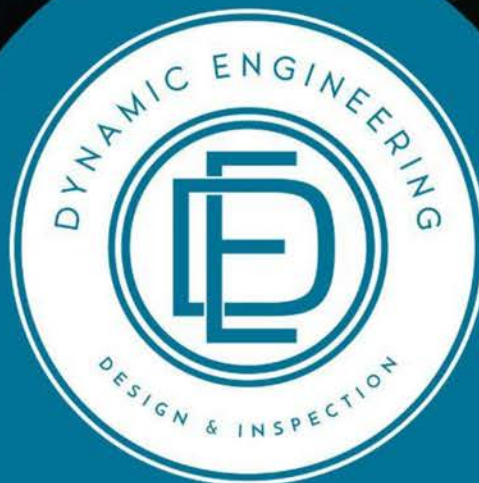


# ROOF REPORT

Carport Roof Condition Assessment

2023

Report Prepared By:



# TABLE OF CONTENTS

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Executive Summary	1
1. Introduction	1
1.1. Purpose	1
1.2. Scope	1
2. Documents and Interviews	1
2.1. Documents Reviewed	1
3. Description	1
3.1. General	1
3.2. Carports	2
3.2.1. Attached Carports	2
3.2.2. Detached Carports	2
4. Visual Observations	2
5. Conclusions	2
6. Financial Analysis	3
7. Recommendations	3
8. Limitations	4
9. Closing	6
List of Exhibits	6



**Condominium Association, Inc.**  
**Florida, FL 34108**

**Attention:** Property Manager

**Property:** Condominium  
123 Main St  
Florida, FL 34108

**Regarding:** Limited Carport Roof Condition Assessment

Mr. Manager

Dynamic Engineering Design & Inspection (Dynamic) recently performed a Limited Carport Roof Condition Assessment at Condominium at your request for Condominium Association, Inc. This report and attachments contain the results of our assessment.

We appreciate the opportunity to provide this assessment. Should you have any questions regarding this report, please do not hesitate to contact me.

Sincerely,

Matthew T. Mullins, PE  
RRC, RRO, CCS, CCCA  
President  
Dynamic Engineering Design & Inspection



## Executive Summary

Dynamic performed a Limited Carport Roof Condition Assessment at Condominium located at 123 Main St, Florida, FL 34108 in 2023. The purpose of the assessment was to determine the condition of the carport roofs, their estimated remaining useful life, and provide recommendations for further action.

<b>Description</b>	Insulated Metal Roof Panels - lightweight composite panels with metal skins and an insulating foam core.		
<b>Approximate Area</b>	35 square feet		
<b>Approximate Age</b>	36	<b>ERUL</b>	4-5
<b>Condition</b>	Fair to Poor ▾	<b>EUL</b>	40
<b>Conclusion</b>	The insulated metal roof panels are near the end of their service life.		
<b>Option A - Replace</b>		<b>Option B - Repair</b>	
Replace the existing metal panels with like kind		Prepare the existing metal panels for coating; reinforce the joints and transitions with fabric and mesh, and apply roof coating	
<b>Est. Unit Cost</b>	\$1/sf	<b>Est. Unit Cost</b>	\$5/sf
<b>Total Est. Cost</b>	\$00	<b>Total Est. Cost</b>	\$000
<b>EUL</b>	40 years	<b>EUL</b>	5 years
<b>EAC</b>	\$/year	<b>EAC</b>	\$35,200/year
<b>Recommendation</b>	If the association has the funds available, the optimal economic choice is Option A, replace the panels immediately. However, replacement may be deferred up to five years and a coating applied to the upper surface to mitigate the water intrusion through the panels until replacement.		





# 1. Introduction

Dynamic performed a Limited Carport Roof Condition Assessment at Condominium located at 123 Main St, Florida, FL 34108 in 2023.

## 1.1. Purpose

The purpose of the assessment was to determine the condition of the carport roofs, their estimated remaining useful life, and provide recommendations for further action.

## 1.2. Scope

The scope of the assessment included:

1. Review of readily available documents
2. Interviews with onsite personnel
3. Aerial survey of the carport roofs
4. Limited observations and investigations from the carport roof surfaces and ground

# 2. Documents and Interviews

## 2.1. Documents Reviewed

Dynamic reviewed applicable sections from the following documents:

1. As-built drawings dated April 4, 1986

# 3. Description

## 3.1. General

██████████ is a condominium association located in Naples, Florida with approximately 176 residential units in 21 buildings. According to information provided by the Collier County Property Appraiser, the buildings were built in 1986 and 1987 and are approximately 36 years old. The carports are original. The design of the carports was delegated by the architect to the contractor.. Buildings A through M and buildings P through U have attached carports, and Buildings N and O have detached carports. The total square footage of the carports is approximately 35,200.



## 3.2. Carports

The carports consist of 4-inch thick insulated metal panels (IMP's) sloped approximately  $\frac{1}{2}$  inch per foot. An integral gutter is provided at the low eave, which discharges stormwater to the ground through downspouts. 3 inch thick by 24 inch tall insulated metal wall panels enclose the carports roofs on all exposed sides. Textured cementitious finish has been applied to the outside face of the insulated metal wall panels.

### 3.2.1. Attached Carports

The IMP's are supported at the eave by structural aluminum tubes, which are supported by and anchored to grouted and reinforced concrete masonry columns. The IMP's are supported at the opposite end by a metal bracket that is partially concealed by the panels and anchored to the concrete masonry wall of the residential building.

### 3.2.2. Detached Carports

The IMP's are supported at both ends by structural aluminum tubes, which are supported by and anchored to grouted and reinforced concrete masonry columns.

## 4. Visual Observations

Dynamic observed the following:

1. Physical damage from impact
2. Structurally compromised panels on building J
3. Evidence of water intrusion through joints in the panels, and at joints between the roof panels, walls, and wall panels.
4. Water discharging from corrosion holes in the panels, indicating water intrusion into and saturation of the insulation core
5. Deteriorated flashing tape at the joints and transitions
6. Physical damage to the gutters, likely from vehicle impact
7. Leaking gutters

Please refer to Exhibit 2 - Photographs for specific observations. The photographs have tags identifying the building to which they belong.

## 5. Conclusions

With a reasonable degree of professional and engineering certainty, Dynamic offers the following conclusions:



1. The insulated metal panels are near the end of their service life, and should be replaced. The service life of the existing panels can be extended approximately 5 years by applying a roof coating with reinforcement at the seams and transitions.

## 6. Financial Analysis

To determine the optimal economic action, Dynamic has performed a financial analysis of the two options, shown in the table below.

Option A - Replace		Option B - Repair	
Replace the existing metal panels with like kind		Prepare the existing metal panels for coating; reinforce the joints and transitions with fabric and mesh, and apply roof coating	
Estimated Unit Cost	\$/sf	Estimated Unit Cost	\$/sf
Total Estimated Cost	\$686,400	Total Estimated Cost	\$0.00
Estimated Useful Life	40 years	Estimated Useful Life	5 years
Equivalent Annual Cost	\$/year	Equivalent Annual Cost	\$35,200/year

## 7. Recommendations

Dynamic offers the following recommendations:

1. Based on the results of our assessment and financial analysis, the optimal economic action is to replace the existing panels with like kind immediately.
2. Replacement may be deferred up to five years if a coating is applied to the upper surface to mitigate the water intrusion through the panels until replacement. Dynamic does not recommend using a silicone coating, as the coating will be required to be turned up the wall, and typical exterior wall coatings will not adhere to the silicone coating.





3. Dynamic recommends obtaining pricing from a licensed contractor capable of performing both the replacement and the repair to validate the pricing above.
4. Regardless of the solution, Dynamic recommends proceeding with the replacement of the carport roofs on Building J units 102 and 103, as these panels have been structurally compromised.
5. If the association pursues the repair option, Dynamic recommends performing the repair on one carport to confirm the solution is valid before proceeding with the repair on the remaining carports.
6. Dynamic can proceed a scope of work, specifications and drawings for either solution, suitable for bidding, permitting and construction.

## 8. Limitations

*This report has been prepared exclusively for Condominium Association, Inc. and its authorized representatives. No other person or entity may rely upon this report without written authorization from Dynamic.*

*The standard of care and skill for the services provided by Dynamic is consistent with the care and skill ordinarily used by members of the subject profession practicing under similar circumstances at the same time and in the same locality. Dynamic makes no warranties, express or implied, in connection with any services provided by Dynamic.*

*Dynamic provides other services to the association, which may be perceived as a conflict of interest. Acceptance of this report or proposals for other services from Dynamic waives any objections or claims that may arise due to a potential conflict of interest.*

*This assessment is limited to portions of the property that were readily accessible and visible at the time of our site visit. Any areas of the property that were concealed, inaccessible or not readily visible at the time of the site visit are not included. Unless explicitly stated in this report, extrapolations should not be made from the observations or opinions provided in this report.*

*Dynamic may rely on the information provided by the Client, and may rely on information furnished by others, including but not limited to, specialty contractors, manufacturer's suppliers, and publishers of technical standards.*





*The conclusions and recommendations offered in this report are based in part upon information gathered from the documents reviewed and interviews performed, and site observations. While reasonable efforts were made to verify the existing conditions as reported, verifying the veracity of this information is beyond this scope of service. Dynamic should be allowed to review any additional information that is discovered after the issuance of this report and determine if the original opinions should be revised.*

*Dynamic's Opinions of Probable Cost are to be made based on Dynamic's experience and qualifications and represent Dynamic's best judgment as an experienced and qualified professional generally familiar with the construction industry. However, since Dynamic has no control over the cost of labor, materials, equipment, or services furnished by others, or over contractors' methods of determining prices, or over competitive bidding or market conditions, Dynamic cannot and does not guarantee that proposals, bids, or actual Construction Cost will not vary from opinions of probable Construction Cost prepared by Engineer. If Client wishes greater assurance as to probable Construction Cost, Client shall employ an independent cost estimator. Dynamic assumes no responsibility for the accuracy of any opinions of Total Project Costs.*

*ERUL's and EUL's are estimates only. Actual useful life may vary. The systems and average useful life years are based on regular preventive maintenance properly performed at frequencies appropriate to the component. Many factors can affect the EUL such as maintenance programs, climatic conditions, challenging environments (wet locations, near salt water or heavy industry), use of heavy-duty equipment features, and use of corrosion resistant materials..*

*All quantities listed in this report are estimates only. Actual quantities may vary from the estimated quantities.*



## 9. Closing

To the best of my knowledge and ability, this report represents an accurate condition assessment and financial analysis for the carports based upon the evaluation of the observed conditions, to the extent reasonably possible. I appreciate the opportunity to provide these services and trust that this report will be informative. Should you have any questions regarding our report, please do not hesitate to contact me.

Matthew Mullins, PE  
RRC, RRO, CCS, CCCA  
President  
941-212-0398  
mtmullins@dyneng.online  
10/09/23

## List of Exhibits

Exhibit 1 - Definitions  
Exhibit 2 - Photographs



# Exhibit 1

## Definitions





**ASSESSMENT:** Systematic collection and analysis of data, evaluation, and recommendations regarding an existing building or portion thereof.

**CONDITION, GOOD:** in working condition and does not require immediate or short-term repairs within the next two years.

**CONDITION, FAIR:** in working condition, but may require immediate or short-term repairs

**CONDITION, POOR:** Not in working condition, or requires immediate or short-term repairs

**CONDITION ASSESSMENT:** The task of evaluating the current condition of the component based on observed or reported characteristics.

**DEFERRED MAINTENANCE:** any maintenance or repair that: will be performed less frequently than yearly; and will result in maintaining the useful life of an asset.

**EFFECTIVE AGE:** The difference between useful life and remaining useful life. Not always equivalent to chronological age, since some components age irregularly. Used primarily in computations.

**ESTIMATED USEFUL LIFE (EUL):** The average amount of time in years that an item, component, or system is estimated to function without material repair when installed new and assuming routine maintenance is practiced.

**ESTIMATED REMAINING USEFUL LIFE (ERUL):** A subjective estimate based upon observations, or average estimates of similar items, components, or systems, or a combination thereof, of the number of remaining years that an item, component, or system is estimated to be able to function in accordance with its intended purpose before warranting replacement. Such a period of time is affected by the initial quality of an item, component, or system, the quality of the initial installation, the quality and amount of preventive maintenance exercised, climatic conditions, extent of use, etc.

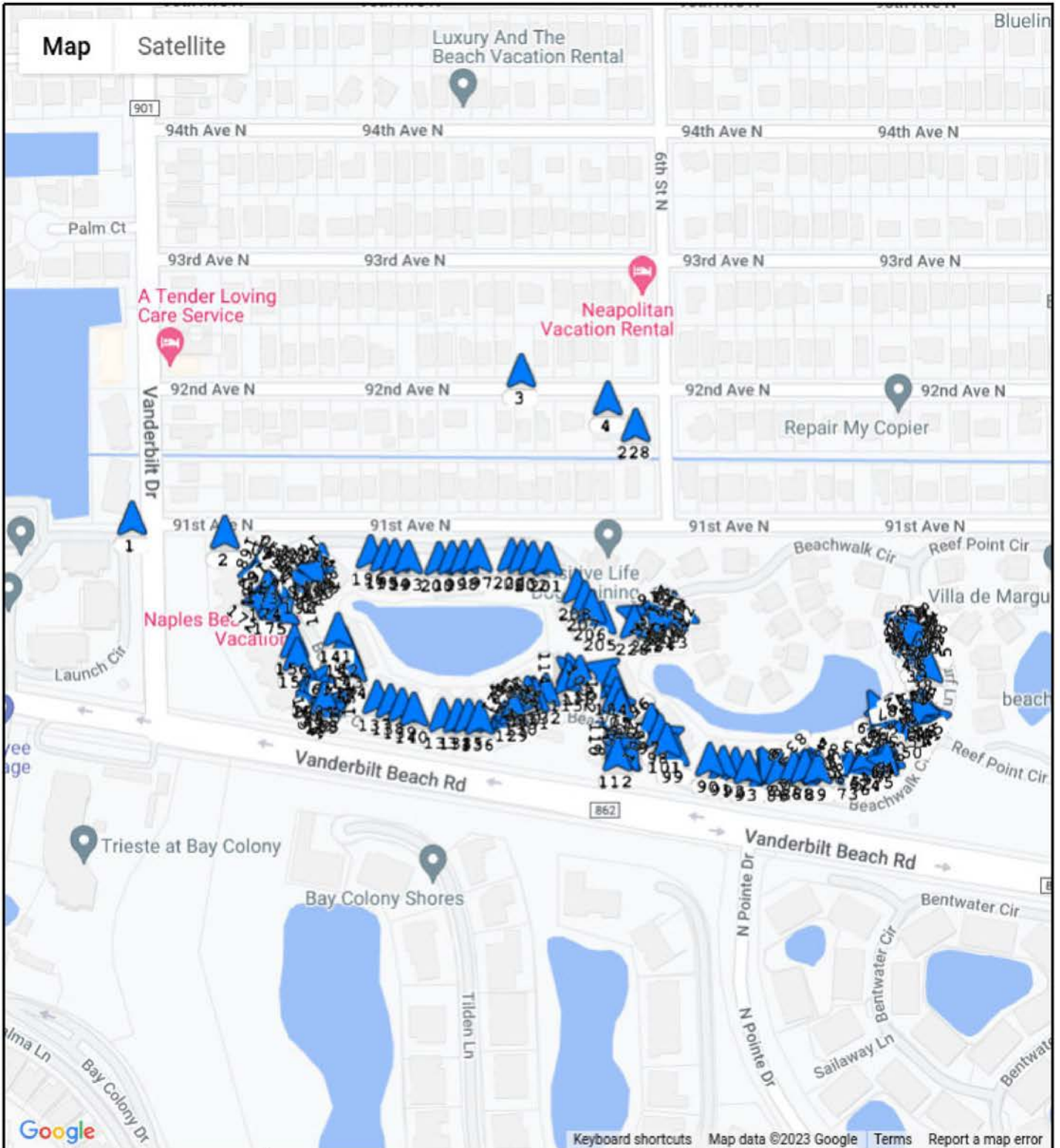
**OBSERVATION:** The visual survey of items, systems, conditions, or components that are readily accessible and easily visible during a walk-through survey of the subject property.



# Exhibit 2


Photo Exhibits







	Project Name: [REDACTED] Carport Roofs	
	Project Location: [REDACTED] Naples, FL 34108, USA	
	Client: N/A	Project Code: [REDACTED]
	Preparer: MTM	Reviewer: MTM
	Report Date: 1 [REDACTED] 2023	Page Number: 1 of 115





	Picture 1: Aerial view
	Lat: 26.25429 Long: -81.81732 Bearing: N Date Taken: 10/05/2023 Weather: Sunny Taken By: Matthew Mullins Tags: Property Overviews

	Picture 2: Aerial view
	Lat: 26.25419 Long: -81.81659 Bearing: N Date Taken: 10/05/2023 Weather: Sunny Taken By: Matthew Mullins Tags: Property Overviews


	Project Name: ██████████ Carport Roofs	
	Project Location: ██████████ Naples, FL 34108, USA	
	Client: N/A	Project Code: ██████████
	Preparer: MTM	Reviewer: MTM
	Report Date: ██████████ 2023	Page Number: 2 of 115


	Picture 5: Overview
	Lat: 26.25339 Long: -81.81109 Bearing: W Date Taken: 10/05/2023 Weather: Partly cloudy Taken By: Matthew Mullins Tags: A-661


	Picture 6: perimeter panels are 2' high
	Lat: 26.25343 Long: -81.81120 Bearing: NW Date Taken: 10/05/2023 Weather: Partly cloudy Taken By: Matthew Mullins Tags: A-661

	Project Name: ██████████ Carport Roofs	
	Project Location: ██████████ Naples, FL 34108, USA	
	Client: N/A	Project Code: ██████████
	Preparer: MTM	Reviewer: MTM
	Report Date: ██████████	Page Number: 4 of 115



	Picture 7: signs of water intrusion through the panels.
	Lat: 26.25350 Long: -81.81114 Bearing: NE Date Taken: 10/05/2023 Weather: Partly cloudy Taken By: Matthew Mullins Tags: A-661


	Picture 8: signs of water intrusion through the panels.
	Lat: 26.25357 Long: -81.81116 Bearing: SE Date Taken: 10/05/2023 Weather: Partly cloudy Taken By: Matthew Mullins Tags: A-661


	Project Name: ██████████ Carport Roofs	
	Project Location: ██████████ Naples, FL 34108, USA	
	Client: N/A	Project Code: ██████████
	Preparer: MTM	Reviewer: MTM
	Report Date: ██████████/2023	Page Number: 5 of 115





	Picture 141: Carport aerial view
	Lat: 26.25351 Long: -81.81571 Bearing: N Date Taken: 10/05/2023 Weather: Sunny Taken By: Matthew Mullins Tags: M

	Picture 142: Carport aerial view
	Lat: 26.25341 Long: -81.81566 Bearing: N Date Taken: 10/05/2023 Weather: Sunny Taken By: Matthew Mullins Tags: M

	Project Name: [REDACTED] Carport Roofs	
	Project Location: [REDACTED] Naples, FL 34108, USA	
	Client: N/A	Project Code: [REDACTED]
	Preparer: MTM	Reviewer: MTM
	Report Date: [REDACTED] 2023	Page Number: 72 of 115

	Picture 151: overview
	Lat: 26.25307 Long: -81.81576 Bearing: W Date Taken: 10/05/2023 Weather: Overcast Taken By: Matthew Mullins Tags: N-592


	Picture 152: overview
	Lat: 26.25304 Long: -81.81573 Bearing: NE Date Taken: 10/05/2023 Weather: Overcast Taken By: Matthew Mullins Tags: N-592

	Project Name: ██████████ Carport Roofs	
	Project Location: ██████████ Naples, FL 34108, USA	
	Client: N/A	Project Code: ██████████
	Preparer: MTM	Reviewer: MTM
	Report Date: ██████████ 2023	Page Number: 77 of 115




	Picture 179: puncture
	<p>Lat: 26.25396</p> <p>Long: -81.81591</p> <p>Bearing: SE</p> <p>Date Taken: 10/05/2023</p> <p>Weather: Patchy rain possible</p> <p>Taken By: Matthew Mullins</p> <p>Tags: P-589</p>


	Picture 180: puncture
	<p>Lat: 26.25397</p> <p>Long: -81.81591</p> <p>Bearing: N</p> <p>Date Taken: 10/05/2023</p> <p>Weather: Patchy rain possible</p> <p>Taken By: Matthew Mullins</p> <p>Tags: P-589</p>

	Project Name: [REDACTED] Carport Roofs	
	Project Location: [REDACTED] Naples, FL 34108, USA	
	Client: N/A	Project Code: [REDACTED]
	Preparer: MTM	Reviewer: MTM
	Report Date: [REDACTED]/2023	Page Number: 91 of 115





	Picture 181: overview
	Lat: 26.25392 Long: -81.81590 Bearing: NE Date Taken: 10/05/2023 Weather: Patchy rain possible Taken By: Matthew Mullins Tags: P-589

	Picture 182: overview
	Lat: 26.25392 Long: -81.81590 Bearing: N Date Taken: 10/05/2023 Weather: Patchy rain possible Taken By: Matthew Mullins Tags: P-589

	Project Name: ██████████ Carport Roofs	
	Project Location: ██████████ Naples, FL 34108, USA	
	Client: N/A	Project Code: ██████████
	Preparer: MTM	Reviewer: MTM
	Report Date: ██████████/2023	Page Number: 92 of 115

	Picture 183: overview
	<p>Lat: 26.25392</p> <p>Long: -81.81590</p> <p>Bearing: NW</p> <p>Date Taken: 10/05/2023</p> <p>Weather: Patchy rain possible</p> <p>Taken By: Matthew Mullins</p> <p>Tags: P-589</p>

	Picture 184: overview
	<p>Lat: 26.25392</p> <p>Long: -81.81590</p> <p>Bearing: W</p> <p>Date Taken: 10/05/2023</p> <p>Weather: Patchy rain possible</p> <p>Taken By: Matthew Mullins</p> <p>Tags: P-589</p>

	Project Name: ██████████ Carport Roofs	
	Project Location: ██████████ Naples, FL 34108, USA	
	Client: N/A	Project Code: ██████████
	Preparer: MTM	Reviewer: MTM
	Report Date: ██████████/2023	Page Number: 93 of 115



Picture 187: view through gutter outlet- (2) 2x7 aluminum beams

Lat: 26.25396

Long: -81.81591

Bearing: NW

Date Taken: 10/05/2023

Weather: Overcast

Taken By: Matthew Mullins

Tags: P-589



Picture 188: stucco corner bead replacement in progress

Lat: 26.25398

Long: -81.81593

Bearing: N

Date Taken: 10/05/2023

Weather: Overcast

Taken By: Matthew Mullins

Tags: P-589



Project Name: [REDACTED] Carport Roofs

Project Location: [REDACTED] Naples, FL 34108, USA

Client: N/A

Project Code: [REDACTED]

Preparer: MTM

Reviewer: MTM

Report Date: [REDACTED] 2023

Page Number: 95 of 115