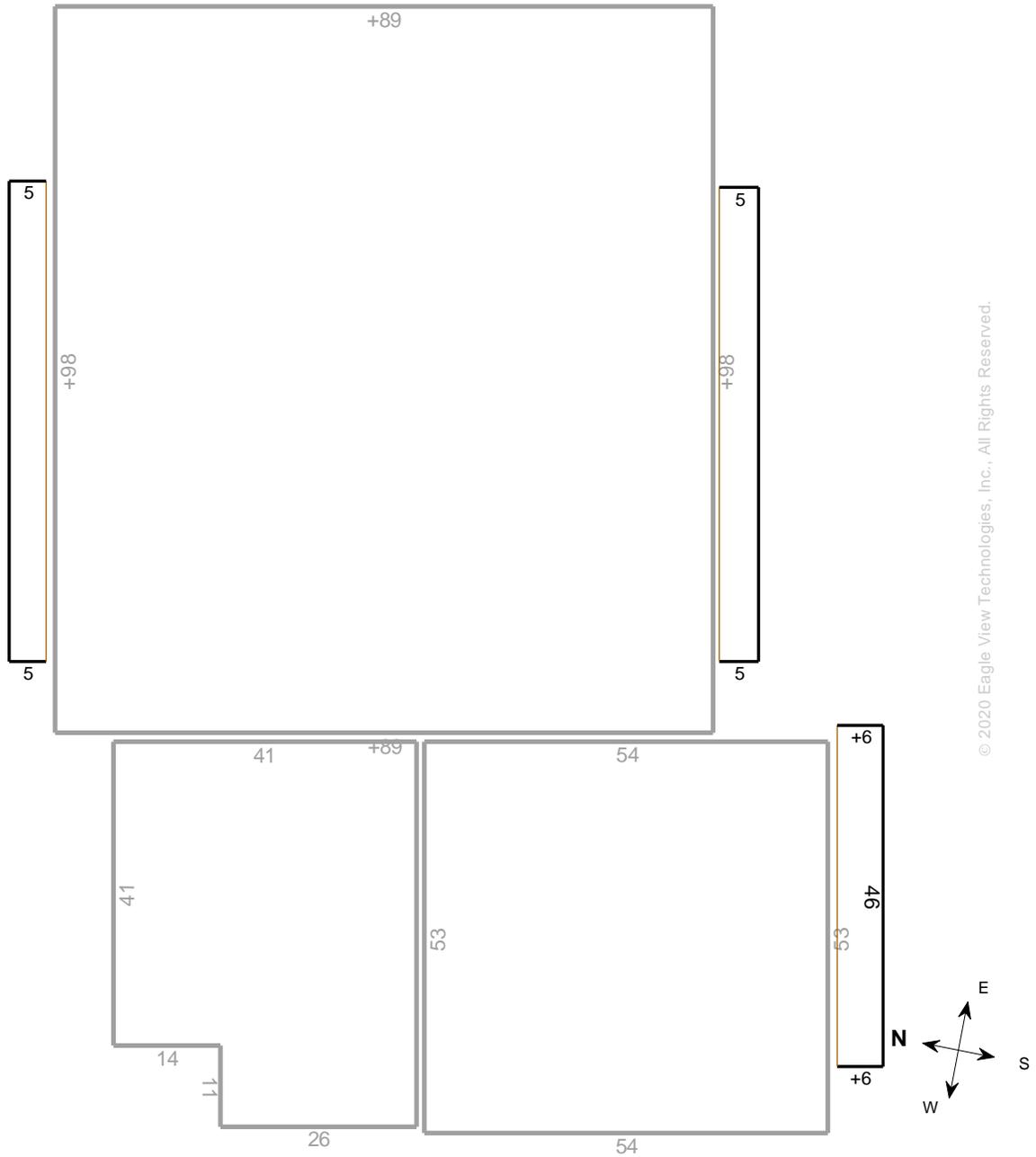


Length Diagram

Total Line Lengths:
 Ridges = 0 ft
 Hips = 0 ft

Valleys = 0 ft
 Rakes = 0 ft
 Eaves = 208 ft

Flashing = 175 ft
 Step flashing = 0 ft
 Parapets = 773 ft



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Note: This diagram contains segment lengths (rounded to the nearest whole number) over 5 feet. In some cases, segment labels have been removed for readability. Plus signs preface some numbers to avoid confusion when rotated (e.g. +6 and +9).



Report: 32484531

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Pitch Diagram

Pitch values are shown in inches per foot, and arrows indicate slope direction. The predominant pitch on this roof is 0/12.

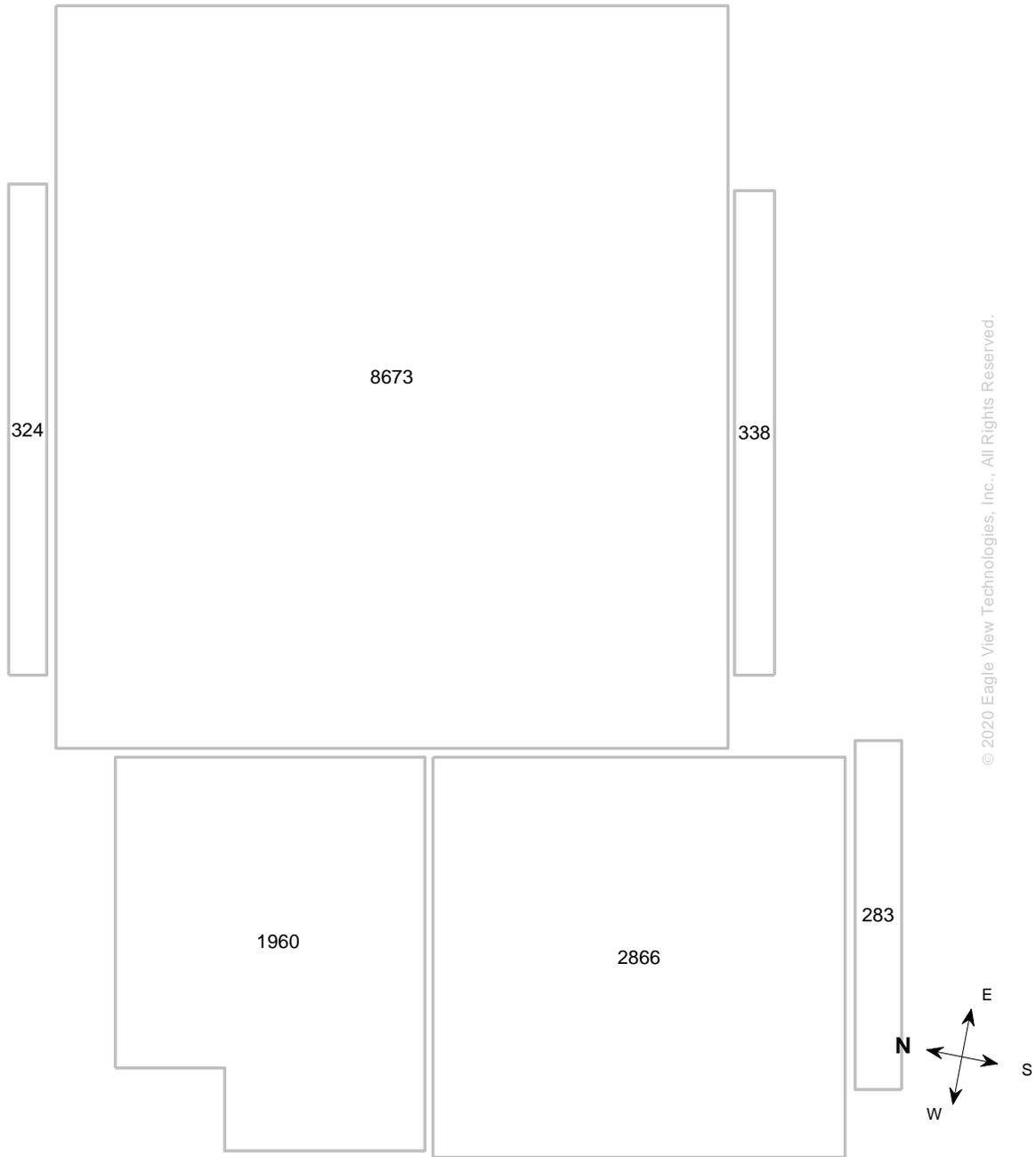


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Note: This diagram contains labeled pitches for facet areas larger than 20 square feet. In some cases, pitch labels have been removed for readability. Plus signs preface some numbers to avoid confusion when rotated (e.g. +6 and +9). Gray shading indicates flat, 1/12 or 2/12 pitches. If present, a value of "F" indicates a flat facet (no pitch).

Area Diagram

Total Area = 14,445 sq ft, with 6 facets.

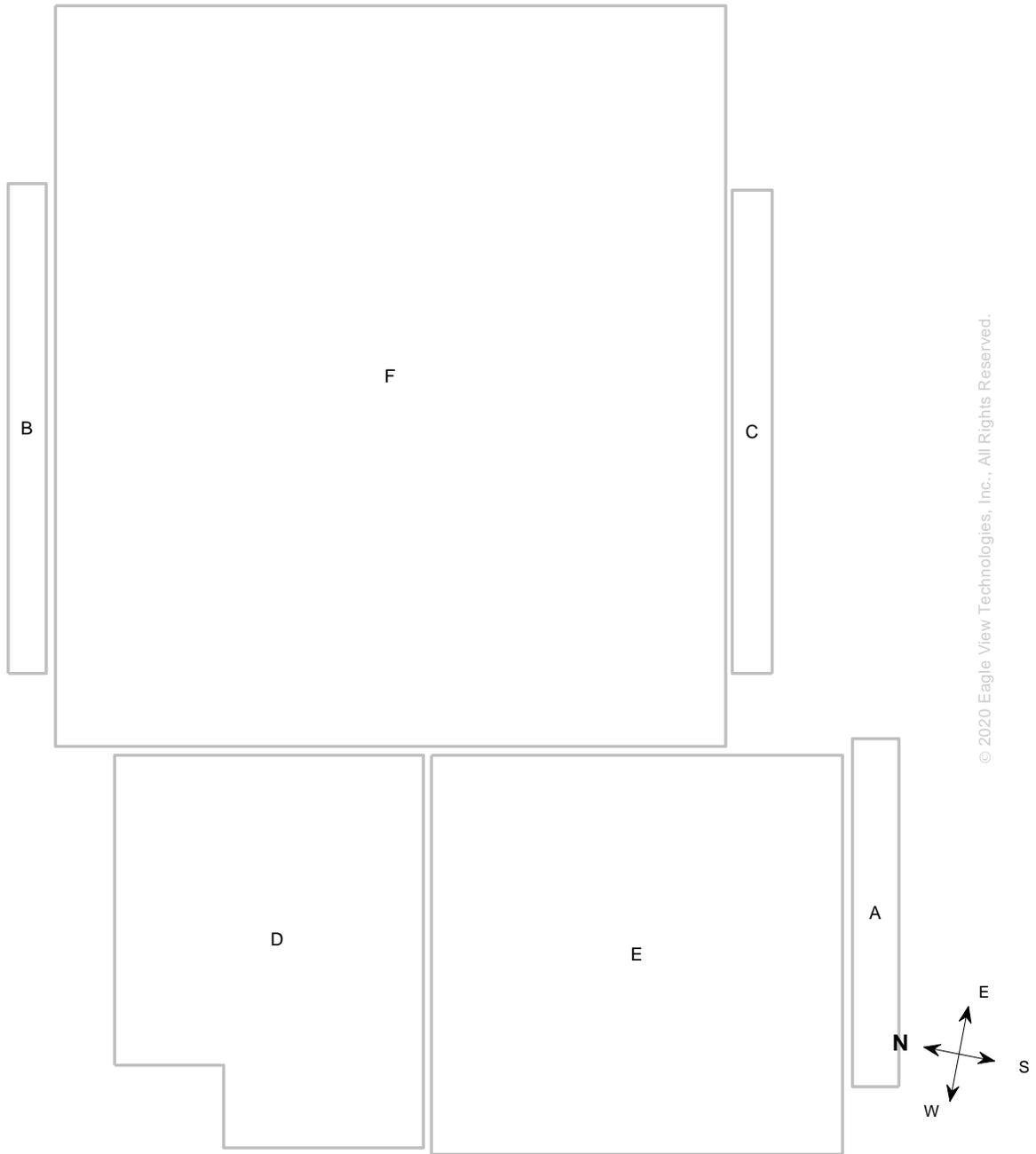


Note: This diagram shows the square feet of each roof facet (rounded to the nearest foot). The total area in square feet, at the top of this page, is based on the non-rounded values of each roof facet (rounded to the nearest square foot after being totaled).



Notes Diagram

Roof facets are labeled from smallest to largest (A to Z) for easy reference.



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Penetrations Notes Diagram

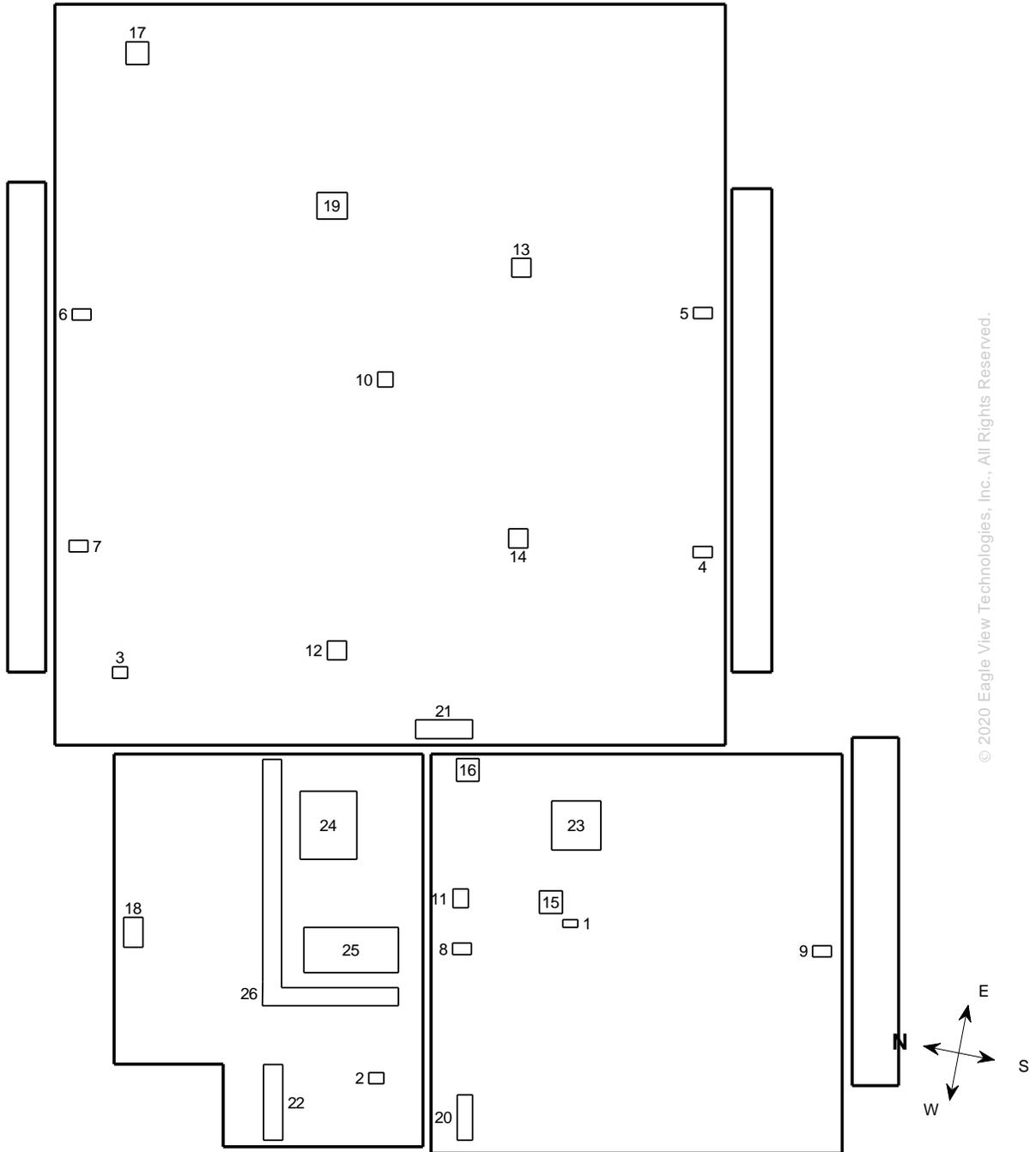
Penetrations are labeled from smallest to largest for easy reference.

Total Penetrations = 26

Total Penetrations Area = 469 sq ft

Total Penetrations Perimeter = 437 ft

Total Roof Area Less Penetrations = 13,976 sq ft



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Report: 32484531

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Report Summary

Below is a measurement summary using the values presented in this report.

All Structures

| Areas per Pitch | |
|-----------------|---------|
| Roof Pitches | 0/12 |
| Area (sq ft) | 14444.7 |
| % of Roof | 100% |

The table above lists each pitch on this roof and the total area and percent (both rounded) of the roof with that pitch.

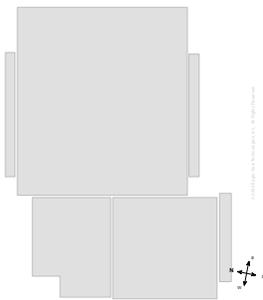
| Waste Calculation Table | | | |
|-------------------------|--------|--------|--------|
| Waste % | 0% | 10% | 15% |
| Area (sq ft) | 14,445 | 15,890 | 16,612 |
| Squares | 144.4 | 158.9 | 166.1 |

This table shows the total roof area and squares (rounded up to the nearest decimal) based upon different waste percentages. The waste factor is subject to the complexity of the roof, individual roofing techniques and your experience. Please consider this when calculating appropriate waste percentages. Note that only roof area is included in these waste calculations. Additional materials needed for ridge, hip, valley, and starter lengths are not included.

| Penetrations | 1 | 2-3 | 4-8 | 9 | 10 | 11 | 12 | 13-14 | 15-17 | 18 |
|----------------|----|-----|------|-----|------|------|-----|-------|-------|----|
| Area (sq ft) | 2 | 3 | 3.7 | 3.8 | 4 | 5 | 6.2 | 6.3 | 9 | 10 |
| Perimeter (ft) | 6 | 7 | 8 | 8 | 8 | 9 | 10 | 10 | 12 | 13 |
| | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | | |
| Area (sq ft) | 14 | 12 | 18.7 | 25 | 42.2 | 67.5 | 75 | 118.6 | | |
| Perimeter (ft) | 15 | 16 | 20 | 25 | 26 | 33 | 37 | 101 | | |

Any measured penetration smaller than 3x3 feet may need field verification. Accuracy is not guaranteed. The total penetration area is not subtracted from the total roof area.

All Structures Totals



Total Roof Facets = 6
Total Penetrations = 26

Lengths, Areas and Pitches

Ridges = 0 ft (0 Ridges)
Hips = 0 ft (0 Hips).
Valleys = 0 ft (0 Valleys)
Rakes † = 0 ft (0 Rakes)
Eaves/Starter ‡ = 208 ft (9 Eaves)
Drip Edge (Eaves + Rakes) = 208 ft (9 Lengths)
Parapet Walls = 773 (14 Lengths).
Flashing = 175 ft (3 Lengths)
Step flashing = 0 ft (0 Lengths)
Total Penetrations Area = 469 sq ft
Total Roof Area Less Penetrations = 13,976 sq ft
Total Penetrations Perimeter = 437 ft
Predominant Pitch = 0/12
Total Area (All Pitches) = 14,445 sq ft

Property Location

Longitude = -72.6067322
Latitude = 42.4742318

Notes

This was ordered as a commercial property. There were no changes to the structure in the past four years.

† Rakes are defined as roof edges that are sloped (not level).
‡ Eaves are defined as roof edges that are not sloped and level.

Parapet Wall Area Table

| Wall Height (ft) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|----------------------------|-----|------|------|------|------|------|------|
| Vertical Wall Area (sq ft) | 773 | 1546 | 2319 | 3092 | 3865 | 4638 | 5411 |

This table provides common parapet wall heights to aid you in calculating the total vertical area of these walls. Note that these values assume a 90 degree angle at the base of the wall. Allow for extra materials to cover cant strips and tapered edges.

Online Maps

Online map of property

http://maps.google.com/maps?f=g&source=s_q&hl=en&geocode=&q=9+Merrigan+Way,South+Deerfield,MA,01373-1106

Directions from Gorman Richardson Lewis Architects to this property

http://maps.google.com/maps?f=d&source=s_d&saddr=239+South+St,Hopkinton,MA,01748-2249&daddr=9+Merrigan+Way,South+Deerfield,MA,01373-1106



Report: 32484531

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