Limited Condition Assessment Report

Linda Pederson Observation Tower

September 2, 2025

Linda Pederson Park
6340 Shoal Line Boulevard
Spring Hill, FL 34607

Biller Reinhart Engineering Group
3434 Colwell Avenue, Ste. 100
Tampa, FL 33614

VIA EMAIL

September 2, 2025

Christopher Linsbeck
Hernando County Community Services Director
15470 Flight Path Drive
Brooksville, FL 34604

Email: clinsbeck@hernandocounty.us

Subject: Limited Condition Assessment
Observation Tower
Linda Pedersen Park
6340 Shoal Line Boulevard
Spring Hill, FL 34607

Dear Mr. Linsbeck:

Alejandro Cubas, E.I. and Matthew Reinhart, E.I., of Biller Reinhart Engineering Group, Inc. (BillerReinhart) performed a limited condition assessment at the above-mentioned address to observe the current condition of the structural components of the Linda Pedersen Park observation tower structure. The visual survey by BillerReinhart was of the structure's current state and did not involve any destructive activity to view inaccessible areas.

Documentation Provided

The following documentation was provided by Coastal Engineering Associates, Inc., to BillerReinhart for review:

1.) *Proposed – Observation Tower for Jenkins Creek,* prepared by Office of the County Engineer, dated January 12, 1994

2.) *Proposed – Jenkins Creek Tower Repair,* prepared by Universal Engineering Sciences, dated October 5, 2005

3.) *Linda Pedersen Observation Tower: Timeline,* prepared by Hernando County Department of Recreation

Document review is not an assessment of the adequacy of the original design or the repairs, rather, it is an information gathering venture intended to assist with the scope of work.

Structural Description

Based on our review of the provided documentation, BillerReinhart understands that the subject observation tower structure was originally constructed in 1994 and subsequently repaired and reinforced in 2005/2006. The tower structure consists of five (5) levels of observation decks and two (2) intermediate landings, one between the 1st and 2nd levels and the other between the 4th and 5th levels (Refer to *Exhibit 1* below).

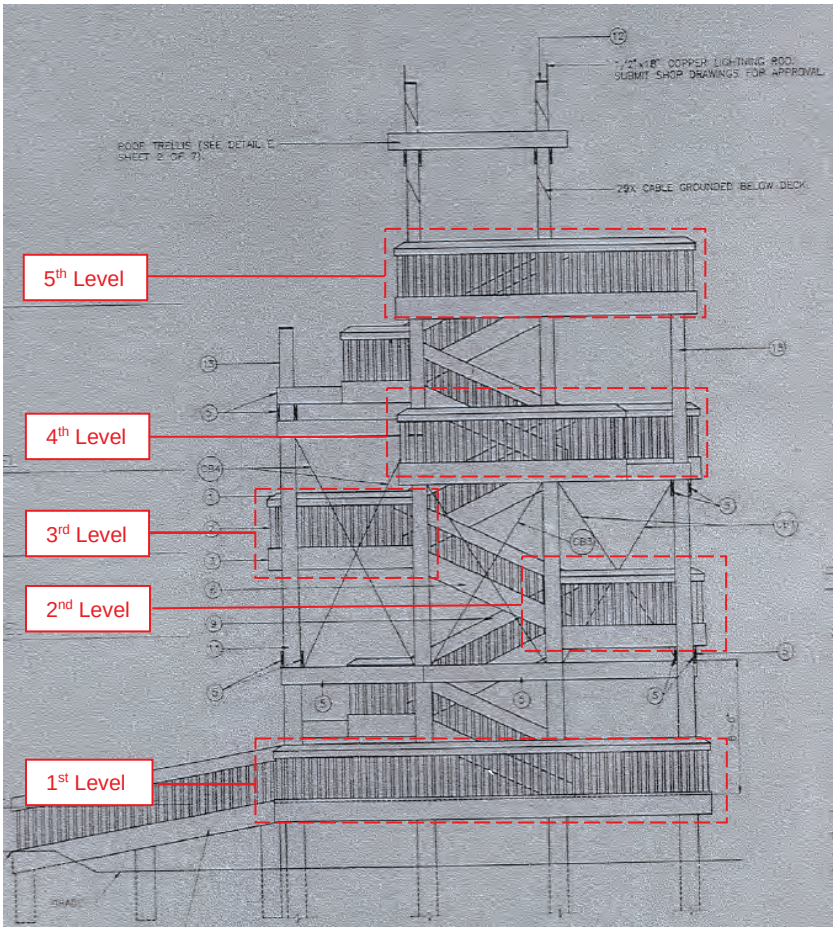


Exhibit 1 – East Elevation of Observation Tower, 1994 Office of the County Engineer

According to the tower's original drawings, the observation decks and landings primarily consist of 2 in. x 6 in. pressure treated (PT) lumber decking supported on 2 in. x 12 in. PT lumber joists. The landings and observation decks are connected by stairways consisting mainly of 2 in. x 16 in. PT lumber stringers and 3 in. x 14 in. PT lumber treads. The stairways, decks, and landings are connected to the sixteen (16) 14-inch diameter PT lumber poles by galvanized steel bolts. The poles extend to various heights along the structure and are indicated to be embedded approximately 25 feet below grade. The sections of the poles below grade are designated to be encased in 8 inches of concrete capped with a 4 ft. x 4 ft. concrete collar extending from the existing grade to 3

feet below the ground surface. The poles are laterally braced at various locations with 2 in. x 12 in. PT lumber and diagonally crossed steel rods with turnbuckles.

Survey of Observation Tower

Readily discernible structural elements of the observation tower 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 – Documented Observations	
Conditions Observed	**Refer. Photos**
Exterior Elevations	
Overall photograph of north elevation	*Figure A-1*
Overall photograph of south elevation	*Figure A-2*
Overall photograph of west elevation	*Figure A-3*
Overall photograph of east elevation	*Figure A-4*
Typical Conditions	
Organic growth and staining along the exterior rails, balusters, and fascia boards	*Figures A-5 and A-6*
Surface wear and minor separation along the perimeter rail balusters	*Figures A-7 and A-8*
Horizontal separations along the perimeter rail fascia boards	*Figure A-9*
Missing or protruding fasteners along the perimeter railing caps, fascia boards, and balusters	*Figures A-10 and A-11*
Separations along lumber poles surfaces	*Figures A-12 and A-13*
Isolated Conditions	
The two center poles along the north elevation appeared to exhibit lateral displacement (see columns marked with dashed red line)	*Figure A-14*
Separation and splitting along the lower fascia board at the west elevation of the 3rd level railing	*Figure A-15*
Lateral displacement and protruding fasteners along the lower fascia board at the east elevation of the 3rd level railing	*Figure A-16*
Surficial decay along the lower fascia board along the south elevation of the 3rd level railing	*Figure A-17*
Discoloration along the lower fascia board at the south elevation of the intermediate landings between the 4th and 5th levels	*Figure A-18*

Separation between the fascia boards along the east elevation of the 1st level	*Figure A-19*
Separation with protruding fasteners along the east elevation railing cap	*Figure A-20*
Separation, deflection, missing fasteners, and holes between the lateral bracing at the 3rd pole from the north along the east elevation	*Figure A-21*
Underside of 1st Level	
Overall photographs of the crawlspace below the 1st level	*Figures A-22 through A-24*
Organic growth at sporadic locations along the 1st level joists	*Figure A-25*
Section loss with deterioration along the top of the end section of a 1st level floor joist at the southeast corner	*Figure A-26*
Splitting and section loss at the south end of floor joist at southwest corner of 1st level	*Figure A-27*
Staining and organic growth along the floor joists at the gaps between the deck boards	*Figure A-28*
Overdriven bolts at sporadic column to joist connections	*Figure A-29*
Nail penetrations at sporadic locations along the 1st level deck boards (circled in red)	*Figure A-30*
Section loss with staining along lateral brace/blocking and exposed nails between 2nd joist girders from the south along the west elevation	*Figure A-31*
Horizontal separation along the 3rd joist from the east within central column span (circled in red)	*Figure A-32*
Spliced sections of 1st level joists with abandoned, corroded nails along east elevation	*Figure A-33*
Overdriven bolts with splitting of wood at the joist-to-pole connection at the 2nd column from the west along the north elevation	*Figure A-34*
Separation at bottom of 3rd joist from the west within the southmost column span	*Figure A-35*
Splitting at connection point between 3rd joist from west within southmost column span and 1st girder joist from the north	*Figure A-36*
Separation along the base of the northwest pole	*Figure A-37*
Surficial deterioration at the top of the west pole at the top of the entrance ramp	*Figure A-38*
Left-in-place nail along the 2nd pole from the south along the east elevation (circled in red)	*Figure A-39*
Separation along the base of the 2nd column from the west along the north elevation	*Figure A-40*
Separation along the base of the 3rd pole from the south along the east elevation	*Figure A-41*
Discoloration at sporadic locations along the base of poles	*Figures A-39 through A-42*

1st Level Entrance Ramp	
Overall photograph of 1st level entrance ramp	*Figure A-43*
The east side railing exhibited lateral displacement	*Figures A-44 and A-45*
Loose fasteners and separation of the lumber boards along the west railing cap	*Figure A-46*
Sporadic areas of separation/splits, section loss, and deterioration along railing balusters	*Figures A-47 and A-48*
Organic growth with loose fasteners at sporadic locations along the exterior rails	*Figure A-49*
Separation/splits at sporadic locations along the railing cover boards	*Figure A-50*
Section loss at an isolated location along the ramp deck	*Figure A-51*
Space between rail balusters was measured to be greater than 4-inches at sporadic locations	*Figure A-52*
Deteriorated deck boards with loose fasteners along entrance ramp	*Figures A-53 and A-54*
Metal angle brace with deteriorated fasteners at an isolated location along the entrance ramp	*Figure A-55*
Observation Deck and Landing Areas	
Overall photographs of observation deck and landing areas	*Figure A-56 through A-71*
Typical Conditions	
Deterioration at sporadic locations along the deck boards	*Figure A-72*
Loose and missing fasteners at sporadic locations along deck boards	*Figure A-73*
Separation/deterioration along the surface of the lumber poles	*Figures A-74 and A-75*
Staining/organic growth along the under sides of the observation decks and landings	*Figure A-76*
Deteriorated/weathered paint at sporadic locations along the poles	*Figure A-77*
Minor surface corrosion along lateral bracing components and fasteners	*Figures A-78 and A-79*
Minor displacement/separation at lateral bracing to pole connections	*Figures A-80 and A-81*
Stairways and landings above the 1st level were enclosed by vertical balusters. Gaps between balusters were observed to be greater than 4 inches in sporadic locations	*Figure A-82*
Organic growth at sporadic locations along the stair treads	*Figure A-83*
Sporadic areas of deterioration along the lumber guard rail caps	*Figure A-84*

Graffiti/vandalism at sporadic locations along the observation tower components	*Figure A-85*
Moisture/moisture staining was observed along the pole surfaces at sporadic locations (no rain had occurred over the duration of our site visit).	*Figure A-86*
Deterioration/voids were observed at the top of the lumber poles	*Figures A-87 and A-88*
Overdriven/misaligned fasteners were observed at sporadic locations along the deck boards	*Figure A-89*
Isolated Conditions	
Plant growth was observed at an isolated corner of the 1st level deck	*Figure A-90*
A missing board was observed at the southeast corner of the 1st level observation deck, tops of the joists exhibited deterioration	*Figure A-91*
A metal post was observed to be installed along the underside of the 2nd level. The post was observed deflecting laterally (see marked with dashed red line).	*Figures A-92 and A-93*
Heavy staining and deterioration were observed along the joists below the landing between the 1st and 2nd floors	*Figure A-94*
Loose/misaligned fasteners for balusters were observed at the top stairs at the 3rd level	*Figure A-95*
Metal joist hangers were observed along the underside of landing between the 4th and 5th levels. Missing fasteners were observed at sporadic locations along the hangers	*Figures A-96 and A-97*
Separations and indentations/hollows were observed along the stair treads of the 2nd to 3rd and 4th to 5th stairways	*Figures A-98 and A-99*
A metal collar was observed to be installed at an isolated area along the poles	*Figure A-100*
Heavy organic growth and section loss was observed along the stringer of the landing to 5th floor stairway	*Figure A-101*
Missing fasteners along stringer-to-tread angles along 2nd to 3rd level stairs	*Figure A-102*
Separation between end-nailed joist connection was observed at an isolated location along underside of 4th level deck	*Figure A-103*
Other Observations	
Embedded poles were observed outside the foundation footprint at the southeast corner of the tower. The poles appear to be for the entrance ramp location depicted in the original drawings.	*Figure A-104*

Conclusions and Recommendations

Based on the conditions observed during our limited visual survey of the existing structure and review of the available documents/information relating to the subject structure, BillerReinhart believes that, in its current condition, the observation tower is unsafe for use by the public. The tower has sustained vandalism/fire damage in 2006, hurricane flooding events in 2016 and 2017, overloading of its top deck in 2018, and additional hurricane flooding events in 2023 and 2024. Even though the tower has undergone repairs in 2006, 2018, and 2020, continued weathering and exposure to flooding events caused further damages and deterioration adversely affecting its structural integrity.

BillerReinhart recommends that the Linda Pedersen Park staff keep the tower closed and install signage in prominent locations warning the public not to access and use the observation tower. A perimeter barrier is recommended to be installed around the tower to delineate a safe distance away from the tower in the event the structure or portion of the structure collapses or elements of the structure detach. Until such time that the structure is repaired or replaced, it should be visually inspected regularly by amenity management (weekly) with supplemental structural inspections by a structural engineer every six (6) months.

BillerReinhart understands that the Hernando County Department of Parks and Recreation has already closed and prohibited public access to the tower citing that previous on-site inspections confirmed that the tower poses serious safety risks with continued use. Currently, two options are being considered by Hernando County authorities to address the unsafe conditions of the observation tower. Option 1 would be to demolish and re-build the existing observation tower. Option 2 would be to implement a renovation project that would restore the tower so the existing structure can safely continue its service life to the public. BillerReinhart has explored both options and has provided a summary of our findings below.

Option 1 – Demolish and Re-Build the Observation Tower

Based on the provided documents, BillerReinhart understands that the observation tower was constructed in 1994 by Schlotter Construction Inc. at a reported cost of $69,945. The tower has served as an amenity at Linda Pedersen Park for over 30 years. The tower has experienced multiple flooding events and has been damaged and subsequently repaired/remediated on multiple occasions. In 2024, park management budgeted for the removal of the observation tower in a capital improvement plan. In 2025, the tower was closed to the public due to serious safety concerns identified by previous structural inspections. Currently, Hernando County Facilities is soliciting a demolition contract for the structure.

From our review of the available information regarding the tower's history and condition, BillerReinhart anticipates that scope of work for Option 1, will likely include the following:

1. Observation Tower Structure Demolition
    a. Permitting
    b. Mobilization
    c. Labor
    d. Site Restoration

2. Design of New Observation Tower Structure
    a. Engineering Analysis
    b. Preparation of Structural Drawings
    c. Bidding and Permitting Assistance
    d. Construction Phase Services

3. Geotechnical Investigation

4. Construction of New Observation Tower Structure (estimated by the reported original construction cost adjusted for inflation) (1)
    a. Permitting
    b. Mobilization
    c. Labor
    d. Site Restoration

(1) https://www.bls.gov/data/inflation_calculator.htm

According to the estimated scope of work, BillerReinhart has prepared an engineer's opinion of probable cost (EOC) below for Option 1.

Engineer's Opinion of Cost - Option 1		Cost
1.0	Demolition of Existing Tower	
		$ 52,035.00
2.0	Engineering Design of New Observation Tower	
		$ 85,000.00
3.0	Geotechnical Investigation	
		$ 10,000.00
4.0	Construction of New Observation Tower	
		$ 306,000.00
5.0	SUB-TOTAL	
		$ 453,035.00
6.0	Contingency (±20%)	
		$ 90,607.00
	TOTAL	$ 543,642.00

There may be an opportunity to re-use/incorporate the existing foundations into the new design for some cost savings. Please note, the estimated costs above

represent an engineer's opinion of cost, and do not necessarily include *all costs associated with construction projects*. BillerReinhart recommends consultation with a licensed contractor local to the area that specializes in lumber structure construction to obtain a more accurate estimate that incorporates current labor and material costs.

Option 2 – Restore Existing Observation Tower

During our assessment of the tower's current condition, BillerReinhart observed that the tower's structural components were exhibiting deterioration and damage in multiple locations. This includes section loss along lumber components (*Refer to Exhibit 2*), aged/deteriorated lumber components within the structure's deck, railings, stairways, and cladding (*Refer to Exhibits 3 and 4),* and heavy organic growth along decking and floor joists (*Refer to Exhibit 5)*.

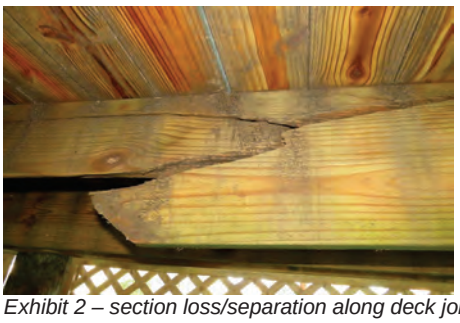


Exhibit 2 – section loss/separation along deck joist

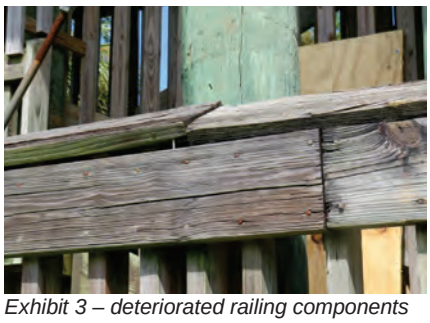


Exhibit 3 – deteriorated railing components


Exhibit 4 – Deterioration of decking


Exhibit 5 – Heavy organic growth

In addition, the lumber poles, which are critical load bearing members of the tower (gravity and lateral stability), also exhibited deterioration and signs of moisture intrusion. Conditions observed include pole top deterioration, (*Refer to Exhibit 6*), splitting/deterioration along the pole surfaces (*Refer to Exhibit 7*), and surficial moisture along the pole surfaces (*Refer to Exhibit 8*).

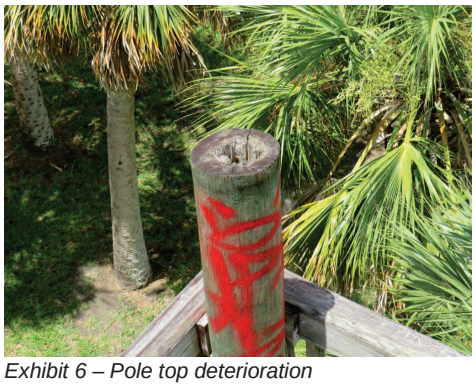


Exhibit 6 – Pole top deterioration

For the structure to be restored to safe operation, all the components exhibiting deterioration will need to be removed and replaced for public safety. This will expectedly include removal and replacement of the poles which support the stairway, deck systems, and lateral bracing of the tower.

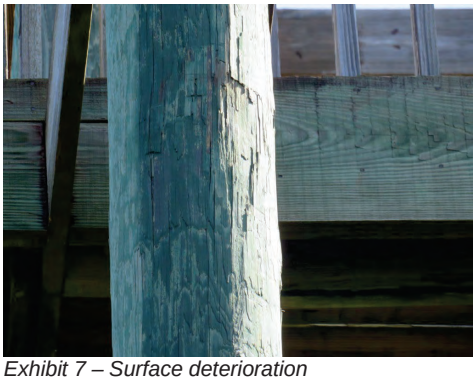


Exhibit 7 – Surface deterioration

The structure is exposed to conditions that are favorable to decay-causing biotic agents, such as moisture, oxygen, moderate temperatures, etc. Should the lumber poles be considered for re-use, testing methods would need to be employed to assess their structural integrity, such as acousto-ultrasonic (AU) testing, a non-destructive method used to evaluate the internal condition of timber poles. This testing detects and evaluates defects, damage, and variations in mechanical properties and is particularly useful for identifying early decay in wood poles. However, advanced deterioration, such as pole top deterioration, was observed.


Exhibit 8 – Surficial moisture

Service life expectancy for lumber utility poles ranges from 25 to 37 years [(2)] and 30 to 50 years [(3)]. Fifteen (15) of the poles are approximate 31 years of age and. one pole is 19 years of age. Most of the lumber poles have reached the range of service life expectancy. Therefore, testing should determine which poles are candidates for re-use and which need replacement. Also, testing will need to continue to monitor the structural integrity of the re-used poles and a plan, timeframe, and budget developed for a pole replacement program.

(2) https://www.hansenpolebuildings.com/2012/11/utility-poles/

(3) https://agostinoutilities.com/the-complete-guide-to-utility-pole-replacement-modern-methods-and-safety-considerations/

Depending on the results of the testing, the scope of work required to complete the tower restoration can vary considerably. In a scenario where it is determined that certain poles are unsuitable for continued use, a complex, temporary shoring system will need to be designed by a licensed structural engineer and installed by a contractor to facilitate the removal and replacement of the poles. A project manual will need to be developed by licensed structural engineer to provide specifications and detail drawings for the removal and replacement of the deteriorated deck, stairway, and railing components and any repairs to the poles.

Another factor to be considered when planning the structure's renovation is that the tower's components will likely need to be improved to meet updated/modern

building codes and safety standards. One example has been presented in the provided document *Linda Pedersen Observation Tower: Timeline,* prepared by Hernando County Department of Recreation. The document mentions an assessment of the tower conducted by a building official which reported that "end-nailed joists supporting the decking were observed to be dropping due to deteriorating fasteners (today's codes require joist hangers)." During our condition assessment, BillerReinhart observed that most of the deck joists appeared to be end-nailed with some of the connections separating at isolated

Exhibit 9 – Separation of end-nailed joist connection

Exhibit 10 – Metal joist hanger

locations (*Refer to Exhibit 9, circled in red*). The scope of work for the tower renovation will require installing new joist hangers at the deck joist connections. Furthermore, BillerReinhart observed metal joist hangers along the undersides of the 5th floor and 4th to 5th floor intermediate landing, likely installed to update the replaced joists to comply with current building codes (*Refer to Exhibit 10*).

In addition, BillerReinhart observed sections of the tower guardrails with gaps spanning greater than 4 inches between the balusters (*Refer to Exhibit 11)*. If the deteriorated baluster sections are to be replaced, they will need to be respaced to comply with the maximum 4-inch spacing requirements required by building codes.

Exhibit 11 – Gap between balusters measured to be greater than 4 inches

From our analysis of the tower's history and the information collected during our limited condition assessment, BillerReinhart anticipates that scope of work for Option 2 will include, but may not be limited to the following:

1. Testing of Pole Supports for Structural Integrity
    a. On-site testing
    b. Reporting

2. Geotechnical Investigation

3. Design of Project Manual for Remediation Project
    a. Engineering Analysis
    b. Preparation of Structural Drawings
    c. Bidding and Permitting Assistance
    d. Construction Phase Services

4. Renovation of New Observation Tower Structure
    a. Permitting
    b. Mobilization
    c. Select Demolition
        i. Note that a portion of the tower selected for partial demolition may reveal conditions that warrant further demolition than initially proposed due to adverse concealed conditions.
        ii. Additional engineering analysis may be required for altered conditions revealed during partial demolition.
    d. Shoring Engineering/Shoring
    e. Labor
    f. Site Restoration

5. Continued Monitoring of Pole Structural Integrity
    a. On-site testing
    b. Develop a plan, timeframe, and budget for a pole replacement program

According to the estimated scope of work, BillerReinhart has prepared an engineer's opinion of probable cost (EOC) below for Option 2.

	Engineer's Opinion of Cost - Option 2	Cost
1.0	Testing of Pole Supports for Structural Integrity	
		$ 10,000.00
2.0	Geotechnical Investigation	
		$ 10,000.00
3.0	Design of Project Manual for Remediation Project	
		$ 90,000.00
4.0	Renovation of New Observation Tower Structure	
		$301,098.60
5.0	Continued Monitoring of Pole Structural Integrity	
		$ 7,500.00
5.0	SUB-TOTAL	
		$418,598.60
6.0	Contingency (±20%)	
		$ 83,719.72
		$502,318.32

Please note, the estimated costs above represent an engineer's opinion of cost, and do not necessarily include *all costs associated with construction projects*. BillerReinhart recommends consultation with a licensed contractor local to the area that specializes in lumber structure construction to obtain a more accurate repair estimate that incorporates current labor and material costs.

The renovated tower will have components from the original construction. Therefore, a more thorough maintenance and monitoring protocol will be required than what would be initially for a new tower.

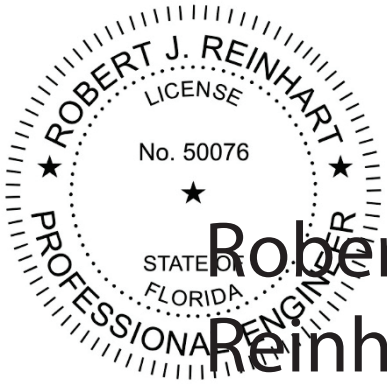
Neither the survey nor this report is intended to cover hidden defects, mechanical, electrical, or architectural features, nor environmental concerns. Unauthorized use of this report, without the permission of BillerReinhart, shall not result in any liability or legal exposure to Biller Reinhart Engineering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

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

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.



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Robert J Reinhart

Digitally signed by Robert J Reinhart
Date: 2025.09.02 17:25:15 -04'00'

Robert J. Reinhart, PE, SI, FRSE
Executive Vice President/Principal Structural Engineer

Attachments: Appendix A – Photographic Documentation

Appendix A

Figure A-1

Figure A-2

Figure A-3

Figure A-4

Figure A-5

Figure A-6

Figure A-7

Figure A-8

Figure A-9

Figure A-10

Figure A-11

Figure A-12

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Figure A-52

Figure A-53

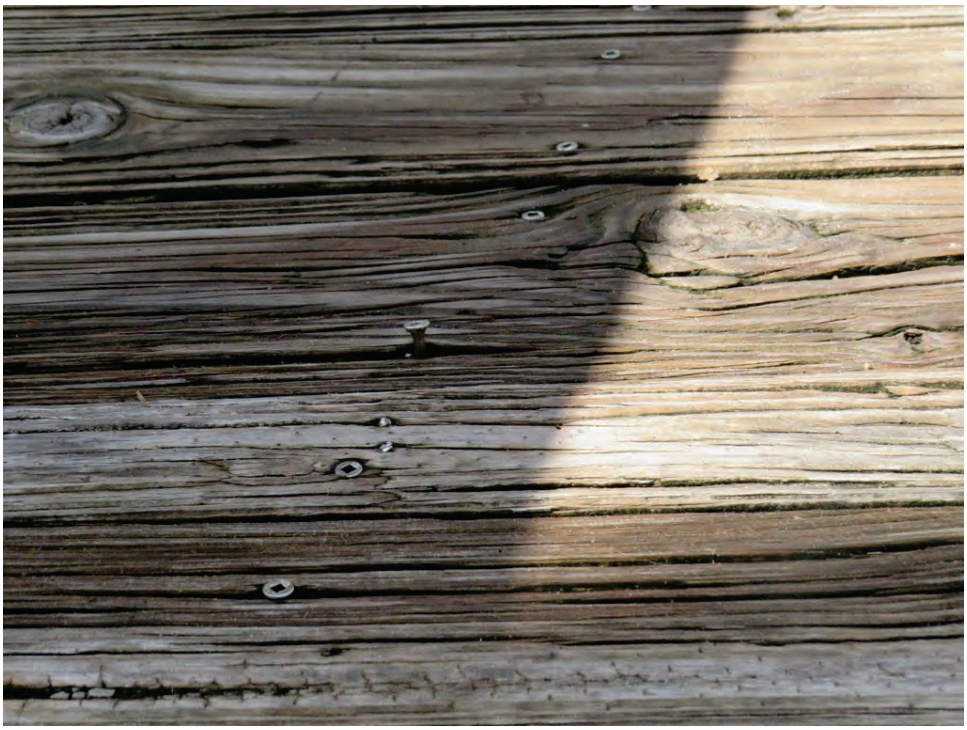

Figure A-54

Figure A-55

Figure A-56: First Level

Figure A-57

Figure A-58: Landing between First and Second Levels

Figure A-59

Figure A-60: Second Level

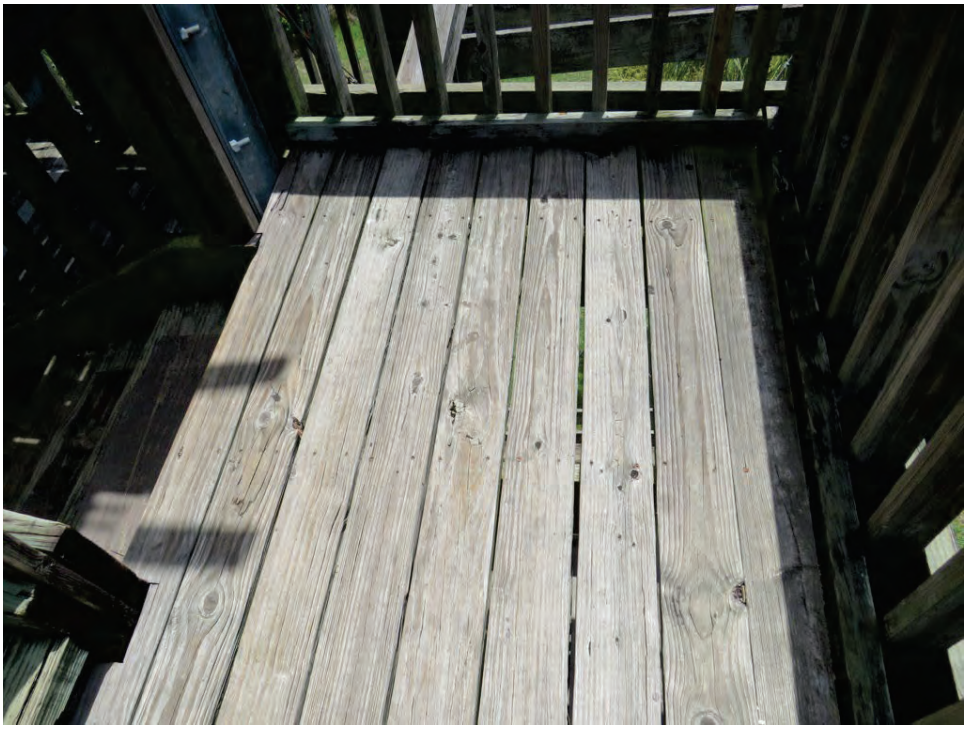

Figure A-61

Figure A-62

Figure A-63: Third Level

Figure A-64

Figure A-65: Fourth Level

Figure A-66: Fourth Level

Figure A-67: Fourth Level

Figure A-68

Figure A-69: Landing between Fourth and Fifth Levels

Figure A-70

Figure A-71: Fifth Level

Figure A-72

Figure A-73

Figure A-74

Figure A-75

Figure A-76

Figure A-77

Figure A-78

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Figure A-100

Figure A-101

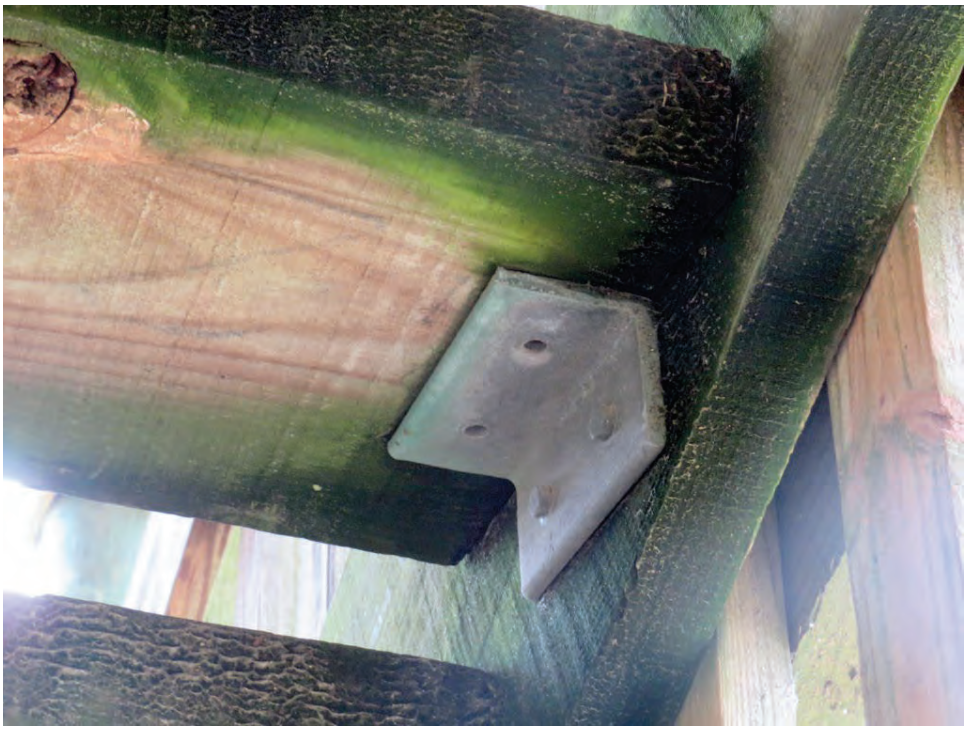

Figure A-102

Figure A-103

Figure A-104