KARINS ENGINEERING GROUP, INC.

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Sarasota, FL 34236
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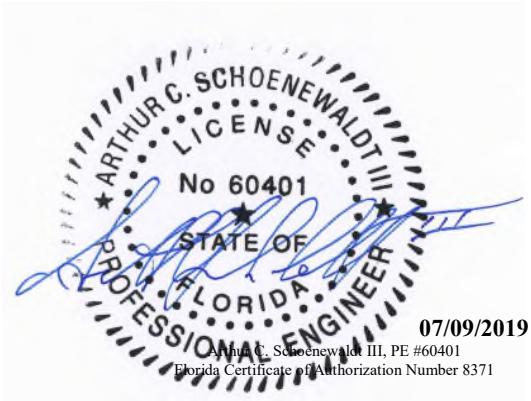
TURNOVER STUDY

KEG File: 19RS-0128
July 9, 2019

For:

Watercrest Community Association, Inc.
19360 Nearpoint Drive
Venice, FL 34292



07/09/2019
Arthur C. Schoenewaldt III, PE #60401
Florida Certificate of Authorization Number 8371

KARINS ENGINEERING GROUP, INC.

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July 9, 2019

Mr. Bill Isenstein
Watercrest Community Association, Inc.
Venice, FL 34292

Via Email: bill.isenstein@gmail.com

RE: Watercrest Community Association, Inc.
KEG Project No. 19RS-0128
Professional Engineering Services – Association Turnover Report

Dear Mr. Isenstein and Board of Directors:

In accordance with our agreement dated February 18, 2019 and authorized on March12, 2019, **Karins Engineering Group, Inc. (KEG)** visited the ***Watercrest Community Association, Inc.*** to identify deficiencies of the existing conditions at Ten Residential Villa Buildings, Exercise Room/Clubhouse and the Association common elements. Our observations were limited to visible surfaces of accessible interior and exterior components. Neither our observations nor this report is intended to cover hidden defects, mechanical, electrical, architectural features, code compliance, or other areas of the building not specifically mentioned.

Due to the limited scope of this investigation, we cannot attest to the structure's compliance with building codes or accepted construction techniques, except as noted herein. This report is prepared for the sole benefit of the Client. Any unauthorized use without our permission shall result in no liability or legal exposure to Karins Engineering Group, Inc.

GENERAL INFORMATION

We understand the buildings consist of a combination of concrete columns, beams, and masonry units. The roofs consist of tile over sheathing over trusses. The common elements include painting, roofs, pool, equipment, guardhouse, pavement & parking, drainage, turf area, pond, and entry gates.

The intent of this review and turnover report is to verify general conformance to the *Project drawings and specifications;* to provide our professional opinion of the condition of the structures, roof, pavement and parking areas and painting systems of the residential villa buildings and the other common elements to verify general conformance to the manufacturers' installation specifications and details.

Documents provided for review:

- A set of architectural, structural, mechanical, electrical, and plumbing drawings for the clubhouse by BSB Design dated 6/27/16.
- A site plan for the amenity area by AM Engineering, Inc. dated 5/2/14.
- Easements for Access, Utilities, Sewer and Sign Easement
- First Amendment to the Access, Utilities, Sewer and Sign Easement
- Drainage Easement
- First Amendment to the Drainage Easement
- Second Amendment to the Drainage Easement
- Landscape Easement

- Guardhouse construction plans with MEP by BSB Design dated 3/15/16.
- Storm water management plan, paving, grading and drainage plans by AM Engineering, Inc. dated 4/10/14.
- Phase I Utility record drawings by AM Engineering, Inc. dated 4/28/14.
- Phase II Utility record drawings by AM Engineering, Inc. dated 6/23/15.
- Swimming pool construction plans by Crest Engineering of Sarasota, LLC dated 5/26/16.
- Precast concrete fence plans by Osborn Sharp Associates dated 5/3/16.
- Supplier information for the pavers, aluminum fence, and PVC fence.
- Correspondence concerning the paving schedule.
- Photos of the paving in progress on 8/15/18.
- Lot Drainage Plan by Banks Engineering dated 5/1/18

We did not attempt to verify the as-built condition, code compliance or the adequacy of the original design, except as specifically referenced herein. The ***Florida Building Code 5th Edition (2014)*** was in effect at the time of construction and used for reference in this report.

EXECUTIVE SUMMARY

KEG observations of deficiencies are listed as Exterior Observations below. Items that were not noted as a concern are not included in this report.

Our findings, as listed, and include identification of deficiencies and a discussion regarding the nature of the observed deficiency. The safety issues and hazards should be addressed as soon as possible. The items listed are found throughout the Project, and should be considered typical for this Project, unless otherwise designated by specifics.

EXTERIOR OBSERVATIONS

Construction defects consisting of code and/or plan compliance concerns were noted. These deficiencies are not commonly found on a Project of this age.

1. Hazards
2. Sealants
3. Coatings
4. Drainage and Grade
5. Asphalt Pavement
6. Concrete
7. Mechanical - AC

Items of workmanship and/or maintenance concern were also noted and are included in this report.

KEG did not observe any apparent issues with the storm sewer system. The Owners may elect to set up a regular maintenance plan involving camera scans of the storm sewer system.

1. Hazards; Trip Hazard At Pool Paver And At The Entrance Pavers

CODE
Trip Hazard
Ground and floor surfaces **ADA Chapter 4, 4.5.2**,
4.5.2 Changes in Level. Changes in level up to 1/4 in (6 mm) may be vertical and without edge treatment. Changes in level between 1/4 in and 1/2 in (6 mm and 13 mm) shall be beveled with a slope no greater than 1:2. Changes in level greater than 1/2 in (13 mm) shall be accomplished by means of a ramp that complies with 4.7 or 4.8.

PLAN
The supplied pool plans do not provide the tile or paver shop drawings or details listing the ADA.
The entrance details are found on the site plan page 7G.

Commentary: pavers, tile, and any uneven walk surfaces should be installed to minimize level changes resulting in trip hazards, including the pool areas.

Reference Photos 12, 13, 14, 78

2. Sealants (Caulk), Missing, Improper Application At Window And Door Perimeters

CODE ISSUE
SECTION 1401 GENERAL
1401.1 Scope. The provisions of this chapter shall establish the minimum requirements for exterior walls, exterior wall coverings, exterior wall openings, exterior windows and doors, architectural trim, balconies and similar projections, and bay and oriel windows.
1403.1 General. The provisions of this section shall apply to exterior walls, wall coverings and components thereof.
1403.2 Weather protection. Exterior walls shall provide the building with a weather-resistant exterior wall envelope. The exterior wall envelope shall include flashing, as described in Section 1405.4. The exterior wall envelope shall be designed and constructed in such a manner as to prevent the accumulation of water within the wall assembly by providing a water-resistive barrier behind the exterior veneer, as described in Section 1404.2 and a means for draining water that enters the assembly to the exterior. All exterior finishes shall be applied in accordance with the manufacturer's specifications or installation instructions. Protection against condensation in the exterior wall assembly shall be provided in accordance with Section 1405.3.

ASTM C-1063, A2. Design Considerations. A2.1.3 Provide for sealing or caulking of V-grooves, exposed ends and edges of plaster panels exterior work to prevent entry of water.

PLAN – no plan details were found.

Commentary: The improper sealant joint configurations do not comply with the referenced design considerations to prevent entry of water. The industry standard for application of sealants requires that the sealant material be no less than ¼" thick at each surface. This would provide a minimum ½" face width on all caulk/sealant joints. In addition, an area of separation (to receive the sealant) between the perimeters and the stucco or trim is required. Window and door frames exhibit minimal or improper sealant application at their perimeters. This will allow water intrusion into the structure and building interior.

The hairline cracks at the stucco surfaces should be addressed as part of the repainting Project.

This condition appears to be systemic throughout the Project.

Reference Photos 101, 102, 103

3. Coatings (paint); Hairline Cracks At Building Exterior Walls

CODE ISSUE
Chapter 14 Exterior Walls
SECTION 1401 GENERAL
1401.1 Scope. The provisions of this chapter shall establish the minimum requirements for exterior walls, exterior wall coverings, exterior wall openings, exterior windows and doors, architectural trim, balconies and similar projections, and bay and oriel windows.
1403.1 General. The provisions of this section shall apply to exterior walls, wall coverings and components thereof.
1403.2 Weather protection. Exterior walls shall provide the building with a weather-resistant exterior wall envelope. The exterior wall envelope shall include flashing, as described in Section 1405.4.

PLAN – no plan details were found.

Commentary; The conditions of the observed coatings indicate it is near the end of its useful expected life. A repaint Project should be scheduled accordingly. All exterior finishes shall be applied in accordance with the manufacturer's specifications or installation instructions.

Manufacturer’s preparation and application specifications should be followed.

Maintenance Note; the access control panel post requires painting.

This condition appears to be systemic throughout the Project.

Reference Photos 64, 94, 95, 96, 97, 99, 100,105

4. Drainage and Grade; Improper Slope At Swales Between Buildings

CODE ISSUE
1804.3 Site grading.
The ground immediately adjacent to the foundation shall be sloped away from the building at a slope of not less than one unit vertical in 20 units horizontal (5-percent slope) for a minimum distance of 10 feet (3048 mm) measured perpendicular to the face of the wall. If physical obstructions or lot lines prohibit 10 feet (3048 mm) of horizontal distance, a 5-percent slope shall be provided to an approved alternative method of diverting water away from the foundation. Swales used for this purpose shall be sloped a minimum of 2 percent where located within 10 feet (3048 mm) of the building foundation. Impervious surfaces within 10 feet (3048 mm) of the building foundation shall be sloped a minimum of 2 percent away from the building.

Exception: Where climatic or soil conditions warrant, the slope of the ground away from the building foundation shall be permitted to be reduced to not less than one unit vertical in 48 units horizontal (2-percent slope).

The procedure used to establish the final ground level adjacent to the foundation shall account for additional settlement of the backfill.

Chapter 15 Section 1503 (6) Protection against decay and termites
Condensate lines and roof downspouts shall discharge at least 1 foot (305 mm) away from the structure sidewall, whether by underground piping, tail extensions, or splash blocks. Gutters with downspouts are required on all buildings with eaves of less than 6 inches (152 mm) horizontal projection except for gable end rakes or on a roof above another roof.

PLAN
The supplied site plans provide the elevations to be followed with an example shown at Page 8E, Detail TT/7E-8E and sheet 1 of the Banks Engineering plans, Section A-A.

Commentary: the plans show 10’ minimum building separation and a 1 in 6 slope starting at six inches below the finished floor.

Standing water from downspouts, irrigation lines, and A/C condensate lines causes erosion of soils, uncontrolled water causes moisture intrusion into exterior walls, damaging interior and exterior finishes, contributing to the growth of mold.

The lack of proper grade away from the structures appears at a majority of the observed locations. The Owners may elect to have a survey performed to confirm the quantities and locations of all of the improper grade locations between the buildings.

The Landscape Contractors Association standard for grade tolerance should also be followed.

Reference Photos 88, 124, 126, 127

5. Asphalt Pavement; Deterioration and Cracks

PLAN
The provided site plans "paving, grading and drainage" address all the paving details, reference pages 7G and 8A.

ASPHALT PAVEMENT DETAIL

1- ASPHALTIC CONCRETE WEARING SURFACE 1" THICK, TYPE S-3 (SCTP-331)
2- ASPHALTIC CONCRETE WEARING SURFACE 2" THICK, TYPE S-1
3- BITUMINOUS PRIME COAT
4- BASE ALTERNATES - 7" THICK CRUSHED CONCRETE (SCTP-204) OR
6" CEMENT STABILIZED BASE (SCTP-270)
5- STABILIZED SUBGRADE- 8" THICK (MINIMUM LBR 40) (SCTP-160) COMPACTED TO 98% DENSITY AASHTO T-180, MODIFIED PROCTOR. SUBGRADE SHALL BE FIRM AND UNYIELDING AND CONTAIN NO ORGANIC MATERIAL IN THE TOP 6".

PAVEMENT NOTES
1. THE ENGINEER OF RECORD HAS DETERMINED THAT THE SUB-BASE, BASE AND SURFACE COURSE SPECIFIED FOR ON-SITE PAVING IS SATISFACTORY FOR THE USE INTENDED.
2. ALL PAVEMENT MARKINGS SHALL BE "ALKYD THERMOPLASTIC" 90 MILS IN THICKNESS, EXCEPT FOR STRIPING OF PARKING SPACES WHICH SHALL BE PAINTED.
3. A TWO FOOT WIDE STRIP OF SOD IS TO BE PROVIDED BEHIND ALL CURBS AND PAVEMENT EDGES. SOD OR GRASSING/MULCHING SHALL BE PROVIDED FOR ALL OTHER OPEN AREAS UNLESS NOTIFIED OTHERWISE ON LANDSCAPE PLANS.

Reference: the American Association of State Highway and Transportation Officials (AASHTO), Asphalt Institute, D.O.T. and the Foundation for Pavement Preservation

Commentary: The general condition observed is not normal for this age asphalt.
The transverse asphalt cracking at Watercrest appears to be due to premature cooling of the hot asphalt, which happens when the outside air temperature cools down too fast, preventing the new hot asphalt from cooling naturally. This premature cooling causing the binder to harden thus leading to surface cracks.

The cracks Karins observed are less than 3 mm. These cracks should receive a good quality crack filler to prevent water intrusion. We suggest the Client monitors them and if they don't get any larger over the next 12 months, this may not be a major problem. If the cracks widen to greater than the 3mm thickness, then the cracks should be addressed.

Based on the month and day the asphalt was installed in the areas where cracks appear, the weather was reported as rain after the paving resulting rapidly cooling temperatures.

Recommended maintenance includes sealing at five-year intervals to minimize the raveling. The areas of improper slope should be addressed.

The asphalt paving should also comply with the FDOT 2014 Standard Specifications for Road and Bridge Construction.

The AASHTO Standard Specifications and Supplement recommendations for paving tolerances should be followed.

This condition appears to be systemic throughout the Project.

Reference Photos 55, 57, 58, 60, 59, 87, 90, 110, 111, 112, 113,114, 115, 116, 117, 118, 119, 120, 121, 122

Asphalt Testing Lab Results
Testing was performed by Terracon, 8260 Vico Ct., Unit B I, Sarasota, Florida 34240

KEG reviewed the Terracon Construction Materials Testing Services report dated 4/18/19 concerning the results of the analysis of twelve sample cores taken at the Project site.

The results indicate areas where the cement stabilized base thickness is below the standard and the site plan requirements, pages 7G and 8A.

The report also indicates the asphalt thickness below the specified 1.5-inch thickness at one of the core samples.

Commentary: The Owners may elect to have additional samples taken. Once the asphalt system is in place there is no simple way to correct the base and thickness issues. Based on these findings, the paving does not comply with the specifications as outlined in the plans.

6. Concrete; Cracks And Deterioration; Various Locations.
There is a crack at the guardhouse door slab along with cracks at sidewalks and curbs.

CODE ISSUE
1901.1 Scope.
The provisions of this chapter shall govern the materials, quality control, design and construction of concrete used in structures.

1901.2 Plain and reinforced concrete.
Structural concrete shall be designed and constructed in accordance with the requirements of this chapter and ACI 318 as amended in Section 1905 of this code. Except for the provisions of Sections 1904 and 1907, the design and construction of slabs on grade shall not be governed by this chapter unless they transmit vertical loads or lateral forces from other parts of the structure to the soil.

ACI 318, Building Code Requirements for Structural Concrete and Commentary. The code portion of this document covers the design and construction of structural concrete used in buildings and where applicable in non-building structures.

PLAN
Reference the provided plan page 7G for the concrete curbs and entrance and page 7H for the sidewalks details.

Commentary: The cracking of the concrete may the result of a failure to follow the code adopted standards for finishing, curing and jointing the concrete, along with design and control of concrete mixtures and/or construction traffic damage. The sidewalk finish varies greatly and some sections appear to have been rained on before setting. The finishes should comply with ACI-318.

The broken curb areas should be replaced. It appears that a majority of the curb damage is likely caused by construction and roll off dumpsters.

All cracked areas of concrete should be addressed.

Moisture intrusion into the concrete may cause reinforcement within the concrete to rust. This rust will cause cracking and spalling of concrete. The moisture intrusion will shorten the expected useful life of the concrete.

The concrete pre-cast walls at the Project perimeter should have all cracks filled to prevent moisture intrusion into the wall structure.

This condition appears to be systemic throughout the Project.

Reference Photos 56, 57, 62, 77, 78, 86, 89, 130

7. Mechanical (Air Conditioning); Improper Condenser Tie Down Fasteners

CODE
Section 2801 General
Paragraph 2801.1 Scope "Mechanical appliances, equipment and systems shall be constructed, installed and maintained in accordance with the International Mechanical Code and the International Fuel Gas Code. Masonry chimneys, fireplaces and barbecues shall comply with the International Mechanical Code and Chapter 21 0f this code."
Reference: International Mechanical Code, FBC Mechanical Code.

301.15 Wind resistance.
Mechanical equipment, appliances and supports that are exposed to wind shall be designed and installed to resist the wind pressures determined in accordance with the Florida Building Code, Building.

1506.6 Screws.
Wood screws conform to ANSI/ASME B 18.6.1. Screws shall be corrosion resistant by coating, galvanization, stainless steel, nonferrous metal or other suitable corrosion-resistant material. The corrosion resistance shall be demonstrated through one of the following methods:

1. Corrosion resistance equivalent to ASTM A 641, Class 1; or
2. Corrosion resistance in accordance with TAS114, Appendix E; or
3. Corrosion resistant coating exhibiting not more than 5-percent red rust after 1000 hours exposure in accordance with ASTM B 117.

PLAN
The supplied amenity plans, page M2.1 requires all screws to be stainless steel.

Commentary:
The AC condenser tie downs should be connected with non-ferrous fasteners. When the fasteners corrode they lose the integrity to perform as designed. The air born condensers can cause a lot of damage during a high wind event.

This condition appears to be systemic throughout the Project.

Reference Photos 51, 104, 106

WORKMANSHIP

Gates and Fence/Railings; Improper Post Pockets at Pool Gate; the gateposts at the pool area are mounted with improperly filled post pockets. This will reduce the useful life expectancy of the posts and the concrete slabs. The loose posts will affect the gate performance. The gates should be maintained as functional.
Many areas of loose railing pickets were observed.
Photos 39, 42

Thresholds; The clubhouse restrooms have improperly installed thresholds. They should be installed in a bed of sealant with the proper non-ferrous fasteners.
Photos 27, 31

Fasteners; The fasteners and fixtures used for exterior exposure should be nonferrous. Corroded items stain adjacent areas and do not perform as designed. The decreased life expectancy of the ferrous fasteners will result in increased maintenance for the Owners.
This condition is also found at the mailbox stands.
Photo 53

Deco Drain; the deco drain at the pool area has open joints and broken areas that should be addressed before they become a hazard and liability to the Owners.
Photos 8, 9, 10, 11

Trim; the trim boards at the "green" area have open joints and ferrous fasteners which will become a maintenance issue and shorten the expected useful life of the structure. .
Photo 15, 16, 17

Timer; the timer at the pool equipment area should be labelled for safety.
Photo 47

Erosion; the erosion at the pool equipment area and by unit 9855 should be addressed.
Photos 43, 48, 83

Post; there is a leaning signpost at Haze Drive that should be straightened.
Photo 91

Pond & Wetland; appears in good/average condition. A maintenance contract should be in place.
Photos 109, 98

KEG RECOMMENDATIONS

The priority should be the trip hazard or safety issue at the pool area, which is a liability concern.

All plan deviations should be brought into compliance and code violation issues corrected.

The workmanship and maintenance items should be addressed.

Based on the observations as noted above, it is the recommendation of Karins Engineering Group, Inc. that **Watercrest** requires some remediation work focusing on the building envelopes to prevent moisture intrusion, including application of new exterior coatings (paint) and sealants. There are also concrete and paving issues that should be addressed.

KEG recommends the building envelope should be weatherproofed by applying sealants and painting to seal the building envelope every seven to ten years, depending on the coatings used.

This report is prepared for the sole benefit of the Client. Any unauthorized use without our permission shall result in no liability or legal exposure to Karins Engineering Group, Inc.

We trust this information is helpful. Should questions arise, please do not hesitate to call.

Sincerely,
Karins Engineering Group, Inc.

ARTHUR C. SCHOENEWALD III
GENERAL
No 60401
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

07/09/2019
Arthur C. Schoenewald III, P.E.
FL Reg. #60401
Director of Restoration

Attachment: Photo Exhibit (68) Pages
Terrcaon Test Report (7) pages

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PHOTO EXHIBIT
WATERCREST

The photos included are representative sample of conditions found throughout the project, unless otherwise designated by specifics.

Photo 1- clubhouse

Photo 2- clubhouse

Photo 3- clubhouse wall light

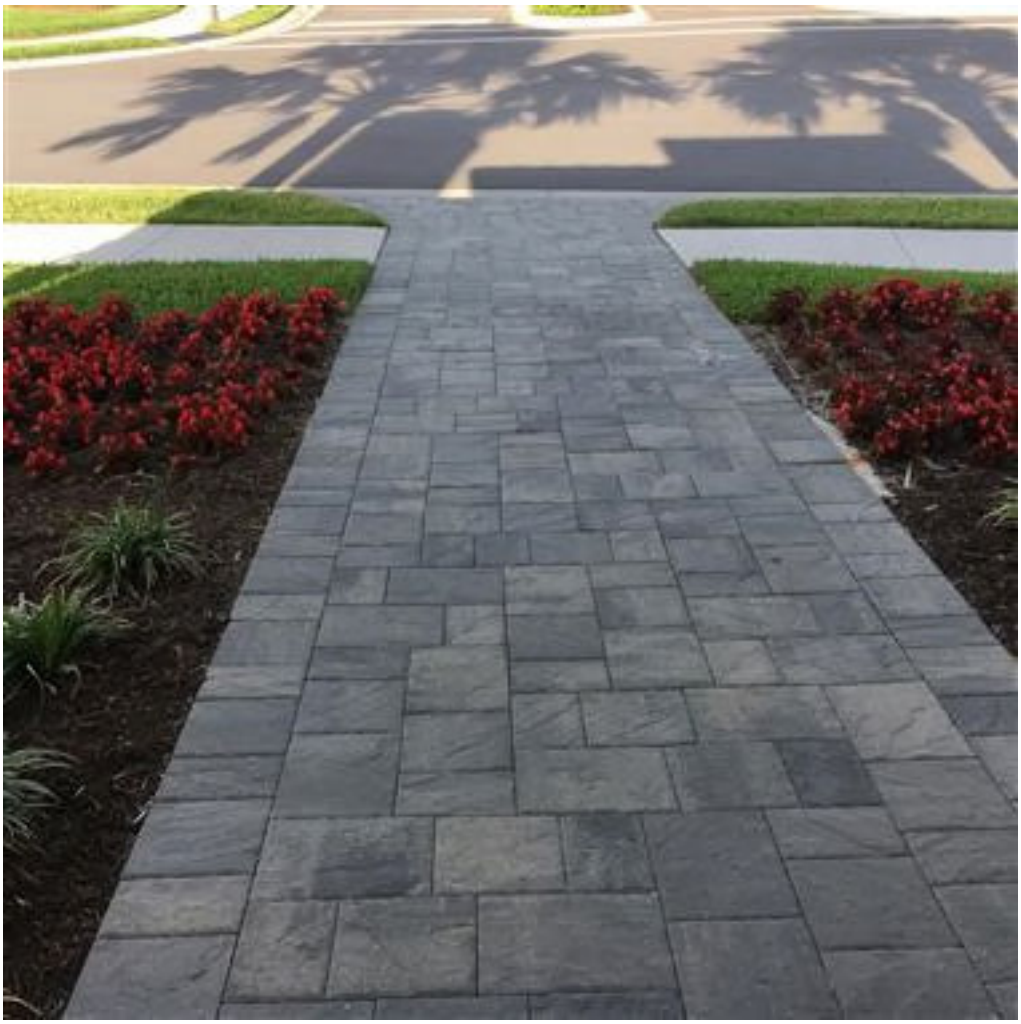


Photo 4- pavers

Photo 5- sidewalk

Photo 6- clubhouse shutters

Photo 7- pool gate

Photo 8- pool pavers

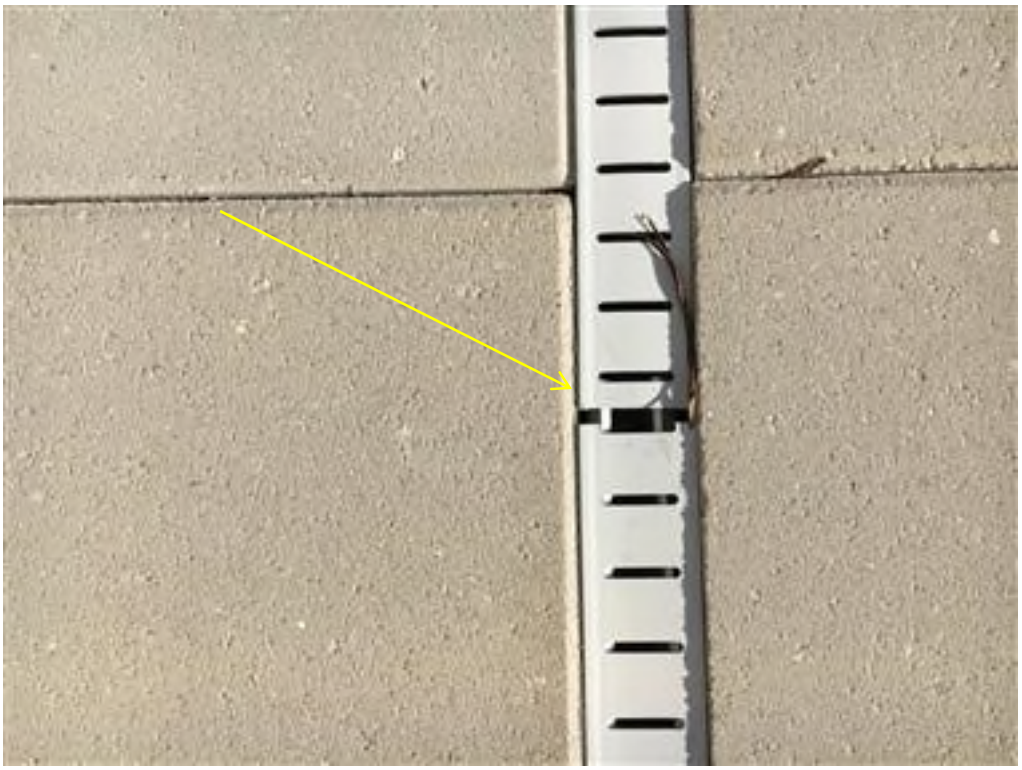


Photo 9- pool deco drain

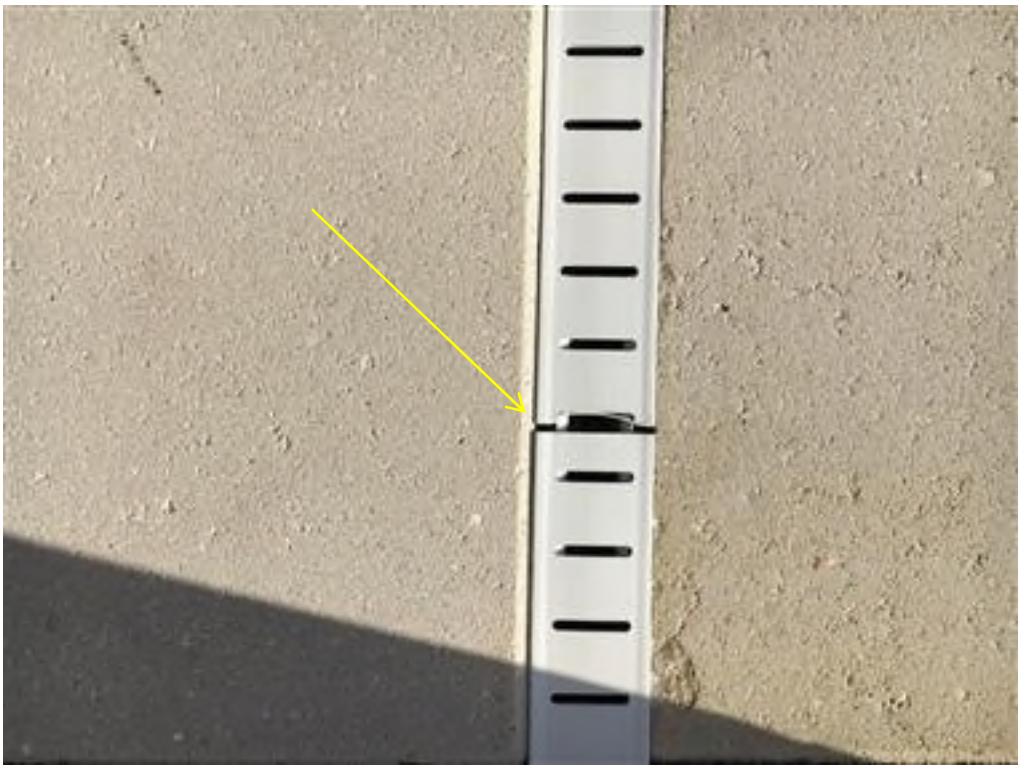


Photo 10- pool deco drain

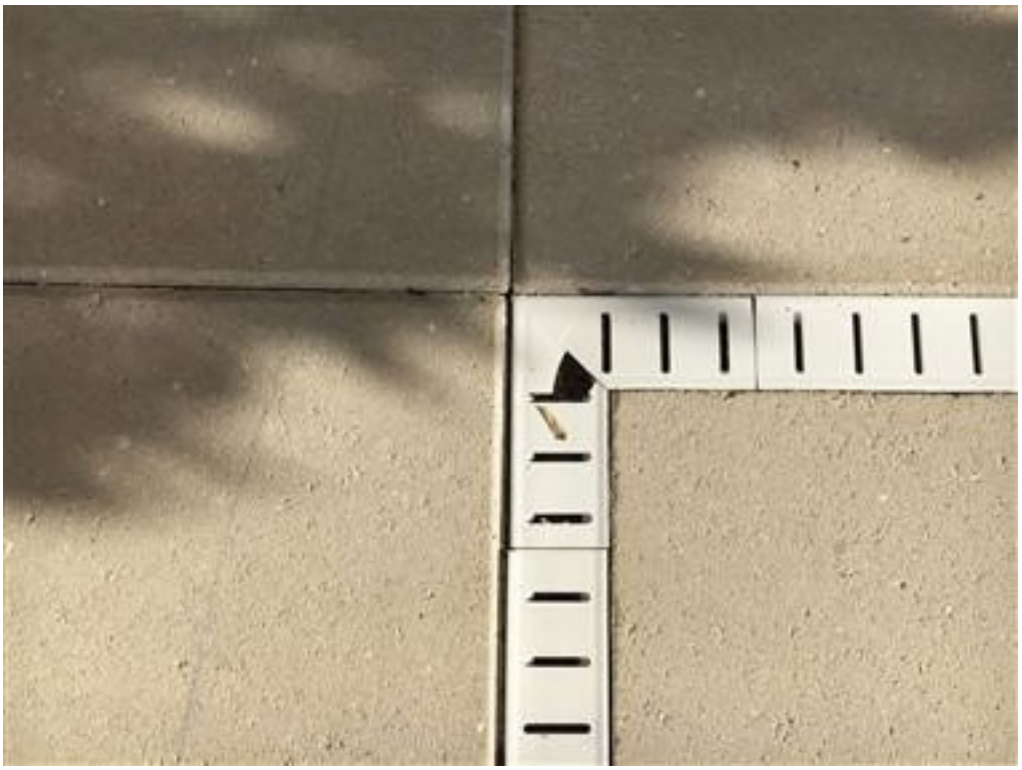


Photo 11- pool deco drain

Photo 12- pool pavers

Photo 13- pool pavers

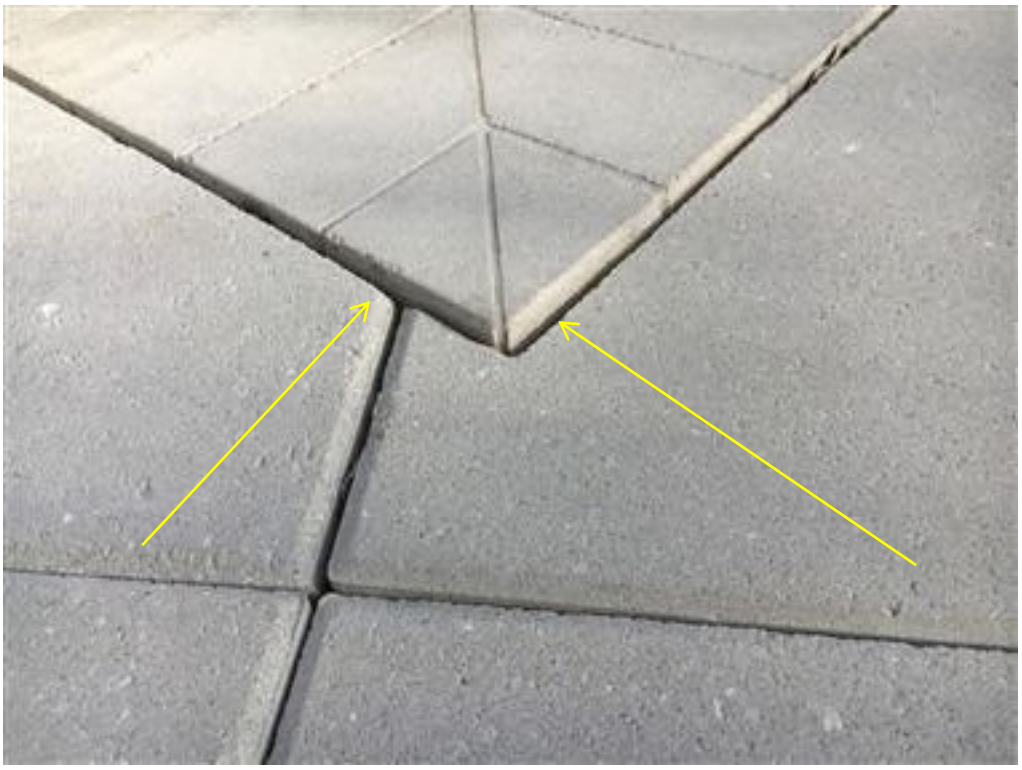


Photo 14- pool pavers

Photo 15- green

Photo 16- green area trim

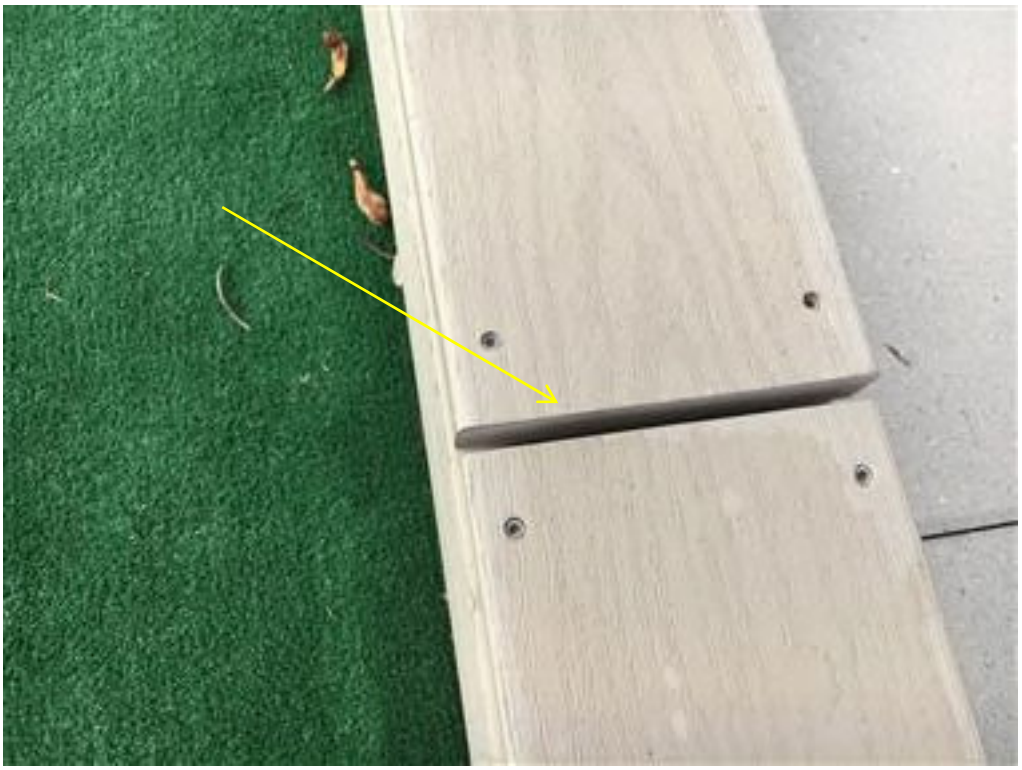


Photo 17- green area trim

Photo 18- pool area

Photo 19- swimming pool

Photo 20- pool area

Photo 21- pool area

Photo 22- - pool area

Photo 23- pool area

Photo 24- pool area

Photo 25- pool area restroom

Photo 26- pool area restroom

Photo 27- pool area restroom

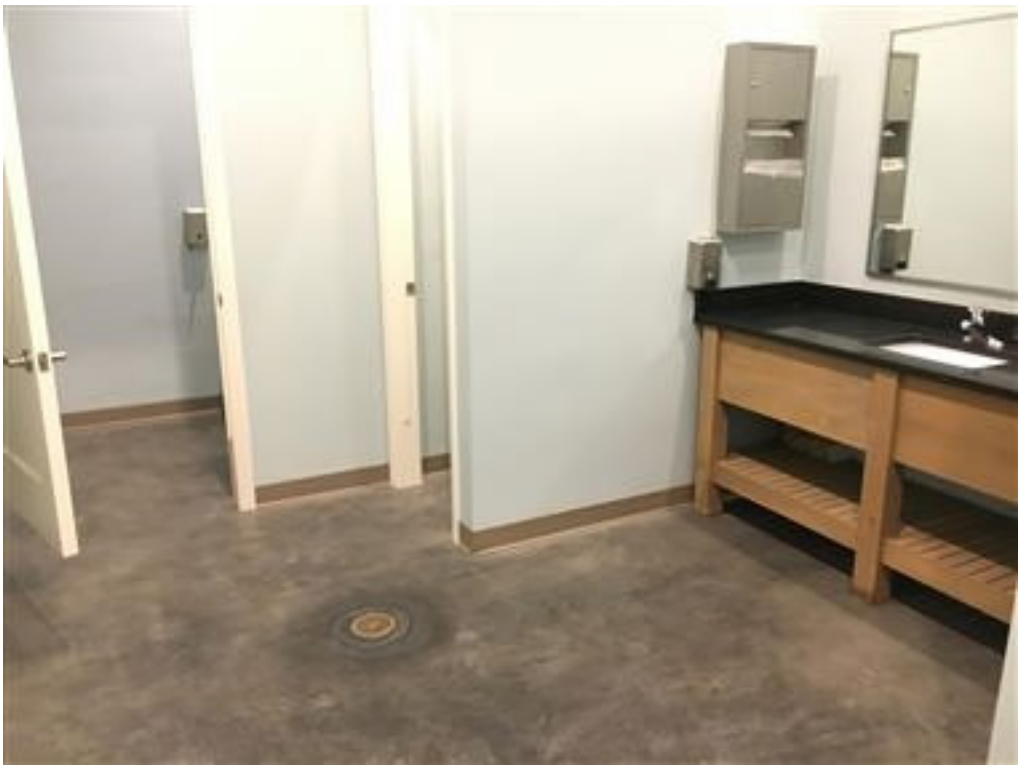


Photo 28- pool area restroom

Photo 29- pool area restroom

Photo 30- pool area restroom

Photo 31- pool area restroom

Photo 32- pool area

Photo 33- pool area

Photo 34- exercise room

Photo 35- exercise room

Photo 36- exercise room

Photo 37- exercise room

Photo 38- exercise room

Photo 39- gate post pocket

Photo 40- exercise room

Photo 41- electrical panel

Photo 42-aluminium pool fence

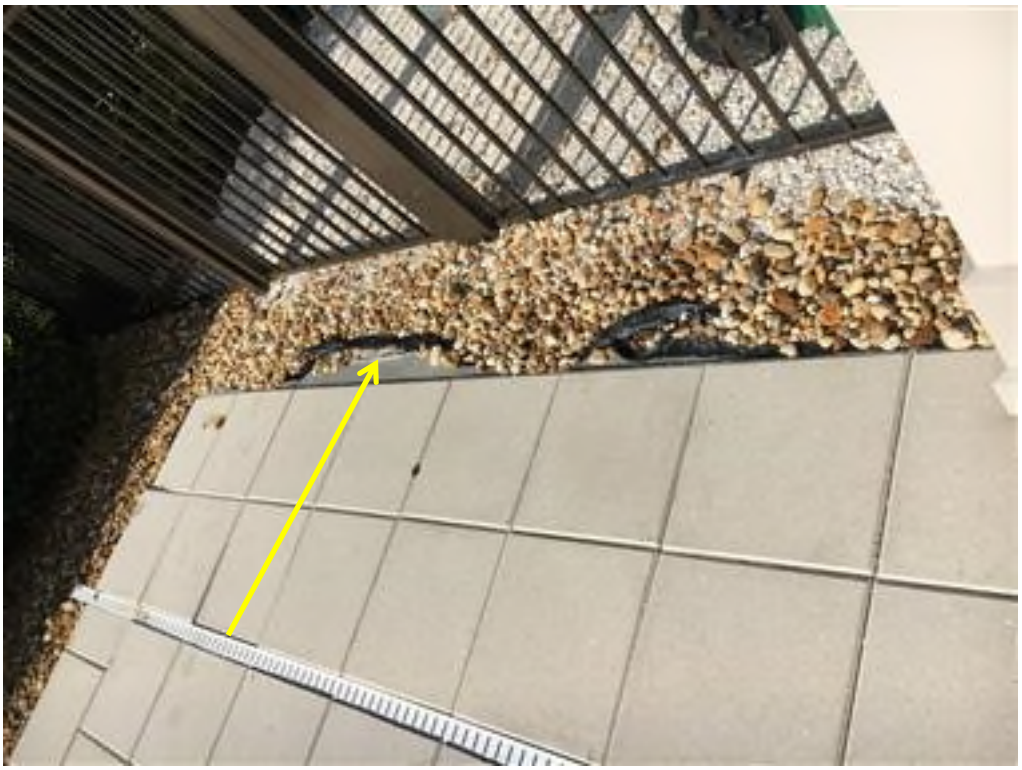


Photo 43- erosion

Photo 44- pool equipment

Photo 45- pool equipment

Photo 46- pool equipment

Photo 47- timer

Photo 48- erosion at equipment area

Photo 49- pool equipment

Photo 50- pool equipment

Photo 51- AC tie down

Photo 52- mailboxes

Photo 53- mailbox fasteners

Photo 54- asphalt parking

Photo 55- asphalt parking, curb

Photo 56- curb

Photo 57- asphalt parking and curb

Photo 58- asphalt parking

Photo 59- asphalt parking

Photo 60- asphalt parking and curb

Photo 61- fire hydrant

Photo 62- sidewalk near clubhouse

Photo 63- street light

Photo 64- rusted fasteners

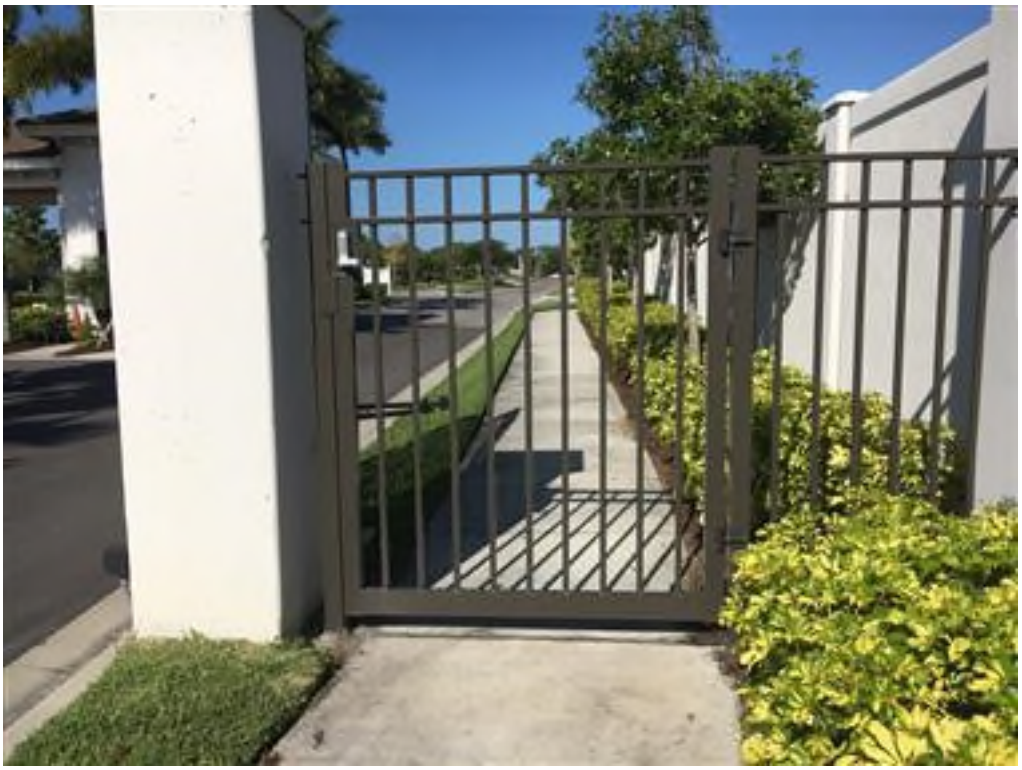


Photo 65- pedestrian gate

Photo 66- gate operator

Photo 67- entry

Photo 68- perimeter wall

Photo 69- guardhouse

Photo 70- guardhouse

Photo 71- guardhouse pavers

Photo 72- guardhouse pavers

Photo 73- access control

Photo 74- guardhouse

Photo 75- guardhouse AC

Photo 76- guardhouse

Photo 77- guardhouse concrete

Photo 78- pavers and concrete at entry gate

Photo 79- typical sign

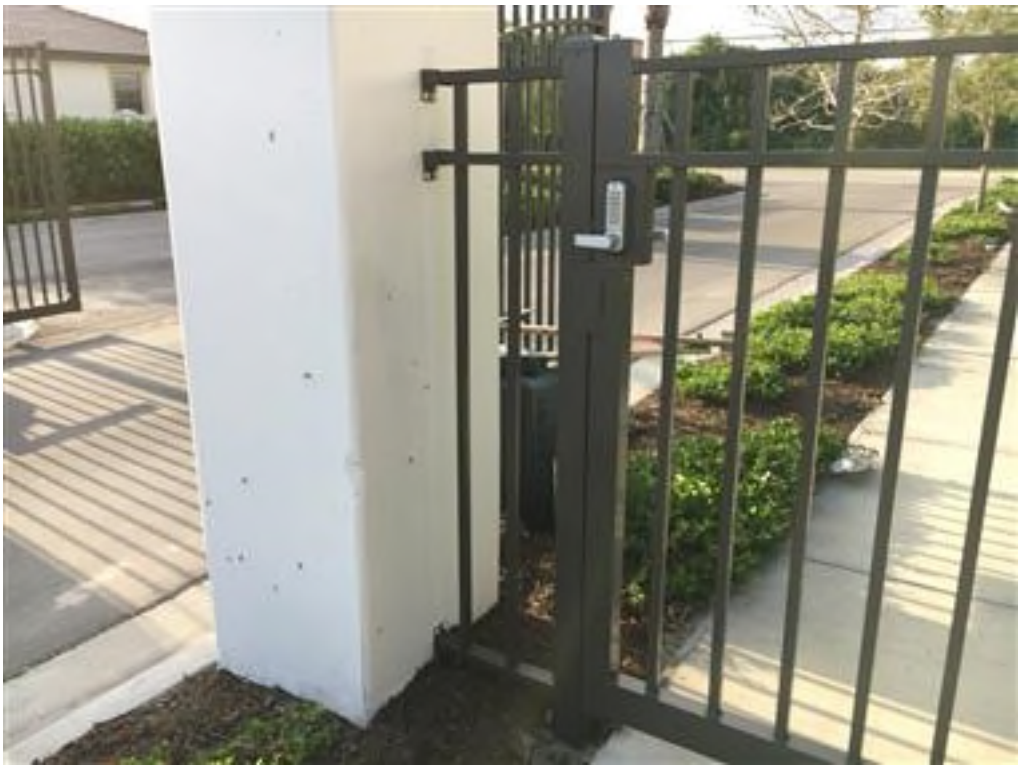


Photo 80- pedestrian gate

Photo 81- exit pavement

Photo 82- entry pavement

Photo 83- landscape area 9855 Haze

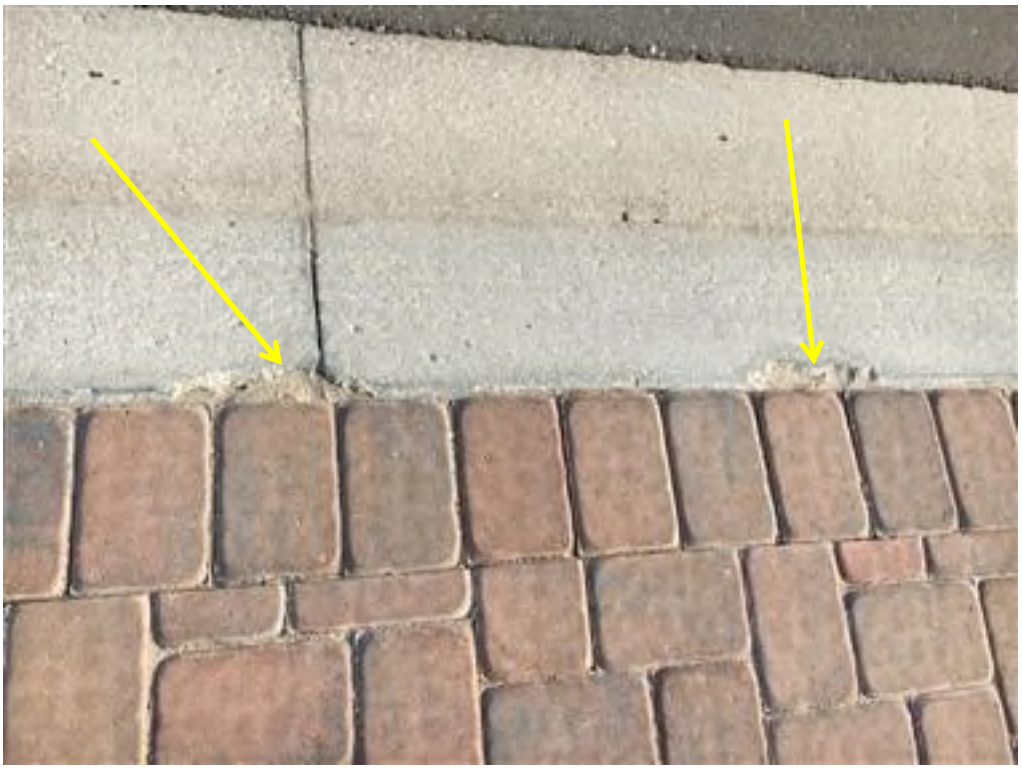


Photo 84- concrete curb, typical

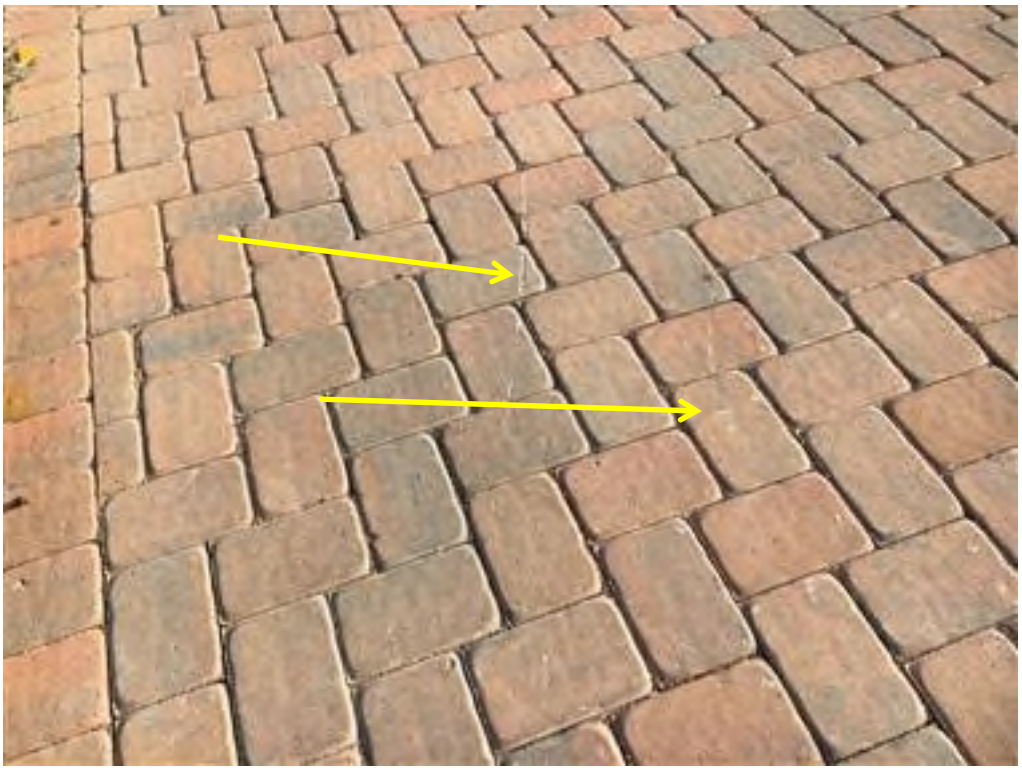


Photo 85-pavers with cuts 9851Haze

Photo 86- concrete curb, typical

Photo 87- asphalt paving

Photo 88- swale area 9851-9847 Haze Drive

Photo 89- concrete curb

Photo 90- asphalt paving

Photo 91- street sign

Photo 92- pavement at drains

Photo 93- swale area 9832-9836 Haze Drive

Photo 94- sealant at window

Photo 95- wall cracks

Photo 96- wall cracks

Photo 97- wall cracks

Photo 98- lake, typical

Photo 99- wall cracks

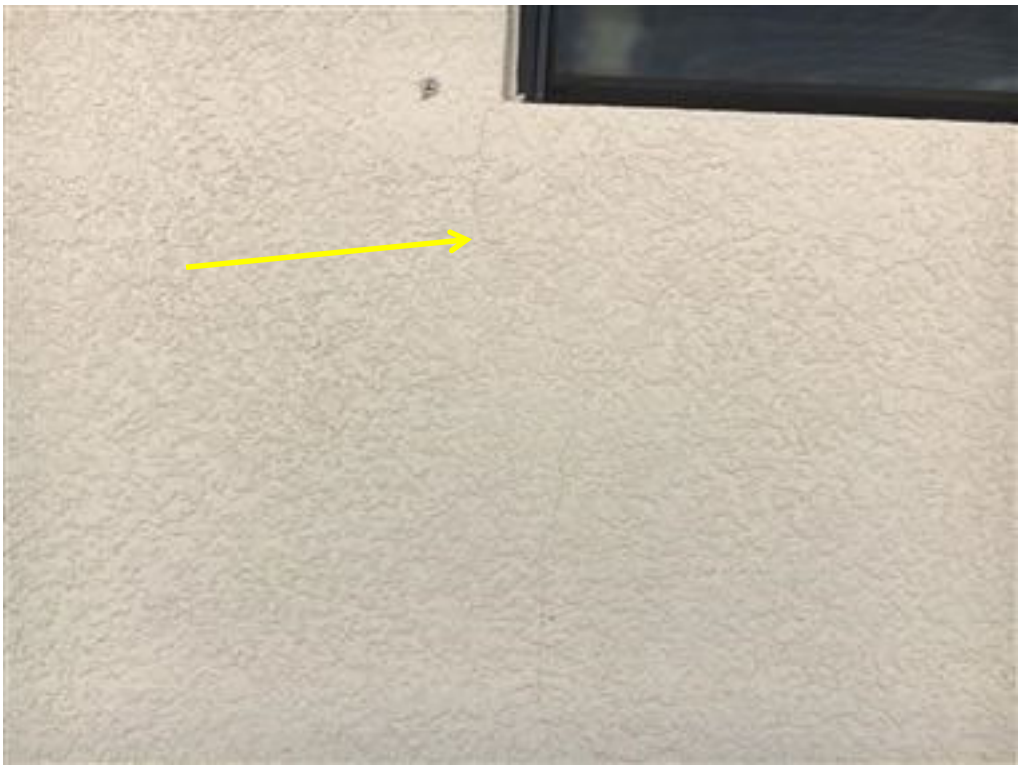


Photo 100- wall cracks

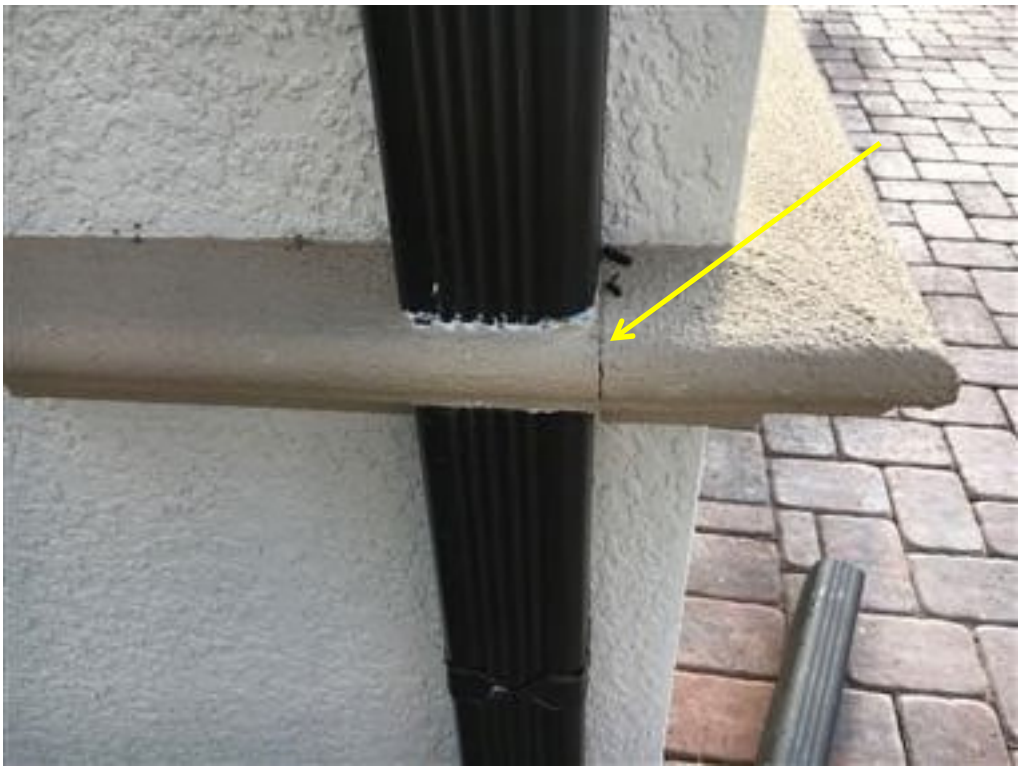


Photo 101- open trim joint 9836 Haze Drive

Photo 102- open trim joint 9832 Haze Drive

Photo 103- sealant at door typical, 9835 Haze Drive

Photo 104- AC tie downs typical, 9835 Haze Drive

Photo 105- window sealant typical 9835 Haze Drive

Photo 106- AC tie downs typical 9835 Haze Drive

Photo 107- perimeter wall

Photo 108- concrete curb, typical

Photo 109- wetland

Photo 110- asphalt paving

Photo 111- asphalt paving

Photo 112- asphalt paving

Photo 113- asphalt paving

Photo 114- asphalt paving

Photo 115- asphalt paving

Photo 116- asphalt paving

Photo 117- asphalt paving

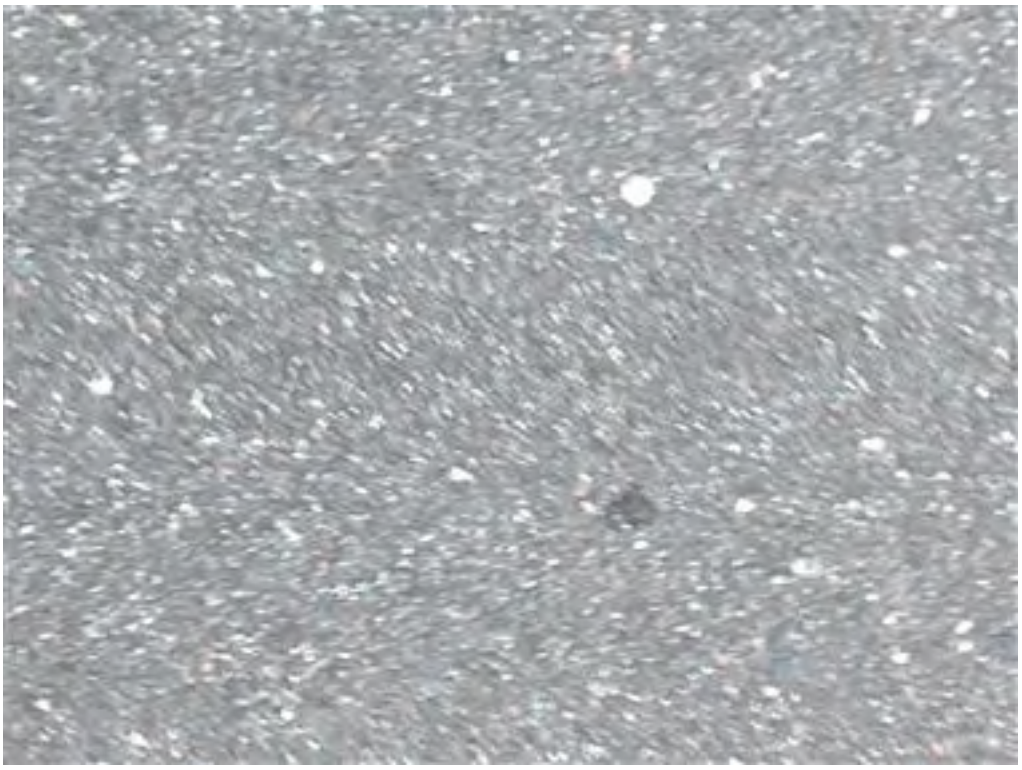


Photo 118- asphalt paving

Photo 119- asphalt paving

Photo 120- asphalt paving

Photo 121- asphalt paving

Photo 122- asphalt paving

Photo 123- single-family unit

Photo 124- swale area 9845-9841 Wingood Drive

Photo 125- single-family unit

Photo 126- swale area 19329-19325 Wingood Drive

Photo 127- swale area19336-19340 Wingood Drive

Photo 128- area to be developed

Photo 129- area to be developed

Photo 130- sidewalk issue

Photo 131- perimeter wall

Photo 132- asphalt paving at entry

April 18, 2019

Karins Engineering Group, Inc.
1626 Ringling Boulevard, Suite 400
Sarasota, FL 34236

Attn: Mr. William G. Clarke

Re: Construction Materials Testing Services
Watercrest Pavement Cores
Northeast Corner of Jacaranda Blvd. and East Venice Avenue
Venice, Florida
Terracon Project Number: HC191030

Dear Mr. Clarke:

In accordance with Terracon Proposal No. PHC191030, dated April 1, 2019, we have completed our pavement coring services in connection with the above referenced project.

The pavement cores were taken along the roadway at locations selected by Karins Engineering Group. The asphalt was cored using an electric machine with a 6-inch diameter barrel. Asphalt cores retrieved from the barrel were labeled and transported to our laboratory for thickness measurements. Each core hole was deepened to a depth of about 1 ½ feet below the pavement surface using hand-turned, bucket-type auguring equipment. Grab samples of the base and subgrade materials were collected from the auger bucket, placed in labeled Ziploc bags, and transported to our laboratory for visual-manual classification by a geotechnical engineer.

The asphalt core holes were backfilled from bottom to top with soil cuttings and capped with 6 inches of cold mix asphalt.

The locations of the pavement cores are indicated on the attached Exploration Plan.

Pavement Cores

The pavement core thicknesses are shown in the following table.

Pavement Core No.	Asphalt Thickness (in)	Cement Stabilized Base Thickness (in)
C-1	2	6
C-2	2	6 ¾
C-3	1 ¼	6
C-4	1 ½	7

Pavement Core No.	Asphalt Thickness (in)	Cement Stabilized Base Thickness (in)
C-5	1 ¾	6 ¼
C-6	1 ¾	6 ½
C-7	2	6 ½
C-8	1 ½	5 ½
C-9	1 ½	5 ½
C-10	1 ½	7
C-11	1 ½	6 ¼
C-12	1 ¾	6 ¼

Photographs of the pavement cores are shown in Appendix A.

The existing subgrade layer consisted of light brown to dark brown fine sand with trace silt to slightly silty fine sand (SP, SP-SM, or A-3, A-2-4). Additionally, the existing subgrade does not appear to have been strengthened with shell or rock fragments at any of the cores. No plastic soils (i.e. clay), organics, or other deleterious materials were encountered in the borings.

We appreciate the opportunity to continue to be of service during this phase of the project. If you have any questions, please contact the undersigned at 941-379-0621.

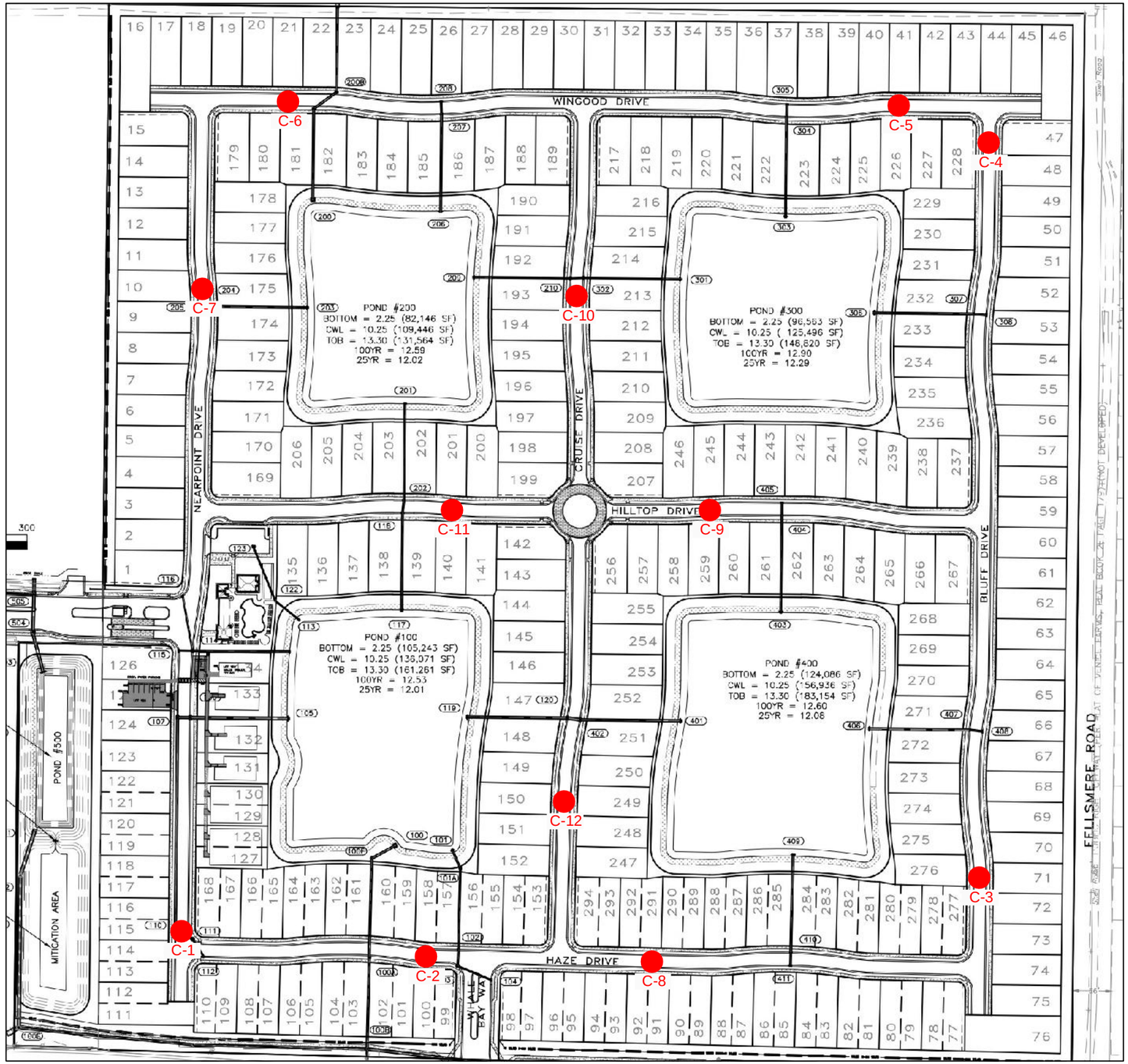
Sincerely,
Terracon Consultants, Inc.

SCOTT N. PARRISH LICENSE No 69091 STATE OF FLORIDA PROFESSIONAL ENGINEER

James M. Jackson, P.E.
Department Manager
FL License No.: 77733

Scott N. Parrish, P.E.
Office Manager
FL License No.: 69091

Attachments: Exploration Plan
Pavement Core Photographs



SOURCE: AM ENGINEERING, INC.

200 0 100 200

SCALE IN FEET

LEGEND

C-1 APPROXIMATE LOCATION OF PAVEMENT CORE

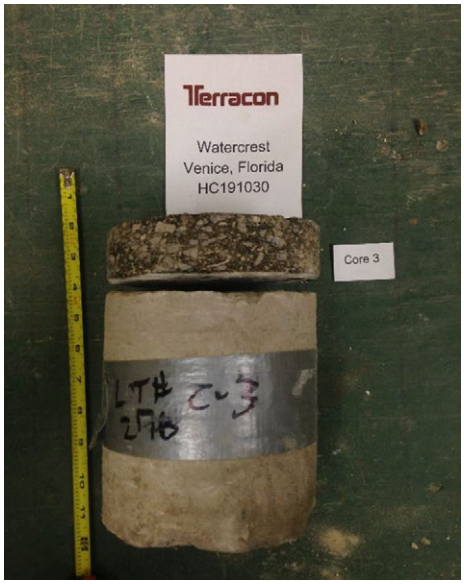
Project Mngr: JMJ	Project No. HC191030	Terracon Consulting Engineers and Scientists	CORING LOCATION PLAN
Drawn By: JMJ	Scale: AS-SHOWN	8260 VICO COURT, UNIT B SARASOTA, FL 34240	GEOTECHNICAL ENGINEERING REPORT
Checked By: JMJ	File No. 1	PH. (941) 379-0621 FAX. (941) 379-5061	WATERCREST
Approved By: SNP	Date: 4-18-19		VENICE, FLORIDA

EXHIBIT 1

APPENDIX A
PAVEMENT CORE PHOTOGRAPHS

Core 1

Core 2



Core 3

Core 4

Core 5

Core 6

Core 7

Core 8

Core 9

Core 10

Core 11

Core 12