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June 6, 2019

VIA EMAIL

Kelly Barrett
Municipal Clerk/Administrator
Borough of Bradley Beach
701 Main Street
Bradley Beach, NJ 07753

Re: Structural Building Review - Retired Sewer Pump Station
Ocean Ave. (Between Park Place Ave. and Ocean Park Ave.)
Block 99, Lot 1
Bradley Beach, Monmouth County, New Jersey
MC Project No. 19004172G

Dear Mrs. Barrett:

Per your request, on May 31, 2019, our office conducted a site visit to the building at the above referenced address. The purpose of the site visit was to conduct general visual structural observations of the building for considerations of a future renovation. The future renovation consists of converting the building into a concession stand. Accompanying our office around the perimeter and interior of the building was an employee from the Town's Department of Public Works. The information contained in this report is based solely on visual observations of the building. No testing of material or structural analysis was conducted. This report represents our best effort at describing the exposed existing structural conditions of the building at the time of our site visit. Please find below our observations, findings and recommendations.

General Building Description

The building is located on the East side of Ocean Avenue along the boardwalk between Park Place Avenue and Ocean Park Avenue in Bradley Beach. It is a one-story rectangular shaped structure with an approximate footprint of 25'-0"x30'-0" (see Photo A&B). Currently the building is unoccupied, but based on information provided to our office, its original purpose was a sewage pump station.

The building's roof is a hip roof that is constructed out of timber rafters and timber ceiling joists. The roof rafters support tongue and groove timber decking and shingle roofing. The building's perimeter exterior walls are a masonry assembly that support the roof framing. The exterior masonry wall assembly consist of an 8" thick terra cotta block layer on the inside and a 4" thick brick layer on the outside. The interior finish of the walls is painted plaster and the exterior finish of the walls is stucco. There are punched openings in all four exterior walls for doors and windows. Within the West exterior wall is a large garage door opening in front of the building's

driveway. At the garage door opening, there is an approximate 2'-6" elevation step up from the driveway to the first floor. The interior of the building has several masonry walls that partition off multiple rooms. The interior walls bear on the building's ground floor. The ground floor appears to be a concrete framed slab that is approximately 6" to 8" thick. The slab spans over a below grade chamber that appears to be the same footprint of the building. Access to the chamber is through several hatches in the floor slab.

Building Observations and Findings

Roof

The conditions of the roof shingles (see photo #1), roof decking, roof and ceiling framing (see photo #2) all appear to be in sufficient condition. The roof rafters and ceiling joists span between and are supported by the exterior walls. However, since the interior walls extend to the underside of the ceiling joists (see photo #2), these walls maybe acting as intermediate support for the roof rafters and ceiling joists.

On the South side of the roof is a masonry chimney. The masonry and joints in the chimney are deteriorated and need to be rebuilt (see photo #3). On the interior of the building we observed that the chimney is not currently in use (see photo #4).

Below the ceiling framing are three (3) steel beams located on the East side of the building (see photo #5). The beams bear on the interior walls but do not support the roof or ceiling framing. The beams appear to have been part of some internal trolley system that is no longer in use.

It was noted that the roof gutter leaders on the exterior of the building have all been removed (see photo #6). Further information should be provided from the Town to determine why the leaders were removed. New leaders should be installed to properly drain the storm water from the roof.

Exterior Walls

Cracks were observed on the interior faces of all exterior walls. The majority of the cracks appear to be emanating from the heads of the window and door openings in the walls (see photo #7). Upon further review, the existing steel lintels over the openings were observed to be rusting (see photo #8). The rust is caused by the stormwater and the ocean environment. Other crack locations on the inside face of the exterior walls seem to be located at embedded conduits that are rusting (see photo #9). The exterior stucco finish appears to be in good condition with only some minor niches and damages at wall opening jambs (see photo #10).

Floor Slab

The floor slab appears to be in sufficient condition. Minor cracking was noticed at one area of the floor slab, but those appears to be within a topping slab that was placed over the floor slab (see photo #11). The first floor contains several circular pipe openings (see photo #11) and rectangular hatch openings (see photo #12). The hatch openings have steel plates over the openings and most of the pipe openings were filled in the concrete. At the hatch openings, the steel plates can be removed, and the opening can be filled solid with a new slab. Any open pipe penetration can be filled solid with concrete.

Building Recommendations and Renovation Considerations

Roof

The roof rafters, decking and ceiling joists all appear to be in structural sufficient condition. As requested by the Town, some of the interior walls may be required to be removed during the future renovation. Since the ceiling joists appear to bear on the interior walls, it is recommended that the ceiling joists be "sistered" with new timber framing. While the interior walls may not have been originally designed as bearing walls, over time the roof and ceiling loads may have transferred to the interior walls. Therefore, the removal of the walls may cause deflection and possible cracking in the roof and ceiling framing. Sistering of the framing will consist of placing a new wood member to the side of the existing ceiling joists and bolting the two members together.

The chimney on the South side of the roof needs to be rebuilt. Since the chimney is not in use and if the future renovation does not require the chimney, it is recommended that the chimney be removed. The hole in the roof at the removed chimney should be patched in with new roof decking and shingle roofing.

The existing steel ceiling beams on the East side of the building do not appear to be in use. The three steel beams may be removed without any impact to the building structure. In addition, if the interior walls are removed below steel beams, the steel beams will need to be removed prior to removing the walls.

New roof gutter leaders should be installed for proper roof storm water drainage. The Town should verify why the leaders were decided to be removed in the first place.

Exterior Walls

It is recommended that the rusted steel lintels over the window and door openings in the exterior walls be removed and replaced with pre-cast concrete lintels. The roof framing above the openings will need to be shored prior to removing the lintels. After the lintels have been replaced the cracks on the interior faces of the walls should be patched and mortared solid. If the existing wall openings are not to be used, the lintels should still be removed, and the openings should be filled solid with CMU. If the future renovation requires the existing wall openings to be enlarged, the lintels can be replaced with new longer lintels and the opening's sill may be lowered by cutting and removing the wall to a new sill elevation. Any embedded rusted conduit on the interior side of the exterior walls should be removed and the cracks due to the rusting conduits should be patched and mortared solid. Any repair or modifications of the interior side of the wall will require patching the plaster finish. Any exterior stucco finish with niches and damages should be patched.

Floor Slab

The cracking on the top surface of the slab appears to be in a leveling concrete that was poured over the original floor slab. The cracks can be patched or if the cracks are excessive the leveling concrete can be removed and replaced. If required as part of the future renovation, the existing floor openings at the hatches and pipes can be infilled. The infill of the hatch openings would include bolting new steel angles to edges of the concrete on all sides of the opening, installing a

form deck between the angles and then pouring a reinforced concrete slab in the form deck. The infill of the pipe openings would include removing any abandoned pipes and filling the pipe opening with new concrete. Temporary formwork may be necessary on the underside of the existing slab to hold the new concrete infill.

Report Summary

At this time the overall structural condition of the building appears to be sufficient. However, the interior sides of the exterior wall have several cracks that need to be addressed. These cracks appear to be from the rusting of the steel lintels over the wall openings and embedded metal in the walls. While the building as a whole appears to be in sufficient condition, the lintels should be replaced, and the wall cracks should be patched. In addition, the chimney on the South side of the building should be removed.

The future renovation of the building may include removing some of the existing interior walls, adjusting the exterior wall openings and infilling the floor openings. These items can be provided in the future renovation but will require the following scope:

- If the interior walls are removed, sistering of the ceiling joists will be required.
- If the wall openings are enlarged, new lintels will be required, and the opening sills can be cut and lowered.
- The floor openings can be infilled with new reinforced concrete slabs that are supported from the edges of the existing openings.

Please note, the purpose of this report was to solely review the visually exposed structural conditions of the building and to provide recommendations for a future renovation. Since all existing building structural conditions were not exposed during our site visit, this may not be complete in every respect. No testing of building materials or structural analysis of building systems were performed. In addition, our office did not review any existing foundation, soil/rock supporting conditions, waterproofing, roofing, architectural systems, mechanical systems, electrical systems, plumbing and any building code related issues.

I trust this report addresses your concerns. Let us know if we can assist you with any further investigation. If you have any questions or require additional information, please do not hesitate to contact me.

Very truly yours,

MASER CONSULTING P.A.

William Doll, P.E.
Project Manager

WD/dm
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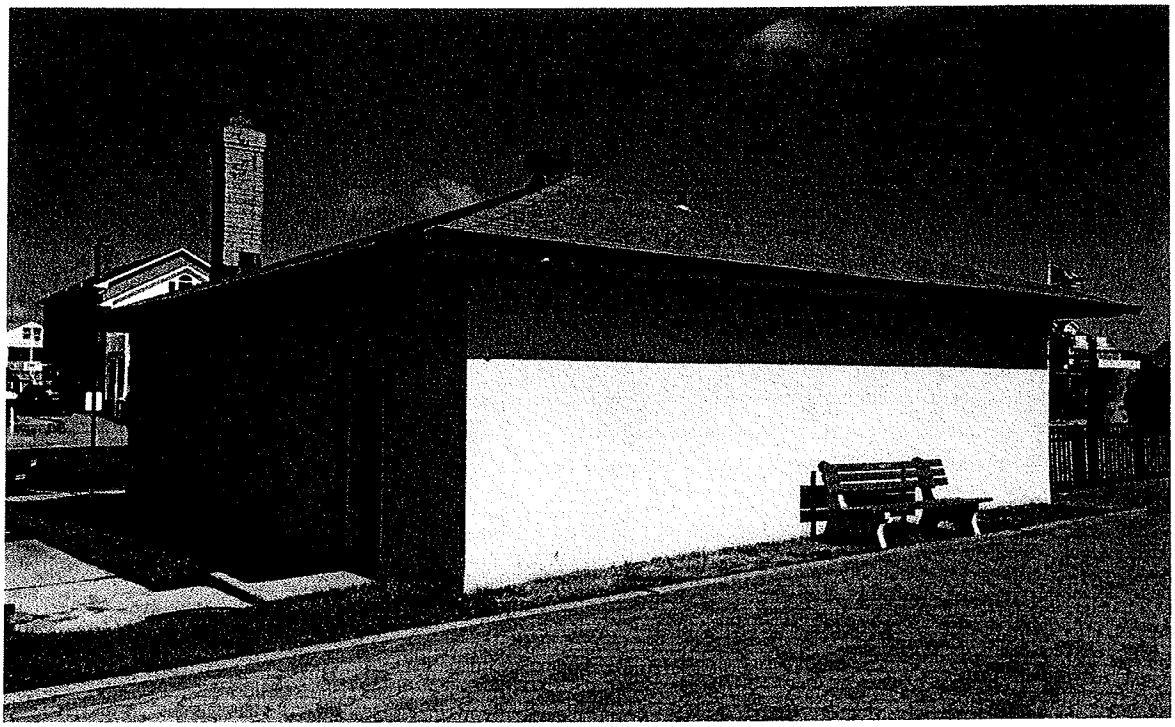
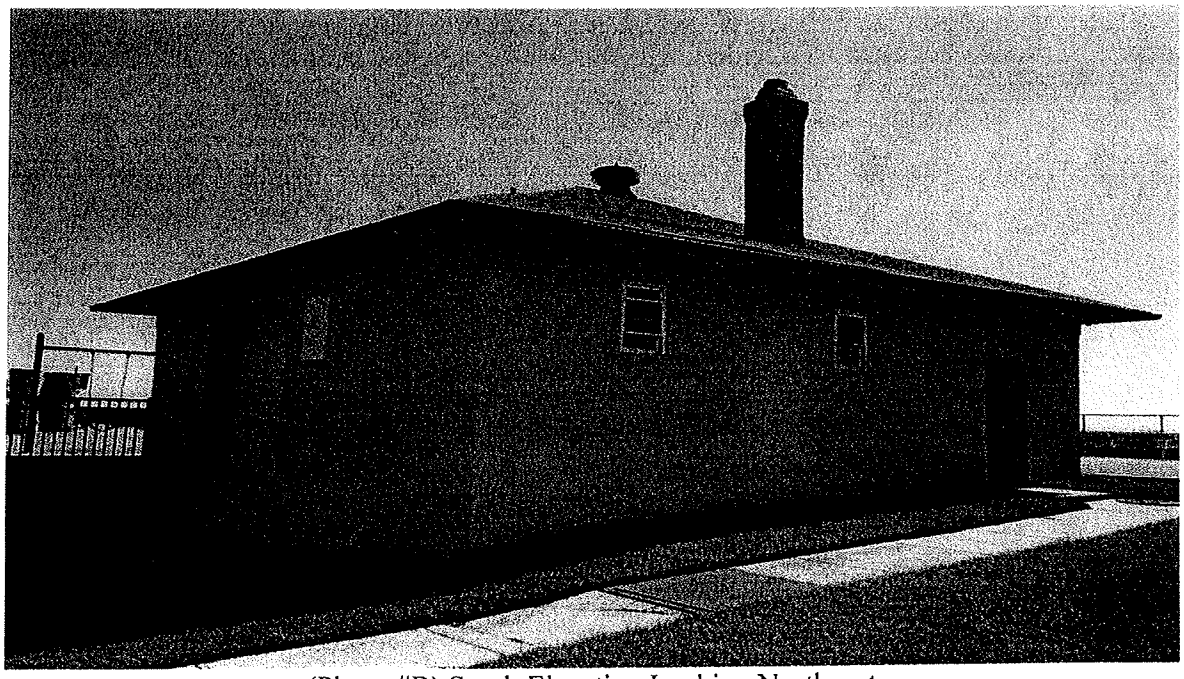
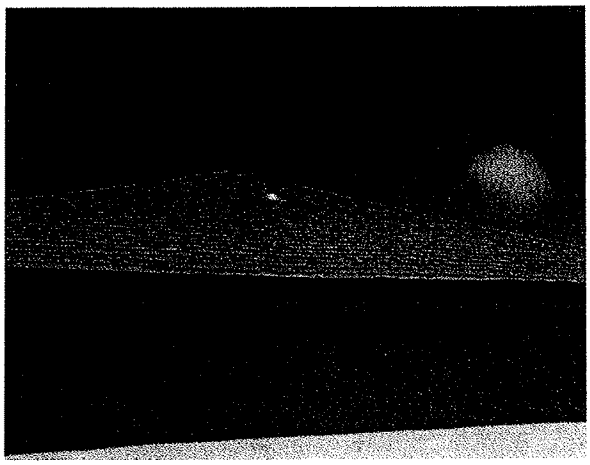
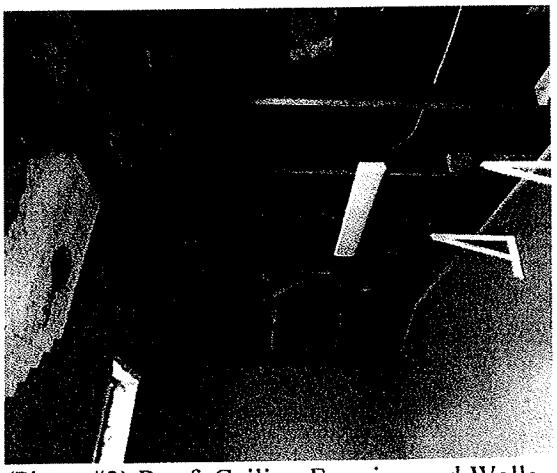


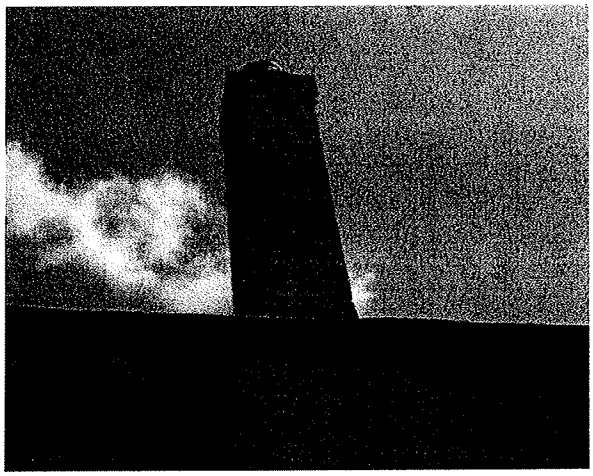
(Photo #A) East Elevation Looking Northwest

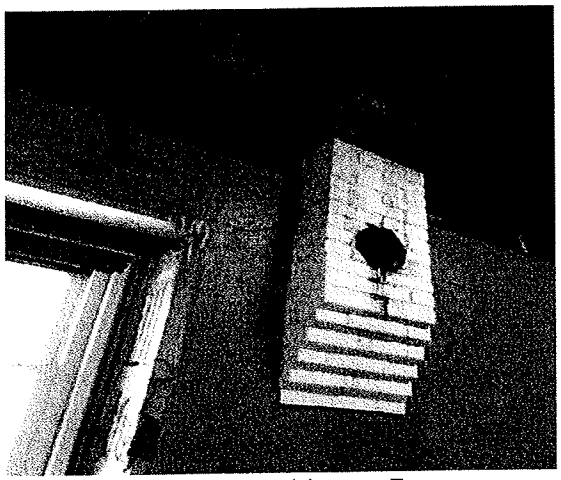


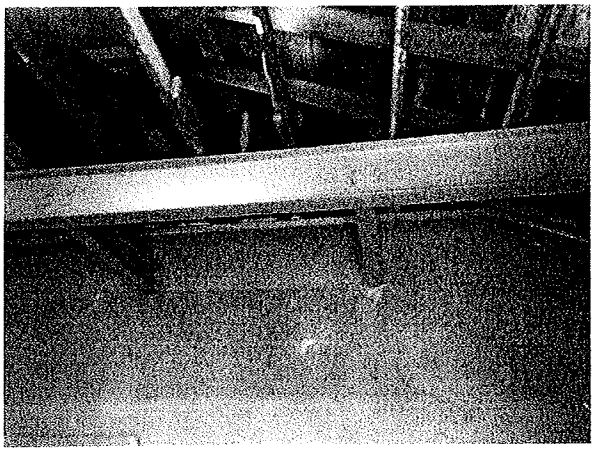
(Photo #B) South Elevation Looking Northeast

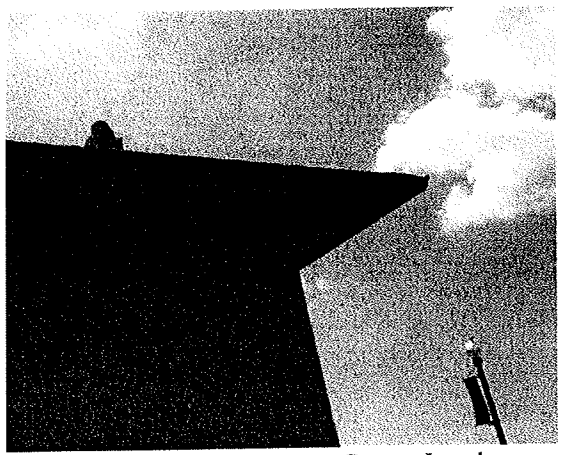

(Photo #1) Roof Shingles

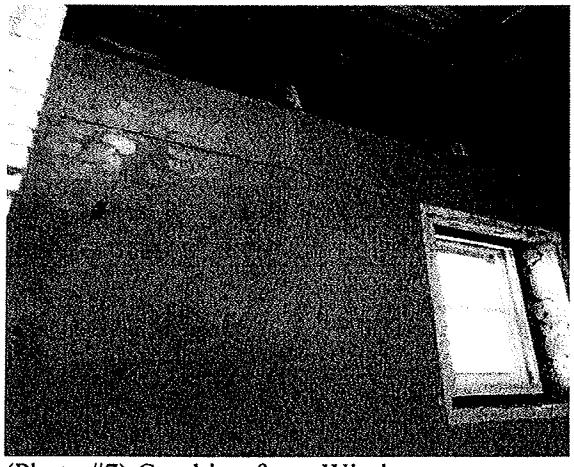

(Photo #2) Roof, Ceiling Framing and Walls


(Photo #3) Chimney

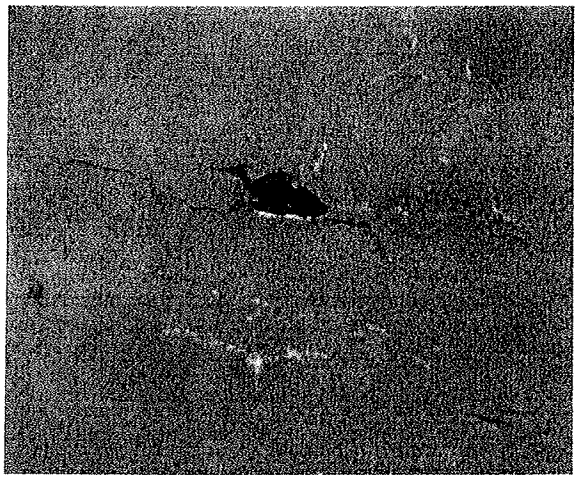

(Photo #4) Interior of Chimney Base

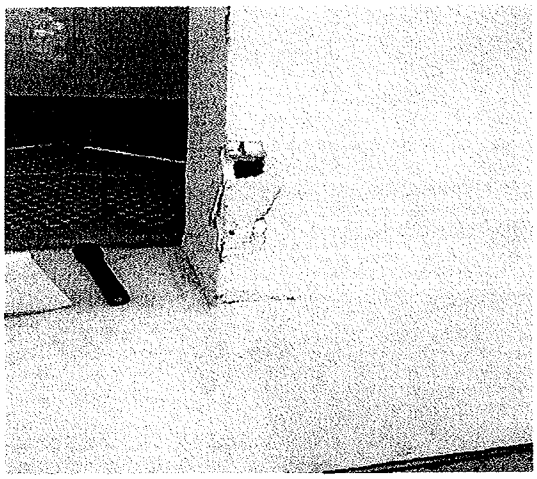

(Photo #5) Ceiling Steel Beams

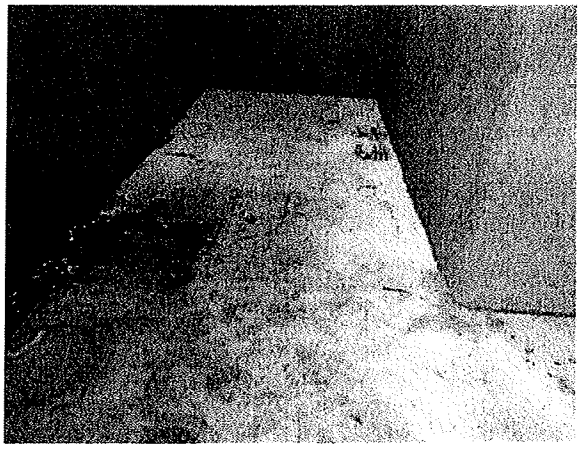

(Photo #6) Missing Corner Gutter Leader

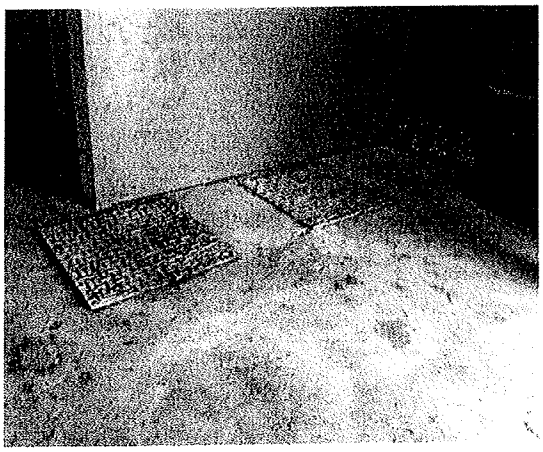

(Photo #7) Cracking from Window


(Photo #8) Rusted Lintel


(Photo #9) Crack from Embedded Metal


(Photo #10) Damage to Stucco


(Photo #11) Crack in Slab and Pipe Penetration


(Photo #12) Floor Hatches