

MEP/FP SYSTEM INVENTORY AND ASSESSMENT – FINAL REPORT

Project Title:	Buffalo Outer Harbor Access & Activation Civic Improvements
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Prepared For:

Erie Canal Harbor Development Corporation

95 Perry Street

Buffalo, NY 14203

August 2017

REP-17055-001, REV. 2

RJR Project # 17055

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1.0 EXECUTIVE SUMMARY

A property condition assessment was performed by RJR Engineering, P.C. as part of the Buffalo Outer Harbor Access & Activation Civic Improvements Project. The subject property is situated just south of downtown Buffalo, New York along the northern end of Fuhrmann Boulevard. It is bordered on two opposite sides by Lake Erie and the Ship Canal. Property on the west side of Fuhrmann Boulevard includes 901 Fuhrmann Boulevard with its associated buildings. Property on the east side of Fuhrmann Boulevard located at the north end adjacent to the Ship Canal includes the First Buffalo Marina. Buildings associated with these two properties can be described as warehouse, office, storage and maintenance spaces.

1.1 901 Fuhrmann Boulevard

The 901 Fuhrmann Boulevard property with its associated buildings is the larger of the two properties. It includes the following buildings; Terminal A, Terminal B, the Administration Building (garage/storage building) and the Blue Building (pre-engineered steel building). These buildings vary greatly in their condition. Terminal A, the largest of them, is in poor condition and requires the most refurbishment. Terminal B, another large building, is in good condition. The Administration Building and the Blue Building are both in fair condition and with their smaller size, will require less effort to refurbish.

Site utilities are generally in place, but will require some level of effort to reactivate. Fire water distribution is marginal, contributing to code compliance issues. Sewerage systems, including gravity and forced mains, have been out of operation for an extended period and it is reasonable to assume the corrosive nature of the system will drive replacement of equipment. Electrically most site lighting is non-functional and only a minor portion of the existing system may be suitable for reuse. Estimated cost information can be found in the Appendix E.

Terminal A is approximately 548,500 sf and has a partial second floor. The fire protection systems are non-functional and/or disconnected in places which results in code compliance issues and will require refurbishment and reactivation in all areas being used for storage. Plumbing services are currently deactivated and metering and backflow equipment will require thorough inspection and maintenance for reactivation. Roof drains are leaking throughout the building and require repair and, in some cases, complete replacement. Mechanically gas service to the building is functional, but heating services after the meters generally require replacement and can be added where necessary. Electrically upgrades are required to bring the services to code compliance and only a minor portion of the existing infrastructure may be suitable for reuse. Estimated cost information can be found in the Appendix E.

Terminal B is approximately 95,000 sf. Systems are overall in good condition. The fire protection system requires only minor repairs. All plumbing systems appear intact and

minor repairs and fixture replacements are expected prior to reuse. Mechanically routine maintenance prior to start up should be sufficient. Electrical services are functional for current use. Estimated cost information can be found in the Appendix E.

The Administration Building is approximately 7,000 sf. Fire protection systems require moderate repairs due to age and configuration of the existing equipment. All plumbing systems appear intact and minor repairs and fixture replacements are expected prior to reuse. Mechanically routine maintenance should be performed and improper past modifications should be corrected. Electrical services are functional, but toward the end of their intended service life and due for replacement. Estimated cost information can be found in the Appendix E.

The Blue Building is approximately 4,400 sf. It does not have a fire protection system. All plumbing and mechanical systems appear intact and only routine maintenance is expected to be required. Electrical services are functional with only minor housekeeping issues. Estimated cost information can be found in the Appendix E.

1.2 First Buffalo Marina

The First Buffalo Marina property includes the following buildings; Marina Office Building and the Marina Maintenance Building. It is the smaller of the two properties. The Marina Office Building, with drawings dated 2011, is a relatively new building and is in excellent condition. The smaller Marina Maintenance Building had no known construction date, is an older building, but is in good condition. Refurbishment effort is minimal.

Site utilities are in place and only require some minor effort to repair neglected items. Estimated cost information can be found in the Appendix E.

The Marina Office Building is approximately 3,200 sf and is a single story building. It does not have a fire protection system. All plumbing and mechanical systems appear in good working condition. Electrical services are functional with only minor housekeeping issues. There are no costs identified for the next 12 months.

The Marina Maintenance Building is approximately 1,500 sf. and is a single story building. It does not have a fire protection system. There are no plumbing or mechanical systems in this building. Electrical services are functional with only one welding receptacle issue. Estimated cost information can be found in the Appendix E.

2.0 PURPOSE/SCOPE

The purpose of this report is to inventory the mechanical, electrical, plumbing and fire protection (MEP/FP) systems associated with buildings/sites located at 901 Fuhrmann

Boulevard and First Buffalo Marina areas. The property at 901 Fuhrmann Boulevard includes the following buildings; Terminal A, Terminal B, the Administration Building (garage/storage building) and the Blue Building (pre-engineered steel building). The First Buffalo Marina property includes the following buildings; Marina Office Building and the Marina Maintenance Building.

The scope includes assessing building conditions and generating recommendations as to what equipment can be utilized in the future and what equipment is recommended to be removed and/or replaced along with a cost estimate for necessary items over the next 12 months. Site visits were performed on March 19, 2017 and April 3, 2017.

3.0 901 FUHRMANN BOULEVARD

3.1 Site Utilities

3.1.1 Fire Protection

The fire protection assessment has looked at the overall condition of the facilities and provides a general description, condition report and a Near Term recommendation assessment to restore necessary function to the facilities. The Near Term objectives include:

- Restoring Fire Protection water supply to the site
- Restoring the fire pump and associated equipment to operation
- Restoring sprinkler systems in leased areas of Terminal A
- Ensuring minimal system monitoring by fire alarm is included
- Notification of local authorities of the system's restoration

3.1.1.1 Fire Protection Water Supply

- **General Description**

The Fire Water supply was originally installed in 1930 with most of the piping in service today.

Fire Water supply for the site is fed from a 16" city main which runs parallel to Fuhrman Blvd. A 10" supply distributes the water to the site, with a 6" domestic water service branching off upstream of the Fire Pump House. The fire pump was originally in the old Boiler House but was replaced by a stand-alone pump house after decommissioning of the Boiler House. The fire pump provides increase to pressure and volume to support the yard hydrants and sprinkler systems in the

Administration Building, Terminal A and Terminal B. The fire water is not metered.

The primary 10" fire water supply is routed from the fire pump house to the yard east of the Administration Building. An 8" branch line is fed to the building sprinkler riser. The piping then continues in the tunnel where it departs to feed the exterior 10" fire loop around Terminal A. Water to sprinklers in Terminal A is taken from the loop where branch lines feed sprinkler risers located throughout the structures. A 10" divisional branch line is located outside the northwest corner of the building which feeds Terminal B hydrants and sprinklers (Figure F-001). An 8" branch line also feeds the Administrative Building.

- Condition Report

The general conditional of the fire water distribution system is marginal. The system has been unpressurized for an extended period of time and at present there is no fire protection water service available to the facilities. The condition of the fire mains will be in question until they can be pressurized and flushed. The flushing will clear debris/scaling determining if the integrity of the fire mains has been compromised due to non-pressurization. Flush is critical to ensure all of the loose debris is removed and before using the service for sprinkler system support.

Following the flushing a pressure test of the system should be conducted to determine any excessive leak rates. This sectional pressure test can be done to narrow down any leaks in the system. A full static pressure test is not warranted at this time, given that that there are no leaks and older valves may not hold the pressure.

Valve integrity is also compromised when valves are left unattended for periods of time. The seats can become pitted and the seals deform when not under pressure. Lack of exercise and mechanical lubrication can cause the valves to seize. Outside the building all of the divisional valves are operated by post indicator operators. The operator posts were found in unserviceable condition and need to be rebuilt or replaced. Each of these operators has glass windows that show a sign "OPEN or SHUT". None of these were found functional. They

are needed for emergency responders to control water supplies during emergencies.

Fire hydrants will also have to be serviced; cleaned and lubricated. One fire hydrant at the east end (in the grass island) has been knocked off and is nowhere to be found. This is located east of Terminal A in the grass area. The hydrants at the west end of the facility are in un-serviceable condition and should be relocated away from the structure so fire fighters can access them without restriction. These are original installation hydrants and it is obvious from physical appearance that they have not been cared for in the past. Many of the hydrants sit low in the ground. This is due to the layers of asphalt built up over the years. Hydrants that have the hose connections low to the ground are difficult to access by fire fighters in the winter because of ice and snow buildup prevents access to the connections (Figure F-010).

Two “Fire Boat” Connections are provided and mounted on the Terminal A facility. These connections were designed for the Buffalo Fire Boat to tie into the water distribution system and supplement the pressure in the fire main. Each connection is fitted with a check valve and drain to keep the connection water free when not in use which in turn prevents freezing. These have not been serviced in years and most likely require replacement (Figure F-011).

The major concern with the water distribution system is with the branch mains that feed the sprinkler risers in Terminal A. Six of these do not have exterior isolation valves. They are located on the north side of the building and routed directly off the fire main loop into the building and to the sprinkler riser location. Based on the original drawings, these lines at one time did have post indicator valves, however, it seems that a sloped truck loading ramp was later added and the valves were removed. These valves should be re-installed for emergency isolation. Since these sprinkler lines do not have valves they will have to be flushed from the sprinkler riser in the building. The sprinkler alarm valves would have to be removed and a flushing connection installed. Hoses would be routed out of the building to accommodate the flush procedure. Flushing of the fire mains has to be done at a volume and pressure sufficient to move loose debris in the entire length of the pipe.

The work to revitalize the underground fire water mains, valves and hydrants will be extensive. Condition of the underground piping is questionable since it has been unpressurized for over 2 years. The piping type and style is unknown but based on its age it is most likely cast iron with mechanical joint flanges. If the joint seals have deteriorated during this time they could produce extensive leaks which would have to be addressed. It can be anticipated that multiple leaks may occur when the system is re-pressurized.

Cost estimate for revamping the water distribution will vary based on the extent of the repairs needed and the whether or not the underground piping is acceptable. It is possible that a good portion of the valves will be usable but some may have to be replaced.

- Compliance Issue

It is essential to place the fire water mains in service as soon as possible. International Building and Fire Code, as adopted by NYS require operable water supplies to buildings that have any form of occupancy. Restoring the fire water supply is considered an essential utility service. Prior to any additional occupancy, including boat storage the sprinkler systems should be restored to service.

- Near Term Work Required

City Water Supply - The water supply from the City of Buffalo will have to be restored. Coordination with the water board will be required. The City of Buffalo treats the restoration of this as a new service tie-in. The original tie-in was unmetered with no back flow protection. Per the Buffalo Water Board, reactivation of the water system will require a new water permit to be issued and conformance with the latest standards. This means back flow prevention will be needed on the incoming 10" water supply.

Yard Mains – All of the yard mains need to be charged and flushed prior to any restoration of the sprinkler systems. Yard mains are equipped with divisional valves and hydrants which will also require servicing. After water main service is restored to the site the flushing of the lines will dislodge any loose pipe scaling. Flushing is done through the fire hydrants. Cost anticipates at least one line failure. Existing water mains are

most likely slip-on mechanical joints. With no water pressure on the lines for a significant period the gasket seals may fail during re-pressurization. Once the yard mains are pressurized a leak test should be performed. A volume leak test will determine loss rate and help to isolate potential problems.

Fire Hydrants and Valves – Full inspection of hydrants and valves is necessary to ensure operability. All valves should be fully cycled multiple times to ensure full travel. Most of the valves use post indicators as the operator. These need to be disassembled, cleaned, painted and adjusted. The indicator windows should be cleaned or replaced. Leak-by is anticipated so any of these valves could introduce water to sprinkler branch lines in the building if the system were to be activated prior to the proper valve maintenance being performed.

All fire hydrants will also need servicing and an operations check. Because they are a direct feed off the fire main they should be inspected prior to the water service being turned back on. After water pressure is restored they should be flow tested and flushed. Repaint after servicing.

3.1.1.2 Fire Pump House

- General Description

The Fire Pump House was inspected to ensure its ability to support the fire water distribution system. The Fire Pump House has a single electric drive fire pump which is used to boost pressure and volume. It could not be determined what the size of the fire pump is because the labels in the room and on the pump had corroded; however it seems to be at least 1,000 GPM or greater. The pump is a single stage centrifugal type and is powered by a 480 VAC 3 phase motor. It is equipped with a pressure relief valve mounted on top of the pump impeller casing. The pump and motor are controlled by a Fire Pump Controller which is mounted on the north wall. Pressure to the fire water system is maintained by a multi stage booster pump.

- Condition Report

The overall condition of the fire pump house is good. The system seems to have been installed in the late 1970's and is modern in design, function and layout. Since there are no

drawing arrangements for the underground connections it is assumed that the pump was installed to replace the original pump which was housed in the Boiler House (Figure F-002, F-003 and F-004).

To revitalize the pump house an inspection of all the components would be required. The fire pump inspection would require disassembly of the pump casing and impeller. Replacement of the bearing sleeves and shaft packing glands is needed. The isolation valves should also be exercised and lubricated to ensure operability. The pressure relief valve on top of the pump casing is corroded and should be replaced. This pressure relief valve is a critical safety component for the pump.

The fire pump controller will have to be re-certified by a factory authorized representative. This is an NFPA 20 code requirement. The controller operates on changes in pressure and the pressure transducer will most likely need replacement.

Prior to operating the fire pump, the water supply from the City Main to the pump house should be flushed to remove any debris in the line. This will help protect the fire pump.

The jockey pump was found mechanically disconnected from the system. This unit needs to be re-attached and set-up for use. The jockey pump should also be inspected and a new seal kit installed.

Once all components of the fire pump are inspected and placed in operation, a full pump test should be conducted by a certified pump test company and flow rates measured to verify that the pump meets the designed demand and flow specifications. This will establish a new baseline for the pump's operation and a comparison point to use during future testing.

The pump house structure requires some work. The entrance doors are steel and show signs of deterioration. These should be replaced.

Overall the fire pump house and its components should not require extensive work to re-commission.

- Near Term Work Required

After water service is restored, the fire pump house can be placed back in service. Electrical service to the fire pump will have to be inspected and checked prior to startup of the pump (see section 3.1.4). Since the fire pump has sat idle for so long, services to replace packing glands and inspect shaft bearing tolerances is essential. City water should be used to flush all piping prior to operating the pump. This will prevent debris from lodging in the pump impeller and causing damage. After completion of the restart of the pump it should be tested to ensure it meets the designed performance characteristics.

3.1.2 Plumbing

Water service to terminals A and B, as well as the Administration building is routed through the utility tunnel. The water meter is located within the tunnel north-east of the Administration building. Records indicate that NFTA contracted a design for an updated water meter configuration in 1991 to include required features such as back-flow prevention, but close field observations of the installation were not possible due to standing water within the tunnel. See figure P-001.

Within the site utility tunnels are multiple sump pumps in pits. In all cases these pumps are currently not in use. It is recommended that all pumps be replaced and reactivated to ensure proper dewatering of below grade areas.

3.1.2.1 Near Term Plumbing Work Required

- Replace all sump equipment within the utility tunnel to ensure proper maintenance access to utilities.

3.1.3 Sanitary Sewer

Sewerage at the site consists of a combination of forced and gravity fed lines. Terminals A and B gravity feed all sewage to a pump station located at the north-west corner of the Terminal A building, as seen in figure P-002, from which a pair of force mains are discharged to a manhole at the edge of the site along Fuhrmann Boulevard and into the Buffalo Sewerage system beyond at the manhole shown in Figure P-003. Condition of the Terminal A and B pump station is unknown as the control panel is de-energized and the wet well is inaccessible. It is reasonable to assume that all mechanicals will require replacement due to the length of time since last use and the corrosive nature of the conditions within a typical sewerage wet-well. Sewage from the Blue building is routed to a pump station directly adjacent to the building at its south-

west corner as shown in figure P-004, from which point it is pumped into the Administration building. The pump station at the Blue building as well as one located in the basement area under the Administration building are currently operational. However, their discharge point is unknown and it is likely that they discharge into the deactivated Terminal A sewerage system. An in-depth survey of the sewer system is recommended to ensure that the decommissioned wet-well adjacent to Terminal A is not overfilled.

3.1.3.1 Near Term Plumbing Work Required

- Reactivation/replacement of the Terminal A sewage pump station equipment will be required for continued use of any restroom facilities on the site, as all waste is routed to that point.

3.1.4 Mechanical

The site wide natural gas distribution system piping was not observed during the site investigation. It is currently in use with no leaks reported.

3.1.4.1 Near Term Mechanical Work Required

- No required near term work is expected.

3.1.5 Electrical

According to the supplied drawings, most site lighting and miscellaneous outbuildings and equipment located around the site was supplied by the Terminal A service. As Terminal A is currently disconnected from the power system, most site lighting and miscellaneous outbuildings are non-functional (Figures E-001 through E-009 and E-013). Most exterior electrical equipment (panelboards, transformers, etc.) is heavily weathered. It may be possible to clean, inspect, and reuse some items; however some may be beyond repair. If site lighting is desired, it is likely that new poles and fixtures will need to be installed due to the harsh environmental conditions and lack of continued maintenance.

An additional lighting service feeds the main entrance roadway lights, however this lighting is not active (Figures E-010 through E-012).

A separate lighting service has been installed for selected area lighting near the Blue building. This lighting is functional and no immediate changes are required (Figures E-014 and E-015).

The site fire pump building has its own electrical service that appears to be active. However, the electric fire pump itself has been taken out of service. Additionally, building lighting was not functioning. An electrician should be called out to ensure everything is functioning correctly within the building and replace components as needed. Electrical panelboards and transformer appear to be in good condition, and absent any hidden damage should be reusable (Figure E-016 through E-019).

3.1.5.1 Near Term Electrical Work Required

- Inspection and restoration of all electrical equipment in the fire pump house required to support the maintenance and operation of the fire pump.

3.2 Terminal A

3.2.1 Fire Protection

3.2.1.1 Sprinkler Systems

The sprinkler systems in Terminal A are original to the building construction in 1930. The systems have been extensively modified over the life of the building. Originally installed as “Wet Pipe” systems they are now a combination of Dry Type 8” Risers and 6 Wet Pipe Systems.

The Dry Pipe Systems rely on air pressure to hold back a differential valve against the water pressure. Once a sprinkler held link is released (OPENED) the air is expelled relieving the pressure on the differential valve causing it to open.

The Wet Pipe systems are completely filled with water and use an Alarm Check Valve to maintain the water in the piping in a stable non-moving condition.

Originally, the sprinkler provided 100% coverage for all areas with the exception of the service tunnels.

- Condition Report

All sprinkler systems are currently non-functional and multiple locations have been physically disconnected. The systems were shut down approximately 2 to 3 years ago when heat was removed from the building (Figure F-005 and F-006).

1. The Crane Bay area is supported by four sprinkler Dry Pipe risers, two at each end of the bay. These valves were manufactured by Grinnell and are model E2 which was built in 1952. Two of the systems provide coverage for the heads located in the space above the suspended ceiling while the other two support sprinklers under the suspended ceiling. The sprinkler system located under the suspended ceiling is relatively new and may have been installed in the 1990's. This system has modern sprinkler heads and is a groove locked piping system. The system at the roof level is original. Issues with the system include:
 - a. Improperly drained riser system control valves
 - b. Sprinkler heads on the system at the roof level may be over 85 years old. This is a performance reliability issue. NFPA 13 requires they be replaced every 75 years.
 - c. Pressure and flow switches disconnected or missing
 - d. Split broken piping from water freezing
 - e. Grinnell Model E2 valves are no longer supported – no rebuild kits are available
 - f. Ceiling tiles are missing on suspended ceiling which causes hot gases from a fire to bypass the sprinklers and delays activation (Figure F-008).
2. Office / Administrative Area - East End is protected by a wet pipe sprinkler system. This system has been modified in recent years and is in a non-functional condition. The sprinkler valve is a Viking Model C Dry Pipe system which was used as a wet pipe valve. This valve has been obsolete since 1972 according to the manufacturer's data.

Some of the piping has been improperly routed around new construction and the suspended ceiling on the ground floor obstructs all the sprinkler heads. The sprinkler heads were never dropped below the plane of the ceiling as required by code (Figure F-007).

Piping was found broken and freeze stressed and requires total replacement in this area.

3. The remaining area of Terminal A has all dry pipe systems which support all ceiling sprinkler heads. At some point in the systems history they were modified to support various configurations of storage and use. All of the sprinkler riser alarm check valves are of the same types previously identified and are all obsolete. The riser isolation valves may still be of use after they are cleaned and the stem packing replaced. Piping throughout the facility would require an internal inspection for obstructions. Based on observations the sprinkler piping has been maintained in reasonable conditions and it would be worthwhile to investigate for reuse.

- Compliance Issue

The current International Fire Code (2015), as adopted by NYS, as well as previous editions, states the requirements a building owner must take when “required” fire protection systems are taken out of-service. Section 9, Paragraph 901.7 states:

“Where required fire protection system is out of service, the fire department and the fire code official shall be notified immediately and where required by the fire code official, the building shall be either evacuated or an approved fire watch shall be provided for all occupants left unprotected by the shutdown until the fire protection system has been returned to service”.

This compliance criterion is not being met and places serious risk on the owners.

3.2.1.2 Alarm System

Terminal A does not presently have a fire alarm system. There is evidence that the pressure and flow switches on the sprinkler risers were at one point tied to a central alarm system; however, most of this has been removed. Depending on the future use of the facility, an alarm system may be required to monitor sprinkler systems, provide occupant notification, and to alert emergency responders.

- Condition Report

There is no functioning fire alarm system within the building.

- Compliance Issue

The International Fire Code (2015) as adopted by New York State (NYS), section 903.4, requires supervision of the sprinkler systems. A new fire alarm control unit will be required to comply with this requirement if the building remains occupied and the sprinkler systems are restored to service.

3.2.1.3 Near Term Fire Protection Work Required

The focus for the near term sprinkler restoration is to provide the leased areas in the facility with the coverage required by the International Building Code (2015), as adopted by NYS. The current use of the building fits within the International Building Code (2015), as adopted by NYS, description for S-1 occupancy, per section 311.2. Section 903.2.9 of the same document requires that such occupancies be provided with automatic sprinkler systems.

The areas in question require about two-thirds of the facility's sprinklers be restored. Each of the risers that are restored will require an insulated hot box enclosure be built around the riser to protect the valve and trim piping from freezing. Hot boxes can be built on site using common materials.

The sprinkler risers to be restored are:

1. Zone 15, 16, 17, 18 - In the crane bay only restore the sprinkler coverage below the suspended ceiling. This will require the ceiling tiles to be replaced where they are missing or damaged by water leaks.
2. Zone 2 – Restore to cover south east corner tool room / maintenance area. This system has many disconnected pipes and will require repair.
3. Zone 4, 6, 8, 10, 12, 14 – Restored to cover leased area.

The following is the minimal requirements necessary to meet the objective.

Assumptions:

1. Water service has been restored to the site,
2. Fire Pump house and fire pump is operational
3. Electrical service is returned to service, or a new minimal system installed, to support the sprinkler system air compressors and heaters.
4. The building will not be fully heated.

Action to restore systems include:

1. Each riser to be placed back in service must be flushed from the yard loop to the riser base. This will require removing the existing dry valve and putting a temporary flushing connection on the riser isolation valve. Hoses will then be connected to the flushing head and run outside the building to flush the system.
2. Dry Pipe alarm valves are installed on the risers. It is recommended that these are new; however, the existing ones can be restored if rebuild kits can be located, RJR investigated this and they are difficult to find. The cost estimate assumes new replacement.
3. Install air compressor
4. Install “Hot Box” enclosures and heaters
5. Test existing sprinkler piping at working pressure. Test system for operation. If leaks are found, repair will be required.
6. Install fire alarm system to monitor sprinkler system.

3.2.2 Plumbing

As discussed in the site utilities section of this report, water service to Terminal A is currently deactivated. Plumbing throughout the building looked to be in fair condition, where accessible. The majority of fixtures observed, including multiple water heaters, are in poor condition and are in need of replacement prior to use. Examples are shown in figures P-005 through P-008

The building roof drain system is in poor repair with many broken down pipes, as seen in figure P-009, as well as locations at which the roof is leaking adjacent to a roof drain – an indication of clogging as seen in figure P-010. Repair/replacement of all damaged roof drains is of paramount importance to prevent further water damage to all systems within the structure.

Per original construction drawings, the roof drain collection system is integral to the floor drain collection system. By modern environmental standards floor drains are prohibited from discharging to storm sewers and roof drains are prohibited from discharging to sanitary sewers, thus the two systems will eventually need to be separated for building occupation. A possible short term solution would be to seal all building floor drains to prevent discharge to storm sewers, but this would not be advisable until after roof drain repairs are completed. This issue should be investigated further with the input of the Buffalo Sewer Authority and New York State Department of Environmental Control.

3.2.2.1 Near Term Plumbing Work Required

- Repair of clogged and broken roof drains and associated piping to prevent further deterioration of conditions within the building.
- Plug floor drains

3.2.3 Sanitary Sewer

All sanitary sewerage in Terminal A is gravity discharged to the pump station at the north-west corner of the building. No piping issues were apparent during site inspection.

3.2.4 Mechanical

Existing gas service meters were last replaced in 1989, and last calibrated in 2009 as seen in figures M-001 through M-003. Service to Terminal A is currently active and functional with the metering room needing only minor maintenance for continued use.

Thirteen industrial air rotation systems are located throughout the first and second floors of the building. These units are shown in figures M-004 through M-015. The air rotation systems units contain gas fired heaters and circulation fans. Due to the size of the building, it appears that these units are intended for supplemental heat only as they are of insufficient capacity to prevent freezing temperatures during winter months on their own. All units appear to have been in operational condition when the building was decommissioned and drawings indicate that unit H-3 was replaced in 2009 or 2010. It is recommended that each unit be inspected prior to startup due to the moisture issues within the

building, observed damage to exhaust outlets as shown in figure M-016, and the noticeable odor of natural gas surrounding unit H-7.

Primary heating within the building was achieved via overhead hot water piping loops, as seen in figures M-017 and M018, supplied from two of the building boilers. The heating loops are original to the building with modifications made in the early 1960s. The loops appear intact and functional in all places observed, but due to their age and current state of disuse, it is recommended that they be thoroughly inspected, flushed, and have all valves replaced prior to reactivation.

The office area was heated via radiators and steam unit heaters supplied by a single boiler within the building. Conditions of the office heating system are unknown due to lack of access to that area but based upon the current atmosphere within the building and the period of disuse, it is recommended that all radiators be flushed and inspected prior to use.

The office was also supplied with forced air heating and cooling in the late 1980s. Two large heating/cooling furnaces are located at grade to the north of the office area with 8.4 ton cooling/140 MBH heating capacity and 16 ton cooling/322 MBH heating capacity respectively, as well as three small split unit air conditioning condensers. The outside units are shown in figures M-019 through M-021. The heating units are natural gas fired. Due to age, lack of maintenance, and the period of disuse, it is expected that all units require extensive reconditioning or replacement. Aerial photos indicate that there are a number of large rooftop units located above the office area as well, as seen in figure M-022. These were not inspected due to lack of access, but it is to be expected that they will require inspection and tune up prior to use. Associated duct systems within the office were not inspected as access to that area is limited due to mold proliferation; it is to be expected that the area mold and moisture hvac detrimentally affected the ductwork and that it will need extensive rework prior to use.

Two large forced air systems were installed in the early 1960s to provide cooling to the office area of the Terminal A building, as seen in figure M-023. These systems remain in place, but it is suspected that they are non-functional and have been superseded by the newer forced air systems installed in the 1980s.

Terminal A contains three oil fired boilers: Kewanee Series 2X with 346 BHP each as shown in figures M-024 through M-027. Records indicate that these boilers were installed circa 1961 to provide steam to the Terminal A building after the decommissioning of the original Power House on site. The boiler feed pumps and associated equipment are in poor condition as are the exhaust stacks observed as seen in figure M-028. The site fuel oil tank has previously been

removed and conversion of the boilers to natural gas is unlikely due to the age of the equipment and the fact that the manufacturer is no longer operational. It is likely that all three boilers need to be replaced prior to commencement of steam generation.

The high-bay section of Terminal A contains sixteen propeller-type exhaust fans on the north wall, as shown in figure M-029, with corresponding inlet dampers on the south wall, as seen in figures M-030 and M-031. All fans appear to be in fair condition. However, it should be expected that all belt drives will require replacement, as well as a number of the electric drive motors, due to the lack of use and the damp nature of the interior of the building.

3.2.4.1 Near Term Mechanical Work Required

- Construction of “Hot Boxes” at all reactivated fire protection risers to as a freeze protection precaution. See fire protection section for more information.

3.2.5 Electrical

Electrical service to Terminal A is disconnected. Prior to its disconnection, Terminal A was served by a 34.5kV feeder that runs from a utility pole located adjacent to the Administration building, through the Administration Building’s basement, continuing through the attached existing utility tunnel, until reaching Terminal A. Upon reaching Terminal A, it runs the length of Terminal A to Substations 1, 2, and 3. This service appears to have been installed in the 1997 to 1999 timeframe. The current service arrangement is non-compliant with NFPA 70 (2014) Article 230.3 and Article 230.70(A). The electrical service to Terminal A must be modified to be brought up to current code, prior to re-energization. (Figure E-020 through Figure E-023).

Previously, Terminal A was served by a duct bank located on the north side of the building, now abandoned, with a main service disconnect switch located on the first floor, feeding open frame medium voltage disconnect switches located on the second floor, which fed roof top transformers, that powered switchboards HVSWBD and LVSWBD (these switchboards are discussed more below). The old service disconnect, associated metering equipment, and second floor medium voltage disconnect switches are still present in the building. They should be removed and scrapped. The roof was not accessed during this investigation; however, the old roof top transformers appear to have been previously removed and disposed of around 2008 based upon review of satellite photos of the building and provided record drawings. HVSWBD and LVSWBD were re-fed from substation 3 following the removal of the roof top transformers. (Figure E-024 and Figure E-025).

Substations 1 and 3 each consist of a medium voltage disconnect switch, a 34.5kV to 480V less-flammable liquid-insulated transformer, and low voltage switchgear which served various switchboards located throughout the building. Substation 2 consists of a medium voltage switch and a 34.5kV to 4160V less-flammable liquid-insulated transformer and had previously been removed from service around 2008 when the roof top transformers that this transformer had been supplying were removed from service. Based on equipment nameplates and owner provided electrical drawings, Substations 1 through 3 appear to have been installed in the 1997 to 1999 time frame. As currently installed, these transformer installations violate NFPA 70 (2014) Article 450.23(A) requirements. Additionally, vandalism has damaged parts of the substation equipment, such as the phase barriers in the medium voltage disconnect switches. It is likely that this equipment is reusable, however the equipment must be inspected and repaired, and the installation brought up to current code requirements prior to re-energization. (Figure E-026 through Figure E-033).

From Substations 1 and 3, power is then distributed to a number of switchboards located around the building in various areas. Switchboards A, B, C, D, E, and the Compressor Switchboard appear to have been installed around the same time period as Substations 1, 2, and 3, based on the provided electrical drawings. Switchboards HVSWBD and LVSWBD located in the 2nd floor switchgear room, however, appear to date back to the original building construction. All switchboards that were encountered show signs of having been vandalized. Switchboard E and the Compressor Switchboard, while listed on drawings, were not encountered during our field investigation. It appears, based on the location where the drawings indicate that the Compressor switchboard should have been located, that it may have been previously removed. There is an indication that this may be the case, as at Substation 1 where there is a note credited to Ferguson Electric that indicates that the feeders to the Compressor Switchboard were removed in March 2003. Switchboard E is indicated on the drawings to possibly reside in a small exterior electric room located adjacent to the south exterior wall of the high bay. This room was locked during our investigation, so we were unable to determine its contents or the condition of the equipment located within. Based on our field investigation, it may be possible to repair and recondition Switchboards A, B, C, and D to be reused, however the cost to do so may exceed their value. Switchgear HVSWBD and LVSWBD are heavily damaged and beyond their useful service life, and should be removed and scrapped. (Figure E-034 through Figure E-043).

From the switchboards and switchgear, power is distributed to a number of transformers, distribution and lighting panelboards, and individually mounted circuit breakers or fusible disconnect switches located throughout the building. These devices are diverse in type and vintage, with some that are newer and some that appear to date back to the original building construction. Many of the

existing distribution and lighting panels, and individually mounted circuit breakers and disconnect switches, especially on the lower floors, show signs of damage. There are numerous transformers located throughout the building. Some are mounted in the rafters, others are floor mounted. In general these appear to be in good condition, and it may be possible to recondition and return them to service, however each transformer should be inspected, cleaned, and tested prior to use to ensure no hidden damage is present. As a general demarcation point, all other devices installed before 1997 should be removed and scrapped. Devices (other than transformers) installed in 1997 or later may be salvageable on a case by case basis, however many of these may also need to be removed and scrapped due to extensive water damage or damage from vandals. All equipment located in the office areas, if reusable, will likely need to be extensively cleaned due to the extensive mold present in these areas. (Figure E-044 through E-049).

Interior lighting is in various conditions throughout the building. Most lighting throughout the building may be salvageable; however this will be a judgment call on a fixture-by-fixture basis due to the water intrusion present throughout the building. Emergency exit signage and any emergency lighting will likely need to be replaced throughout the building due to the amount of time the batteries have been discharged. Lighting in the office areas will likely need to be scrapped due to the extensive mold present in these areas. (Figure E-050 through Figure E-053).

Exterior lighting varies between fixtures original to the building's construction and those installed later as replacements. Newer fixtures will likely be reusable if desired, however it may be more cost and energy efficient to install all new LED exterior lighting. (Figure E-054 and Figure E-055).

Signs of copper theft are rampant throughout the building. It is likely that much of the wiring throughout the building will need to be replaced in order to have an operational electrical system. No existing circuits or conduits should be reused unless thoroughly tested and inspected prior to energization. (Figure E-028, Figure E-032, Figure E-033, Figure E-038, Figure E-041 through Figure E-043, and Figure E-056 through Figure E-061).

In order to support building stabilization, and allow for the current occupancy to continue, it is recommended that a new electrical system be installed throughout the building. This system should consist of a new service and associated distribution equipment to supply minimal lighting throughout all areas (including required emergency lighting), power for the sanitary and sump pumps located throughout the building, power to supply heat to the fire water risers to prevent freezing, and power to supply the compressors needed for the recommended dry pipe sprinkler system. This system should be capable of

supporting sub-metering to correctly allocate costs between landlord and tenants.

As an exception to above, the Maintenance Shop area located at the front of Terminal A has power supplied to it from the Administration building. This was done when power was shut down to the remainder of Terminal A, and supplies local lighting and heat to this area of the building. Equipment in this area remains operational and in good condition. (Figure E-062 through Figure E-064).

Communication systems throughout the building should be considered not reusable. There may be components that can be reused, however it is likely more cost effective to remove any existing components and install all new, rather than inspecting and rehabilitating on a case by case basis. New communication lines will need to be extended to the fire alarm control unit monitoring the sprinkler systems to enable monitoring of the system as required by the International Fire Code (2015), Section 903.4.

3.2.5.1 Near Term Electrical Work Required

- Install new or reconfigure existing electrical service to Terminal A.
- Install new distribution equipment and wiring to supply power required for sprinkler hot-boxes and compressors, minimum required lighting within the leased area, required emergency lighting and exit signage, required exterior lighting at egress points and any other areas required by applicable codes, sewage grinder pump(s), sump pumps, and any other systems identified as required to support the continued occupation of the leased area.
- Install new interior lighting to provide legally required illumination.
- Install new interior emergency lighting and exit signs.
- Install new exterior lighting (including required emergency lighting) at egress points and as otherwise required.
- Provide power points as required to support building stabilization activities in conjunction with other disciplines.
- Install new communication lines to support the installation of the Fire Alarm Control Unit required to monitor the sprinkler risers.

3.3 Terminal B

3.3.1 Fire Protection

3.3.1.1 Sprinkler System

The Terminal B sprinkler system is a hydraulically design system installed in 1989. The system has two wet pipe sprinkler risers off a common header. The riser Isolation valves are also classed as wall mount post indicator valves and operated from the exterior of the building.

Water supply to the sprinkler riser is from a 10” branch line off the Terminal A fire main loop. The water enters the building on the south east corner. Prior to the sprinkler risers a back flow preventer is installed.

- Condition Report

The system is presently out-of-service because the water system is off. Restoring the system is contingent on restoring the site fire water mains. The overall condition of the system is very good and only minor repairs are needed.

3.3.1.2 Alarm System

The alarm system is a small zoned panel which was operational when inspected. The system monitors the sprinkler riser pressure/flow switches and the one manual pull station located at the door. The system is wired for a municipal tie to an offsite alarm service.

- Condition Report

The fire protection systems in Terminal B will require a minimal effort to restore to service.

3.3.1.3 Near Term Fire Protection Work Required

- Gauge valves will need replacing and the components inspected.
- An internal obstruction investigation should be performed on the sprinkler piping cross mains to ensure the piping is not scaled.

- The batteries on the fire alarm system need immediate replacement. They are dated as being 9 years old.

3.3.2 Plumbing

Plumbing service to the Terminal B building originates within Terminal A, per the original construction drawings in 1966. The field investigation did not result in any findings indicating a deviation from the design drawings. Currently, service to this building is deactivated.

All plumbing systems within the building appear to be intact, with fixtures needing extensive cleaning and minor maintenance prior to use as shown in figures P-011 and P-012.

3.3.2.1 Near Term Plumbing Work Required

- No required plumbing work is expected in the near term

3.3.3 Sanitary Sewer

All sanitary sewerage in Terminal B is gravity discharged to the pump station at the north-west corner of Terminal A. No piping issues were apparent during site inspection.

3.3.3.1 Near Term Plumbing Work Required

- No required sanitary sewer work is expected in the near term

3.3.4 Mechanical

The Terminal B building is supplied with a 2” gas main originating at Terminal A. Within Terminal B is a boiler, as shown in figure M-032, and hot water tank, as shown in figure M-033, serving the office, toilets, and locker room area of the building. The boiler provides water supply to radiant heat units throughout the office area, shown in figure M-034. All equipment in this system appears operational in its current condition. However, inspection and tune up is recommended before use.

Terminal B also contains a single air rotation unit with gas fired burner as shown in figure M-035. There is also a unit heater along the south wall of the building interior, shown in figure M-036. These units also appears to be in operable condition with the note of inspection and regular maintenance prior to start up.

Ventilation in the building is provided by two exhaust fans in the south wall of the building, as shown in figures M-037 and M-038, as well as eight power exhaust vents along the ridge of the building roof, as seen in figure M-039. The wall units as well as six of the eight roof ventilators appear to be in operable condition. Aerial photography shows that the northern most two roof ventilators have sustained excessive wear and/or damage.

3.3.4.1 Near Term Mechanical Work Required

- Air Rotator inspection and maintenance
- Northern roof ventilators require repair/replacement

3.3.5 Electrical

Electrical service to Terminal B is functional. The electrical service enters on the south side of the building through an exterior pad mounted transformer. The transformer appears to be weathered, but is functional. It is unknown as to where service to this transformer is supplied from. (Figure E-064 and Figure E-065).

Electrical panels within the building are generally in good repair, but some are older and some are missing covers, causing energized busses to be exposed. Missing covers should be immediately replaced to prevent inadvertent contact with energized components. Older panels should be monitored and replaced as they reach the end of their service life. All panels should be cleaned to prevent any future problems. The electrical panel located in the boiler room should be raised to a standard height to allow for easier servicing and potentially relocated to a different area to prevent damage in the event of a failure of either the hot water tank or boiler located within the same space. (Figure E-066 through Figure E-068).

Interior lighting appears to be functional throughout the building. Re-lamping or fixture replacement may be required for some fixtures that are currently non-functional. High bay lighting was not tested as a part of this investigation; however it appears to be in good condition. An electrician should be brought out to test the high bay lighting and repair any lights or circuits as required. (Figure E-069 and E-070).

Exterior lighting appears that it would be functional if energized. An electrician should be brought out to test the exterior lighting and repair any lights or circuits as required. (Figure E-071 and E-072).

Communication systems appear to have been mostly removed from service. As the building is currently unoccupied, no major changes are currently required. It

is likely that in the event the building is repurposed the communication system will need to be completely replaced and upgraded. (Figure E-073). It will need to be verified that the communication lines connected to the current fire alarm control unit are functioning correctly and the control unit is reporting to the designated monitoring station.

3.3.5.1 Near Term Electrical Work Required

- Correct Electrical Panelboard Deficiencies
- Repair / Re-lamp / Reenergize Interior Lighting to provide minimum required lighting while occupied.
- Repair / Re-lamp / Reenergize Exterior Lighting as required.
- Repair / Replace Interior and Exterior Emergency Lighting as required to provide legally required coverage.
- Verify / repair communication lines to the fire alarm control unit, as required.

3.4 Administration Building

3.4.1 Fire Protection

3.4.1.1 Sprinkler System

The sprinkler system for the Administration Building is supplied from an 8” main of the site 10” distribution leg. This water supply is presently out-of-service.

The sprinkler system riser is located in the south east corner of the building. It transitions in a narrow wall chase which provides no accessibility to the riser check valve. The sprinkler piping is located throughout the structure and provides adequate protection.

- Condition Report

The overall condition of the system is fair. In accessibility to the riser check valve prevented any investigative determination to ensure its operability. This should be accessed and the riser check valve inspected.

Gauge valves will need to be installed. An internal obstruction investigation should be performed on the sprinkler piping cross mains to ensure the piping is not scaled.

Some modifications to the rooms and ceilings require the sprinkler heads to be repositioned. This system has seen various forms of modification through the years and it needs to be re-evaluated for use

3.4.1.2 Alarm System

The alarm system is a small zoned panel which was not operational when inspected. This panel is very dated and does not meet current code standards. The system monitors the sprinkler riser pressure/flow switches and the one manual pull station. The system is wired for a municipal tie to an offsite alarm service.

The batteries on the fire alarm system need immediate replacement. They are dated as being 9 years old.

3.4.1.3 Near Term Fire Protection Work Required

- Sprinkler riser needs to be rebuilt with modern alarm check valve and gauges. It needs to be accessible to emergency responders. Sprinkler piping needs to be inspected for scaling.
- The fire alarm panel and devices needs to be replaced.

3.4.2 Plumbing

Water supply within the Administration Building is supplied via the main site water feed and is subsequently deactivated. Fixtures within the building appear functional but will require extensive cleaning and proper maintenance before use as seen in figures P-013 and P-014.

Per the original construction documentation for this building, all floor drains were routed to storm sewers and discharged directly to the lake. It was not possible to verify the existing configuration of the floor drain piping.

3.4.2.1 Near Term Plumbing Work Required

- Investigate storm sewer configurations to verify flow paths

3.4.3 Sanitary Sewer

The Administration Building did not include sanitary waste plumbing of any sort in its original configuration. Since that time, the building has been heavily modified and restroom facilities added. It appears that waste has been routed to the existing legacy ejector tank and pumped towards the Terminal A building

sewerage but it is recommended that this be further investigated and verified before use to ensure that waste is not discharged to the environment.

3.4.3.1 Near Term Plumbing Work Required

- No required sanitary sewer work is expected in the near term.

3.4.4 Mechanical

The Administration Building west room contains a single gas fired unit heater. The unit was running and functioning properly at the time of site inspection. However, improper modifications have been made to the outlet air louvers and burner exhaust system as shown in figures M-040 and M-041. It is recommended that these modifications be reversed immediately.

The central room contains a vertical multi-port boiler, Fulton model VMP-50, manufactured in 2005 as seen in figures M-042 and M-043. This boiler appears to be in good operating condition.

The east room has a forced air system with gas furnace suspended from the roof, shown in figure M-044. It was functioning at the time of site inspection. However, the duct system is in poor repair and will need extensive rework depending on the end use of the area.

3.4.4.1 Near Term Mechanical Work Required

- Repairs to unit heater
- Repairs to forced air furnace

3.4.5 Electrical

Electrical service to the Administration Building is functional. Two meters and service disconnects are located on the south side of the building which are fed from an underground service supplied by pole top transformers located to the south of the building. (Figure E-074).

Distribution panels within the building are functional, but older and towards the end of their intended service life and should be scheduled for replacement. (Figure E-075 through E-079).

Interior lighting on the first floor of the building was found to be partly functional. Lights should be repaired or replaced as necessary to provide interior illumination to the building, especially within the mechanical space located between the rear garage and front office area. (Figure E-080 and E-081).

The basement of the building is attached to mechanical tunnels. Basement and tunnel lighting was nonfunctional. This should be repaired immediately to allow for maintenance of the other systems located in these areas. (Figure E-082 and E-083).

Standing water was noted in the tunnels and former oil tank area. Any sump pumps that were previously present in these areas appear to be nonfunctional or non-powered currently. These should be repaired or repowered as appropriate to eliminate the standing water. (Figure E-083 and E-084).

Exterior lighting generally appeared to be older. It should be replaced in the future as the fixtures reach the end of their service life. (Figure E-085).

Communication systems appear to have been mostly removed from service. No major changes are recommended at this time. It is likely that in the event the building is repurposed the communication system will need to be completely replaced and upgraded. (Figure E-081). It will need to be verified that the communication lines connected to the current fire alarm control unit are functioning correctly and the control unit is reporting to the designated monitoring station.

3.4.5.1 Near Term Electrical Work Required

- Repair / Re-lamp / Replace Main Floor Interior Lighting as required to restore functionality.
- Test, and repair / replace as needed all interior and exterior emergency lighting to insure required illumination levels are met.
- Restore basement and tunnel lighting, including required emergency lighting.
- Restore power to sump pumps.
- Correct any other critical electrical issues identified during restoration activities.
- Verify / repair communication lines to the fire alarm control unit, as required.

3.5 Blue Building

3.5.1 Fire Protection

Not needed at this time.

3.5.2 Plumbing

Water service to this building is currently active and the single restroom facility within appears to be in fair, working order.

3.5.2.1 Near Term Plumbing Work Required

- No required plumbing work is expected in the near term

3.5.3 Sanitary Sewer

Sanitary waste is directed to the pump station directly adjacent to the west wall of the building and to the Administration Building from there. As stated in other sections of the report, it is recommended that this configuration be further investigated to ensure that waste is not discharged to the environment.

3.5.3.1 Near Term Plumbing Work Required

- No required sanitary sewer work is expected in the near term

3.5.4 Mechanical

The Blue Building contains gas fired infrared tube heaters for temperature control, located at the ceiling elevation, as shown in figure M-045. At the time of site inspection these heaters were functioning but are in need of maintenance as they show signs of minor damage.

The source of natural gas supply in the maintenance building is unclear. There is no meter at the building and records of the gas service installation are not currently available. See figure M-046.

3.5.4.1 Near Term Mechanical Work Required

- No required mechanical work is expected in the near term

3.5.5 Electrical

Electrical service to the maintenance building is functional. The electric meter is located on the west side of the structure with power supplied underground from a pole top transformer to the south of the building. The building is supplied with 480V service and has a 480V to 240V/120V 1 ϕ step down transformer to supply miscellaneous lighting and equipment throughout the building. (Figure E-086).

No major issues were noted, however the building tenant should be instructed to clear out the space around the panel boards and transformers as they are currently obstructed by various items. Additionally, there is a disconnected

conduit with wiring lying across a wire trough in front of live panels, this should be removed immediately as it appears to still be connected to an active disconnect switch which is not locked out appropriately. (Figure E-087 and Figure E-088).

The building appears to have an active phone and internet connection for use by the current tenant. No changes are recommended at this time. (Figure E-088).

3.5.5.1 Near Term Electrical Work Required

- Repair Identified Safety Hazards
- Remove Obstructions from in front of electrical equipment.

4.0 FIRST BUFFALO MARINA

4.1 Site Utilities

4.1.1 Fire Protection

There are no fire protection systems at this site.

4.1.2 Plumbing

Multiple hose bibs are located in the areas adjacent to the Marina Office building. All observed bibs were observed to be in working order at the time of the site inspection. However, there are multiple leaking valves, as shown in figure P-015 and P-016; maintenance is recommended.

4.1.2.1 Near Term Plumbing Work Required

- No required plumbing work is expected in the near term

4.1.3 Mechanical

There are no mechanical systems in this area.

4.1.4 Electrical

Site Power is provided through a dedicated service connection via an exterior panelboard mounted to a power pole located near the front gate. The panelboard servicing the site power is deteriorating due to weather exposure and should be replaced. Of immediate concern is the open breaker slot in the panel, a slot cover or new breaker should be installed immediately to prevent inadvertent contact with the energized bus. (Figure E-089 and Figure E-090).

Site lighting generally appears to be in functional and in good condition, no changes are recommended at this time. (Figure E-091).

Shore power connections appear to be in good working order and no changes are recommended at this time. (Figure E-092).

4.1.4.1 Near Term Electrical Work Required

- Replace Existing Power Panel

4.2 Marina Office Building

4.2.1 Fire Protection

Not needed at this time.

4.2.2 Plumbing

All plumbing systems observed within the building were in accordance with the original construction drawing set, dated May 2011, with the exception of the kitchen sink location in office 01, shown in figure P-017 and the addition of a sink in office 07, shown in figure P-018. All equipment was observed to be in good, working condition.

4.2.2.1 Near Term Plumbing Work Required

- No required plumbing work is expected in the near term

4.2.3 Mechanical

All mechanical systems observed were in accordance with the original construction drawing set, dated May 2011, with the exception of an added unit heater located within garage 06, shown in figure M-047. All equipment was observed to be in good, working condition.

4.2.3.1 Near Term Mechanical Work Required

- No required mechanical work is expected in the near term

4.2.4 Electrical

The Marina Office Building is supplied from its own electrical service (Figure E-093). The building configuration largely matches the construction drawings provided dated May 11, 2011. The building is currently occupied and no electrical problems were communicated by the occupants during the site investigation. Two issues were noted during the investigation:

1. Occupant items are accumulating in front of the electrical panel and should be moved to provide the required working space around the panel (Figure E-094).
2. The building's panelboard full, a larger panel or subpanel will need to be installed to support any future additions (Figure E-095).

The building is currently wired for phone and internet, and it is in use by the tenant. No changes are recommended at this time (Figure E-096).

4.2.4.1 Near Term Electrical Work Required

- Remove obstructions from in front of existing electrical equipment.

4.3 Marina Maintenance Building

4.3.1 Fire Protection

Not needed at this time.

4.3.2 Plumbing

There are no plumbing systems within this building.

4.3.3 Mechanical

There are no mechanical systems within this building.

4.3.4 Electrical

The Marina Maintenance Building has its own dedicated 208/120V 3 ϕ electrical service connection. The service and panelboard it is feeding appear to have been recently redone. All lighting and other items supplied by the building appear to be functional. The only problem noted is a welding receptacle has been removed and wires are hanging freely from a junction box. Either the welding receptacle should be reinstalled, or the wiring, junction box, and conduit should be removed back to the panel, this should be corrected immediately. (Figure E-097 through Figure E-100).

4.3.4.1 Near Term Electrical Work Required

- Repair welding outlet or remove feeders from panelboard.

FIRE PROTECTION SYSTEMS PHOTOS F-001 TO F-011

**A
P
P
E
N
D
I
X

A**



Figure F-001



Fire Pump House

Figure F-002



Figure F-004



Figure F-003



The Sprinkler risers shown in Figure 2 have been converted to wet pipe systems. Both of these systems are obsolete and parts non-virtually existent for repairs.

Figure F-005



Figure F-006



Figure 7 is a room enclosure in Terminal A which houses 3 sprinkler risers. The enclosure is mold saturated and should be removed.

Figure F-007

Figure 8 shows sprinkler below the suspended ceiling in the Crane Bay and Sprinkler line above the ceiling.

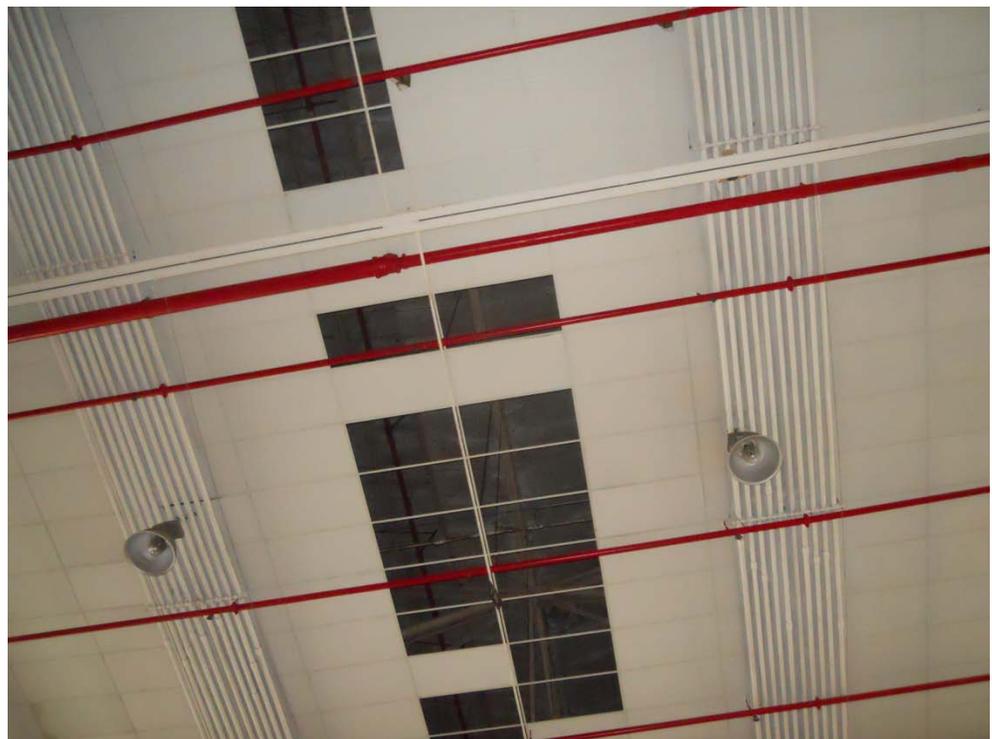


Figure F-008



Roll up Fire Door has not been maintained. Required for Fire Area separation. Wall to right hand side was built for some type protection. The left end of the wall encroaches on the fire door frame and prevents fire closing. This requires remediation.

Figure F-009



Figure F-010



On South side of Terminal A at the East and West Corner a “Fire Boat” connection or Fire Department Connection is provided to all fire department pumpers to supplement water pressure to the water system. Each connection has a check valve. The South west check valve is located in a manhole as shown in the drawing. The east end is located inside the crane bay area entrance.

Figure F-011

PLUMBING PHOTOS P-001 TO P-018

**A
P
P
E
N
D
I
X

B**



Figure P-001



Figure P-002



Figure P-003



Figure P-004



Figure P-005



Figure P-006



Figure P-007

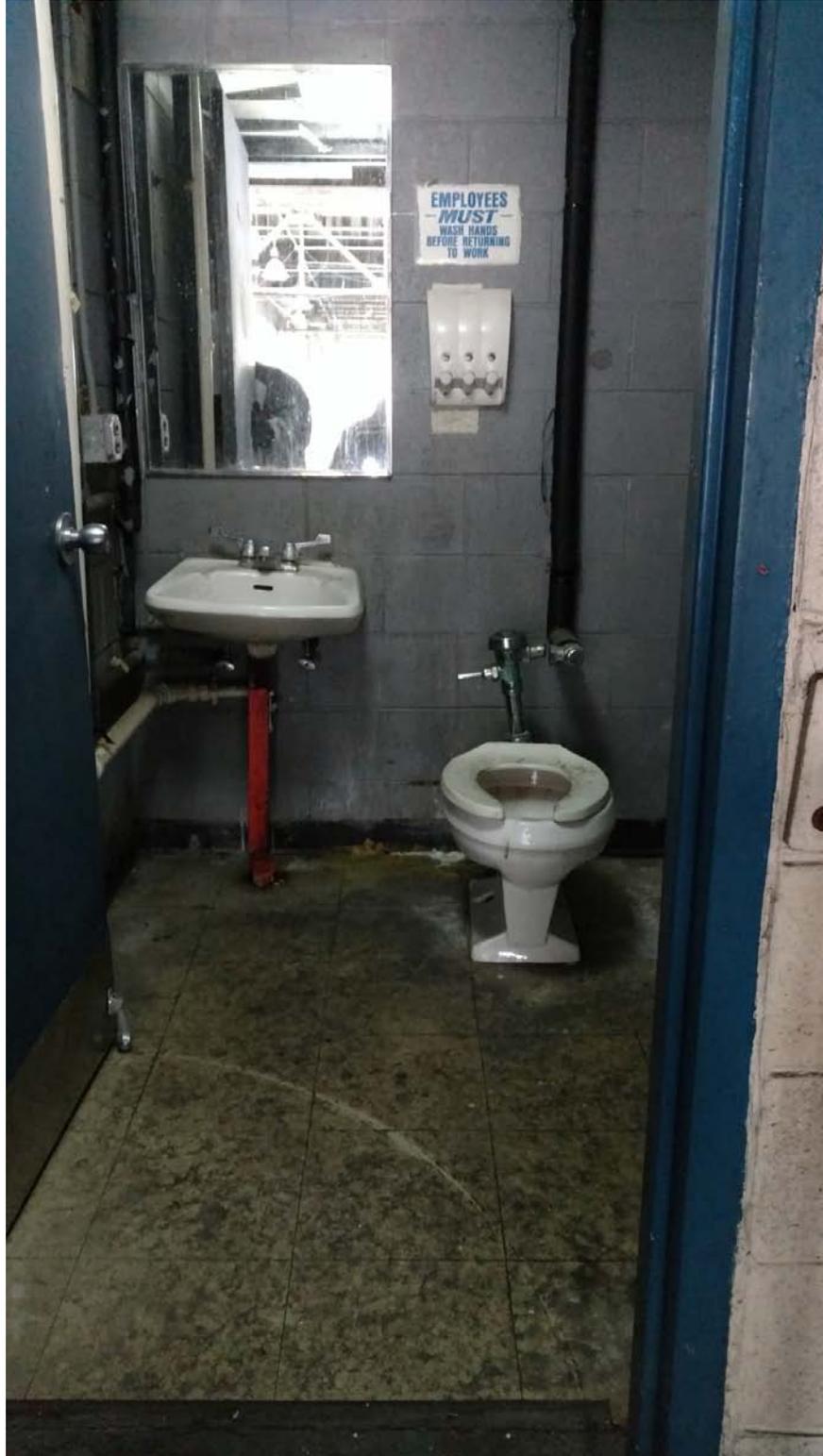


Figure P-008

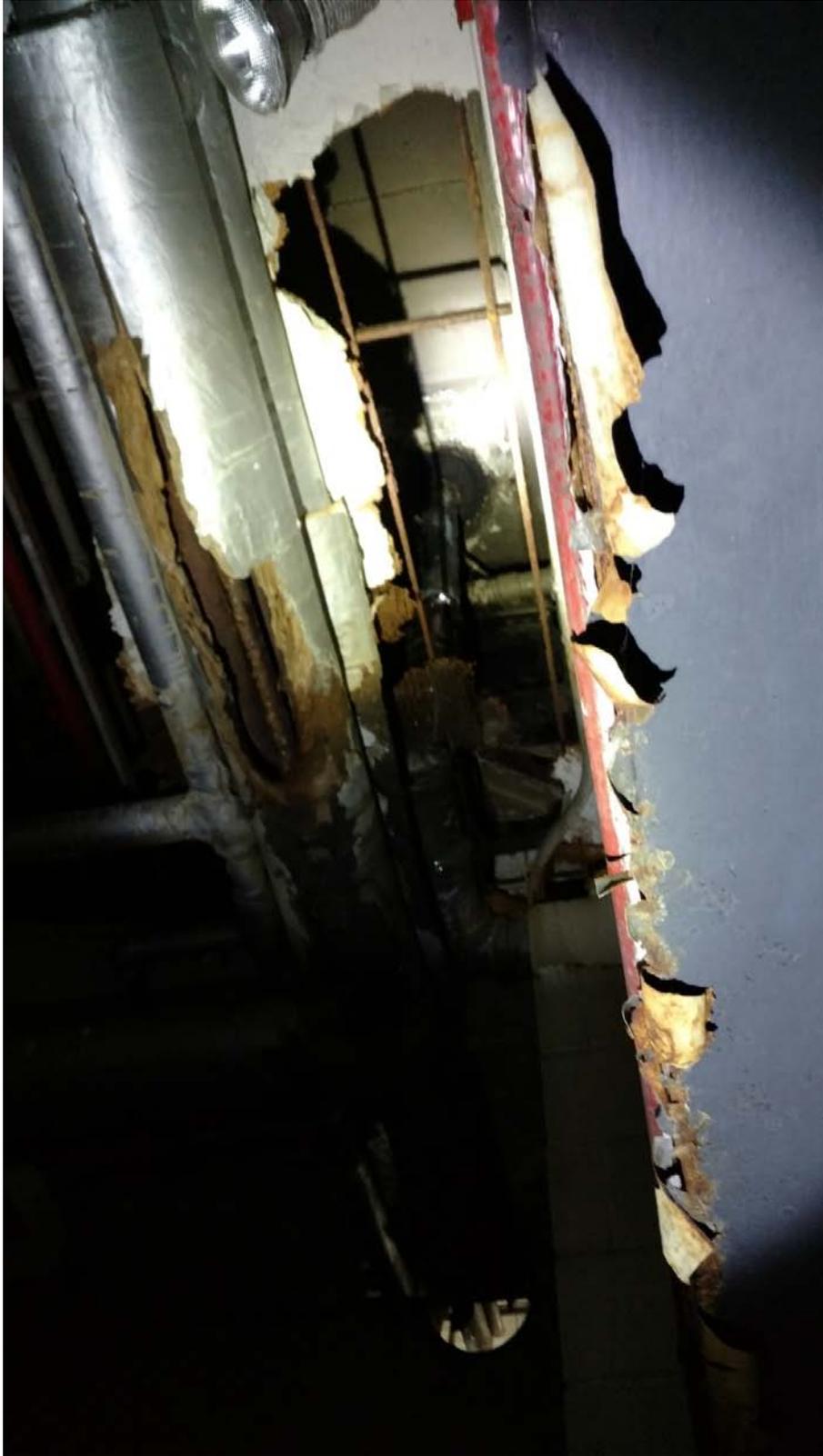


Figure P-009



Figure P-010



P-011



P-012

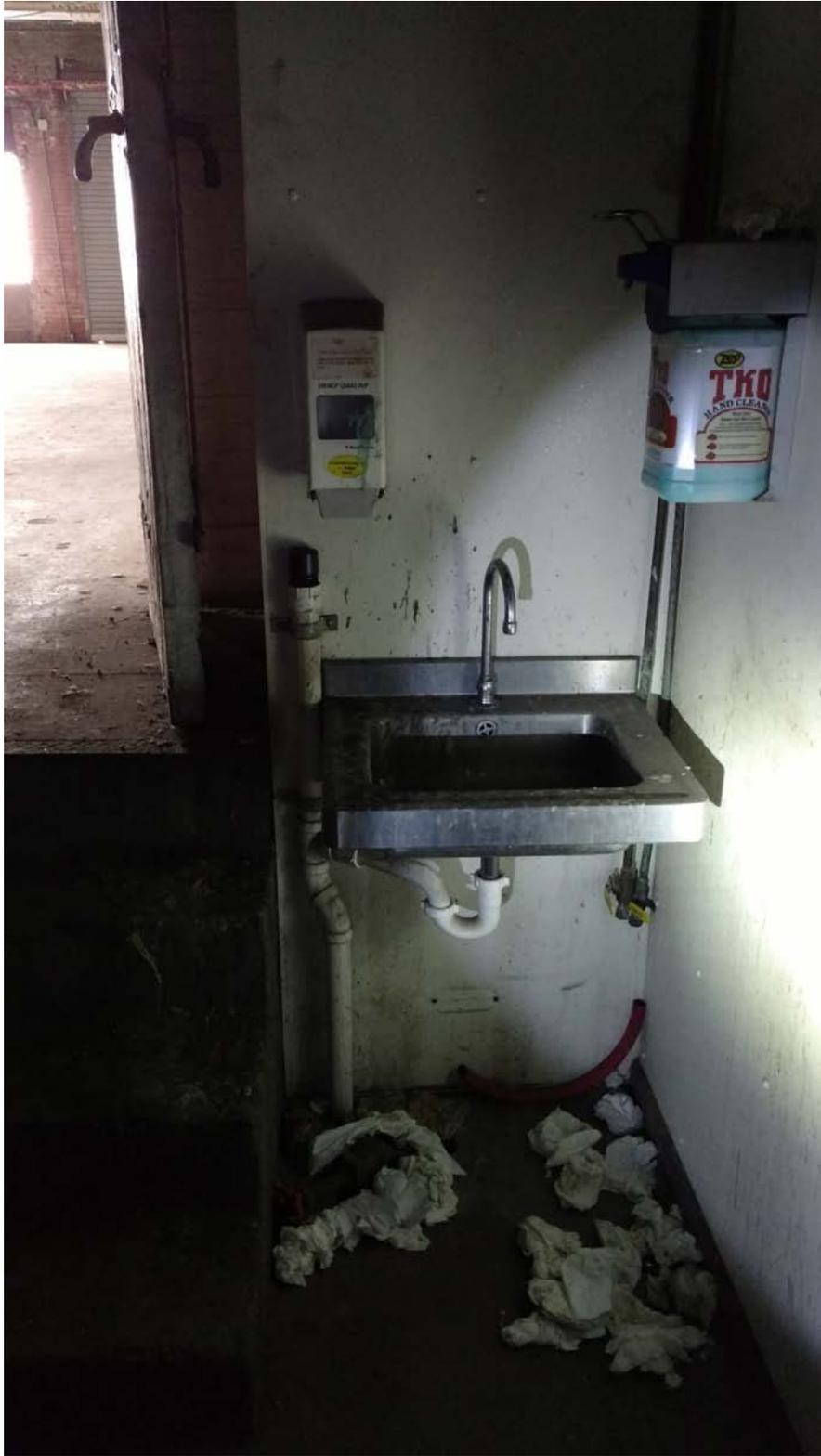


Figure P-013



Figure P-014

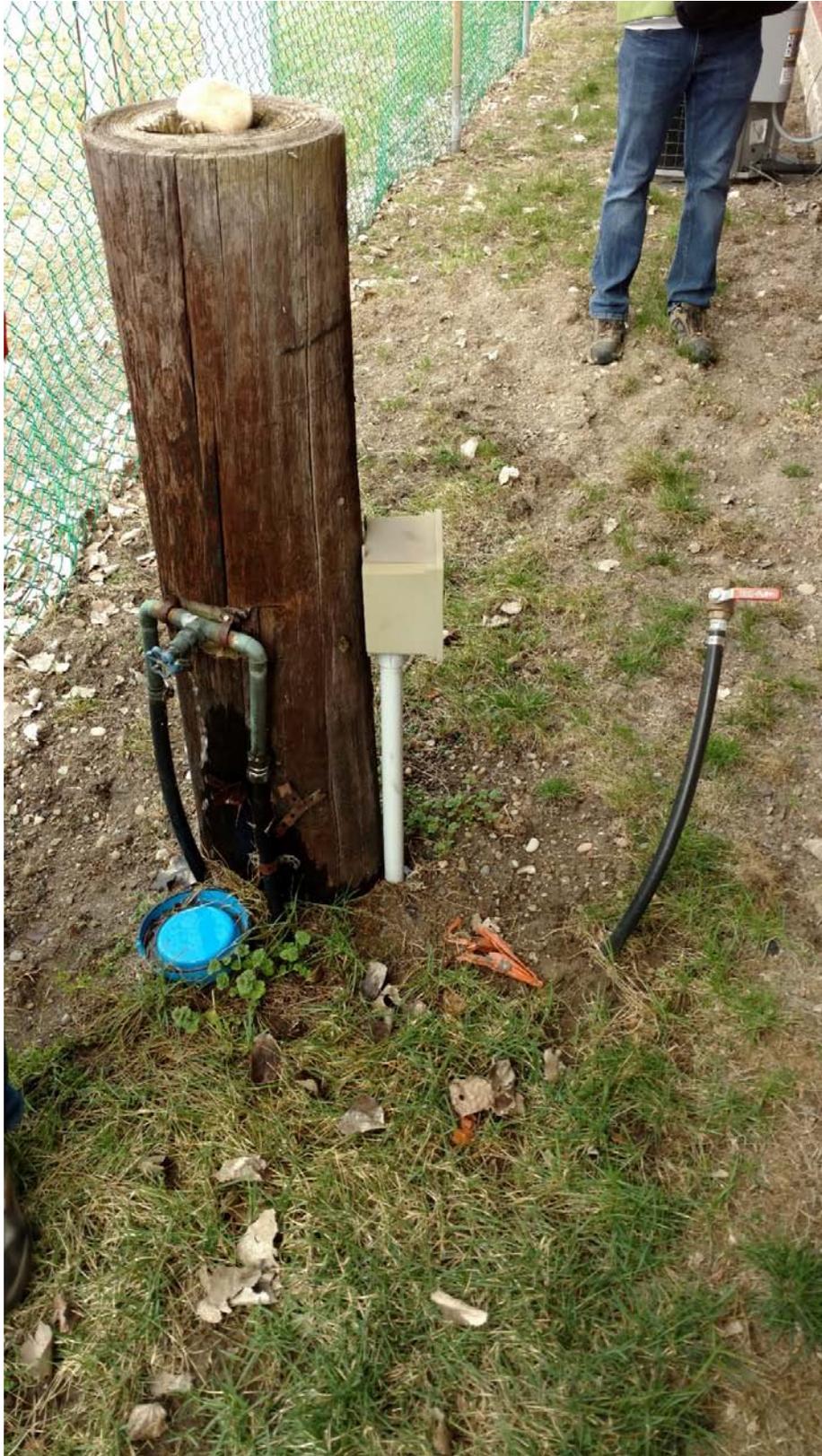


Figure P-015



Figure P-016



Figure P-017



Figure P-018

MECHANICAL PHOTOS M-001 TO M-047

A
P
P
E
N
D
I
X

C



Figure M-001



Figure M-002



Figure M-003



Figure M-004



Figure M-005



Figure M-006



Figure M-007



Figure M-008



Figure M-009



Figure M-010



Figure M-011



Figure M-012



Figure M-013



Figure M-014



Figure M-015



Figure M-016



Figure M-017



Figure M-018



Figure M-019



Figure M-020



Figure M-021



Figure M-022



Figure M-023

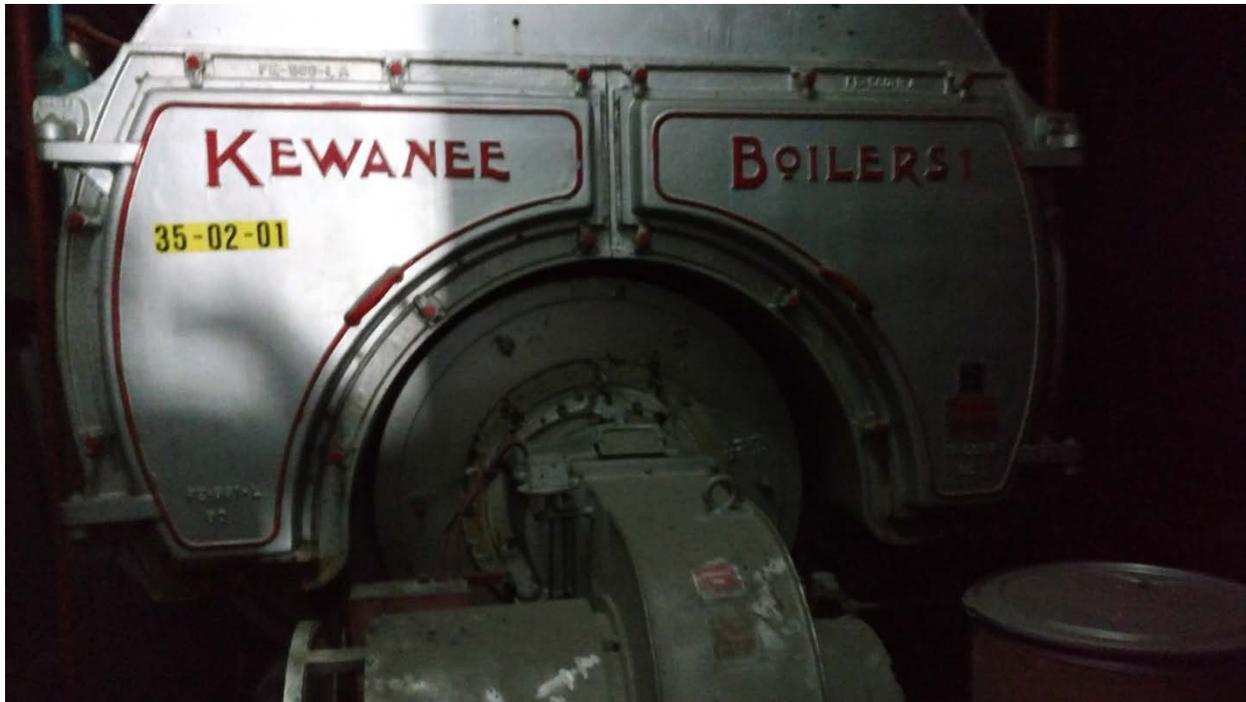


Figure M-024



Figure M-025



Figure M-026



Figure M-027



Figure M-028

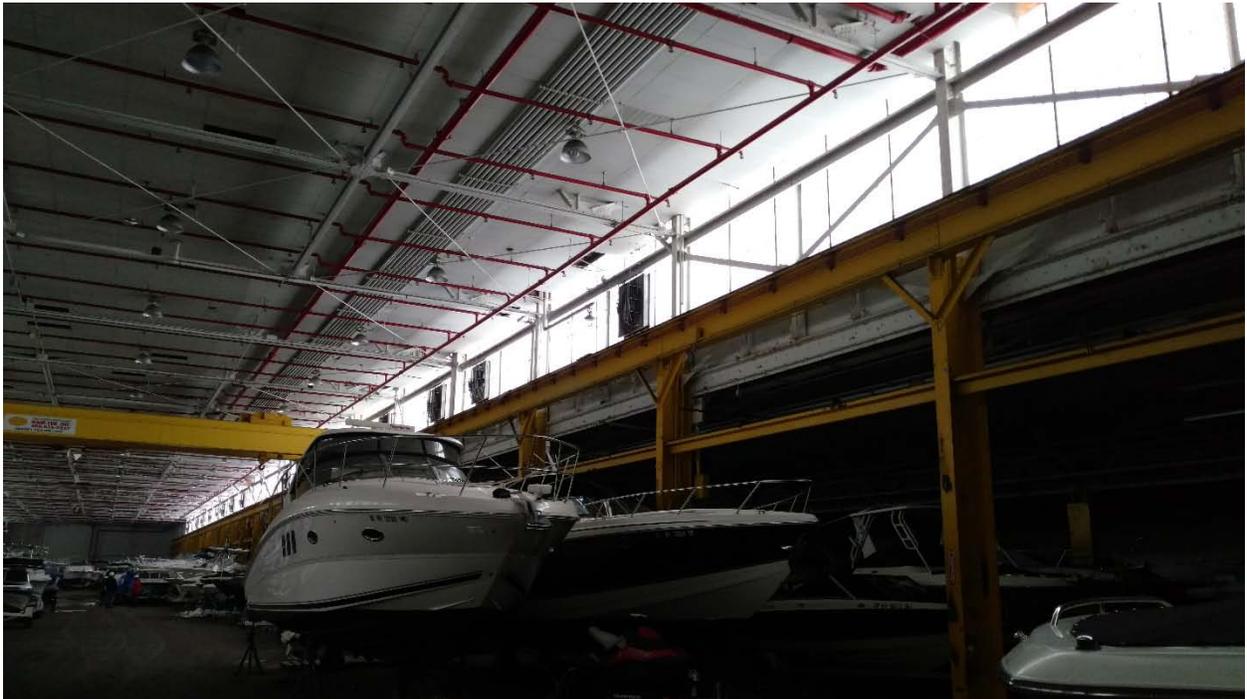


Figure M-029



Figure M-030



Figure M-031



Figure M-032



Figure M-033



Figure M-034



Figure M-035



Figure M-036



Figure M-037



Figure M-038



Figure M-039



Figure M-040



Figure M-041

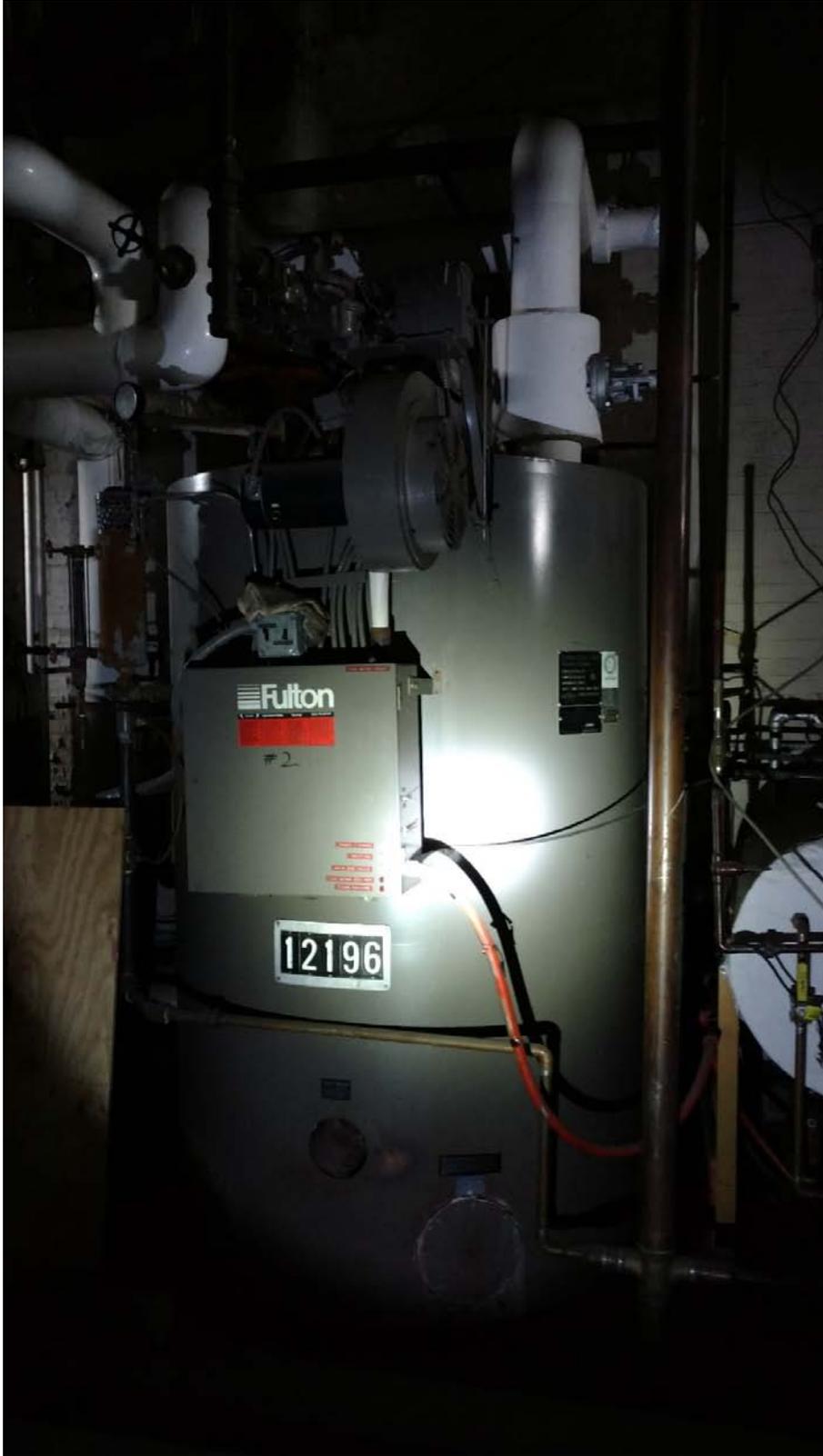


Figure M-042

1

Fulton Fuel-Fired Steam Boiler

Boiler No. **96446**
 National Board No. **96446** 
 Model **VMP 50** Year **1974**
 HD Lbs Steam/Hr **1725** SH **5/16** HD **1/2** HS **147** MWHP **150**

Fulton
Fulton Boiler Works, Inc.
 Fulton, NY 13142

MODEL NUMBER **VMP 50** **TYPE OF FUEL** **NAT GAS**
MAXIMUM BTUH INPUT AT 5-7500 FT ALTITUDE **1,552,000** **MAXIMUM BTUH AT 3000 FT AND GREATER ALTITUDE**

GAS SUPPLY PRESSURE	MINIMUM 7 IN W.C.	MAXIMUM 14 IN W.C.
MANHOOD GAS PRESSURE	MINIMUM 3 IN W.C.	MAXIMUM 6 IN W.C.
MAXIMUM OIL INPUT GPM (AV)	MAXIMUM OIL PUMP PRESSURE	
OIL NOZZLE SIZE	SPRAY ANGLE	
G.P.H.	SPRAY PATTERN	

BOILER ELECTRICAL RATING
 V **120** HZ **60** PH **1** AMPS **6.0**
CONTROLS RATING
 V **230** HZ **60** PH **3** AMPS **10.0**
BURNER MOTOR RATING
 V **115** HZ **60** PH **1** AMPS **10.0**
BURNER MOTOR (2) RATING
 V **115** HZ **60** PH **1** AMPS **10.0**
OIL PUMP MOTOR RATING
 V **115** HZ **60** PH **1** AMPS **10.0**

Fuel-Fired Boiler

Fulton
Fulton Boiler Works, Inc.
 Fulton, NY 13142

This unit shall be installed
 combustibles to provide clearance to unprotected
 24 inches on top, rear and from flue pipe;
 18 inches on sides, rear and from flue pipe.
 The floor beneath this unit shall be noncombustible.



UNION MADE

When Ordering Parts for your Boiler, Please Mention Boiler Number, Type of Fuel and Year.

Figure M-043



Figure M-044



Figure M-045



Figure M-046



Figure M-047

ELECTRICAL PHOTOS E-001- TO E-100

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Figure E-001. 901 Fuhrmann Blvd Site



Figure E-002. 901 Fuhrmann Blvd Site



Figure E-003. 901 Fuhrmann Blvd Site



Figure E-004. 901 Fuhrmann Blvd Site Miscellaneous Equipment



Figure E-005. 901 Fuhrmann Blvd Site Miscellaneous Equipment



Figure E-006. 901 Fuhrmann Blvd Site Miscellaneous Equipment



Figure E-007. 901 Fuhrmann Blvd Site Guardhouse Transformer



Figure E-008 901 Fuhrmann Blvd Site Diesel Shed Building



Figure E-009. 901 Fuhrmann Blvd Site Diesel Shed Building Electric



Figure E-010. 901 Fuhrmann Blvd Site Main Driveway Lighting



Figure E-011. 901 Fuhrmann Blvd Site Main Driveway Lightng



Figure E-012. 901 Fuhrmann Blvd Site at Night, Showing Inactive Driveway Lighting



Figure E-013. 901 Fuhrmann Blvd Site at night, Showing Inactive Site Lighting



Figure E-014. 901 Fuhrmann Blvd Site Active Site Lighting, Showing Service Meter



Figure E-015. 901 Fuhrmann Blvd Site at Night, Showing Active Site Lighting



Figure E-016. Fire Pump House Electrical Service



Figure E-017. Fire Pump House Main Power Panel



Figure E-018. Fire Pump House Fire Pump Controller and other Electrical Equipment



Figure E-019. Fire Pump House Lighting and Heating



Figure E-020. Terminal A Service



Figure E-021. Terminal A Service



Figure E-022. Terminal A Service Entrance at Filbin Building



Figure E-023. Terminal A Service



Figure E-024. Abandoned Terminal A Service Disconnect Switch



Figure E-025. Abandoned Terminal A Open Frame Medium Voltage Disconnect Switch



Figure E-026. Substation 1



Figure E-027. Substation 1 Medium Voltage Switch



Figure E-028. Substation 1 Medium Voltage Switch Damaged Phase Barrier and Cut Wiring



Figure E-029. Substation 1 Transformer Name Plate



Figure E-030. Substation 1 Low Voltage Switchgear



Figure E-031. Substation 3 Medium Voltage Switch



Figure E-032. Substation 3 Medium Voltage Switch Damaged Phase Barriers and Cut Wiring



Figure E-033. Cut Wiring at Substation 3



Figure E-034. Switchboards A, B, C, and D



Figure E-035. Switchboard A



Figure E-036. Switchboard B



Figure E-037. Switchboards C and D



Figure E-038. Transformers Feeding LVSWBD, Notice All Wiring Removed



Figure E-039. LVSWBD



Figure E-040. HVSWBD



Figure E-041. Cut Wiring at LVSWBD



Figure E-042. Rear of LVSWBD



Figure E-043. Rear of LVSWBD



Figure E-044. Water Damaged Panelboards, 1st Floor



Figure E-045. Water Damaged Panelboards, 1st Floor



Figure E-046. Damaged Panelboard, 1st Floor Boiler Room



Figure E-047. Damaged Panelboard, 2nd Floor



Figure E-048. Potentially Salvageable Panelboard, 2nd Floor

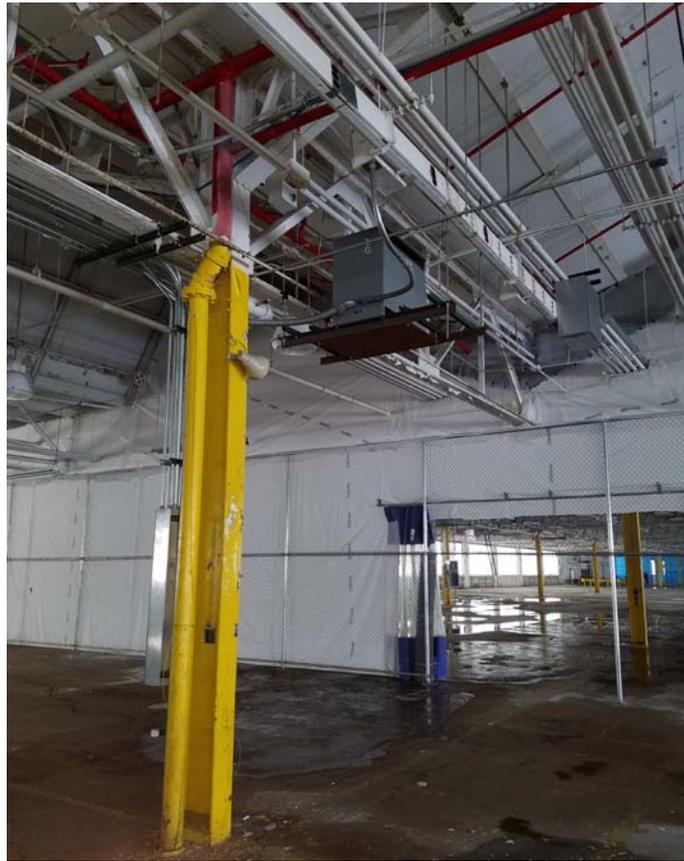


Figure E-049. Ceiling Mounted Transformer, 2nd Floor



Figure E-050. Representative High Bay Lighting



Figure E-051. Damaged Lighting, 1st Floor

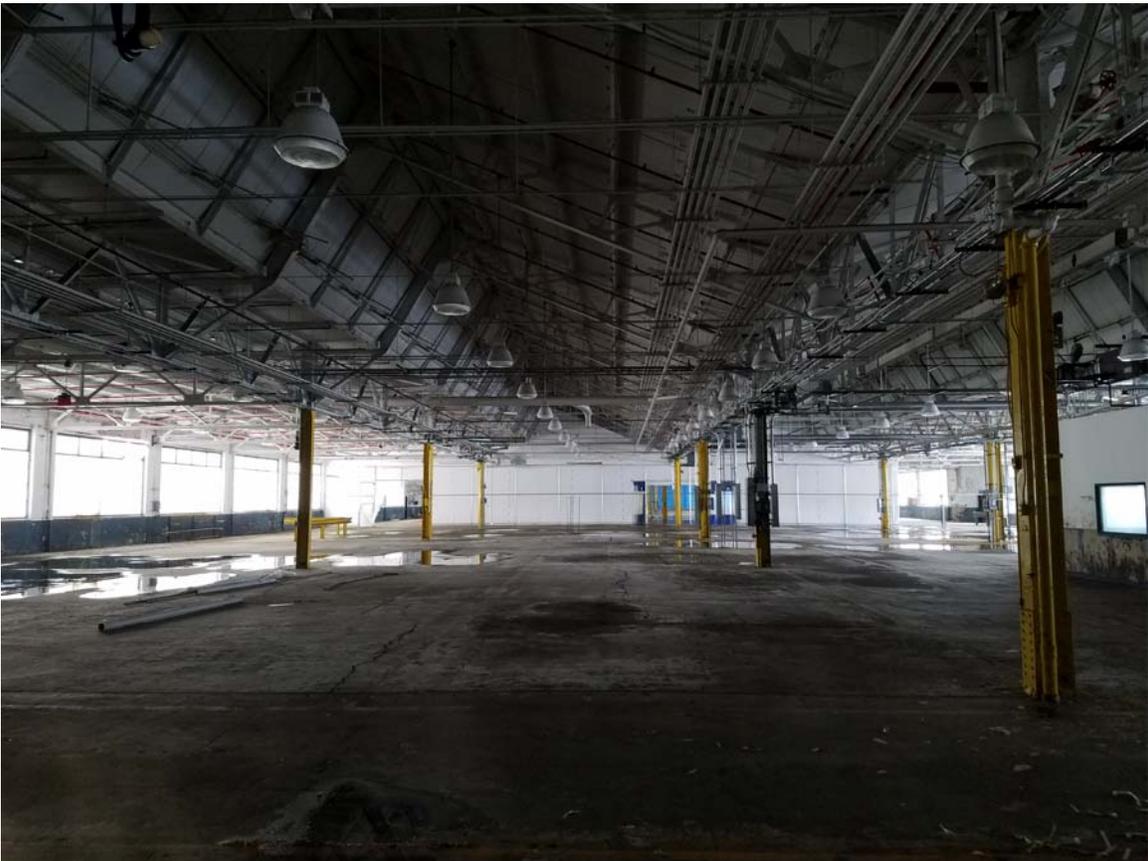


Figure E-052. Lighting, 2nd Floor



Figure E-053. Lighting, 2nd Floor



Figure E-054. Exterior Lighting, South East Corner



Figure E-055. Exterior Lighting, North East Corner



Figure E-056. Panel Showing Damage due to Cable Theft



Figure E-057. Panel Showing Damage due to Cable Theft



Figure E-058. Conduits Showing Damage due to Cable Theft



Figure E-059. Panel Showing Damage due to Cable Theft

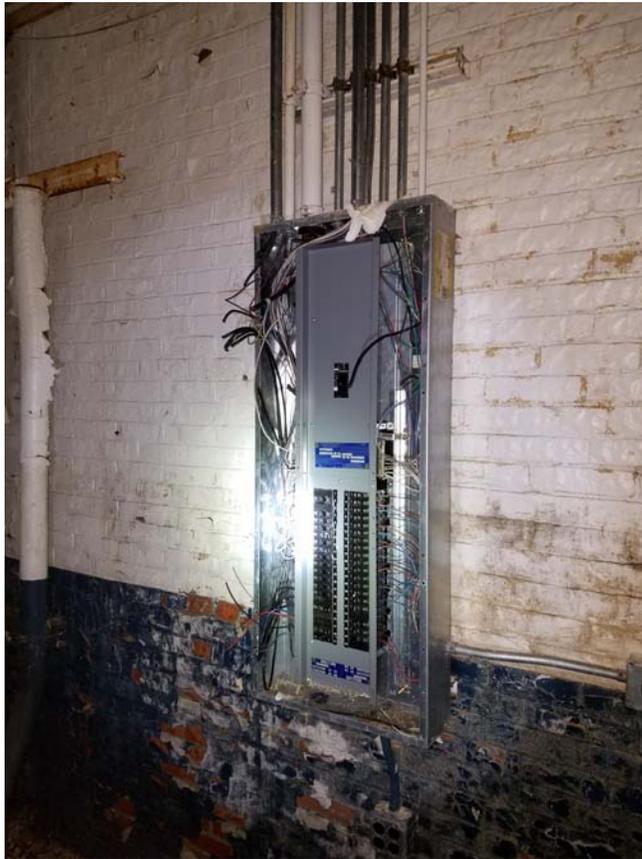


Figure E-060. Panel Showing Damage due to Cable Theft



Figure E-061. Panels Showing Damage due to Cable Theft



Figure E-062. Maintenance Shop Area



Figure E-063. Maintenance Shop Area Power Panels



Figure E-064. Maintenance Shop Area Power Source



Figure E-064. Terminal B Service Equipment

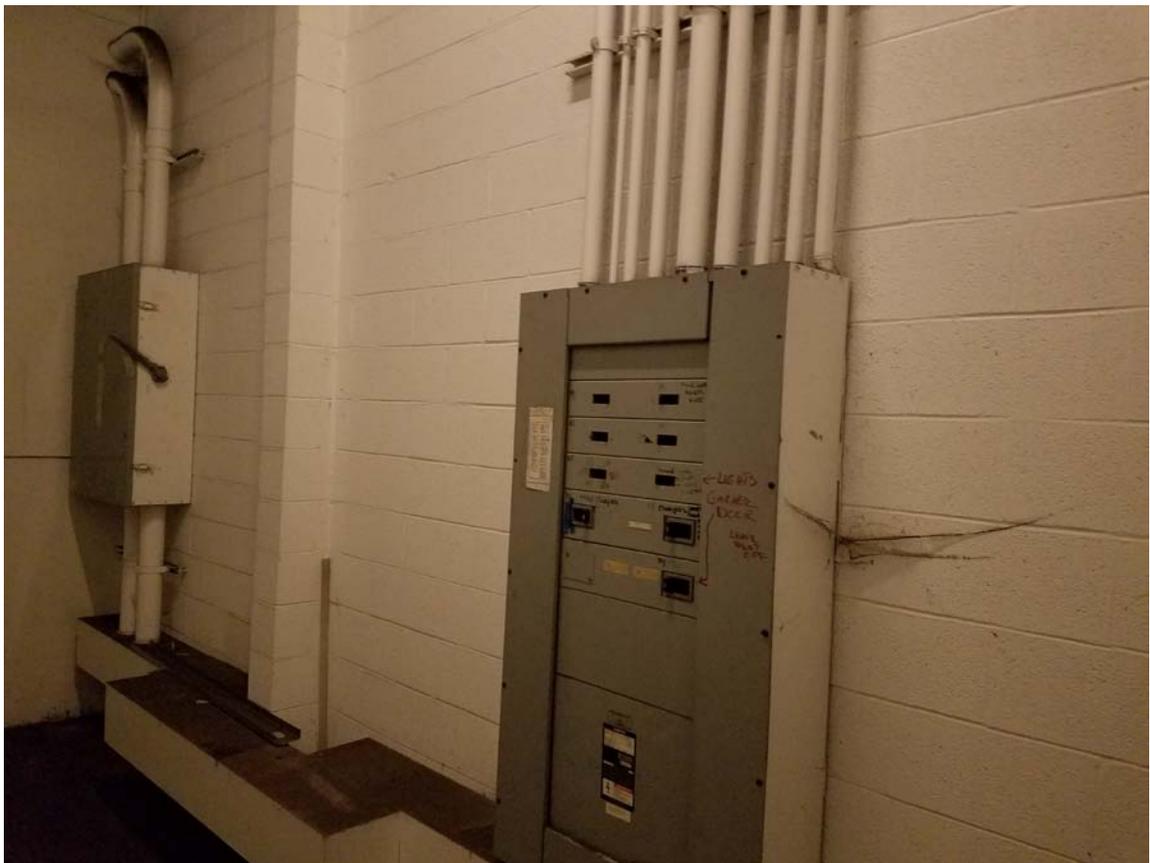


Figure E-065. Terminal B Main Service Disconnect and Main Distribution Panel



Figure E-066. Panelboard with Exposed Busbars

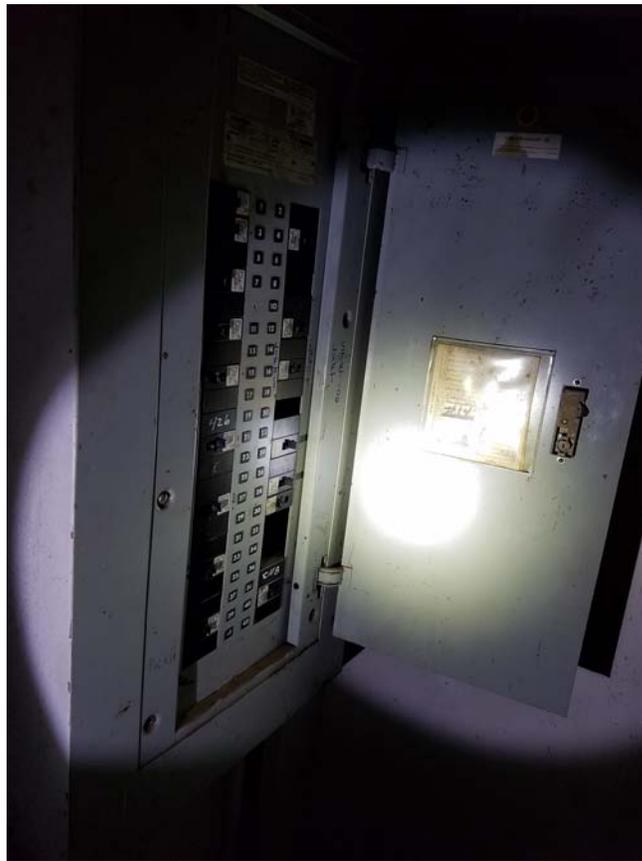


Figure E-067. Panelboard with Exposed Busbars



Figure E-068. Panelboard with Exposed Busbars and Mounted Low to Ground



Figure E-069. Terminal B Highbay Lighting



Figure E-070. Terminal B Breakroom Lighting



Figure E-071. Terminal B Exterior Lighting West Side



Figure E-072. Terminal B Exterior Lighting East Side



Figure E-073. Terminal B Phone Demarcation Point



Figure E-074. Filbin Building Service Entrance



Figure E-075. Filbin Building Electrical Panels



Figure E-076. Filbin Building Electrical Panels



Figure E-077. Filbin Building Electrical Panels



Figure E-078. Filbin Building Electrical Panels, Located in Basement



Figure E-079. Filbin Building Electrical Panels, Located in Basement



Figure E-080. Filbin Building Garage Area Lighting



Figure E-081. Filbin Building Office Area Lighting – Notice Multiple Generations of Lighting Present



Figure E-082. Non-functional Tunnel and Basement Lighting



Figure E-083. Non-functional Tunnel and Lighting in Flooded Tunnel



Figure E-084. Standing Water in Oil Tank Room



Figure E-085. Filbin Building Exterior, South East Corner



Figure E-086. Maintenance Building Service Entrance



Figure E-087. Maintenance Building Electrical Panels



Figure E-088. Maintenance Building Electrical Panels and Telephone Demarcation Point



Figure E-089. First Buffalo River Marina Site Power Service Entrance



Figure E-090. First Buffalo River Marina Site Power Panel



Figure E-091. First Buffalo River Marina Typical Site Lighting



Figure E-092. First Buffalo River Marina Typical Shore Power Connection



Figure E-093. First Buffalo River Marina Office and Restrooms Service Entrance



Figure E-094. First Buffalo River Marina Office and Restrooms Panelboard



Figure E-095. First Buffalo River Marina Office and Restrooms Panelboard Closeup



Figure E-096. First Buffalo River Marina Office and Restrooms Phone and Internet Connections



Figure E-097. First Buffalo River Marina Maintenance Building Service Entrance



Figure E-098. First Buffalo River Marina Maintenance Building Panelboard



Figure E-099. First Buffalo River Marina Maintenance Building Lighting



Figure E-100. First Buffalo River Marina Maintenance Building Exposed Wiring

COST ESTIMATES

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TERM. A MEP/FP SYSTEM ASSESSMENT - OPTION 1 - DRY STORAGE CODE COMPLIANCE

July 24, 2017

RJR Project #17055

COST ESTIMATE				
901 Fuhrmann Boulevard	Remove/ Replace ¹	Estimated Cost ²	Remarks/ Comments	
Site Utilities				
Fire Protection				
Item 1	Install new double check detector assembly on city water entrance to site	X	\$25,000.00	City permit required. Cost includes equipment, material and labor
Item 2	Flush and leak test Fire Water Mains	X	\$20,000.00	3 men for 7 days plus equip
Item 3	Inspect fire hydrants, yard valves and operators	X	\$30,000.00	Est includes replacing half of the equipment
Item 4	Fire Pump recertify and test. Minor equipment repairs	X	\$15,000.00	Inspection and recertification
subtotal			\$ 90,000	
Plumbing				
None				
subtotal			\$ -	
Sanitary				
Item 1	Inspect Sewerage System		\$10,000.00	
Item 3	Replace pump station equipment	X	\$50,000.00	Terminal A adjacent
Item 4	Replace utility tunnel sump equipment	X	\$10,000.00	Between Terminal A and Admin. Building
subtotal			\$ 70,000	
Mechanical				
None				
subtotal			\$ -	
Electrical				
Item 1	Restore Fire Water Pump Service		\$30,000.00	
Item 2	Restore Site Lighting	X	\$10,000.00	Slip lighting for fall prevention
subtotal			\$ 40,000	
Total			\$ 200,000	

¹Items marked with an "X" are recommended to be removed and/or replaced.

²Cost estimate only for items deemed to be necessary within the next 12 months.

TERM. A MEP/FP SYSTEM ASSESSMENT - OPTION 1 - DRY STORAGE CODE COMPLIANCE

July 24, 2017

RJR Project #17055

COST ESTIMATE				
		Remove/ Replace ¹	Estimated Cost ²	Remarks/ Comments
901 Fuhrmann Boulevard				
Terminal A				
Fire Protection				
Item 1	Flush Sprinkler Pipe and Inspect System. This is 11 sprinkler risers. Cost of each \$ \$8,000	X	\$88,000.00	Includes equip rental and replacement piping as needed
Item 2	Replace Sprinkler Riser Alarm Check Valves, \$14,000 each	X	\$154,000.00	Includes labor and all valves, gauges and fittings
Item 3	Install air compressors \$3,500 ea	X	\$38,500.00	
Item 4	Install hot box enclosures and heaters	X	\$33,000.00	
Item 5	Test system piping and make repairs	X	\$44,000.00	
Item 6	Install fire alarm system		\$70,000.00	testing.
			subtotal	\$ 427,500
Plumbing				
None			-	
			subtotal	\$ -
Sanitary				
None			-	
			subtotal	\$ -
Mechanical				
None			-	
			subtotal	\$ -
Electrical				
Item 1	New Service Installation	X	\$63,000.00	New 400A Overhead Service, MV Transformer, LV Switchboard
Item 3	New Interior Distribution System	X	\$160,000.00	To Support Code Required Lighting, Heat, Etc.
Item 4	New Lighting	X	\$60,000.00	Minimal for Safety, Emergency Lighting
			subtotal	\$ 283,000
			Total	\$ 710,500

¹Items marked with an "X" are recommended to be removed and/or replaced.

²Cost estimate only for items deemed to be necessary within the next 12 months.

TERM. A MEP/FP SYSTEM ASSESSMENT - OPTION 2 - STABILIZATION / CODE COMPLIANCE

August 1, 2017
RJR Project #17055

COST ESTIMATE			
	Remove/ Replace ¹	Estimated Cost ²	Remarks/ Comments
901 Fuhrmann Boulevard			
Site Utilities			
Fire Protection			
Item 1			
Item 1	X	\$25,000.00	Install new double check detector assembly on city water entrance to site City permit required. Cost includes equipment, material and labor
Item 2	X	\$20,000.00	Flush and leak test Fire Water Mains 3 men for 7 days plus equip
Item 3	X	\$30,000.00	Inspect fire hydrants, yard valves and operators Est includes replacing half of the equipment
Item 4	X	\$15,000.00	Fire Pump recertify and test. Minor equipment repairs Inspection and recertification
subtotal			\$ 90,000
Plumbing			
None			
subtotal			\$ -
Sanitary			
Item 1		\$10,000.00	Inspect Sewerage System
Item 3	X	\$50,000.00	Replace pump station equipment Terminal A adjacent
Item 4	X	\$10,000.00	Replace utility tunnel sump equipment Between Terminal A and Admin. Building
subtotal			\$ 70,000
Mechanical			
None			
subtotal			\$ -
Electrical			
Item 1		\$30,000.00	Restore Fire Water Pump Service
Item 2	X	\$10,000.00	Restore Site Lighting Slip lighting for fall prevention
subtotal			\$ 40,000
Total			\$ 200,000

¹Items marked with an "X" are recommended to be removed and/or replaced.

²Cost estimate only for items deemed to be necessary within the next 12 months.

TERM. A MEP/FP SYSTEM ASSESSMENT - OPTION 2 - STABILIZATION / CODE COMPLIANCE

August 1, 2017
RJR Project #17055

COST ESTIMATE				
		Remove/ Replace ¹	Estimated Cost ²	Remarks/ Comments
901 Fuhrmann Boulevard				
Terminal A				
Fire Protection				
None				
			subtotal	\$ -
Plumbing				
Item 1	Roof Drain Leader Repair/Replace		\$75,000.00	Accounts for half of pipe being replaced, flashing
Item 2	Roof Drain Leader Heat-trace		\$130,000.00	Heat trace all roof drain piping
Item 3	Roof Drain Leader Insulation		\$100,000.00	Insulate all roof drain piping
			subtotal	\$ 305,000
Sanitary				
None			-	
			subtotal	\$ -
Mechanical				
Item 1	Ventilation Fans		\$175,000.00	
Item 2	Ventilation Louvers		\$15,000.00	
			subtotal	\$ 190,000
Electrical				
Item 1	New Service Installation	X	\$63,000.00	New 400A Overhead Service, MV Transformer, LV Switchboard
Item 3	New Interior Distribution System	X	\$160,000.00	To Support Heat Trace, Ventilation, Misc. Aux Systems
Item 4	New Lighting	X	\$5,000.00	Minimal for Safety in Electrical Equipment Areas
			subtotal	\$ 228,000
			Total	\$ 723,000

¹Items marked with an "X" are recommended to be removed and/or replaced.

²Cost estimate only for items deemed to be necessary within the next 12 months.

TERM. A MEP/FP SYSTEM ASSESSMENT - OPTION 3 - PREPARE FOR FUTURE USE

August 1, 2017

RJR Project #17055

COST ESTIMATE			
901 Fuhrmann Boulevard	Remove/ Replace ¹	Estimated Cost ²	Remarks/ Comments
Site Utilities			
Fire Protection			
Item 1			
Item 1	X	\$25,000.00	City permit required. Cost includes equipment, material and labor
Item 2	X	\$20,000.00	3 men for 7 days plus equip
Item 3	X	\$30,000.00	Est includes replacing half of the equipment
Item 4	X	\$15,000.00	Inspection and recertification
		subtotal	\$ 90,000
Plumbing			
None			
		subtotal	\$ -
Sanitary			
Item 1			
Item 3	X	\$50,000.00	Terminal A adjacent
Item 4	X	\$10,000.00	Between Terminal A and Admin. Building
		subtotal	\$ 70,000
Mechanical			
None			
		subtotal	\$ -
Electrical			
Item 1			
Item 2	X	\$10,000.00	Slip lighting for fall prevention
		subtotal	\$ 40,000
		Total	\$ 200,000

¹Items marked with an "X" are recommended to be removed and/or replaced.

²Cost estimate only for items deemed to be necessary within the next 12 months.

TERM. A MEP/FP SYSTEM ASSESSMENT - OPTION 3 - PREPARE FOR FUTURE USE

August 1, 2017

RJR Project #17055

COST ESTIMATE				
901 Fuhrmann Boulevard		Remove/ Replace ¹	Estimated Cost ²	Remarks/ Comments
Terminal A				
Fire Protection				
Item 1	Flush Sprinkler Pipe and Inspect System. This is 11 sprinkler risers. Cost of each \$ \$8,000	X	\$88,000.00	Includes equip rental and replacement piping as needed
Item 2	Replace Sprinkler Riser Alarm Check Valves, \$14,000 each	X	\$154,000.00	Includes labor and all valves, gauges and fittings
Item 6	Install fire alarm system		\$70,000.00	testing.
			subtotal	\$ 312,000
Plumbing				
Item 1	Roof Drain Leader Repair/Replace		\$75,000.00	Accounts for half of pipe being replaced, flashing
Item 2	Roof Drain Leader Heat-trace		\$130,000.00	Heat trace all roof drain piping
Item 3	Roof Drain Leader Insulation		\$100,000.00	Insulate all roof drain piping
			subtotal	\$ 305,000
Sanitary				
None				
			subtotal	\$ -
Mechanical				
None				
			subtotal	\$ -
Electrical				
Item 1	Correct Electrical Service Deficiencies	X	\$100,000.00	New Duct Bank, and MV Switch
Item 2	Correct Main Transformer Installations		\$200,000.00	
Item 3	New Interior Distribution System	X	\$200,000.00	To Support Lighting, Heat, Plumbing Pumps, but with future redevelopment in mind.
Item 4	New Lighting	X	\$60,000.00	Minimal for Safety, Emergency Lighting
			subtotal	\$ 560,000
			Total	\$ 1,177,000

¹Items marked with an "X" are recommended to be removed and/or replaced.

²Cost estimate only for items deemed to be necessary within the next 12 months.

TERM. A MEP/FP SYSTEM ASSESSMENT - OPTION 4 - DEMOLITION

August 1, 2017

RJR Project #17055

COST ESTIMATE			
901 Fuhrmann Boulevard	Remove/ Replace ¹	Estimated Cost ²	Remarks/ Comments
Site Utilities			
Fire Protection			
Item 1			City permit required. Cost includes equipment, material and labor
Item 1	X	\$25,000.00	Install new double check detector assembly on city water entrance to site
Item 3	X	\$30,000.00	Inspect fire hydrants, yard valves and operators
Item 4		\$45,000.00	Pipe to bypass Terminal A section of loop
Item 5		\$10,000.00	Trenching/backfill for new pipe
Item 6	X	\$15,000.00	Fire Pump recertify and test. Minor equipment repairs
subtotal			\$ 125,000
Plumbing			
Item 1		\$30,000.00	Meters for remaining site buildings
Item 2		\$5,000.00	Utility Trenching/backfill
Item 3		\$20,000.00	Water service piping to remaining buildings
Item 4		\$5,000.00	New water taps for each remaining building
subtotal			\$ 60,000
Sanitary			
Item 1		\$20,000.00	Pump station equipment for remaining buildings
Item 2		\$30,000.00	Sewer pipe for remaining buildings
Item 3		\$12,000.00	Trenching/backfill for new pipe
subtotal			\$ 62,000
Mechanical			
Item 1		\$15,000.00	Gas line to Term B
Item 2		\$2,000.00	Gas meter at Term B
Item 3		\$2,500.00	Trench/Backfill for new gas line
subtotal			\$ 19,500
Electrical			
Item 1		\$30,000.00	Restore Fire Water Pump Service
Item 2	X	\$10,000.00	Restore Site Lighting
subtotal			\$ 40,000
Total			\$ 306,500

¹Items marked with an "X" are recommended to be removed and/or replaced.

²Cost estimate only for items deemed to be necessary within the next 12 months.

TERM. A MEP/FP SYSTEM ASSESSMENT - OPTION 4 - DEMOLITION

August 1, 2017

RJR Project #17055

COST ESTIMATE			
901 Fuhrmann Boulevard	Remove/ Replace ¹	Estimated Cost ²	Remarks/ Comments
Terminal A			
Fire Protection			
None			
subtotal			\$ -
Plumbing			
None		-	
subtotal			\$ -
Sanitary			
None		-	
subtotal			\$ -
Mechanical			
None		-	
subtotal			\$ -
Electrical			
Item 1 Demo Medium Voltage Cable and Equipment	X	\$27,000.00	Transformers, Switchgear, and 35kV Cabling
subtotal			\$ 27,000
Total			\$ 27,000

¹Items marked with an "X" are recommended to be removed and/or replaced.

²Cost estimate only for items deemed to be necessary within the next 12 months.

TERM. A MEP/FP SYSTEM ASSESSMENT - OPTION 4 - DEMOLITION

August 1, 2017

RJR Project #17055

COST ESTIMATE			
	Remove/ Replace ¹	Estimated Cost ²	Remarks/ Comments
901 Fuhrmann Boulevard			
Terminal B			
Fire Protection			
None			
subtotal			\$ -
Plumbing			
None		-	
subtotal			\$ -
Sanitary			
None		-	
subtotal			\$ -
Mechanical			
None		-	
subtotal			\$ -
Electrical			
Item 1	Install New Feeder to Grinder Pump	\$7,000.00	To Support Terminal B Sanitary System
subtotal			\$ 7,000
Total			\$ 7,000

¹Items marked with an "X" are recommended to be removed and/or replaced.

²Cost estimate only for items deemed to be necessary within the next 12 months.

COST ESTIMATE			
901 Fuhrmann Boulevard	Remove/ Replace ¹	Estimated Cost ²	Remarks/ Comments
Terminal B			
Fire Protection			
Item 1 Inspect all piping and service valves, RPZ and Alarm Check		\$10,000.00	
Item 2 Update Alarm System for Code Compliance	X	\$10,000.00	
		subtotal	\$ 20,000
Plumbing			
None		-	
		subtotal	\$ -
Sanitary			
None		-	
		subtotal	\$ -
Mechanical			
Item 1 Roof vent repairs	X	\$10,000.00	Two northern most units
Item 2 Air Rotator maint.		\$10,000.00	
		subtotal	\$ 20,000
Electrical			
Item 1 Correct Panelboard Deficiencies		\$10,000.00	
Item 2 Interior and Exterior Lighting		\$10,000.00	Check and Relamp as needed
		subtotal	\$ 20,000
		Total	\$ 60,000

¹Items marked with an "X" are recommended to be removed and/or replaced.

²Cost estimate only for items deemed to be necessary within the next 12 months.

COST ESTIMATE			
901 Fuhrmann Boulevard	Remove/ Replace ¹	Estimated Cost ²	Remarks/ Comments
Administration Building			
Fire Protection			
Item 1 New Sprinkler Riser and Alarm Check Valve Assembly	X	\$14,000.00	
Item 2 Flush Sprinkler Pipe and Inspect System	X	\$8,000.00	
Item 3 Reconfigure Piping for new occupancy		\$6,000.00	
		subtotal	\$ 28,000
Plumbing			
None		-	
		subtotal	\$ -
Sanitary			
None		-	
		subtotal	\$ -
Mechanical			
Item 1 Forced air and Unit heater repairs	X	\$10,000.00	
		subtotal	\$ 10,000
Electrical			
Item 1 Interior Lighting (1st Floor)	X	\$10,000.00	Relamp and Replace and necessary to restore
Item 2 Basement and Tunnel Lighting, Sump Pump Power	X	\$10,000.00	Restore Basement and Tunnel Lighting, Restore Power to Sump Pumps, Fix other issues as exposed.
		subtotal	\$ 20,000
		Total	\$ 58,000

¹Items marked with an "X" are recommended to be removed and/or replaced.

²Cost estimate only for items deemed to be necessary within the next 12 months.

COST ESTIMATE			
901 Fuhrmann Boulevard	Remove/ Replace ¹	Estimated Cost ²	Remarks/ Comments
Blue Building			
Fire Protection			Note: NYS Building Code does not require fire protection for this building as it is used.
None		-	
subtotal			\$ -
Plumbing			
None		-	
subtotal			\$ -
Sanitary			
None		-	
subtotal			\$ -
Mechanical			
None		-	
subtotal			\$ -
Electrical			
Item 1 Fix Wiring		\$1,000.00	
subtotal			\$ 1,000
Total			\$ 1,000

¹Items marked with an "X" are recommended to be removed and/or replaced.

²Cost estimate only for items deemed to be necessary within the next 12 months.

COST ESTIMATE			
First Buffalo Marina	Remove/ Replace ¹	Estimated Cost ²	Remarks/ Comments
Site Utilities			
Fire Protection			
None		-	
subtotal			\$ -
Plumbing			
None		-	
subtotal			\$ -
Sanitary			
None		-	
subtotal			\$ -
Mechanical			
None		-	
subtotal			\$ -
Electrical			
Item 1 Replace Exterior Power Panel	X	\$2,000.00	
subtotal			\$ 2,000
Total			\$ 2,000

¹Items marked with an "X" are recommended to be removed and/or replaced.

²Cost estimate only for items deemed to be necessary within the next 12 months.

COST ESTIMATE			
	Remove/ Replace ¹	Estimated Cost ²	Remarks/ Comments
First Buffalo Marina			
Marina Office Building			
Fire Protection			
None			
subtotal			\$ -
Plumbing			
None			
subtotal			\$ -
Sanitary			
None			
subtotal			\$ -
Mechanical			
None			
subtotal			\$ -
Electrical			
None			
subtotal			\$ -
Total			\$ -

¹Items marked with an "X" are recommended to be removed and/or replaced.

²Cost estimate only for items deemed to be necessary within the next 12 months.

COST ESTIMATE			
	Remove/ Replace ¹	Estimated Cost ²	Remarks/ Comments
First Buffalo Marina			
Marina Maintenance Building			
Fire Protection			
None		-	
subtotal			\$ -
Plumbing			
None		-	
subtotal			\$ -
Sanitary			
None		-	
subtotal			\$ -
Mechanical			
None		-	
subtotal			\$ -
Electrical			
Item 1	Fix Electrical Outlet	X	
		\$1,000.00	
subtotal			\$ 1,000
Total			\$ 1,000

¹Items marked with an "X" are recommended to be removed and/or replaced.

²Cost estimate only for items deemed to be necessary within the next 12 months.