CITY OF KEY WEST

FREDERICK DOUGLASS COMMUNITY CENTER
Gymnasium Structural Assessment

111 Olivia Street
Key West, Florida

Prepared By

Perez Engineering and Development, Inc.
1010 Kennedy Drive, Suite 202, Key West, Fl.

And

Reynolds Engineering Services, Inc.
24478 Overseas Hwy, Summerland Key, Fl. 33042

August 8, 2025

Preliminary

08/11/2025 8:02:49 AM

James C. Reynolds, PE
Fl. Lic. No. 46685

Reynolds Engineering Services, Inc.

August 8, 2025

Mr. Eric Augst, Senior Construction Manager
City of Key West
1300 White Street
Key West, Fl. 33040

Re: Frederick Douglass Community Center
Gymnasium Building Structural Assessment

Dear Mr. Augst,

On July 9, 2025 we conducted a structural inspection of the gymnasium building to determine its overall structural condition and prepare an opinion of probable construction costs for repairs.

The gymnasium is constructed of a steel reinforced concrete frame with concrete masonry unit in-fill. The roof is supported with steel trusses spanning the width of the building. The building was built in 1967 according to Monroe County Property Appraiser records.

The building is generally in good condition with the exception of areas of concrete spalling, termite damaged stage floor support trusses, and leaking window seals and roof flashing.

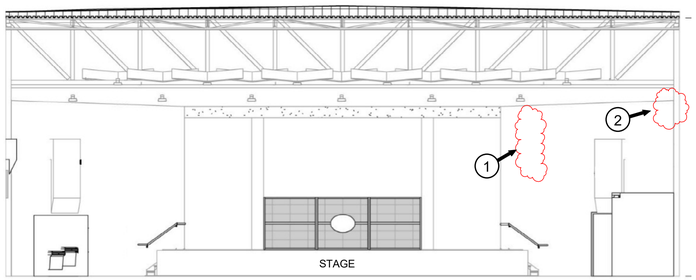
Concrete spalling is damage to concrete structural members that occurs when the steel reinforcement expands due to corrosion. When the steel reinforcement corrodes, the oxidized steel expands exerting enough force that it exceeds the tensile strength of the concrete causing the concrete to crack and break away from the reinforcement. Once the concrete is cracked the steel reinforcement is directly exposed to the environment causing the corrosion to accelerate. Concrete spalling is primarily occurring on the original building structure. The concrete spalling appears to be repairable with standard concrete repair methods and replacement of concrete structural members is not anticipated. Repairs should be made as soon as practical to prevent the concrete from deteriorating further.

Although the building is safe for continued use, areas where concrete is spalling should have access by staff and the general public restricted due to the possibility of loose concrete falling to the floor.

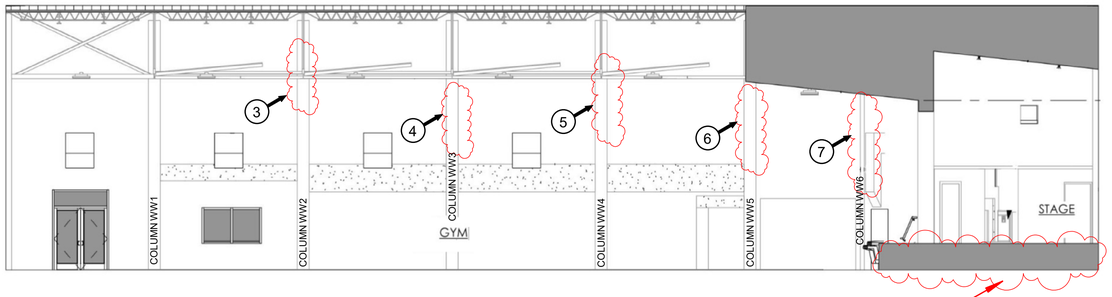
The stage floor framing is suffering active termite damage with evidence of termite droppings throughout the underside of the stage floor framing. Although the stage appears to be safe for continued use, a termite control specialist should be contacted as soon as practical to prevent further deterioration. We recommend the city consider reconstructing the stage floor framing with termite resistant materials.

FREDERICK DOUGLASS COMMUNITY CENTER GYMNASIUM
STRUCTURAL CONCRETE SPALLING REPAIRS

111 Olivia Street, Key West, Fl.

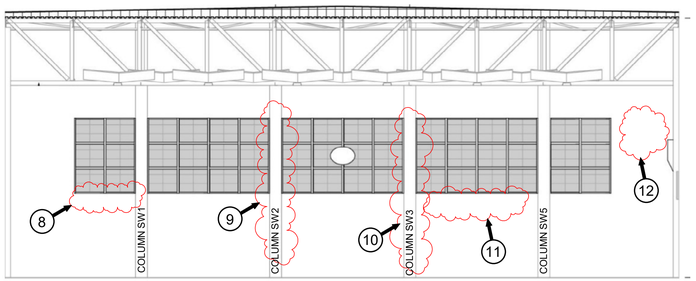


NORTH WALL INTERIOR
SCALE: 1/8"=1'



WEST WALL INTERIOR
SCALE: 1/8"=1'

= AREA OF SPALLING CONCRETE



SOUTH WALL INTERIOR
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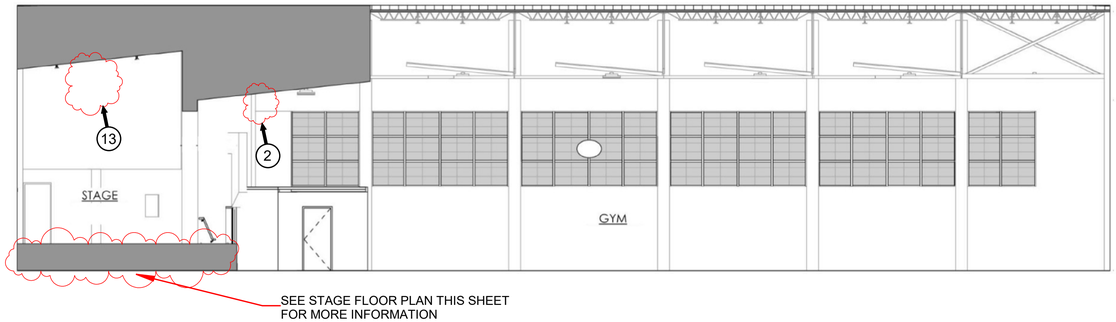
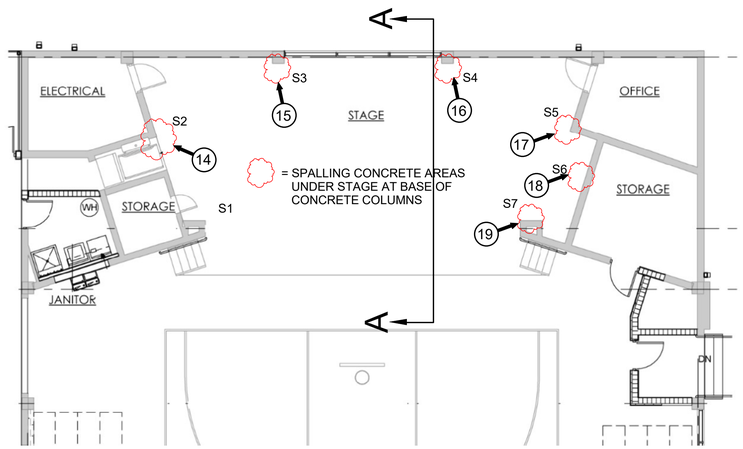
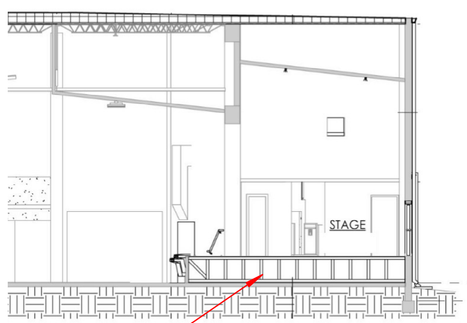


EAST WALL INTERIOR
SCALE: 1/8"=1'

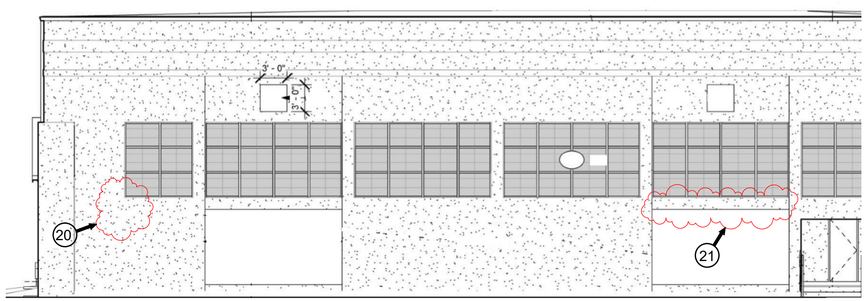


STAGE FLOOR PLAN
SCALE: 1/8"=1'



STAGE CONSISTS OF 34" HIGH 2"x4" WOOD TRUSSES
@ 24" ON CENTER WITH (2) LAYERS OF 3/4" PLYWOOD

SECTION A-A
SCALE: 1/8"=1'



EAST EXTERIOR WALL
SCALE: 1/8"=1'

Reynolds Engineering Services, Inc.

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Fl. C.A. No. 26597
24478 Overseas Highway
Summerland Key, Fl.
Jim@ReynoldsEngineeringServices.com
305-394-5987

Title:
CONCRETE SPALLING REPAIRS
for
Frederick Douglass Community Center Gymnasium
111 Olivia Street, Key West, Fl.

James C. Reynolds, PE
Fl. Lic. No. 46685

Date:
8/8/2025

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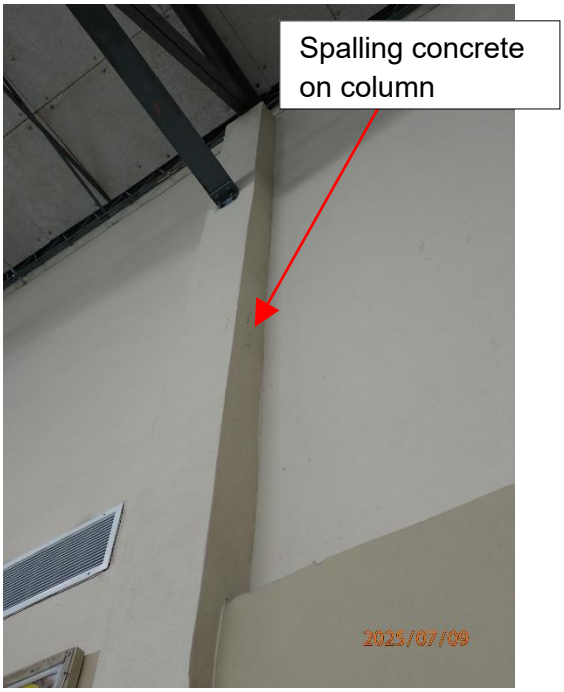
Mr. Eric Augst
Frederick Douglass Community Center Gymnasium
August 8, 2025

Photographic Documentation

Picture #1

Picture #2

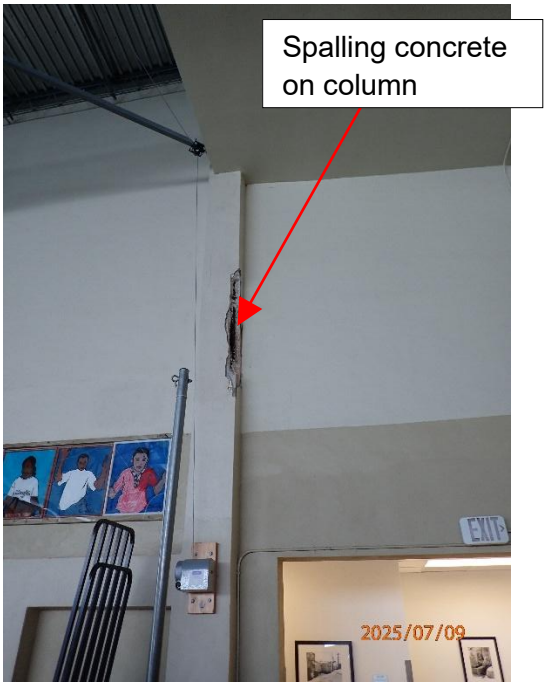
Picture #3



Picture #4

24478 Overseas Hwy ▪ Summerland Key, Fl. 33042 ▪ Phone: 305-394-5987 ▪ Jim@ReynoldsEngineeringServices.com C.A. #26597

Picture #5



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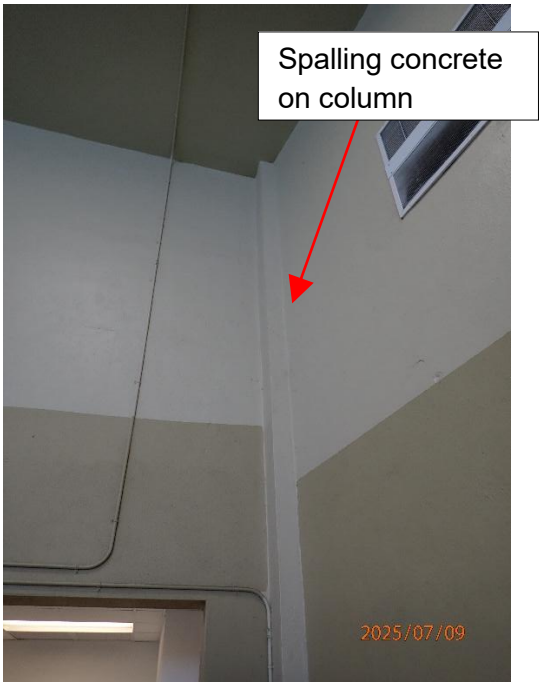
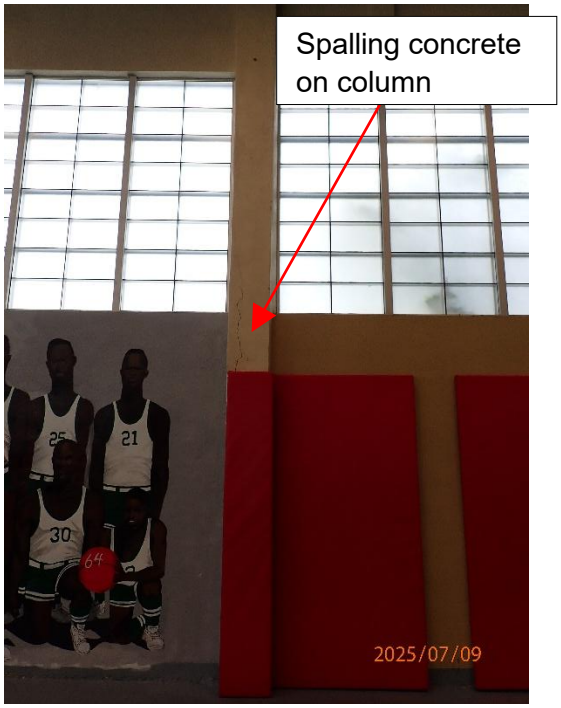


Picture #7

Picture #8

Mr. Eric Augst
Frederick Douglass Community Center Gymnasium
August 8, 2025



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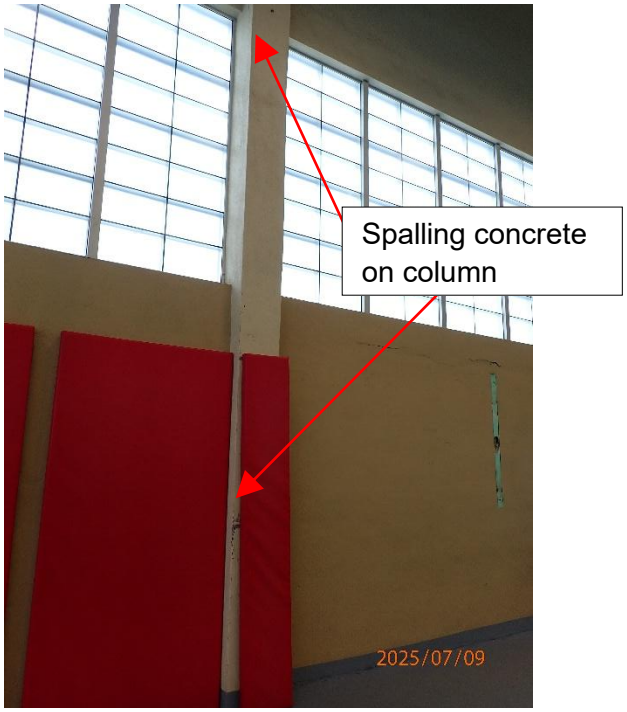
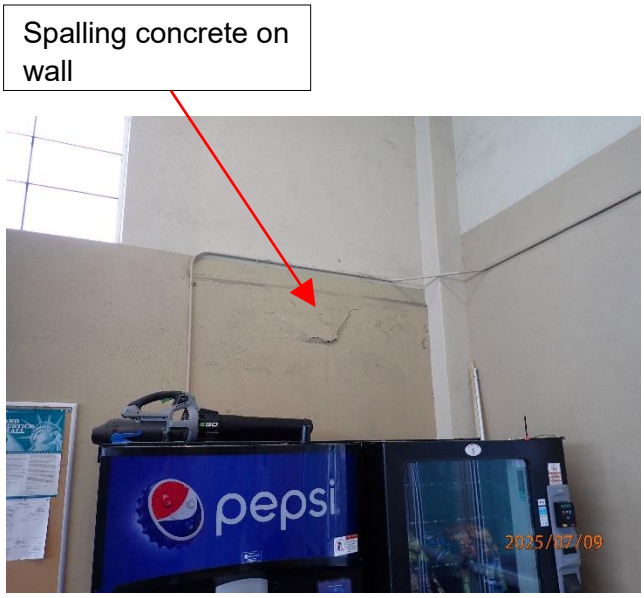


Picture #10

Picture #11



Picture #12

24478 Overseas Hwy ▪ Summerland Key, Fl. 33042 ▪ Phone: 305-394-5987 ▪ Jim@ReynoldsEngineeringServices.com C.A. #26597

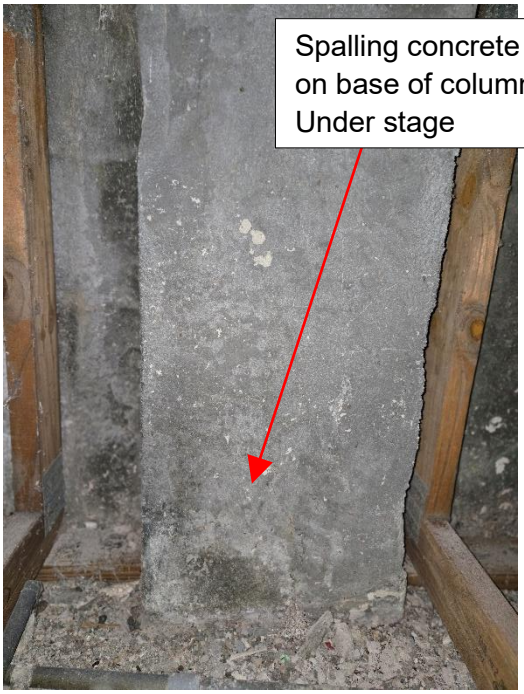
Spalling concrete on wall

Picture #13

Exposed rebar from conduit installation

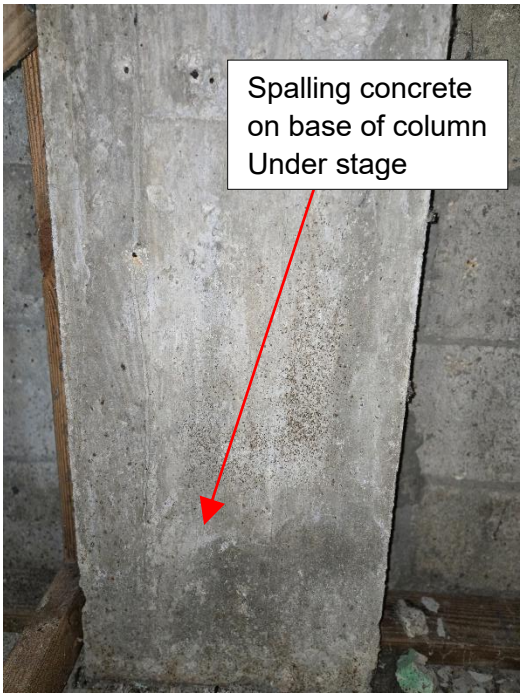
Picture #14

Spalling concrete on base of column Under stage



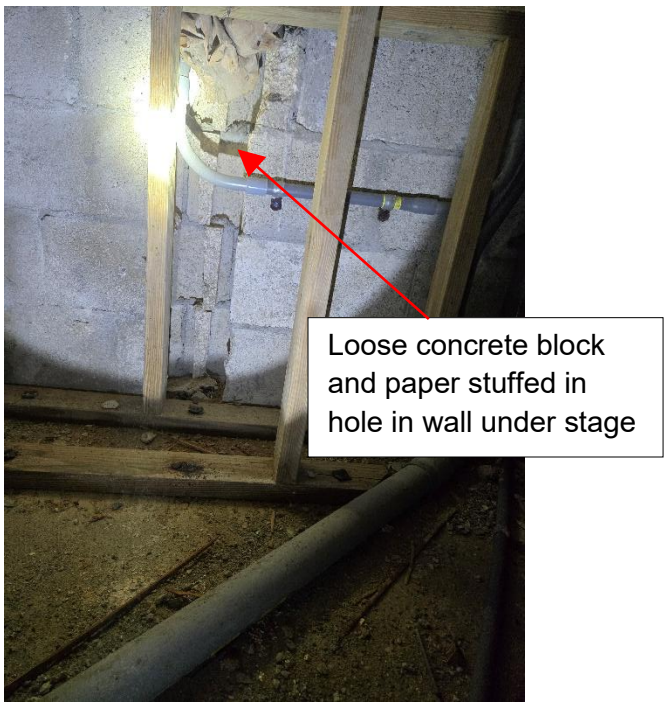
Picture #15

Spalling concrete on base of column Under stage



Picture #16

Picture #17



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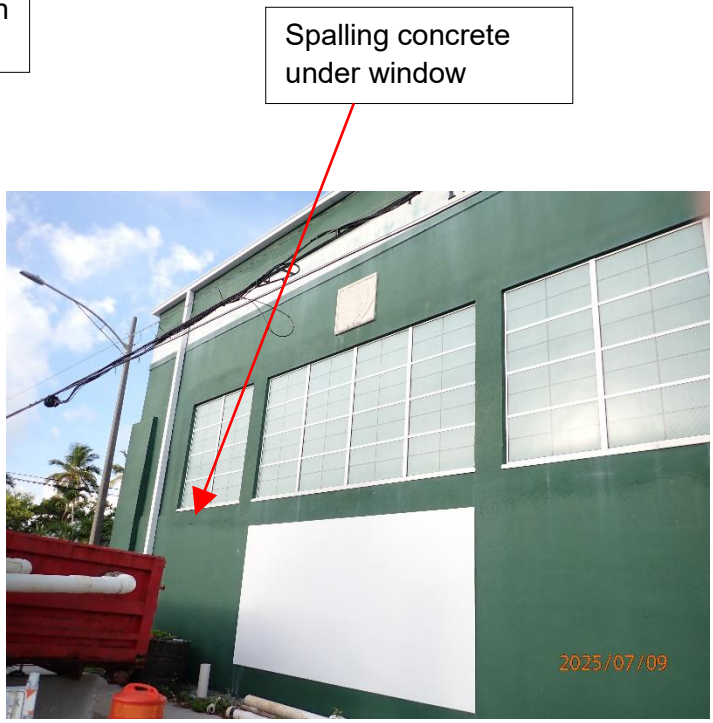
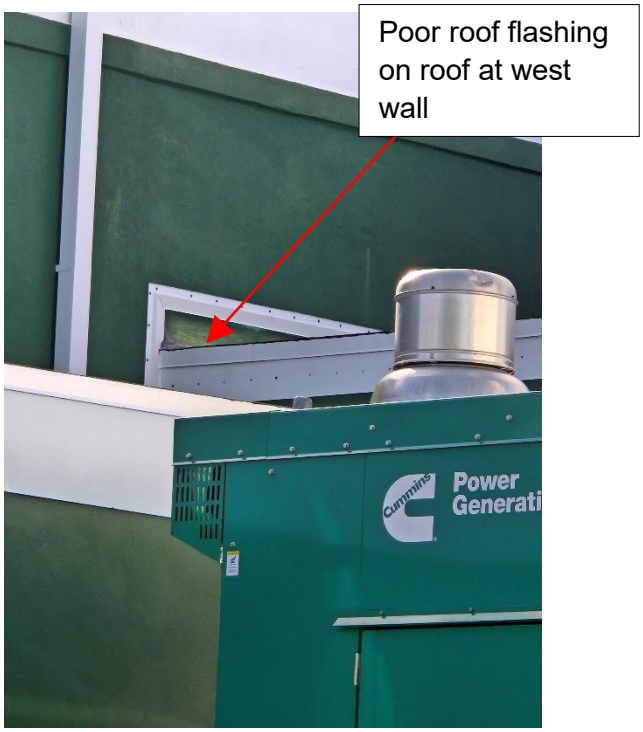
Picture #19



Picture #20

Picture #21

Picture #22



Picture #23

Picture #24

END OF SECTION