



VIA EMAIL

June 11, 2019

Chuck Lane, Assistant Director
Economic Development & Housing
City of Clearwater

Email: Charles.Lane@MyClearwater.com

Subject: Limited Condition Assessment
North Ward Elementary School
900 N. Fort Harrison Avenue
Clearwater, FL 33755

Introduction

Brian Walter, P.E., Jeremiah Mosley, E.I., Randall Arthurs, E.I., Caitlin Williams, and Rolando Morffy of Biller Reinhart Engineering Group, Inc. (BillerReinhart) performed a limited condition assessment of the interior, exterior, roof and attic space areas at 900 N. Fort Harrison Avenue, Clearwater, Florida. The assessment was conducted on April 24, 2019. The purpose of the assessment is to visually observe the current state of the readily discernible structural elements of the structure, existing conditions that require repair and/or preventative maintenance, and generate a report to document our observations and recommendations.

The visual survey by BillerReinhart was of the structure's current state and did not involve any destructive activity to view inaccessible areas.

BACKGROUND

General

The following are details of the property:

Current Name of Project: North Ward Elementary School – Clearwater, Florida

Project Address: 900 N. Fort Harrison Avenue, Clearwater, FL 33755

Site Bounded by: N. Fort Harrison Avenue on the east
Cedar Street on the north

Nicholson Street on the south
N. Osceola Avenue on the west

The property includes 4 separate structures. These include the northeast education building, The northwest pavilion, the northwest storage building, and the southwest main education building. The main education building can be further separated into the original north wing, and the later additions of the south wing and west wing. The following includes further details on the different structures within the property, as observed from the site survey as well as construction documents provided by the City of Clearwater.

Main Education Building – North Wing

Year Built:	Circa 1910-1915
Building Section Shape:	Rectangular
Approximate square footage:	9,900 sq. ft.
Total Number of floors:	2
Approximate Floor-to-Floor Height:	12 feet
Average Building Height:	Approximately 40 feet
Foundation:	Likely continuous concrete footing and concrete stem wall along the perimeter. Unknown within the interior.
Floors:	Combination of concrete slab on fill/grade and wood framed floor system with joist, beam and pier at the 1st floor. Wood framed floor system with joist and beam at the 2nd floor.
Walls:	Exterior walls appear to be solid-filled double-wythe brickwork continuing up to the roof. Interior load bearing walls appear to be plastered brick/or wood framed. Non-load bearing walls are generally wood framed construction. Non brick exterior surfaces are painted.
Exterior Windows:	Exterior windows are aluminum framed single hung windows, with vertical sliding lower sash. The windowsill is homogeneously built into the brickwork, while the interior window stool is



constructed from wood. The typical window unit consists of either a metal single window unit or a double window unit separated by an aluminum mullion. Confirmation of impact rating of the windows were not available.

Select window units appear to have been replaced/modified to provide wall mounted air conditioning systems.

Exterior Doors: Exterior unit doors consist of either wood panel or metal doors. The interior doors typically consist of wood panel doors with dead bolt locks.

Roof Structure: Timber conventionally framed hip roof system with wood plank decking covered with an architectural asphalt shingle system. A brick chimney structure penetrates the roof within the southwest quadrant of the building. Past construction documents indicate that the roof may have originally been a tile roof. The framing system is supported by exterior walls and interior load bearing walls.

Main Education Building – South Wing

Year Built:	Circa 1926
Building Section Shape:	L-Shaped
Approximate square footage:	9,300 sq. ft.
Total Number of floors:	2 and basement at southwest corner
Approximate Floor-to-Floor Height	12 feet
Average Building Height:	Approximately 40 feet
Foundation:	Continuous concrete footing and concrete foundation wall along the perimeter. Isolated spread footing along grids on the interior with masonry columns to help support first floor.
Floors:	Combination of concrete slab on fill/grade and wood framed floor system with joist, beam and



pier at the 1st floor. Wood framed floor system with joist and beam at the 2nd floor.

Walls: Exterior walls appear to be solid-filled double-wythe brickwork continuing up to the roof. Interior load bearing walls appear to be plastered brick/or wood framed. Non-load bearing walls are generally wood framed construction. Non brick exterior surfaces are painted.

Exterior Windows: Typical windows, similar to Main Education Building-North Wing.

Select window units appear to have been replaced to provide wall mounted air conditioning systems. Non brick exterior surfaces are painted.

Exterior Doors: Exterior unit doors consist of either wood panel or metal doors. The interior doors typically consist of wood panel doors with dead bolt locks.

Roof Structure: Timber conventionally framed hip roof system with wood plank decking covered with an architectural asphalt shingle system. A brick chimney structure intersects the roof at southwest corner of the building. Past construction documents indicate that the roof may have originally been a tile roof. The framing system is supported by exterior walls and interior load bearing walls. The trussed roof system is constructed with metal tie downs at inner framing and top chord wood ties and ceiling joist anchors at the roof eave detail.

Main Education Building – West Wing

Year Built: Circa 1926

Building Section Shape: L-Shaped

Approximate square footage: 2,300 sq. ft.

Total Number of floors: 1 and crawl space room at south end

Approximate Floor-to-Floor Height: 10 feet



Average Building Height:	15 - 20 feet
Foundation:	Continuous concrete footing and CMU foundation wall along the perimeter. Isolated footing along grids on the interior with brick columns to help support floor.
Floors:	Typically reinforced concrete slab supported by precast concrete beams. Floor slab at the south section appear to be precast concrete slab panels supported by "Z" section structural steel.
Walls:	Perimeter walls are concrete masonry units (CMU) having a painted stucco finish.
Exterior Windows:	Typical windows, similar to Main Education Building-North Wing.
	Select window units appear to have been replaced to provide wall mounted air conditioning systems. Non brick exterior surfaces are painted.
Exterior Doors	Exterior unit doors consist of either wood panel or metal doors. The interior doors typically consist of wood panel doors with dead bolt locks.
Roof Structure:	Timber framed flat roof system covered with a modified bitumen system.

Northeast Education Building

Year Built:	Circa 1956
Building Section Shape:	Trapezoidal
Approximate square footage:	4,300 sq. ft.
Total Number of floors:	1
Approximate Floor-to-Ceiling: Height	10 feet
Average Building Height:	15 - 20 feet



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Foundation:	Continuous concrete footing and CMU foundation wall along the perimeter. Isolated footing along grids on the interior with brick columns to help support floor.
Floors:	Concrete slab on grade.
Walls:	Perimeter walls are concrete masonry units (CMU) having a painted stucco finish. Exterior columns have a brick veneer finish.
Exterior Windows:	Typical windows, similar to Main Education Building-North Wing.
Exterior Doors	Exterior unit doors consist of either wood panel or metal doors. The interior doors typically consist of wood panel doors with dead bolt locks.
Roof Structure:	Timber framed flat roof construction covered with a modified bitumen system.
Sidewalk and Canopy:	A covered sidewalk connects the northeast building with the north wing of the main education building. The sidewalk is covered with an aluminum canopy supported by rectangular tube frames.
Other:	The restroom structure was built separate at the southeast section of the building. The restroom construction is a continuous concrete footing with concrete masonry units (CMU) walls, concrete slab on grade, wood framed flat roof covered with a modified bitumen flat roof system. An addition, incorporating a new room, has been added to the west side of the restroom since its original construction.

Northwest Storage Building

Year Built:	Circa 1995
Building Shape:	Rectangular
Approximate square footage:	240 sq. ft.
Total Number of floors:	1



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Approximate Floor-to-Ceiling: Height	8 feet
Average Building Height:	15 - 20 feet
Foundation:	Thickened reinforced concrete slab edge along the perimeter.
Floors:	Concrete slab on grade.
Walls:	Perimeter walls are concrete masonry units (CMU) having a painted stucco finish.
Exterior Doors	Metal double door.
Roof Structure:	Timber framed gable roof construction covered with a three-tab asphalt shingle system.

Northwest Pavilion

Year Built:	Unknown
Structure Shape:	Rectangular
Approximate square footage:	240 sq. ft.
Total Number of floors:	1
Average Structure Height:	15 - 20 feet
Foundation:	Concrete slab on grade with isolated concrete footings supporting columns.
Walls:	Open structure, having structural steel columns and moment frames without walls.
Roof Structure:	Structural metal framing covered with continuous rib metal panels.

Document Review

Following are general descriptions of documents that were reviewed relating to the structures. Documents described below area available as electronic files and are not attached to this report.



Offering Memorandum:	Not provided for review.
Architectural Drawings:	Reviewed select legible sections and pages provided
Architectural Specifications:	Not provided for review
Structural Drawings:	Reviewed select legible sections and pages provided
Project Submittals:	Not provided for review
Construction Photos:	Not provided for review

ON-SITE SURVEY

General

Site Visit Date:	April 24, 2019
BREG Consultants on Site:	Brian Walter PE, Jeremiah Mosley EI, Randall Arthurs, E.I. and Caitlin Williams, and Rolando Morffy
City of Clearwater Personnel on Site:	Jim Benwell
Site Survey Scope:	<p>Review of available drawings.</p> <p>Visual observations of exterior via accessible areas from ground level.</p> <p>Visual observations of the roof surfaces of the northeast education building and southwest main education building. Visual observation of the pavilion roof structure was completed from the west side using a ladder. Visual observation of the roof over the storage building was completed from ground level.</p>
Interior Observations:	Interior conditions were observed at the three enclosed structures. Observations also included accessible crawl spaces, basements, and attic spaces.



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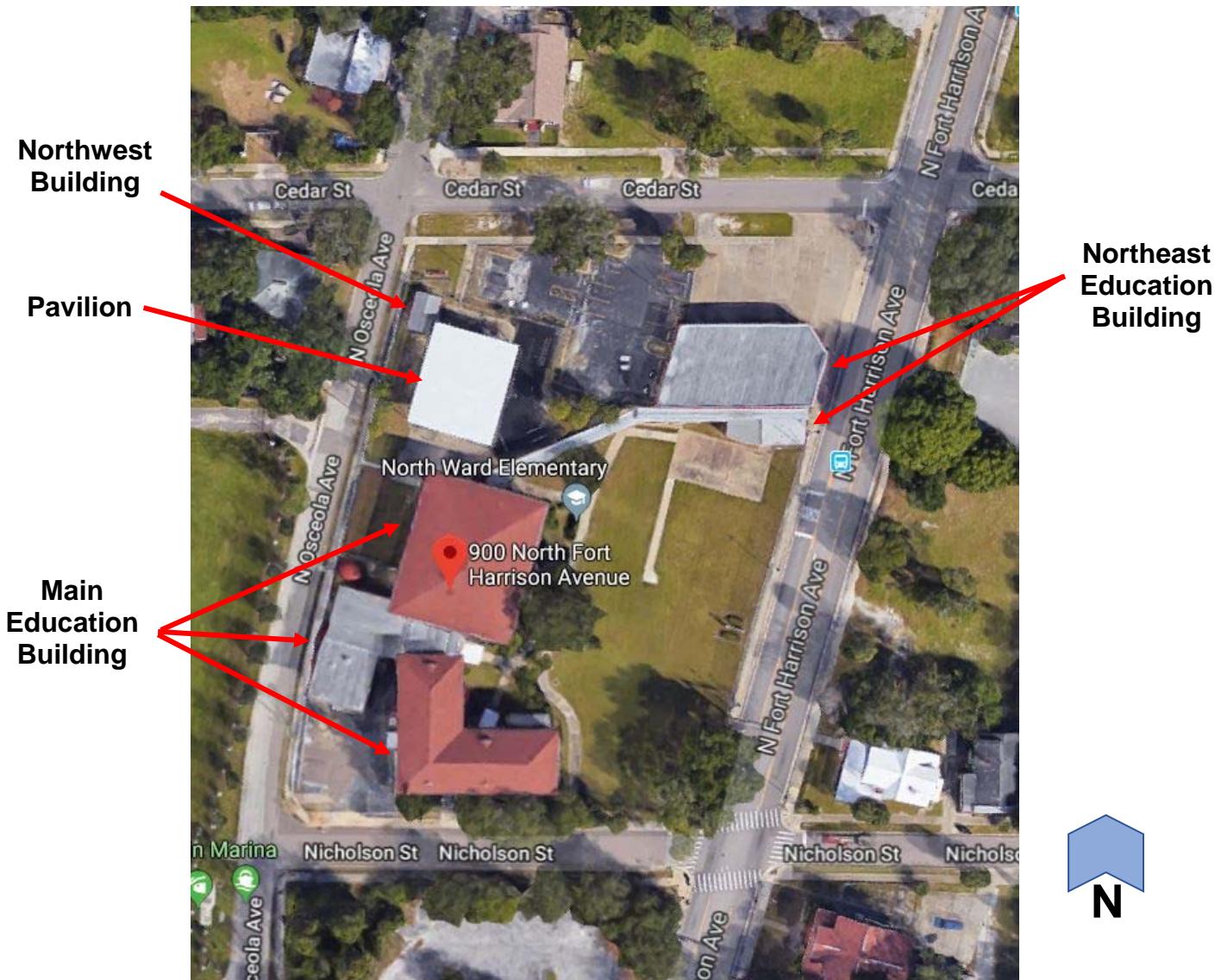


Figure 1: Overview of North Ward Elementary School

Survey of the Structure Exterior

Readily discernible structural elements of the structure exterior were visually observed. Photographs were taken during the survey and are included in *Appendix A* of this report. Note that some of the conditions listed below were observed throughout the structure and the selected photographs are representative of the respective conditions.

Table A – Structure Exterior Observations	
Conditions Observed	Reference Photos (Figures in Appendix A)
Northeast Education Building	
General Conditions	
Cracking in concrete slab	A-1
Cracking in CMU walls	A-2 and A-3
Deteriorating paint at wood soffits and facias	A-4
Delaminating paint at CMU walls	A-5
Corroding metal window vents	A-6
Deteriorating window sealants	A-7
South Elevation	A-9
Paint separation on CMU wall surface	A-10
Moisture damage at soffit joint	A-11
Cracking/separation at CMU wall joint	A-12 and A-13
Corroding metal door framing and accessories	A-14 and A-15
Failed previous joint repair	A-16
Cracking and damaged concrete with vertical displacement in concrete sidewalk slab	A-17 and A-18
Cracking at concrete sidewalk exposing top of pipe	A-19 and A-20
West Elevation	A-21
Tree growth causing spalling in concrete slab	A-22
North Elevation	A-23 and A-24
Cracking in concrete windowsill	A-25 and A-26
East Elevation	A-27
Cracking and delaminating paint at wooden arch	A-28 and A-29



Covered Sidewalk and Canopy	A-30 thru A-32
View of metal tube column foundation	A-33
Surface staining at overhead metal paneling	A-34
Corrosion at interface of metal support framing	A-35
Vegetation growth at column bases at the west end of overhang	A-36
Main Education Building	
North Building	
General Conditions	
Cracking in brick walls	A-37 and A-38
Corrosion at metal window framing and headers/lintels	A-39 and A-40
Deteriorated sealants	A-41
Deteriorating paint	A-40 and A-42
North Elevation	A-43
Previous crack repair	A-44
View of wood soffit; corroding electrical piping	A-40
View of stairway; corrosion at metal stringers, lateral bracing, treads and post bases with section loss, surface staining, exposed concrete foundations, and cracking at concrete landing	A-45 thru A-52
View of visitor's entrance; delaminating paint, cracking at concrete wall caps, and corroding at electrical conduits,	A-53 thru A-55
East Elevation	A-56
View of roof overhang; surface rust at gutter system	A-57
View of north entrance; delaminating paint, corrosion at metal columns and handrail, cracking and vegetation growth in concrete landing	A-58 thru A-61
View of anchors above metal roof overhang	A-62
South Elevation	A-63
View of updated windows	A-63
West Elevation	A-64
View of retaining wall; cracking in concrete wall, spalling at top of concrete wall, and surface staining	A-65 thru A-68



View of brick in-fill; corroding steel lintel member, cracking in grout and damaged and corroding metal door	A-69 thru A-74
View of retaining wall and stairway; cracking in concrete retaining wall and concrete stairs, surface rust staining at metal handrails, corrosion at metal post base with section loss, and deteriorated paint	A-75 thru A-76
View of north concrete ramp and retaining wall; rust staining at metal handrail, cracking in concrete retaining wall and slab, corroding metal post pockets and abandoned metal post bases	A-77 thru A-81
View of metal dome structure; delaminating paint, previous patch repairs, surface corrosion and metal section loss	A-82
South Building	
General Conditions	
Cracking in brick walls	
Corrosion at metal window framing and headers/lintels	A-83
Deteriorated sealants	
Deteriorating paint	A-84
East Elevation	
View of 2 nd level metal stairway; corrosion with section loss throughout, surface corrosion, chipped paint, exposed column foundations, missing stairs, and cracking in concrete landing	A-87
View of entrance; broken window, corroding metal door and framing	A-88 and A-89
Broken windows	A-90
South Elevation	
View of stairway entrance; delaminating paint, corroding metal hand railing, window framing and post bases, broken windows, and cracking at concrete landing	A-93 and A-94
Cracking at concrete foundation wall	A-96
West Elevation	
South end of elevation; dented down spout, corroding steel pipe, and vegetation growth in asphalt	A-98
Corroding window vent framing	A-99
Corroding metal ties at concrete foundation walls	A-100
Previous repairs at brick interfaces	A-101



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Corroding at fasteners	A-102
View of basement entrance; corrosion at metal door, delaminating paint at metal railing, concrete retaining walls and concrete stairs	A-103 and A-104
West Building	
General Conditions	
Cracking in concrete walls	A-105 and A-106
Deteriorated sealants	
Staining on metal gutters	
South and East Elevation	
View of east staircase; corroding metal railing and post base, cracking in concrete stairs, and deteriorating paint	A-107 and A-109
View of crawl space exterior entry and retaining wall; cracking in concrete retaining wall, delaminating paint, and corroding metal door framing	A-110 thru A-112
View of crawl space interior; cracking in CMU wall, concrete overhead slab and concrete slab foundation, spalling in overhead concrete slab at pipe penetration, surface corrosion at steel beam that sisters concrete beam, and rust staining at reinforcing concrete beams	A-113 thru A-119
Spalling at concrete wall	A-120
Corrosion at pipe stack	A-121
View of west concrete stairway; cracking in concrete wall, landing, slab and stairs, corroding metal railing, corroding metal posts, and delaminating metal railing	A-122 thru A-126
West Elevation	
Corroding metal strap	A-128
Staining at metal soffits	
Staining at concrete steps	A-129
Significant concrete wall cracking at cafeteria wall	A-130 thru A-133
Steel Pavilion	
Surface corrosion at steel members throughout pavilion	A-135 thru A-138
Section loss at metal gutter system, base of columns, base plates and girder/beam flanges,	A-139 thru A-142



Delaminating protective coating throughout pavilion	A-143
Northwest Building	A-145
Chipped corner of CMU wall	A-146
Delaminating paint	

Survey of Structure Interior

Readily discernible structural elements of the interior were visually observed. Photographs were taken during the survey and are included in *Appendix B* of this report. Note that some of the conditions listed below were observed throughout the structure and the selected photographs are representative of the respective conditions. BillerReinhart selected a random sample of rooms to visually observe.

Table B – Structure Interior Observations	
Conditions Observed	Reference Photos (Figures in Appendix B)
Main Education Building	
Typical Conditions	
Wall cracking	<i>B-1 thru B-3</i>
Delaminating paint	<i>B-4 and B-5</i>
Moisture damage at wall surfaces	<i>B-6 and B-7</i>
Moisture staining at ceiling surfaces	<i>B-8 and B-9</i>
Broken windows	<i>B-10</i>
Termite damage and evidence of termite activity	<i>B-11 and B-12</i>
North Classroom (1st Level)	<i>B-13 thru B-15</i>
Moisture staining at hard wood floors	<i>B-16 and B-17</i>
West Classroom (1st Level)	<i>B-18</i>
Ceiling plaster damage	<i>B-19</i>
Door handle indentation at south wall	<i>B-20</i>
Theater Classroom (2nd Level)	<i>B-21 thru B-23</i>
Moisture damage and staining at hard wood floors	<i>B-24</i>
View of attached side room	<i>B-25 thru B-27</i>
Southwest Classroom (2nd Level)	<i>B-29</i>
Vegetation growth through broken window	<i>B-30</i>



Main Central Hallway	B-31
Cafeteria and Kitchen (2nd Level)	B-32 thru B-36
Significant wall cracking and separation at wall surfaces	B-37 thru B-42
Ceiling cracking in kitchen	B-43 and B-44
Evidence of termite activity	B-45
Southwest Basement	B-46 and B-47
Spalling at ceiling	B-48
Surface staining at brick surfaces	B-49
Northeast Education Building	
East Classroom	B-52
Moisture Damage	B-53 and B-54
Cracking in walls	
Delaminating paint at wall surfaces	
Northwest Classroom	
Cracking at walls	B-55

Survey of Roof System

The roof systems were visually observed. Photographs were taken during the survey and are included in Appendix C of this report. Note that some of the conditions listed below were observed throughout the structure and the selected photographs are representative of the respective conditions.

Table C – Roof System Observations	
Conditions Observed	Reference Photos (Figures in Appendix C)
Main Education Building Roof System (Pitched Surfaces)	C-1 thru C-13
Torn ridge cap and hip cap shingles	C-14 and C-15
Significant granule loss at ridge cap shingles	C-16
Spalled concrete and corroded reinforcing at the chimney cap	C-17
Isolated cracking and joint sealant repairs	C-18 and C-19
Deformation at south gutter	C-20
Paint delamination at the soffit boards	C-21
Significant granule loss at the flat roof systems	C-22 thru C-25
Partial displacement of roof stack at west flat roof	C-26



Transition detail between two west flat roof systems	C-27
Flashing detail along flat roof edge	C-28
Northeast Education Building Roof System	C-29 thru C-31
Joint intersection details	C-32 and C-33
Stucco flashing detail	C-34
Stucco sealant repair along sidewall at apparent pre-existing stucco crack	C-35
East parapet wall	C-36
Unsealed joints at metallic sheet material installed along the backside of the parapet wall and deteriorated sealant at parapet wall cap	C-37
Significant granule loss with collected granules on surface	C-38
Roll roofing membrane deterioration and exposed fiber glass	C-39
Aluminum panel canopy roof system	C-40 and C-41
Pavilion Roof System	C-42
Corrosion and section loss at the metal roof framing and fasteners	C-43 thru C-45

Survey of Attic Space

The attic spaces of the north and south wings of the main education building were visually observed. Photographs were taken during the survey and are included in *Appendix D* of this report. Note that some of the conditions listed below were observed throughout and the selected photographs are representative of the respective conditions.

Table D – Attic Space Observations	
Conditions Observed	Reference Photos (Figures in Appendix D)
Sporadic moisture staining throughout the north and south attic spaces	<i>D-1 through D-4</i>
Minor section loss at wood framing within the east side of the south attic space	<i>D-5</i>
Supplemental wood members at the diagonal bracing and columns within the north attic space area	<i>D-6 and D-7</i>
Apparent post construction vertical framing at north side of north attic space	<i>D-8</i>

Conclusions and Recommendations



BillerReinhart understands that the buildings have been unoccupied for at least the past 10 years. BillerReinhart is not privy to maintenance records for the building during this time. Based on this and the results of the limited visual survey of the subject structures, BillerReinhart believes that their condition can be described as fair to slightly poor, with repair and restoration required. In summary:

- The exterior façades are in need of restoration, including cleaning, repointing of brickwork, stucco repairs (where applicable), painting and sealing.
- Significant wall cracking was observed along the west side and south side of the west main education building.
- Exterior stair systems in degraded and/or defunct conditions
- Evidence of water intrusion and termite activity was observed in the interior.
- Roof shingles exhibited moderate to heavy granule loss, which could affect the serviceability of the roof system.
- Damaged cap shingles along the hip and ridge lines were observed.
- The maintenance history of the buildings is unknown at this time, including time of installation of roof systems.

Other conditions observed consisted of normal/expected age-related and exposure-related deterioration/damage of the exterior and interior portions of the structures.

BillerReinhart does not know the ultimate plans for the property and its buildings. This report assumes that the buildings will be restored and renovated for occupancy sometime in the near future after acquisition by the City of Clearwater. To reiterate, BillerReinhart understands that the buildings have been unoccupied for at least the past 10 years. Given the above, BillerReinhart recommends that all work/restoration efforts described subsequently in this report be completed in the near future, and additional terms for work are not considered.

BillerReinhart recommends the following repair protocol:

I. Roof Areas:

Main Education Building:

- 1) BillerReinhart recommends that the shingle roof covering systems and rolled roof covering systems be removed and replaced.
- 2) The dormer located at the north side of the south leg should be evaluated by a Florida licensed professional engineer to investigate a potential active roof leak. If an active roof leak is discovered, then repair the referenced dormer.
- 3) Repoint and restore brick chimneys
- 4) Remove and replace gutter system along the south eave.
- 5) Reset partially displaced roof stacks.



Northeast Education Building:

- 6) Remove and replace roll roofing materials installed along the flat roof areas.
- 7) Remove metallic roofing materials and install a waterproofing roll roofing material at southeast roof area.
- 8) Reseal or remove and replace metallic sheet covering at backside of the east parapet wall. Remove and replace sealant along the metal cap of the east parapet wall.

II. Pavilion:

- 9) Remove and replace metal roof framing located along the east and west eaves of the pavilion.
- 10) Repair or remove and replace any framing members exhibiting section loss
- 11) Clean all framing, horizontal and vertical, and hardware of surface corrosion and apply an anti-corrosion coating.

III. Exterior Façade Restoration and Waterproofing:

- 12) Restore and seal all brick facades via brick repointing and application of 100% silane sealer
- 13) Clean and coat all exposed corroding steel angle lintel surfaces at brick buildings
- 14) Repair all wall cracking at all buildings. Repairs may require rebuilding of blocks/bricks
- 15) Repair damaged stucco systems, where applicable
- 16) Seal non-structural cracks in non-brick buildings with an elastomeric joint sealant
- 17) Paint and seal all existing painted facade and overhead soffit surfaces
- 18) Remove and replace (2) metal stair systems



IV. Other Allowances

Please note the following other allowances which should be made:

- Due to the age of the structures, it is possible that the existing building construction methods utilized hazardous materials such as asbestos and lead-based paint. Work required to restore the structures for occupancy will disturb existing building materials, and the appropriate testing for hazardous materials will be required. An allowance should be made for testing and possible abatement of such materials.
- Access to the first-floor areas of elevated wood framing (crawl spaces) was not provided. Concealed conditions requiring repair at these areas could be present, especially given the evidence of termite activity. BillerReinhart recommends that, prior to occupancy of the building(s), the elevated wood floor framing be assessed/evaluated. An allowance for assessment of and repairs to concealed elevated wood framing should be made.
- The condition of interior load bearing elements remains concealed. An allowance for repairs to concealed interior load bearing elements should be made.
- BillerReinhart visually observed windows and doors generally. Building fenestrations were not tested for effectiveness, water/weather-tightness, etc. Given the buildings' ages, exposure to recent storm events (Irma 2017) and the recent and current unoccupied nature of the buildings, BillerReinhart recommends an allowance be made for water-testing of all windows and doors, and for removal and replacement of windows/doors. This allowance would cover the broken windows observed.
- BillerReinhart observed areas of wood framing and wood elements exhibiting decay from wood-destroying organisms. Allowance should be made for removal and replacement of framing and other wood elements exhibiting decay/rot. This would include roof sheathing/planking during the various roof replacements.
- BillerReinhart observed areas of concrete degradation, including cracking and spalling at sidewalks, sills, retaining walls, chimney caps, etc, some with exposed corroding reinforcing steel. An allowance should be made for miscellaneous concrete repairs.
- BillerReinhart observed areas of exposed corroding metal surfaces, including handrails and post bases, hardware, etc. An allowance should be made for various and miscellaneous metal surface restorations, including repair or removal and replacement of elements exhibiting section loss, and cleaning surfaces of corrosion and coating with anti-corrosion coating.
- Given the ages of the structures, it is possible that roof hold-downs/strapping of roof joists does not meet current wind code requirements. BillerReinhart recommends that an allowance be made for roof tie down retrofitting/upgrades.



Table E – Engineer’s Opinion of Cost	
Recommendation	Estimated Cost
Allowance for Immediate/Near Future Repairs	
I. Roof Areas (work items 1 thru 8, see above)	\$235,000
II. Pavilion (work items 9 thru 11, see above)	\$55,000
III. Exterior Façade Restoration and Waterproofing	
• Work Items 12 and 13 (see above)	\$200,000
• Work Items 14 thru 16 (see above)	\$50,000
• Work Item 17 (see above)	\$43,000
• Work Item 18 (see above)	\$25,000
IV. Other Allowances	
• Hazardous Materials Abatement	\$17,000
• Concealed Floor Framing Repairs	\$40,000
• Concealed Interior Load Bearing Elements Repairs	\$10,000
• Windows/Doors Testing and Removal and Replacement	\$100,000
• Miscellaneous Wood Repairs	\$20,000
• Miscellaneous Concrete Repairs	\$15,000
• Miscellaneous Metals Repairs	\$15,000
• Roof Tie-down Retrofitting/Upgrades	\$40,000
Total	\$865,000

The estimated costs above represent an engineer’s opinion of cost, and do not necessarily include **all** costs associated with construction projects, such as all permitting fees, all of the contractor’s overhead and profit and contractor general conditions. BillerReinhart recommends that the client consult with a licensed contractor local to the area/region that specializes in structural restoration to obtain a more accurate repair estimate that incorporates current labor and material costs.



Closing

All repair work should conform to *Florida Building Code, 6th Edition (2017), Existing Building.*

In addition to the above recommended repairs, BillerReinhart believes that a maintenance program should be developed and implemented. The development and implementation of the maintenance program should include, at a minimum, the following:

- Development of a maintenance manual containing specifications, record drawings, product and warranty information, and maintenance information from manufacturers of the various components of the building.
- Periodic visual observations/walk-through surveys performed by an engineer with experience in the field of structural condition assessments of building envelope and building structures
- Preventative maintenance to reduce life-cycle repair expenses and to extend the service life of the buildings.

The cost and scope of work required to restore the structures for occupancy may qualify as “Substantial Improvement” in accordance with *Florida Building Code, 6th Edition (2017), Existing Building.* BillerReinhart recommends consultation with a general contractor to determine the extents of non-structural modifications required. If repair work is to be performed, BillerReinhart recommends consultation with the local building department, having jurisdiction over the project, to determine the extent of building code upgrades required. Code upgrades could potentially have a significant cost impact to implement the repairs.

Neither the survey nor this report is intended to cover hidden defects, mechanical, electrical, or architectural features, nor environmental concerns. Unauthorized use of this report, without the permission of BillerReinhart, shall not result in any liability or legal exposure to Biller Reinhart Engineering Group, Inc.

Biller Reinhart Engineering Group, Inc. reserves the right to update the information contained in this report if deemed necessary due to modified site conditions or the availability of new/additional information.



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Thank you for offering us the opportunity to provide our services for this project. Please contact our office if you have any questions regarding this report.

Sincerely,

Biller Reinhart Engineering Group, Inc.

Brian E. Walter

Brian E. Walter
Principal Structural Engineer
FL P.E. No. 66538



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Appendix A



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Figure A-1



Figure A-2



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Figure A-3



Figure A-4

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Figure A-5



Figure A-6



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North Ward Elementary School
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BillerReinhart Project No. 19-075



Figure A-7



Figure A-8

Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-9



Figure A-10



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-11

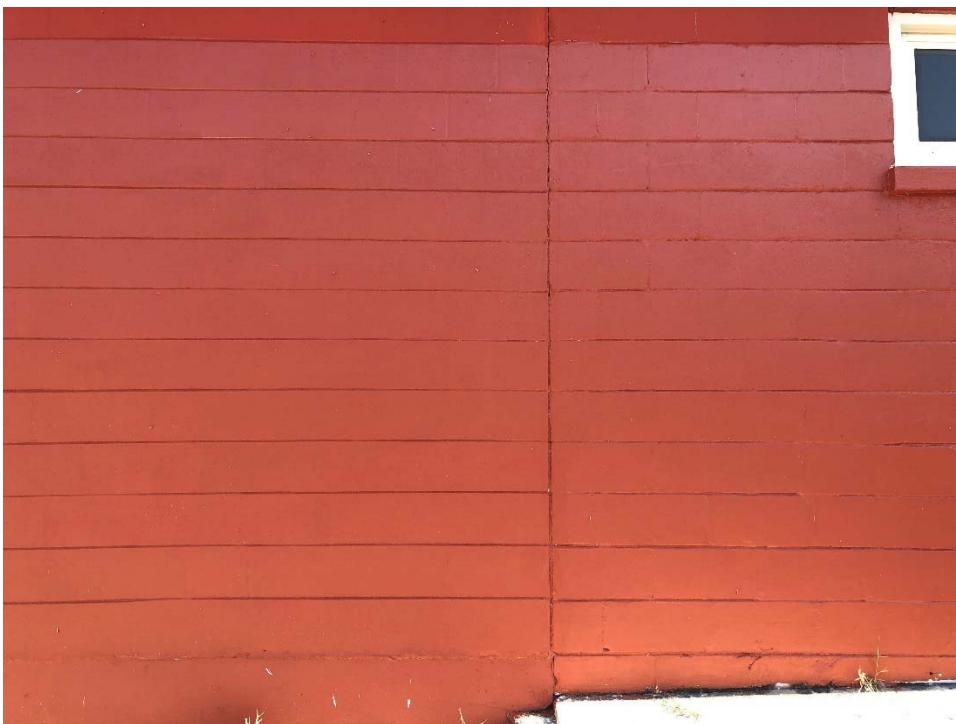


Figure A-12



*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*

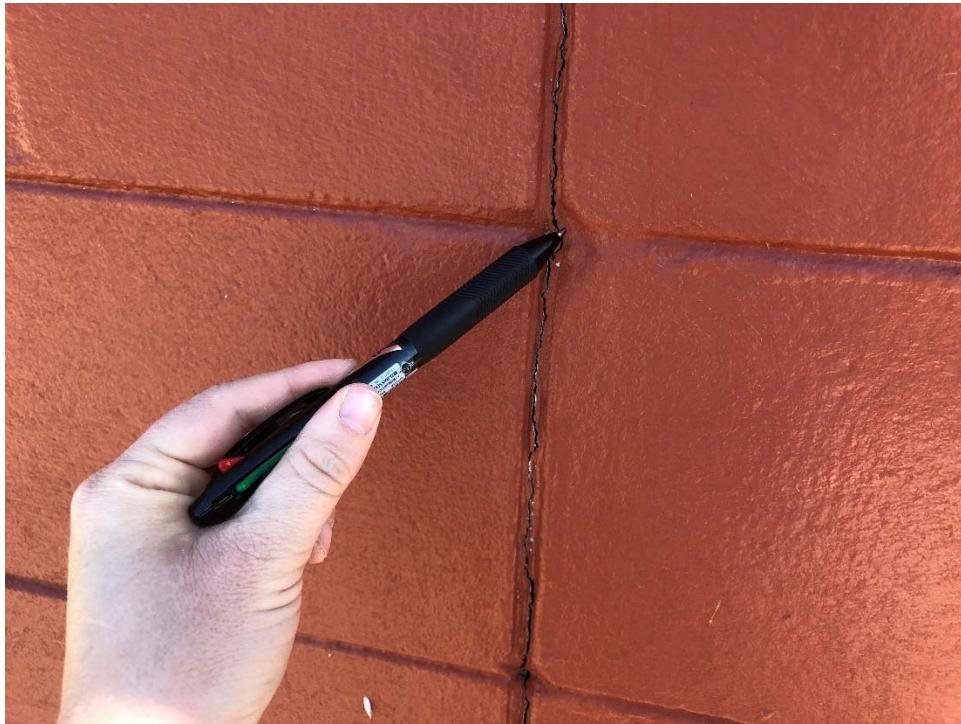


Figure A-13



Figure A-14

Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-15

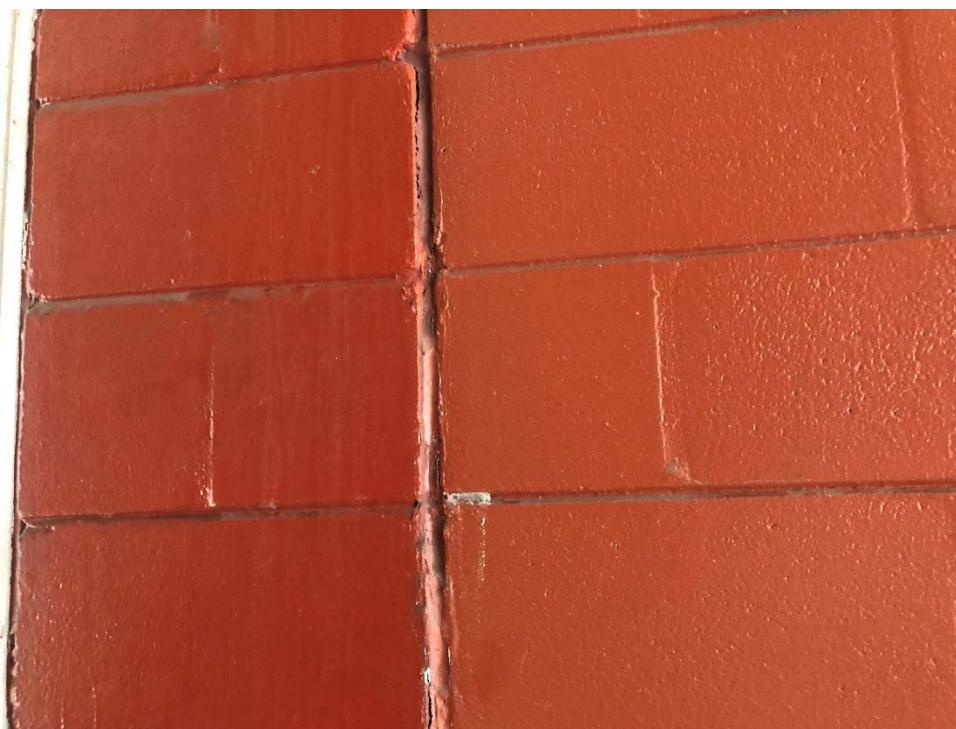


Figure A-16



*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure A-17

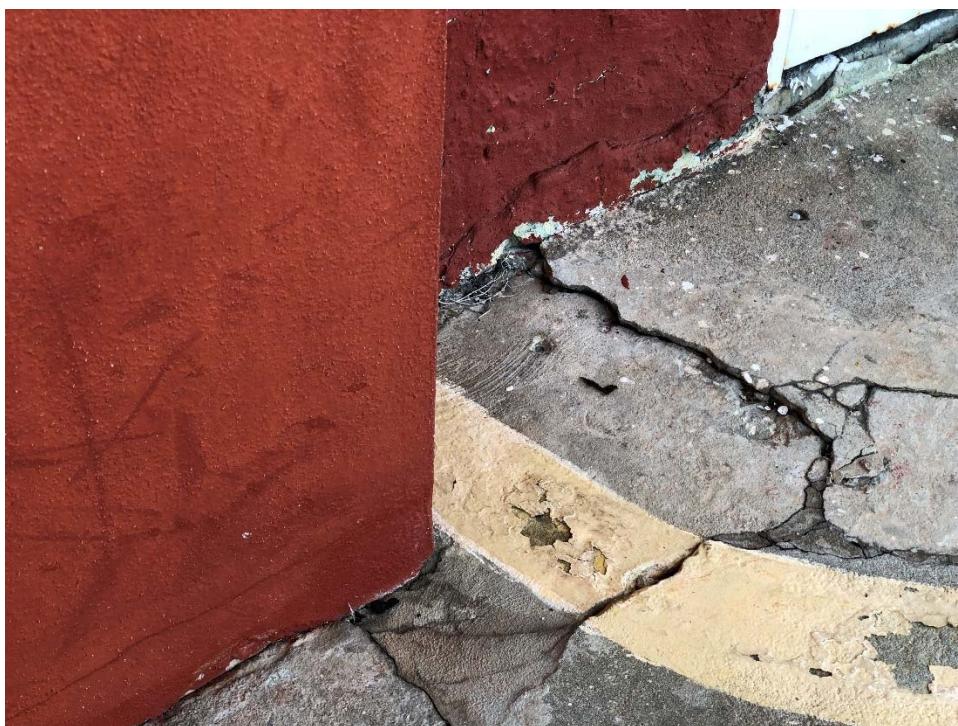


Figure A-18

*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure A-19

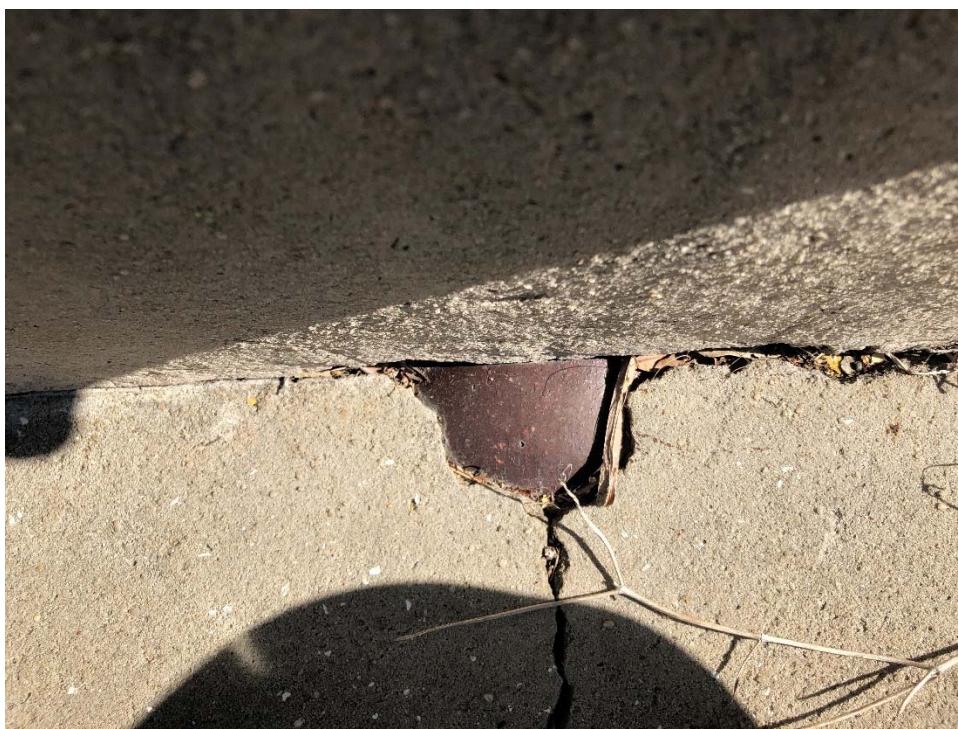


Figure A-20

Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-21

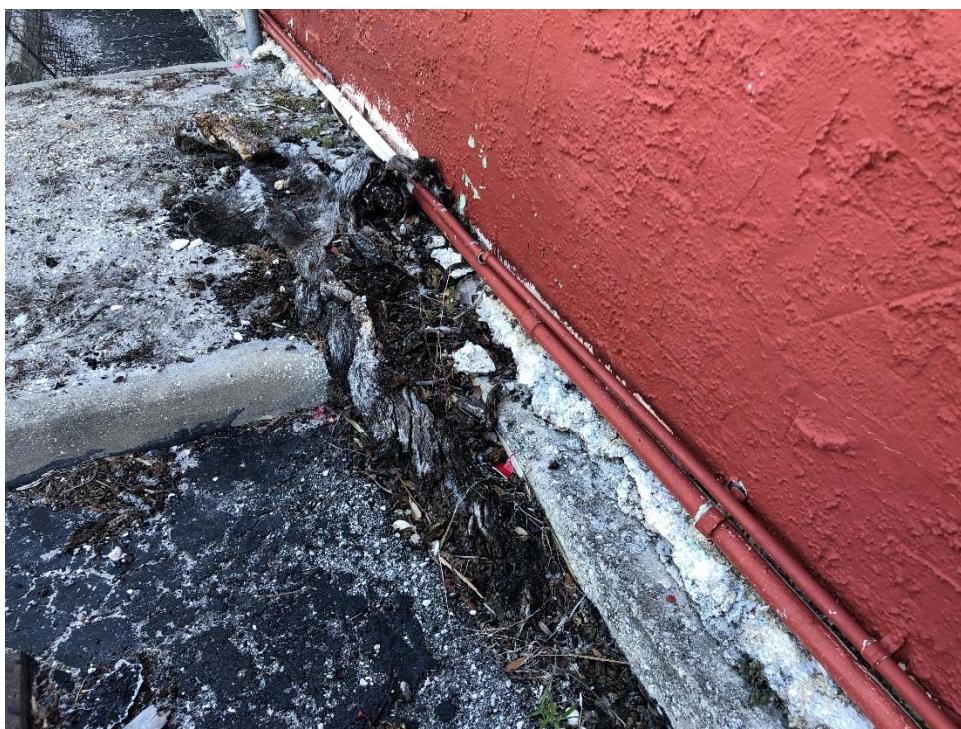


Figure A-22

Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-23



Figure A-24

Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-25



Figure A-26



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-27



Figure A-28



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-29



Figure A-30



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-31



Figure A-32



*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure A-33



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-34



Figure A-35



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-36

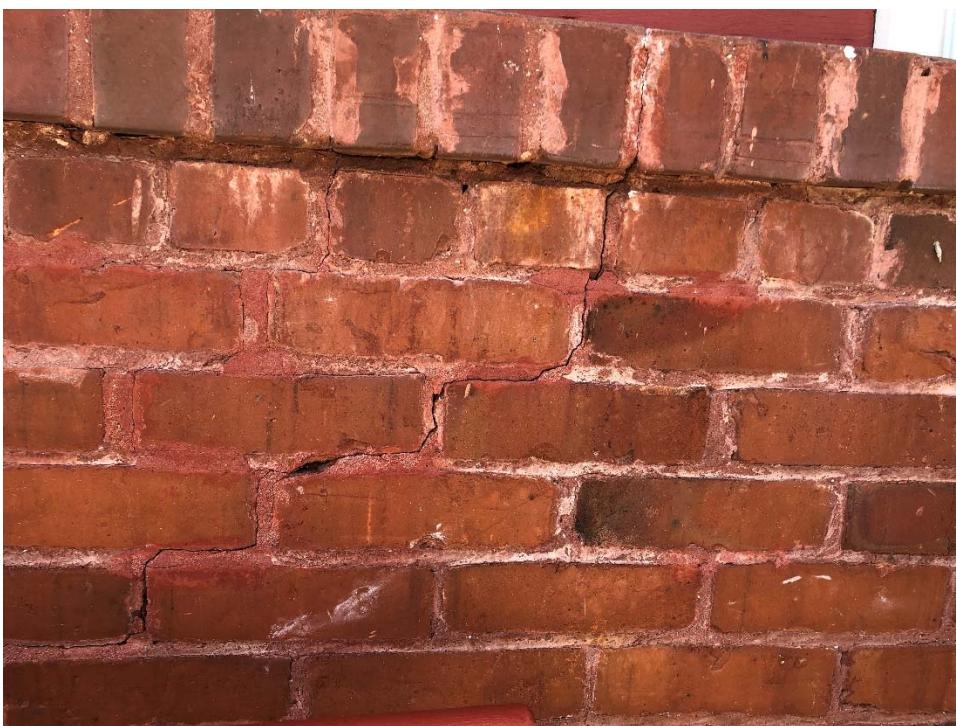


Figure A-37



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-38

Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-39



Figure A-40



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-41



Figure A-42



*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure A-43



Figure A-44

Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-45



Figure A-46



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075

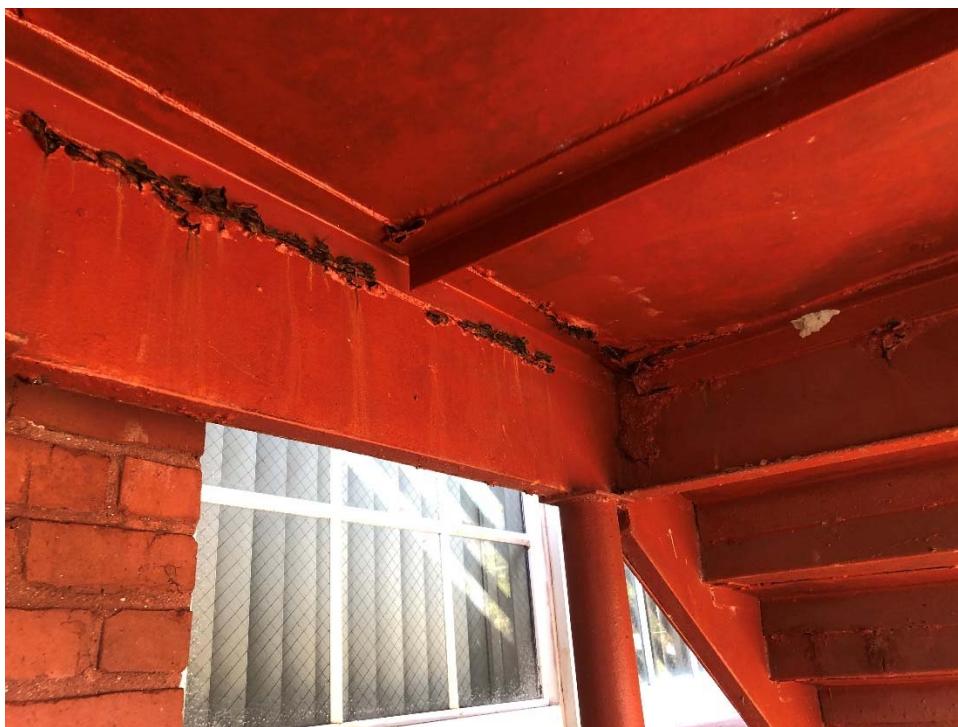


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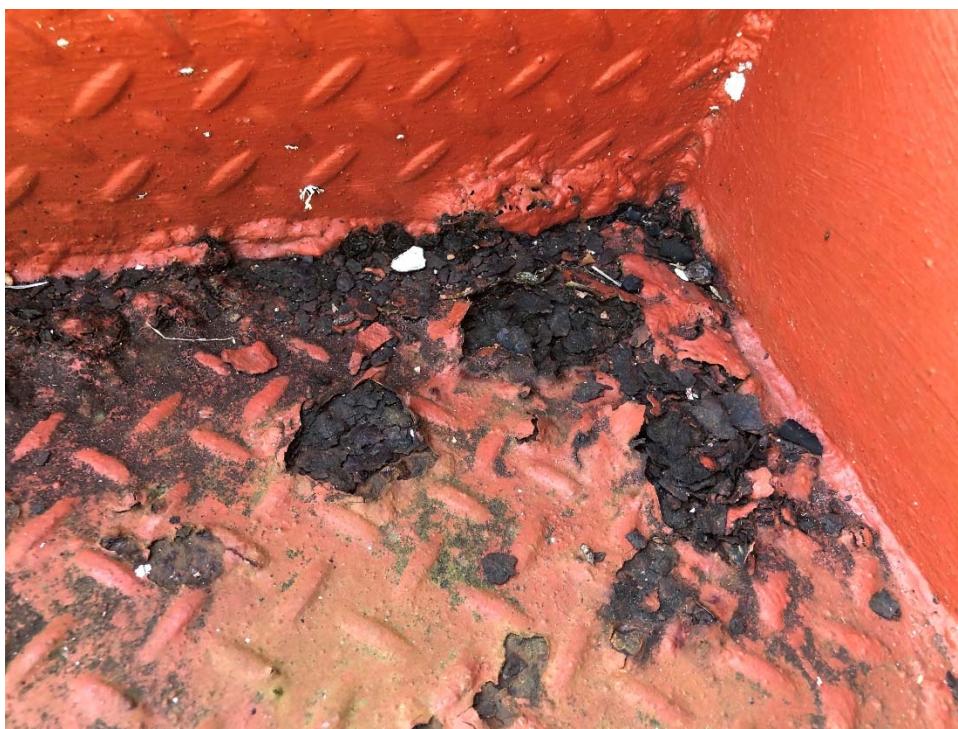


Figure A-48

*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure A-49



Figure A-50

Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075

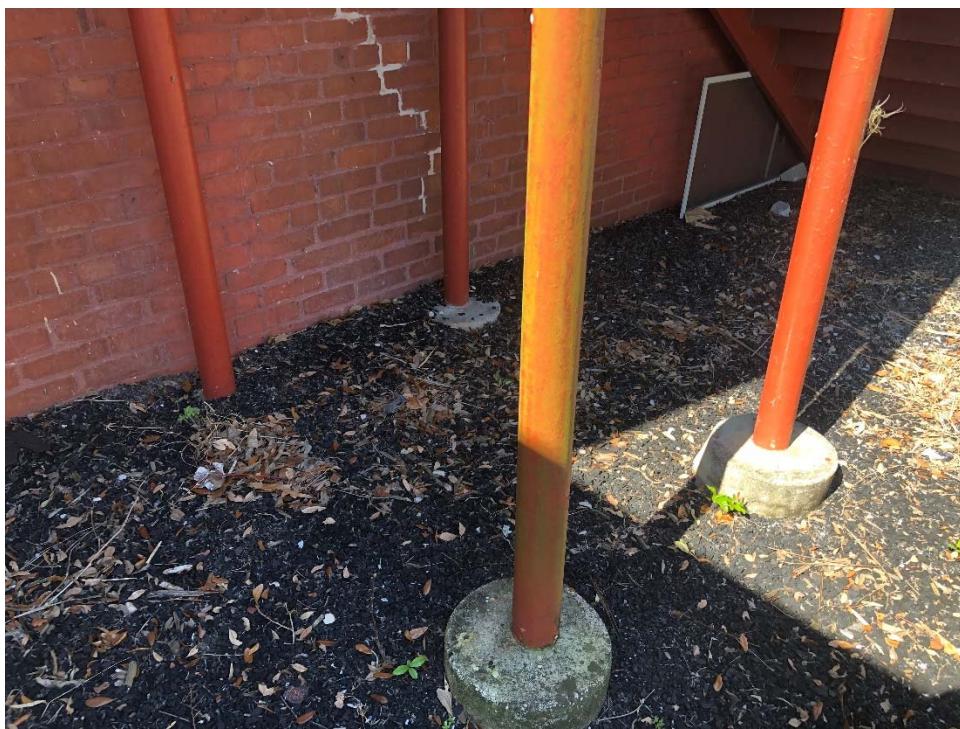


Figure A-51



Figure A-52



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-53



Figure A-54



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-55



Figure A-56



*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*

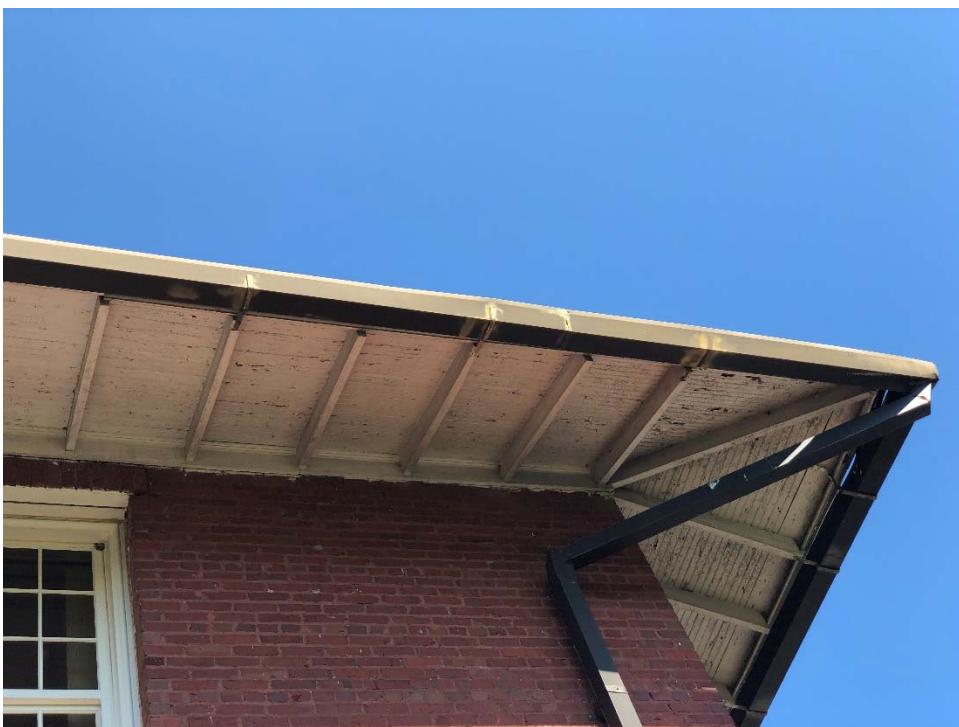


Figure A-57



Figure A-58



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-59



Figure A-60

*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure A-61



Figure A-62



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-63



Figure A-64



*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure A-65



Figure A-66



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-67



Figure A-68



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075

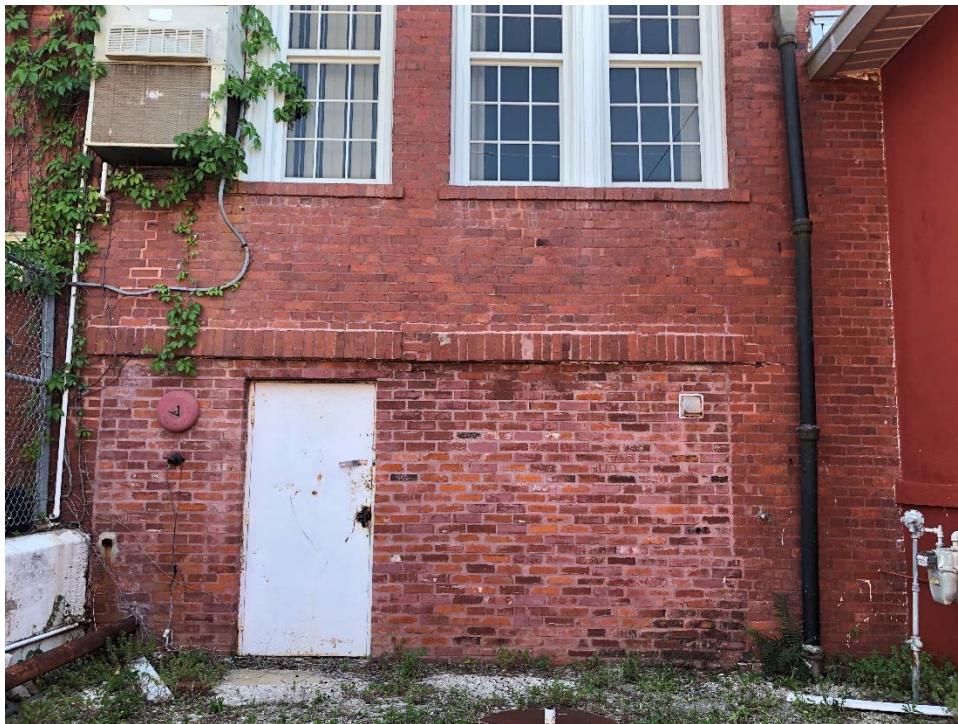


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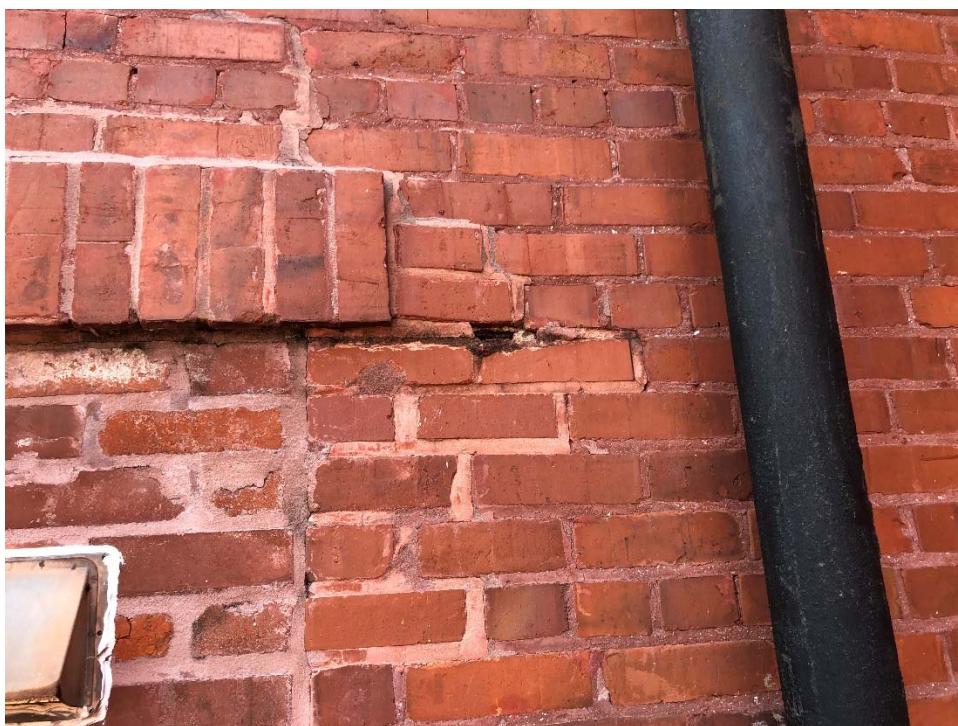


Figure A-70

Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-71



Figure A-72



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-73

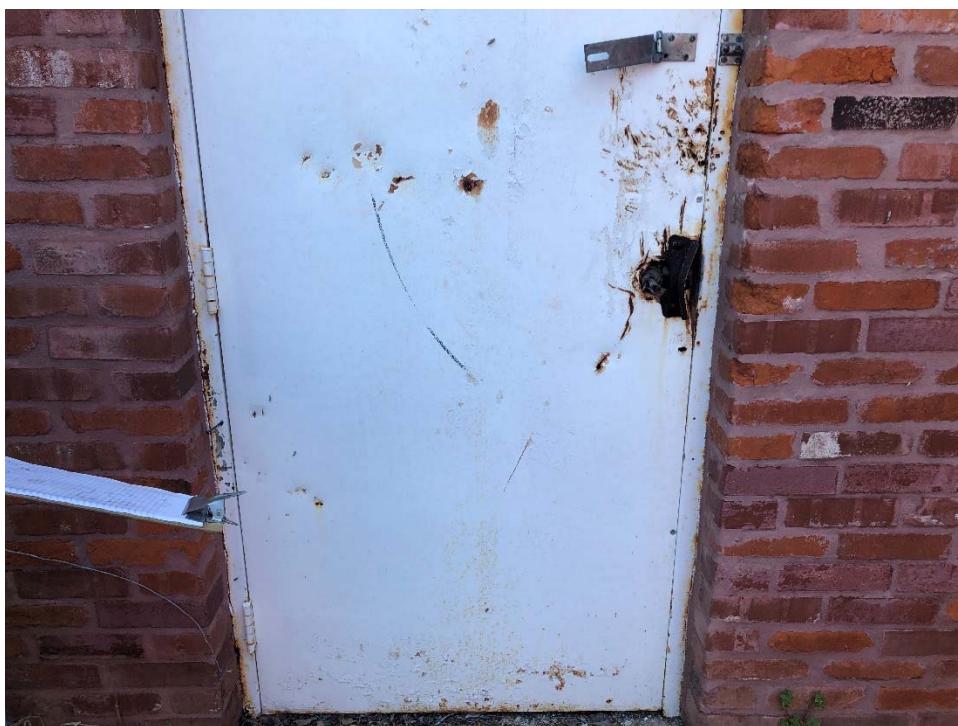


Figure A-74



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-75



Figure A-76



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-77



Figure A-78



*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure A-79



Figure A-80

*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure A-81



Figure A-82



*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure A-83



Figure A-84

*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure A-85



Figure A-86



*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure A-87



Figure A-88



*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure A-89



Figure A-90



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-91

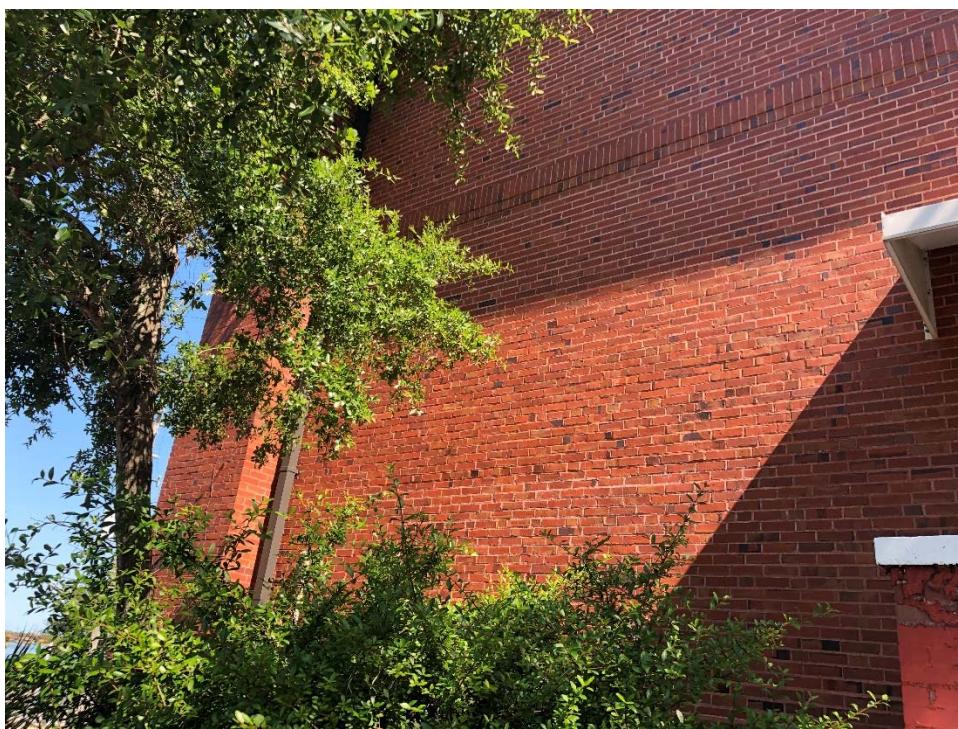


Figure A-92



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075

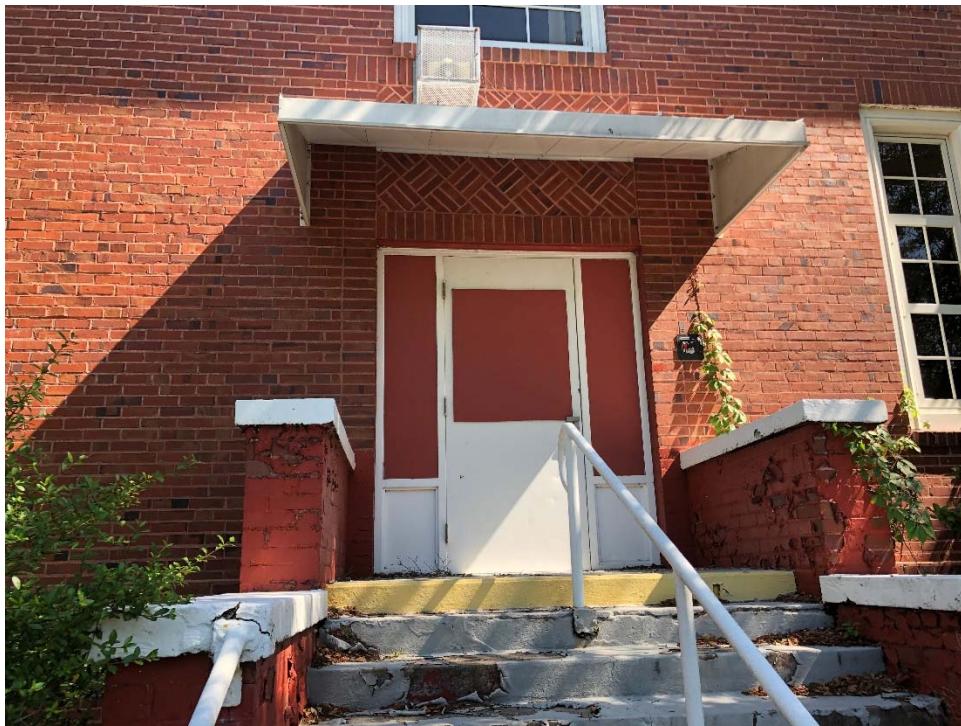


Figure A-93



Figure A-94



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-95



Figure A-96



*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure A-97



Figure A-98

*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure A-99



Figure A-100

Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-101

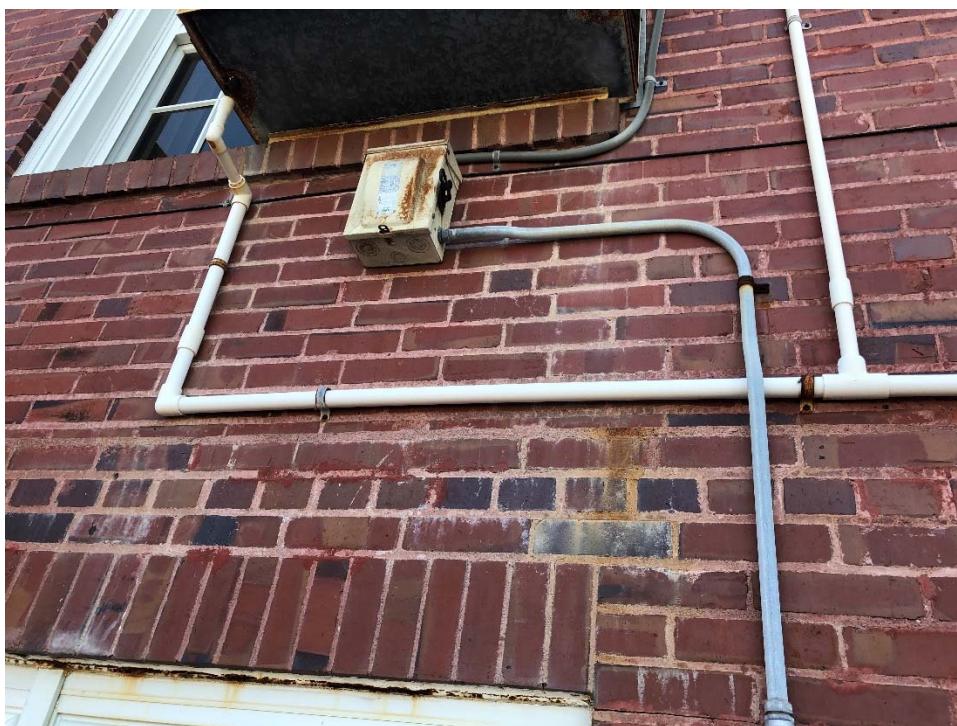


Figure A-102



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-103



Figure A-104



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075

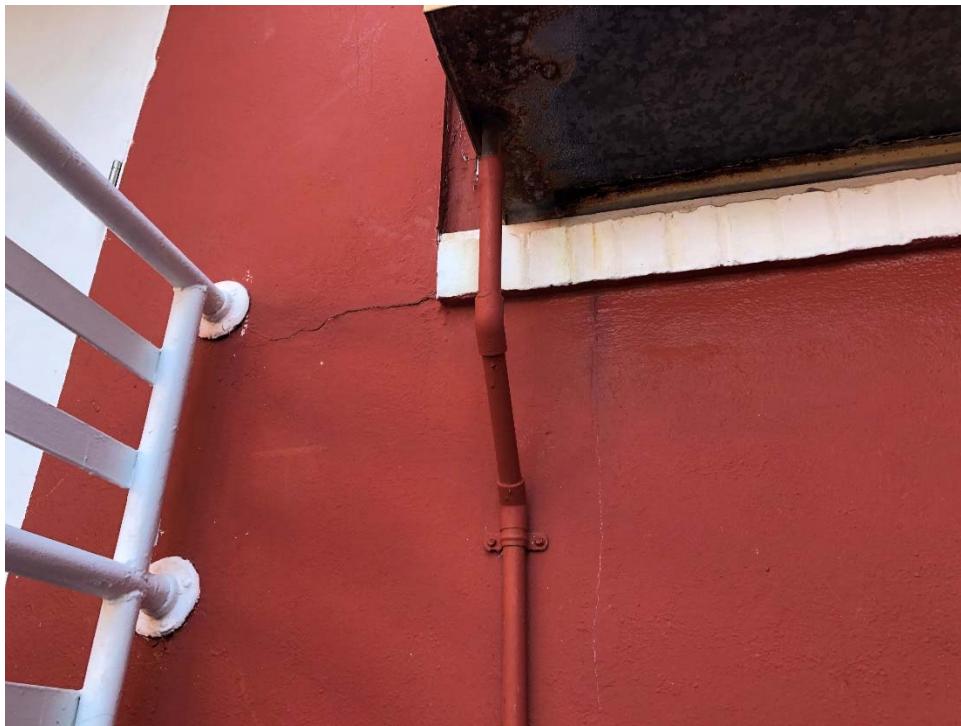


Figure A-105

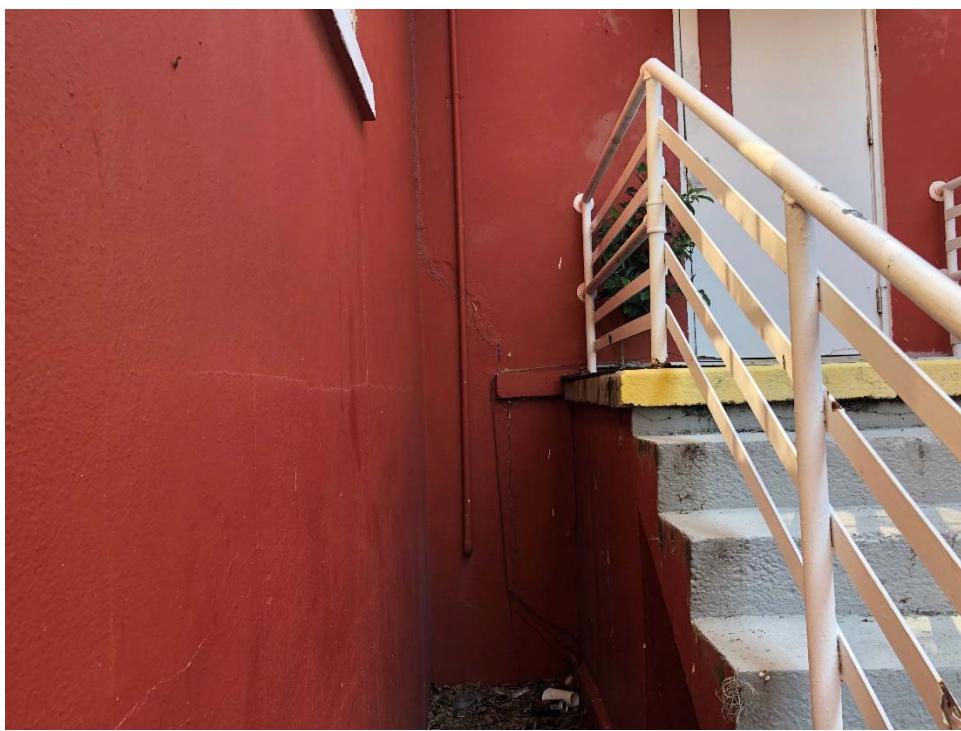


Figure A-106

Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075

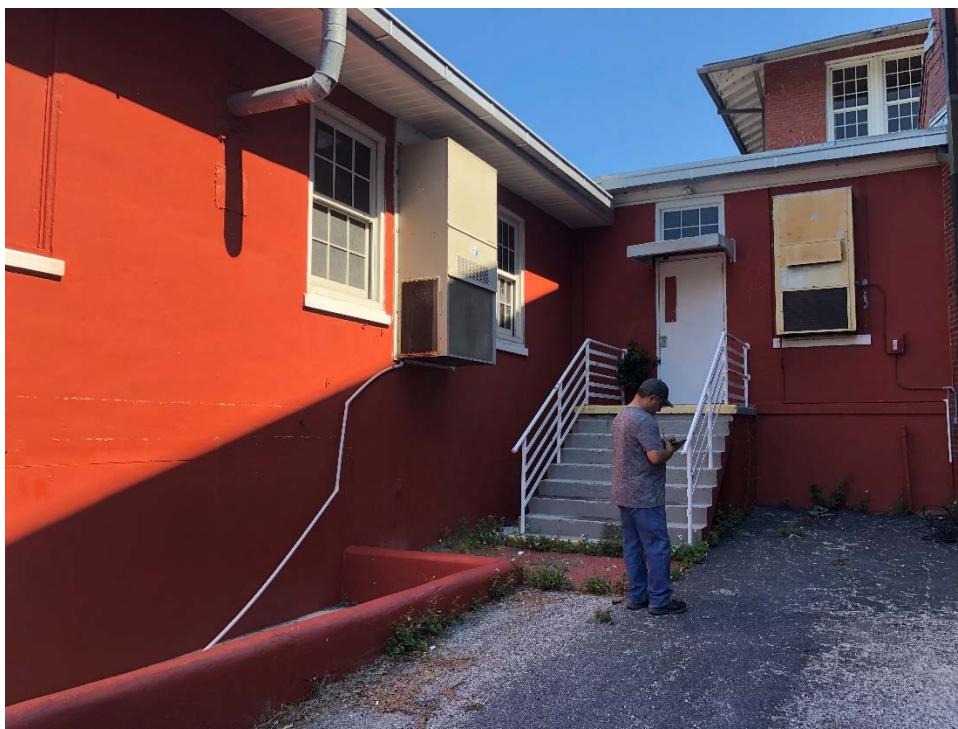


Figure A-107



Figure A-108

Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075

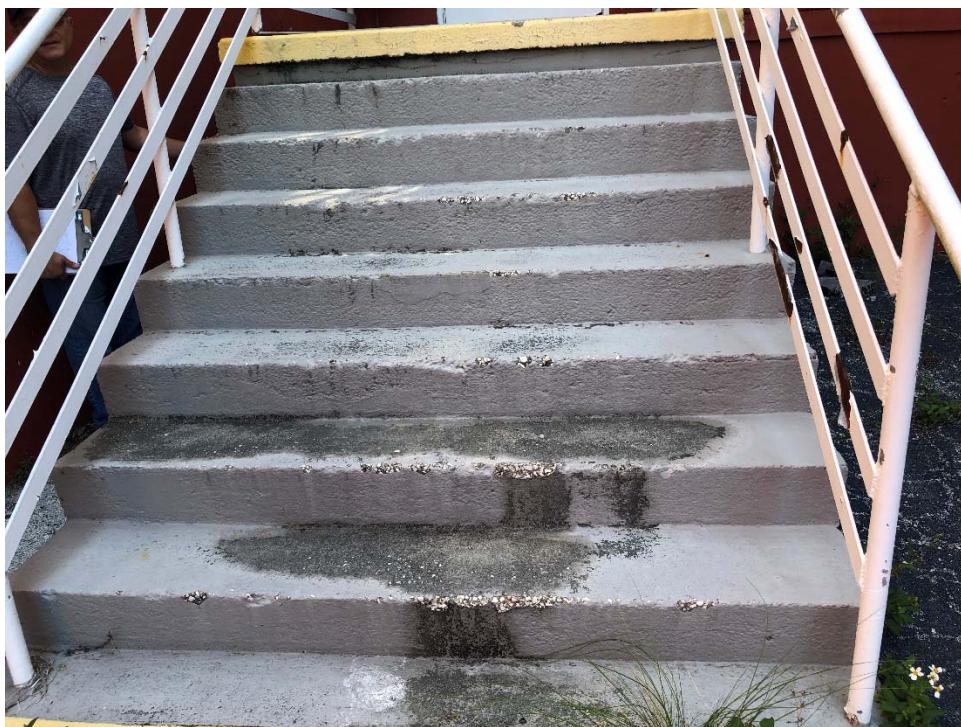


Figure A-109

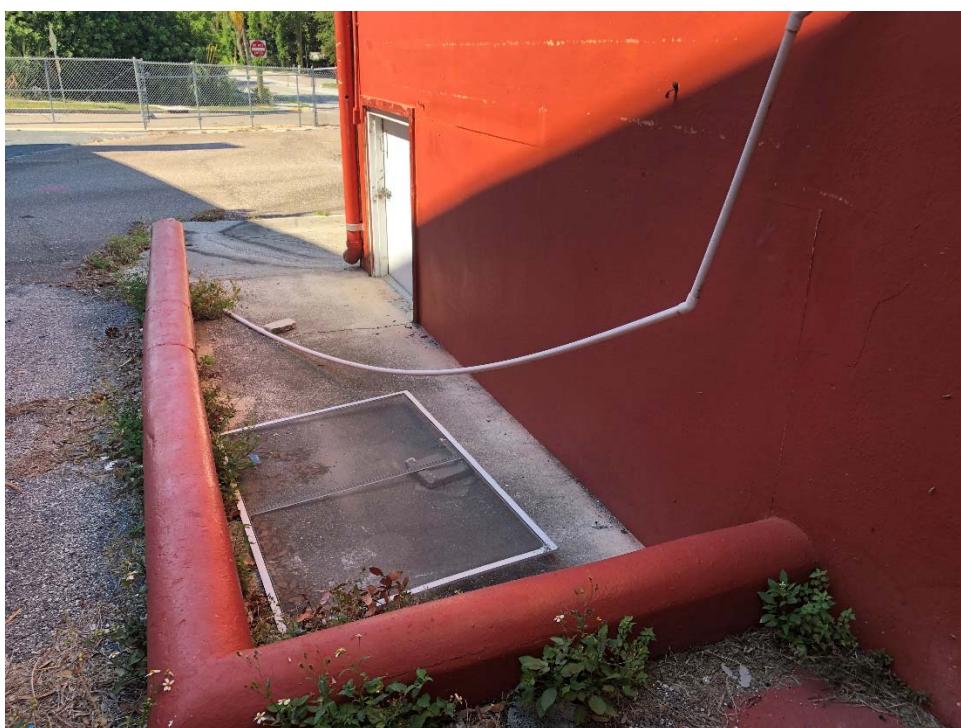


Figure A-110

Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-111



Figure A-112



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-113



Figure A-114



*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure A-115



Figure A-116



*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure A-117



Figure A-118

*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure A-119



Figure A-120

Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-121



Figure A-122



*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure A-123



Figure A-124

Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-125

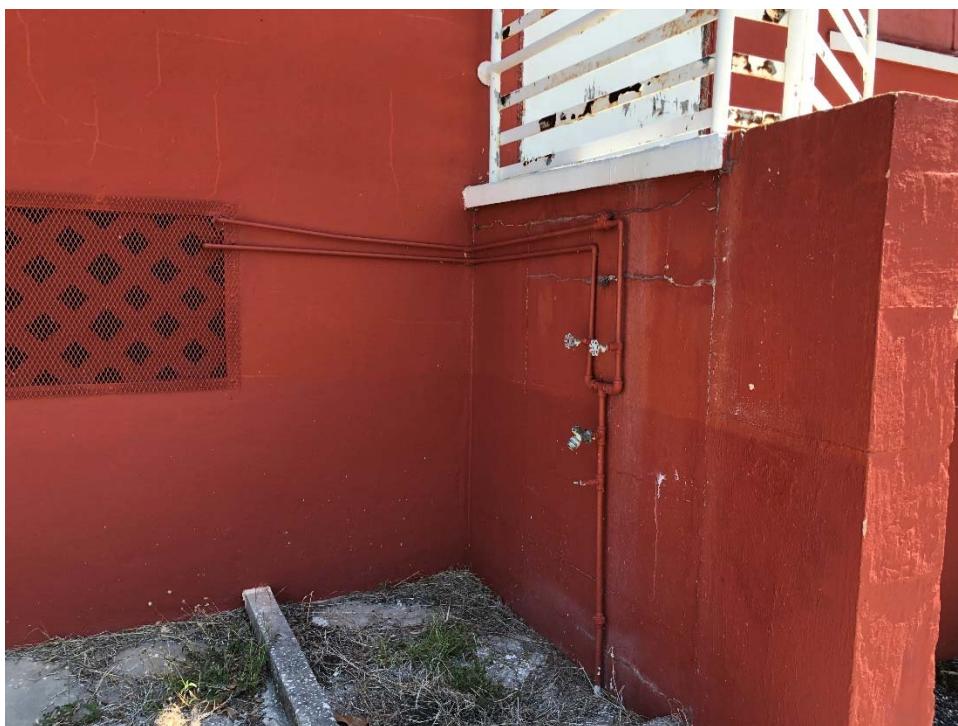


Figure A-126

Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-127



Figure A-128

*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure A-129

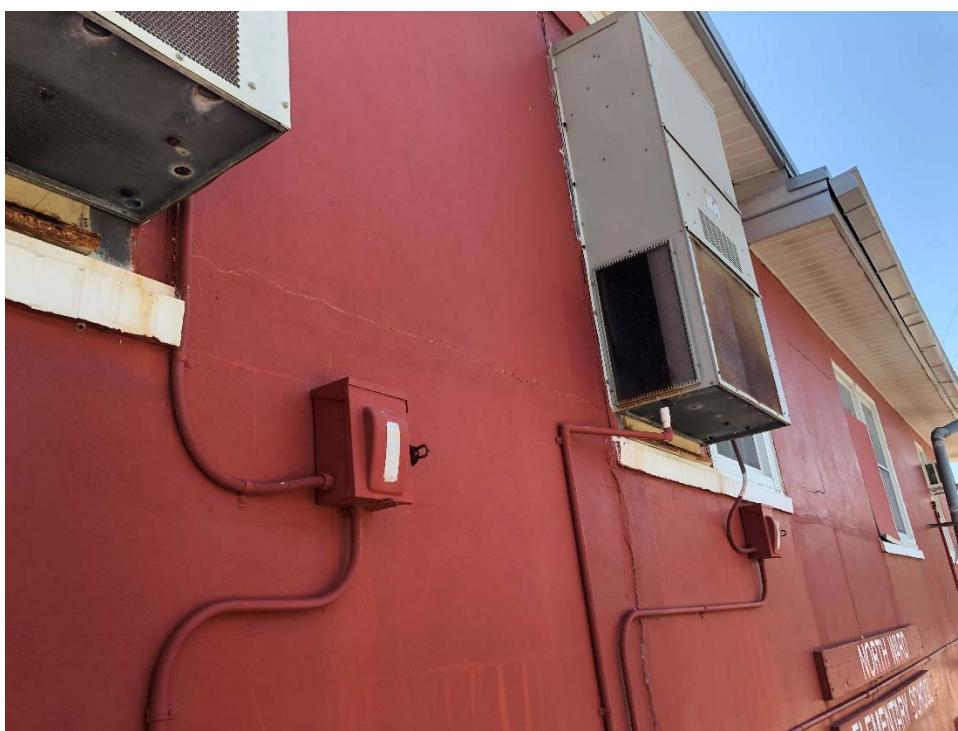


Figure A-130



*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure A-131



Figure A-132

Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-133



Figure A-134

*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure A-135



Figure A-136



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-137



Figure A-138



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-139



Figure A-140



*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure A-141



Figure A-142

*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure A-143



Figure A-144



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure A-145

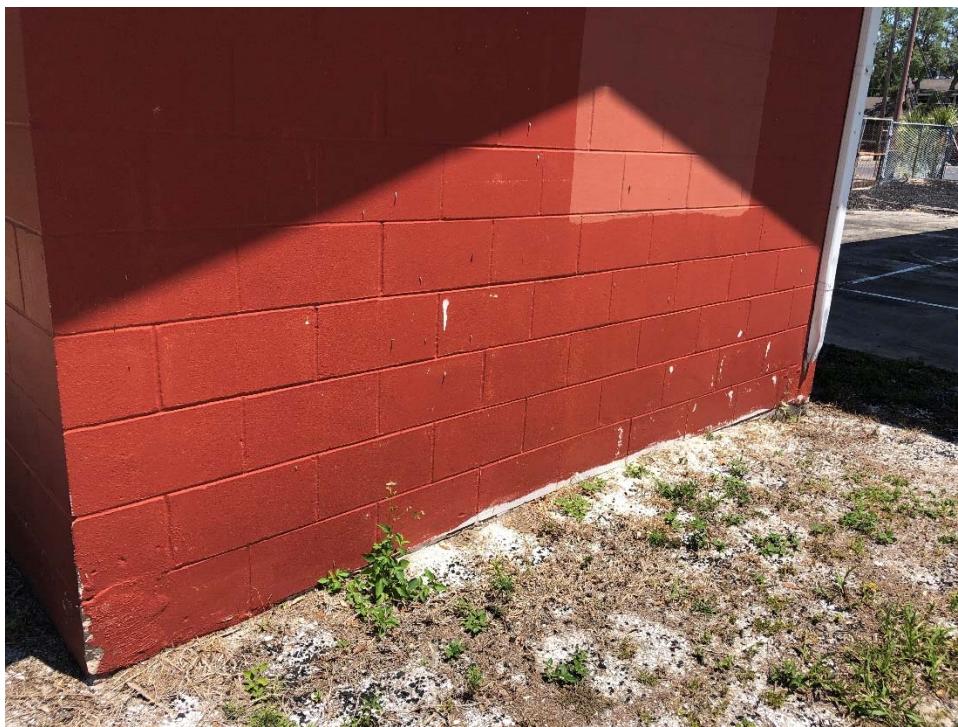


Figure A-146

*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*

Appendix B



*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*

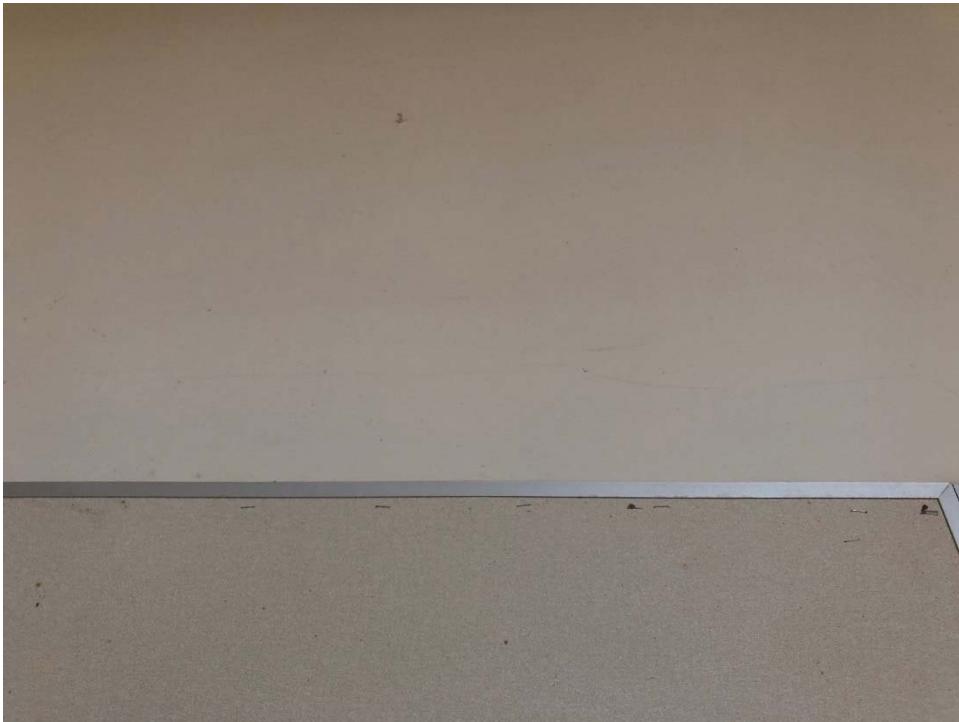


Figure B-1



Figure B-2

*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure B-3

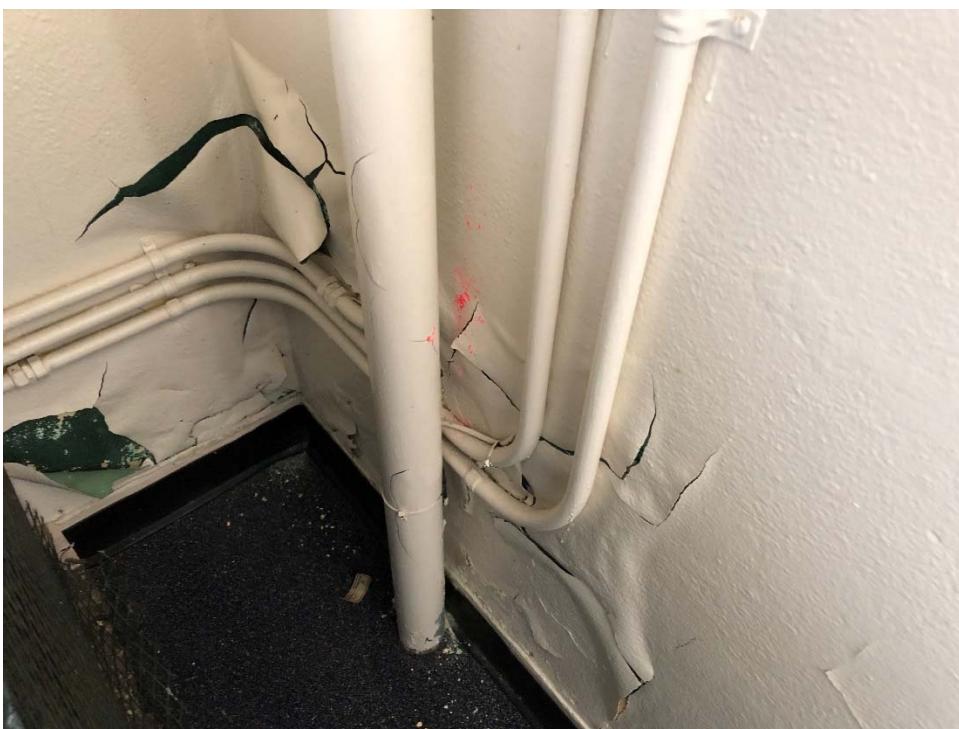


Figure B-4

Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure B-5



Figure B-6

*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure B-7



Figure B-8



*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure B-9



Figure B-10



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure B-11



Figure B-12



*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure B-13



Figure B-14

Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure B-15



Figure B-16

*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*

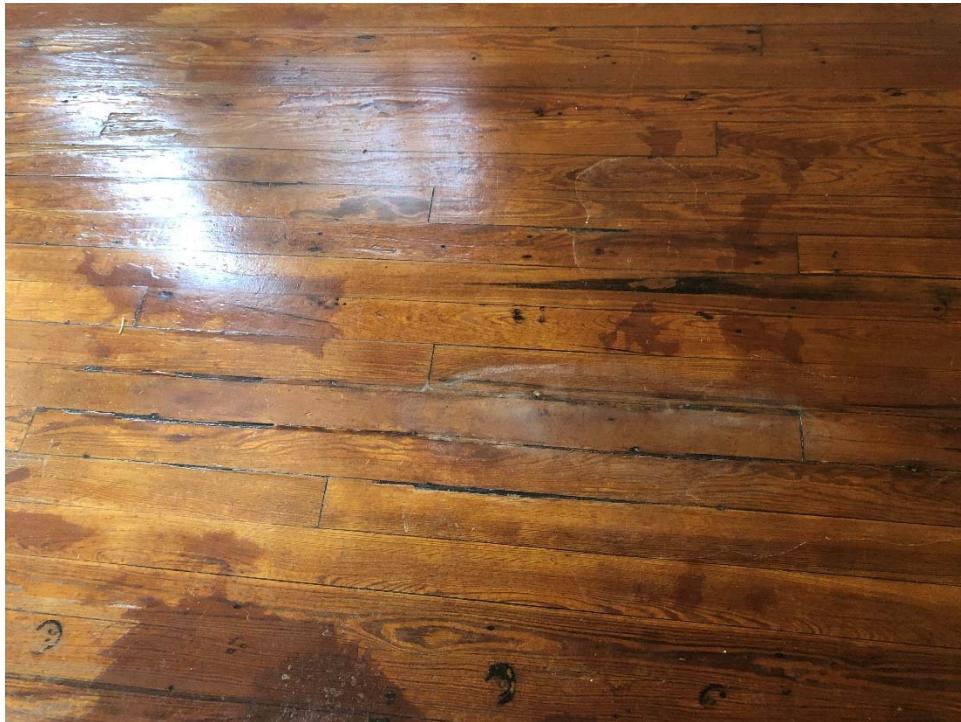


Figure B-17



Figure B-18

*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure B-19



Figure B-20



*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure B-21



Figure B-22

*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure B-23



Figure B-24

*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure B-25



Figure B-26

Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure B-27



Figure B-28



*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure B-29



Figure B-30



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure B-31



Figure B-32



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure B-33



Figure B-34



*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure B-35



Figure B-36

*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure B-37



Figure B-38

*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure B-39



Figure B-40

*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure B-41

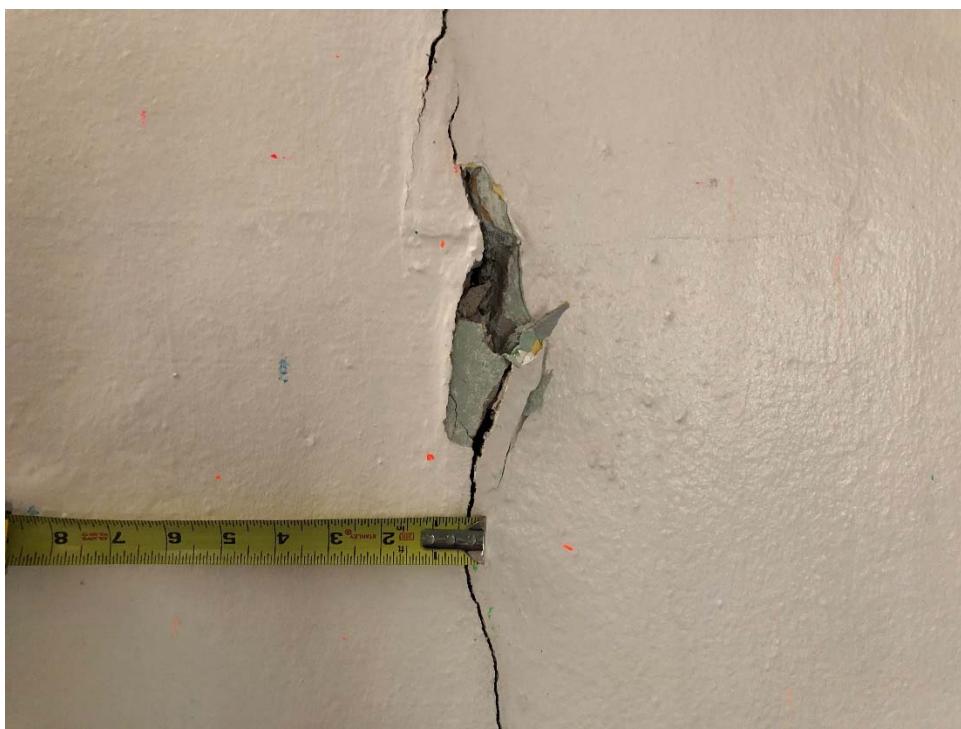


Figure B-42



*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure B-43



Figure B-44



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075

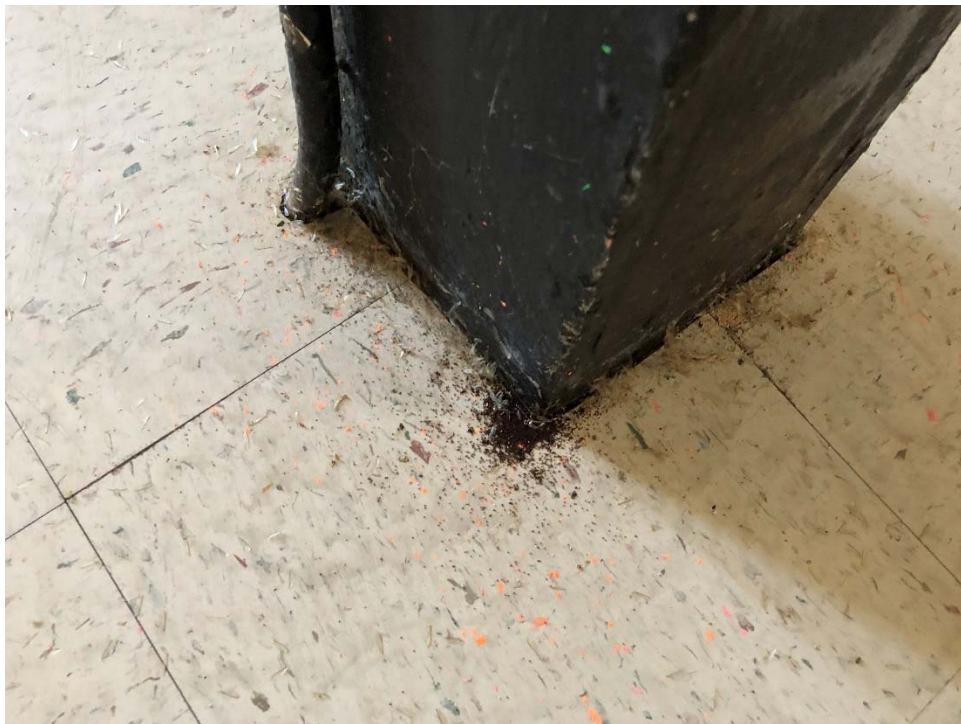


Figure B-45



Figure B-46



*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure B-47



Figure B-48

*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*

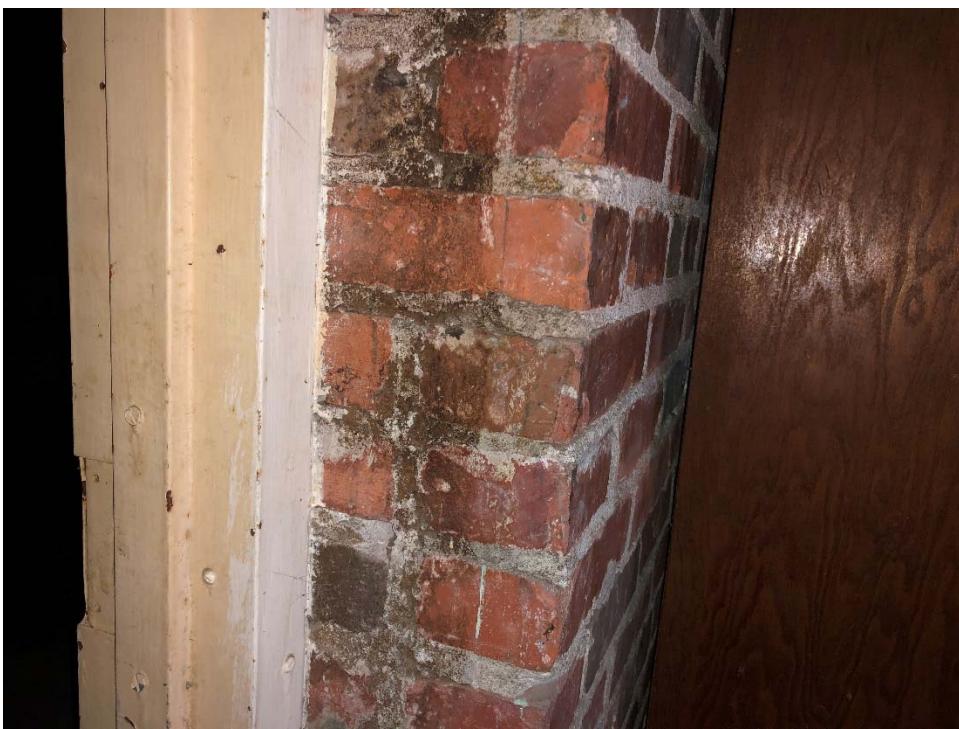


Figure B-49



Figure B-50



*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure B-51



Figure B-52



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075

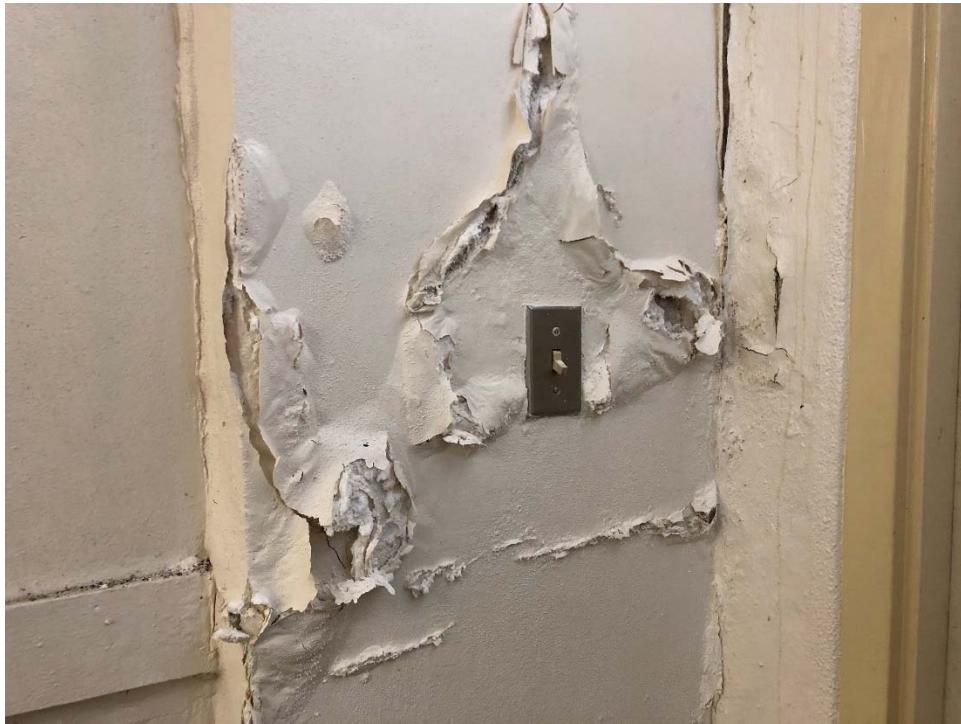


Figure B-53



Figure B-54



*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure B-55



*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*

Appendix C



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075

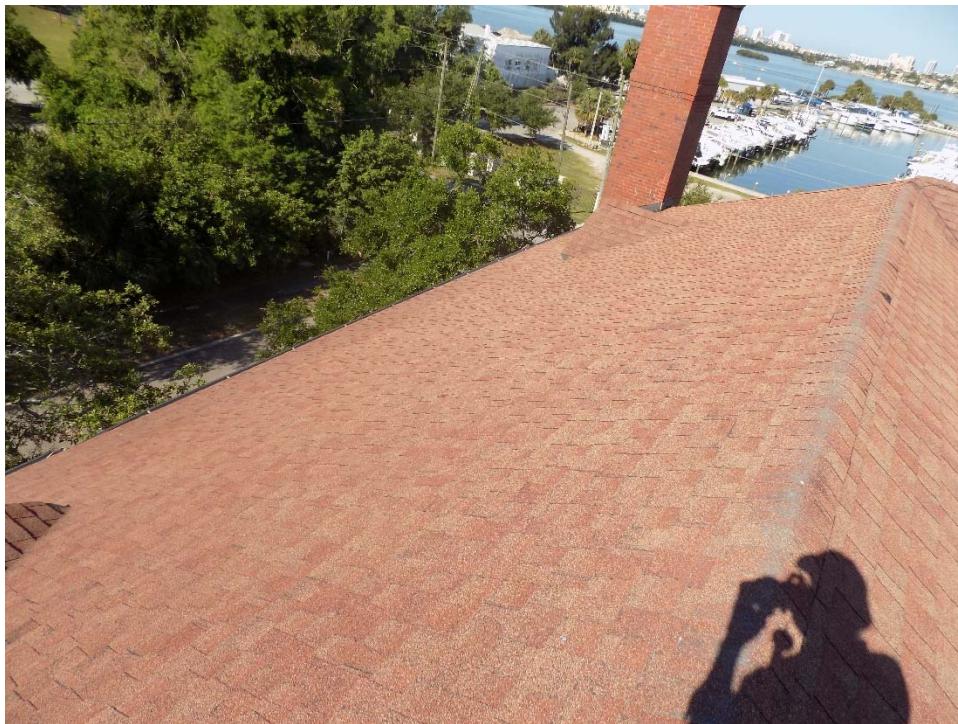


Figure C-1



Figure C-2

Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075

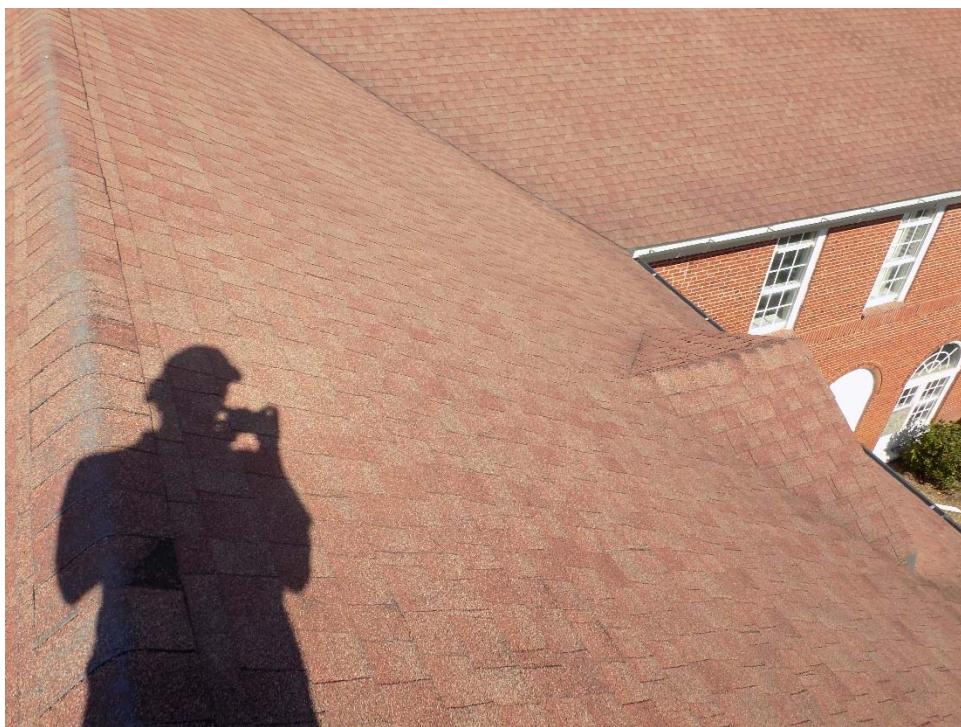


Figure C-3



Figure C-4

Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075

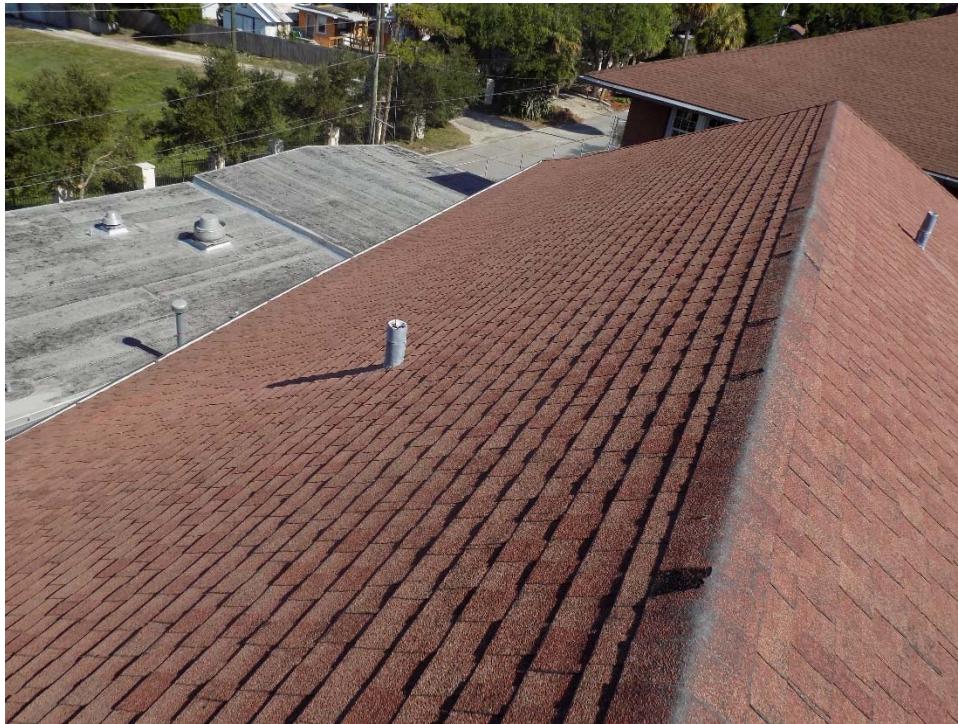


Figure C-5

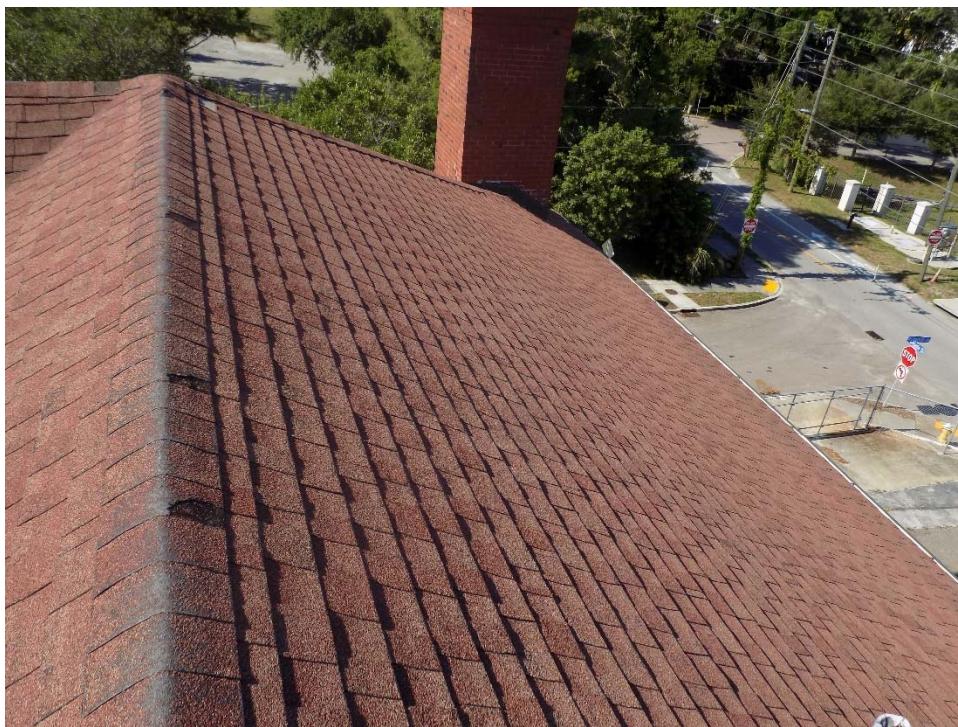


Figure C-6



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure C-7



Figure C-8



*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure C-9

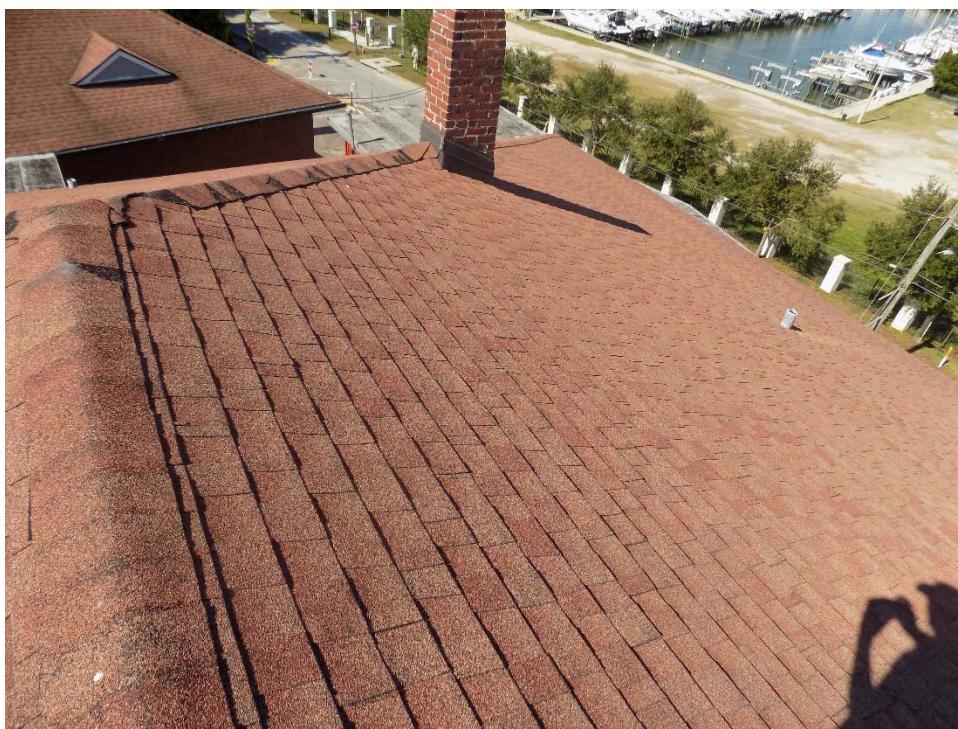


Figure C-10



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075

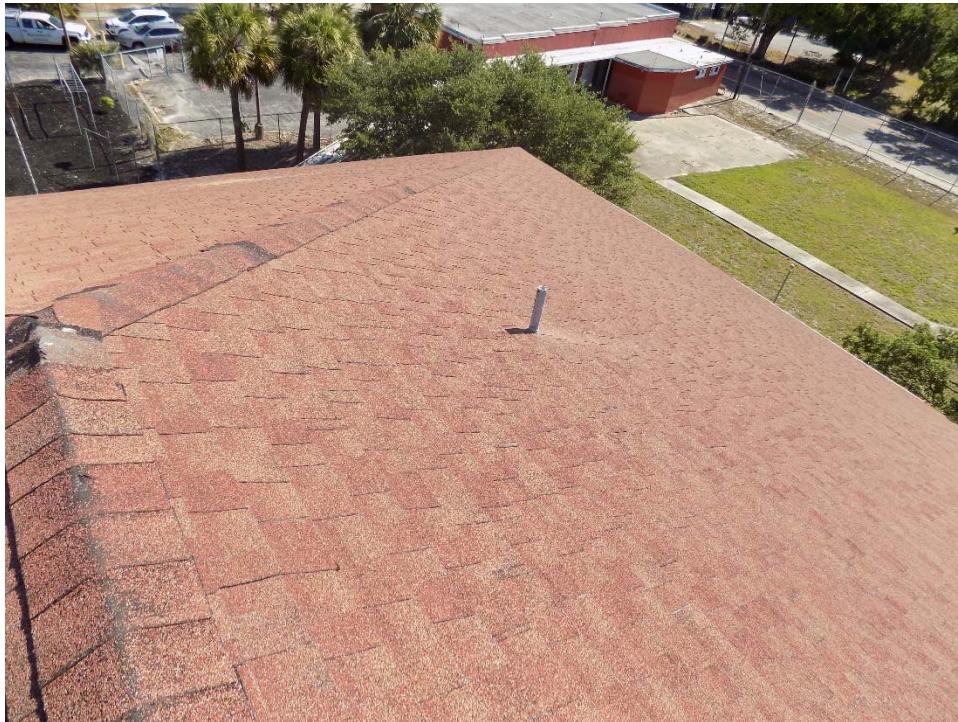


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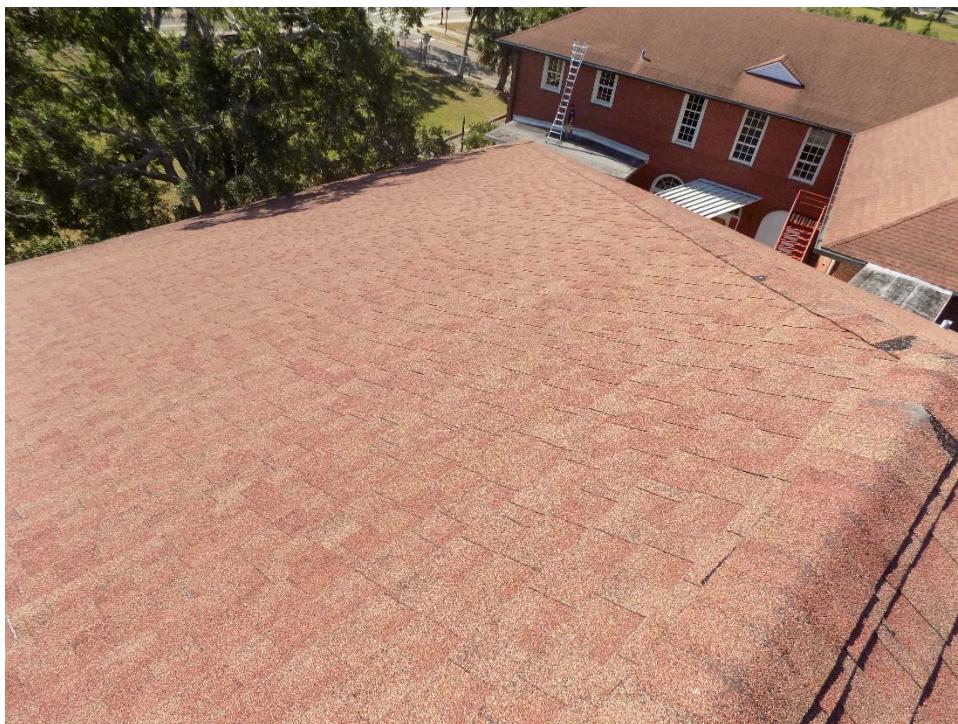


Figure C-12



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure C-13



Figure C-14



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure C-15

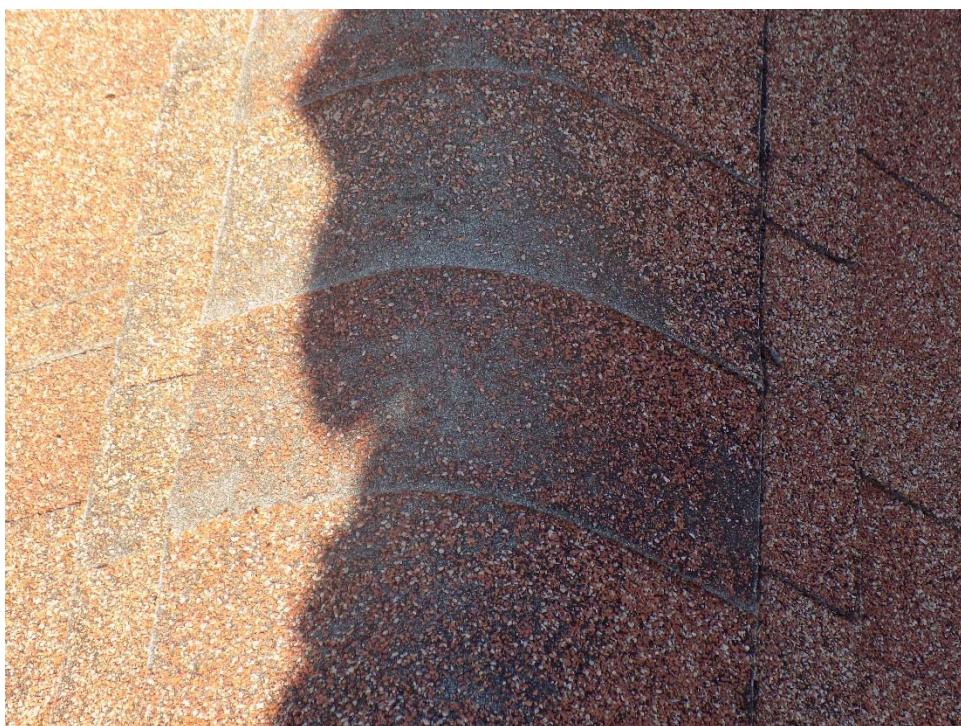


Figure C-16

*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*



Figure C-17

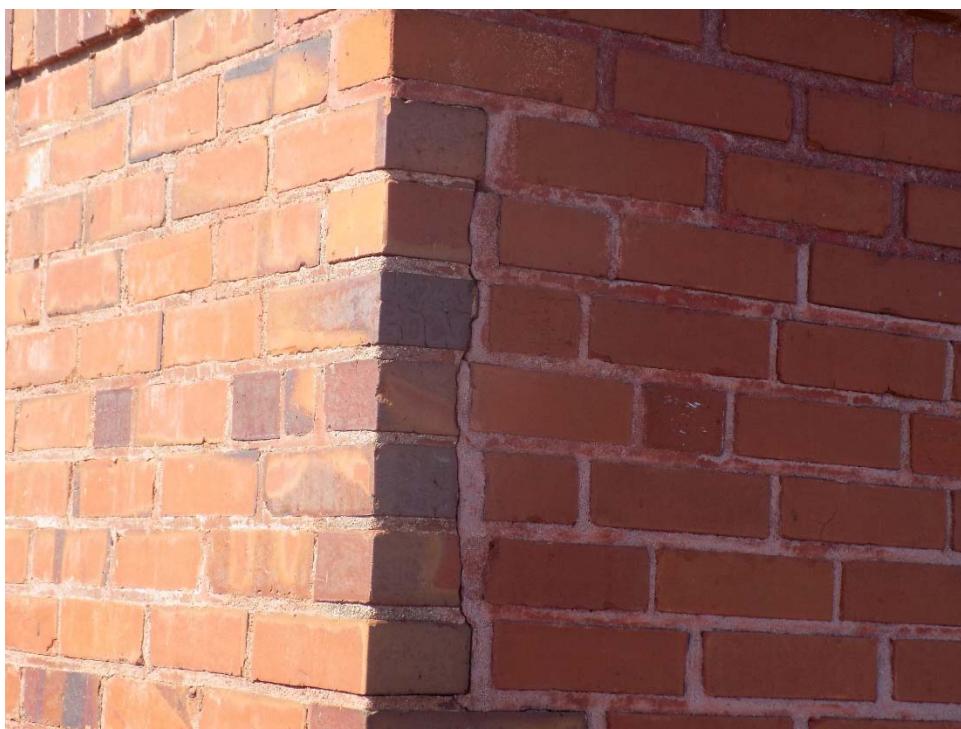


Figure C-18



Limited Condition Assessment
North Ward Elementary School
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Figure C-19



Figure C-20



*Limited Condition Assessment
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Figure C-21



Figure C-22



*Limited Condition Assessment
North Ward Elementary School
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Figure C-23



Figure C-24



*Limited Condition Assessment
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Figure C-25



Figure C-26



Limited Condition Assessment
North Ward Elementary School
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Figure C-27

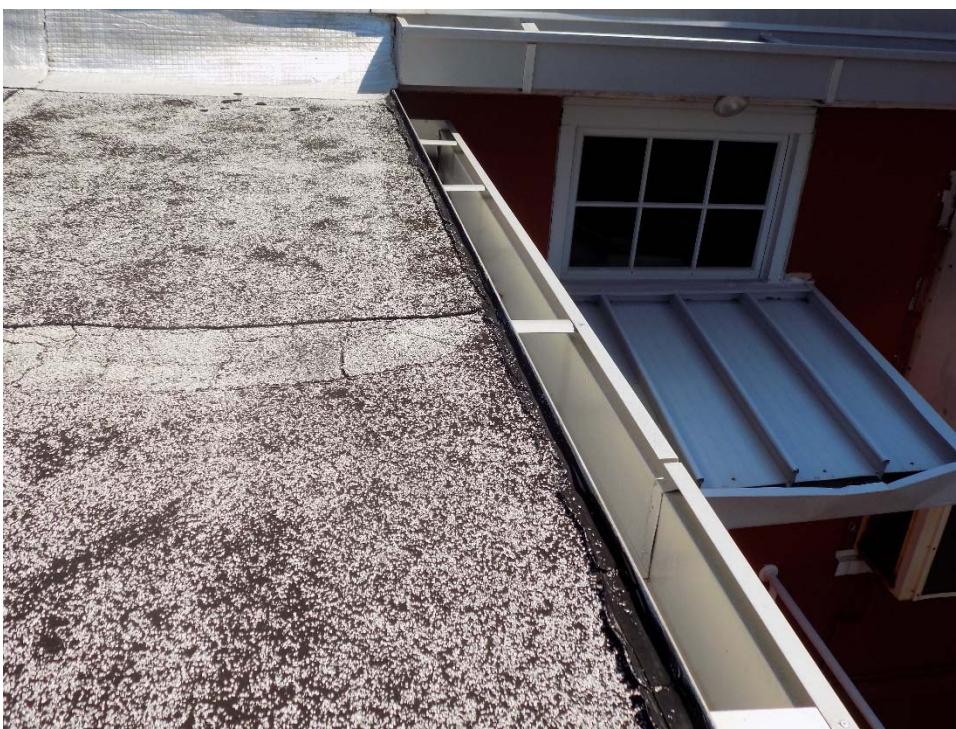


Figure C-28



Limited Condition Assessment
North Ward Elementary School
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Figure C-29

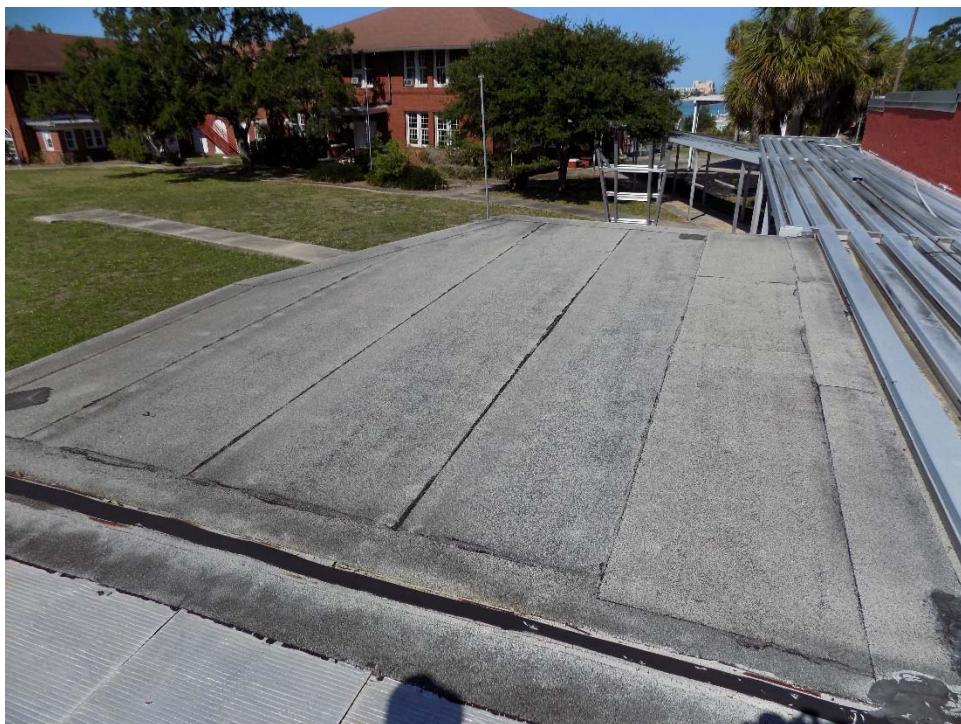


Figure C-30



Limited Condition Assessment
North Ward Elementary School
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Figure C-31

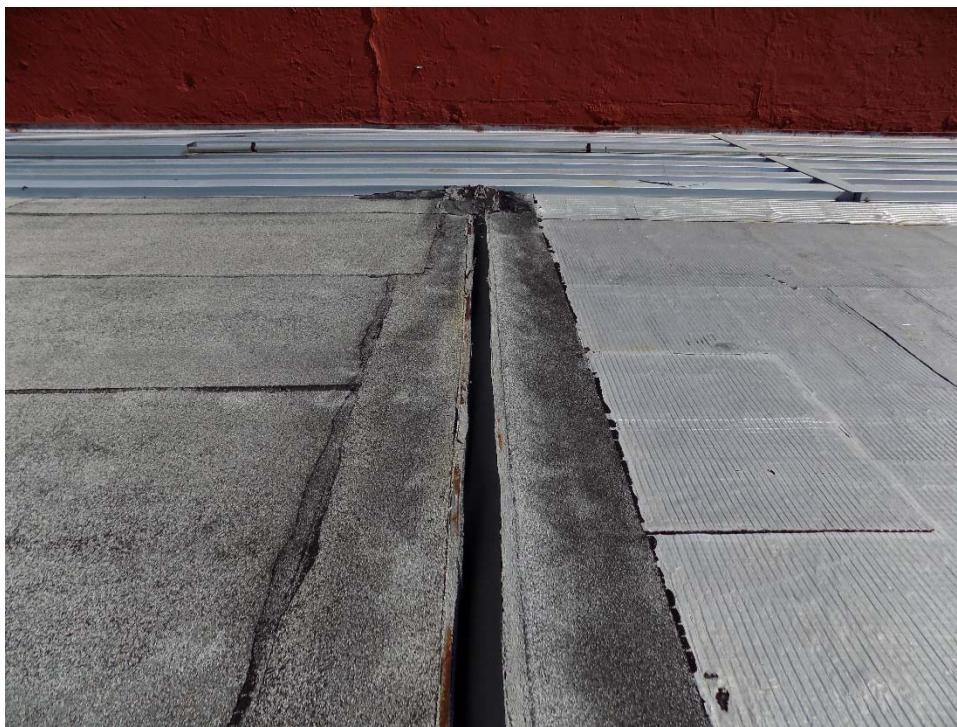


Figure C-32

*Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075*

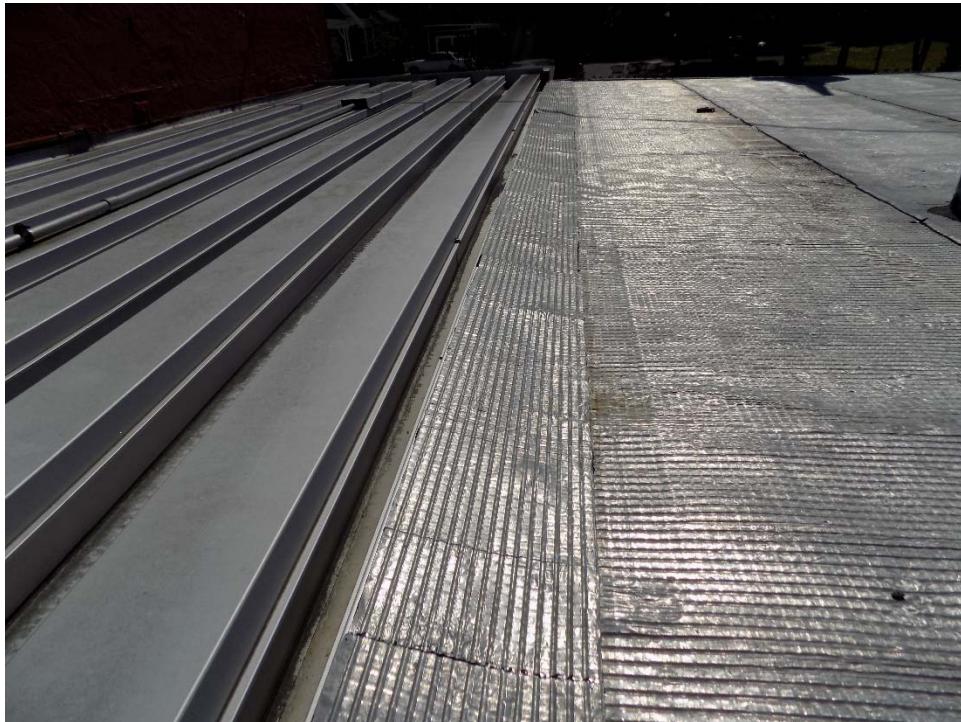


Figure C-33

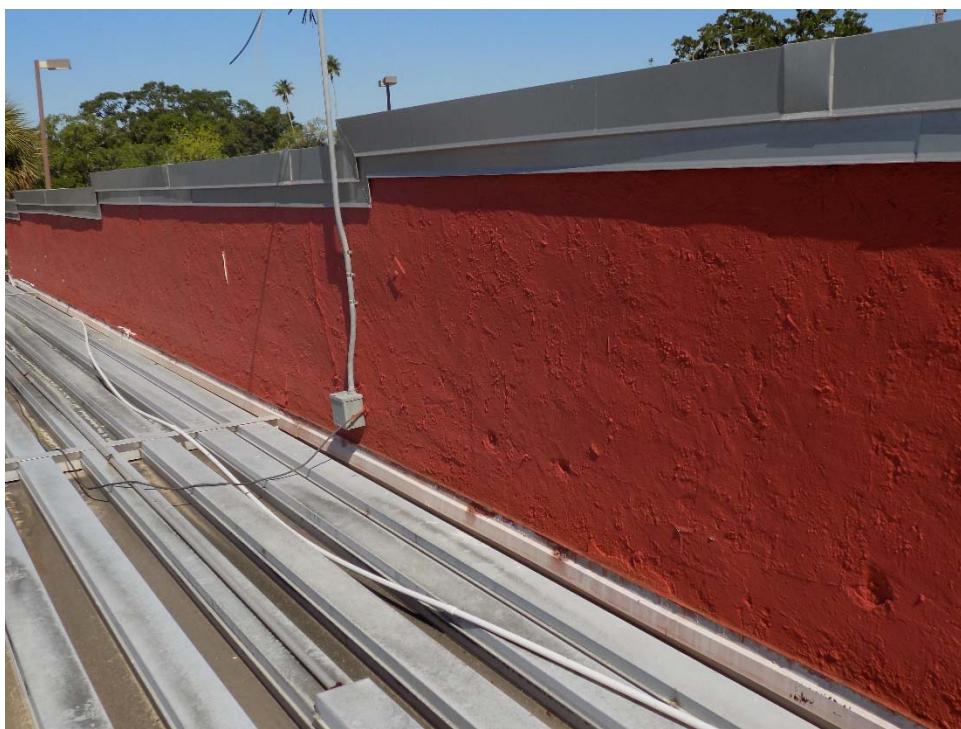


Figure C-34

*Limited Condition Assessment
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Figure C-35



Figure C-36

*Limited Condition Assessment
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Figure C-37

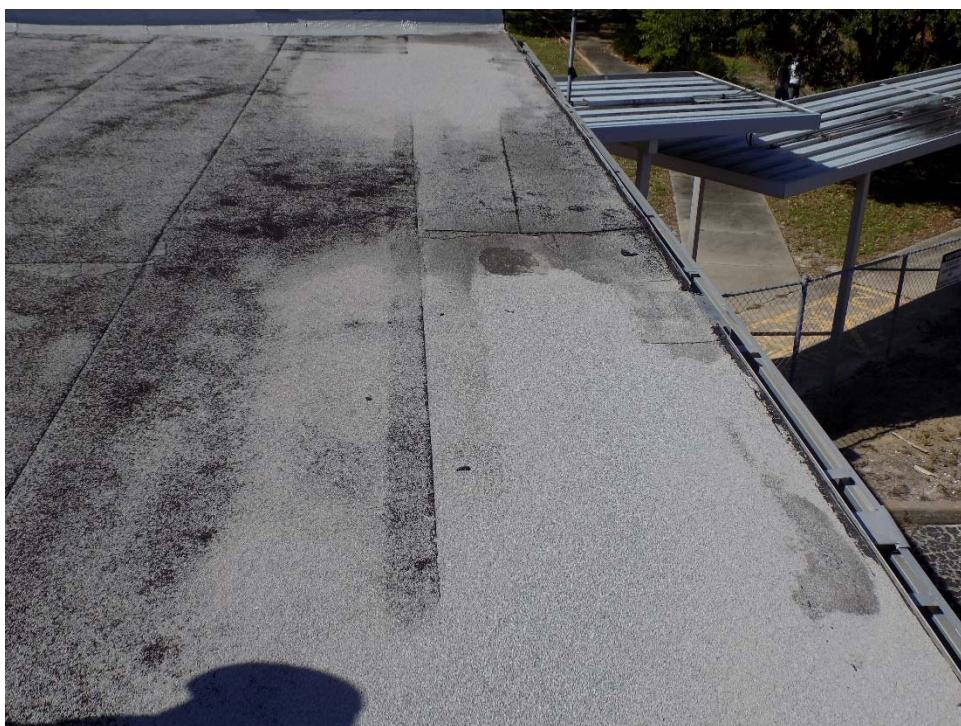


Figure C-38



*Limited Condition Assessment
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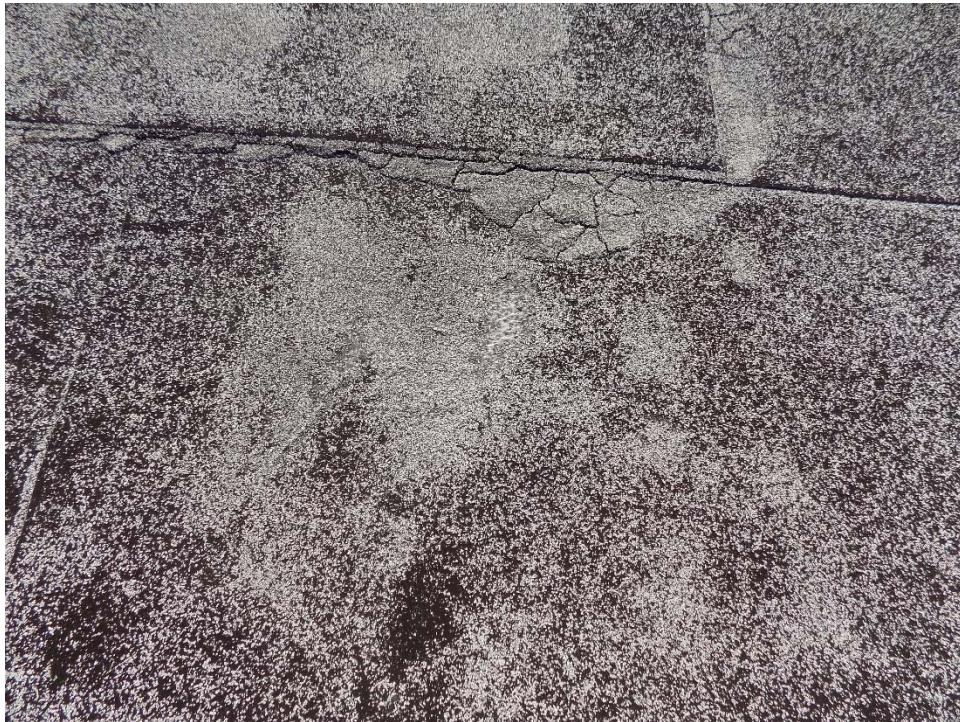


Figure C-39

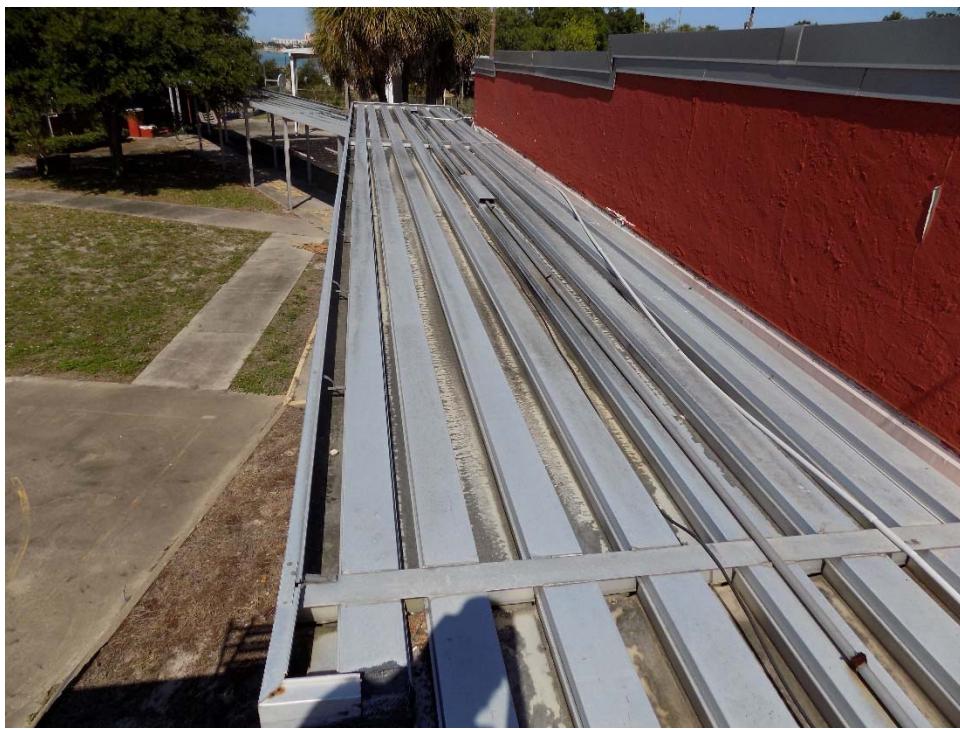


Figure C-40



*Limited Condition Assessment
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Figure C-41



Figure C-42

Limited Condition Assessment
North Ward Elementary School
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Figure C-43



Figure C-44

Limited Condition Assessment
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Figure C-45

*Limited Condition Assessment
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Appendix D



Limited Condition Assessment
North Ward Elementary School
Clearwater, Florida
BillerReinhart Project No. 19-075



Figure D-1



Figure D-2

*Limited Condition Assessment
North Ward Elementary School
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Figure D-3



Figure D-4

*Limited Condition Assessment
North Ward Elementary School
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Figure D-5



Figure D-6

Limited Condition Assessment
North Ward Elementary School
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Figure D-7



Figure D-8

