

City of Cocoa

*65 Stone Street
Cocoa, FL 32922*



Meeting Agenda

Wednesday, April 6, 2022

6:00 PM

Cocoa City Council Chambers

Planning and Zoning / Local Planning Agency

I. CALL TO ORDER

ROLL CALL

PLEDGE OF ALLEGIANCE

II. APPROVAL OF AGENDA AND MINUTES:

AGENDA:

[22-192](#) Approval of the April 6, 2022 agenda.

Attachments: [PZ Short Agenda.pdf](#)

MINUTES:

[22-190](#) Approval of the December 1, 2021 and March 2, 2022 meeting minutes.

Attachments: [12-01-2021.pdf](#)
[03-02-2022 Draft.pdf](#)

III: OLD BUSINESS:

None

IV: NEW BUSINESS:

- A. Election of Chairman and Vice Chairman of Board
- B. PZ-22-00500001 (Modwash, LLC) - Request to be Tabled
- C. PZ-22-02100001 (Modwash, LLC) - Request to be Tabled

- D. [22-204](#) Consideration of Approval of a LARGE-SCALE SITE PLAN consistent with Appendix A, Zoning, Article XIII, Section 1, to construct a 107 room hotel with parking garage at 603 Brevard Avenue, a Large-Scale Site Plan on 1.25 acres.

Attachments:

[Cocoa Village Hotel Civil Set 3-31-2022 eCert.pdf](#)
[Cocoa Village Hotel Architectural Set 3-31-2022.pdf](#)
[Cocoa Village Hotel Landscape Set 3-31-2022.pdf](#)
[Exhibit D Location Map Cocoa Hotel 603 Brevard Avenue.docx](#)
[Stormwater Report eCert.pdf](#)
[Watermain Analysis eCert.pdf](#)
[FINAL - Development Agreement for 603 Brevard Avenue Hotel Project.pdf](#)
[Abutter Letter .docx](#)
[Amended and Restated Redevelopment Agreement FULLY EXECUTED.pdf](#)
[Legal Ad Proof.pdf](#)
[cocoa15001 Radius Map.pdf](#)
[Cocoa Hotel TIA 2022-03-18ss.pdf](#)
[cocoa15001 Mailing Labels.pdf](#)

V. NEXT MEETING DATE:

The next regularly scheduled meeting of the Planning and Zoning will be on Wednesday, May 4 at 6:00 PM at the Cocoa City Hall, 65 Stone Street, Cocoa, Florida.

VI. ADJOURNMENT

NOTICE TO THE PUBLIC:

This is a public meeting. All interested parties may attend in person. The facility wherein this public meeting will be held is accessible to the physically handicapped. In accordance with the Americans With Disabilities Act, persons needing assistance to participate in any of these proceedings should contact the City Clerk of the City of Cocoa, listed below, at least 48 hours prior to the meeting: Carie Shealy, City Clerk, 65 Stone Street, Cocoa, by telephone at (321) 433-8484 or via email at cshealy@cocoafl.org.

Additionally, interested persons may view or listen to the meeting electronically at the following internet sites:

- (1) <https://tinyurl.com/s5e875r> or
- (2) <https://cocoa.legistar.com/DepartmentDetail.aspx?ID=26365&GUID=FF9D3369-D354-4FAB-800A-57D0AEE30153&Mode=MainBody>

However, the City is not responsible for technical difficulties that may occur while attempting to view or listen to the meeting on the internet.

Interested persons may submit their written comments or questions regarding the meeting prior to the meeting through Email at sleone@cocoafl.org, or via E-comments through the online agenda. Any electronic comments submitted will be made part of the meeting record. Written comments or questions not relevant to the Planning and Zoning meeting agenda will not be made part of the meeting record but will be maintained as public record.

Pursuant to Section 286.0105, Florida Statutes, the City hereby advises the public that: if a person decides to appeal any decision made by the City Council with respect to any matter considered at its meeting or hearing, that person will need a record of the proceedings and for such purpose, affected persons may need to assure that a verbatim record of the proceedings is made, and such record shall include the testimony and evidence upon which the appeal is to be based. This notice does not constitute consent by the City for the introduction or admission into evidence of otherwise inadmissible or irrelevant evidence, nor does it authorize challenges or appeals otherwise not allowed by law.

Although members of the public are entitled to be heard by the City Council on certain items on the meeting agenda pursuant to the City Council Rules of Procedure, members of the public are not entitled to an immediate response by either administrative staff members or Council; however, the City Council or administrative staff may provide a response at their discretion. When presenting before the City Council, all comments or questions should be directed to the Mayor or the chair of the meeting. Comments or questions should not be made directly to administrative staff without permission from the Mayor or chair.

Public debate by individual speakers from the audience on public hearing items shall be limited to three (3) minutes. Applicants or representatives of recognized groups with special interests in a matter shall be limited to ten (10) minutes; and total debate on a single issue shall be limited to thirty (30) minutes. Only one presentation per person per item shall be allowed.

A Council member may add an item to the agenda during the meeting only at the time the agenda is approved. If the item requires action by the Council, then it may be added to the agenda by an affirmative vote of the Council, and written documentation must be submitted at the time the item is added to the agenda. Matters may also be raised by the Council, City Manager or City Attorney under reports and acted upon by the City Council.

This agenda is posted on the Municipal Bulletin Board for public review.



Legislation Details (With Text)

File #: 22-192 **Version:** 1 **Name:**
Type: Agenda **Status:** Agenda Ready
File created: 4/1/2022 **In control:** Planning and Zoning / Local Planning Agency
On agenda: 4/6/2022 **Final action:**
Title: Approval of the April 6, 2022 agenda.
Sponsors:
Indexes:
Code sections:
Attachments: [PZ Short Agenda.pdf](#)

Date	Ver.	Action By	Action	Result
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PLANNING & ZONING BOARD/LOCAL PLANNING AGENCY AGENDA ITEM

Memo Date: April 1, 2022
Agenda Date: April 6, 2022
Prepared By:
Through: Cindy Thurman, Planning and Zoning Manager
Requested Action:
Approval of the April 6, 2022 agenda.

BACKGROUND:

N/A

BUDGETARY IMPACT:

N/A

PREVIOUS ACTION:

N/A

RECOMMENDED MOTION:

Approval of the April 6, 2022 agenda.



CITY OF COCOA
Planning & Zoning Board /
Local Planning Agency
City Council Chambers

Cocoa City Hall
65 Stone Street
Cocoa, FL 32922

AGENDA
Regular Meeting
April 6, 2022
6:00 p.m.

I. OPENING MATTERS:

1. CALL TO ORDER
2. ROLL CALL
3. PLEDGE OF ALLEGIANCE

II. APPROVAL OF AGENDA AND MINUTES:

1. AGENDA: Meeting of April 6, 2022
2. MINUTES: Meeting of December 1, 2021
3. MINUTES: Meeting March 2, 2022

III. OLD BUSINESS: None

IV. NEW BUSINESS:

A. Election of Chairman and Vice Chairman of Board

B. PZ-22-00500001 (MODWASH, LLC.)

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF COCOA, BREVARD COUNTY, FLORIDA; A COMPREHENSIVE PLAN MAP AMENDMENT CHANGING THE FUTURE LAND USE MAP DESIGNATION OF MIXED USE ON 1.38 ACRES OF LAND LOCATED ON THE SOUTHWEST CORNER OF THE INTERSECTION OF SR520 (W. KING STREET) AND HIGHWAY US1 (S. COCOA BLVD.) TO COMMERCIAL.: 24-36-33-31-A-5; 24-36-33-31-C-1; 24-36-33-31-*R.1; 24-36-33-31-*R.2; 24-36-33-31-*R.3; 24-36-33-31-*R.4; 24-36-33-31-*R.5; 24-36-33-31-D-11; 24-36-33-31-D-12; 24-36-33-31-D-13

C. PZ-22-02100001 (MODWASH, LLC)

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF COCOA, BREVARD COUNTY, FLORIDA; CHANGING THE ZONING MAP DESIGNATION OF CP (COMMERCIAL PARKWAY DISTRICT) ON 1.38 ACRES OF LAND LOCATED ON THE SOUTHWEST CORNER OF THE INTERSECTION OF SR520 (W. KING STREET) AND HIGHWAY US1 (S. COCOA BLVD.) TO CG (GENERAL COMMERCIAL DISTRICT):. 24-36-33-31-A-5; 24-36-33-31-C-1; 24-36-33-31-*R.1; 24-36-33-31-*R.2; 24-36-33-31-*R.3; 24-36-33-31-*R.4; 24-36-33-31-*R.5; 24-36-33-31-D-11; 24-36-33-31-D-12; 24-36-33-31-D-13

D. PZ-21-0200022 (603 BREVARD AVE)

APPROVAL OF A LARGE-SCALE SITE PLAN (COCOA HOTEL AND HOSPITALITY) CONSISTENT WITH APPENDIX A ZONING, ARTICLE XIII, SECTION 1, OF THE CITY CODE. THE APPLICANT DESIRES TO DEVELOP THE EXISTING VACANT SITE AS A HOTEL. THE SUBJECT PROPERTY IS LOCATED ON THE WEST SIDE OF BREVARD AVE AT 603 BREVARD AVE AND CONTAINS +/- 1.25 ACRES. THE PROPERTY IS IDENTIFIED BY PARCEL: 24-36-53-75-*2; PARCEL :24-36-53-75-*3 AND PARCEL #: 24-36-53-75-*4.

V. NEXT MEETING DATE:
TBD

VI. ADJOURNMENT

General Notice Information:

This is a public meeting. Interested parties are hereby advised that they may appear at said meeting and be heard. The facility wherein this public meeting will be held is accessible to the physically handicapped. In accordance with the Americans With Disabilities Act, persons needing assistance to participate in any of these proceedings should contact the City Clerk of the City of Cocoa, listed below, at least 48 hours prior to the meeting: Carie Shealy, City Clerk, 65 Stone Street, Cocoa, by telephone at (321) 433-8484 or via email at cshealy@cocoafl.org.

Pursuant to Section 286.0105, Florida Statutes, the City hereby advises the public that if a person decides to appeal any decision made by the BOA, P&Z Board/LPA or City Council with respect to any matter considered at its meeting or hearing, that person will need a record of the proceedings and for such purpose, affected persons may need to assure that a verbatim record of the proceedings is made, and such record shall include the testimony and evidence upon which the appeal is to be based. This notice does not constitute consent by the City for the introduction or admission into evidence of otherwise inadmissible or irrelevant evidence, nor does it authorize challenges or appeals otherwise not allowed by law.

The BOA or PZ Board/LPA meeting may include the attendance of one (1) or more members of the Cocoa City Council who may or may not participate in the Board discussions held at this public hearing. The BOA, PZ Board/LPA and City Council reserve the right to continue or postpone hearings to a date certain without re-advertising.

Public Participation Information:

Members of the public may view the meeting agenda, ordinances, project applications, supporting documents, and staff reports on the City's website at the following link prior to attending or commenting:

- City of Cocoa meeting calendar at <https://cocoa.legistar.com/Calendar.aspx>

Documents pertaining to the above may also be inspected at the Community Services Department, between 8:00 a.m. and 5:00 p.m., Monday through Friday, or by phoning (321) 433-8535.

Interested persons may submit their written comments or questions prior to the meeting through Email at meetings@cocoafl.org, or via E-comments through the online agenda at the link above. Any electronic comments submitted will be made part of the meeting record.

Viewing In Real Time. Interested persons are encouraged to view and listen to the hearings live by accessing the meetings at the following internet address:

- City of Cocoa meeting calendar at <https://cocoa.legistar.com/Calendar.aspx>

However, the City is not responsible for technical difficulties that may occur while attempting to view or listen to the meeting on the internet.

Special Information for Quasi-Judicial Hearings:

Any person that (1) can demonstrate that they may suffer special damages different in kind and degree from that of the general public at large; and (2) wishes to present factual or expert witnesses and/or evidence at the quasi-judicial hearing is highly encouraged to immediately contact Cynthia Thurman, Planning and Zoning Manager, at (321) 433-8510 or Cthurman@cocoafl.org, to make proper arrangements for presentation of witnesses and/or evidence. All witnesses should be identified and all evidentiary documents and exhibits that are intended to be distributed to the BOA, P&Z/LPA and City Council should be submitted to Mrs. Thurman via email or mail at least three (3) days prior to the hearing.



Legislation Details (With Text)

File #: 22-190 **Version:** 1 **Name:**
Type: Minutes **Status:** Agenda Ready
File created: 3/31/2022 **In control:** Planning and Zoning / Local Planning Agency
On agenda: 4/6/2022 **Final action:**
Title: Approval of the December 1, 2021 and March 2, 2022 meeting minutes.
Sponsors:
Indexes:
Code sections:
Attachments: [12-01-2021.pdf](#)
[03-02-2022 Draft.pdf](#)

Date	Ver.	Action By	Action	Result
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PLANNING & ZONING BOARD/LOCAL PLANNING AGENCY AGENDA ITEM

Memo Date: March 31, 2022
Agenda Date: April 6, 2022
Prepared By: Sandra Leone, Planner
Through: Cindy Thurman, Planning & Zoning Manager
Requested Action:
Approval of the December 1, 2021 and March 2, 2022 meeting minutes.

BACKGROUND:

N/A

BUDGETARY IMPACT:

N/A

PREVIOUS ACTION:

N/A

RECOMMENDED MOTION:

Approval of the December 1, 2021 and March 2, 2022 meeting minutes.

**MINUTES
CITY OF COCOA
PLANNING & ZONING BOARD/ LOCAL PLANNING AGENCY
REGULAR MEETING
December 1, 2021**

A Regular meeting of the Planning & Zoning Board Local Planning Agency was held on December 1, 2021 at City Hall, 65 Stone Street, Cocoa, FL, as publicly noted.

I. CALL TO ORDER:

Chairperson Dobrin called the meeting to order at 6:00 PM.

ROLL CALL:

Michael Dobrin	Chairperson
Al Washington	Vice Chairperson
Todd Anderson	Board Member
Jeri Blanco	Board Member
Marilyn Green	Board Member
Susan Mock	Board Member
Russell Sengel	Board Member
Justin Simpson	Board Member
Aleck Greenwood	Alternate Member
Jesse Heredia	Alternate Member
Debbie Joyce	School Board Representative

PRESENT:

Michael Dobrin	Chairperson
Al Washington	Vice Chairperson
Todd Anderson	Board Member
Jeri Blanco	Board Member
Marilyn Green	Board Member (via phone)
Susan Mock	Board Member
Russell Sengel	Board Member
Justin Simpson	Board Member
Aleck Greenwood	Alternate Member
Debbie Joyce	School Board Representative

ABSENT:

Jesse Heredia	Alternate Member
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STAFF PRESENT:

Kristin Eick, Board Attorney (via phone); Cindy Thurman, Planning and Zoning Manager; and Monica Arsenault, Recording Secretary.

Chairperson Dobrin led the assembly in the Pledge of Allegiance.

II. APPROVAL OF AGENDA AND MINUTES:

1. AGENDA: Meeting of December 1, 2021

* **MOTION BY BOARD MEMBER BLANCO; SECONDED BY BOARD MEMBER ANDERSON TO APPROVE THE DECEMBER 1, 2021 AGENDA.**

AYES: DOBRIN, WASHINGTON, ANDERSON, BLANCO, GREEN, GREENWOOD, SENDEL, SIMPSON

NAYES: MOCK

MOTION PASSED (8-1)

2. MINUTES: Meeting of November 3, 2021

* **MOTION BY BOARD MEMBER BLANCO; SECONDED BY BOARD MEMBER SIMPSON TO APPROVE THE NOVEMBER 3, 2021 MINUTES AS WRITTEN.**

AYES: DOBRIN, WASHINGTON, ANDERSON, BLANCO, GREEN, GREENWOOD, MOCK, SENDEL, SIMPSON

MOTION PASSED UNANIMOUSLY (9-0)

III. OLD BUSINESS:

None.

IV. NEW BUSINESS:

A. Large Scale Site Plan

Ms. Thurman explained that this large-scale site plan is simply the next phase of what has already been worked out and this is facilitating the site plan portion of the hotel. She stated that the Board will now need to look at the use and develop it, look at the site plan and send it through the formal site plan process with the City.

Although the engineer and development group submitted all of their documents by the November deadline, staff unfortunately had not had enough time to review everything

thoroughly. She also pointed out that there is a new engineer, Bruce Moya, who is working on the project with staff and supplied them with a fresh set of plans. She spoke with him this morning and he is very excited to work with the City. Additionally, staff has a meeting with the engineer prior to Christmas to get the ball rolling. Part of Factory Street will be vacated to accommodate an in and out for the hotel and there is a lot of extensive work that needs to be done. The developer is at the mercy of FPL and so there are some large utility poles that have to be moved which will be done on FPL's schedule. This creates a window of time for staff and the engineer to work out things that need to be done.

* **MOTION BY BOARD MEMBER BLANCO; SECONDED BY BOARD MEMBER ANDERSON TO APPROVE THE DECEMBER 1, 2021 AGENDA.**

AYES: DOBRIN, WASHINGTON, ANDERSON, BLANCO, GREEN, GREENWOOD, SENDEL, SIMPSON

NAYES: MOCK

MOTION PASSED (8-1)

Chairperson Dobrin asked why there is a new engineer.

In response, Mr. Jack Brown, the developer, explained that the old engineer left the company that they were using and so they had to find a new one.

He provided a brief background of the project, pointing out that he had originally submitted his RFP back in January, 2018, however there have been a lot of delays.

Vice Chairperson Washington asked for clarification as to what is being asked of the Board this evening. In response, Ms. Thurman explained that this is an opportunity for the Board to take a look at a fresh site plan for approval, however the site plan is not technically ready for approval since staff has not had enough time to digest it yet. Any approvals that the Board is willing to make this evening would need to be conditional. After staff and the engineer have had time to make sure that City codes and regulations are met the site plan will be brought back before the Board for final approval.

Ms. Eick added that she did not think it would be appropriate to have a condition where it would be subject to administrative approval. At this time, staff is saying that they have not had adequate time to review the engineering plans and so she strongly suggests that the best possible move forward is to postpone this item to a time certain.

Alternate member Greenwood asked if he needed to recuse himself due to his involvement in the hotel project. In response, Board Attorney Eick responded affirmatively.

Chairman Dobrin opened the hearing to the public.

Kristin Lortie, 5524 Brilliance Cir., Cocoa, asked if this project will incorporate low impact development features or sustainability aspects. She pointed out that there is a lot of citizen

interest in this project and others and mentioned that there was recently a two-day seminar in Brevard sponsored by the Marine Resources Council on this and many of the local officials attended that. At the seminar, they stressed the importance of incorporating low impact development principals into our projects. She went on to share that she drove by the Cirrus Apartments project and noticed that only two trees were maintained in the entire footprint. She would like to encourage the Board to continue to ask questions and think about things that the City can require of the developers to incorporate into the project.

Ms. Eick added that the City Council has already approved a Development Agreement with a conceptual plan and some of the enhancements will include sustainability measures so that has already been taken into account.

Mr. Brown further shared that a conceptual site plan was submitted back in July and what is being presented now is a final conceptual site plan. They have paid a professional \$25,000 for a landscaping plan which met the requirements set by the City Code. All the trees on Brevard Avenue have been protected and they will also be re-doing the streets around the property. Additionally, they bought an additional site to compliment the project by doing some of, if not all of, the stormwater control on the adjacent site.

Ms. Thurman assured the Board that if they agree to postpone the meeting, staff will bring before them a completed site plan that staff is confident with.

Board member Simpson asked that if the Board agrees to this, he'd like to ask the Board be given at least two weeks to have time to review an agenda so they have plenty of time to review all of the documents and staff report. In response, Ms. Thurman agreed and also stated that she would be happy to set up an appointment to answer any questions with any Board member.

* **MOTION BY VICE CHAIRPERSON WASHINGTON; SECONDED BY BOARD MEMBER SIMPSON TO TABLE THE ITEM TO THE FEBRUARY 2, 2022 REGULAR PLANNING AND ZONING MEETING.**

AYES: DOBRIN, WASHINGTON, ANDERSON, BLANCO, GREEN, GREENWOOD, MOCK, SENDEL, SIMPSON

MOTION PASSED UNANIMOUSLY (9-0)

Alternate member Greenwood asked about an oak tree that was removed by Green Apples and Ossorio's that was not brought before the Board. He explained the purpose and process of the Tree Board to Ms. Thurman. In response, Ms. Thurman offered to work with Mr. Greenwood on this.

VII. NEXT MEETING DATE:

The next scheduled meeting for the Planning and Zoning Board will be held on Wednesday, January 5, 2022 at 6pm in Cocoa City Hall, 65 Stone St, Cocoa, FL 32922.

VIII. ADJOURNMENT:

* **MOTION BY VICE CHAIRPERSON WASHINGTON; SECONDED BY BOARD MEMBER SENDEL TO ADJOURN THE REGULAR MEETING OF DECEMBER 1, 2021.**

AYES: DOBRIN, WASHINGTON, ANDERSON, BLANCO, GREEN, GREENWOOD, MOCK, SENDEL, SIMPSON

MOTION PASSED UNANIMOUSLY (9-0)

MEETING WAS ADJOURNED AT 6:43 PM.

Michael Dobrin, Chairperson

Respectfully Submitted By:

Monica Arsenault, Recording Secretary

**MINUTES
CITY OF COCOA
PLANNING & ZONING BOARD/ LOCAL PLANNING AGENCY
REGULAR MEETING
March 2, 2022**

A Regular meeting of the Planning & Zoning Board Local Planning Agency was held on March 2, 2022 at City Hall, 65 Stone Street, Cocoa, FL, as publicly noted.

I. CALL TO ORDER:

Chairperson Dobrin called the meeting to order at 6:02 PM.

ROLL CALL:

Michael Dobrin	Chairperson
Al Washington	Vice Chairperson
Todd Anderson	Board Member
Jeri Blanco	Board Member
Veronica Lopez	Board Member
Marilyn Green	Board Member
Susan Mock	Board Member
Russell Sengel	Board Member
Justin Simpson	Board Member
Aleck Greenwood	Alternate Member
Merrybeth Burgess	Alternate Member
Debbie Joyce	School Board Representative

PRESENT:

Michael Dobrin	Chairperson
Al Washington	Vice Chairperson
Marilyn Green	Board Member
Veronica Lopez	Board Member
Susan Mock	Board Member
Russell Sengel	Board Member
Justin Simpson	Board Member
Aleck Greenwood	Alternate Member
Merrybeth Burgess	Alternate Member
Debbie Joyce	School Board Representative

ABSENT:

Todd Anderson	Board Member
Jeri Blanco	Board Member

STAFF PRESENT:

Kristin Eick, Board Attorney (via phone); Cindy Thurman, Planning and Zoning Manager; Sandra Leone, Planner; Paul Body, Senior Planner; and Monica Arsenault, Recording Secretary.

Chairperson Dobrin led the assembly in the Pledge of Allegiance.

- * **MOTION BY CHAIRPERSON DOBRIN; SECONDED BY ALTERNATE MEMBER GREENWOOD TO TABLE ALL ITEMS, INCLUDING THE DECEMBER 1, 2021 MINUTES TO THE APRIL 6, 2022 REGULAR PLANNING AND ZONING MEETING.**

AYES: DOBRIN, WASHINGTON, BURGESS, GREEN, GREENWOOD, LOPEZ, MOCK, SENDEL, SIMPSON

MOTION PASSED UNANIMOUSLY (9-0)

II. APPROVAL OF AGENDA AND MINUTES:

1. AGENDA: Meeting of March 2, 2022
2. MINUTES: Meeting of December 1, 2021

III. OLD BUSINESS:

None.

IV. NEW BUSINESS:

A. PZ-22-02100002 (HTG Orchid Lake, Ltd.) **TABLED**

B. PZ-22-00500002 (HTG Orchid Lake, Ltd.) **TABLED**

C. PZ-22-02100001 (ModWash, LLC) **TABLED**

D. PZ-22-02100001 (ModWash, LLC) **TABLED**

VII. NEXT MEETING DATE:

The next scheduled meeting for the Planning and Zoning Board will be held on Wednesday, April 6, 2022 at 6pm in Cocoa City Hall, 65 Stone St, Cocoa, FL 32922.

VIII. ADJOURNMENT:

* **MOTION BY CHAIRPERSON DOBRIN; SECONDED BY BOARD MEMBER SENDEL TO ADJOURN THE REGULAR MEETING OF MARCH 2, 2022.**

AYES: DOBRIN, WASHINGTON, BURGESS, GREEN, GREENWOOD, LOPEZ, MOCK, SENDEL, SIMPSON

MOTION PASSED UNANIMOUSLY (9-0)

MEETING WAS ADJOURNED AT 6:21 PM.

Michael Dobrin, Chairperson

Respectfully Submitted By:

Monica Arsenault, Recording Secretary



Legislation Details (With Text)

File #:	22-204	Version:	1	Name:	
Type:	Agenda	Status:		Agenda Ready	
File created:	4/4/2022	In control:		Planning and Zoning / Local Planning Agency	
On agenda:	4/6/2022	Final action:			
Title:	Consideration of Approval of a LARGE-SCALE SITE PLAN consistent with Appendix A, Zoning, Article XIII, Section 1, to construct a 107 room hotel with parking garage at 603 Brevard Avenue, a Large-Scale Site Plan on 1.25 acres.				
Sponsors:					
Indexes:					
Code sections:					
Attachments:	Cocoa Village Hotel Civil Set 3-31-2022 eCert.pdf Cocoa Village Hotel Architectural Set 3-31-2022.pdf Cocoa Village Hotel Landscape Set 3-31-2022.pdf Exhibit D Location Map Cocoa Hotel 603 Brevard Avenue.pdf Stormwater Report eCert.pdf Watermain Analysis eCert.pdf FINAL - Development Agreement for 603 Brevard Avenue Hotel Project.pdf Abutter Letter .pdf Amended and Restated Redevelopment Agreement FULLY EXECUTED.pdf Legal Ad Proof.pdf cocoa15001 Radius Map.pdf Cocoa Hotel TIA 2022-03-18ss.pdf cocoa15001 Mailing Labels.pdf				

Date	Ver.	Action By	Action	Result
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PLANNING & ZONING BOARD/LOCAL PLANNING AGENCY AGENDA ITEM

Memo Date: March 31, 2022
Agenda Date: April 6, 2022
Prepared By: Cindy Thurman, Planning and Zoning Manager
Through: Angela Essing, Growth and Economic Development Manager
Requested Action: Consideration of **APPROVAL OF A LARGE-SCALE SITE PLAN** consistent with Appendix A, Zoning, Article XIII, Section 1, to construct a 107-room hotel with parking garage at 603 Brevard Avenue, a Large-Scale Site Plan on 1.25 acres.

BACKGROUND:

Project Name: Cocoa Hotel and Hospitality;
603 Brevard Avenue, Cocoa, FL 32922

Project No: PZ-21-0200013

Applicant: MBV Engineering, Inc., Bruce Moia, P.E.
1250 W. Eau Gallie Blvd. Suite H.
Melbourne, FL 32935

Property Owner: City of Cocoa; Cocoa Redevelopment Agency
65 Stone St
Cocoa, FL 32922

RLR Group, LLC.
1125 Indian River Drive N.
Cocoa, FL 32922

Project Location: The subject property is comprised of three (3) parcels located at 603 Brevard Ave. Encompassing addresses 603, 625, 627, and 629 Brevard Avenue, (corner of Brevard Avenue and Factory Street). The property is identified by the Brevard County Property Appraiser's Office as Parcel ID numbers: 24-36-33-75-*2; 24-36-33-75-*3; 24-36-33-75-*4; and Tax Account #'s 2426228; 2426229; 2426230

I. Project Information

The applicant proposes to develop a new seven story hotel building with an 8th floor roof top bar and architecturally integrated multi-level parking garage in central Cocoa Village on 1.25 acres. The hotel will have 107 hotel rooms and amenities with an overall square footage of 202,846. The hotel will have its main entrance and lobby on Brevard Avenue. The first level will consist of hotel lobby, garage accesses, open air café, retail, office and meeting spaces.

The hotel rooms are primarily on three levels, the fifth, sixth and seventh floors. There will be a swimming pool on the 5th level. Factory street will be partially vacated but will remain a two-way street. The architectural plans show an overall proposed building height of 85'.

(Exhibit A - Site Plan, Exhibit B - Architectural Plans, Exhibit C - Landscaping Plans, Exhibit D - Location Map).

Existing Site Conditions

The site is formerly known as the old Cocoa City Hall site. The subject property consists of the three parcels that are currently marginally improved. The area is sparse of landscaping and is impervious and primarily used for parking.

Development Agreement Timeline:

- The City of Cocoa Community Redevelopment Agency is the owner of 603 Brevard Avenue. Tax Parcel IDs 24- 36-33- 75-* - 2 and 24- 36- 33- 75-* - 3.
- The CRA acquired 603 Brevard Avenue for redevelopment purposes in accordance with the

Florida Community Redevelopment Act of 1969.

- On January 22, 2018 the City of Cocoa Community Redevelopment Agency (CRA), issued a request for proposal (RFP), soliciting proposals from interested parties to redevelop 603 Brevard Avenue, a portion of the subject property.
- On June 10, 2020, the CRA and the Developer entered into an Amended and Restated Redevelopment Agreement which established the development schedule and time periods during which the CRA Property would be expeditiously redeveloped for the betterment of the Cocoa Community Redevelopment Area as a mixed-use hotel project.

Development Agreement:

On December 10, 2020, City Council approved a Binding Development Agreement between the City of Cocoa, Florida and the Developer, the Development Agreement provides the following:

1. Developer shall, at its expense, design, permit and construct an approximately 87,870 square-foot mixed-use hotel project with public access retail space fronting Brevard Avenue on the first floor and a parking garage.
2. The Project, at a minimum, shall consist of at least 100 hotel rooms and no more than 112 hotel rooms with ancillary meeting space, hotel office space, hotel sundries retail shop, breakfast area and lounge, kitchen, swimming pool, and roof top bar and lounge.
3. The public access retail space, which is distinct from the hotel sundries retail shop, shall consist of a minimum of 3,600 square feet of space with pedestrian access from and onto Brevard Avenue.
4. The parking garage shall be incorporated into the hotel building on floors one through four, and
5. 100 parking spaces in the parking garage shall be reserved for public parking use without charge or fee to the public.
6. Developer shall be specifically required to develop the Project to incorporate all amenities described above and as further required in this Agreement into the formal site plan, and such amenities shall be maintained in good and working condition throughout the life of the Project
7. The Conceptual Development Plan is intended to be the general blueprint which details key aspects of the future physical development of the Property.
(Conceptual Development Plan referred to here is described and attached to DA at CRA meeting of October 27, 2020.)
8. Developer shall have the obligation to further submit and obtain the City's approval of a formal site plan and final engineering plans consistent with the Conceptual Development Plan in all material respects and in compliance with the City Code.
(Requires approval by Planning & Zoning Board)

9. Further, other aspects of the building façade and roof lines, color scheme, and architectural features depicted on the building may have to be adjusted during the City's formal review and approval procedures to satisfy the requirements of the City Code.

Development Agreement Project Enhancements:

In accordance with Section 15- 21 of the City Code and in consideration of the variances and waivers granted in Section 9.0 of the adopted Development Agreement, and as a condition of the approval of a Large-Scale Commercial/Mixed-Use Building on the Property, the Developer agrees to incorporate the following development enhancements into the Final Site Plan:

A)

- 100 parking spaces in the parking garage shall be reserved for public parking use without charge or fee to the public. Prior to the issuance of any certificate of occupancy, the Developer shall deliver to the City a written, perpetual covenant in favor of the City of Cocoa and in a form acceptable to the City Attorney, reserving the parking spaces for the benefit of and use by the public in perpetuity and without charge or fee unless the City imposes such charge or fee for municipal purposes.
- The Developer shall mill and resurface John Garren Lane and Factory Street along the entire length of the Project frontage, including all travel lanes and shoulders on both sides of each street.
- The Developer shall install a total of fourteen (14) parallel, on, street parking spaces and a pave drain system along both sides of John Garren Lane.
- Sidewalks shall also be installed on both sides of John Garren Lane and Factory Street along the entire length of the Project frontage.

B) Prior to the issuance of a certificate of occupancy,

- the Developer shall provide to the City public access easements in a form acceptable to the City Attorney for the portion of the future sidewalk located on the Property along the length of John Garren and;
- a 24-foot wide public access easement for the drive aisle located on the southern portion of the Property between the 28 hotel parking spaces.

C) All utilities constructed on the Property including, but not limited to, electric, water, sewer, cable, phone, fiber optics, natural gas and other similar kinds of utilities to service the Property shall be constructed underground unless otherwise necessary to be above ground and approved by the City.

D) The Project shall incorporate the use of energy efficient lighting systems, insulation and ENERGY STAR rated windows, low-flow water fixtures, modern heat pumps, and energy efficient HVAC systems.

Development Agreement Variances and Waivers

In accordance with Section 15-21 of the City Code and, in exchange for the significant project enhancements the City Council approved the following variances and waivers from the City Code:

- A) Appendix A Zoning, Article XI, Section 22 (I) Cocoa Waterfront Overlay District. The minimum frontage buildout of ninety percent (90%) may be decreased to seventy-eight percent (78%).
- B) Appendix A Zoning, Article XI, Section 22 (I) Cocoa Waterfront Overlay District. Upon the partial vacation of Factory Street, the maximum street setback from Factory Street of 10 feet shall be exceeded to a minimum of 20 feet and a maximum of 36 feet on the Property.
- C) Appendix A Zoning, Article XI, Section 22 (I) Cocoa Waterfront Overlay District. The maximum side street setback from Brevard Avenue of 10 feet shall be exceeded to a maximum of 23.2 feet.
- D) Appendix A Zoning, Article XI, Section 22 (I) Cocoa Waterfront Overlay District. The maximum side street setback from John Garren Lane of 10 feet shall be exceeded to a maximum of 29 feet.
- E) Appendix A Zoning, Article XII, Section 1(c) Off-Street Parking and Loading Regulations. The definition of "off-street" parking shall be relaxed to include rectangular parking areas measuring nine (9) feet by eighteen (18) feet, exclusive of access drives and aisles, for purposes of this Project, rather than ten (10) feet by twenty (20) feet as is typically required.

Economic Impact

The intent of the project is to serve as a catalyst for development to reduce slum and blight and economically revitalize the Cocoa Community Redevelopment Area in furtherance of the Community Redevelopment Plan. It is anticipated that the project will bring five new jobs during the construction phase and twenty new positions when the hotel opens to the City of Cocoa.

Future Land Use & Zoning Designations

Future Land Use Designation: Mixed-Use

Zoning District: CBD-CVO Central Business District-Cocoa Village Overlay

Existing Land Use: Vacant Land (Former site of City Hall)

Council District: District 1 - Councilmember Alex Goins

Overview of Surrounding Area:

	Future Land Use Designations	Zoning Districts	Existing Land Uses
North	Mixed Use	CBD-CVO	Parking Lot
South	Mixed Use	CBD-CVO	Retail

East	Mixed Use	CBD-CVO	Retail
West	Mixed Use	CBD	Utility

II. Site Plan Analysis

“Consistent with Appendix A, Article XIII, Section 1(D), “All site plans shall be required to meet all current applicable code requirements.”

City staff has reviewed the site plan and determined that it generally meets the minimum requirements of all applicable City Code requirements. In addition, the site plan meets the requirements of the Binding Development Agreement, as modified.

Consistency with Code of the City of Cocoa

The Community Services Department’s Planning and Zoning Division and Building Division, Public Works Department, Utilities Department, Code Enforcement Department, and Fire Department have reviewed this site plan application and determined that it generally meets the minimum requirements of all applicable City Code requirements, except where specific examples have been provided in this report and through the proposed Development Agreement included as an exhibit hereto.

Site Coverage

The site is 1.25 acres. The site is 1.25 acres overall with 202,846 SF of building area. The lot coverage is 54.55% (not including Factory) and the total impervious ratio is 90.02% (maximum 95%).

Setbacks

<u>Building Setbacks</u>	<u>Setback Required by Code</u>	<u>Setback Provided</u>
John Garren Lane	5 feet -10 Max	9.95 feet
Factory Street	0 feet -10 max	4.34 feet
Brevard Avenue	0 feet - 5 feet	5.00 feet

Building Height

The actual height of the building structure will be 81.4’.

The passing of Ordinance No. 06- 2018 on October 24, 2018, a zoning text amendment to allow for Large Scale Commercial/Mixed-Use Buildings effectively increased the maximum height to 104’ with approval of a Development Agreement by the City Council after consideration of certain factors.

Parking

The required parking spaces for a hotel is one space per hotel unit, one space per manager and one space per every 3 employees per shift and 50% seating capacity for rooftop bar area with 126 seats. As outlined in the table from the site plan. The project is required to provide 288 parking spots with nine of those being designated as handicapped spaces. This would be a total of 295 spaces required by code and provided as outlined in the table below.

PARKING PROVIDED		
FLOOR	PARKING	H/C
1ST (PUBLIC)	20	1
2ND (PUBLIC)	77	2
3RD	76	2
4TH	79	2
PARKING LOT SOUTHERN	22	2
EXISTING PARKING ON FACTORY ST.	0	
JOHN GARREN STORMWATER PAVE DESIGN	13	
BREVARD AVE REPLACED PARALLEL PARK.	1	
TOTAL	288	9

Landscaping

The applicant has provided a landscaping plan in compliance with city codes.

Consistency with the Comprehensive Plan Policies and Objectives

Floor Area Ratio & Maximum Impervious Surface Ratio

Figure FLU-1 of the Comprehensive Plan requires a maximum 1.50 FAR and .75 maximum impervious surface ratio. The site plan indicates the project has a 1.49 FAR and 90% impervious surface ratio. This is consistent with the Mixed Use land use policies of the Future Land Use Element of the adopted comprehensive plan.

Square footages for the Calculations of Floor Area Ratio:

First Floor: 30,099 s.f.

5th floor 27,574 s.f. (35 Rooms and pool deck)

6th floor 16,124

7th floor 19,124

8th roof top bar area 9,405 s.f.

Minus Parking Garage Areas: 101, 746 s.f.

First Floor Parking Garage 4,226 s.f.

2nd floor Parking Garage 32,322 s.f.

3rd floor Parking Garage 32,939 s.f.

4th floor Parking Garage 32,259 s.f.

Total 102,326 sf

The site area is 1.25 acres or 58,756 s. f. which when used with the total square footage calculation of 102,326 s.f. as above, yields a floor area ratio of 1.74.

This is consistent with the Mixed Use land use policies of the Future Land Use Element of the adopted comprehensive plan as the property is located in the Cocoa Redevelopment Area and the maximum Floor Area ratio is 2.0 with additional provisions allowed within the central business district to allow the FAR to go to a maximum of 2.5.

Land Use

Policy 1.1.2.6: Mixed-Use (MU). The Mixed-Use land use category is intended to

provide a mixture of residential, commercial, office, recreational and institutional uses along the major transportation corridors (such as SR 520 and US 1). The mixed-use could be developed as single uses on separate parcels or as a mixture of uses within a single development. Based on current land use trends, the City estimates that the mix of uses in the mixed-use category will be 50 percent residential and 50 percent non-residential.

The property currently has a future land use map designation of mixed-use and is zoned CBD-CVO. The use of a 202,846 square-foot seven story hotel is consistent with the appropriate activities listed in this policy for a mixed-use property and is located on Brevard Ave, which is a two-lane roadway. Extensive facades and planned parking to accommodate hotel guests and employees has been provided.

GOAL 1.3: The City of Cocoa shall enhance the quality of life and prosperity of its citizens through the retention and creation of a wide range of profitable business opportunities and jobs.

The applicant is seeking to develop a 202,846 ± square-foot hotel building and related facilities which would result in a substantial capital investment in building construction and local tourism, and the creation of numerous local job opportunities. The project will create a new business within the City of Cocoa and be a significant economic catalyst to Brevard County including, but not limited to, enhancing the local government tax base.

Concurrency Management/Adequate Public Facilities

Section 15-22, Code of the City of Cocoa, provides for a concurrency management system to ensure public facilities and services needed to support development are available concurrent with the impacts of such development and that development orders and development permits are not issued in a manner that will not result in a reduction in the levels of service below the adopted level of service standards adopted by the City for public facilities and services, as contained in the City's adopted Comprehensive Plan.

Wastewater

The Sellers Plant is currently permitted to treat 4.5 mgd of wastewater per day, and is currently operating at 2.08 mgd. The maximum peak flow over the past twelve months was 4.56 mgd. Thus, it is anticipated that there is sufficient capacity for 107 hotel rooms and ancillary uses in contrast with previous uses.

Stormwater Management

The Level of Service (LOS) for Stormwater Management is as follows:

Design Storm Event	25-year frequency/24-hour duration event
On-site Stormwater Management:	Retention of the first one inch of rainfall for areas of more than one acre.
Stormwater Quantity:	Post development Stormwater runoff flow rates, quantities, peaks, and velocities shall be equal to or less than levels that existed prior to development.
Stormwater Quality:	No significant degradation of water quality in receiving water bodies.

A St Johns River Water Management District Permit will be provided by the applicant for this project. The City's Public Works Department has reviewed the application to ensure that the City's LOS for

stormwater management is satisfied.

Potable Water

The Dyal Plant provides potable for the City of Cocoa service area and it is currently permitted to operate at 48 million gallons per day (mgd). The maximum average daily flow over the past twelve months is 26.17 mgd. Thus, there is sufficient capacity for Potable Water.

Solid Waste

The Level of Service (LOS) for the City of Cocoa is 1.2 tons of solid waste disposal per capita per year, and non-residential collection LOS shall be 2 to 6 times per week per week as needed with green waste and recyclables once per week. The City contracts with Waste Management for the provision of solid waste, and the projected solid waste generated will be collected consistent with the adopted level of service standards.

Roadways (Transportation)

The minimum LOS for Brevard Avenue C.

The Space Coast TPO Traffic Counts Report for 2019 indicates level of service for this local arterial is adequate and the proposed use would generate a manageable number of additional daily trips.

Based on the Current Maximum Acceptable Volume established by the Space Coast TPO, adding the anticipated daily trips to the roadway volume will not cause the level of service on the roadway to drop below the established minimum LOS.

The site will have a covered drop off area which extends to the middle of the existing Factory street right of way. Consistent with the Conceptual Development Plan, approximately 4,200 square-feet of the right-of-way on Factory Street is intended to be vacated and redeveloped for the Project. Pursuant to Section 9.B of the Redevelopment Agreement, vacation of the right-of-way shall occur no sooner than the commencement of construction and must be presented to the City Council for approval.

Recreation

The project will not add any residential units; therefore, no recreation capacity is required.

Schools

The project will not add any residential units; therefore, no school capacity is required.

BUDGETARY IMPACT:

N/A

PREVIOUS ACTION:

N/A

RECOMMENDED MOTION:

Staff recommends APPROVAL of a Large-Scale Site Plan consistent with Appendix A, Zoning, Article

XIII, Section 1, to construct a 107-room mixed use hotel totaling approximately 202,044 square feet on 1.25 acres with the following conditions:

1. The Applicant shall be required to obtain all other applicable state and federal permits necessary for the development prior to commencement of the development, which shall include, but not be limited to, a Brevard County Right-of-Way Permit, the St. John's River Water Management District permit. Issuance of a development permit by the City does not create any right on the part of an applicant to obtain a permit from a state or federal agency and does not create any liability on the part of the City for issuance of the permit if the applicant fails to obtain requisite approvals or fulfill the obligations imposed by a state or federal agency or undertakes actions that result in a violation of state or federal law.
2. The site plan shall be subject to and conditioned upon the City Council's approval of the vacation of approximately 4,200 square feet of Factory Street as outlined in the plans and providing the public easements required in the Development Agreement.

The vacation shall not become effective until the commencement of construction pursuant to the Development Agreement with the City and in accordance with the schedule contained in the Amended and Restatement Redevelopment Agreement.

3. All utilities comments shall be satisfied prior to final site plan approval.
4. The spot in front of the FDC & Hydrant shall be marked as "No Parking - Fire Lane."
5. Provide a dechlorinator for the swimming pool and proposed discharge connection to the stormwater system.

COCOA HOTEL AND HOSPITALITY COCOA VILLAGE

SECTION 33, TOWNSHIP 24, RANGE 36E
BREVARD COUNTY, FLORIDA

NOVEMBER 4, 2021

REV. FEBRUARY 2, 2022

REV. MARCH 9, 2022

REV. MARCH 22, 2022

REV. MARCH 31, 2022

OWNER / APPLICANT

COCOA REDEVELOPMENT AGENCY

603 BREVARD AVE..

COCOA, FLORIDA, 32922

DEVELOPER

GULFSTREAM EQUITY MANAGEMENT LLC.

5055 BABCOCK N.E.

PALM BAY, FLORIDA, 32905

ENGINEER



CIVIL ■ STRUCTURAL ■ SURVEYING ■ ENVIRONMENTAL

1250 W. EAU GALLIE BLVD., SUITE H

MELBOURNE, FL 32935

PH: (321) 253-1510

VERO BEACH, FL - PH: (772) 569-0035

FT. PIERCE, FL - PH: (772) 468-9055

PALM CITY, FL - PH: (772) 426-9959

ARCHITECT

MICHAEL F. KELLEY

5055 BABCOCK ST. N.E. SUITE #4

PALM BAY, FLORIDA, 32905

PHONE: (321) 727-7100

FAX: (321) 728-7100

LANDSCAPE ARCHITECT

LANDSCAPE ARCHITECTURE

& SITE PLANNING

EDWARD HAECK, R.L.A.

1711 HICKORY ST

MELBOURNE, FL 32901

PHONE: (321) 327-4524

SURVEYOR

R.M. PACKARD & Assoc

SURVEYING & MAPPING

197 BOUGAINVILLE DRIVE / SUITE D

Rockledge, FL 32955

PH: (321) 632-6335

FAX: (321) 631-7392

Florida certificate #6649

Sheet List Table

Sheet Number	Sheet Title
G-001	COVER
G-002	GENERAL NOTES
C-101	EXISTING SITE PLAN
C-102	EROSION CONTROL PLAN
C-103	SITE DEMOLITION PLAN
C-104	SITE PLAN
C-105	PAVING, GRADING AND DRAINAGE PLAN
C-106	UTILITY SITE PLAN
C-107	FACTORY STREET PLAN
C-108	JOHN GARREN STREET PLAN
C-109	BREVARD AVENUE PLAN
C-801	EROSION CONTROL DETAILS
C-802	UTILITY DETAILS
C-803	PAVING, GRADING AND DRAINAGE DETAILS
C-804	PAVING, GRADING AND DRAINAGE SECTIONS
C-805	DRAINAGE EXFILTRATION DETAILS
C-806	DRAINAGE EXFILTRATION DETAILS -2
C-807	DRAINAGE EXFILTRATION DETAILS - 3
C-808	DRAINAGE EXFILTRATION DETAILS - 4
C-809	FDOT DETAILS
C-810	STREET DETOUR PLAN

L-1 LANDSCAPE PLAN AS ATTACHMENT

L-2 IRRIGATION PLAN AS ATTACHMENT

2

LEGAL DESCRIPTION

LOTS 2,3, AND 4 OF PLAT OF SINGLETON'S ADDITION TO COCOA, ACCORDING TO THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 1, PAGE 28 OF THE PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA

GENERAL STATEMENT

THE PROPOSED PROJECT WILL BE DEVELOPED AS A HOTEL IN COCOA VILLAGE. THE HOTEL WILL BE 8 FLOORS WITH A TOTAL HEIGHT OF 85 FEET. THERE WILL BE A TOTAL OF 107 HOTEL UNITS, LOCATED ON 3 FLOORS, LEVELS 5, 6, 7. THERE WILL BE A PARKING GARAGE ON LEVELS 1, 2, 3, 4. FIRST FLOOR IS THE CHECK IN LOBBY, HOTEL OFFICES, KITCHEN, BREAKFAST AREA. 1,300 SF HOTEL SUNDRIES RETAIL, MAINTENANCE 2,520 SF MEETING AREA. 3,800 SF PUBLIC ACCESS RETAIL OFF BREVARD AVE. THERE WILL BE AN OUTDOOR EATING AREA ASSOCIATED WITH THE HOTEL ALONG BREVARD AVE. A 28 SPACE PARKING LOT WILL BE ADDED TO THE SOUTH SIDE OF THE BUILDING.

THERE WILL BE A SWIMMING POOL ON THE 5TH LEVEL. FACTORY STREET WILL REMAIN 2 WAY. PARKING ON THE NORTH SIDE WILL REMAIN.

THE SITE WILL HAVE A COVERED DROP OFF AREA WHICH EXTENDS TO THE MIDDLE OF THE EXISTING STREET RIGHT-OF-WAY 4,200 SF OF FACTORY STREET WILL BE VACATED AND INCORPORATED INTO THE SITE PLAN. DEVELOPER SHALL BE RESPONSIBLE FOR RELOCATION OF UNDERGROUND UTILITIES AND DRAINAGE. OUTSIDE OF BUILDING AND CANOPY AREAS. VACATED PORTION OF FACTORY STREET WILL BE REPLACED WITH PUBLIC ACCESS, DRAINAGE UTILITY AND SIDEWALK EASEMENTS.

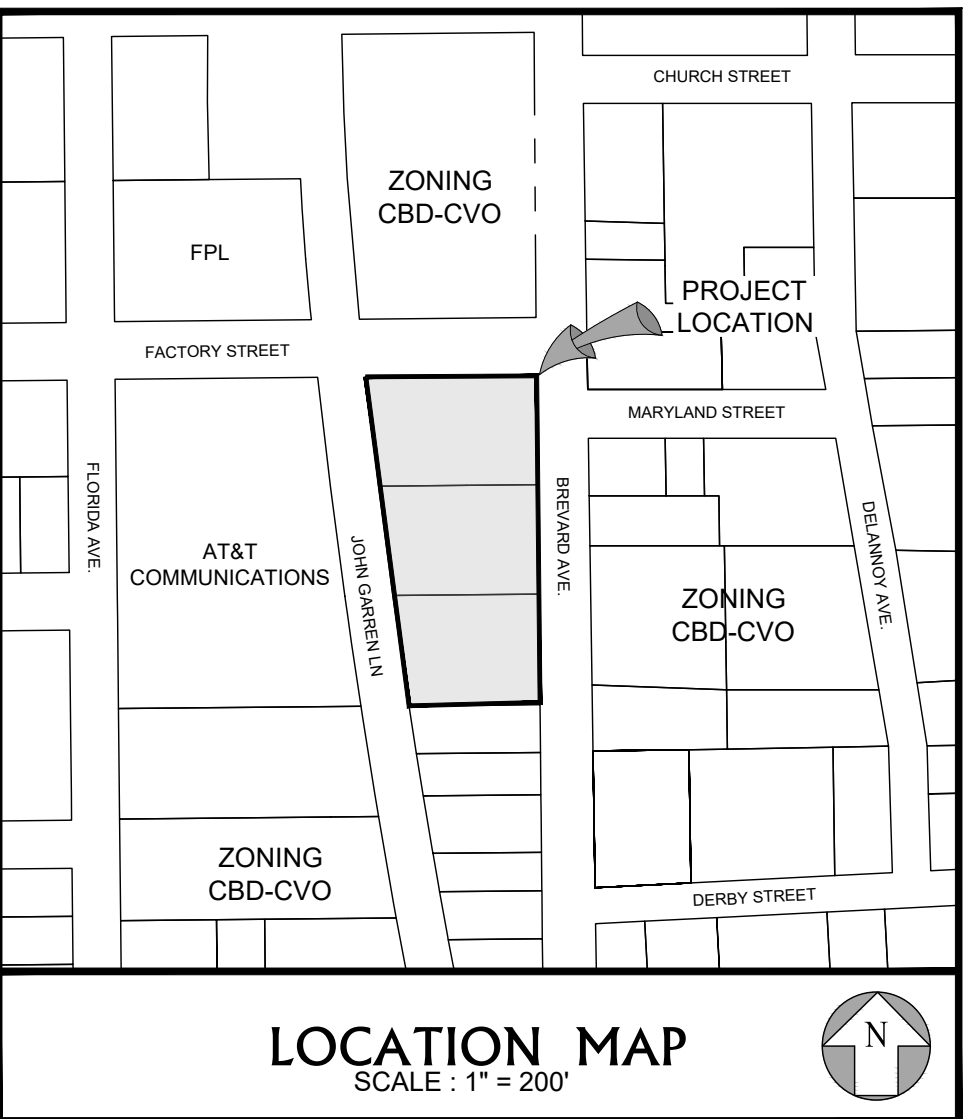
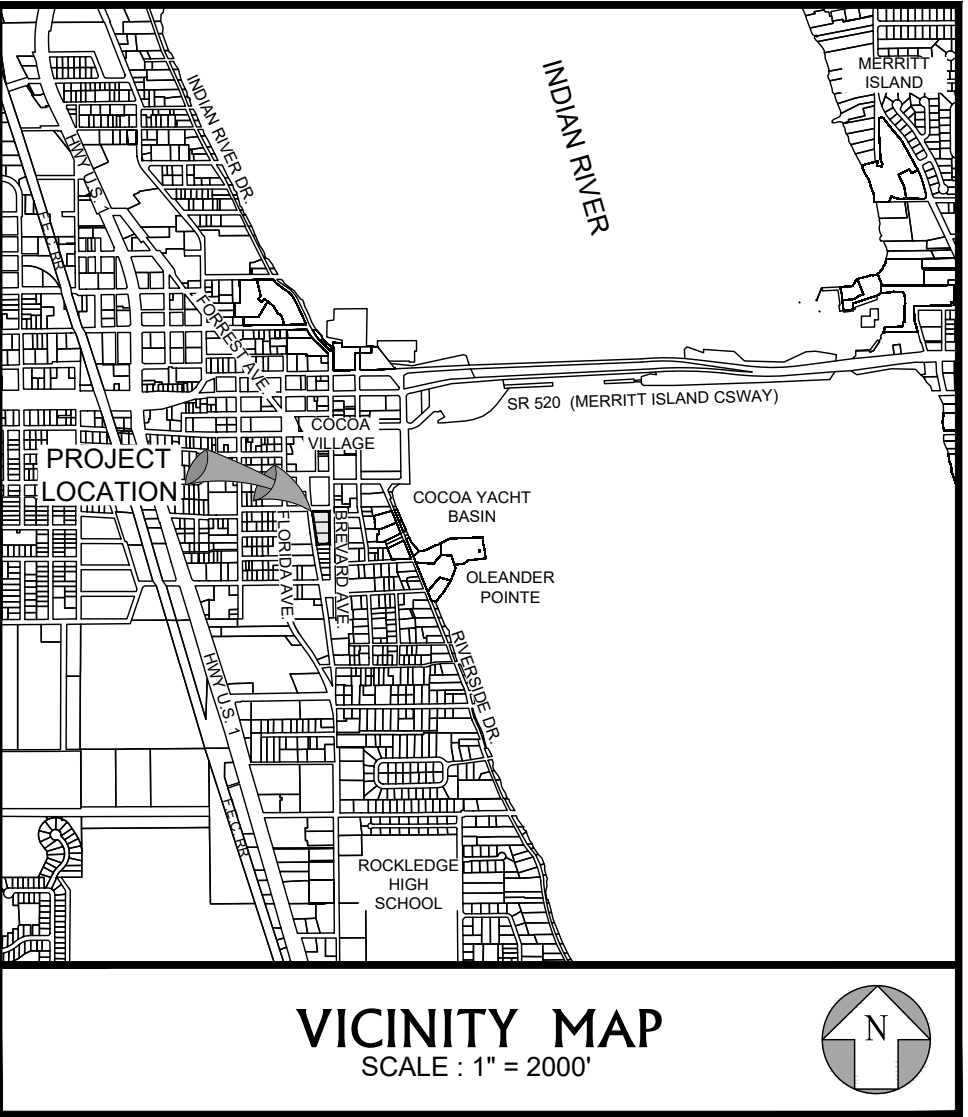
100 SPACES OF THE TOTAL NUMBER OF PARKING SPACES PROVIDED ON SITE SHALL BE DESIGNATED AS PUBLIC PARKING.

THE HOTEL SHALL HAVE A FULLY AUTOMATIC SPRINKLER SYSTEM PARKING GARAGE HEIGHT CLEARANCE: 8.0 FEET PARKING GARAGE WILL HAVE STANDPIPES

STORMWATER MANAGEMENT WILL BE PROVIDED IN ACCORDANCE WITH CITY OF COCOA CODE. STORMWATER MANAGEMENT SHALL BE UNDERGROUND.

TWO OF THE EXISTING LARGE CONCRETE FPL POWER POLES ARE IN CONFLICT WITH THE PROPOSED SITE FRONT ENTRANCE AN SHALL HAVE TO BE REMOVED/RELOCATED. ANY AND ALL ELECTRIC ASSOCIATED WILL BE BURIED UNDERGROUND ON THE NORTH END OF THE PROPOSED SITE. THIS WORK WILL BE PERFORMED BY FPL AND PAID FOR BY THE DEVELOPER. THE EXISTING CONCRETE POLE LOCATED AT THE NORTHEAST CORNER OF THE PROPOSED SITE IS TO BE PRESERVED AND PROTECTED IN PLACE.

WATER AND SEWER TREATMENT PLANT CAPACITY SHALL BE PROVIDED BY THE CITY OF COCOA. THE PROJECT DEVELOPER IS RESPONSIBLE FOR BRINGING WATER AND SEWER FACILITIES OF ADEQUATE CAPACITY TO THE SITE TO SERVE THE PROPOSED BUILDING. DEVELOPER SHALL PROVIDE ANY ADDITIONAL FIRE HYDRANTS AND WATER MAINS NEEDED FOR THE SITE PLAN.



REQUIRED PERMITS

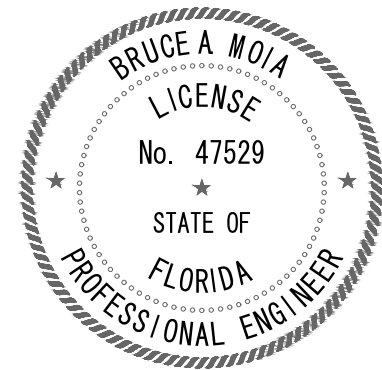
CITY OF COCA SITE PLAN
FDEP POTABLE WATER DISTRIBUTION
FDEP WASTEWATER COLLECTION
SURVMD ERP

CITY OF COCOA

CITY PERMIT NUMBER: PZ-21-00200013

SAINT JOHN'S WATER MANAGEMENT DISTRICT

SURVMD PERMIT NUMBER: 181051-1



BRUCE A. MOIA
FL. P.E. #47529

DATE: 3/31/22

PROJECT: 21-1092

SHEET

G-001

PERMITTING SET

PERMITTING SET

COCOA

 ENGINEERING, INC. MOVA, BOWEN, KALANICK & ASSOCIATES CIVIL - STRUCTURAL - ENVIRONMENTAL 17245 W. BAYVIEW BLVD., SUITE 400 MELBOURNE, FLORIDA 32955 P: 321-255-1510 F: 321-263-0911 E: info@mbve.com W: www.mbv.com P: 772-566-0035, T: PERCE: 772-468-9565, PALM CITY: 772-426-9690	JOB NO.	21-1092	8	
	DESIGNED	RMS	6	
	DRAWN		5	
		RMS	4	
	DATE		3	03/18/2022
			2	03/18/2022
	CHECKED	TC /BAM	1	03/01/2022
			1	02/02/2022
	DATE ISSUED			

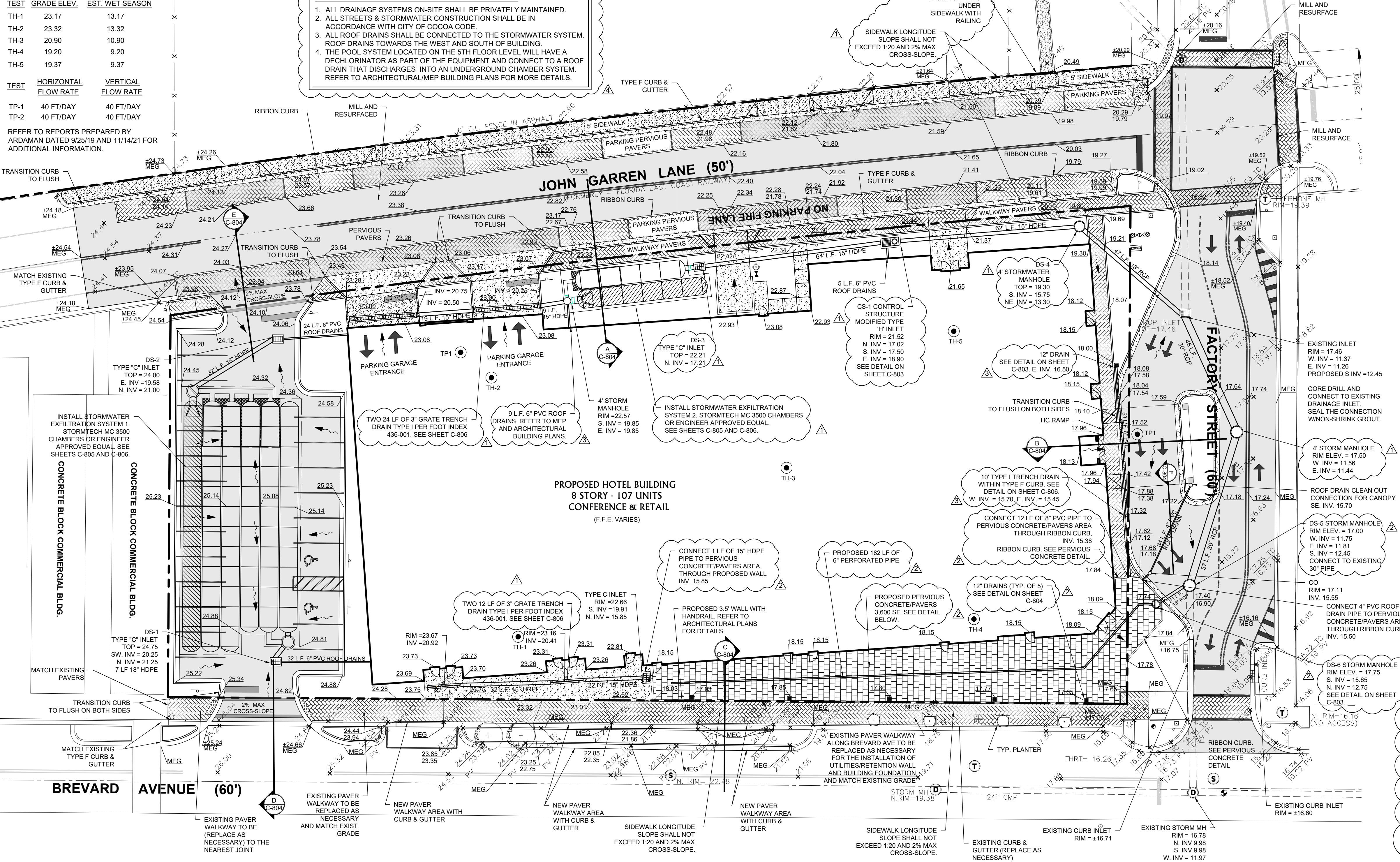
PERMITTING SET

TEST	GRADE ELEV.	EST. WET SEASON
TH-1	23.17	13.17
TH-2	23.32	13.32
TH-3	20.90	10.90
TH-4	19.20	9.20
TH-5	19.37	9.37

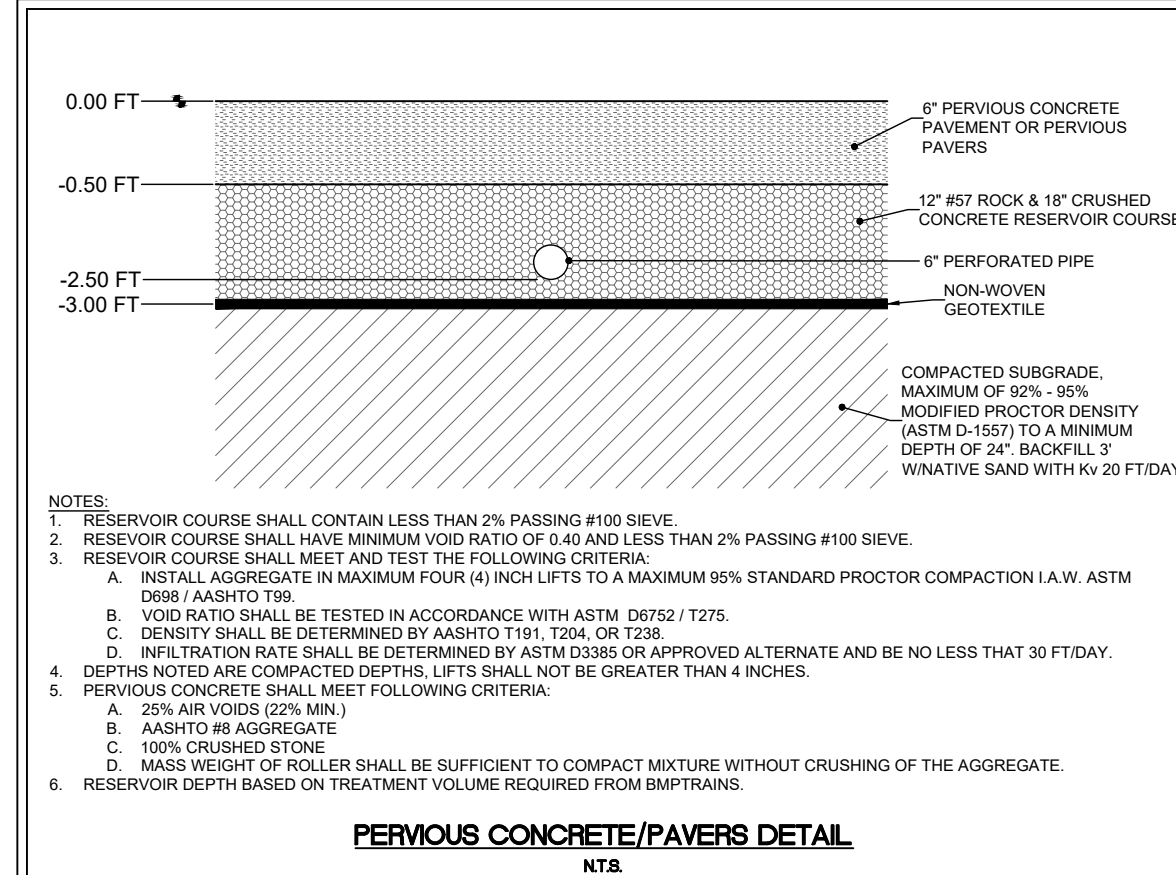
<u>TEST</u>	<u>HORIZONTAL FLOW RATE</u>	<u>VERTICAL FLOW RATE</u>
TP-1	40 FT/DAY	40 FT/DAY

REFER TO REPORTS PREPARED BY
ARDAMAN DATED 9/25/19 AND 11/14/21 FOR
ADDITIONAL INFORMATION.

1. ALL DRAINAGE SYSTEMS ON-SITE SHALL BE PRIVATELY MAINTAINED.
2. ALL STREETS & STORMWATER CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF COCOA CODE.
3. ALL ROOF DRAINS SHALL BE CONNECTED TO THE STORMWATER SYSTEM ROOF DRAINS TOWARDS THE WEST AND SOUTH OF BUILDING.
4. THE POOL SYSTEM LOCATED ON THE 5TH FLOOR LEVEL WILL HAVE A DECHLORINATOR AS PART OF THE EQUIPMENT AND CONNECT TO A ROOF DRAIN THAT DISCHARGES INTO AN UNDERGROUND CHAMBER SYSTEM. REFER TO ARCHITECTURAL/MEP BUILDING PLANS FOR MORE DETAILS.

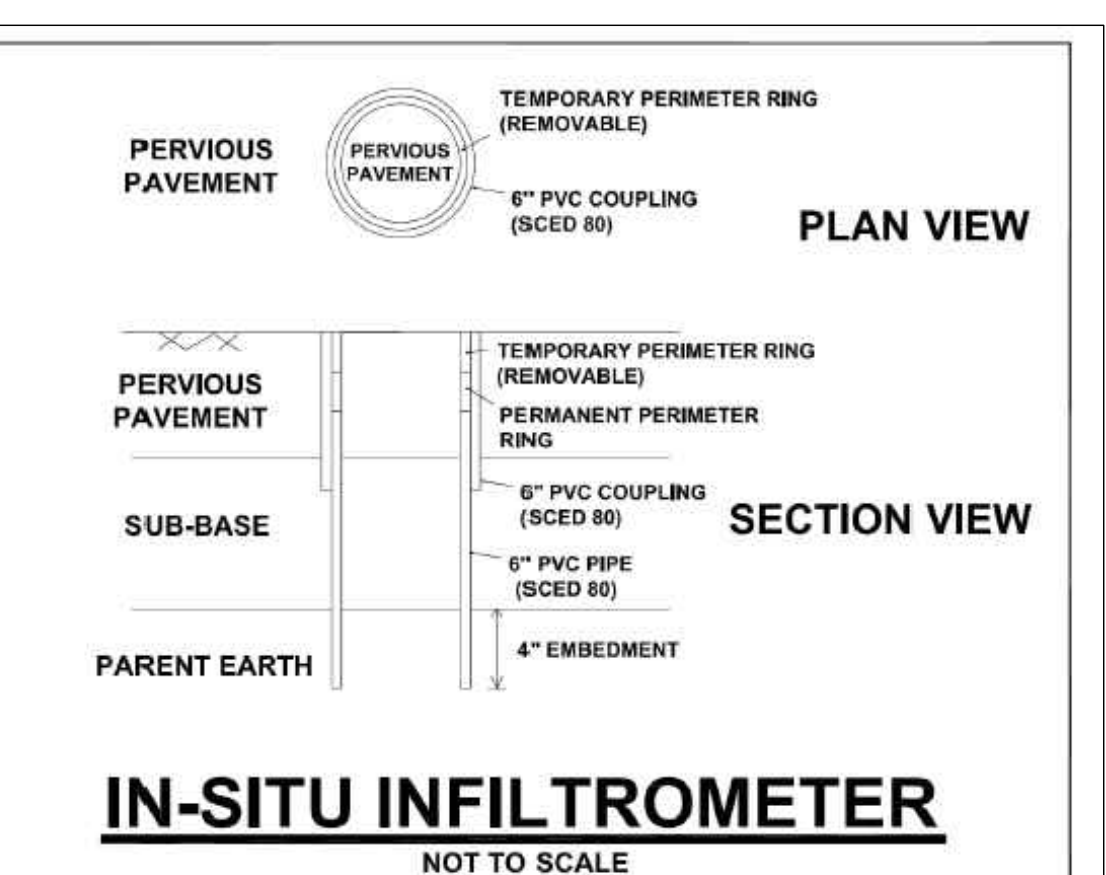


	PROPOSED ASPHALT PAVEMENT		PROPOSED PERVIOUS CONCRETE OR PERVIOUS PAVERS
	PROPOSED PAVERS		EXISTING PAVERS
	PROPOSED CONCRETE		EXISTING CONCRETE
	PROPOSED NO PARKING PAVERS		EXISTING DRAINAGE SWALE
	EXISTING CONC. POWER POLE		EXISTING DRAINAGE PIPE
	EXISTING WOOD POLE		EXISTING WATER MAIN
	EXISTING VALVE		EXISTING TELEPHONE LINE
	EXISTING WATER METER		EXISTING SANITARY LINE
	EXISTING ELECTRIC HAND HOLE		EXISTING GAS LINE
	EXISTING FIRE HYDRANT		EXISTING GAS LINE
	EXISTING LIGHT POLE		EXISTING OVERHEAD WIRE
	EXISTING SANITARY MANHOLE		EXISTING CHAIN LINK FENCE
	EXISTING DRAINAGE MANHOLE		SOIL BORING
	EXISTING DRAINAGE MANHOLE		PROPOSED DRAINAGE PIPE



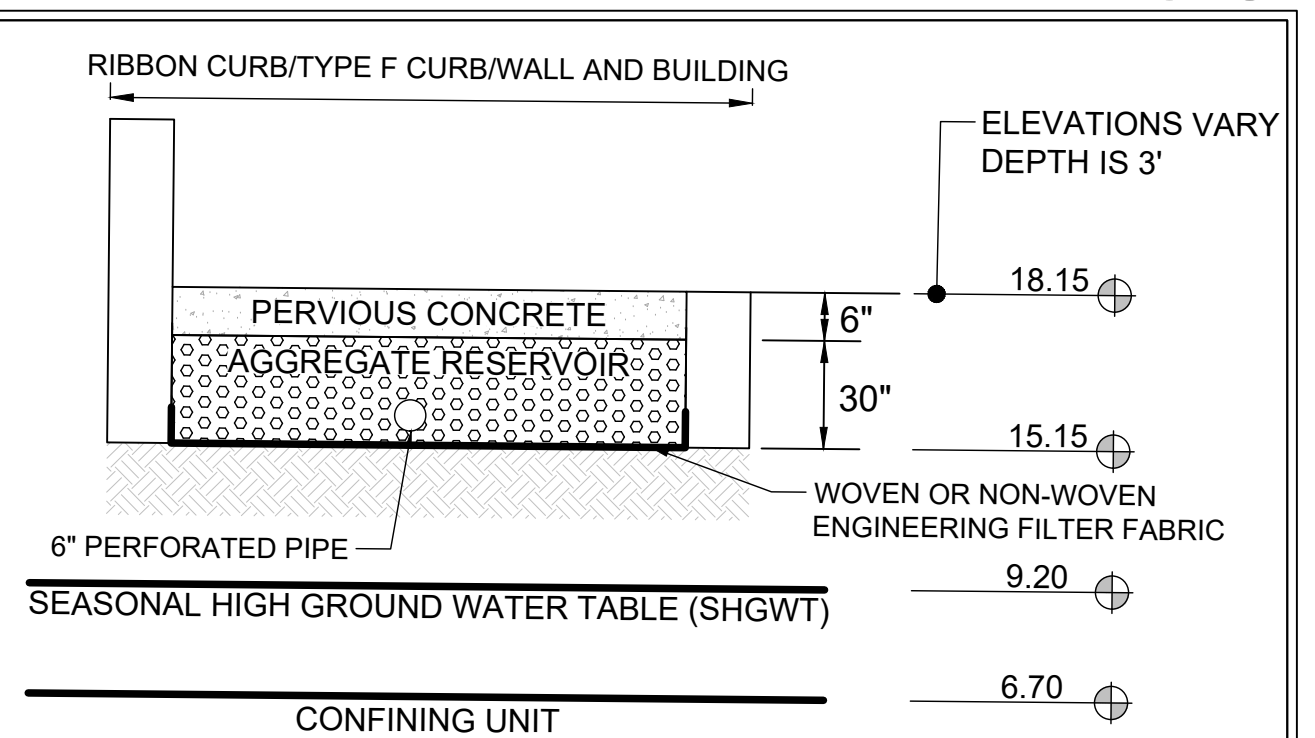
1. BACKFILL WITH GOOD, NATIVE SAND WITH K_v OF 20 FT/DAY
2. MATERIAL MUST BE NATIVE SANDS, NOT PROCESSED OR WASHED
3. HAVE A HIGHER PERCENTAGE PASSING THE NO. 200 SIEVE (8-10%).
4. BE FREE AND CLEAR OF DEBRIS AND OTHER ORGANIC MATTER.
5. A PE OR GEOTECHNICAL ENGINEER WILL ENSURE THE ADEQUACY OF THE MATERIAL AT THE TIME OF BACKFILL.

1. ALL ROOF DRAINS ARE TO BE DIRECTED INTO PROPOSED INLETS ON WEST AND SOUTH OF BUILDING AND FRONT ENTRANCE CANOPY ROOF DRAIN IS TO BE DIRECTED TO THE PERVIOUS PAVED AREA.
2. ALL UNDERGROUND STORMWATER AREAS LOCATED IN PERVIOUS AREA TO BE SODDED ON TOP.
3. INSTALLATION OF EMBEDDED RING INFILTRATOR KIT IS REQUIRED. SEE DETAIL ON THIS SHEET.
4. REFER TO ARDAMAN GEOTECHNICAL REPORT FOR SUBGRADE PREPARATION RECOMMENDATIONS UNDER PROPOSED PERVIOUS CONCRETE AREA, CONCRETE PAVEMENT AREAS AND BUILDING FOUNDATIONS.
5. PERVIOUS CONCRETE PAVEMENT/PAVERS CONSTRUCTION WILL BE PERFORMED BY A CONTRACTOR THAT IS TRAINED AND CERTIFIED BY THE PRODUCT MANUFACTURER PRIOR TO INSTALLING THE PERVIOUS CONCRETE PAVEMENT OR PERVIOUS PAVEMENT SYSTEM.

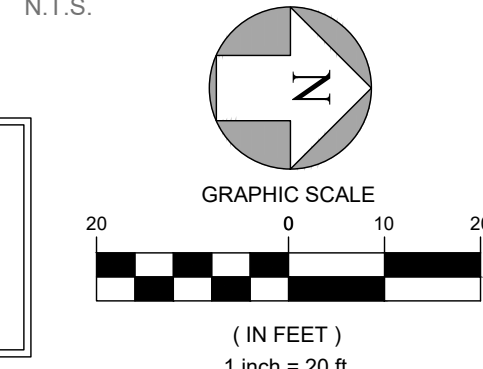


1. SPOT ELEVATIONS ARE AT EDGE OF PAVEMENT OR EDGE OF CURB FOR CONCRETE PAVG UNLESS NOTED OTHERWISE. DOUBLE STACKED SPOT ELEVATIONS DENOTE CURB REAL WITH THE LOWER ELEVATION BEING TOP OF CURB, AND THE BOTTOM BEING THE GUTTER ELEVATION.
2. THE PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED ON THIS PROJECT. CONTRACTORS BID SHALL INCLUDE CONSIDERATION FOR ADDRESSING THIS ISSUE. ALL INLETS SHALL HAVE A MIN. 6" SUMP/LOWEST INLET.
3. EROSION CONTROL FENCING MUST BE IN PLACE PRIOR TO GRADING.
4. PIPE LENGTHS AND SLOPES SHOWN ARE APPROXIMATE.
5. STORM PIPE SHALL BE AS FOLLOWS:
A. RCP MEETING ASTM C76
B. HIGH DENSITY POLYETHYLENE PIPE MEETING REQUIREMENTS OF AASHTO M252 TYPE 2, M254 TYPE 3, ASTM D1248, D3550 AND D3231. CONTRACTOR SHALL SELECT THE MOST ECONOMICAL PRODUCT THAT MEETS LOCAL JURISDICTIONAL REQUIREMENTS AND SOIL CONDITIONS.
7. WHERE POSSIBLE, SLOPE 4:1 OR FLATTER TO EXIST. GROUND SLOPE NOT TO EXCEED 3:1 AT ANY LOCATION UNLESS OTHERWISE SPECIFIED.
8. REFER TO SWPPP (STORM WATER POLLUTION PREVENTION PLAN) FOR EROSION CONTROL.
9. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.
10. ALL STORM PIPE ENTERING STRUCTURES SHALL BE GROUTED TO ASSURE CONNECTION AT STRUCTURE IS WATER TIGHT.
11. STORM MANHOLE TOP ELEVATIONS SHOWN ARE APPROXIMATE. ALL STORM SEWER EXPOSED IN PAVED AREAS SHALL BE COVERED WITH PAVEMENT AND SHALL HAVE TRAFFIC BEARING LIDS. STORM MANHOLES IN NON-PAVED AREAS SHALL BE MIN. 6" ABOVE FINISHED GRADE. CONTRACTOR SHALL ADJUST STRUCTURE TOPS AS REQUIRED. LIDS SHALL BE LABELED "STORM SEWER".
12. CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS.
13. PERCOLATION TESTS (AS REQUIRED BY THE PROJECT SPECIFICATIONS) SHALL BE CONDUCTED IN ALL PARKING LOT ISLANDS PRIOR TO CURBING AND/OR LANDSCAPE PLANTINGS.
14. CONTRACTOR SHALL PROVIDE 3' LONG TRANSITION FROM CURB & GUTTER TO ALL FDOT CURB INLETS AND/OR OFFSITE FDOT CURBS TO MAINTAIN CURB ALIGNMENT.
15. CONTRACTOR SHALL ADJUST INLET/STRUCTURE OR CONNECTION LOCATION AS REQUIRED TO ENSURE PROPOSED STRUCTURES AND PIPES ARE IN PROPER ALIGNMENT AND MATCH SLOPE OF EXISTING PIPES OR CONNECTIONS.
16. ALL STRUCTURES ARE TO CONFORM WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS. CURB INLETS SHALL BE FDOT INDEX 211, CATCH BASINS SHALL HAVE TRAFFIC BEARING RETICULINE GRATES INDEX 232 AND FDOT INDEX 200 STRUCTURE BOTTOMS SIZED AS REQUIRED. CONCRETE ENDWALLS SHALL BE FDOT INDEX 250 AND MANHOLES (M.H.) SHALL BE FDOT INDEX 201 TOPS WITH FDOT INDEX 200 STRUCTURE BOTTOMS SIZED AS REQUIRED. MITERED 90 DEGREE SIZES SHALL BE USED. ALL MITERED END SECTIONS SHALL BE IN ACCORDANCE WITH INDEX 273. CONTRACTOR SHALL ENSURE THAT INLETS ARE INSTALLED WITH AN ORIENTATION CONSISTENT WITH THE ALLOWABLE PIPE SIZES AS LISTED IN FDOT INDEX 232.
17. LOCATION OF EXISTING UTILITIES AND/OR PRIOR CONSTRUCTION PLANS OR AS-BUILT INFORMATION IS NOT A WARRANTY IS MADE AS TO THE ACTUAL LOCATION OF EXISTING UTILITIES OR OTHER CONNECTIONS SHOWN. CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS OF ALL EXISTING LANDSCAPING, APPURTENANCES, UTILITIES AND OTHER CONNECTIONS. IF ANY DISCREPANCIES ARE DISCOVERED BETWEEN THE LISTED LOCATIONS, ADJUSTMENTS, UTILITIES, OR OTHER CONNECTIONS SHOWN ON THESE PLANS AND ACTUAL FIELD LOCATIONS, CONTRACTOR SHALL CONTACT THE OWNER AND ENGINEER IMMEDIATELY AND SHALL NOT PROCEED WITH CONSTRUCTION UNTIL DIRECTED TO BY OWNER.
18. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR EXISTENCE OF EXISTING UTILITIES OR OTHER CONNECTIONS IS THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
19. WHERE AN FDOT INDEX 200 BOTTOM IS CALLED OUT, THE CONTRACTOR SHALL USE THE MOST ECONOMICAL PRODUCT WHICH MEETS ALL APPLICABLE FDOT REQUIREMENTS FOR THE PROJECT SIZES AND SLOPES.
20. THE CONTRACTOR SHALL EXERCISE DUE CARE IN OPERATION OF VIBRATORY EQUIPMENT TO AVOID DAMAGE TO ADJACENT STRUCTURES.
21. ALL STORM INLETS SHALL UTILIZE RETICULINE STEEL GRATES MEETING FDOT REQUIREMENTS.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE EXISTING PUBLIC ROADWAYS, CURBS, GUTTERS, SIDEWALKS, DRAINAGE SYSTEMS, AND UTILITIES AS A DIRECT RESULT OF NEW CONSTRUCTION, ROAD IMPROVEMENTS SUCH AS BUT NOT LIMITED TO RESURFACING MAYBE REQUIRED.
23. ALL STORM PIPE JOINTS SHALL BE IMPROVED WITH FILTER CLOTH. SEE DETAIL C-8 FOR DRAINAGE AND CONSTRUCTION DETAILS.
24. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT ALL EXISTING UTILITIES AND ADJOINING PROPERTY AND/OR ROADWAYS.

DRAINAGE INLET	TOP ELEV.	PIPE INVERT	DESCRIPTION
DS-1	24.75	20.25 WEST 21.25 NORTH	TYPE C CATCH BASIN
DS-2	24.00	19.58 EAST 21.00 NORTH	TYPE C CATCH BASIN
DS-3	22.21	17.21 SOUTH 17.21 NORTH	TYPE C CATCH BASIN
DS-4	19.30	15.40 NORTHEAST 15.75 SOUTH	4' STORMWATER MANHOLE
DS-5	16.72	11.81 EAST 11.75 WEST	TYPE F CATCH BASIN
CS-1	21.52	17.02 NORTH 17.50 SOUTH 18.90 EAST	CONTROL STRUCTURE (MODIFIED TYPE 'H' INLET)



N.T.S.



72 HOURS BEFORE DIGGING
CALL TOLL FREE
811
Know what's **below**.
Call before you dig.

[illegible]

JOB NO.	21-1092	8
DESIGNED	RMS	7
DRAWN	RMS	6
DATE		5
CHECKED	TC/BAM	4
DATE ISSUED		3
		2
		1
		0

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1250 W. GAIL GALE BLVD., SUITE #H
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ALSO WITH OFFICES IN:
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772-569-0035 PALM CITY 772-426-9659

PAVING, GRADING AND
DRAINAGE PLAN

**COCOA HOTEL AND HOSPITALITY
COCOA VILLAGE**

BRUCE A. MOIA

DATE:

FL. P.E. #47529	3/31/2022
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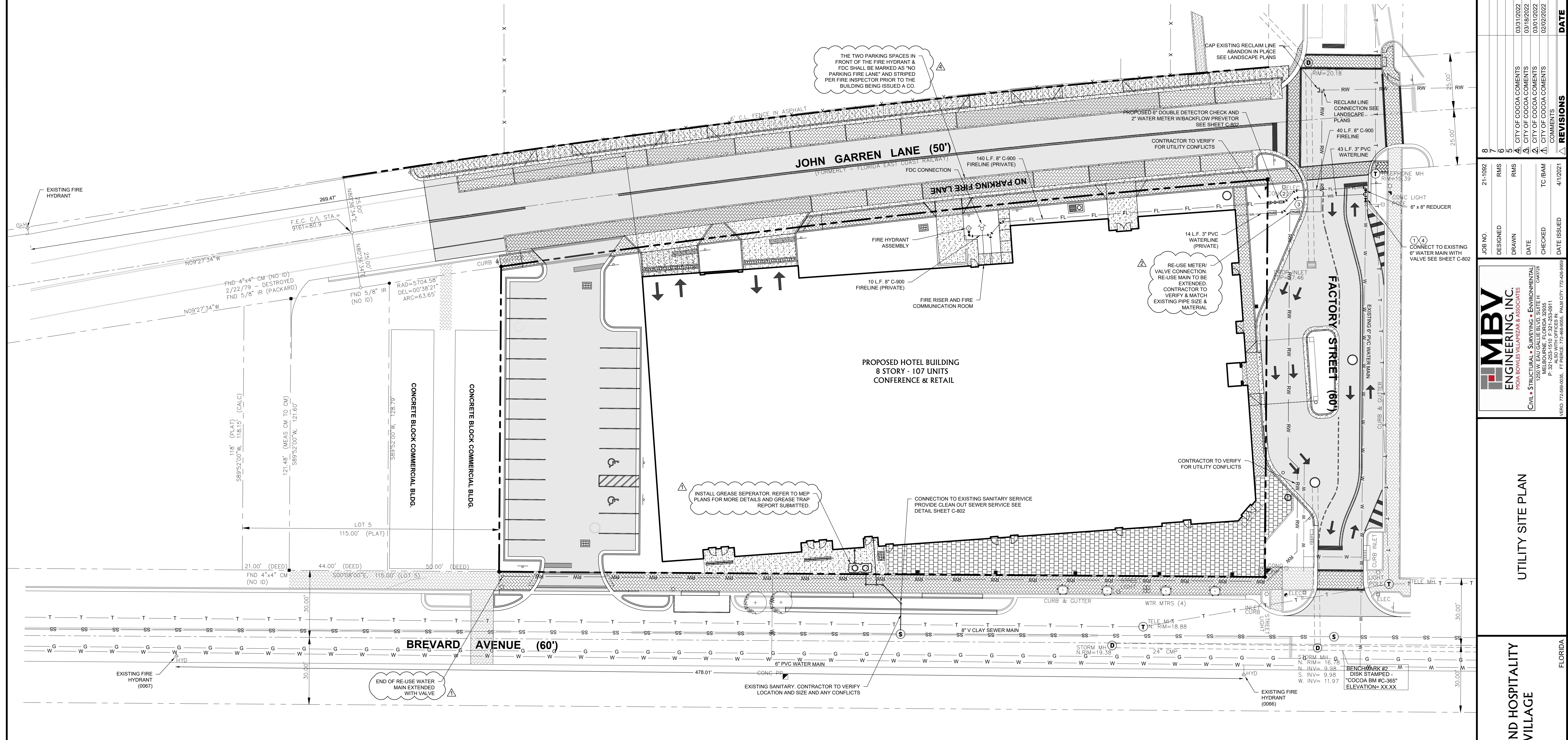
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SHEET
01-1030

21-1092
PERMITTING SET



GENERAL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING EXISTING WATER MAINS, FORCE MAINS, REUSE MAINS, SANITARY SEWER, STORM MAINS AND OTHER UTILITIES AND MAINTAIN MINIMUM CLEARANCE BETWEEN WATER MAINS AND OTHER UTILITIES AT ALL POINTS ALONG THEIR LENGTH AS REQUIRED IN THE PLANS, DETAILS AND SPECIFICATIONS.
2. ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODE AND/OR UTILITY SERVICE PROVIDER COMPANIES SHALL BE PERFORMED PRIOR TO ANNOUNCED BUILDING PROCESSION AND THE FINAL CONNECTION OF SERVICES.
3. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR PRECISE BUILDING DIMENSIONS, BUILDING UTILITY ENTRANCE LOCATIONS AND EXIT PORCH LOCATIONS.
4. REFER TO WATER AND SEWER SEPARATION NOTES ON THIS SHEET FOR PROTECTION OF POTABLE WATER.
5. NO UTILITY LATERALS, METER BOXES, VALVES, ETC. SHALL BE LOCATED IN PROPOSED SIDEWALK AREAS.
6. SITE CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTING WATER AND SEWER SERVICES WITHIN 5 FEET OF BUILDING UNLESS OTHERWISE NOTED.
7. ALL WATER LINE AND SEWER LINE CONSTRUCTION SHALL CONFORM WITH THE CITY OF COCOA UTILITIES DEPARTMENT POLICIES, PROCEEDINGS, AND STANDARDS.
8. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS ARE BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
9. CONTRACTOR TO VERIFY THE BUILDING FOUNDATION TO MAKE SURE THAT THERE NO UTILITY CONFLICTS.
10. DECORATIVE STREET LIGHTINGS SHOULD BE PROVIDED TO MATCH EXISTING POLES/FIXTURES. LIGHTS SHOULD BE PROVIDED ALONG FACTORY STREET AND JOHN GARREN LANE.

UTILITY NOTES

1. CONTRACTOR TO FIELD VERIFY EXISTING UTILITIES AND PROTECT THEM DURING CONSTRUCTION. SEWER CLEANOUTS MAY NEED TO SWITCH TO TRAFFIC BEARING IF LOCATED ON NEW PAVEMENT AREA.
2. ALL WATER AND SEWER MAINS AND SERVICES ARE EXISTING.
3. ALL NEW SERVICE FOR POTABLE WATER SHALL BE EXTENDED INTERNALLY TO PROPOSED BUILDINGS. CONTRACTOR TO REFER TO AND COORDINATE WITH ARCHITECTURAL PLANS.
4. ALL NEW SERVICE FOR SANITARY SEWER SHALL BE EXTENDED INTERNALLY TO PROPOSED ADDITION. CONTRACTOR TO REFER TO AND COORDINATE WITH ARCHITECTURAL PLANS.
5. WATER SUPPLY EXTENDING FROM MAIN TO THE DOUBLE DETECTOR CHECK VALVE (DDC) SHALL BE PERMITTED THROUGH COCOA UTILITIES. ALL WATER DOWNSTREAM OF THE DDC SHALL BE PERMITTED THROUGH BUILDING DIVISION AND REVIEWED BY FIRE PREVENTION, ON A SEPARATE PERMIT.
6. ALL RELOCATED POWER POLES AND LINES TO BE CORDINATED WITH UTILITY COMPANY AND CITY.

FIRE PREVENTION NOTES:

1. LANDSCAPING, OR ANY OTHER OBSTRUCTION SHALL NOT BE LOCATED WITHIN 7.5 FEET TO THE FRONT AND SIDES OR 4.5 FEET TO THE REAR OF ANY FIRE HYDRANT OR FIRE DEPARTMENT CONNECTION.
2. WATER FOR FIRE FIGHTING PURPOSES SHALL BE INDICATED WITH A BLUE ROADWAY REFLECTOR PLACED ONE FOOT OFF THE CENTERLINE OF THE ROAD FACING THE FIRE HYDRANT. THIS INCLUDES NEW AND EXISTING SOURCES.
3. WATER FOR FIRE FIGHTING PURPOSES SHALL BE AVAILABLE AT THE TIME COMBUSTIBLES ARE BROUGHT ON SITE.
4. NEW FIRE HYDRANTS SHALL BE POSITIONED NOT MORE THAN 8 FEET NOR LESS THAN 6 FEET OFF THE EDGE OF PAVEMENT. THE CENTER LINE OF THE STEAMER CONNECTION (4 1/2") SHALL BE POSITIONED BETWEEN 18"-24" ABOVE FINISH GRADE (I.E. SODDED OR MULCHED). ALSO, ALL HYDRANTS SHALL BE READILY ACCESSIBLE WITHOUT THE NEED TO TRAVERSE SWALES, DITCHES ETC.
5. ACCESS SHALL BE PROVIDED BY AN UNOBSTRUCTED, 20 FOOT WIDE, ALL WEATHER DRIVING SURFACE CAPABLE OF SUPPORTING A 32-TON EMERGENCY VEHICLE. THE DRIVING SURFACE SHALL BE MAINTAINED DURING ALL PHASES OF CONSTRUCTION.

PRESSURE
FIXTURE TABLE

1	6"X 3" REDUCER TEE
2	6" 45° BEND
3	4" 45° BEND
4	6" GATE VALVE

WATER AND SEWER DEDICATION NOTE

1. ALL PROPOSED SEWER SERVICES ARE PRIVATE.
2. ALL PROPOSED WATER SERVICE ARE PRIVATE.

LEGEND

	PROPOSED ASPHALT		PROPOSED NO PARKING PAVERS
	PROPOSED PAVERS		EXISTING DRAINAGE SWALE
	PROPOSED CONCRETE		EXISTING DRAINAGE PIPE
	EXISTING PAVERS		EXISTING WATER MAIN
	EXISTING CONCRETE		EXISTING TELEPHONE LINE
	EXISTING CONC. POWER POLE		EXISTING SANITARY LINE
	EXISTING WOOD POLE		EXISTING GAS LINE
	EXISTING VALVE		EXISTING OVERHEAD WIRE
	EXISTING WATER METER		EXISTING CHAIN LINK FENCE
	EXISTING ELECTRIC HAND HOLE		PROPOSED FIRE LINE
	EXISTING FIRE HYDRANT		PROPOSED WATER SERVICE
	EXISTING LIGHT POLE		PROPOSED SANITARY LINE
	EXISTING SANITARY MANHOLE		
	EXISTING DRAINAGE MANHOLE		
	EXISTING TELEPHONE MANHOLE		

FIRE FLOW CALCULATIONS (NFPFA)

BUILDING DESCRIPTION	FLOOR AREA (Sq. Ft.)	FIRE FLOW (TABLE 18.4.5.1.2)	EXPOSURE %	INITIAL FIRE FLOW SUB-TOTAL (GPM)	FIRE SPRINKLER DECREASE (75 %)	TOTAL MINIMUM FLOW (GPM)	HYDRANTS REQUIRED	HYDRANTS SUPPLIED
HOTEL/RETAIL COMMERCIAL	202,846	4,750	0%	4,750	3,563	1,188	2.0	4"

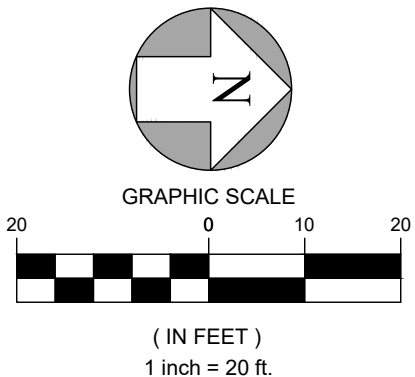
* ONE PROPOSED FIRE HYDRANT ON SITE.

** THREE FIRE HYDRANTS ARE EXISTING WITHIN 500 FT. OF BUILDING (OFFSITE), TWO ON BREVARD AVE AND ONE ON JOHN GARREN LANE.

CONSTRUCTION TYPE: TYPE I-B IBC II (222) NFPA

HAZARD CLASSIFICATION: COMPLETE AUTO SPRINKLER

STRUCTURE OCCUPANCY: HOTEL/RETAIL COMMERCIAL
IN ACCORDANCE WITH NFPA 1, SECTION 3.3, OCCUPANCY (2015 EDITION)



DATE

03/31/2022

03/18/2022

03/01/2022

02/02/2022

REVISIONS

8

7

6

5

4

3

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1

COMMENTS

Δ CITY OF COCOA COMMENTS

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Δ CITY OF COCOA COMMENTS

JOB NO.

21-1092

DESIGNED

RMS

DRAWN

RMS

DATE

CHECKED

TC/BAW

DATE ISSUED

4/1/2021

UTILITY SITE PLAN

COCOA HOTEL AND HOSPITALITY
COCOA VILLAGE

FLORIDA

COCOA

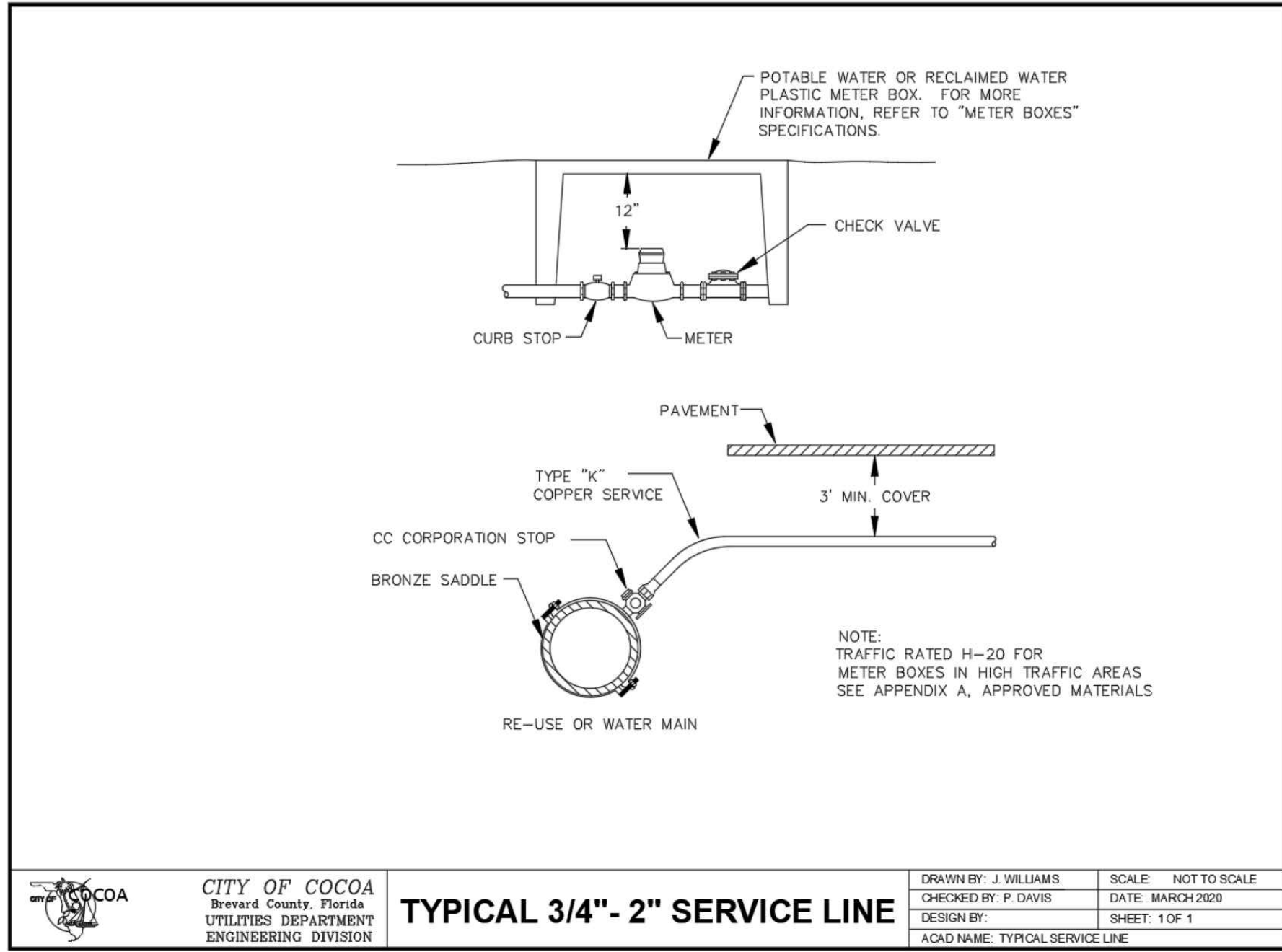
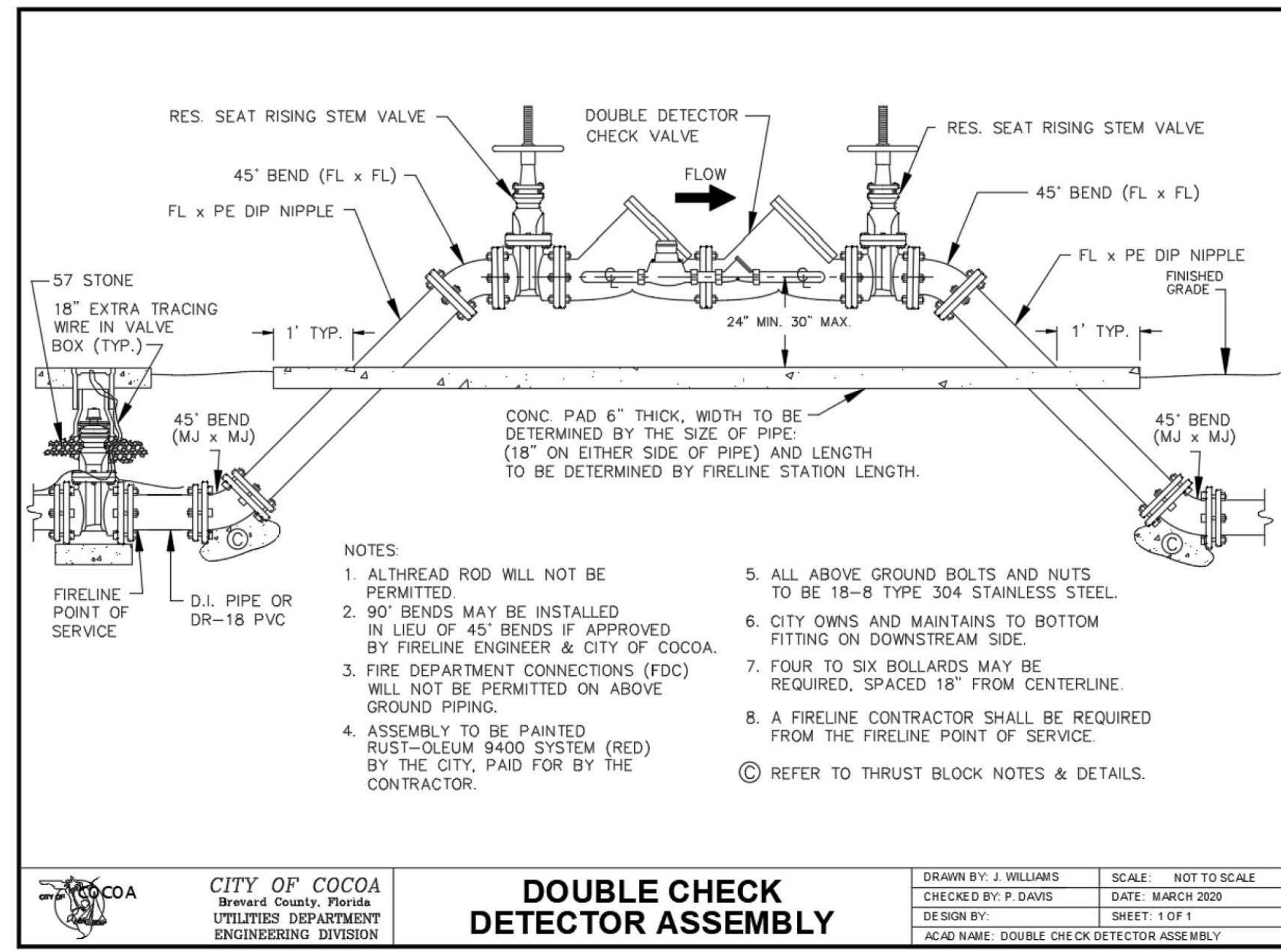
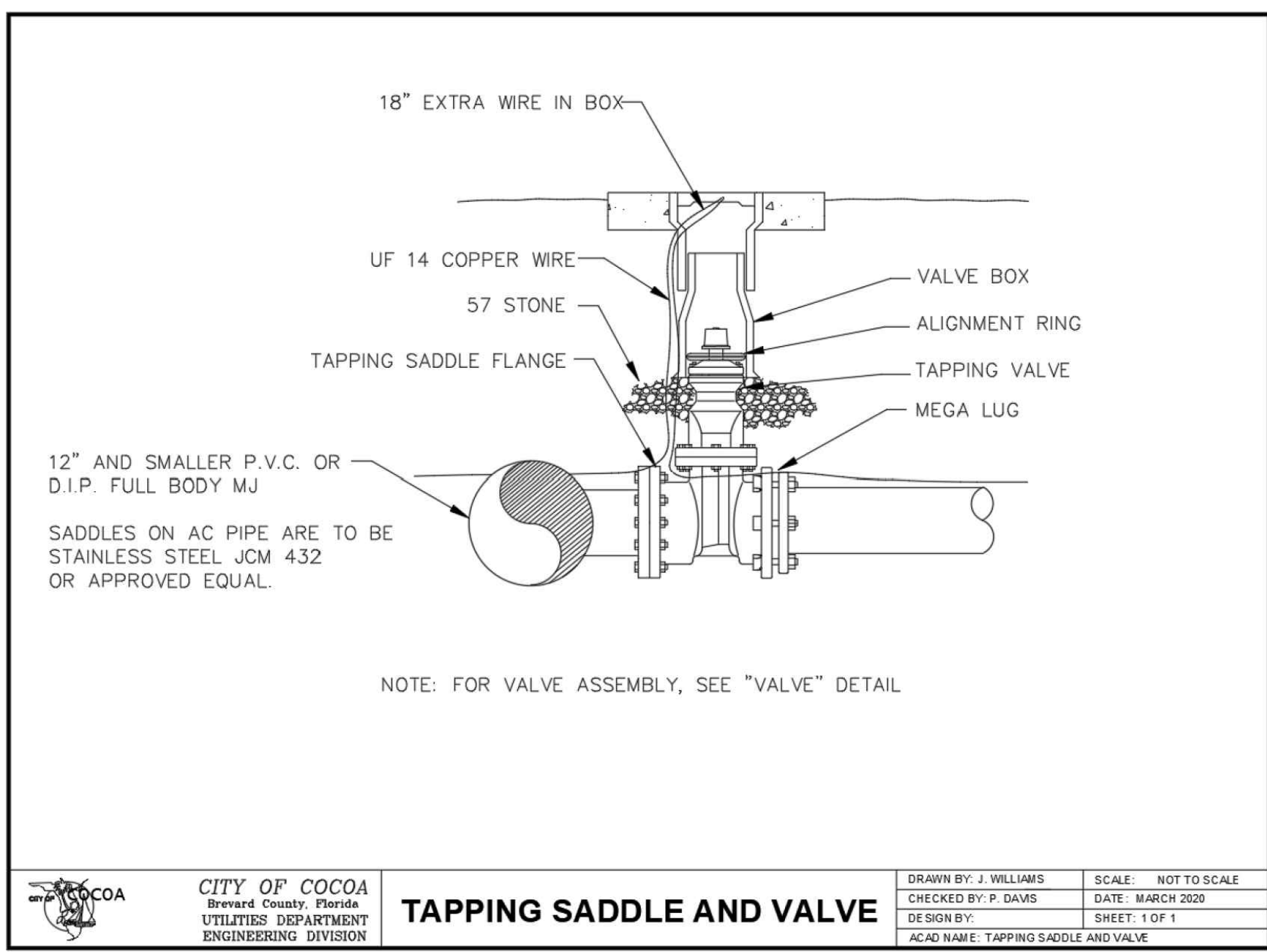
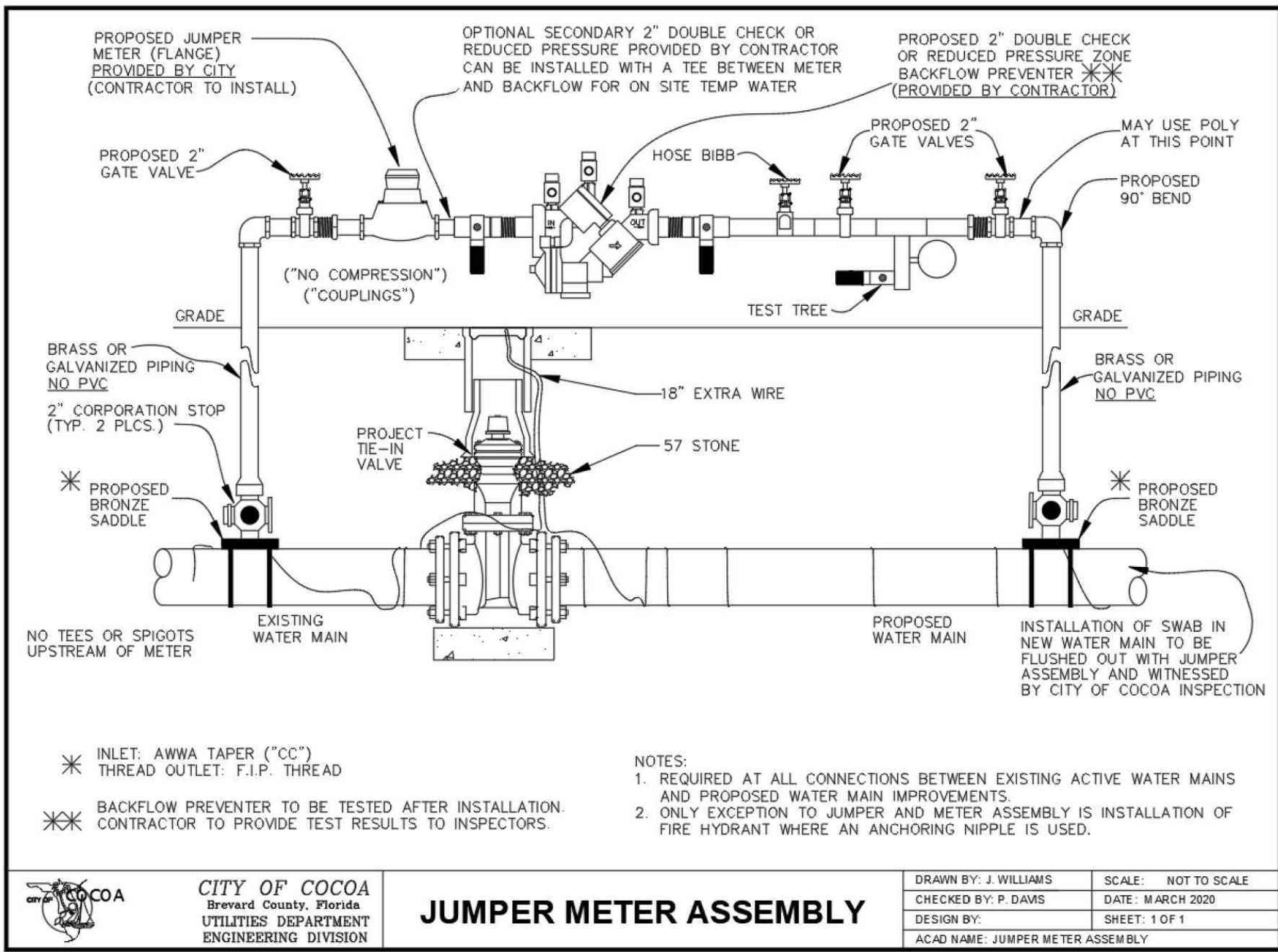
BRUCE A. MOIA
LICENSE
No. 47529
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

DATE
3/31/2022

C-106

SHEET
21-1092

PERMITTING SET



**RESTRAINED PIPE TABLE
WATER AND RECLAIMED WATER MAINS**

TYPE	MINIMUM LENGTH (FT) TO BE RESTRAINED ON EACH SIDE OF FITTING(S)						
	PIPE SIZE						
	4"	6"	8"	10"	12"	16"	20"
90° BEND	21	29	38	45	53	66	79
45° BEND	9	12	16	19	22	45	33
22-1/2° BEND	5	6	8	9	11	14	16
11-1/4° BEND	3	3	4	5	6	7	8
PLUG, BRANCH OF TEE, VALVE	58	82	107	128	151	193	234

NOTES:

1. FITTINGS SHALL BE RESTRAINED JOINTS.
2. INSTALL FULL LENGTH JOINTS WITH TOTAL LENGTH EQUAL TO OR GREATER THAN SHOWN IN THE TABLE.
3. WHERE TWO OR MORE FITTINGS ARE TOGETHER, USE FITTING WHICH YIELDS GREATEST LENGTH OF RESTRAINED PIPE.
4. ALL LINE VALVES AND THROUGH RUN OF TEES SHALL BE RESTRAINED.
5. LENGTHS SHOWN IN THE TABLE HAVE BEEN CALCULATED IN ACCORDANCE WITH THE PROCEDURE OUTLINED IN "THRUST RESTRAINT DESIGN FOR DUCTILE IRON PIPE" AS PUBLISHED BY DIPRA, WITH THE FOLLOWING ASSUMPTIONS:

WORKING PRESSURE: 150 PSI
SOIL DESIGNATION: SM (SAND SILT)
LAYING CONDITIONS: 3

6. TABLE IS FOR PVC AND WRAPPED DUCTILE IRON.

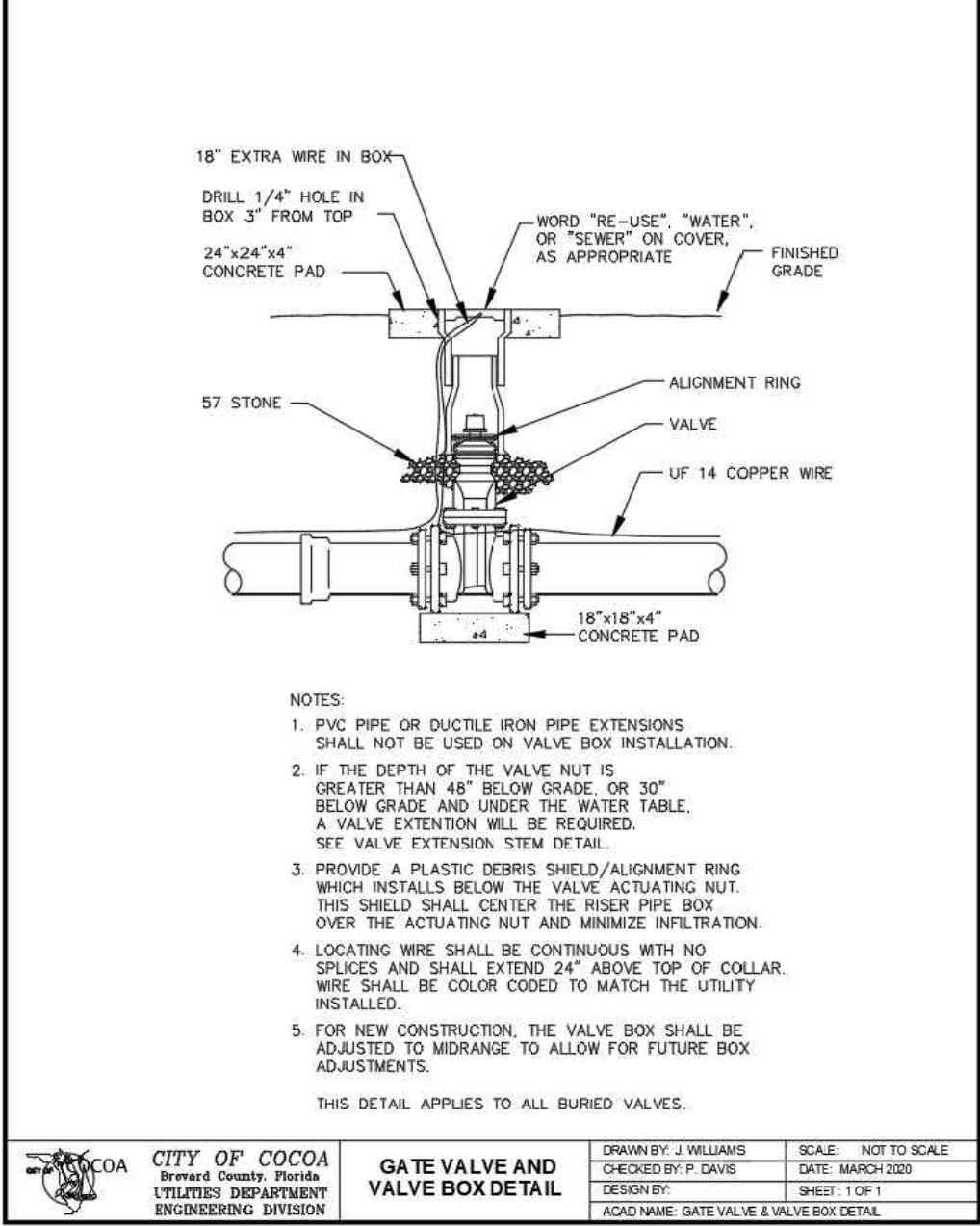
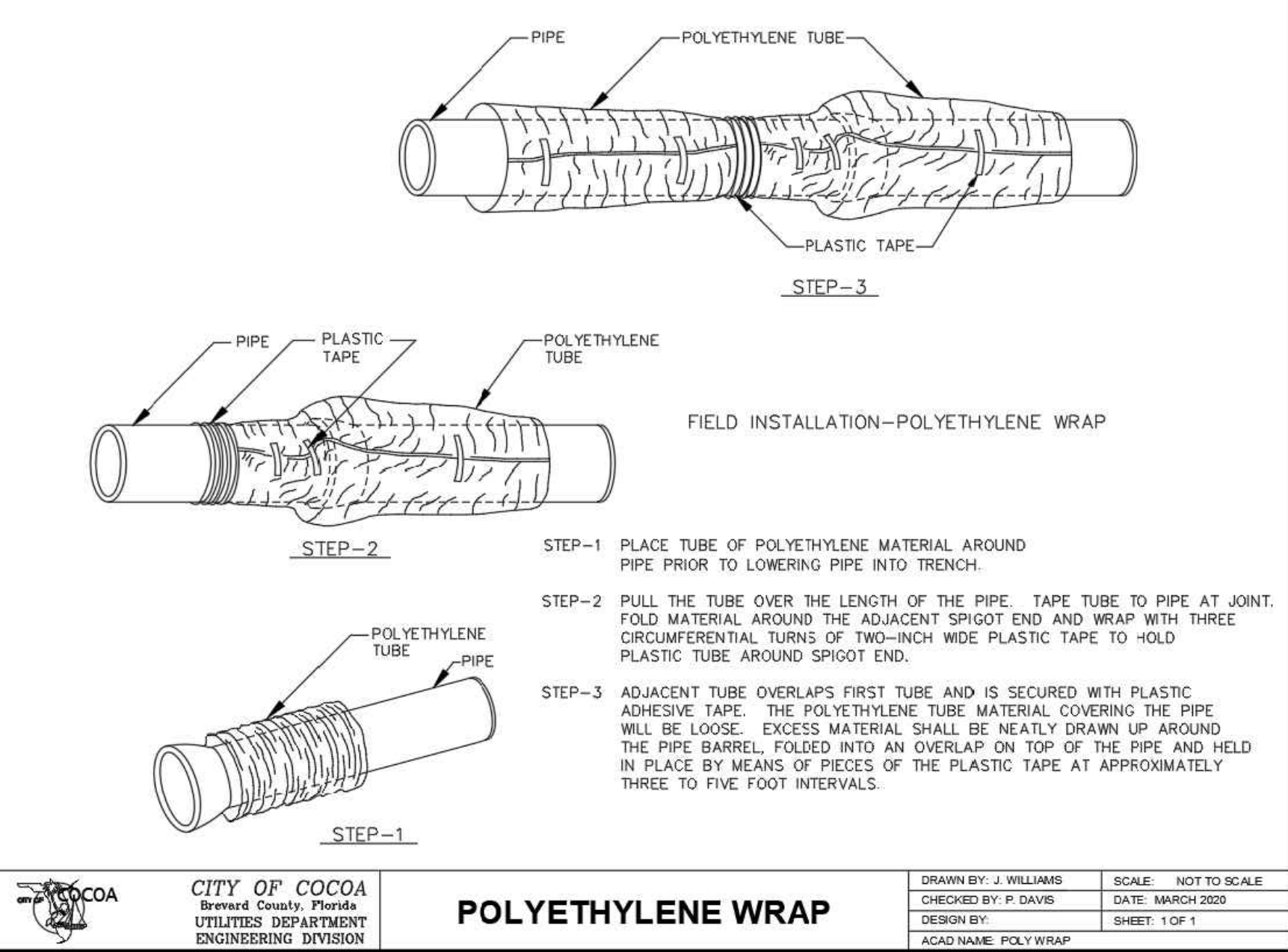
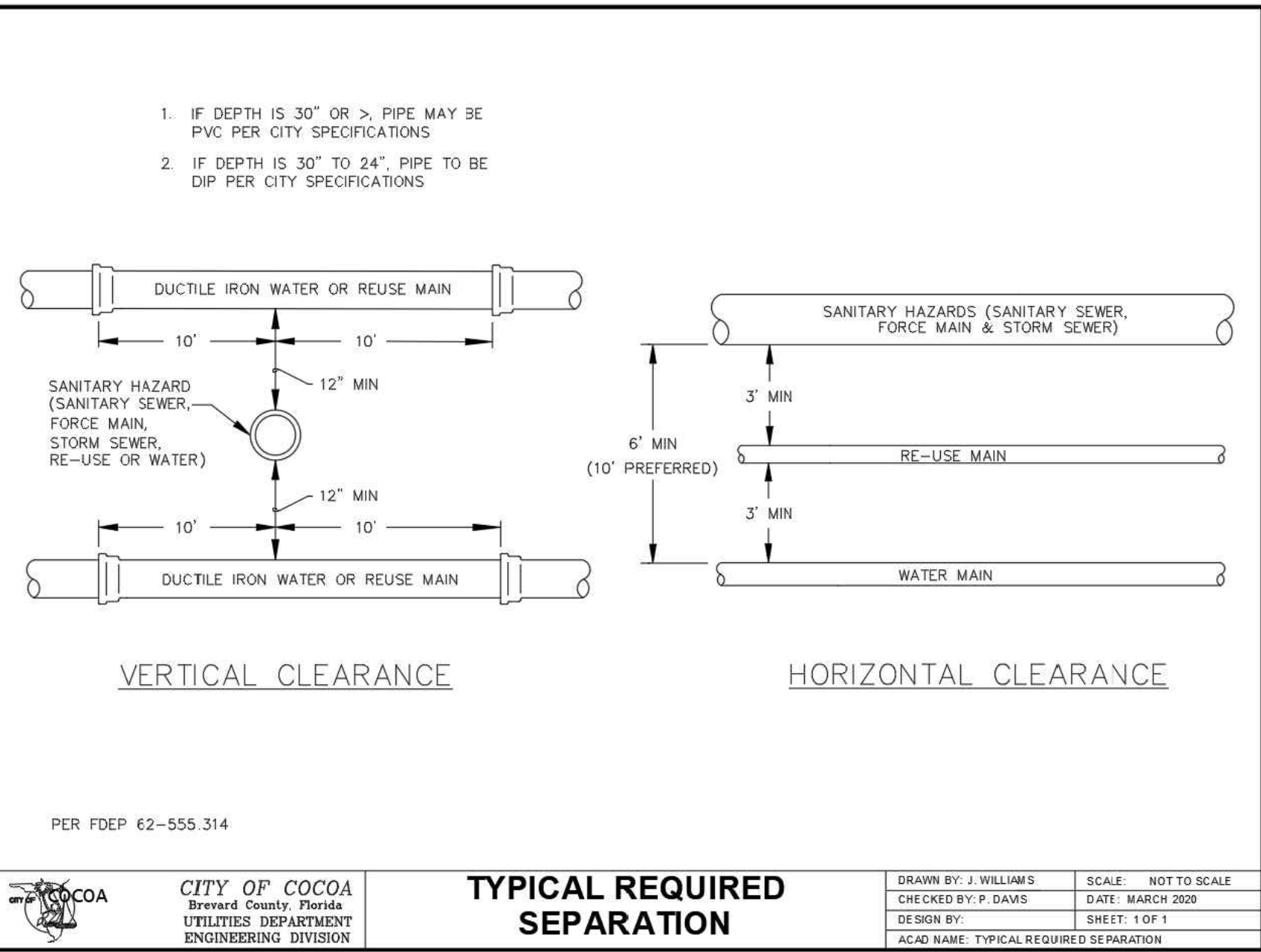
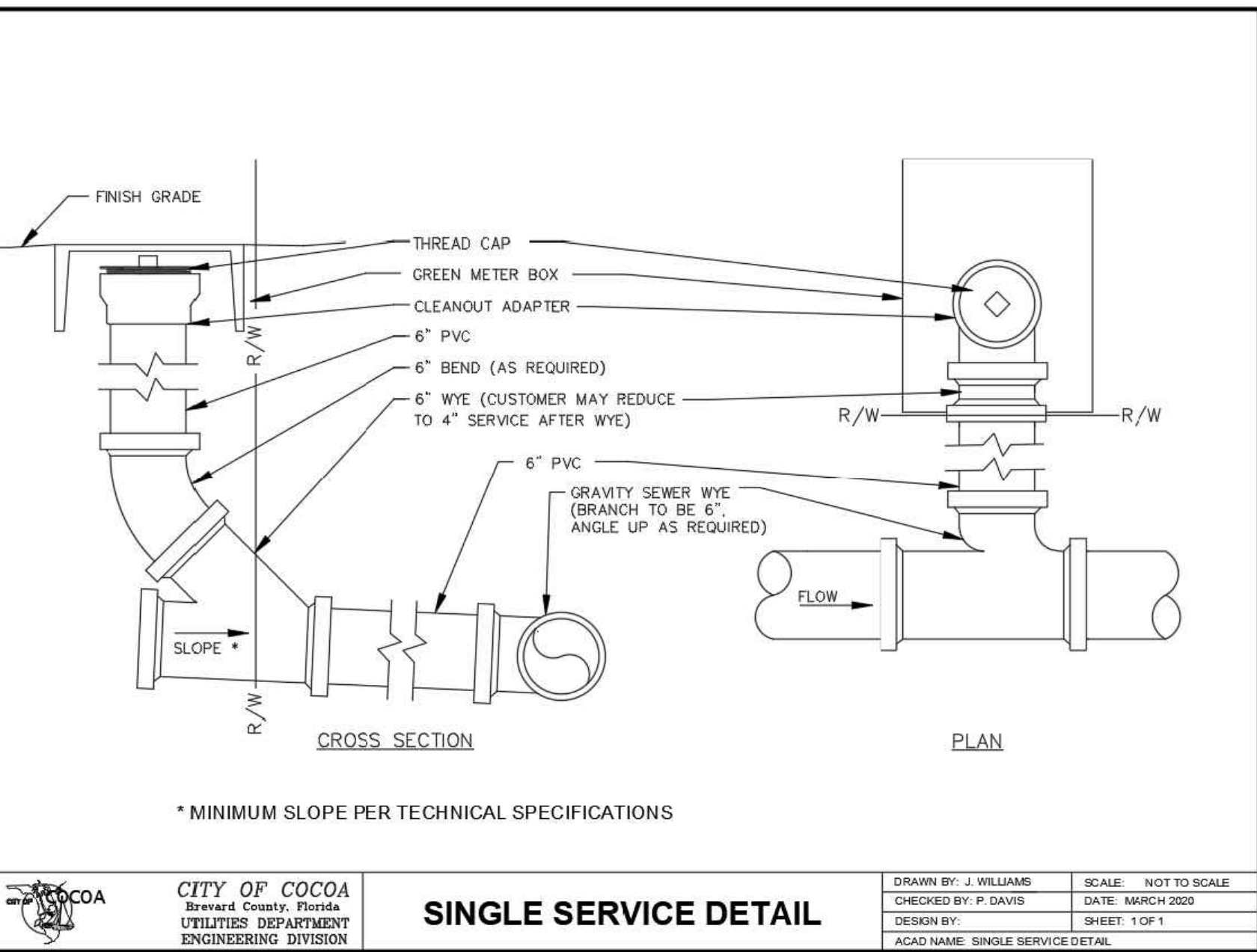
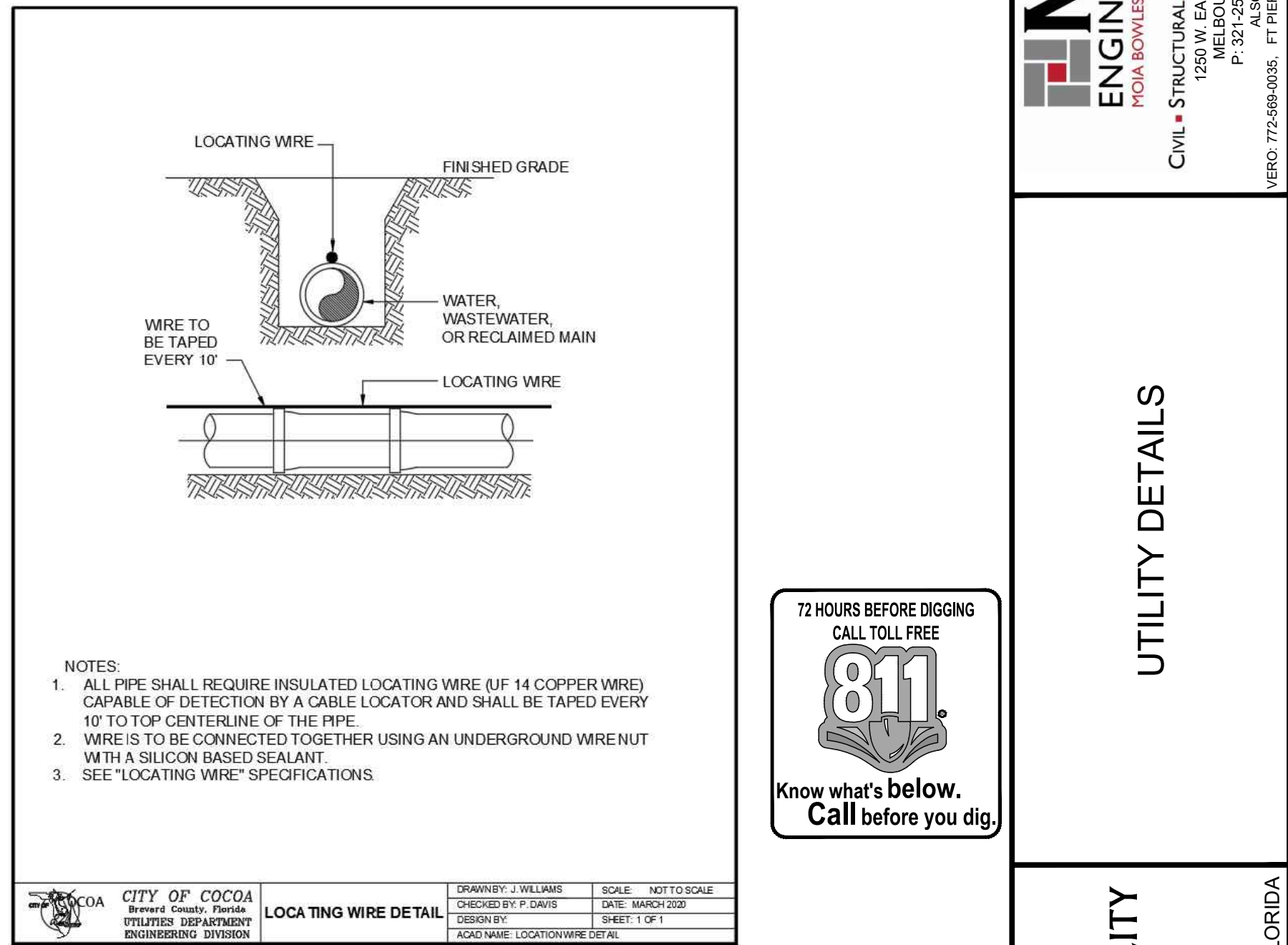
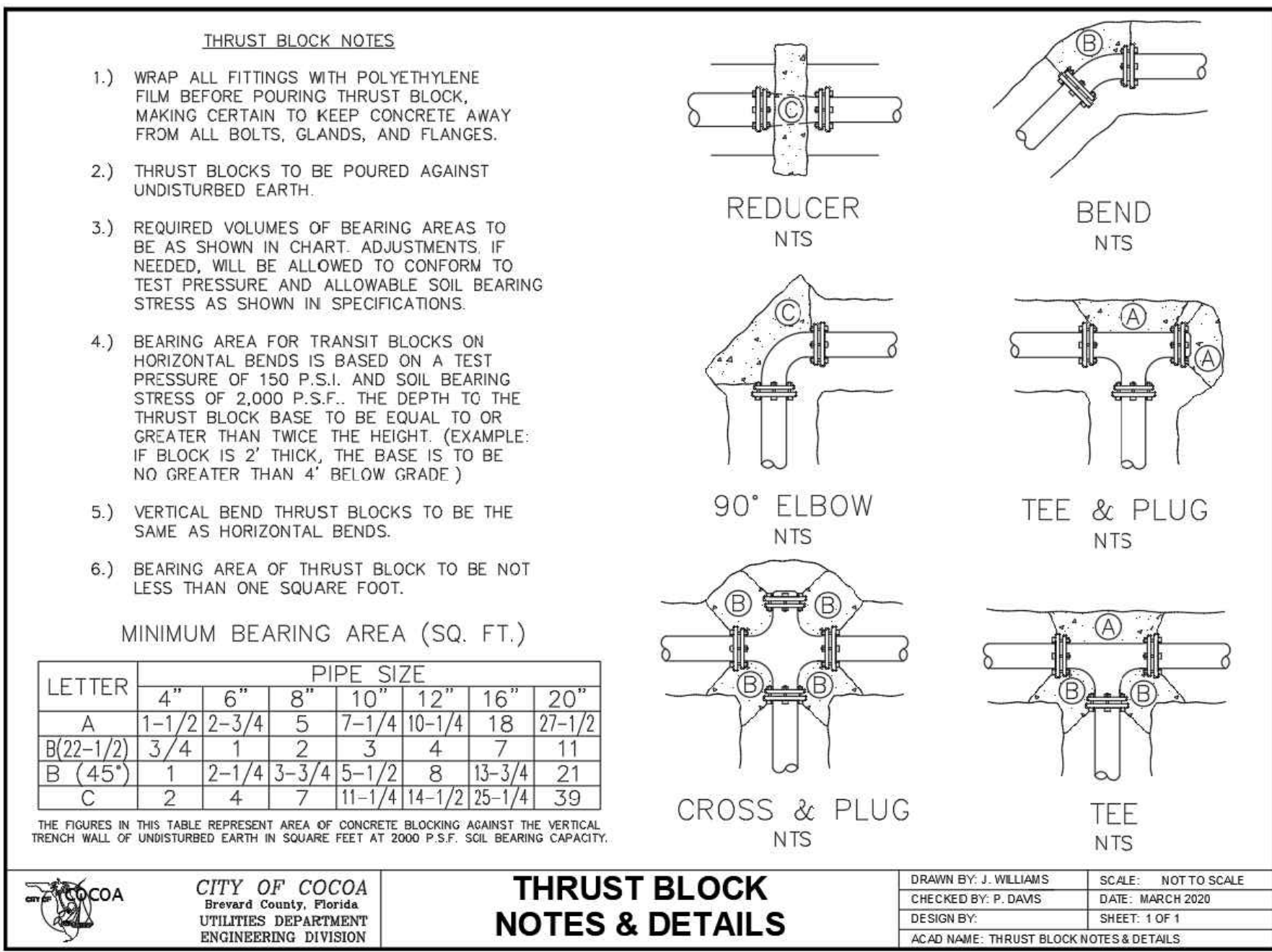
CITY OF COCOA
Broward County, Florida
UTILITY DEPARTMENT
ENGINEERING DIVISION

**RESTRAINED PIPE TABLE
WATER & RECLAIMER
WATER MAINS**

DRAWN BY: J. WILLIAMS
CHECKED BY: J. DAVIS
DESIGN BY:

SCALE: NOT TO SCALE
DATE: MARCH 2022
SHEET: 1 OF 1

AGG. WARE: RESTRAINED PIPE TABLE WATER AND RECLAMER



DATE

03/31/2022

03/18/2022

03/01/2022

02/02/2022

REVISIONS

8

7

6

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1

COMMENTS

1. CITY OF COCOA COMMENTS

2. CITY OF COCOA COMMENTS

3. CITY OF COCOA COMMENTS

4. CITY OF COCOA COMMENTS

5. CITY OF COCOA COMMENTS

JOB NO.

21-1092

DESIGNED

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DRAWN

RMS

DATE

03/18/2022

CHECKED

TC/BAM

DATE ISSUED

3/31/2022

MBV ENGINEERING, INC.

MOA BOWLES VILLALBA & ASSOCIATES

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MELBOURNE, FLORIDA 32935

PH: 321.486.9511

ALSO WITH OFFICES IN:

VERO: 772.689.0035, FT. PIERCE: 772.689.9056, PALM CITY: 772.456.9550

UTILITY DETAILS

COCOA HOTEL AND HOSPITALITY COCOA VILLAGE

COCOA

FLORIDA

BRUCE A. MOIA

FL. P.E. #47529

DATE

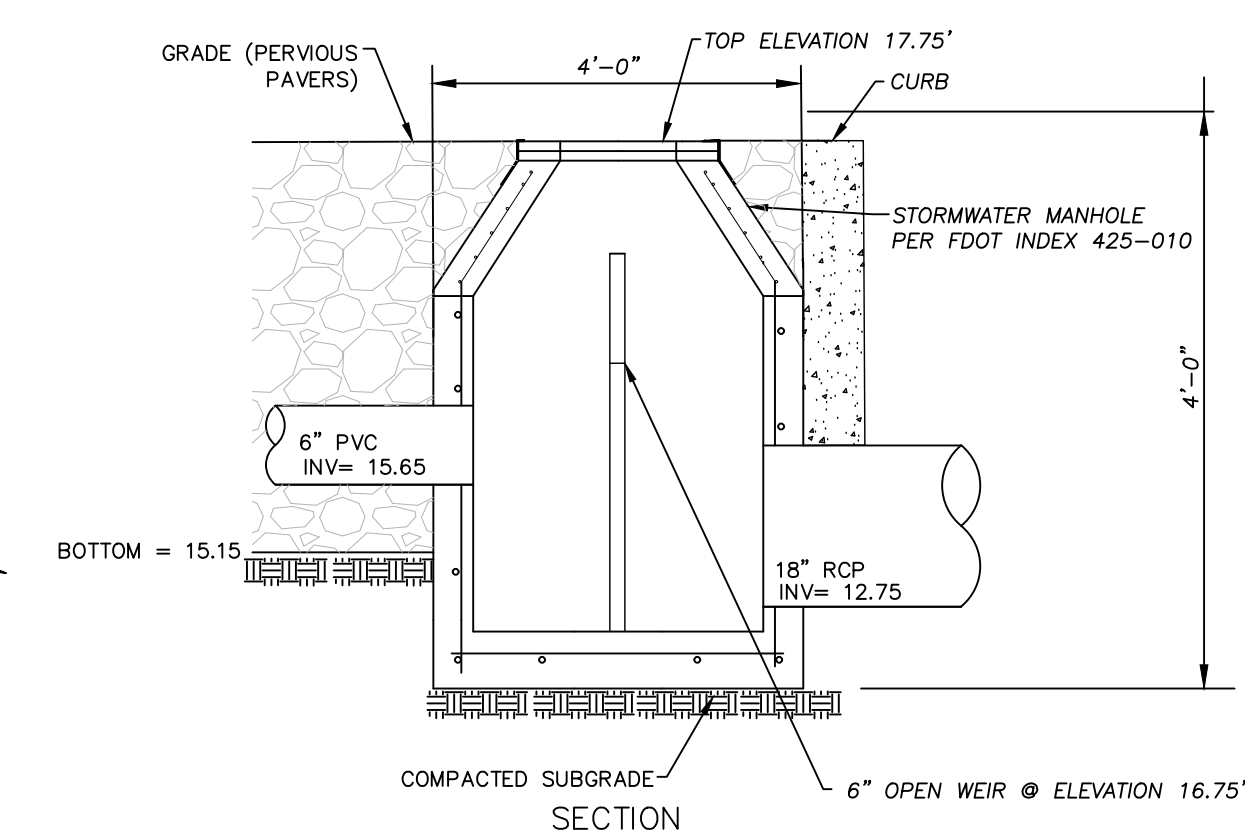
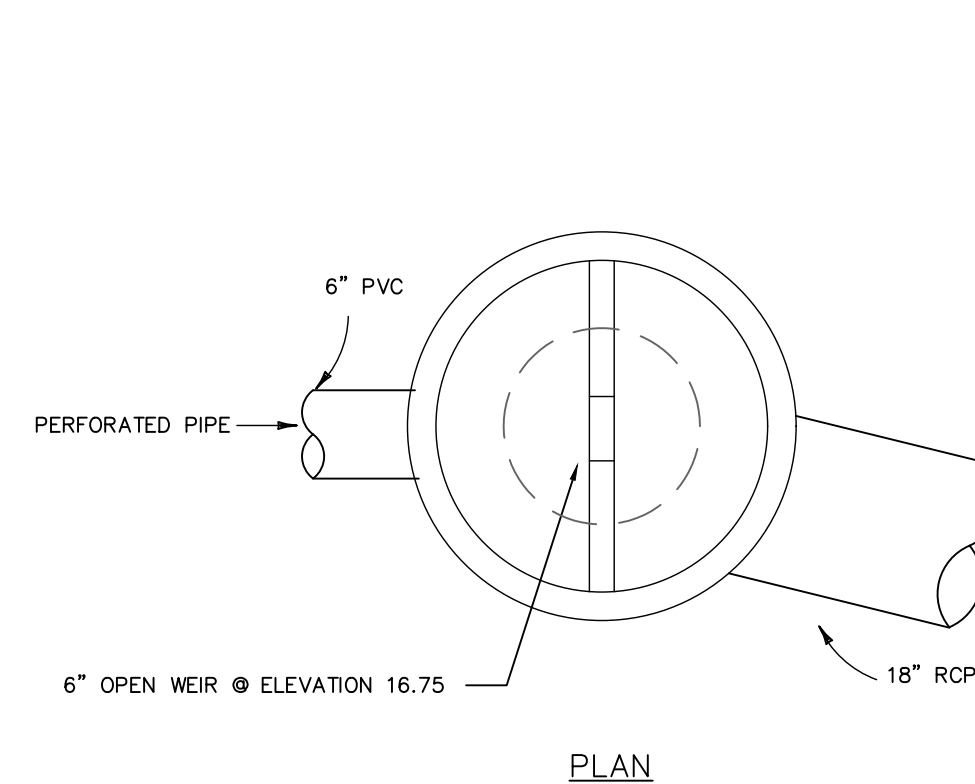
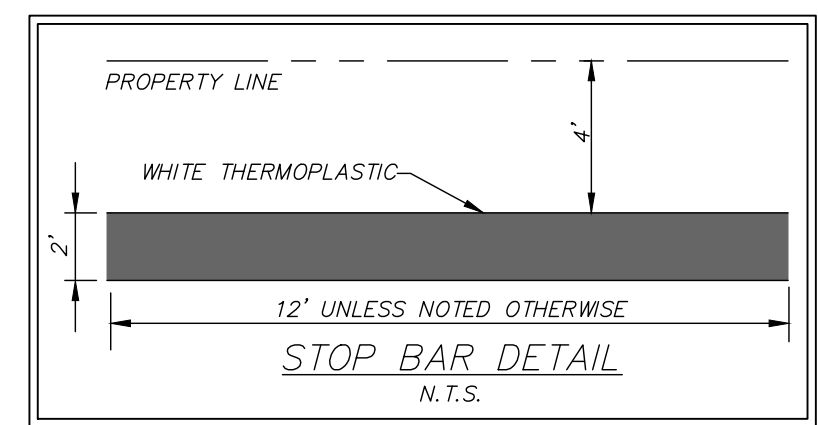
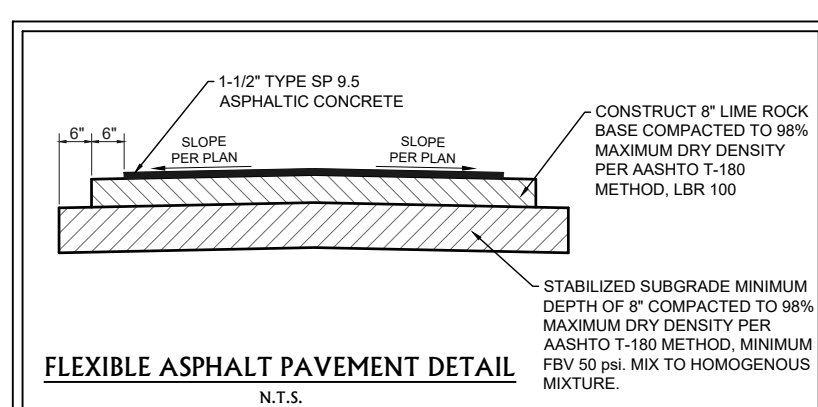
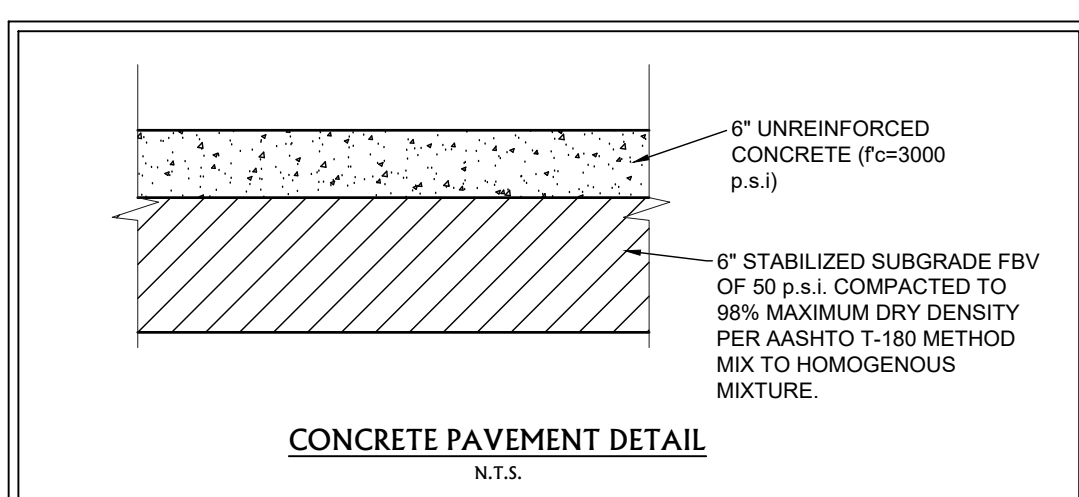
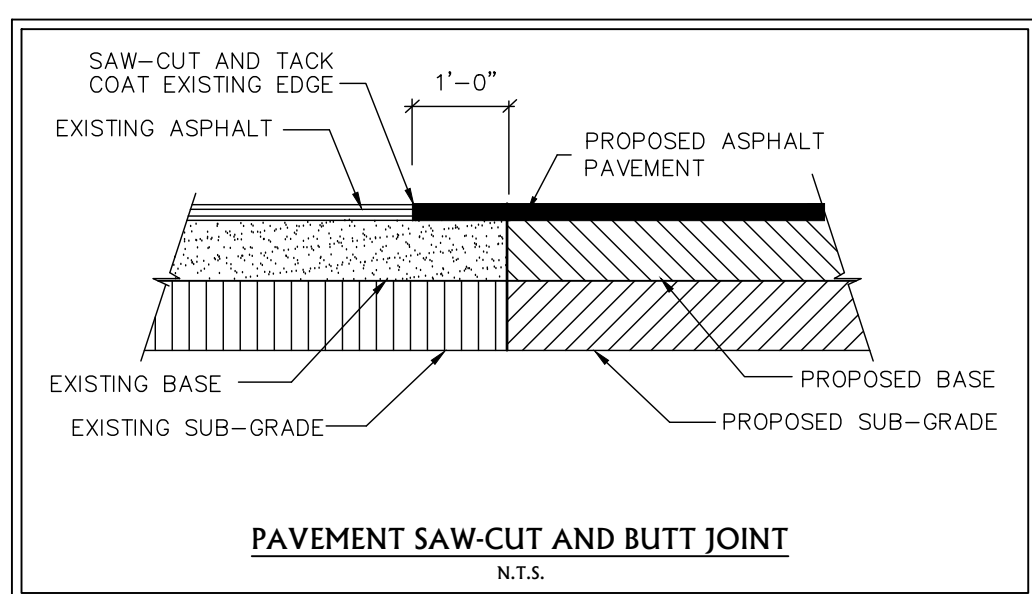
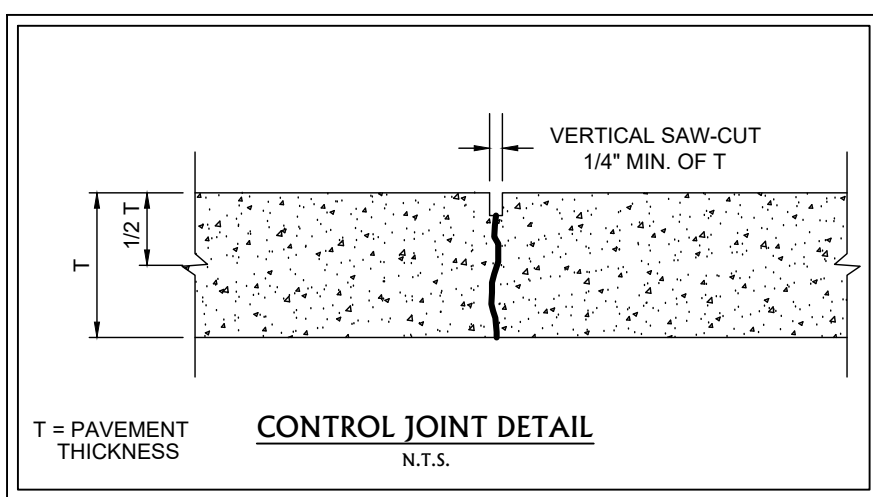
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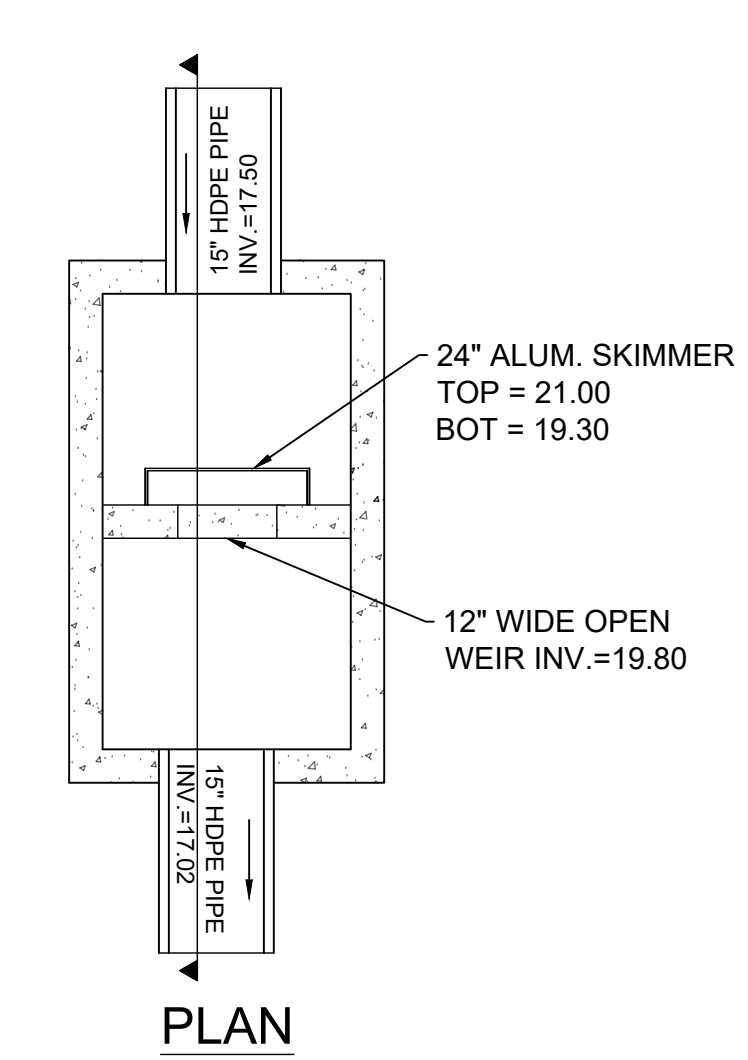
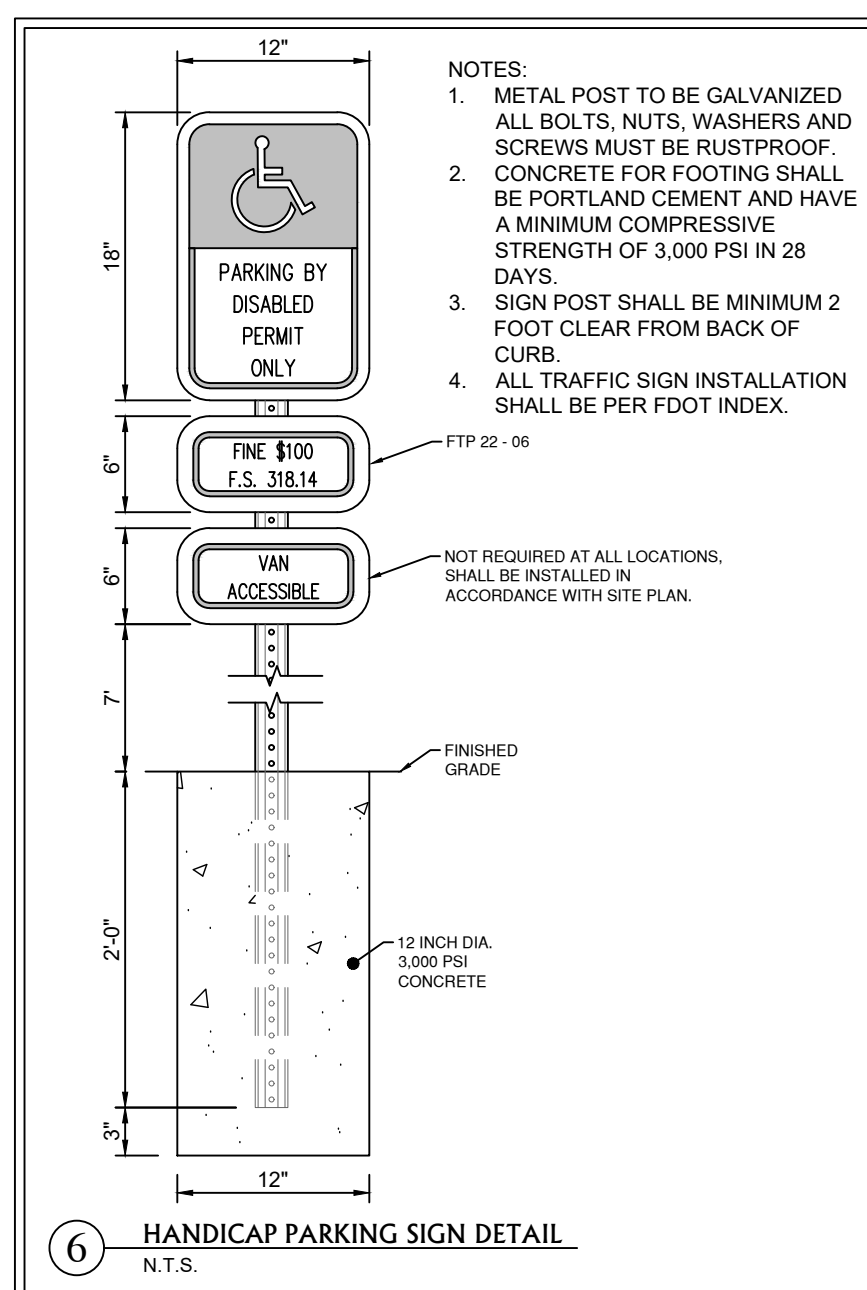
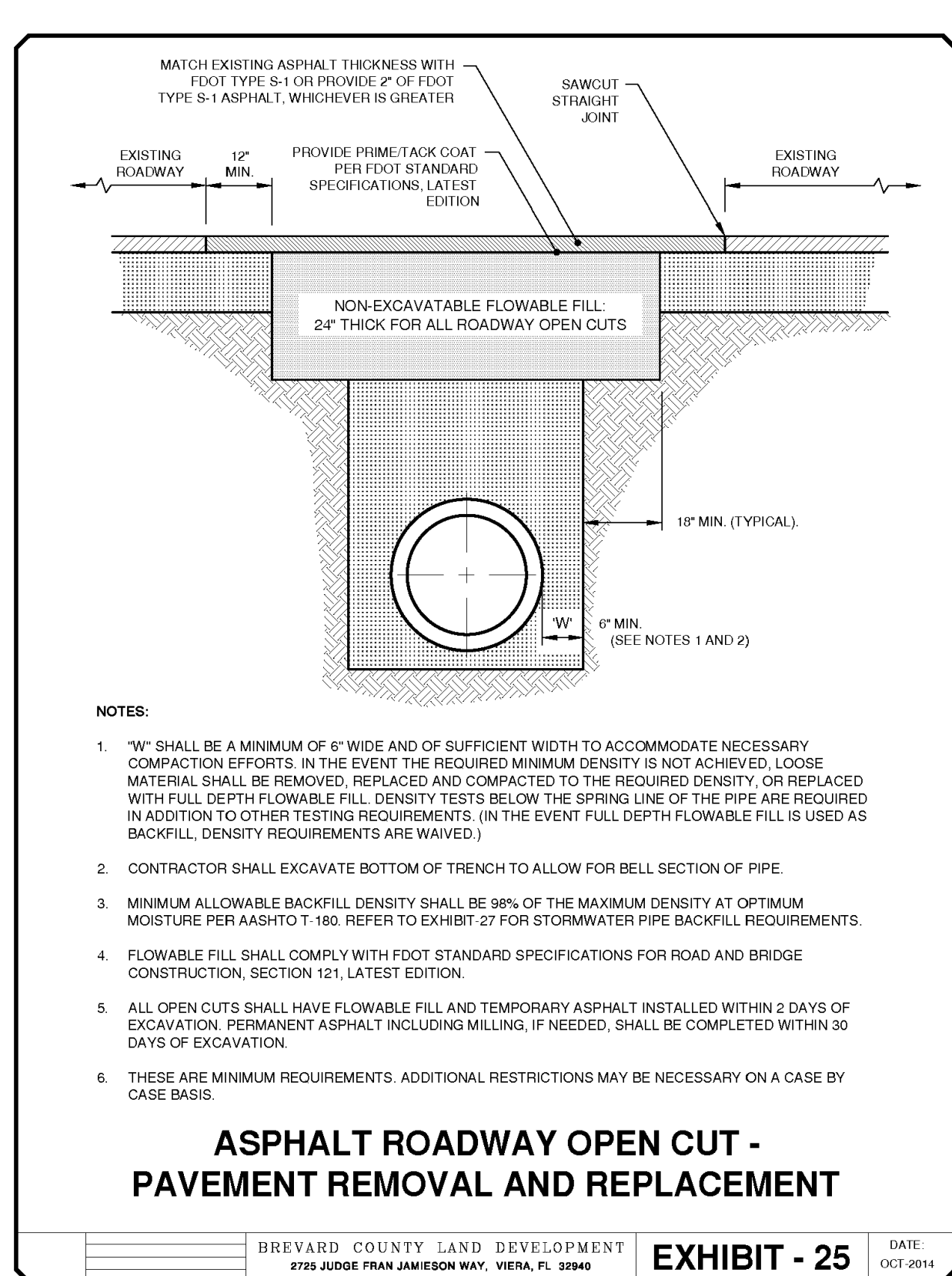
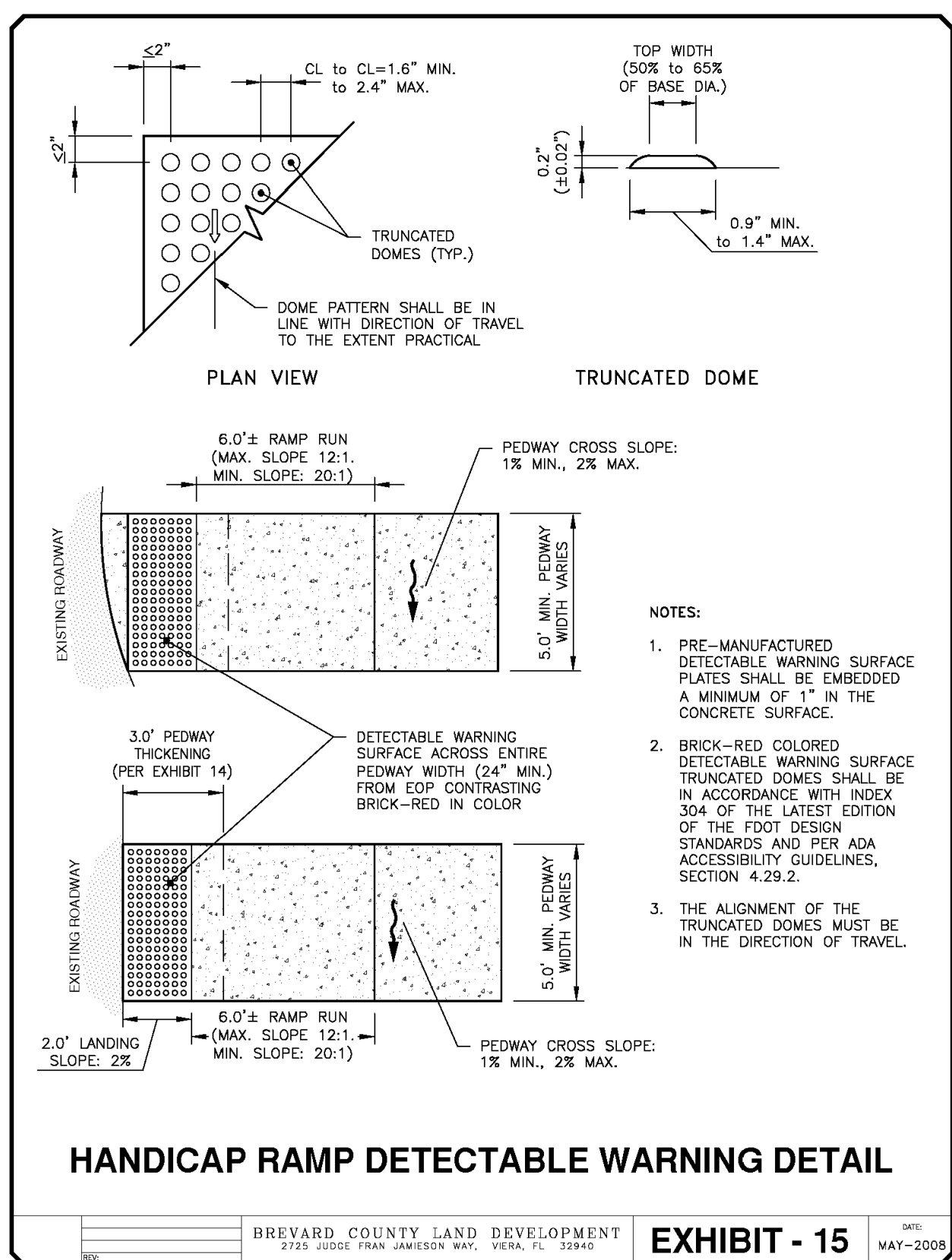
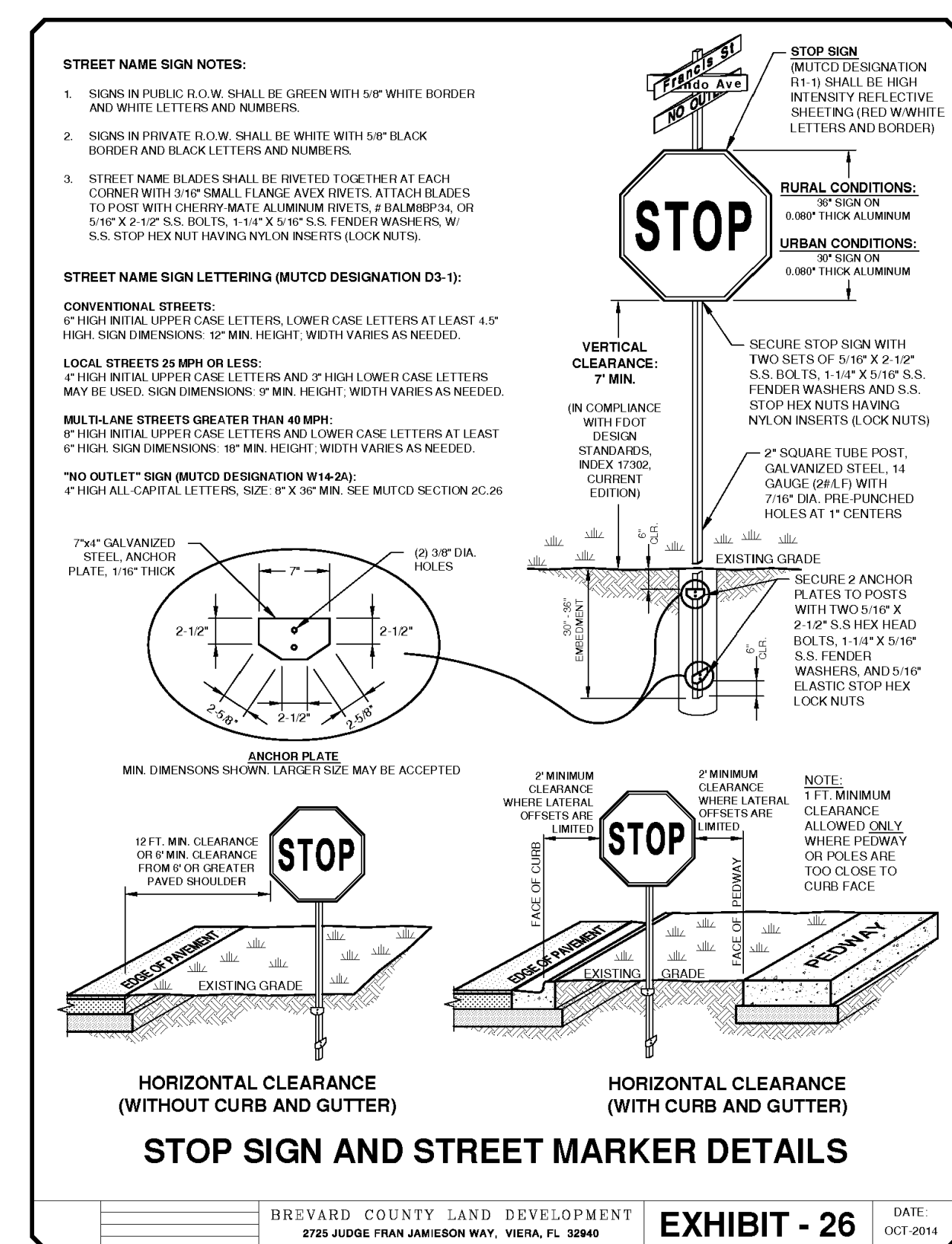
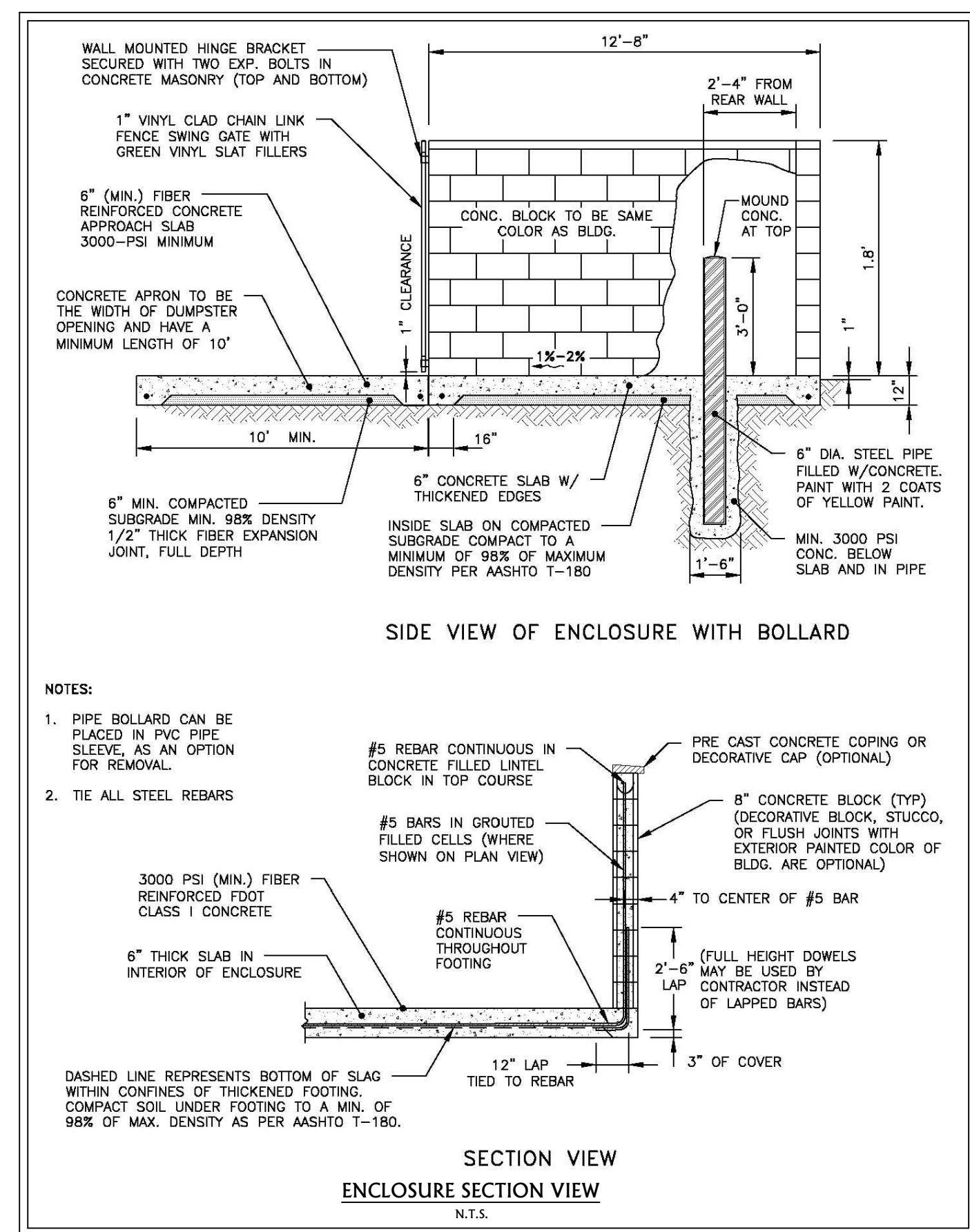
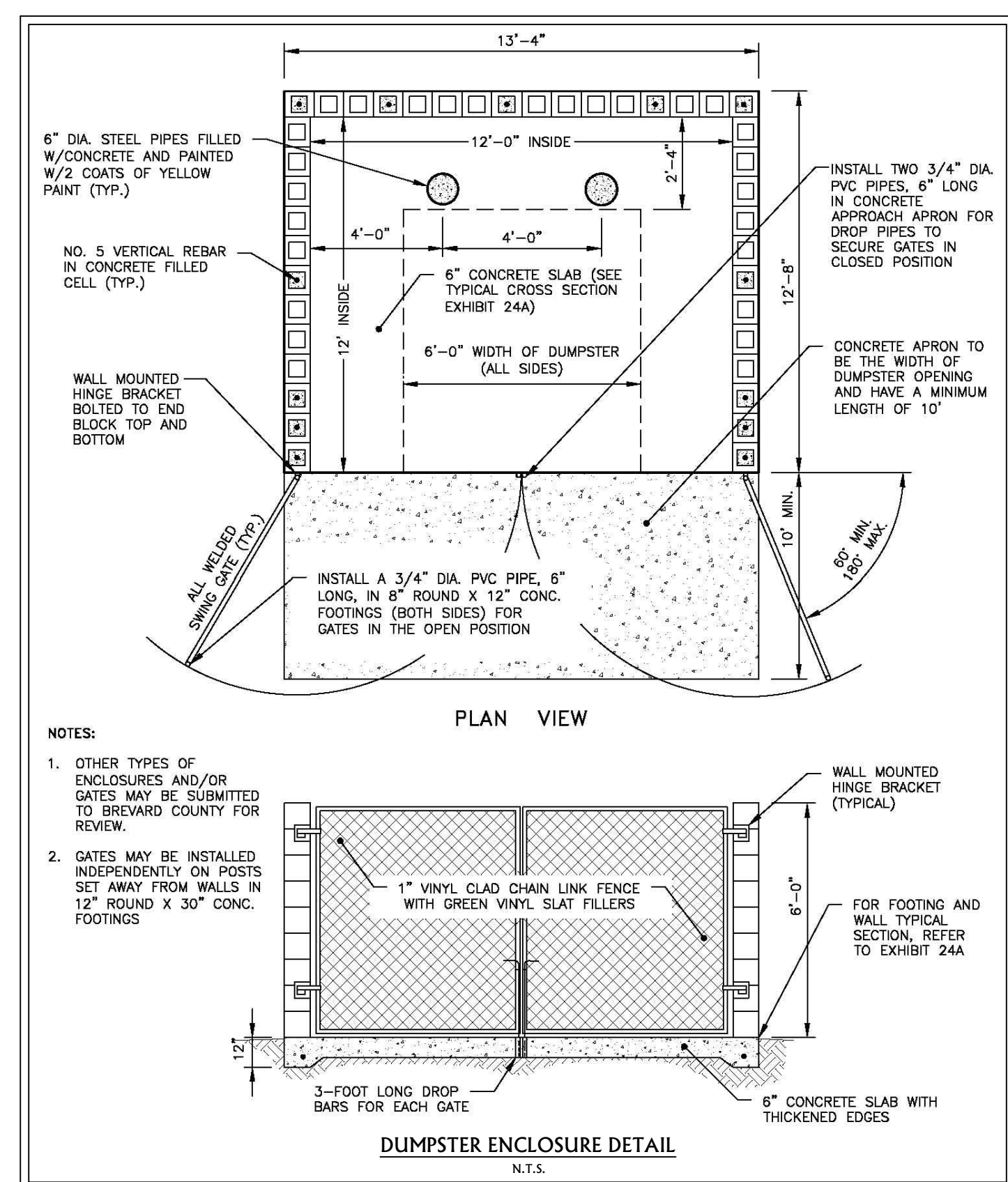
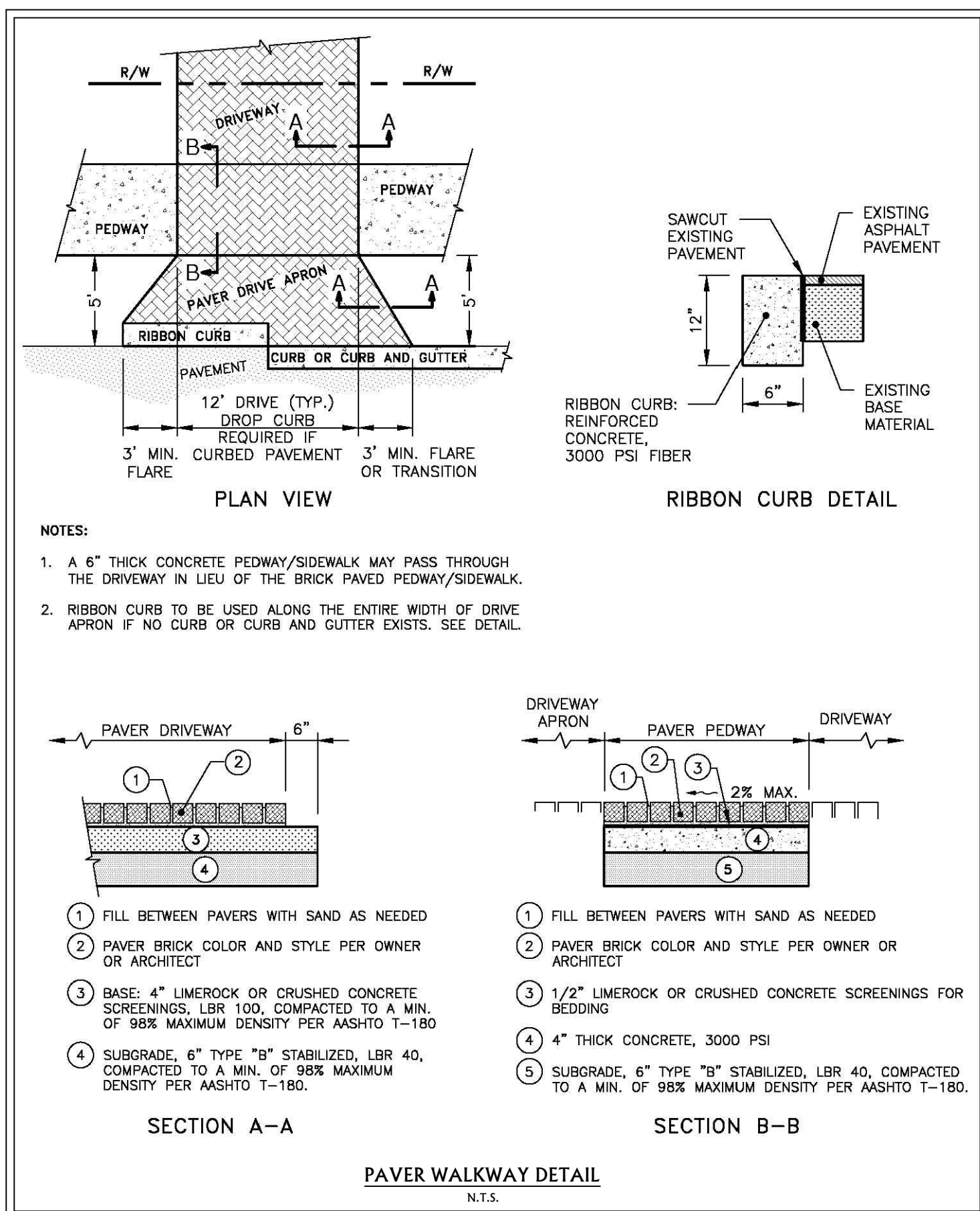
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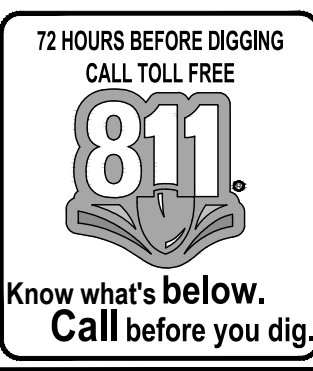
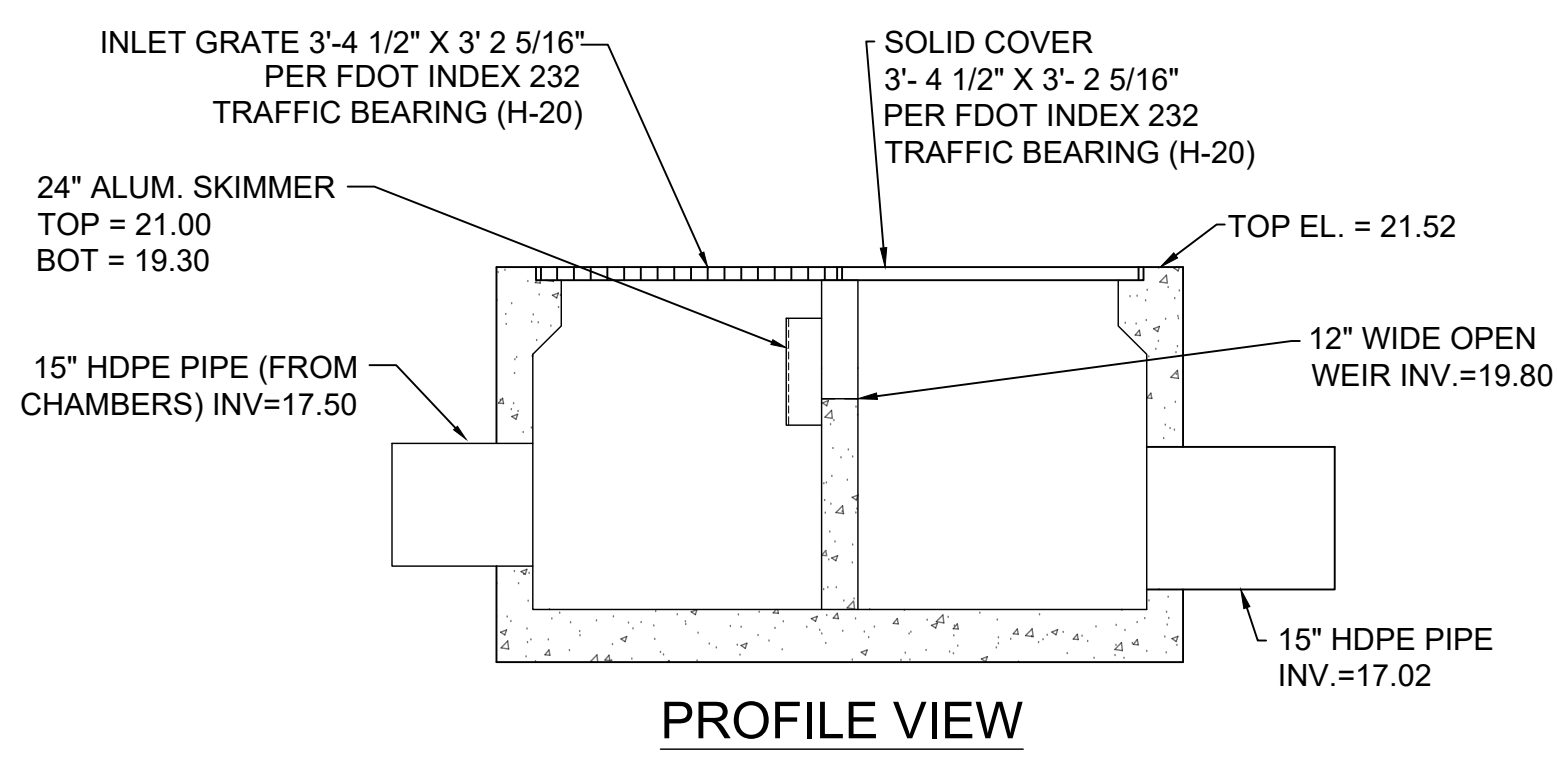
PERMITTING SET



4' STORMWATER MANHOLE OUTFALL STRUCTURE DS-6
N.T.S.



TYPE \"H\" MODIFIED OUTFALL STRUCTURE CS-1
N.T.S.



JOB NO.		DESIGNED	DRAWN	DATE	CHECKED	DATE ISSUED	REVISIONS	DATE
21-1092	RMS	RMS	RMS	03/31/2022	TC/BAM	3/31/2022		
MBV ENGINEERING, INC. 1250 W. EAU GALIE BLVD. SUITE H MELBOURNE, FLORIDA 32935 P: 321.486.9696 F: 321.486.9697 CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL MOA BOWLES VILLALBA & ASSOCIATES CH27B								
COCOA HOTEL AND HOSPITALITY COCOA VILLAGE BRUCE A. MOIA FL. P.E. #47529 STATE OF FLORIDA PROFESSIONAL ENGINEER DATE 3/31/2022								
C-803 SHEET 21-1092								
PERMITTING SET								

COCOA VILLAGE (1) PARKING

COCOA, FL

MC-3500 STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH MC-3500.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x78 DESIGNATION SS.
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 8.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 450 LBS/IN/IN. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
 - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
 - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
 - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-3500 CHAMBER SYSTEM

- STORMTECH MC-3500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500MC-4500 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
 - STONESHOOTER LOCATED OFF THE CHAMBER BED.
 - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
 - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
- INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
- STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

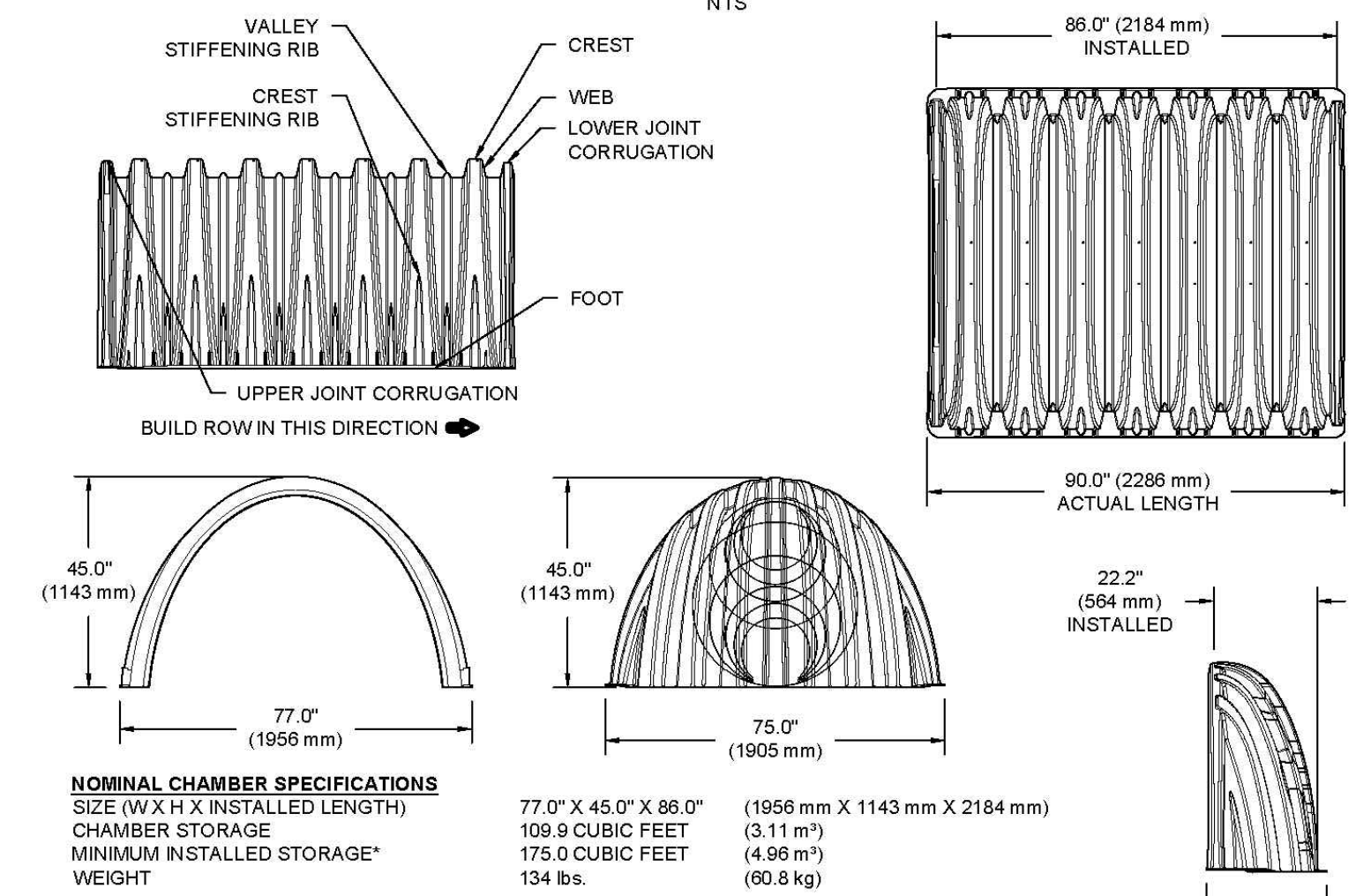
NOTES FOR CONSTRUCTION EQUIPMENT

- STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500MC-4500 CONSTRUCTION GUIDE".
- THE USE OF EQUIPMENT OVER MC-3500 CHAMBERS IS LIMITED:
 - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
 - NO RUBBER Tired LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500MC-4500 CONSTRUCTION GUIDE".
 - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-3500MC-4500 CONSTRUCTION GUIDE".
- FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

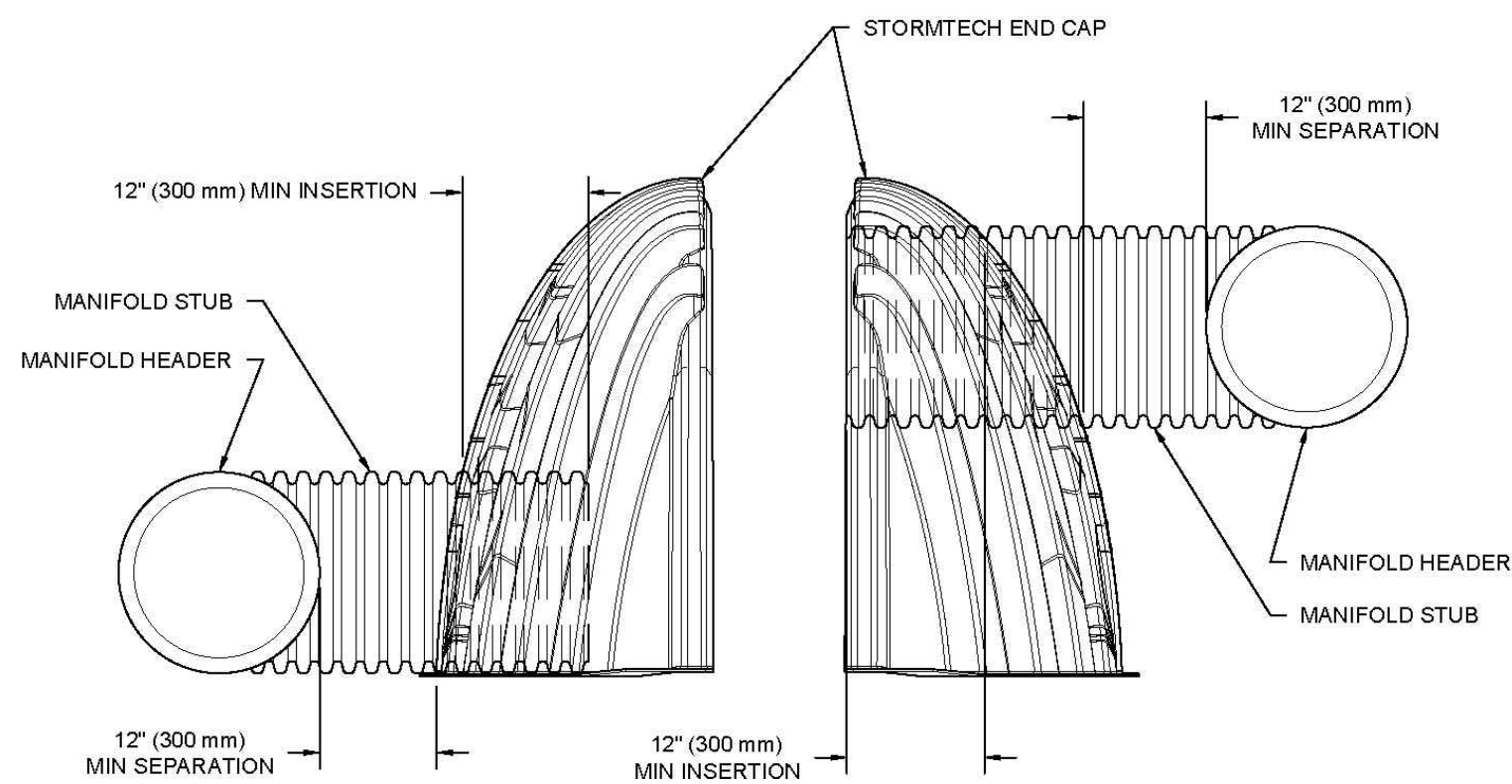
CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

MC-3500 TECHNICAL SPECIFICATION



MC-SERIES END CAP INSERTION DETAIL

NTS



STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"

STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"

END CAPS WITH A WELDED CROWN PLATE END WITH "C"

END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"

PART #	STUB	B	C
MC3500IEPP06T		33.21" (844 mm)	—
MC3500IEPP06B	6" (150 mm)	—	0.66" (17 mm)
MC3500IEPP08T		31.16" (791 mm)	—
MC3500IEPP08B	8" (200 mm)	—	0.81" (21 mm)
MC3500IEPP10T		29.04" (738 mm)	—
MC3500IEPP10B	10" (250 mm)	—	0.95" (24 mm)
MC3500IEPP12T		26.36" (670 mm)	—
MC3500IEPP12B	12" (300 mm)	—	1.35" (34 mm)
MC3500IEPP15T		23.39" (594 mm)	—
MC3500IEPP15B	15" (375 mm)	—	1.50" (38 mm)
MC3500IEPP18T		20.03" (509 mm)	—
MC3500IEPP18TW	18" (450 mm)	—	1.77" (45 mm)
MC3500IEPP18BC		—	—
MC3500IEPP18BW		14.48" (368 mm)	—
MC3500IEPP24T		—	—
MC3500IEPP24TW	24" (600 mm)	—	2.06" (52 mm)
MC3500IEPP24BC		—	—
MC3500IEPP24BW		—	2.75" (70 mm)
MC3500IEPP30BC	30" (750 mm)	—	—

NOTE: ALL DIMENSIONS ARE NOMINAL

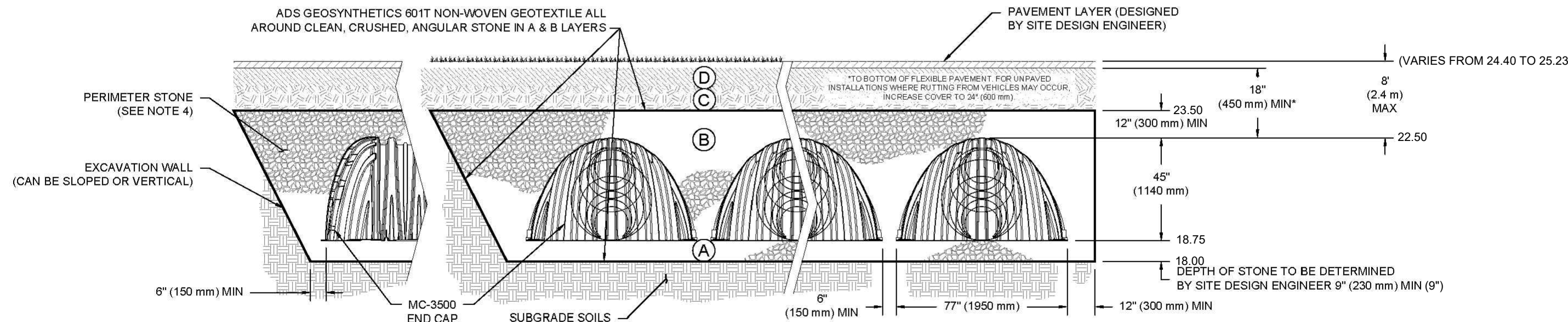
CUSTOM PRECURED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-3500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <3% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145 ¹ A-1, A-2-4, A-3 OR AASHTO M43 ¹ 3, 367, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 ¹ 3, 4
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 ¹ 3, 4

PLEASE NOTE:

- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
- STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
- WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
- ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOTES:

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x78 DESIGNATION SS.
- MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 8.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 450 LBS/IN/IN. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

INSPECTION & MAINTENANCE

- STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
- A.1. REMOVE/OPEN LID ON NYLON/PLAST INLINE DRAIN
- A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
- A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
- A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
- A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
- B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
- B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
- i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
- ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
- IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED OULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED
- STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

- INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
- CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



DATE	REVISIONS	DATE	REVISIONS
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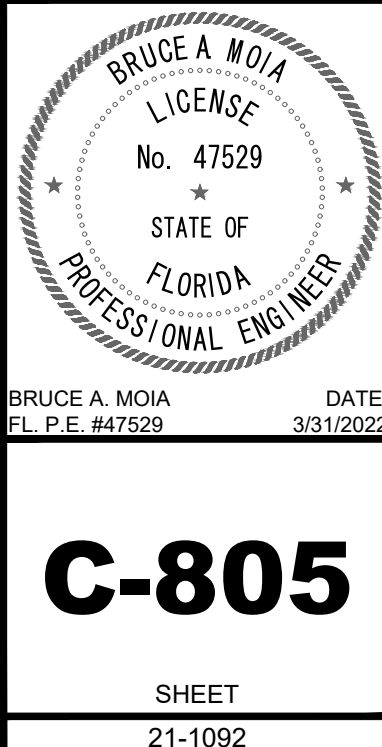
DRAINAGE EXFILTRATION DETAILS

COCOA HOTEL AND HOSPITALITY

COCOA VILLAGE

FLORIDA

COCOA



811

Know what's below. Call before you dig.

C-805

SHEET

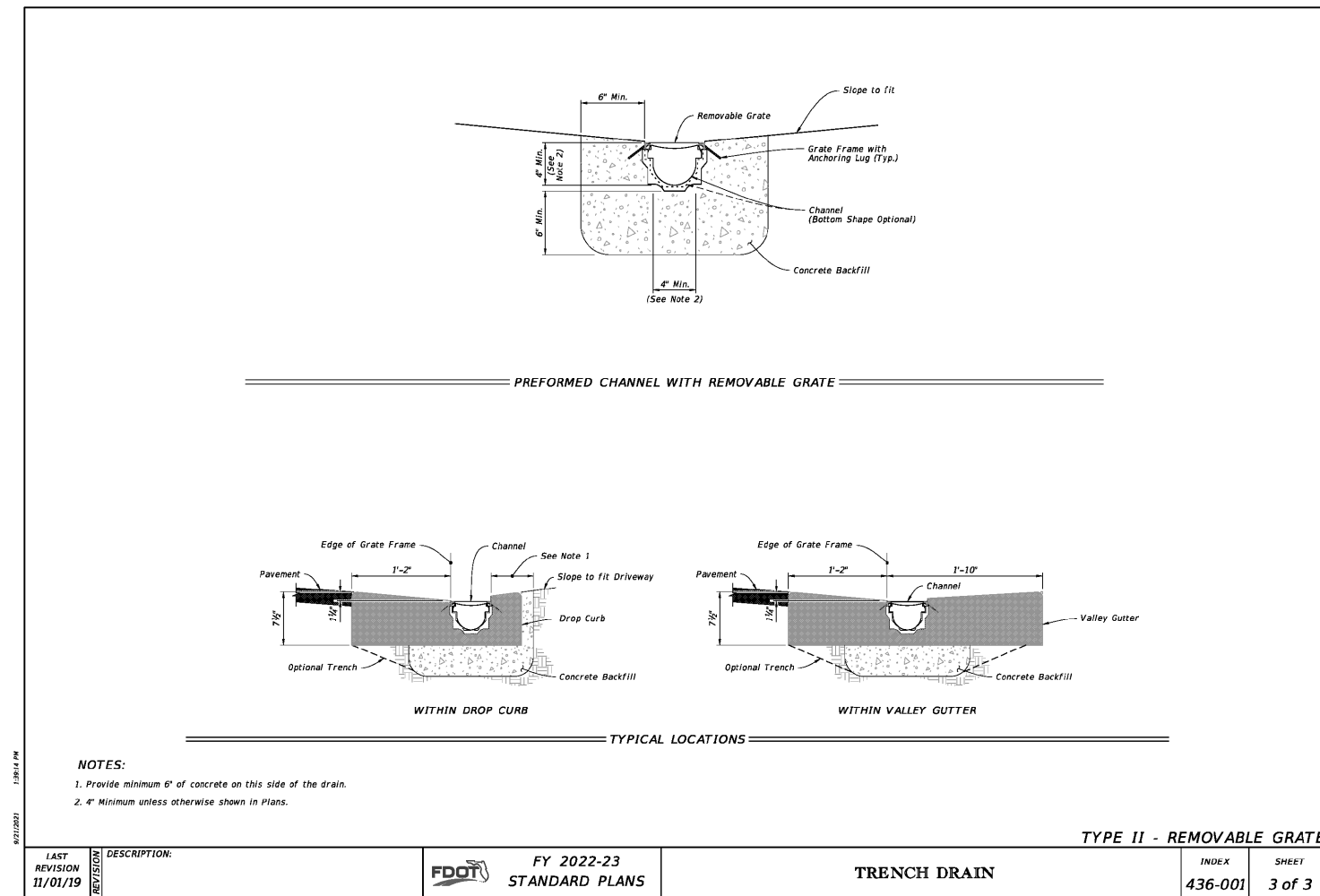
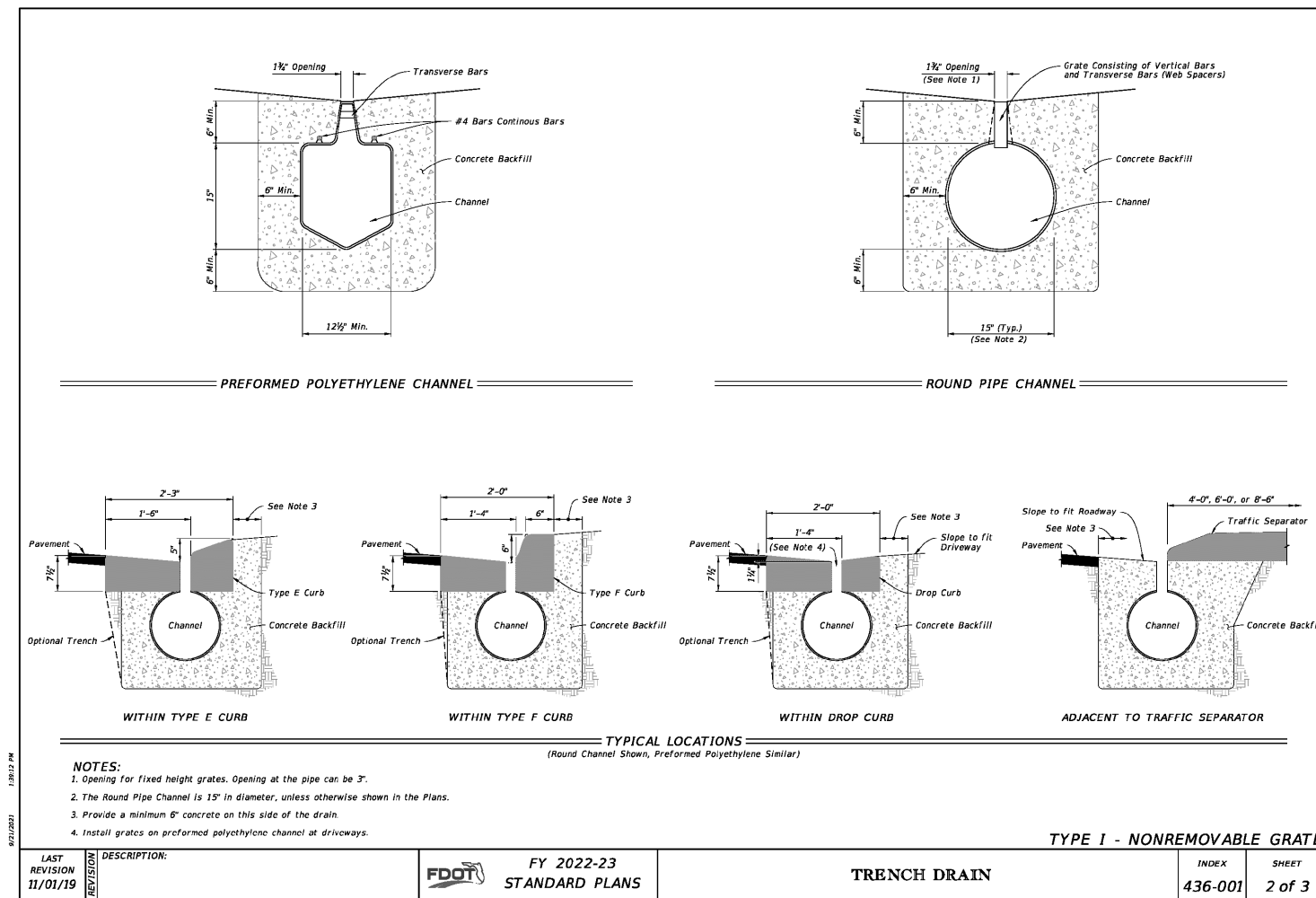
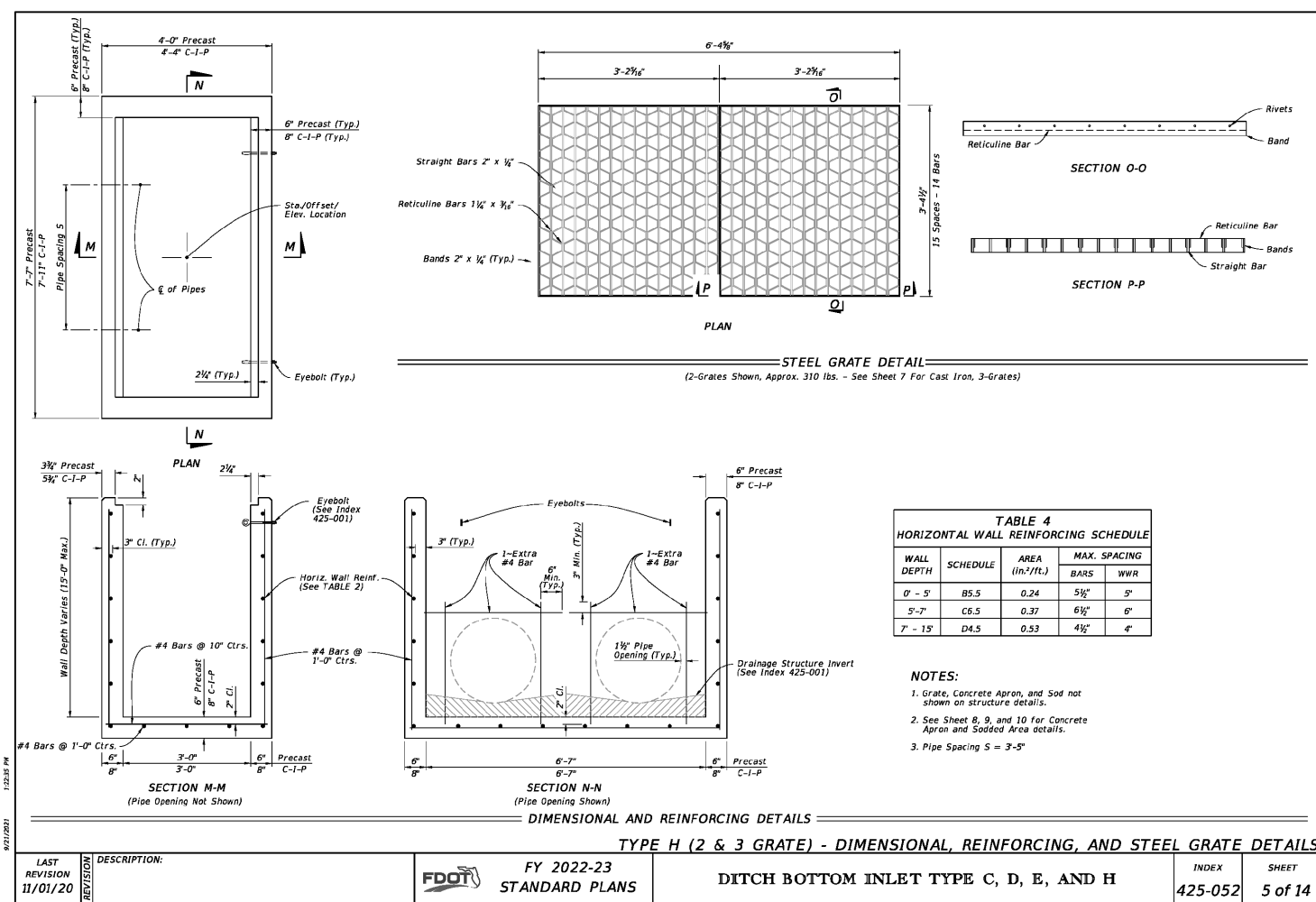
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PERMITTING SET

[illegible]

— — — BED LIMITS

- MANHOLE SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE #6.32 FOR MANHOLE SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANHOLE COMPONENTS IN THE FIELD.
 - THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
 - THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.
- NOT FOR CONSTRUCTION:** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.



COCOA, FL

1. CHAMBERS SHALL BE STORMTECH MC-3500.
2. CHAMBERS SHALL MEET SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45/78 DESIGNATION SS.
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBTSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SHALL MEET THE LIVE BRIDGE DESIGN SPECIFICATIONS. SECTION 12.12 ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
6. CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LOGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 450 LBS/INCH, AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
 - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
 - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO STANDARD SPECIFICATION FOR STRUCTURAL DESIGN OF THERMOPLASTIC PIPE.
 - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

1. STORMTECH MC-3500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS.
 - STONESHOOTER LOCATED OFF THE CHAMBER BED.
 - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
 - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
8. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
9. STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
10. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
11. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

1. STORMTECH MC-3500 CHAMBER-HALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500MC-4500 CONSTRUCTION GUIDE".

2. THE USE OF EQUIPMENT OVER MC-3500 CHAMBERS IS LIMITED:

- NO EQUIPMENT IS ALLOWED ON RAMP TRUCKS.
- NO RUBBER TIERED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500MC-4500 CONSTRUCTION GUIDE".
- WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-3500MC-4500 CONSTRUCTION GUIDE".

3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

The image contains three technical drawings of stone wall components with their dimensions and specifications.

CHAMBER

Diagram showing a perspective view of a chamber with the following labels: VALLEY STIFFENING RIB, CREST STIFFENING RIB, CREST, WEB, LOWER JOINT CORRUGATION, FOOT, and UPPER JOINT CORRUGATION. An arrow indicates the BUILD ROW IN THIS DIRECTION.

Diagram showing the installed dimensions: 86.0" (2184 mm) INSTALLED and 90.0" (2286 mm) ACTUAL LENGTH.

END CAP

Diagram showing the installed dimensions: 22.2" (564 mm) INSTALLED.

STONE FOUNDATION

Diagram showing the installed dimensions: 25.7" (653 mm).

NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)
 CHAMBER STORAGE
 MINIMUM INSTALLED STORAGE*
 WEIGHT

77.0" X 45.0" X 86.0"	(1956 mm X 1143 mm X 2184 mm)
109.8 CUBIC FEET	(3.11 m ³)
175.0 CUBIC FEET	(4.96 m ³)
134 lbs.	(60.8 kg)

NOMINAL END CAP SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)
 END CAP STORAGE
 MINIMUM INSTALLED STORAGE*
 WEIGHT

75.0" X 45.0" X 22.2"	(1905 mm X 1143 mm X 564 mm)
14.9 CUBIC FEET	(0.42 m ³)
45.1 CUBIC FEET	(1.28 m ³)
49 lbs.	(22.2 kg)

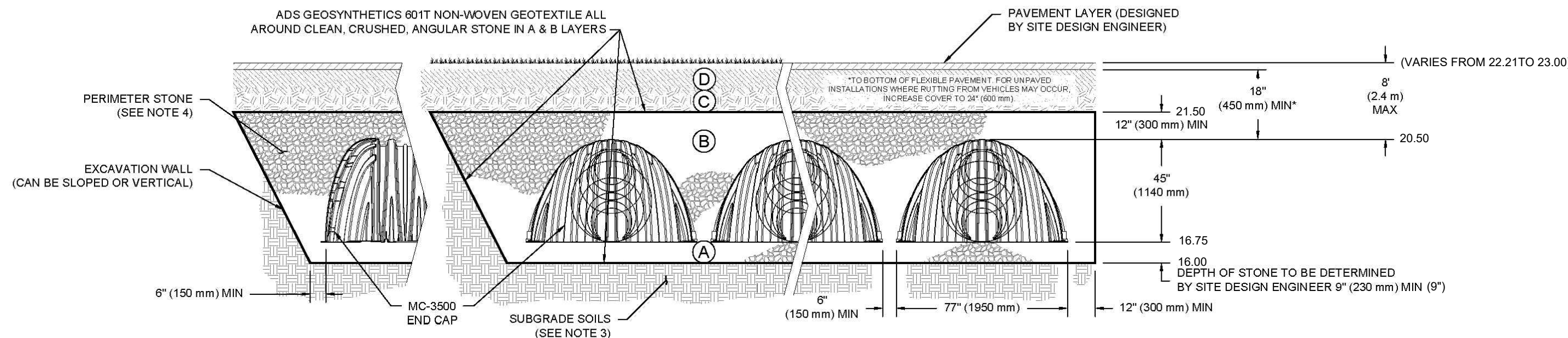
*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION, 8" SPACING BETWEEN CHAMBERS, 6" (152 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY

NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

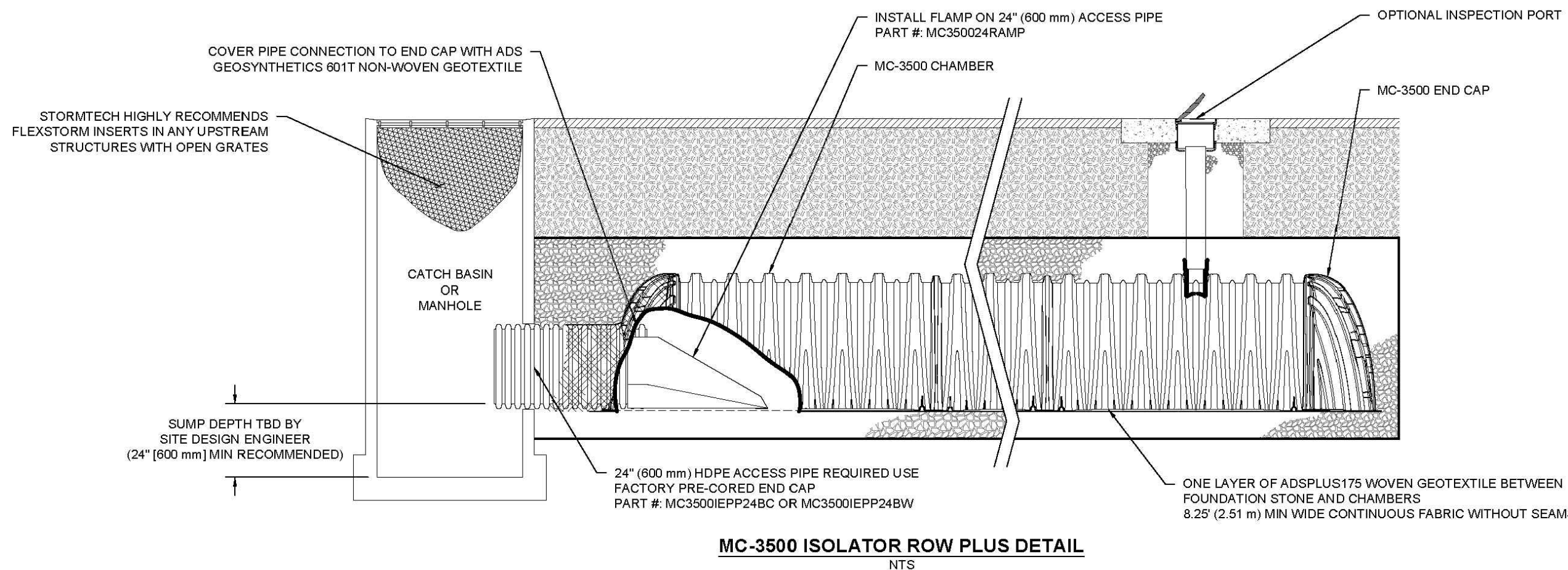
MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145 ¹ A-1, A-2.4, A-3 OR AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 ¹ 3, 4	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 ¹ 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3}

PLEASE NOTE:

1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTRENCH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNERS, CONTACT STORMTRENCH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
2. MC-300 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STOVE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, (A) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 450 LBS/IN/IN AND (b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW-COLORS.



STEP 1 INSPECT ISOLATOR ROW PLUS FOR SEDIMENT

- A. INSPECTION PORTS (IF PRESENT)
 - 1.1. REMOVE COVER LID ON NYLONPLAST INLINE DRAIN
 - 1.2. REMOVE AND CLEAN FLEXPORT FILTER IF INSTALLED
 - 1.3. USING A FLASHLIGHT, INSPECT DOWN TO A DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
 - 1.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
- B. IS SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2; IF NOT, PROCEED TO STEP 3.

STEP 2 ISOLATOR ROW PLUS FOR SEDIMENT

- A. INSPECTION PORTS (IF PRESENT)
 - 2.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
 - 2.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS TO THE OUTLET PIPE
 - 2.3. MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
 - 2.4. FOLLOW CONDUIT TUBULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MAIN PIPE
- B. IS SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 3; IF NOT, PROCEED TO STEP 3.

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

CUSTOM PRECURED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-3500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

PART #	STUB	B	C
MC3500I/EPP0P5T	6" (150 mm)	33.21" (844 mm)	---
MC3500I/EPP0P8B		---	0.66" (17 mm)
MC3500I/EPP0P5T	8" (200 mm)	31.16" (791 mm)	---
MC3500I/EPP0P8B		---	0.81" (21 mm)
MC3500I/EPP10T	10" (250 mm)	29.04" (738 mm)	---
MC3500I/EPP10B		---	0.93" (24 mm)
MC3500I/EPP12T	12" (300 mm)	28.36" (670 mm)	---
MC3500I/EPP12B		---	1.35" (34 mm)
MC3500I/EPP15T	15" (375 mm)	23.39" (594 mm)	---
MC3500I/EPP15B		---	1.50" (38 mm)
MC3500I/EPP18TC	18" (450 mm)	20.03" (509 mm)	---
MC3500I/EPP18TW		---	---
MC3500I/EPP18BC	---	---	1.77" (45 mm)
MC3500I/EPP18BW		---	---
MC3500I/EPP24TC	24" (600 mm)	14.48" (368 mm)	---
MC3500I/EPP24TW		---	---
MC3500I/EPP24BC	---	---	2.06" (52 mm)
MC3500I/EPP24BW		---	---
MC3500I/EPP30BC	30" (750 mm)	---	2.75" (70 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL

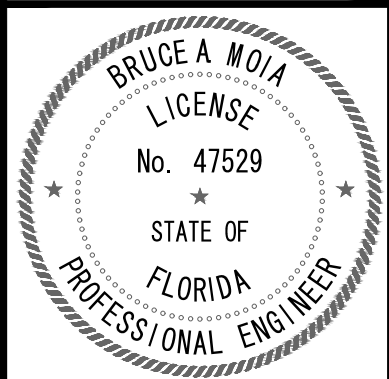
 ENGINEERING, INC. MOHA BOWLES VILLANAR & ASSOCIATES CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL 1250W. PALM GALLERY SUITE H CAW709 MELBOURNE, FLORIDA 32935 P 321.431.1510 F 321.431.1511 E INFO@MBV-ENG.COM P FRIEREE, T72-46F0065, PALM CITY T72-46F0460	JOB NO.	21-1092			
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		COMMENTS			
		REVISIONS			
	DATE				

DRAINAGE EXFILTRATION DETAILS - 3

COCOA HOTEL AND HOSPITALITY
COCOA VILLAGE

FLORIDA

COCOA



BRUCE A. MOIA
FL. P.E. #47529

C-807

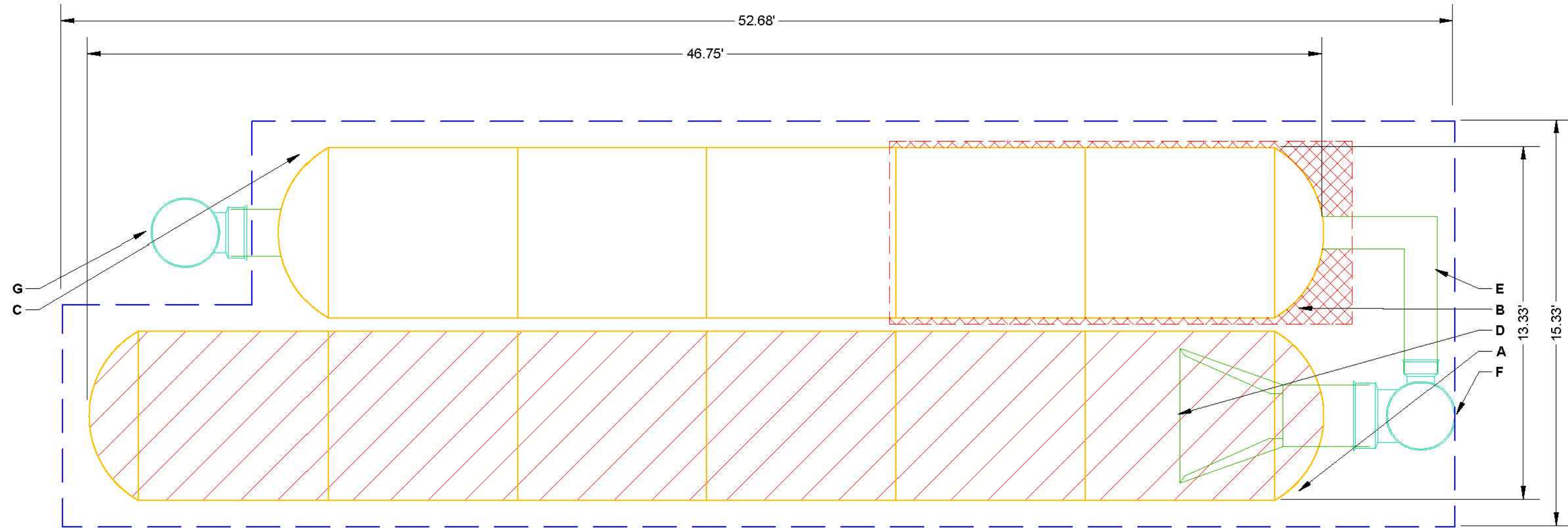
SHEET

PERMITTING SET

72 HOURS BEFORE DIGGING
CALL TOLL FREE
811
Know what's below.
Call before you dig

Know what's below.
Call before you dig.

PROPOSED LAYOUT		PROPOSED ELEVATIONS		*INVERT ABOVE BASE OF CHAMBER				
				PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW
11	STORMTECH MC-3500 CHAMBERS	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	28.50					
4	STORMTECH MC-3500 END CAPS	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	22.50					
12	STONE ABOVE (in)	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	22.00	PREFABRICATED END CAP	A	24" BOTTOM CORED END CAP, PART# MC3500IEPP24BC / TYP OF ALL 24" BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS	2.06"	
9	STONE BELOW (in)	MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	22.00	PREFABRICATED END CAP	B	12" TOP CORED END CAP, PART# MC3500IEPP12T / TYP OF ALL 12" TOP CONNECTIONS	28.40"	
40	STONE VOID	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	22.00	PREFABRICATED END CAP	C	18" BOTTOM CORED END CAP, PART# MC3500IEPP18BC / TYP OF ALL 18" BOTTOM CONNECTIONS	1.77"	
2430	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED) (COVER STONE INCLUDED)	TOP OF STONE:	21.50	PREFABRICATED END CAP	D			
		TOP OF MC-3500 CHAMBER:	20.50	FLAMP	D	INSTALL FLAMP ON 24" ACCESS PIPE / PART# MC350024RAMP		
		12" x 12" TOP MANIFOLD INVERT:	16.92	MANIFOLD	E	12" x 12" TOP MANIFOLD, ADS N-12	26.36"	
758	SYSTEM AREA (SF)	24" ISOLATOR ROW PLUS INVERT:	16.92	NYLOPLAST (INLET W/ ISO PLUS ROW)	F	30" DIAMETER (24.00" SUMP MIN)		2.5 CFS IN
136.0	SYSTEM PERIMETER (ft)	18" BOTTOM CONNECTION INVERT:	16.90	NYLOPLAST (OUTLET)	G	30" DIAMETER (DESIGN BY ENGINEER)		4.0 CFS OUT
		BOTTOM OF MC-3500 CHAMBER:	16.75					
		BOTTOM OF STONE:	16.00					



STORMTECH MC-3500 CHAMBERS (2) WEST

ISOLATOR ROW PLUS
(SEE DETAIL)

PLACE MINIMUM 17.50' OF ADSPUS175 WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS

BED LIMITS

NOTES

- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE #6.32 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD CONNECTIONS.

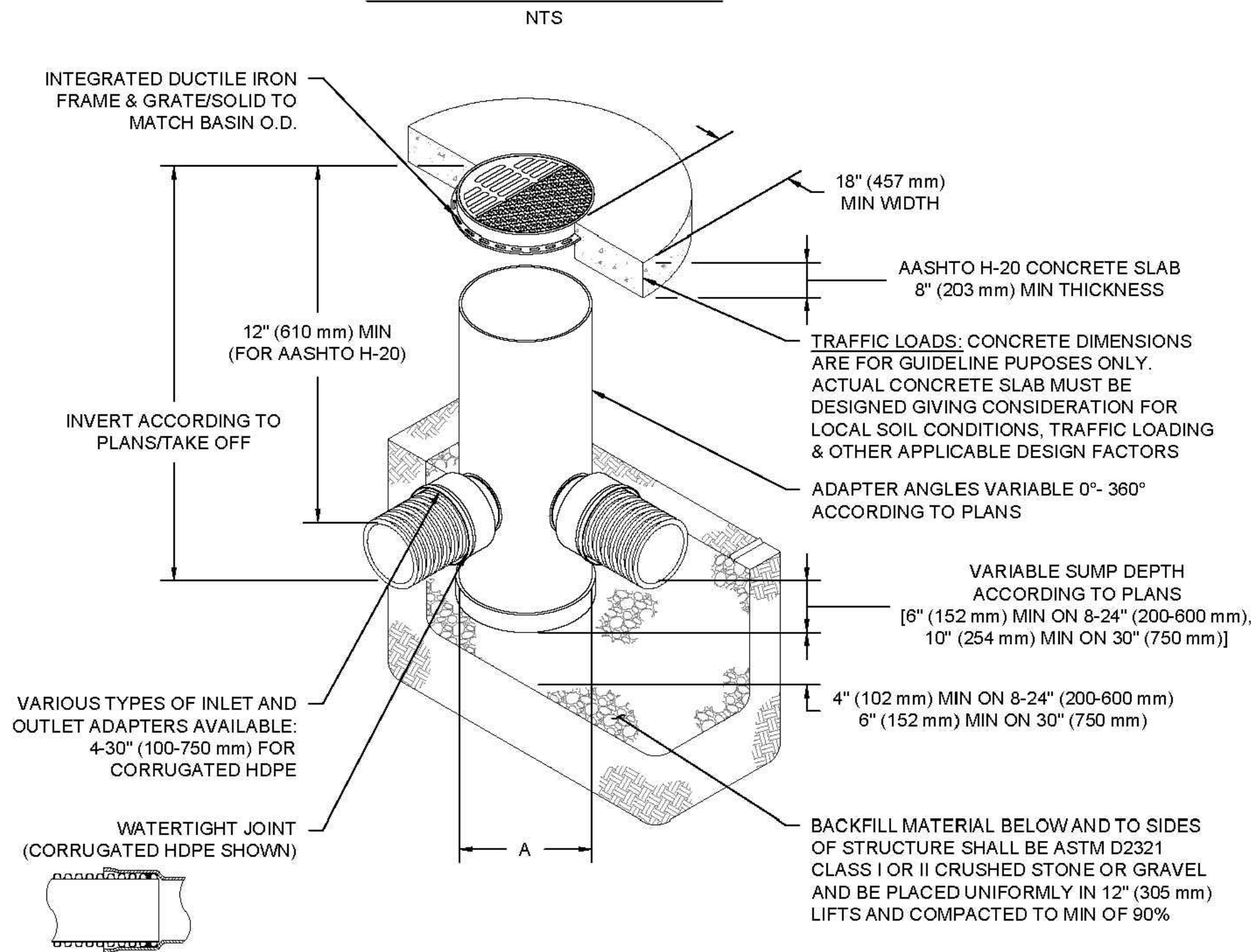
COMMENTS:

- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.

NOT FOR CONSTRUCTION: THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

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NYLOPLAST DRAIN BASIN

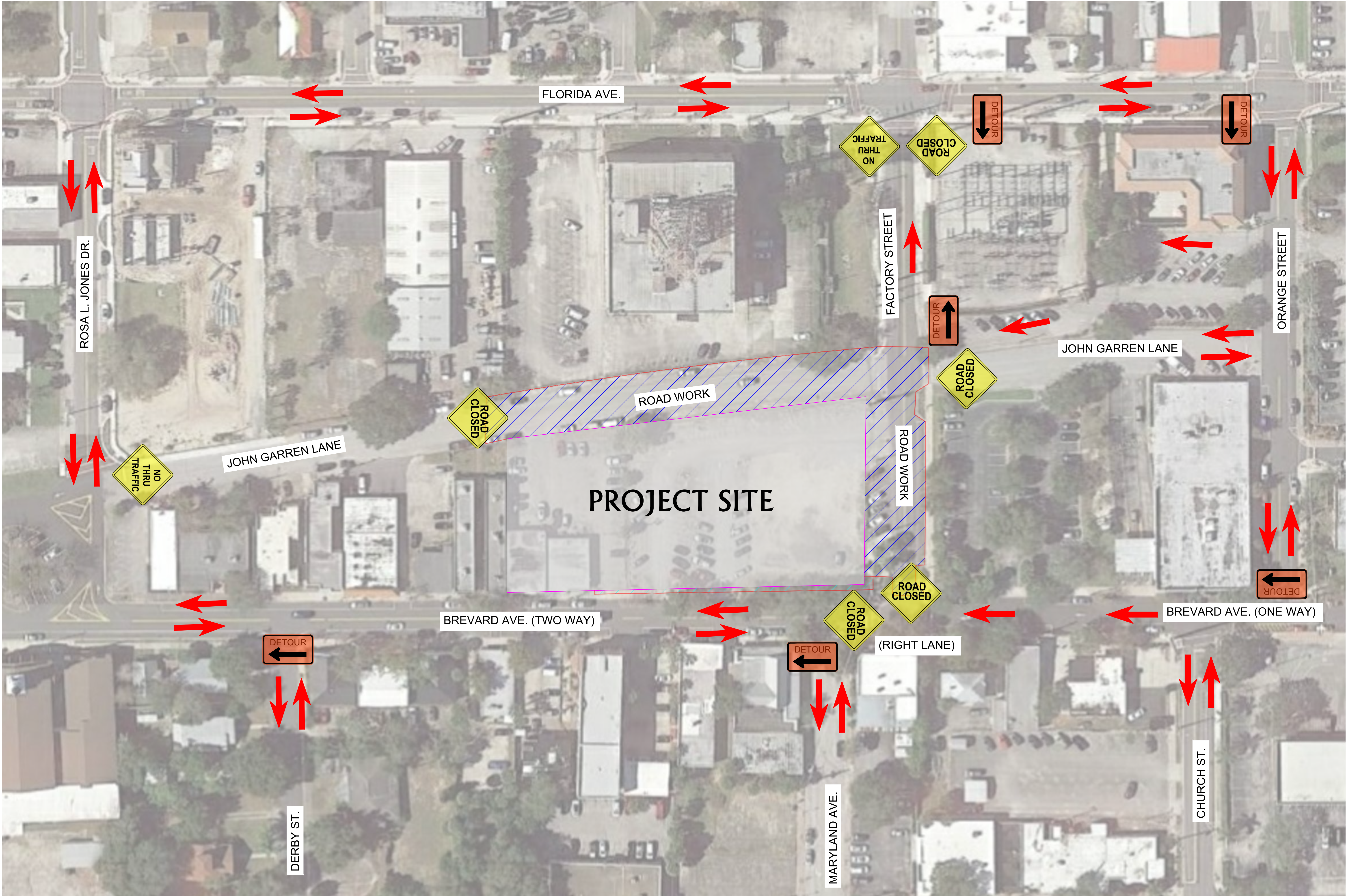


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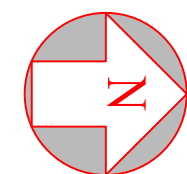
1. 8-30" (200-750 mm) GRATES/SOLID COVERS SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
2. 12-30" (300-750 mm) FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
3. DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS
4. DRAINAGE CONNECTION STUD JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS & HANCOR DUAL WALL) & SDR 35 PVC
5. FOR COMPLETE DESIGN AND PRODUCT INFORMATION: WWW.NYLOPLAST-US.COM
6. TO ORDER CALL: **800-821-6710**

A	PART #	GRATE/SOLID COVER OPTIONS		
8" (200 mm)	2808AG	PEDESTRIAN LIGHT DUTY	STANDARD LIGHT DUTY	SOLID LIGHT DUTY
10" (250 mm)	2810AG	PEDESTRIAN LIGHT DUTY	STANDARD LIGHT DUTY	SOLID LIGHT DUTY
12" (300 mm)	2812AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
15" (375 mm)	2815AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
18" (450 mm)	2818AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
24" (600 mm)	2824AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
30" (750 mm)	2830AG	PEDESTRIAN AASHTO H-20	STANDARD AASHTO H-20	SOLID AASHTO H-20

 ENGINEERING, INC. MOYA BOWLES VILLANAR & ASSOCIATES CIVIL & STRUCTURAL & SURVEYING & ENVIRONMENTAL 1250 W. EAU GALIE BLVD., SUITE 44 MELBOURNE, FLORIDA 32935 P: 321-255-1510 F: 321-255-0911 V: 321-255-1510 E: info@mbveng.com VERO: 772-560-0035, FT. PIERCE: 772-488-2005, PALM CITY: 772-426-9590	DRAINAGE EXFILTRATION DETAILS - 4				COCOA HOTEL AND HOSPITALITY COCOA VILLAGE				COCOA FLORIDA							
	BRUCE A. MOYA LICENSE No. 47529 STATE OF FLORIDA PROFESSIONAL ENGINEER												BRUCE A. MOYA P.E. #47529		DATE: 3/31/2022	
	C-808															
	SHEET															
	21-1092															
	JOB NO.				21-1092				8							
	DESIGNED				RMS				7							
	DRAWN				RMS				6							
	DATE				03/18/2022				5							
	CHECKED				TC /BAM				4							
COMMENTS				02/02/2022				3								
DATE ISSUED				3/31/2022				2								
REVIEWS				03/01/2022				1								
DATE				03/18/2022				0								



- MOT NOTES:**
1. CONTRACTOR SHALL PROVIDE A SIDEWALK DIVERSION/DETOUR FOR PEDESTRIANS PER FDOT INDEX 102-660.
 2. CONTRACTOR SHALL BE RESPONSIBLE TO INSTALL AND MAINTAIN ALL MOT DEVICES DURING CONSTRUCTION OF IMPROVEMENTS TO FACTORY ST, JOHN GARREN LANE AND BREVARD AVE RIGHT-OF-WAY.



2
ADDED SHEET

 MBV ENGINEERING, INC. MOA BOWLES VILLANAZ & ASSOCIATES CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL 1250 W. EAU GALIE BLVD, SUITE H MELBOURNE, FLORIDA 32935 P: 321.486.9000 F: 321.486.9011 ALSO WITH OFFICES IN: VERO 772.698.0035 FT PIERCE 772.488.9056 PALM CITY 772.488.9850		DESIGNED 21-1092		RMS		RMS		DATE 03/18/2022		COMMENTS CITY OF COCOA COMMENTS		REVISIONS		DATE					
		DRAWN RMS		CHECKED TC/BAM		DATE 03/18/2022		COMMENTS CITY OF COCOA COMMENTS		REVISIONS		DATE							
STREET DETOUR PLAN														COCOA		FLORIDA			
COCOA HOTEL AND HOSPITALITY COCOA VILLAGE														COCOA		FLORIDA			
 BRUCE A. MOIA P.E. 47529 DATE 3/31/2022														C-810		SHEET 21-1092		PERMITTING SET	

COCOA HOTEL & HOSPITALITY

PRELIMINARY REVIEW DRAWINGS
FEBRUARY 18, 2022



GENERAL NOTES

THIS PROJECT CONSISTS OF THE CONSTRUCTION OF ONE 7-STORY HOTEL WITH PARKING GARAGES AND ROOFTOP BAR AREA. THE HOTEL WILL HAVE A PROPOSED 178,972 GROSS SF AND WILL BE LOCATED AT 603 BREVARD AVE, COCOA FLORIDA 32922

THIS PROJECT HAS BEEN DESIGNED UTILIZING THE PROVISIONS OF THE FOLLOWING CODES AND REGULATIONS:

APPLICABLE CODES:	FLORIDA ACCESSIBLE CODE 2020
	FLORIDA BUILDING CODE 2020
	FLORIDA PLUMBING CODE 2020
	FLORIDA MECHANICAL CODE 2020
	FLORIDA FUEL GAS CODE 2020
	FLORIDA FIRE PREVENTION CODE 2020
	NFPA 1&101 2018
	NATIONAL ELECTRIC CODE 2017

THE DRAWINGS ARE INTENDED TO GRAPHICALLY DEPICT THE GENERAL REQUIREMENTS FOR THE SCOPE OF WORK REQUIRED TO COMPLETE THE PROJECT. THEY DO NOT SHOW OR IDENTIFY EACH AND EVERY COMPONENT, MATERIAL, ITEM OR INSTALLATION METHOD NECESSARY TO MEET MANUFACTURERS OR REGULATORY REQUIREMENTS. SPECIFIC REGULATORY COMPLIANCE ITEMS OR PROVISIONS ARE IDENTIFIED AND/OR REFERRED TO BY INDICATION OF THE APPROPRIATE ASSEMBLY DESIGNATION OR GENERAL TERMINOLOGY. THE CONTRACTOR(S) SHALL BE REQUIRED TO FAMILIARIZE THEMSELVES WITH THE APPLICABLE CODE PROVISIONS, ASSEMBLY DESIGNATION OR MATERIAL IDENTIFIED AND SHALL COMPLETE THE PROJECT IN COMPLIANCE WITH THE APPLICABLE REQUIREMENTS.

THE CONTRACTOR(S) SHALL BE SOLELY RESPONSIBLE FOR THE MEANS, METHODS, SEQUENCING AND SAFETY REQUIREMENTS FOR THE PROJECT. EACH CONTRACTOR, SUBCONTRACTOR, LABORER OR OTHER PERSONS PERFORMING WORK ON THE PROJECT SITE SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE WORKPLACE & CONSTRUCTION SAFETY REGULATIONS PROMULGATED BY FEDERAL, STATE OR LOCAL AUTHORITIES, INCLUDING BUT NOT LIMITED TO, US DEPT. OF LABOR OCCUPATIONAL SAFETY & HEALTH ACT (OSHA) OR OTHER INDUSTRY REQUIREMENTS APPLICABLE TO CONSTRUCTION SITES AND SAFETY. THE GENERAL CONTRACTOR/CONSTRUCTION MANAGER IS SOLELY RESPONSIBLE FOR ASSURING THAT SITE SPECIFIC SAFETY REQUIREMENTS ARE DOCUMENTED AND DISSEMINATED TO ALL PARTIES AND SHALL MAINTAIN ALL REQUIRED RECORDS, FORMS, MANUALS, RULES OR OTHER DOCUMENTS AT THE SITE.

THE CONTRACTOR AND/OR THE APPLICABLE TRADE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION OF ALL UNDERGROUND UTILITIES, PUBLIC OR PRIVATE, IN THE AREAS OF WORK PRIOR TO THE START OF WORK. ALL UTILITIES SHALL BE PROTECTED FROM DAMAGE DURING THE COMPLETION OF THE PROJECT.

EACH SHEET CONTAINED IN THIS SET OF DRAWINGS IS AN INTEGRAL COMPONENT OF THE CONSTRUCTION DOCUMENTS FOR THE PROJECT. PORTIONS OF THE WORK DESCRIBED ON ONE SHEET MAY IMPACT, BE IMPACTED BY, OR RELY UPON INFORMATION OR WORK SHOWN ON THE OTHER SHEETS WITHIN DRAWINGS OR WITHIN THE SPECIFICATIONS. EACH CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH THE SCOPE OF WORK REQUIRED FOR THE ENTIRE PROJECT AND SHALL BE RESPONSIBLE FOR COORDINATION OF THEIR RESPECTIVE PORTIONS WITH OTHER TRADES TO ASSURE THAT THE WORK PROGRESSES IN AN ORDERLY AND TIMELY FASHION.

ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS APPROVED BY THE AUTHORITIES HAVING JURISDICTION OVER THE PROJECT. EACH CONTRACTOR, SUBCONTRACTOR OR OTHER PERSON PERFORMING WORK ON THE PROJECT SHALL REFER TO THE APPROVED DOCUMENTS FOR THE SCOPE OF WORK REQUIRED. USE OF BID SETS, LOOSE SHEETS OR OTHER ITEMS/DOCUMENTS NOT PART OF THE APPROVED DOCUMENTS IS DONE AT THE RESPECTIVE PARTIES SOLE RISK. THE GENERAL CONTRACTOR/CONSTRUCTION MANAGER SHALL BE RESPONSIBLE FOR MAINTENANCE AND SAFEKEEPING OF THE APPROVED DOCUMENTS.

DO NOT SCALE DRAWINGS. IF ANY DISCREPANCY IS FOUND OR ANY INFORMATION OR CLARIFICATION IS NEEDED WHICH CANNOT BE REASONABLY DETERMINED BY THE CONSTRUCTION DOCUMENTS, CONTACT THE ARCHITECT FOR RESOLUTION. IN CASE OF DISCREPANCY REGARDING THE QUANTITY OR QUALITY, THE HIGHER QUALITY OR GREATER QUANTITY SHALL BE PROVIDED UNLESS DIRECTED OTHERWISE BY THE OWNER OR ARCHITECT.

ALL WORK DESCRIBED HEREIN IS DESIGNED AND INTENDED TO COMPLY WITH THE PROVISIONS OF THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES. FOR RENOVATIONS THE WORK IS DESIGNED TO COMPLY WITH THE ADAAG TO THE MAXIMUM EXTENT FEASIBLE WITH ALL ELEMENTS THAT CAN BE MADE ACCESSIBLE BEING MADE ACCESSIBLE UNLESS TECHNICALLY INFEASIBLE OR BEYOND APPLICABLE THRESHOLD REQUIREMENTS. THE CONTRACTOR SHALL ENSURE THE WORK IS COMPLETED TO MEET THE APPLICABLE REQUIREMENTS AND SHALL BECOME FAMILIAR WITH THE APPLICABLE PROVISIONS BEFORE COMPLETING THE WORK DESCRIBED HEREIN

UNLESS OTHERWISE NOTED, THE RIGHTS, RESPONSIBILITIES AND DUTIES OF THE CONTRACTOR, ARCHITECT AND OWNER, SHALL BE GOVERNED BY THE PROVISIONS OF AIA DOCUMENT A201 GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION, 2007 EDITION. IF ARCHITECT HAS NOT BEEN RETAINED FOR CONTRACT ADMINISTRATION DUTIES, THIS PROVISION SHALL NOT IMPOSE A GREATER REQUIREMENT ON THE ARCHITECT THAN THOSE CONTAINED IN THEIR AGREEMENT FOR PROFESSIONAL SERVICES. REFER TO THE PROJECT MANUAL AND GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION FOR ADDITIONAL REQUIREMENTS FOR COMPLETION AND ADMINISTRATION OF THE PROJECT.

I HEREBY CERTIFY THESE DRAWINGS WERE DONE BY ME, OR UNDER MY DIRECT SUPERVISION AND TO THE BEST OF MY KNOWLEDGE COMPLY WITH ALL APPLICABLE BUILDING CODES, ZONING ORDINANCES AND COMPLY WITH THE FLORIDA BUILDING CODES 7TH EDITION 2020 & THE FLORIDA FIRE PREVENTION CODE 7TH EDITION 2020.

ARCHITECT (LIC EXP. 02/28/2023) _____ DATE _____

CODE DATA PER BUILDING

MULTI-FAMILY RESIDENTIAL

USE GROUP:	S-2, R-2, A-3
CONSTRUCTION TYPE:	I-B, FULLY SPRINKLERED
ALLOWABLE HEIGHT:	85 FEET
ACTUAL BUILDING HEIGHT:	74' - 0"
ALLOWABLE FLOOR AREA:	S-2 AREA PER FLOOR = 237,000 SF R-2 AREA PER FLOOR = UNLIMITED A-3 AREA PER FLOOR = 28,500 SF
S-2 ACTUAL GROSS FLOOR AREA:	LEVEL 1 10,064 SF LEVELS 2-4 33,798 SF EACH LEVEL
B BUSINESS GROSS FLOOR AREA:	23,502 SF
R-2 ACTUAL GROSS FLOOR AREA:	LEVEL 5 19,984 SF LEVELS 6-7 19,984 SF EACH LEVEL
A-3 ACTUAL GROSS FLOOR AREA:	ROOF LEVEL 7,562 SF
TOTAL AREA:	178,972 SF

ELEVATOR BASIS OF DESIGN: OTIS GEN2 UNDERSLUNG 3500 LB CAPACITY ELEVATOR WITH ADA AND STRETCHER COMPLIANT CAB. SPEED 350 FPM.

MINIMUM FIRE RESISTANCE OF WALLS, PARTITIONS & OPENING PROTECTIVES		
COMPONENT	WALLS/PARTITIONS	OPENING PROTECTIVES
SHAFT ENCLOSURES (STAIRWAYS/ELEVATORS)	2 HR	1-1/2 HR
ALL REFUSE CHUTES	2 HR	1-1/2 HR
REFUSE CHUTES ACCESS ROOMS	1 HR	1 HR
REFUSE & LAUNDRY CHUTE TERMINATION ROOMS	2 HR	1-1/2 HR
OCCUPANCY SEPARATIONS (RESIDENTIAL)	1 HR	3/4 HR
BALCONY EXIT ACCESS CORRIDORS PER SECTION 1019 FBC AND SECTION 30.3.6.1.2 AND TABLE 8.3.4.2 NFPA 101	1/2 HR	1/3 HR

FBC TABLE 803.11
WALL AND CEILING FINISH REQUIREMENTS FOR R2 SPRINKLERED BUILDINGS:

SPACE LOCATION	CLASS RATING
1. INTERIOR EXIT STAIRWAYS, INTERIOR EXIT RAMPS AND EXIT PASSAGEWAYS A, B	C
2. CORRIDORS AND ENCLOSURE FOR EXIT ACCESS STAIRWAYS AND EXIT ACCESS RAMPS	C
3. ROOMS AND ENCLOSED SPACES, C	C

CLASS C = FLAME SPREAD INDEX 76-200; SMOKE-DEVELOPED INDEX 0-450.

A. CLASS C INTERIOR FINISH MATERIALS SHALL BE PERMITTED FOR WAINSCOTTING OR PANELING OF NOT MORE THAN 1,000 SQUARE FEET OF APPLIED SURFACE AREA IN THE GRADE LOBBY WHERE APPLIED DIRECTLY TO A NONCOMBUSTIBLE BASE OR OVER FURRING STRIPS APPLIED TO A NONCOMBUSTIBLE BASE AND FIREBLOCKED AS REQUIRED BY SECTION 803.13.1.

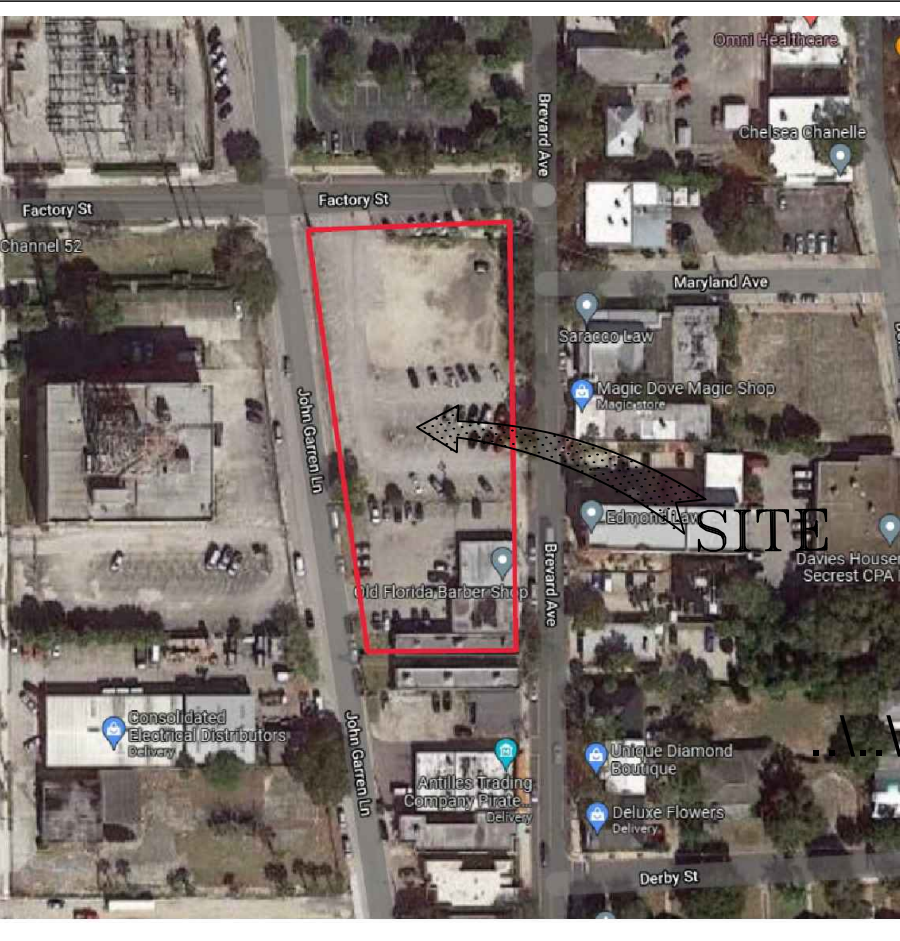
B. IN OTHER THAN GROUP I-3 OCCUPANCIES IN BUILDINGS LESS THAN THREE STORIES ABOVE GRADE PLANE, CLASS B INTERIOR FINISH FOR NONSPRINKLERED BUILDINGS AND CLASS C INTERIOR FINISH FOR SPRINKLERED BUILDINGS SHALL BE PERMITTED IN INTERIOR EXIT STAIRWAYS AND RAMPS.

C. REQUIREMENTS FOR ROOMS AND ENCLOSED SPACES SHALL BE BASED UPON SPACES ENCLOSED BY PARTITIONS. WHERE A FIRE-RESISTANCE RATING IS REQUIRED FOR STRUCTURAL ELEMENTS, THE ENCLOSING PARTITIONS SHALL EXTEND FROM THE FLOOR TO THE CEILING. PARTITIONS THAT DO NOT COMPLY WITH THIS SHALL BE CONSIDERED ENCLOSING SPACES AND THE ROOMS OR SPACES ON BOTH SIDES SHALL BE CONSIDERED ONE. IN DETERMINING THE APPLICABLE REQUIREMENTS FOR ROOMS AND ENCLOSED SPACES, THE SPECIFIC OCCUPANCY THEREOF SHALL BE THE GOVERNING FACTOR REGARDLESS OF THE GROUP CLASSIFICATION OF THE BUILDING OR STRUCTURE.

SUBMITTAL NOTES

1. CONTRACTOR SHALL SUBMIT PRODUCT APPROVAL DATA ON EXTERIOR DOORS & FRAMES.
2. CONTRACTOR SHALL SUBMIT PRODUCT APPROVAL DATA ON EXTERIOR STOREFRONT SYSTEM.
3. CONTRACTOR SHALL SUBMIT PRODUCT APPROVAL DATA ON EXTERIOR WINDOWS.
4. CONTRACTOR SHALL SUBMIT SIGNED & SEALED FIRE SPRINKLER DRAWINGS.
5. CONTRACTOR SHALL SUBMIT SIGNED & SEALED FIRE ALARM SYSTEM DESIGN.
6. CONTRACTOR SHALL SUBMIT PRODUCT APPROVAL DATA ON NEW MEMBRANE ROOFING SYSTEM.
7. CONTRACTOR SHALL SUBMIT PRODUCT APPROVAL DATA ON THE METAL ROOFING SYSTEM.
8. CONTRACTOR SHALL SUBMIT PRODUCT APPROVAL DATA ON GARAGE DOORS.
9. CONTRACTOR SHALL SUBMIT SIGNED & SEALED METAL TRUSS DRAWINGS.

SITE LOCATION MAP COCOA, FL



DATE	ISSUE
10-25-21	REVIEW SET
02-03-22	REVIEW SET
02-18-22	REVIEW SET

REVISION	
NO.	DATE

NEW COCOA HOTEL & HOSPITALITY
AT
603 BREVARD AVE.
COCOA, FLORIDA 32922

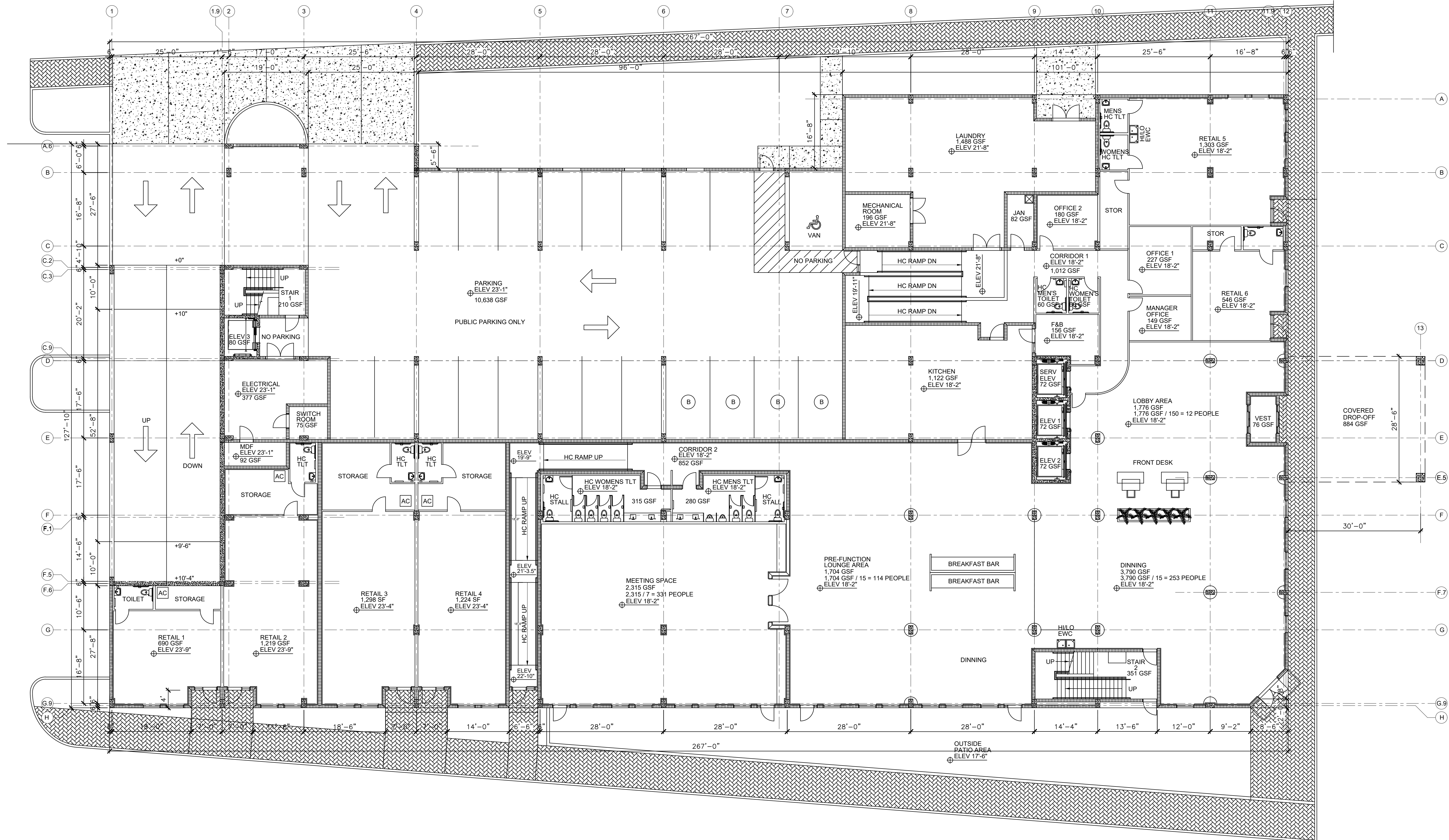
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APPROVED:	MFK
DATE:	03-31-2022
JOB #:	A0260

1ST FLOOR PLAN

SHEET NO.

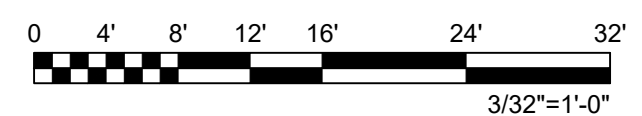
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101



16 - 9' x 18' PUBLIC PARKING SPACES
4 - 10' X 18' PUBLIC PARKING SPACES
1 - 12' X 18' HC VAN PARKING SPACE

TOTAL 1ST FLOOR PUBLIC PARKING SPACES = 21



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PALM BAY, FL 32905
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DATE	ISSUE
10-25-21	REVIEW SET
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02-18-22	REVIEW SET

REVISION	
NO.	DATE

NEW COCOA HOTEL & HOSPITALITY

AT
603 BREVARD AVE.
COCOA, FLORIDA 32922

COUNTY

BREVARD

SCALE: AS SHOWN
DRAWN: CMT
CHECKED: MFK
APPROVED: MFK
DATE: 03-31-2022
JOB #: A0260

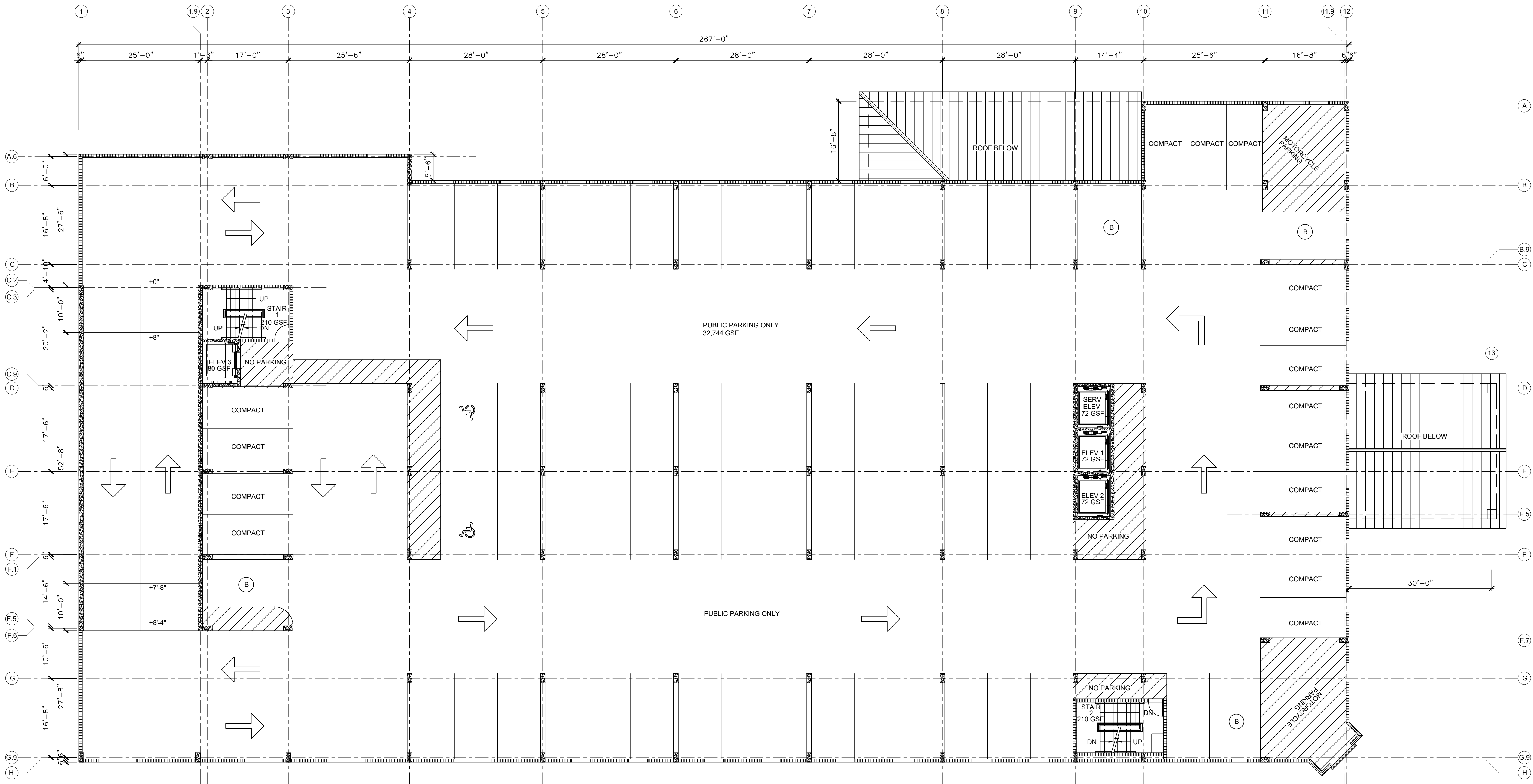
2ND FLOOR PLAN

SHEET NO.

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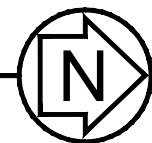
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OF



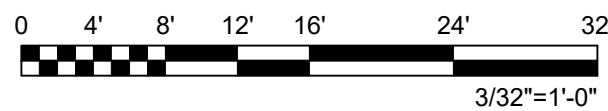
2ND FLOOR PLAN

3/32" = 1'-0"



57 - 9' x 18' PUBLIC PARKING SPACES
4 - 10' x 18' PUBLIC PARKING SPACES
16 - 8.5' x 18' PUBLIC COMPACT PARKING SPACES
2 - 12' X 18' HC PARKING SPACES

TOTAL PUBLIC PARKING SPACES ON 2ND FLOOR = 79



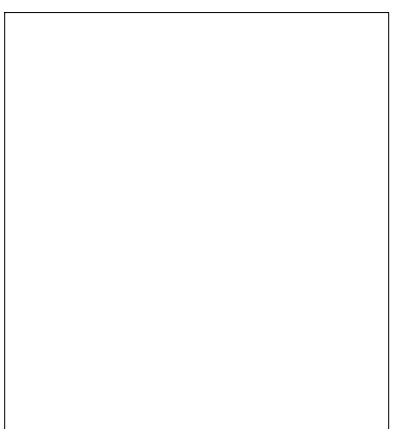
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02-03-22	REVIEW SET
02-18-22	REVIEW SET

REVISION	
NO.	DATE

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COCOA HOTEL & HOSPITALITY
AT
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COCOA, FLORIDA 32922

BREVARD



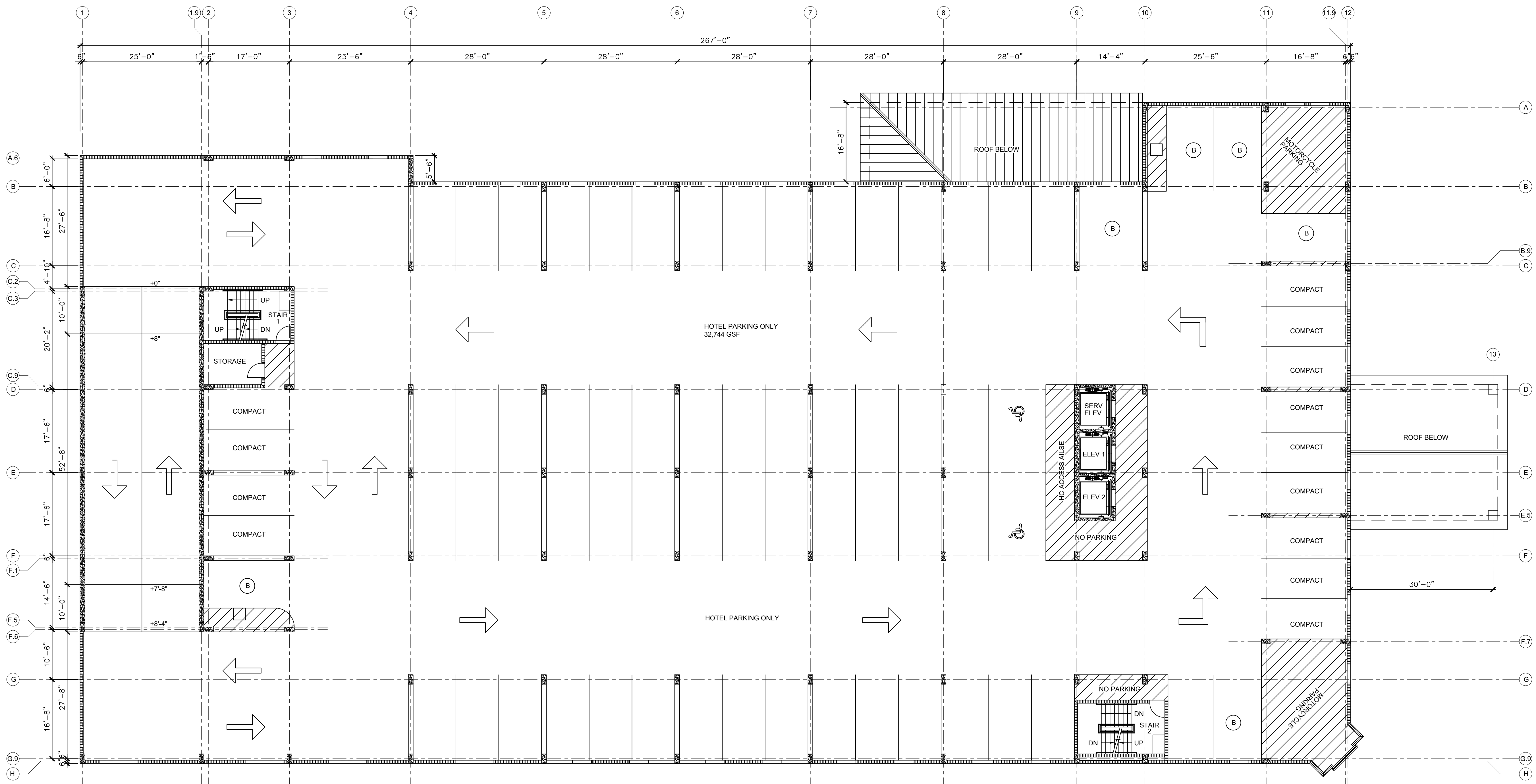
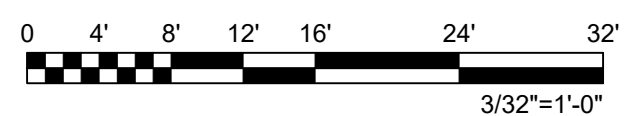
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APPROVED:	MFK
DATE:	03-31-2022
JOB #:	A0260

3RD FLOOR PLAN

SHEET NO.

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103

OF -



57 - 9' x 18' PARKING SPACES
6 - 10' x 18' PARKING SPACES
13 - 8.5' x 18' COMPACT PARKING SPACES
2 - 12' X 18' HC PARKING SPACES

TOTAL 1ST FLOOR HOTEL PARKING SPACES = 78

DATE	ISSUE
10-25-21	REVIEW SET
02-03-22	REVIEW SET
02-18-22	REVIEW SET

REVISION	
NO.	DATE

NEW COCOA HOTEL & HOSPITALITY
AT
603 BREVARD AVE.
COCOA, FLORIDA 32922

COUNTY

BREVARD

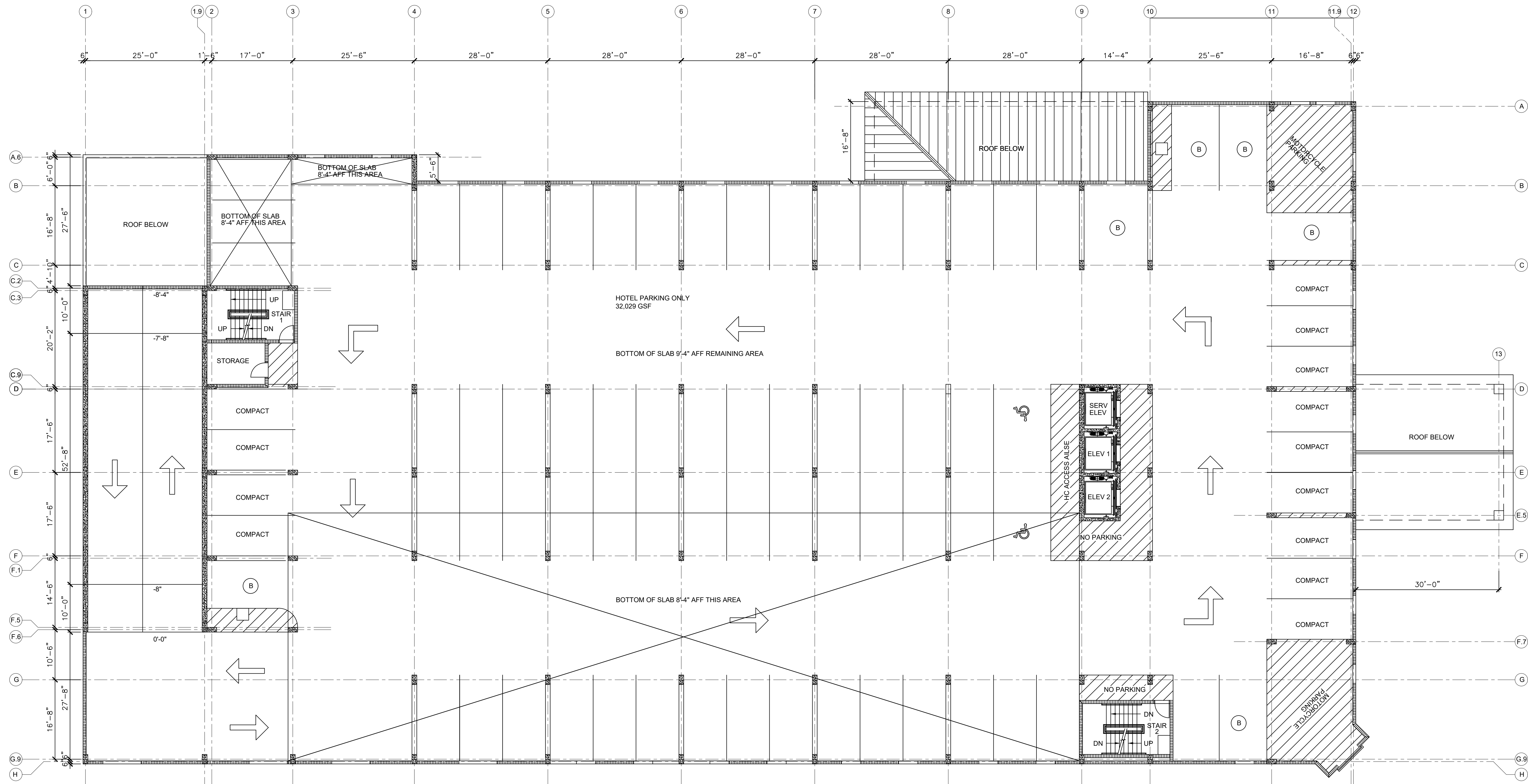
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CHECKED: MFK
APPROVED: MFK
DATE: 03-31-2022
JOB #: A0260

4TH FLOOR PLAN

SHEET NO.

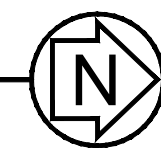
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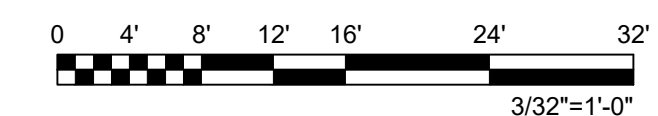
4TH FLOOR PLAN

3/32" = 1'-0"



60 - 9' x 18' PARKING SPACES
6 - 10' x 18' PARKING SPACES
13 - 8.5' x 18' COMPACT PARKING SPACES
2 - 12' X 18' HC PARKING SPACES

TOTAL 4TH FLOOR HOTEL PARKING SPACES = 81



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02-18-22	REVIEW SET

REVISION	
NO.	DATE

NEW COCOA HOTEL & HOSPITALITY

AT
603 BREVARD AVE.
COCOA, FLORIDA 32922

COUNTY

BREVARD

SCALE: AS SHOWN
DRAWN: CMT
CHECKED: MFK
APPROVED: MFK
DATE: 03-31-2022
JOB #: A0260

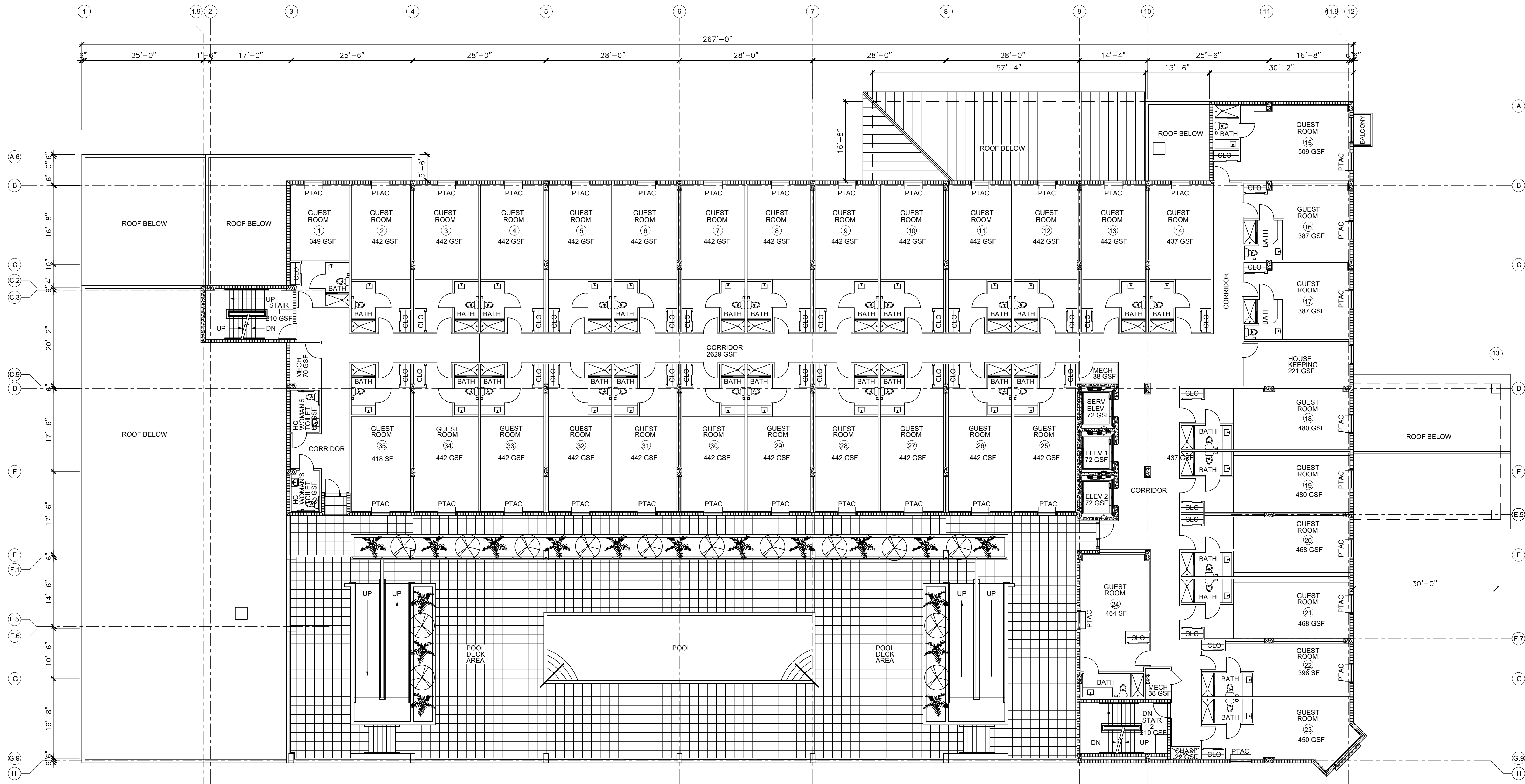
5TH FLOOR PLANS

SHEET NO.

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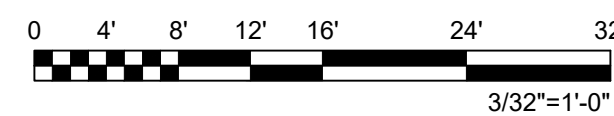
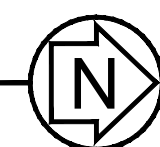
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5TH FLOOR PLAN

3/32" = 1'-0"

35 GUEST ROOMS



DATE	ISSUE
10-25-21	REVIEW SET
02-03-22	REVIEW SET
02-18-22	REVIEW SET

REVISION	
NO.	DATE

NEW COCOA HOTEL & HOSPITALITY
AT
603 BREVARD AVE.
COCOA, FLORIDA 32922

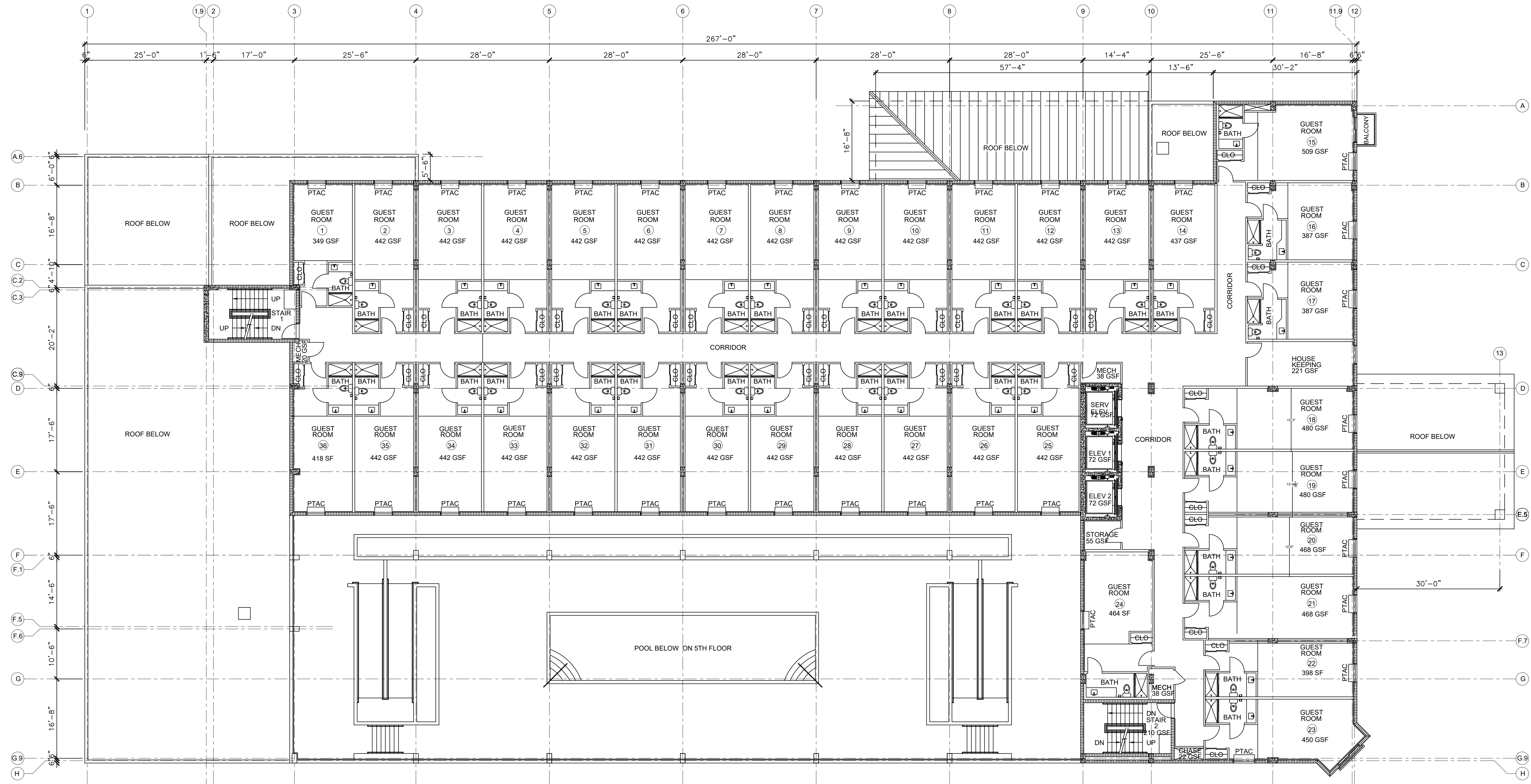
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CHECKED:	MFk
APPROVED:	MFk
DATE:	03-31-2022
JOB #:	A0260

6TH FLOOR PLAN

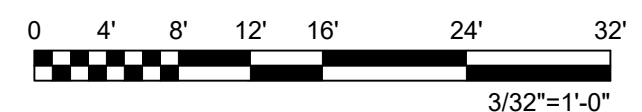
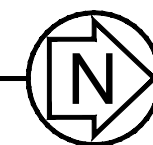
SHEET NO.

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106



36 GUEST ROOMS



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PALM BAY, FL 32905
Phone: (321) 727-7100
Web: www.dfi-gc.com

DATE	ISSUE
10-25-21	REVIEW SET
02-03-22	REVIEW SET
02-18-22	REVIEW SET

REVISION	
NO.	DATE

NEW COCOA HOTEL & HOSPITALITY

AT
603 BREVARD AVE.
COCOA, FLORIDA 32922

COUNTY

BREVARD

SCALE: AS SHOWN
DRAWN: CMT
CHECKED: MFK
APPROVED: MFK
DATE: 03-31-2022
JOB #: A0260

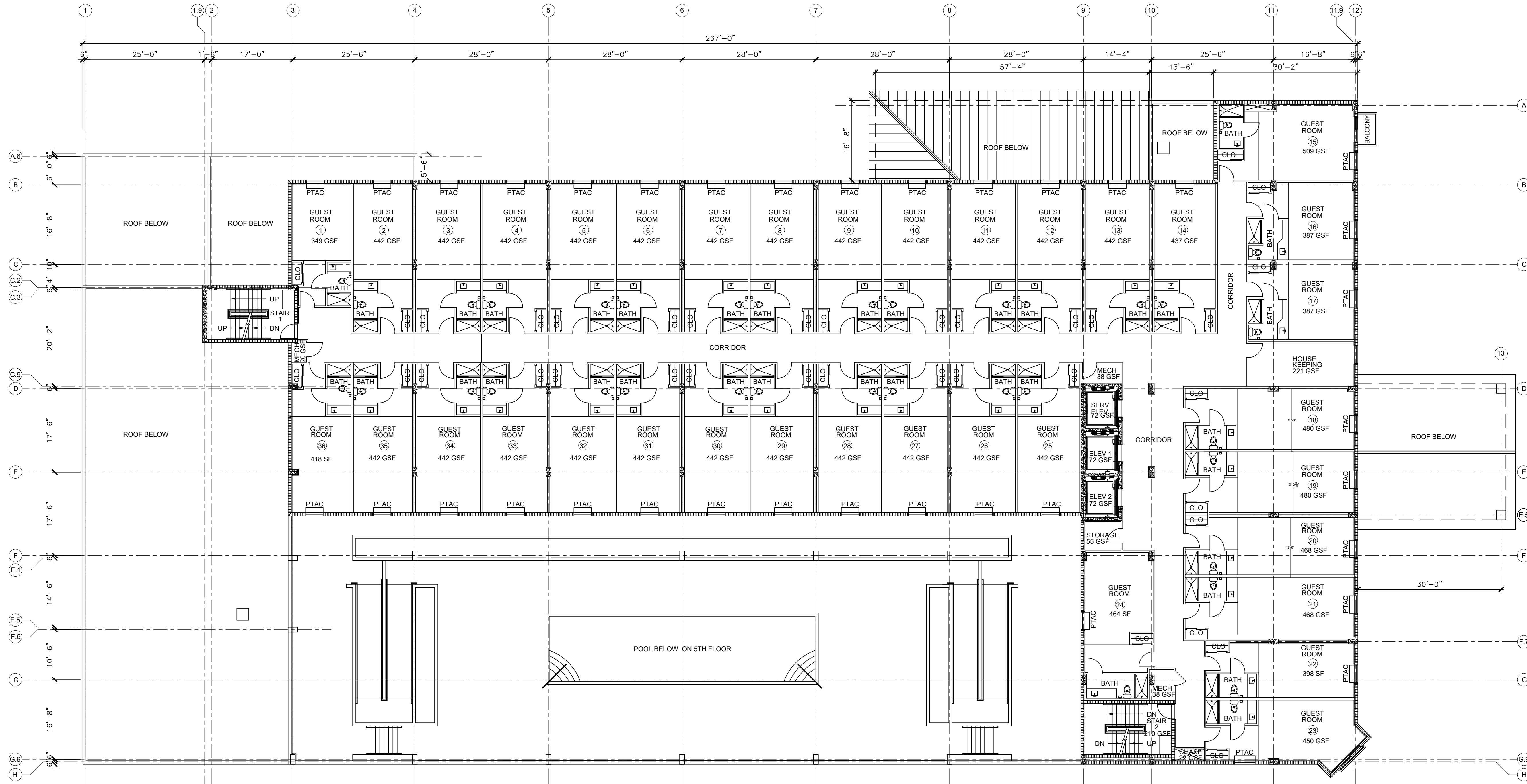
7TH FLOOR PLAN

SHEET NO.

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107

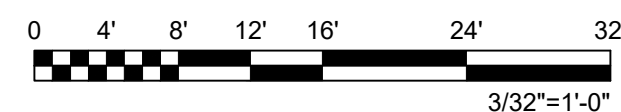
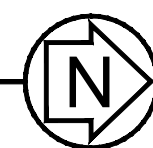
OF



7TH FLOOR PLAN

3/32" = 1'-0"

36 GUEST ROOMS



DATE	ISSUE
10-25-21	REVIEW SET
02-03-22	REVIEW SET
02-18-22	REVIEW SET

REVISION	
NO.	DATE

NEW COCOA HOTEL & HOSPITALITY
AT
603 BREVARD AVE.
COCOA, FLORIDA 32922

COUNTY

BREVARD

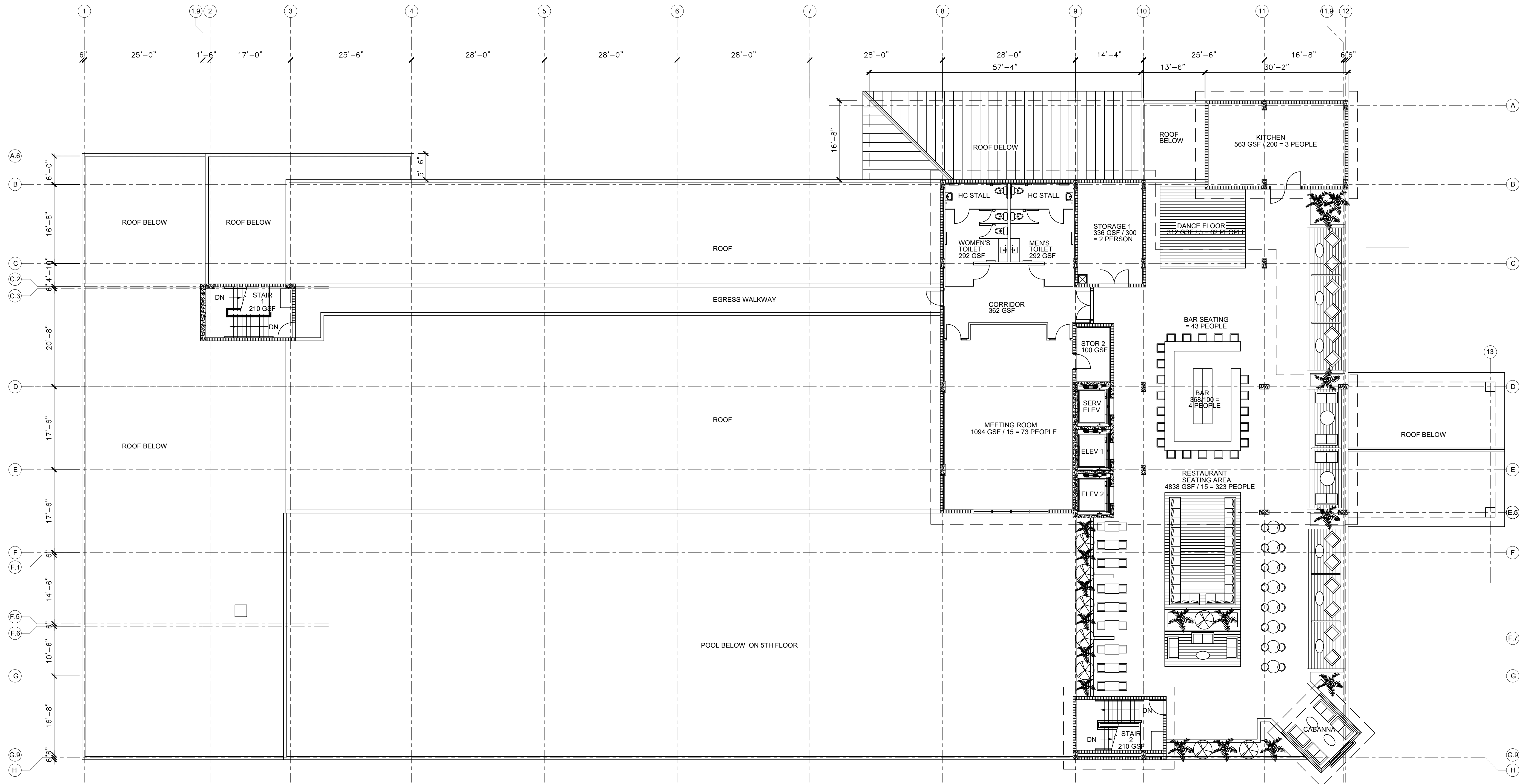
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APPROVED: MFK
DATE: 03-31-2022
JOB #: A0260

8TH FLOOR PLAN

SHEET NO.

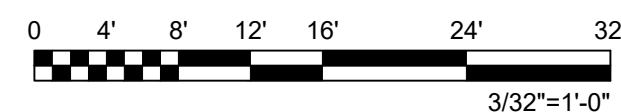
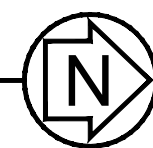
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108

OF



8TH FLOOR PLAN

3/32" = 1'-0"



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PALM BAY, FL 32905
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Web: www.dfi-gc.com

DATE	ISSUE
10-25-21	REVIEW SET
02-03-22	REVIEW SET
02-18-22	REVIEW SET

REVISION	
NO.	DATE

NEW COCOA HOTEL & HOSPITALITY
AT
603 BREVARD AVE.
COCOA, FLORIDA 32922

COUNTY

BREVARD

SCALE: AS SHOWN
DRAWN: CMT
CHECKED: MFK
APPROVED: MFK
DATE: 03-31-2022
JOB #: A0260

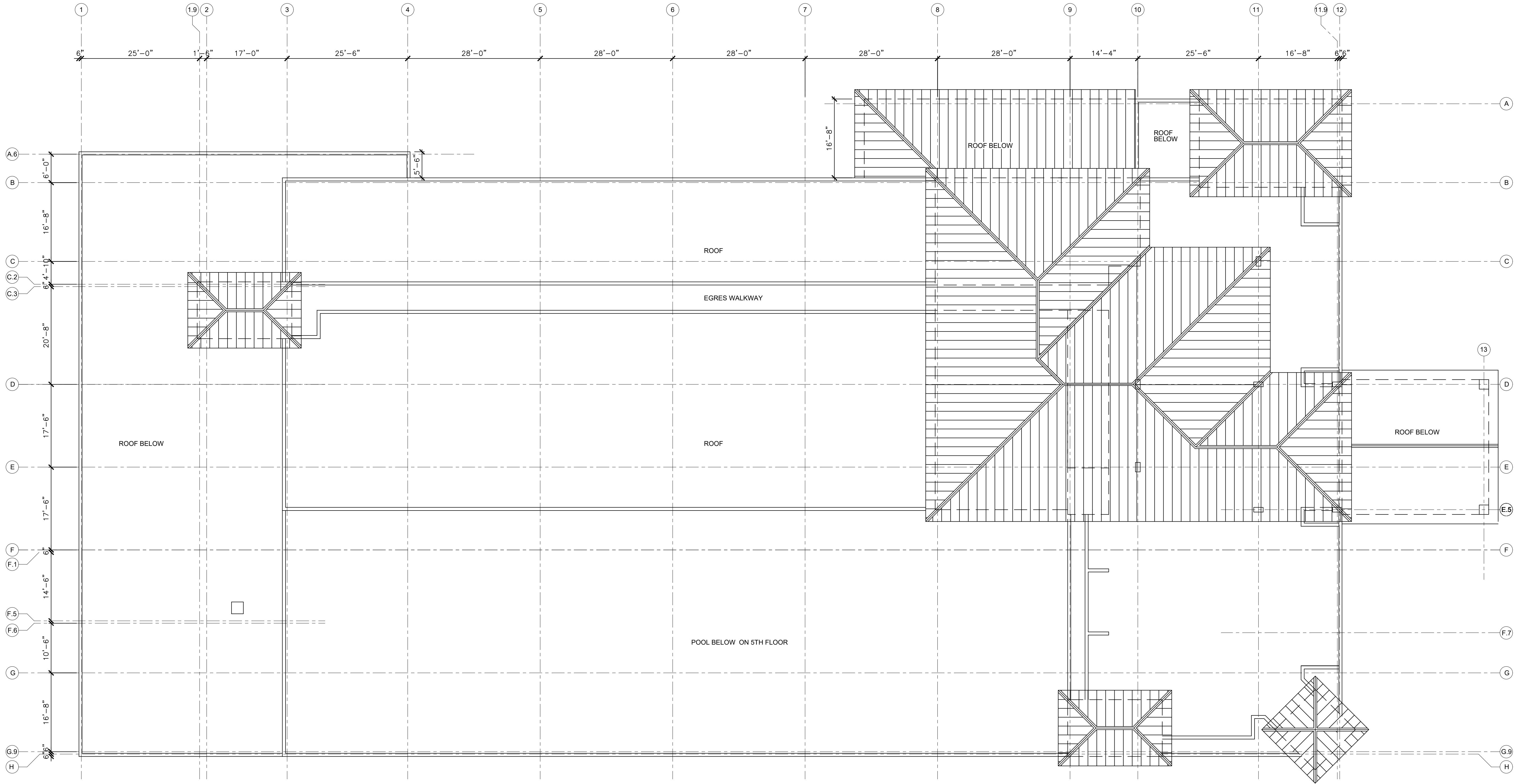
ROOF PLAN

SHEET NO.

A

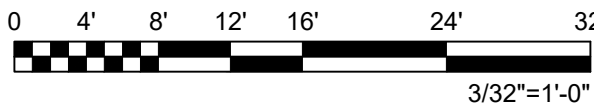
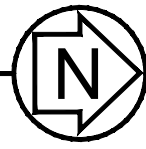
109

OF



ROOF PLAN

3/32" = 1'-0"



DATE	ISSUE
10-25-21	REVIEW SET
02-03-22	REVIEW SET
02-18-22	REVIEW SET

REVISION	
NO.	DATE

NEW COCOA HOTEL & HOSPITALITY
AT
603 BREVARD AVE.
COCOA, FLORIDA 32922

SCALE:	AS SHOWN
DRAWN:	CMT
CHECKED:	MFK
APPROVED:	MFK
DATE:	03-31-2022
JOB #:	A0260

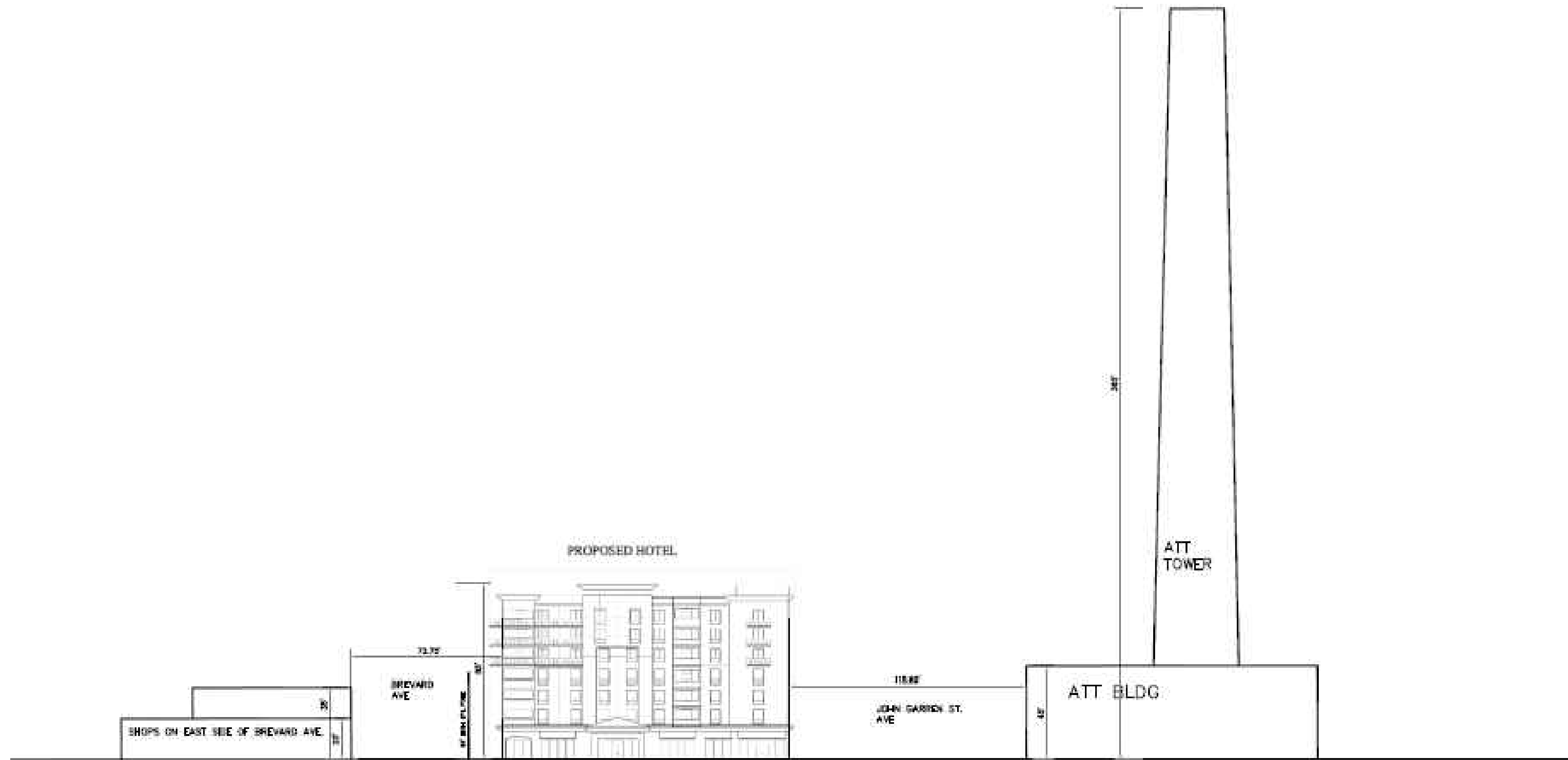
PERSPECTIVE
ELEVATIONS

SHEET NO.

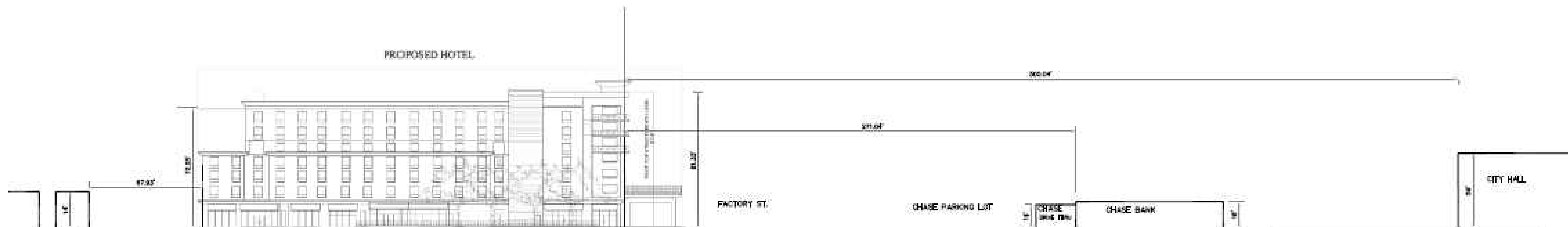
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110

_____ OF _____



PERSPECTIVE SECTION LOOKING SOUTH
HORIZONTAL SCALE 1" = 30'
VERTICAL SCALE 1" = 30'



PERSPECTIVE SECTION LOOKING WEST
HORIZONTAL SCALE 1" = 30'
VERTICAL SCALE 1" = 30'



DATE	ISSUE
10-25-21	REVIEW SET
02-03-22	REVIEW SET
02-18-22	REVIEW SET

REVISION	
NO.	DATE

NEW COCOA HOTEL & HOSPITALITY
AT
603 BREVARD AVE.
COCOA, FLORIDA 32922

SCALE:	AS SHOWN
DRAWN:	CMT
CHECKED:	MFK
APPROVED:	MFK
DATE:	03-31-2022
JOB #:	A0260

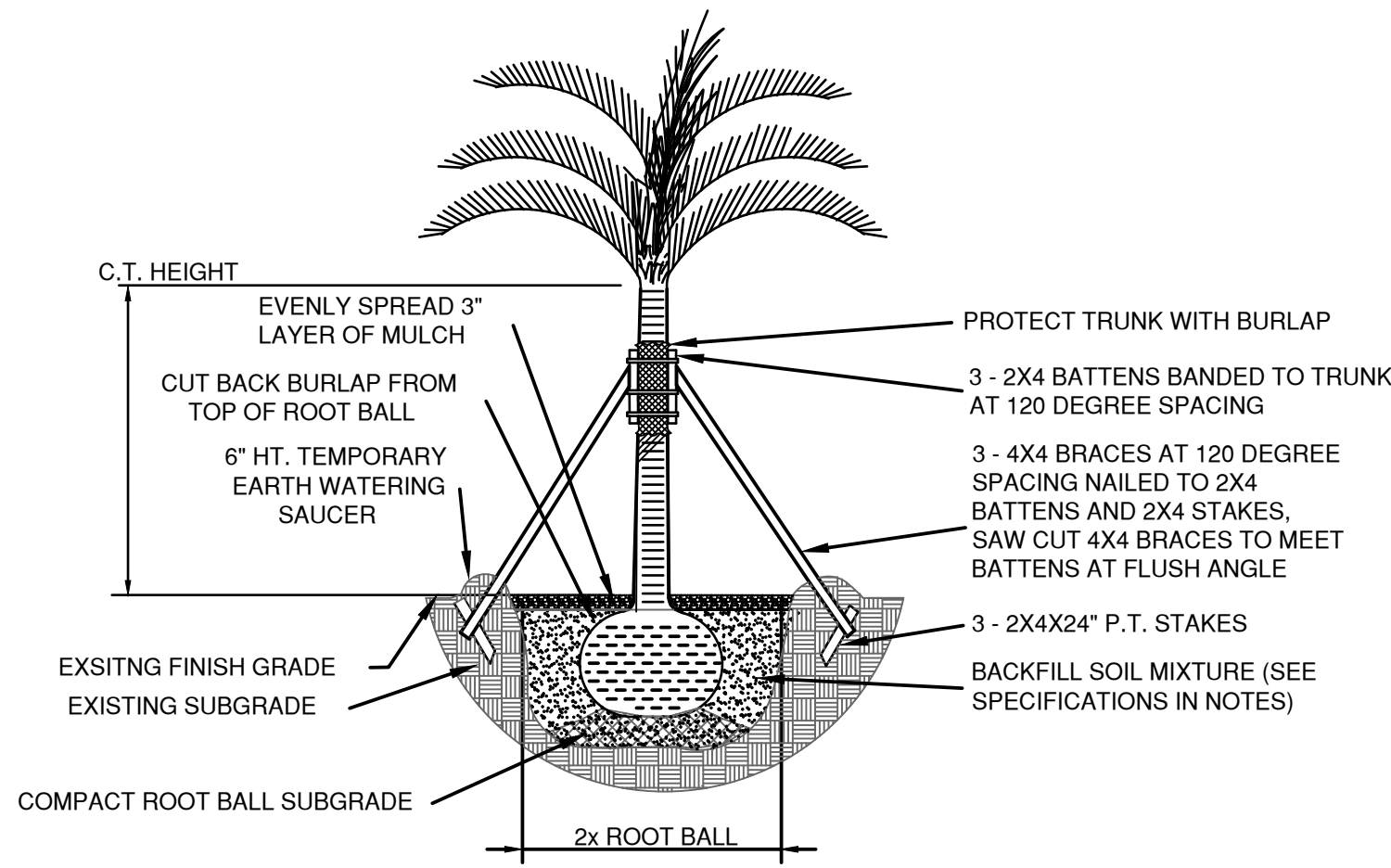
ENDERING ELEVATION

SHEET NO.

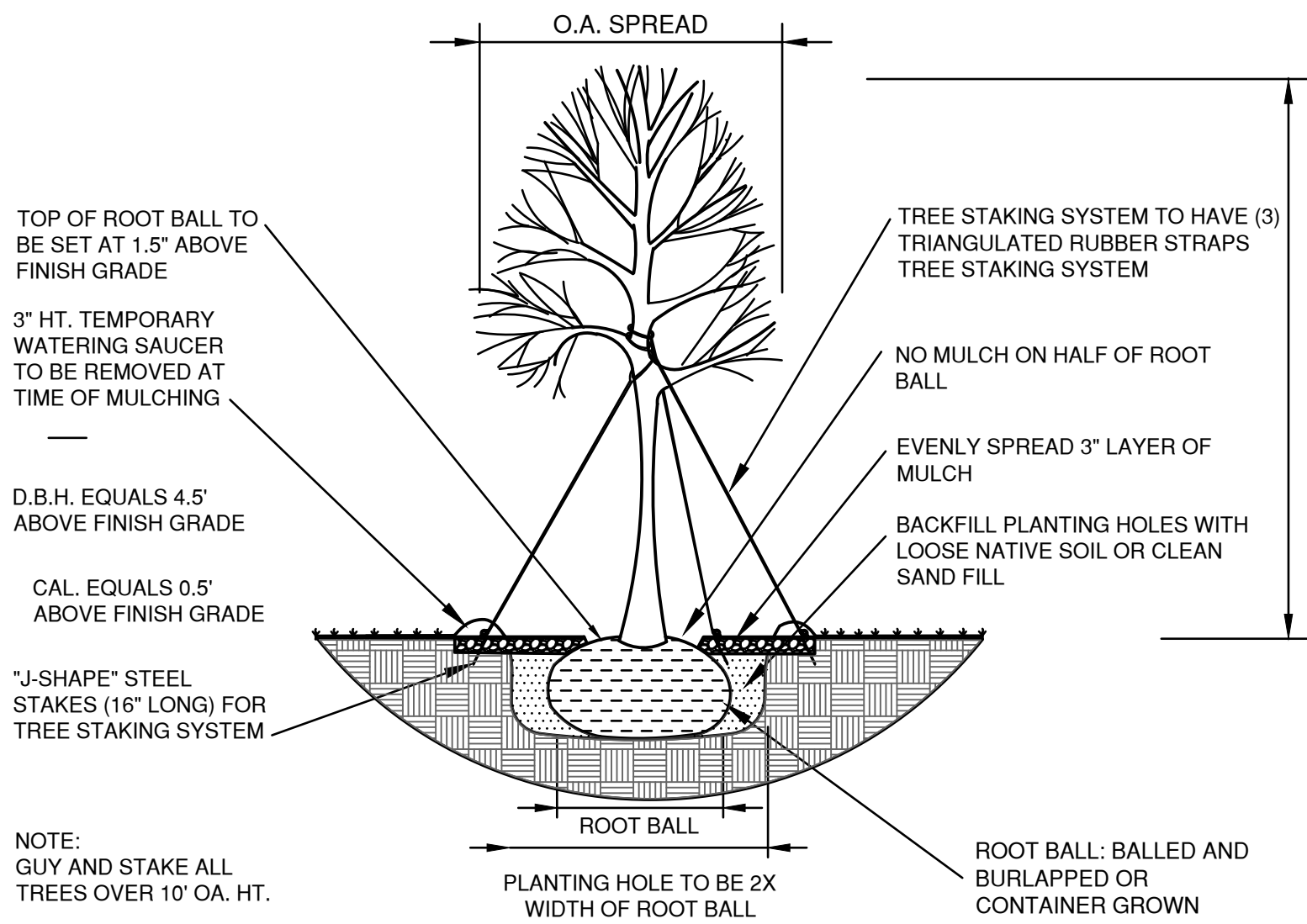
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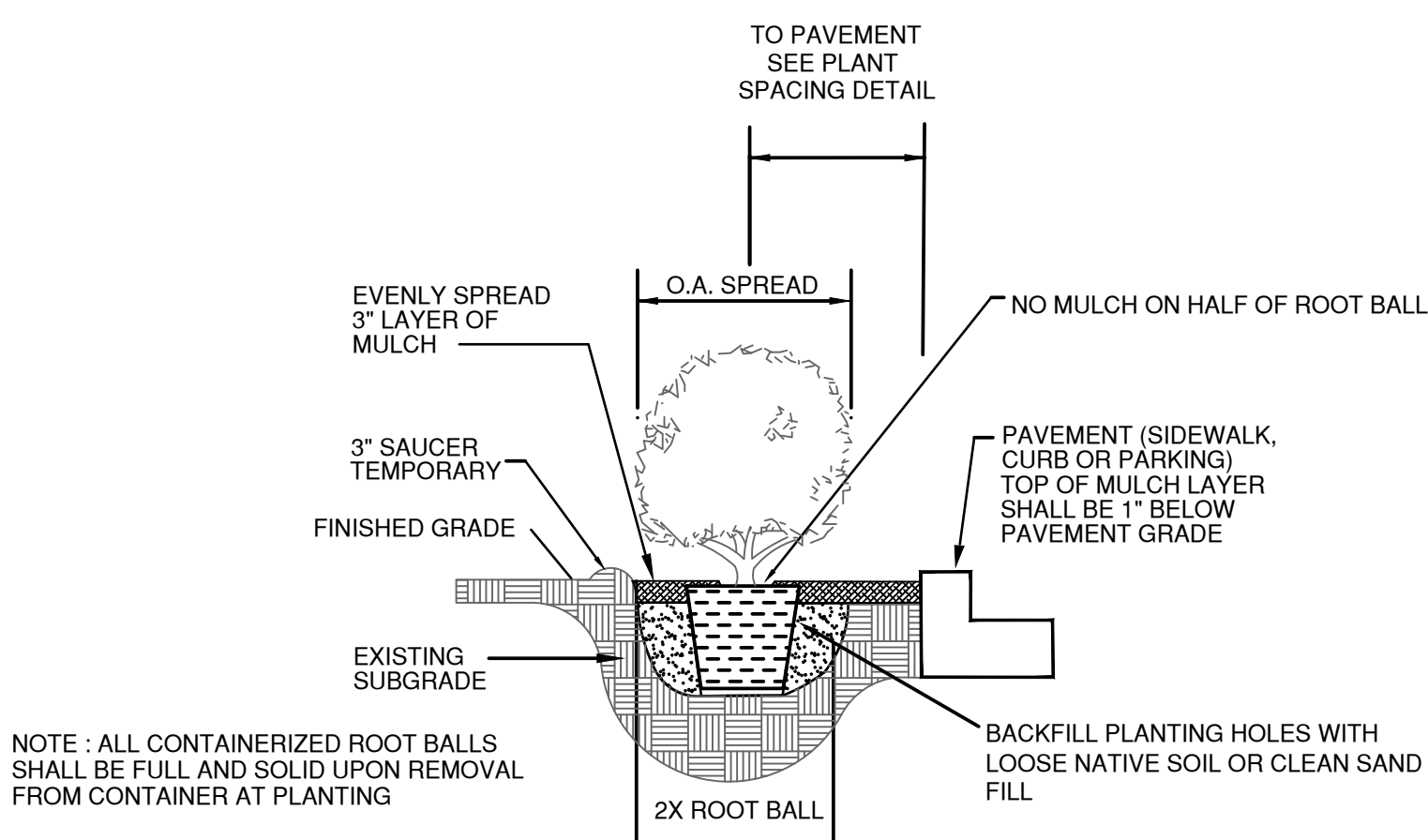
OF _____



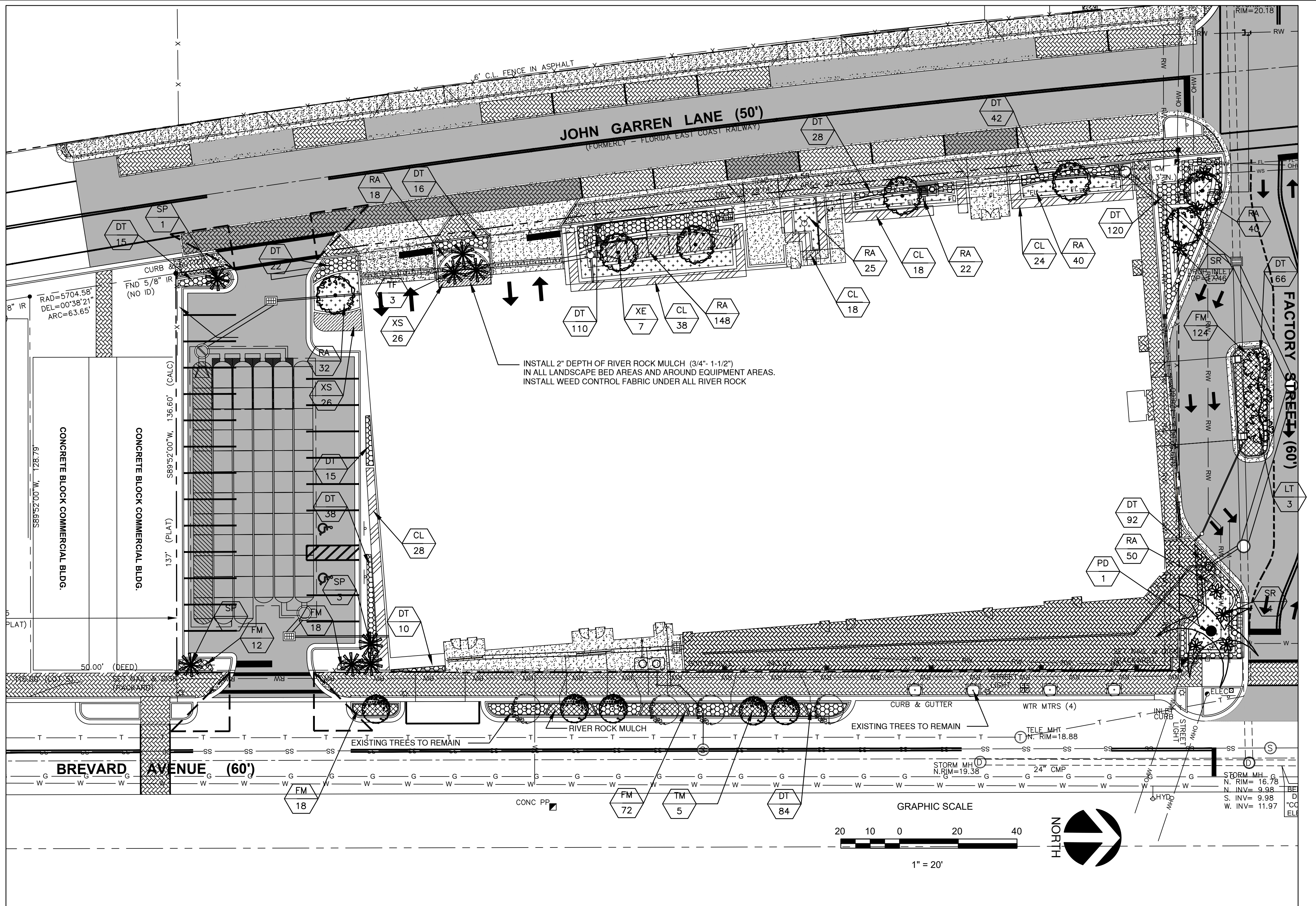
DATE PALM PLANTING DETAIL
N.T.S.



TREE PLANTING DETAIL
N.T.S.



SHRUB AND GROUND COVER DETAIL
N.T.S.



PLANT SYMBOL LEGEND

	(PD) DATE PALM
	(XE) EAGLESTON HOLLY
	(TM) PURPLE TABEBUIA
	(LT) CRAPE MYRTLE
	(SP) CABBAGE PALM
	(TF) WINDMILL PALM
	(SR) BIRD OF PARADISE

PLANT LIST

Trees and Palms							
XE	EAGLESTON HOLLY	ILEX ATTENUATA 'EAGLESTON'	16' O.A.	7'	100 GAL.	4" CAL. / 7' C.T.	5
TM	PURPLE TABEBUIA	TABEBUIA IMPETIGINOSA	16' HT.	7'	100 GAL.	4" CAL. / 7' C.T.	5
LT	CRAPE MYRTLE	LAEGESTROMIA 'TUSCARORA'	12' O.A.	5'	3 GAL.	3" CAL./STANDARD	3
PD	DATE PALM	PHOENIX DACTYLIFERA 'DEGLET NOOR'	26' O.A.	5'	F.G.	18" C.T./15" CAL.	1
SP	CABBAGE PALM	SABAL PALMETTO	12'-16' C.T.	CROPPED	BARE	12'-16' C.T./10" CAL.	5
TF	WINDMILL PALM	TRACHYCARPUS FORTUNEI	12' O.A.	5'	F.G.	6" C.T./4" CAL.	3
Shrubs and Groundcovers							
SR	BIRD OF PARADISE	STRELITZIA REGINAE	30" O.A.	4'	15 GAL.	SINGLE CROWN	7
CL	DWARF BOTTLEBRUSH	CALLISTEMON 'LITTLE JOHN'	36" O.A.	24"	7 GAL.	36" O.C./FULL SHRUB	126
RA	INDIA HAWTHORN	RHAPIOLEPSIS INDICA 'ALBA'	12" O.A.	12"	3 GAL.	24" O.C.	365
XS	DWARF YAUPOON HOLLY	ILEX VOMITORIA 'SCHILLINGS'	12" O.A.	12"	3 GAL.	24" O.C.	52
FM	GREEN ISLAND FICUS	FIGUS MACROPHYLLA 'GREEN ISLAND'	12" O.A.	15"	3 GAL.	24" O.C.	226
DT	BLUEBERRY FLAX LILY	DANIELLA TASMANICA 'VARIEGATA'	9" O.A.	6"	1 GAL.	18" O.C.	623
Turfgrass							
SOD	BAHIA SOD	PASPALUM NOTATUM	16' HT.	7'	100 GAL.	1-1/2" SOLID ROOT MASS	AS REQD
MULCH	RIVER ROCK		2" DEPTH			BROWN COLOR, 3/4" - 1-1/2" SIZE	AS REQD
Notes							
1. ALL PLANTS SHALL BE INSTALLED IN A MULCH BED (TREES AND PALMS MIN. 3' DIAM. RING) WITH 2" DEEP LAYER OF SPECIFIED RIVER ROCK.							

LANDSCAPE ABBREVIATIONS

HT. = HEIGHT
O.A. = OVERALL HT. PER COUNTY STANDARDS
O.C. = ON CENTER SPACING
D.B.H. = CALIPER OF TRUNK AT 4' HT. ABOVE ROOT BALL
C.T. = CLEAR TRUNK HEIGHT
MIN. = MINIMUM
GAL. = GALLON CONTAINER
GALV. = GALVINIZED
PT. = PRESSURE TREATED
F.G. = FIELD GROWN / BALLED AND BURLAPPED

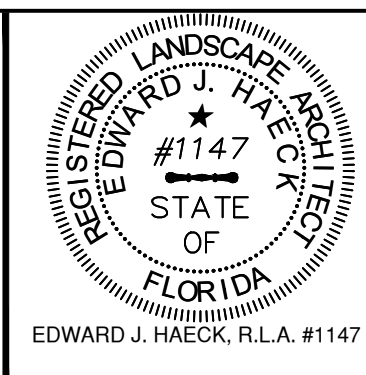
DT	= SPECIES PER PLANT LIST CODE
84	= QUANTITY IN NEARBY OR ADJACENT GROUP

REVISION	DATE	DESCRIPTION

REPRODUCTION IN PART
OR WHOLE IS PROHIBITED
WITHOUT THE EXPLICIT
WRITTEN PERMISSION FROM
EDWARD J. HAECK, R.L.A.

COCOA VILLAGE HILTON
FACTORY STREET
COCOA, FLORIDA

Edward J. Haeck, R.L.A.
LANDSCAPE ARCHITECTURE & LAND PLANNING
(321) 327-4524 MELBOURNE, FLORIDA
STATE OF FLA. REGISTERED LANDSCAPE ARCHITECT #1147



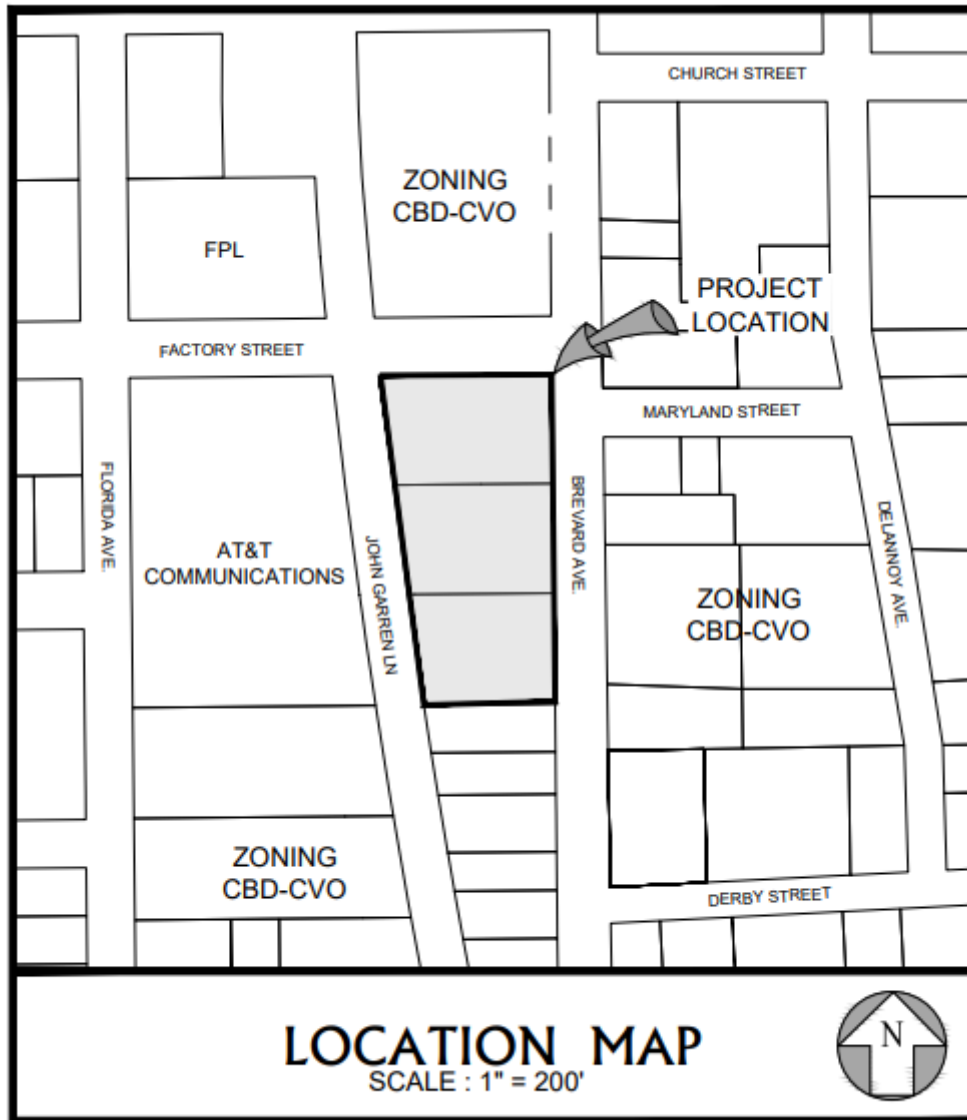
LANDSCAPE PLAN

COCOA VILLAGE HILTON

1" = 20'

DATE	02.24.22
DRAWN BY	HAECK
CHECKED BY	HAECK
FILE NAME	L-CVH-MBV-B
SHEET 1 OF 1	L-1

EXHIBIT D
Cocoa Hotel
603 Brevard Avenue
LOCATION MAP



STORMWATER CALCULATIONS

FOR

**Cocoa Hotel and Hospitality
Cocoa Village**

City of Cocoa

**November 2021
Rev February 8, 2022
Rev March 8, 2022
Rev March 23, 2022**

Prepared by:



CIVIL ■ STRUCTURAL ■ SURVEYING ■ ENVIRONMENTAL

1250 W. Eau Gallie Blvd., Unit L
Melbourne, Florida 32935
321.253.1510 ■ Fax: 321.253.0911
www.mbveng.com

CA#3728

Certificate of Authorization Number: 3728
Engineers Project #: 21-1092

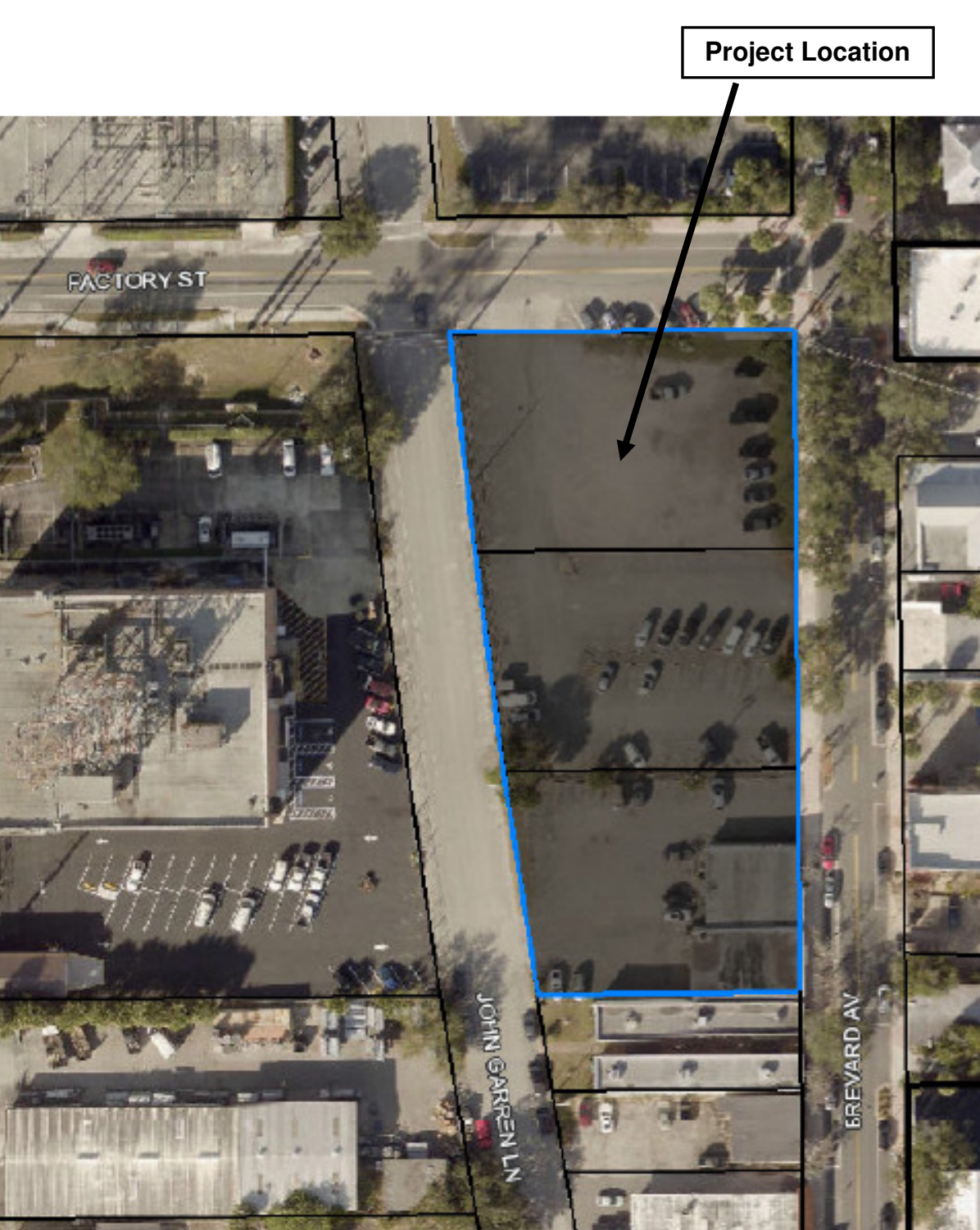


Bruce A. Moia, P.E.

#47529

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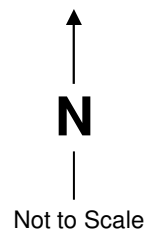
1.0	Location Map
2.0	Soils Map
3.0	Introduction and Background
4.0	Pre-Development Conditions Pre-Development Basin Map
5.0	Post Development Conditions Post Development Basin Map
6.0	Required Storage
6.1	Porous Pavement Treatment Volume Calculations
7.0	Soil Boring Data
8.0	Summaries
Appendix A	ICPR Printouts - Node Max and Basin Summaries
Appendix B	ICPR Printouts - Input Report
Appendix C	Recovery Analysis
Appendix D	Soils Report
Appendix E	Phosphorus/Nitrogen Calcs (BMP Trains)
Appendix F	ADS Exfiltration Trench Specs



Site Location: 603 BREVARD AVE COCOA FL 32922

Location Map

Project Name:	Cocoa Village Hotel
Scale:	Not to Scale
MBV #	21-1092



**Project
Location**

Soil Types: Urban Land (69)

Soils Map

Project Name: Cocoa Village Hotel
Scale: NTS
MBV # 21-1092

3.0 Introduction

The proposed project site has a total of 1.25 acres consisting of one commercial building with asphalted parking spaces and gravel driveway/parking area on 603 Brevard Ave Cocoa, FL. A building was demolished before and the site is used mostly for public parking. We are proposing to demolish the existing commercial building left and remove all concrete, asphalt, gravel parking/driveway areas and develop a new 34,325 sf (building footprint) 107 room 8 stories Hotel/Retail building along with multi-story garage parking, onsite/offsite parking, utilities, stormwater system, driveways, paver sidewalks, offsite pavement and landscaping.

Background

The project site is developed. The open space exists as grass, gravel, pavement and dirt. The existing soils throughout the site are Urban land, Type A soils.

Soils reports for this site were prepared by Ardaman & Associates, Inc. and were performed on September 25, 2019 and November 14, 2019. The water table findings estimate the seasonal high water table to be 10 ft below grade level.

4.0 Pre-Development Conditions

The pre development site includes three Basins (Brevard, John & Factory). There are no depressional areas onsite since it is developed and storm runoff discharges towards the existing curb and gutters located on Brevard Ave and John Garren Lane and towards an existing storm inlet on Factory Street.

Total Site Area =	1.25 ac.	
Pre - John		
Basin Area =	0.23 ac. =	100.0%
Existing Building =	0 ac. =	
Existing Vehicular Use Areas =	0.22 ac. =	
Existing Concrete Use Areas =	0 ac. =	
Total Impervious =	0.22 ac. =	95.7%
Total Pervious =	0.01 ac. =	4.3%
Basin Total =	0.23 ac. =	100.0%

• Time of Concentration

Sheet Flow	n	L	P2	s	Tt	
Route 1	0.011	90	5.5	0.0248	0.01	
Route 2	0.011	0	5.5	0.0900	0.00	
Shallow Concentrated						
Unpaved		0		0.0296	0.00	
Paved		0		0.0080	0.00	
Total (Tc)					0.01	Hrs.
					1	Mins.
				Use min.	10	Mins.

• **Curve Number**

Pervious CN	39 (Open Space, Good Condition)
Impervious CN	98

Pre - Brevard

Basin Area =	0.60 ac. =	100.0%
Existing Building =	0.09 ac. =	
Existing Vehicular Use Areas =	0.24 ac. =	
Existing Gravel Areas =	0.17 ac. =	
Existing Concrete Use Areas =	0.01 ac. =	
Total Impervious =	0.51 ac. =	85.0%
Total Pervious =	0.09 ac. =	15.0%
Basin Total =	0.60 ac. =	100.0%

• **Time of Concentration**

Sheet Flow	n	L	P2	s	Tt	
Route 1	0.011	94	5.5	0.0141	0.02	
Route 2	0.011	79	5.5	0.0252	0.01	
Shallow Concentrated						
Unpaved		0		0.0296	0.00	
Paved		0		0.0080	0.00	
Total (Tc)					0.03	Hrs.
					2	Mins.
				Use min.	10	Mins.

• **Curve Number**

Pervious CN	39 (Open Space, Good Condition)
Impervious CN	98

Pre - Factory

Basin Area =	0.42 ac. =	100.0%
Existing Building =	0.00 ac. =	
Existing Vehicular Use Areas =	0.32 ac. =	
Existing Gravel Areas =	0.07 ac. =	
Existing Concrete Use Areas =	0.00 ac. =	
Total Impervious =	0.39 ac. =	92.9%
Total Pervious =	0.03 ac. =	7.1%
Basin Total =	0.42 ac. =	100.0%

• Time of Concentration

Sheet Flow	n	L	P2	s	Tt
Route 1	0.011	100	5.5	0.0269	0.01
Route 2	0.011	0	5.5	0.0900	0.00

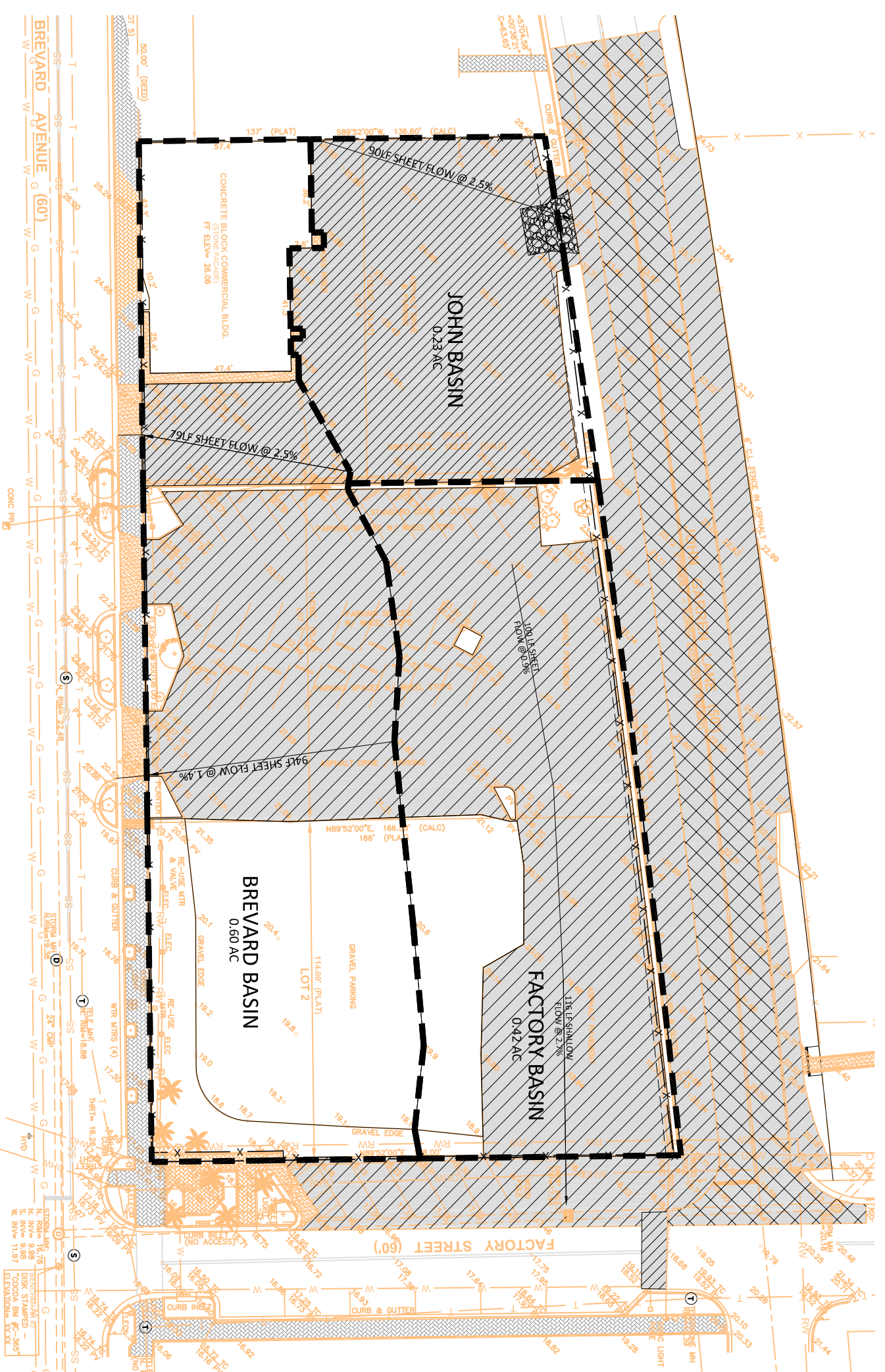
Shallow Concentrated

Unpaved		0		0.0010	0.00
Paved		116		0.0269	0.01

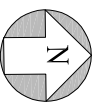
Total (Tc)					0.02	Hrs.
					1	Mins.
				Use min.	10	Mins.

• Curve Number

Pervious CN	39 (Open Space, Good Condition)
Impervious CN	98



PRE DEVELOPMENT BASIN MAP



5.0 Post Development Conditions

The boundary conditions for the proposed site during the post-development scenarios is the tailwater of the existing storm inlet on Factory St. and the tailwater from the road curb and gutter. We are proposing two underground stormtech chamber systems and an area of pervious concrete or pavers with no outfall discharge.

Total Site Area = 1.25 ac.
Basin Area (Include Entrance Canopy) = 1.27 ac.

Basin 1

Basin Area =	0.86 ac.	
Building Area =	0.64 ac.	
Vehicular Use Area =	0.16 ac.	
Existing Pavement Area to remain =	0.00 ac.	
Concrete Use Area =	0.00 ac.	
Total Impervious =	0.80 ac. =	93.0%
Total Pervious =	0.06 ac. =	7.0%
Basin Total =	0.86 ac. =	100.0%

• Time of Concentration

Sheet Flow	n	L	P2	s	Tt	
Route 1	0.011	67	5.5	0.0078	0.02	
Route 2	0.011	64	5.5	0.0198	0.01	
Shallow Concentrated						
Unpaved		0		0.0030	0.00	
Paved		0		0.0030	0.00	
Total (Tc)					0.03	Hrs.
					2	Mins.
				Use min.	10	Mins.

• Curve Number

Pervious CN	39 (Open Space, Good Condition)
Impervious CN	98

Basin 2

Basin Area =	0.17 ac.	
Building Area =	0.00 ac.	
Vehicular Use Area =	0.03 ac.	
Existing Pavement Area to remain =	0.00 ac.	
Perv. Concrete/Pavers Use Area =	0.08 ac.	
Concrete Use Area =	0.00 ac.	
Pavers Area =	0.02 ac.	
Total Impervious =	0.11 ac. =	64.7%
Total Pervious =	0.06 ac. =	35.3%
Basin Total =	0.17 ac. =	100.0%

• Time of Concentration

Sheet Flow	n	L	P2	s	Tt	
Route 1	0.011	23	5.5	0.0200	0.00	
Shallow Concentrated						
Unpaved		0		0.0030	0.00	
Paved		0		0.0030	0.00	
Total (Tc)					0.00	Hrs.
					0	Mins.
				Use min.	10	Mins.

• Curve Number

Pervious CN	39 (Open Space, Good Condition)
Impervious CN	98

Basin 3

Basin Area =	0.24 ac.	
Building Area =	0.15 ac.	
Vehicular Use Area =	0.00 ac.	
Existing Pavement Area to remain =	0.00 ac.	
Pavers Area =	0.00 ac.	
Concrete Use Area =	0.03 ac.	
Total Impervious =	0.18 ac. =	75.0%
Total Pervious =	0.06 ac. =	25.0%
Basin Total =	0.24 ac. =	100.0%

• **Time of Concentration**

Sheet Flow	n	L	P2	s	Tt	
Route 1	0.13	26	5.5	0.0139	0.04	
Shallow Concentrated						
Unpaved		0		0.0030	0.00	
Paved		0		0.0030	0.00	
Total (Tc)					0.04	Hrs.
					3	Mins.
				Use min.	10	Mins.

• **Curve Number**

Pervious CN	39 (Open Space, Good Condition)
Impervious CN	98

TEST	GRADE LEVEL	EST. WET SEASON
TH-1	23.17	13.17
TH-2	23.32	13.32
TH-3	20.80	10.80
TH-4	19.20	9.20
TH-5	19.37	9.37

TEST

HORIZONTAL FLOW RATE

VERTICAL FLOW RATE

TP-1 40 FPDAY 40 FPDAY

TP-2 40 FPDAY 40 FPDAY

REFER TO REPORTS PREPARED BY ARDMAN DATED 9/25/19 AND 11/14/21 FOR ADDITIONAL INFORMATION.

TEST	GRADE LEVEL	EST. WET SEASON
TH-1	23.17	13.17
TH-2	23.32	13.32
TH-3	20.80	10.80
TH-4	19.20	9.20
TH-5	19.37	9.37

TEST

HORIZONTAL FLOW RATE

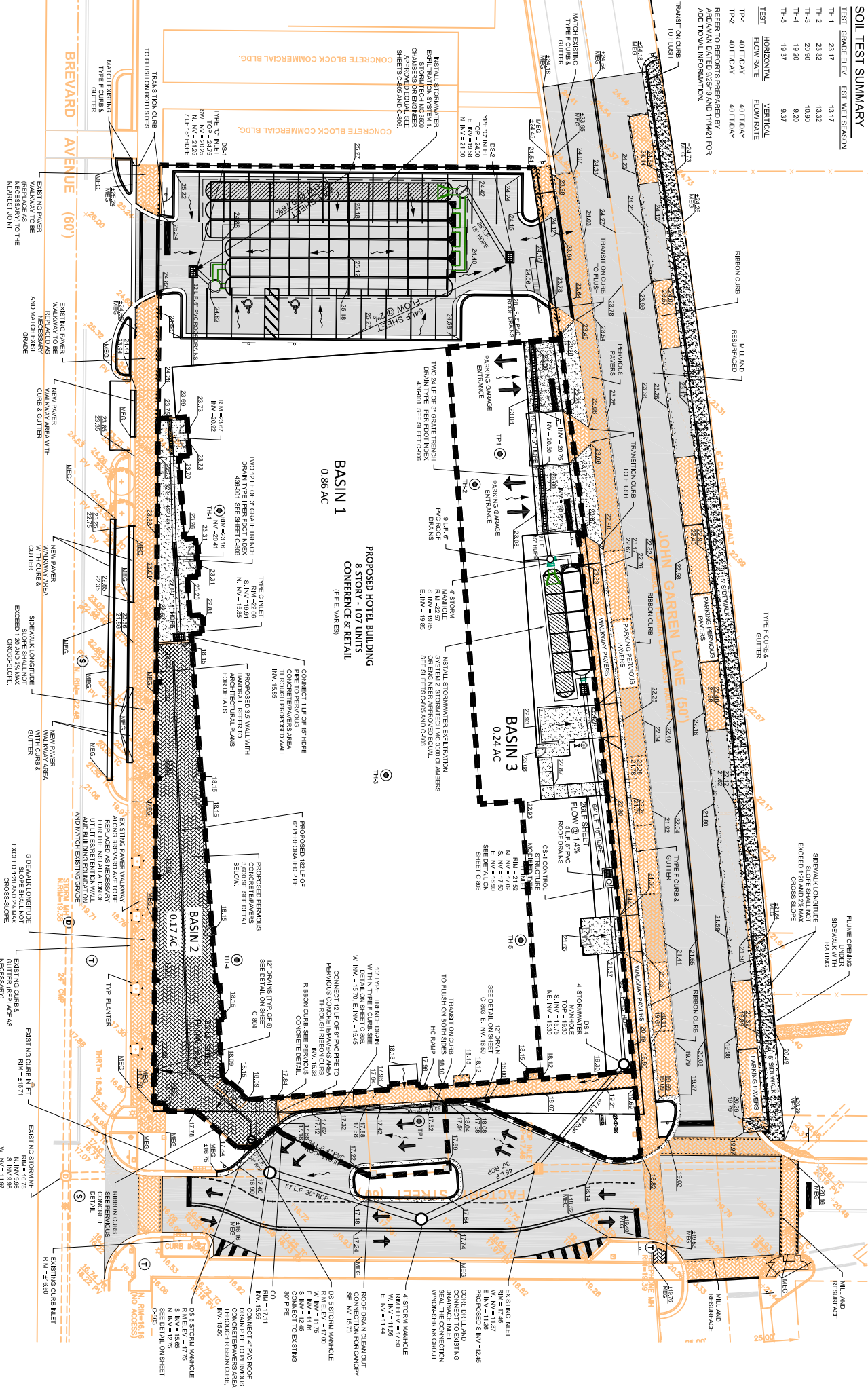
VERTICAL FLOW RATE

TP-1 40 FPDAY 40 FPDAY

TP-2 40 FPDAY 40 FPDAY

REFER TO REPORTS PREPARED BY ARDMAN DATED 9/25/19 AND 11/14/21 FOR ADDITIONAL INFORMATION.

REFER TO REPORTS PREPARED BY
ARDAMAN DATED 9/25/19 AND 11/14/21 FOR
ADDITIONAL INFORMATION.



POST DEVELOPMENT BASIN MAP



6.0 Required Storage

BASIN 1 (Chambers 1 Parking)

Exfiltration Treatment Criteria :

Offline Storage

Total Contributing Area (ac) =

0.86

Total Impervious Area (ac) =

0.82

Required Treatment over site (in) =

0.5

=>

0.036

ac-ft

Required Treatment over impervious area (in) =

1.25

=>

0.085

ac-ft

Critical Treatment Volume Required (ac-ft) =

0.085 ac-ft

Online Storage

Additional 0.5" over site for on-line retention =

0.036
0.121 ac-ft

Direct Discharges

Additional 50% for Class I, II, II, or OFW =

0.061 ac-ft

Total Runoff Treatment Volume = 0.182 ac-ft

Total Treatment Volume (Nutrient Removal) = 0.020 ac-ft (Refer to Appendix E)

Governing Treatment Volume = 0.182 ac-ft 7,922 CF

Provided Treatment Volume = **0.308 ac.ft.**

13,433 CF cu.ft. (TOP ELEV OF TRENCH SYSTEM 23.50 FT)

Hydraulic Conductivity



40.0 ft/day

From Ardaman & Associates Soils Report 11/09/2019

Note: See following sheets from StormTech for storage calculations.

BASIN 3 (Chambers 2 West)

Exfiltration Treatment Criteria :

Offline Storage

Total Contributing Area (ac) =

0.24

Total Impervious Area (ac) =

0.18

Required Treatment over site (in) =

0.5

=>

0.010

ac-ft

Required Treatment over impervious area (in) =

1.25

=>

0.019

ac-ft

Critical Treatment Volume Required (ac-ft) =

0.019 ac-ft

Online Storage

Additional 0.5" over site for on-line retention =

0.010
0.029 ac-ft

Direct Discharges

Additional 50% for Class I, II, II, or OFW =

0.014 ac-ft

Total Runoff Treatment Volume = 0.043 ac-ft

Total Treatment Volume (Nutrient Removal) = 0.010 ac-ft (Refer to Appendix E)

Governing Treatment Volume = 0.043 ac-ft 1,879 CF

Provided Treatment Volume = **0.043** **ac.ft.**
 1,879 CF **cu.ft.** **(WEIR ELEV OF TRENCH SYSTEM 19.80 FT)**

Hydraulic Conductivity  **40.0 ft/day** From Ardaman & Associates Soils Report 11/09/2019

Note: See following sheets from StormTech for storage calculations.

Project: Cocoa Village Hotel Chambers 1 (Parking)



Chamber Model -

MC-3500

Units -

Imperial

[Click Here for Metric](#)

Number of Chambers -

69

Number of End Caps -

12

Voids in the stone (porosity) -

40

%

Base of STONE Elevation -

18.00

ft

Amount of Stone Above Chambers -

12

in

Amount of Stone Below Chambers -

9

in

Area of system -

3988

sf

☒ Include Perimeter Stone in Calculations

Min. Area - 3746 sf min. area

Height of System (inches)	Incremental Single Chamber (cubic feet)	Incremental Single End Cap (cubic feet)	Incremental Chambers (cubic feet)	Incremental End Cap (cubic feet)	Incremental Stone (cubic feet)	Incremental Ch, EC and Stone (cubic feet)	Cumulative System (cubic feet)	Elevation (feet)
66	0.00	0.00	0.00	0.00	132.93	132.93	13433.10	23.50
65	0.00	0.00	0.00	0.00	132.93	132.93	13300.16	23.42
64	0.00	0.00	0.00	0.00	132.93	132.93	13167.23	23.33
63	0.00	0.00	0.00	0.00	132.93	132.93	13034.30	23.25
62	0.00	0.00	0.00	0.00	132.93	132.93	12901.36	23.17
61	0.00	0.00	0.00	0.00	132.93	132.93	12768.43	23.08
60	0.00	0.00	0.00	0.00	132.93	132.93	12635.50	23.00
59	0.00	0.00	0.00	0.00	132.93	132.93	12502.56	22.92
58	0.00	0.00	0.00	0.00	132.93	132.93	12369.63	22.83
57	0.00	0.00	0.00	0.00	132.93	132.93	12236.70	22.75
56	0.00	0.00	0.00	0.00	132.93	132.93	12103.76	22.67
55	0.00	0.00	0.00	0.00	132.93	132.93	11970.83	22.58
54	0.06	0.00	4.01	0.00	131.33	135.34	11837.90	22.50
53	0.19	0.02	13.39	0.29	127.46	141.14	11702.56	22.42
52	0.29	0.04	20.28	0.45	124.64	145.37	11561.42	22.33
51	0.40	0.05	27.85	0.62	121.55	150.02	11416.04	22.25
50	0.69	0.07	47.42	0.81	113.64	161.87	11266.03	22.17
49	1.03	0.09	70.95	1.06	104.13	176.14	11104.16	22.08
48	1.25	0.11	86.22	1.29	97.93	185.44	10928.02	22.00
47	1.42	0.13	98.13	1.52	93.07	192.72	10742.58	21.92
46	1.57	0.14	108.55	1.73	88.82	199.10	10549.86	21.83
45	1.71	0.16	117.79	1.95	85.03	204.78	10350.76	21.75
44	1.83	0.18	126.17	2.18	81.59	209.94	10145.98	21.67
43	1.94	0.20	133.71	2.41	78.49	214.60	9936.04	21.58
42	2.04	0.22	140.82	2.62	75.56	218.99	9721.44	21.50
41	2.13	0.23	147.29	2.82	72.89	223.00	9502.44	21.42
40	2.22	0.25	153.47	3.01	70.34	226.82	9279.44	21.33
39	2.31	0.27	159.17	3.19	67.99	230.35	9052.62	21.25
38	2.38	0.28	164.55	3.36	65.77	233.68	8822.27	21.17
37	2.46	0.29	169.68	3.53	63.65	236.86	8588.59	21.08
36	2.53	0.31	174.44	3.69	61.68	239.82	8351.74	21.00
35	2.59	0.32	178.97	3.85	59.80	242.63	8111.92	20.92
34	2.66	0.33	183.27	4.01	58.02	245.30	7869.29	20.83
33	2.72	0.35	187.34	4.16	56.33	247.84	7623.99	20.75
32	2.77	0.36	191.22	4.32	54.72	250.26	7376.16	20.67
31	2.82	0.37	194.90	4.47	53.19	252.55	7125.90	20.58
30	2.88	0.38	198.41	4.61	51.73	254.74	6873.34	20.50
29	2.92	0.40	201.77	4.75	50.33	256.84	6618.60	20.42
28	2.97	0.41	204.92	4.89	49.01	258.82	6361.76	20.33
27	3.01	0.42	207.86	5.02	47.78	260.66	6102.93	20.25
26	3.05	0.43	210.67	5.16	46.60	262.43	5842.27	20.17
25	3.09	0.44	213.50	5.28	45.42	264.21	5579.84	20.08
24	3.13	0.45	216.01	5.41	44.37	265.78	5315.63	20.00
23	3.17	0.46	218.43	5.53	43.35	267.31	5049.85	19.92
22	3.20	0.47	220.76	5.65	42.37	268.78	4782.54	19.83
21	3.23	0.48	222.95	5.76	41.45	270.16	4513.76	19.75
20	3.26	0.49	225.04	5.87	40.57	271.48	4243.60	19.67
19	3.29	0.50	227.03	5.98	39.73	272.74	3972.12	19.58
18	3.32	0.51	228.94	6.08	38.93	273.94	3699.39	19.50
17	3.34	0.51	230.74	6.17	38.17	275.08	3425.44	19.42

16	3.37	0.52	232.43	6.27	37.45	276.15	3150.36	19.33
15	3.39	0.53	234.08	6.35	36.76	277.20	2874.21	19.25
14	3.41	0.54	235.60	6.44	36.12	278.16	2597.01	19.17
13	3.44	0.54	237.15	6.52	35.46	279.14	2318.85	19.08
12	3.46	0.55	238.58	6.59	34.86	280.04	2039.71	19.00
11	3.48	0.56	240.03	6.66	34.26	280.95	1759.68	18.92
10	3.51	0.59	241.85	7.14	33.34	282.33	1478.73	18.83
9	0.00	0.00	0.00	0.00	132.93	132.93	1196.40	18.75
8	0.00	0.00	0.00	0.00	132.93	132.93	1063.47	18.67
7	0.00	0.00	0.00	0.00	132.93	132.93	930.53	18.58
6	0.00	0.00	0.00	0.00	132.93	132.93	797.60	18.50
5	0.00	0.00	0.00	0.00	132.93	132.93	664.67	18.42
4	0.00	0.00	0.00	0.00	132.93	132.93	531.73	18.33
3	0.00	0.00	0.00	0.00	132.93	132.93	398.80	18.25
2	0.00	0.00	0.00	0.00	132.93	132.93	265.87	18.17
1	0.00	0.00	0.00	0.00	132.93	132.93	132.93	18.08

Project: Cocoa Village Hotel Chambers 2 (West)



Chamber Model -

MC-3500

Units -

Imperial

[Click Here for Metric](#)

Number of Chambers -

11

Number of End Caps -

4

Voids in the stone (porosity) -

40 %

Base of STONE Elevation -

16.00 ft

Amount of Stone Above Chambers -

12 in

Amount of Stone Below Chambers -

9 in

Area of system -

758 sf

☒ Include Perimeter Stone in Calculations

Min. Area - 632 sf min. area

Height of System (inches)	Incremental Single Chamber (cubic feet)	Incremental Single End Cap (cubic feet)	Incremental Chambers (cubic feet)	Incremental End Cap (cubic feet)	Incremental Stone (cubic feet)	Incremental Ch, EC and Stone (cubic feet)	Cumulative System (cubic feet)	Elevation (feet)
66	0.00	0.00	0.00	0.00	25.27	25.27	2429.15	21.50
65	0.00	0.00	0.00	0.00	25.27	25.27	2403.88	21.42
64	0.00	0.00	0.00	0.00	25.27	25.27	2378.61	21.33
63	0.00	0.00	0.00	0.00	25.27	25.27	2353.35	21.25
62	0.00	0.00	0.00	0.00	25.27	25.27	2328.08	21.17
61	0.00	0.00	0.00	0.00	25.27	25.27	2302.81	21.08
60	0.00	0.00	0.00	0.00	25.27	25.27	2277.55	21.00
59	0.00	0.00	0.00	0.00	25.27	25.27	2252.28	20.92
58	0.00	0.00	0.00	0.00	25.27	25.27	2227.01	20.83
57	0.00	0.00	0.00	0.00	25.27	25.27	2201.75	20.75
56	0.00	0.00	0.00	0.00	25.27	25.27	2176.48	20.67
55	0.00	0.00	0.00	0.00	25.27	25.27	2151.21	20.58
54	0.06	0.00	0.64	0.00	25.01	25.65	2125.95	20.50
53	0.19	0.02	2.14	0.10	24.37	26.61	2100.30	20.42
52	0.29	0.04	3.23	0.15	23.91	27.30	2073.69	20.33
51	0.40	0.05	4.44	0.21	23.41	28.05	2046.39	20.25
50	0.69	0.07	7.56	0.27	22.13	29.96	2018.34	20.17
49	1.03	0.09	11.31	0.35	20.60	32.27	1988.38	20.08
48	1.25	0.11	13.74	0.43	19.60	33.77	1956.11	20.00
47	1.42	0.13	15.64	0.51	18.81	34.96	1922.34	19.92
46	1.57	0.14	17.30	0.58	18.11	36.00	1887.38	19.83
45	1.71	0.16	18.78	0.65	17.49	36.92	1851.39	19.75
44	1.83	0.18	20.11	0.73	16.93	37.77	1814.46	19.67
43	1.94	0.20	21.32	0.80	16.42	38.54	1776.69	19.58
42	2.04	0.22	22.45	0.87	15.94	39.26	1738.15	19.50
41	2.13	0.23	23.48	0.94	15.50	39.92	1698.89	19.42
40	2.22	0.25	24.47	1.00	15.08	40.55	1658.97	19.33
39	2.31	0.27	25.37	1.06	14.69	41.13	1618.43	19.25
38	2.38	0.28	26.23	1.12	14.33	41.68	1577.30	19.17
37	2.46	0.29	27.05	1.18	13.98	42.20	1535.62	19.08
36	2.53	0.31	27.81	1.23	13.65	42.69	1493.42	19.00
35	2.59	0.32	28.53	1.28	13.34	43.16	1450.73	18.92
34	2.66	0.33	29.22	1.34	13.04	43.60	1407.57	18.83
33	2.72	0.35	29.87	1.39	12.77	44.02	1363.97	18.75
32	2.77	0.36	30.48	1.44	12.50	44.42	1319.95	18.67
31	2.82	0.37	31.07	1.49	12.24	44.80	1275.53	18.58
30	2.88	0.38	31.63	1.54	12.00	45.17	1230.73	18.50
29	2.92	0.40	32.17	1.58	11.77	45.52	1185.56	18.42
28	2.97	0.41	32.67	1.63	11.55	45.85	1140.04	18.33
27	3.01	0.42	33.14	1.67	11.34	46.15	1094.20	18.25
26	3.05	0.43	33.59	1.72	11.14	46.45	1048.04	18.17
25	3.09	0.44	34.04	1.76	10.95	46.75	1001.59	18.08
24	3.13	0.45	34.44	1.80	10.77	47.01	954.85	18.00
23	3.17	0.46	34.82	1.84	10.60	47.27	907.84	17.92
22	3.20	0.47	35.19	1.88	10.44	47.51	860.57	17.83
21	3.23	0.48	35.54	1.92	10.28	47.74	813.06	17.75
20	3.26	0.49	35.88	1.96	10.13	47.97	765.32	17.67
19	3.29	0.50	36.19	1.99	9.99	48.18	717.35	17.58
18	3.32	0.51	36.50	2.03	9.86	48.38	669.17	17.50
17	3.34	0.51	36.79	2.06	9.73	48.57	620.79	17.42

16	3.37	0.52	37.05	2.09	9.61	48.75	572.22	17.33
15	3.39	0.53	37.32	2.12	9.49	48.93	523.47	17.25
14	3.41	0.54	37.56	2.15	9.38	49.09	474.54	17.17
13	3.44	0.54	37.81	2.17	9.27	49.25	425.45	17.08
12	3.46	0.55	38.03	2.20	9.17	49.41	376.19	17.00
11	3.48	0.56	38.27	2.22	9.07	49.56	326.79	16.92
10	3.51	0.59	38.56	2.38	8.89	49.83	277.23	16.83
9	0.00	0.00	0.00	0.00	25.27	25.27	227.40	16.75
8	0.00	0.00	0.00	0.00	25.27	25.27	202.13	16.67
7	0.00	0.00	0.00	0.00	25.27	25.27	176.87	16.58
6	0.00	0.00	0.00	0.00	25.27	25.27	151.60	16.50
5	0.00	0.00	0.00	0.00	25.27	25.27	126.33	16.42
4	0.00	0.00	0.00	0.00	25.27	25.27	101.07	16.33
3	0.00	0.00	0.00	0.00	25.27	25.27	75.80	16.25
2	0.00	0.00	0.00	0.00	25.27	25.27	50.53	16.17
1	0.00	0.00	0.00	0.00	25.27	25.27	25.27	16.08

6.1 Porous Pavement Treatment Volume Calculations

The runoff will be an off-line treatment system with pervious concrete/pavers and overflow weir.

BASIN 2

Pervious Concrete Treatment Criteria Off-Line:

Total Contributing Area (ac) =	0.17		
Total Impervious Area (ac) =	0.11		
Required Treatment over site (in) =	0.5	=>	0.007 ac-ft
Required Treatment over impervious area (in) =	1.25	=>	0.011 ac-ft

Critical Treatment Volume Required (ac-ft) =	0.011	ac-ft
Additional 0.5" over site for on-line retention =	0.007	ac-ft
	0.019	

Additional 50% for Class I, II, III, or OFW =	0.009	ac-ft
Total Runoff Treatment Volume =	0.028	ac-ft
	1210	c.f.

BMP

Total Treatment Volume (Nutrient Removal) = 0.020 ac-ft (Refer to Appendix E)

Pervious Concrete Area = 3,600 s.f. = 0.083 Ac

	Layer Thickness	Porosity (%)	Volume	Cummulative Volume	Cummulative Volume
#57 Rock	12 in.	21	756.0 c.f.	756 c.f.	0.017 Ac-ft
Chocker (Reservoir) Course	18 in.	21	1,134.0 c.f.	1,890 c.f.	0.043 Ac-ft
Pervious Concrete	6 in.	25	450.0 c.f.	2,340 c.f.	0.054 Ac-ft

Treatment Volume to be Recovered = 2,340 c.f.

Stage (ft)	Area (s.f.)	Area (ac)	Incremental Volume (c.f.)	Incremental Volume (ac-ft)	Cumulative Volume (c.f.)	Cumulative Volume (ac-ft)
15.15	756	0.017	0.00	0.000	0.00	0.000
16.15	756	0.017	756	0.017	756	0.017
17.65	756	0.017	1,134	0.026	1,890	0.043
top of bank = 18.15	1,040	0.024	449	0.010	2,339	0.054

Set Weir @ 16.75	Actual Storage Volume =	0.028 ac.ft.
		1,210 c.f.

*Top and bottom elevations of Pervious Concrete/Pavers varies. The depth is always 3 ft.

7.0 Soil Boring Data

	Aprx. EL @ Boring (ft)	Hard Pan Depth	Hard Pan Elevation (ft)	Water Table Depth	Seasonal Water Table Elevation (ft)
TH-1	23.17	240 in.	3.17	120 in.	13.17
TH-2	23.32	180 in.	8.32	120 in.	13.32
TH-3	20.90	150 in.	8.40	120 in.	10.90
TH-4	19.20	150 in.	6.70	120 in.	9.20
TH-5	19.37	300 in.	-5.63	120 in.	9.37

**Aquifer Base set per dense sand found and coquina cemented found per boring.*

*** SHWL set to 10 feet below and Groundwater Level at 10.5 feet below*

****Soils reports for this site were prepared by Ardaman & Associates, Inc. and were performed on September 25, 2019.*

	Horizontal Flow Rate ft/day	Vertical Flow Rate ft/day
TP-1	40.00	40.00
TP-2	40.00	40.00

**An additional soil report for this site were prepared by Ardaman & Associates, Inc. and was performed on November 14, 2019.*

8.0 Summaries

Pre-Development (Summary)

	Factory St Peak Discharge Rate (cfs)	John Garren Lane Peak Discharge Rate (cfs)	Brevard Ave Peak Discharge Rate (cfs)
Mean Annual	1.43	0.8	1.86
25 Year 24 Hr	2.78	1.56	3.71
100 Year 24 Hr	3.88	2.17	5.25

Post Development - Stormwater Chambers (Weir Top of Inlets DS- 1 & DS-2) (Basin 1)

	Peak Discharge Rate to John Garren Lane from DS-2 (cfs)	Peak Stage Chambers Elev. (ft)
Mean Annual	0.00	20.06
25 Year 24 Hr	0.00	22.46
100 Year 24 Hr	1.77	24.16

Top of Stormwater Chambers = 22.50 ft
 Top of Upper Gravel Layer = 23.50 ft
 Top of Pavement Grade = 24.82 ft (varies from 24.40 to 25.18)

	Total John Garren Peak Discharge Rate (cfs)	
Mean Annual	0.00	< Pre
25 Year 24 Hr	0.00	< Pre
100 Year 24 Hr	1.77	< Pre

Post Development - Stormwater Chambers 2 (Basin 3 discharges to Factory St)

	Post Peak Discharge Rate from CS-1 (cfs)	Peak Stage Chambers Elev. (ft)
Mean Annual	0.00	17.70
25 Year 24 Hr	0.00	19.50
100 Year 24 Hr	0.84	17.52

Top of Stormwater Chambers = 21.50 ft
 Top of Upper Gravel Layer = 20.50 ft
 Top of Grade (Non-Pavement) = 22.57 ft (varies from 22.21 to 23.00)

Post Development - Pavers/Concrete Pervious (Basin 2 discharges to Factory St - DS-6)

	Peak Discharge Rate DS-6 (cfs)	Peak Stage Elev. (ft)
Mean Annual	0.00	15.73
25 Year 24 Hr	0.00	16.51
100 Year 24 Hr	0.19	17.02

Top of Pervious Concrete Pavers = 18.00 ft (varies from 17.68 to 18.15)

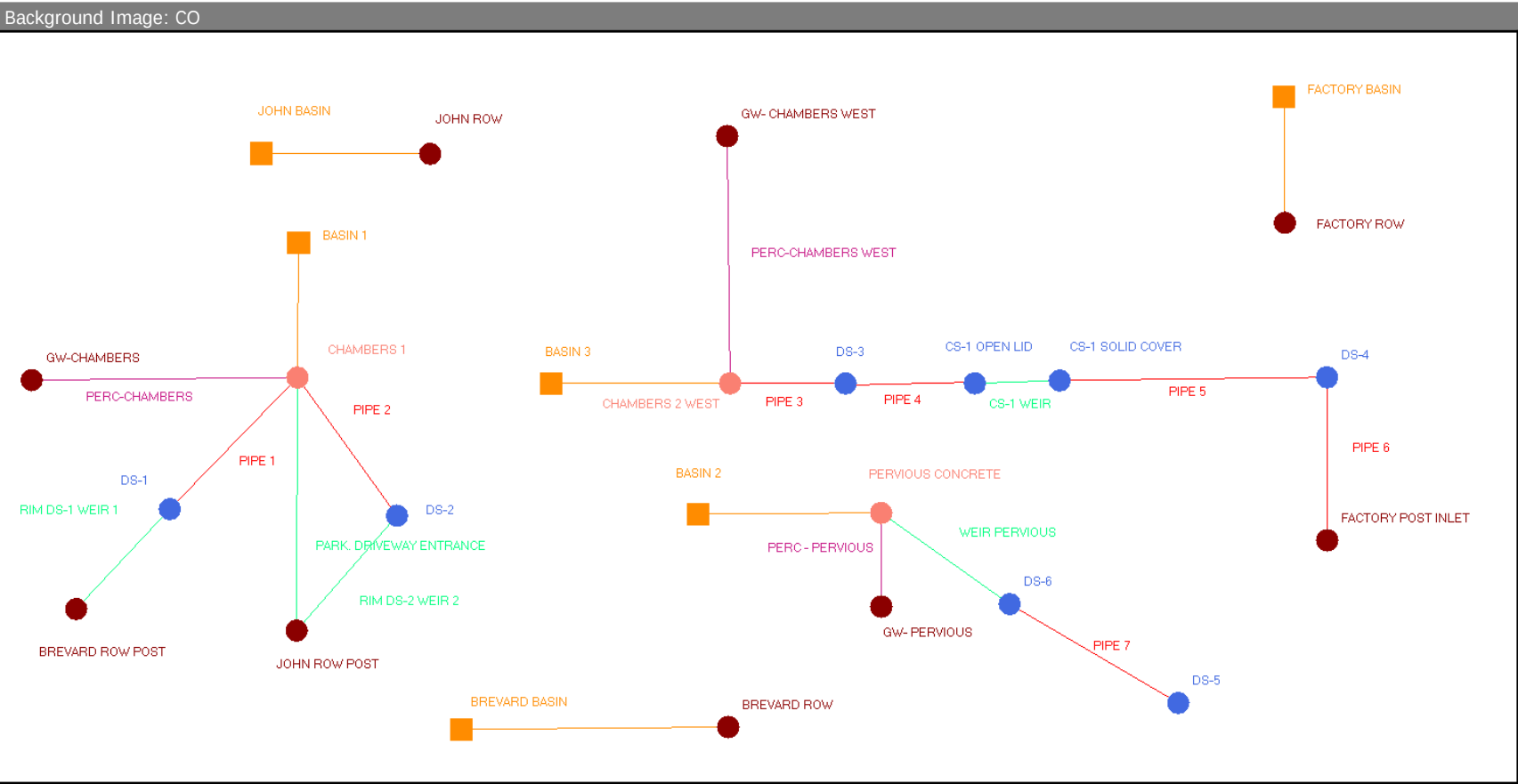
Post - Basin 2 and 3 Factory St Peak Discharge Rate

	Total Factory St Peak Discharge Rate (cfs)	
Mean Annual	0.00	< Pre
25 Year 24 Hr	0.00	< Pre
100 Year 24 Hr	1.03	< Pre

APPENDIX A

ICPR Computer Printouts

Mean Annual, 25 year 24 hour, Node Diagram & Basin Summaries



Node Max Conditions [Scenario1]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
BREVARD ROW	100Y-24H	23.60	23.60	0.0022	5.25	0.00	0
BREVARD ROW POST	100Y-24H	23.60	23.60	0.0022	0.00	0.00	0
CHAMBERS 1	100Y-24H	23.51	24.19	0.0035	7.96	5.89	3495
CHAMBERS 2 WEST	100Y-24H	21.51	20.28	0.0010	1.95	1.26	617
CS-1 OPEN LID	100Y-24H	21.52	20.25	0.0010	0.85	0.85	100
CS-1 SOLID COVER	100Y-24H	21.52	17.52	0.0010	0.85	0.84	100
DS-1	100Y-24H	24.75	24.19	0.0017	1.69	0.11	100
DS-2	100Y-24H	24.00	24.16	0.0016	1.81	1.77	100
DS-3	100Y-24H	22.21	20.27	0.0010	0.88	0.85	120
DS-4	100Y-24H	19.30	15.82	0.0010	0.84	0.73	131
DS-5	100Y-24H	17.00	12.96	0.0010	0.19	0.00	100
DS-6	100Y-24H	17.75	12.96	0.0005	0.20	0.19	100
FACTORY POST INLET	100Y-24H	13.76	13.76	0.0017	0.73	0.00	0
FACTORY ROW	100Y-24H	18.41	18.41	0.0007	3.88	0.00	0
GW- CHAMBERS WEST	100Y-24H	21.50	16.00	0.0000	0.39	0.00	0
GW- PERVIOUS	100Y-24H	18.15	9.20	0.0000	0.62	0.00	0
GW-CHAMBERS	100Y-24H	23.50	18.00	0.0000	1.76	0.00	0
JOHN ROW	100Y-24H	23.90	23.90	0.0006	2.17	0.00	0
JOHN ROW POST	100Y-24H	23.90	23.90	0.0006	4.12	0.00	0
PERVIOUS CONCRETE	100Y-24H	18.15	17.02	0.0010	1.27	0.80	721
BREVARD ROW	25Y-24H	23.60	23.60	0.0022	3.71	0.00	0
BREVARD ROW POST	25Y-24H	23.60	23.60	0.0022	0.00	0.00	0
CHAMBERS 1	25Y-24H	23.51	22.46	0.0010	5.70	1.56	3495
CHAMBERS 2 WEST	25Y-24H	21.51	19.50	0.0010	1.35	0.93	617
CS-1 OPEN LID	25Y-24H	21.52	19.50	0.0010	0.69	0.06	100
CS-1 SOLID COVER	25Y-24H	21.52	16.52	0.0000	0.00	0.00	100
DS-1	25Y-24H	24.75	22.46	0.0010	0.79	0.00	100

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
DS-2	25Y-24H	24.00	22.46	0.0010	0.62	0.00	100
DS-3	25Y-24H	22.21	19.50	0.0010	0.75	0.69	120
DS-4	25Y-24H	19.30	12.80	0.0000	0.00	0.00	100
DS-5	25Y-24H	17.00	11.25	0.0000	0.00	0.00	100
DS-6	25Y-24H	17.75	12.25	0.0000	0.00	0.00	100
FACTORY POST INLET	25Y-24H	13.76	13.76	0.0017	0.00	0.00	0
FACTORY ROW	25Y-24H	18.41	18.41	0.0007	2.78	0.00	0
GW- CHAMBERS WEST	25Y-24H	21.50	16.00	0.0000	0.26	0.00	0
GW- PERVIOUS	25Y-24H	18.15	9.20	0.0000	0.48	0.00	0
GW-CHAMBERS	25Y-24H	23.50	18.00	0.0000	0.76	0.00	0
JOHN ROW	25Y-24H	23.90	23.90	0.0006	1.56	0.00	0
JOHN ROW POST	25Y-24H	23.90	23.90	0.0006	0.00	0.00	0
PERVIOUS CONCRETE	25Y-24H	18.15	16.51	0.0010	0.86	0.48	609
BREVARD ROW	MEAN	23.60	23.60	0.0022	1.86	0.00	0
BREVARD ROW POST	MEAN	23.60	23.60	0.0022	0.00	0.00	0
CHAMBERS 1	MEAN	23.51	20.06	0.0010	2.92	0.65	3494
CHAMBERS 2 WEST	MEAN	21.51	17.70	0.0010	0.66	0.46	617
CS-1 OPEN LID	MEAN	21.52	17.65	0.0010	0.10	0.00	100
CS-1 SOLID COVER	MEAN	21.52	16.52	0.0000	0.00	0.00	100
DS-1	MEAN	24.75	19.75	0.0000	0.00	0.00	100
DS-2	MEAN	24.00	20.06	0.0010	0.26	0.00	100
DS-3	MEAN	22.21	17.70	0.0010	0.31	0.10	110
DS-4	MEAN	19.30	12.80	0.0000	0.00	0.00	100
DS-5	MEAN	17.00	11.25	0.0000	0.00	0.00	100
DS-6	MEAN	17.75	12.25	0.0000	0.00	0.00	100
FACTORY POST INLET	MEAN	13.76	13.76	0.0017	0.00	0.00	0
FACTORY ROW	MEAN	18.41	18.41	0.0007	1.43	0.00	0
GW- CHAMBERS	MEAN	21.50	16.00	0.0000	0.16	0.00	0

DS-3 has discharge because it is unique and goes back to chambers as well as to CS-1.

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
WEST							
GW- PERVIOUS	MEAN	18.15	9.20	0.0000	0.30	0.00	0
GW-CHAMBERS	MEAN	23.50	18.00	0.0000	0.41	0.00	0
JOHN ROW	MEAN	23.90	23.90	0.0006	0.80	0.00	0
JOHN ROW POST	MEAN	23.90	23.90	0.0006	0.00	0.00	0
PERVIOUS CONCRETE	MEAN	18.15	15.73	0.0010	0.40	0.30	341

Link Min/Max Conditions with Times [Scenario1]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Time to Max Flow [hrs]	Time to Min Flow [hrs]	Time to Min/Max Delta Flow [hrs]	Time to Max Us Velocity [hrs]	Time to Max Ds Velocity [hrs]
CS-1 WEIR	100Y-24H	0.85	0.00	0.00	1.88	1.88	12.1562	0.0000	12.5920	12.1563	12.1563
CS-1 WEIR	25Y-24H	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000
CS-1 WEIR	MEAN	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000

Link Min/Max Conditions with Times [Scenario1]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Time to Max Flow [hrs]	Time to Min Flow [hrs]	Time to Min/Max Delta Flow [hrs]	Time to Max Us Velocity [hrs]	Time to Max Ds Velocity [hrs]
PARK. DRIVEWAY ENTRANCE	100Y-24H	2.36	0.00	0.06	0.87	0.87	12.1183	0.0000	12.1106	12.1184	12.1184
PARK. DRIVEWAY ENTRANCE	25Y-24H	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Time to Max Flow [hrs]	Time to Min Flow [hrs]	Time to Min/Max Delta Flow [hrs]	Time to Max Us Velocity [hrs]	Time to Max Ds Velocity [hrs]
PARK. DRIVEWAY ENTRANCE	MEAN	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000

Link Min/Max Conditions with Times [Scenario1]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Time to Max Flow [hrs]	Time to Min Flow [hrs]	Time to Min/Max Delta Flow [hrs]	Time to Max Us Velocity [hrs]	Time to Max Ds Velocity [hrs]
RIM DS-1 WEIR 1	100Y-24H	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000
RIM DS-1 WEIR 1	25Y-24H	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000
RIM DS-1 WEIR 1	MEAN	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000

Link Min/Max Conditions with Times [Scenario1]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Time to Max Flow [hrs]	Time to Min Flow [hrs]	Time to Min/Max Delta Flow [hrs]	Time to Max Us Velocity [hrs]	Time to Max Ds Velocity [hrs]
RIM DS-2 WEIR 2	100Y-24H	1.77	0.00	-0.02	1.11	1.11	12.1192	0.0000	12.6469	12.1192	12.1192
RIM DS-2 WEIR 2	25Y-24H	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000
RIM DS-2	MEAN	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Time to Max Flow [hrs]	Time to Min Flow [hrs]	Time to Min/Max Delta Flow [hrs]	Time to Max Us Velocity [hrs]	Time to Max Ds Velocity [hrs]
WEIR 2											

Link Min/Max Conditions with Times [Scenario1]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Time to Max Flow [hrs]	Time to Min Flow [hrs]	Time to Min/Max Delta Flow [hrs]	Time to Max Us Velocity [hrs]	Time to Max Ds Velocity [hrs]
WEIR PERVIOUS	100Y-24H	0.20	0.00	0.00	1.47	1.47	12.1578	0.0000	12.4711	12.1578	12.1578
WEIR PERVIOUS	25Y-24H	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000
WEIR PERVIOUS	MEAN	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000

Link Min/Max Conditions with Times [Scenario1]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Time to Max Flow [hrs]	Time to Min Flow [hrs]	Time to Min/Max Delta Flow [hrs]	Time to Max Us Velocity [hrs]	Time to Max Ds Velocity [hrs]
PIPE 1	100Y-24H	0.11	-1.69	-0.20	-0.95	-2.54	12.6479	12.1010	12.1002	12.1010	11.8138
PIPE 1	25Y-24H	0.00	-0.79	0.01	-0.61	-2.61	15.7327	12.0037	12.0112	12.0036	11.9995
PIPE 1	MEAN	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000

Link Min/Max Conditions with Times [Scenario1]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Time to Max Flow [hrs]	Time to Min Flow [hrs]	Time to Min/Max Delta Flow [hrs]	Time to Max Us Velocity [hrs]	Time to Max Ds Velocity [hrs]
PIPE 2	100Y-24H	0.05	-1.81	0.41	-1.02	-2.16	13.7437	12.1133	12.8117	12.1133	11.6211
PIPE 2	25Y-24H	0.00	-0.62	0.01	-0.47	-2.45	15.7327	11.8596	11.8680	11.8595	11.8550
PIPE 2	MEAN	0.00	-0.26	0.01	-0.24	-1.97	18.7705	12.2736	12.2842	12.2735	12.2676

Link Min/Max Conditions with Times [Scenario1]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Time to Max Flow [hrs]	Time to Min Flow [hrs]	Time to Min/Max Delta Flow [hrs]	Time to Max Us Velocity [hrs]	Time to Max Ds Velocity [hrs]
PIPE 3	100Y-24H	0.10	-0.88	0.37	-0.97	-2.19	22.3321	12.1268	12.5599	11.6513	11.6455
PIPE 3	25Y-24H	0.19	-0.75	-0.19	-1.04	-2.32	18.6043	11.9554	18.6047	11.8232	11.8182
PIPE 3	MEAN	0.01	-0.31	0.01	-0.90	-2.12	13.1406	12.1103	12.1204	12.1102	12.1049

Link Min/Max Conditions with Times [Scenario1]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Time to Max Flow [hrs]	Time to Min Flow [hrs]	Time to Min/Max Delta Flow [hrs]	Time to Max Us Velocity [hrs]	Time to Max Ds Velocity [hrs]
PIPE 4	100Y-24H	0.06	-0.85	-0.32	-0.75	-2.58	22.2908	12.1443	12.5657	11.7929	11.7890
PIPE 4	25Y-24H	0.06	-0.69	-0.06	-0.79	-2.64	18.6047	11.9543	18.6561	11.9541	11.9504
PIPE 4	MEAN	0.00	-0.10	0.00	-0.21	-1.61	13.1363	12.3577	12.5742	12.3577	12.3579

Link Min/Max Conditions with Times [Scenario1]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Time to Max Flow [hrs]	Time to Min Flow [hrs]	Time to Min/Max Delta Flow [hrs]	Time to Max Us Velocity [hrs]	Time to Max Ds Velocity [hrs]
PIPE 5	100Y-24H	0.84	0.00	0.01	1.96	5.02	12.1657	0.0000	13.0505	12.1708	12.1708
PIPE 5	25Y-24H	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000
PIPE 5	MEAN	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000

Link Min/Max Conditions with Times [Scenario1]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Time to Max Flow [hrs]	Time to Min Flow [hrs]	Time to Min/Max Delta Flow [hrs]	Time to Max Us Velocity [hrs]	Time to Max Ds Velocity [hrs]
PIPE 6	100Y-24H	0.73	0.00	0.01	1.80	4.63	12.2527	0.0000	13.0334	12.2580	12.2567
PIPE 6	25Y-24H	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000
PIPE 6	MEAN	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000

Link Min/Max Conditions with Times [Scenario1]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Time to Max Flow [hrs]	Time to Min Flow [hrs]	Time to Min/Max Delta Flow [hrs]	Time to Max Us Velocity [hrs]	Time to Max Ds Velocity [hrs]
PIPE 7	100Y-24H	0.19	0.00	-0.01	1.47	3.42	12.2104	12.7238	12.4594	12.1516	12.2181
PIPE 7	25Y-24H	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000
PIPE 7	MEAN	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000

Manual Basin Runoff Summary [Scenario1]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
BASIN 1	100Y-24H	7.96	12.0167	13.20	12.34	0.8600	92.9	0.00	0.00
BASIN 2	100Y-24H	1.27	12.0167	13.20	9.79	0.1700	74.2	0.00	0.00
BASIN 3	100Y-24H	1.95	12.0167	13.20	10.72	0.2400	80.7	0.00	0.00
BREVARD BASIN	100Y-24H	5.25	12.0167	13.20	11.62	0.6000	87.3	0.00	0.00
FACTORY BASIN	100Y-24H	3.88	12.0167	13.20	12.33	0.4200	92.8	0.00	0.00
JOHN BASIN	100Y-24H	2.17	12.0167	13.20	12.58	0.2300	94.8	0.00	0.00
BASIN 1	25Y-24H	5.70	12.0167	9.57	8.82	0.8600	93.7	0.00	0.00
BASIN 2	25Y-24H	0.86	12.0167	9.57	6.71	0.1700	76.8	0.00	0.00
BASIN 3	25Y-24H	1.35	12.0167	9.57	7.48	0.2400	82.8	0.00	0.00
BREVARD BASIN	25Y-24H	3.71	12.0167	9.57	8.22	0.6000	88.8	0.00	0.00
FACTORY BASIN	25Y-24H	2.78	12.0167	9.57	8.81	0.4200	93.6	0.00	0.00
JOHN BASIN	25Y-24H	1.56	12.0167	9.57	9.02	0.2300	95.3	0.00	0.00
BASIN 1	MEAN	2.92	12.0167	5.00	4.45	0.8600	95.2	0.00	0.00
BASIN 2	MEAN	0.40	12.0167	5.00	3.16	0.1700	82.8	0.00	0.00
BASIN 3	MEAN	0.66	12.0167	5.00	3.63	0.2400	87.5	0.00	0.00
BREVARD BASIN	MEAN	1.86	12.0167	5.00	4.08	0.6000	91.9	0.00	0.00
FACTORY BASIN	MEAN	1.43	12.0167	5.00	4.44	0.4200	95.2	0.00	0.00
JOHN BASIN	MEAN	0.80	12.0167	5.00	4.57	0.2300	96.3	0.00	0.00

APPENDIX B

ICPR Computer Printouts Input Reports

Mean Annual
25 yr 24 hr

Manual Basin: BASIN 1

Scenario: Scenario1
Node: CHAMBERS 1
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 0.8600 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
0.8000	IMPERVIOUS	A	
0.0600	PERVIOUS	A	

Comment:

Manual Basin: BASIN 2

Scenario: Scenario1
Node: PERVIOUS CONCRETE
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 0.1700 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
0.1100	IMPERVIOUS	A	
0.0600	PERVIOUS	A	

Comment:

Manual Basin: BASIN 3

Scenario: Scenario1
Node: CHAMBERS 2 WEST
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 0.2400 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
0.1800	IMPERVIOUS	A	
0.0600	PERVIOUS	A	

Comment:

Manual Basin: BREVARD BASIN

Scenario: Scenario1
Node: BREVARD ROW
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 0.6000 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
0.5100	IMPERVIOUS	A	
0.0900	PERVIOUS	A	

Comment:

Manual Basin: FACTORY BASIN

Scenario: Scenario1
Node: FACTORY ROW
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 0.4200 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
0.3900	IMPERVIOUS	A	
0.0300	PERVIOUS	A	

Comment:

Manual Basin: JOHN BASIN

Scenario: Scenario1

Node: JOHN ROW
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 10.0000 min
 Max Allowable Q: 0.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: UH484
 Peaking Factor: 484.0
 Area: 0.2300 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
0.2200	IMPERVIOUS	A	
0.0100	PERVIOUS	A	

Comment:

Node: BREVARD ROW

Scenario: Scenario1
 Type: Time/Stage
 Base Flow: 0.00 cfs
 Initial Stage: 20.50 ft
 Warning Stage: 23.60 ft
 Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	20.50
0	0	0	12.0000	23.60
0	0	0	24.0000	22.20

Comment:

Node: BREVARD ROW POST

Scenario: Scenario1
 Type: Time/Stage
 Base Flow: 0.00 cfs
 Initial Stage: 20.50 ft
 Warning Stage: 23.60 ft
 Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	20.50
0	0	0	12.0000	23.60
0	0	0	24.0000	22.20

Comment:

Node: CHAMBERS 1

Scenario: Scenario1
 Type: Stage/Volume
 Base Flow: 0.00 cfs
 Initial Stage: 18.00 ft
 Warning Stage: 23.51 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
18.00	0.00	0
18.08	0.00	133
18.17	0.01	266
18.25	0.01	399
18.33	0.01	532
18.42	0.02	665
18.50	0.02	798
18.58	0.02	931
18.67	0.02	1063
18.75	0.03	1196
18.83	0.03	1479
18.92	0.04	1760
19.00	0.05	2040
19.08	0.05	2319
19.17	0.06	2597
19.25	0.07	2874
19.33	0.07	3150
19.42	0.08	3425
19.50	0.08	3699
19.58	0.09	3972
19.67	0.10	4244
19.75	0.10	4514
19.83	0.11	4783
19.92	0.12	5050
20.00	0.12	5316
20.08	0.13	5580
20.17	0.13	5842
20.25	0.14	6103
20.33	0.15	6362
20.42	0.15	6619
20.50	0.16	6873
20.58	0.16	7126
20.67	0.17	7376
20.75	0.18	7624
20.83	0.18	7869
20.92	0.19	8112
21.00	0.19	8352
21.08	0.20	8589
21.17	0.20	8822
21.25	0.21	9053
21.33	0.21	9279
21.42	0.22	9502

Stage [ft]	Volume [ac-ft]	Volume [ft3]
21.50	0.22	9721
21.58	0.23	9936
21.67	0.23	10146
21.75	0.24	10351
21.83	0.24	10550
21.92	0.25	10743
22.00	0.25	10928
22.08	0.25	11104
22.17	0.26	11266
22.25	0.26	11416
22.33	0.27	11561
22.42	0.27	11703
22.50	0.27	11838
22.58	0.27	11971
22.67	0.28	12104
22.75	0.28	12237
22.83	0.28	12370
22.92	0.29	12503
23.00	0.29	12635
23.08	0.29	12768
23.17	0.30	12901
23.25	0.30	13034
23.33	0.30	13167
23.42	0.31	13300
23.50	0.31	13433
23.51	0.31	13433

Comment:

Node: CHAMBERS 2 WEST

Scenario: Scenario1
Type: Stage/Volume
Base Flow: 0.00 cfs
Initial Stage: 16.00 ft
Warning Stage: 21.51 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
16.00	0.00	0
16.08	0.00	25
16.17	0.00	51
16.25	0.00	76
16.33	0.00	101
16.42	0.00	126
16.50	0.00	152
16.58	0.00	177
16.67	0.00	202

Stage [ft]	Volume [ac-ft]	Volume [ft3]
16.75	0.01	227
16.83	0.01	277
16.92	0.01	327
17.00	0.01	376
17.08	0.01	425
17.17	0.01	475
17.25	0.01	523
17.33	0.01	572
17.42	0.01	621
17.50	0.02	669
17.58	0.02	717
17.67	0.02	765
17.75	0.02	813
17.83	0.02	861
17.92	0.02	908
18.00	0.02	955
18.08	0.02	1002
18.17	0.02	1048
18.25	0.03	1094
18.33	0.03	1140
18.42	0.03	1186
18.50	0.03	1231
18.58	0.03	1276
18.67	0.03	1320
18.75	0.03	1364
18.83	0.03	1408
18.92	0.03	1451
19.00	0.03	1493
19.08	0.04	1536
19.17	0.04	1577
19.25	0.04	1618
19.33	0.04	1659
19.42	0.04	1699
19.50	0.04	1738
19.58	0.04	1777
19.67	0.04	1814
19.75	0.04	1851
19.83	0.04	1887
19.92	0.04	1922
20.00	0.04	1956
20.08	0.05	1988
20.17	0.05	2018
20.25	0.05	2046
20.33	0.05	2074
20.42	0.05	2100
20.50	0.05	2126
20.58	0.05	2151
20.67	0.05	2176
20.75	0.05	2202

Stage [ft]	Volume [ac-ft]	Volume [ft3]
20.83	0.05	2227
20.92	0.05	2252
21.00	0.05	2278
21.08	0.05	2303
21.17	0.05	2328
21.25	0.05	2353
21.33	0.05	2379
21.42	0.06	2404
21.50	0.06	2429
21.51	0.06	2429

Comment:

Node: CS-1 OPEN LID

Scenario: Scenario1
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 16.52 ft
 Warning Stage: 21.52 ft

Stage [ft]	Area [ac]	Area [ft2]
16.52	0.0010	44
21.52	0.0010	44

Comment:

Node: CS-1 SOLID COVER

Scenario: Scenario1
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 16.52 ft
 Warning Stage: 21.52 ft

Stage [ft]	Area [ac]	Area [ft2]
16.52	0.0010	44
21.52	0.0010	44

Comment:

Node: DS-1

Scenario: Scenario1

Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 19.75 ft
Warning Stage: 24.75 ft

Stage [ft]	Area [ac]	Area [ft2]
19.75	0.0010	44
24.75	0.0010	44

Comment:

Node: DS-2

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 19.00 ft
Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
19.00	0.0010	44
24.00	0.0010	44

Comment:

Node: DS-3

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 16.71 ft
Warning Stage: 22.21 ft

Stage [ft]	Area [ac]	Area [ft2]
16.71	0.0010	44
22.21	0.0010	44

Comment:

Node: DS-4

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 12.80 ft

Warning Stage: 19.30 ft

Stage [ft]	Area [ac]	Area [ft2]
12.80	0.0010	44
19.30	0.0010	44

Comment:

Node: DS-5

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 11.25 ft
Warning Stage: 17.00 ft

Stage [ft]	Area [ac]	Area [ft2]
11.25	0.0010	44
17.00	0.0010	44

Comment:

Node: DS-6

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 12.25 ft
Warning Stage: 17.75 ft

Stage [ft]	Area [ac]	Area [ft2]
12.25	0.0010	44
17.75	0.0010	44

Comment:

Node: FACTORY POST INLET

Scenario: Scenario1
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 11.26 ft
Warning Stage: 13.76 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	11.26
0	0	0	12.0000	13.76
0	0	0	24.0000	12.51

Comment: Existing 30" PIPE INV 11.26 & 11.37

INLET RIM 17.46

Node: FACTORY ROW

Scenario: Scenario1
 Type: Time/Stage
 Base Flow: 0.00 cfs
 Initial Stage: 17.46 ft
 Warning Stage: 18.41 ft
 Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	17.46
0	0	0	12.0000	18.41
0	0	0	24.0000	17.75

Comment:

Node: GW- CHAMBERS WEST

Scenario: Scenario1
 Type: Time/Stage
 Base Flow: 0.00 cfs
 Initial Stage: 16.00 ft
 Warning Stage: 21.50 ft
 Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	16.00
0	0	0	9999.0000	16.00

Comment:

Node: GW- PERVIOUS

Scenario: Scenario1
 Type: Time/Stage
 Base Flow: 0.00 cfs

Initial Stage: 9.20 ft
Warning Stage: 18.15 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	9.20
0	0	0	9999.0000	9.20

Comment:

Node: GW-CHAMBERS

Scenario: Scenario1
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 18.00 ft
Warning Stage: 23.50 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	18.00
0	0	0	9999.0000	18.00

Comment:

Node: JOHN ROW

Scenario: Scenario1
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 23.00 ft
Warning Stage: 23.90 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	23.00
0	0	0	12.0000	23.90
0	0	0	24.0000	23.70

Comment:

Node: JOHN ROW POST

Scenario: Scenario1
Type: Time/Stage

Base Flow: 0.00 cfs
 Initial Stage: 23.00 ft
 Warning Stage: 23.90 ft
 Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	23.00
0	0	0	12.0000	23.90
0	0	0	24.0000	23.70

Comment:

Node: PERVIOUS CONCRETE

Scenario: Scenario1
 Type: Stage/Volume
 Base Flow: 0.00 cfs
 Initial Stage: 15.15 ft
 Warning Stage: 18.15 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
15.15	0.01	436
16.15	0.02	741
17.65	0.04	1873
18.15	0.05	2352

Comment: PERVIOUS CONCRETE OR PERVIOUS PAVERS

Weir Link: CS-1 WEIR

Scenario: Scenario1
 From Node: CS-1 OPEN LID
 To Node: CS-1 SOLID COVER
 Link Count: 1
 Flow Direction: Both
 Damping: 0.0000 ft
 Weir Type: Broad Crested Vertical
 Geometry Type: Rectangular
 Invert: 19.80 ft
 Control Elevation: 19.80 ft
 Max Depth: 9999.00 ft
 Max Width: 1.00 ft
 Fillet: 0.00 ft

Bottom Clip

Default: 0.00 ft
 Op Table:
 Ref Node:

Top Clip

Default: 0.00 ft
 Op Table:
 Ref Node:

Discharge Coefficients

Weir Default: 2.800
 Weir Table:
 Orifice Default: 0.600
 Orifice Table:

Comment:

Weir Link: PARK. DRIVEWAY ENTRANCE

Scenario:	Scenario1	Bottom Clip
From Node:	CHAMBERS 1	Default: 0.00 ft
To Node:	JOHN ROW POST	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Paved Road Vertical	Op Table:
Geometry Type:	Irregular	Ref Node:
Invert:	24.06 ft	Discharge Coefficients
Control Elevation:	24.10 ft	Weir Default: 2.800
Cross Section:	DRIVEWAY	Weir Table:
		Orifice Default: 0.600
		Orifice Table:

Comment: FOR 100 YR STORM ONLY OVERFLOW

Percolation Link: PERC - PERVIOUS

Scenario:	Scenario1	Surface Area Option:	User Specified
From Node:	PERVIOUS CONCRETE	Bottom Elevation:	15.15 ft
To Node:	GW- PERVIOUS	Surface Area:	0.0830 ac
Link Count:	1	Vertical Flow Termination:	Horizontal Flow Algorithm
Flow Direction:	Both	Perimeter 1:	428.00 ft
Aquifer Base Elevation:	6.70 ft	Perimeter 2:	543.00 ft
Water Table Elevation:	9.20 ft	Perimeter 3:	659.00 ft
Annual Recharge Rate:	0 ipy	Distance P1 to P2:	20.00 ft
Horizontal Conductivity:	20.000 fpd	Distance P2 to P3:	20.00 ft
Vertical Conductivity:	20.000 fpd	# of Cells P1 to P2:	4
Fillable Porosity:	0.250	# of Cells P2 to P3:	4
Layer Thickness:	0.00 ft		

Comment:

Percolation Link: PERC-CHAMBERS

Scenario:	Scenario1	Surface Area Option:	User Specified
From Node:	CHAMBERS 1	Bottom Elevation:	18.00 ft
To Node:	GW-CHAMBERS	Surface Area:	0.0920 ac
Link Count:	1	Vertical Flow Termination:	Horizontal Flow Algorithm
Flow Direction:	Both	Perimeter 1:	286.00 ft
Aquifer Base Elevation:	5.00 ft	Perimeter 2:	458.00 ft
Water Table Elevation:	15.00 ft	Perimeter 3:	994.00 ft
Annual Recharge Rate:	0 ipy	Distance P1 to P2:	20.00 ft
Horizontal Conductivity:	20.000 fpd	Distance P2 to P3:	50.00 ft
Vertical Conductivity:	20.000 fpd	# of Cells P1 to P2:	5
Fillable Porosity:	0.250	# of Cells P2 to P3:	25
Layer Thickness:	0.00 ft		

Comment: Aquifer 25 - 20 = 5 (TH-1 and TH-2)

Percolation Link: PERC-CHAMBERS WEST

Scenario:	Scenario1	Surface Area Option:	User Specified
From Node:	CHAMBERS 2 WEST	Bottom Elevation:	16.00 ft
To Node:	GW- CHAMBERS WEST	Surface Area:	0.0170 ac
Link Count:	1	Vertical Flow Termination:	Horizontal Flow Algorithm
Flow Direction:	Both	Perimeter 1:	136.00 ft
Aquifer Base Elevation:	8.00 ft	Perimeter 2:	207.00 ft
Water Table Elevation:	13.00 ft	Perimeter 3:	269.00 ft
Annual Recharge Rate:	0 ipy	Distance P1 to P2:	10.00 ft
Horizontal Conductivity:	20.000 fpd	Distance P2 to P3:	10.00 ft
Vertical Conductivity:	20.000 fpd	# of Cells P1 to P2:	2
Fillable Porosity:	0.250	# of Cells P2 to P3:	2
Layer Thickness:	0.00 ft		

Comment: Aquifer 23 - 15 = 8 (TH-2)

Pipe Link: PIPE 1

	Upstream	Downstream
Scenario:	Scenario1	Invert: 19.75 ft
From Node:	DS-1	Manning's N: 0.0120
To Node:	CHAMBERS 1	Geometry: Circular
Link Count:	1	Max Depth: 1.50 ft
Flow Direction:	Both	Bottom Clip
Damping:	0.0000 ft	Default: 0.00 ft
Length:	7.00 ft	Op Table:
FHWA Code:	1	Ref Node:
Entr Loss Coef:	0.50	Manning's N: 0.0000
Exit Loss Coef:	1.00	Top Clip
Bend Loss Coef:	0.00	Default: 0.00 ft
Bend Location:	0.00 dec	Op Table:
Energy Switch:	Energy	Ref Node:
	Manning's N: 0.0000	Manning's N: 0.0000

Comment:

Pipe Link: PIPE 2

	Upstream	Downstream
Scenario:	Scenario1	Invert: 19.00 ft
From Node:	DS-2	Manning's N: 0.0120
To Node:	CHAMBERS 1	Geometry: Circular
Link Count:	1	Max Depth: 1.50 ft
Flow Direction:	Both	Bottom Clip
Damping:	0.0000 ft	Default: 0.00 ft
Length:	28.00 ft	Op Table:
FHWA Code:	1	Ref Node:
Entr Loss Coef:	0.50	Manning's N: 0.0000
Exit Loss Coef:	1.00	Top Clip
Bend Loss Coef:	0.00	Default: 0.00 ft
Bend Location:	0.00 dec	Op Table:

Energy Switch: Energy

Ref Node:
Manning's N: 0.0000Ref Node:
Manning's N: 0.0000

Comment:

Pipe Link: PIPE 3		Upstream	Downstream
Scenario:	Scenario1	Invert: 17.21 ft	Invert: 17.15 ft
From Node:	DS-3	Manning's N: 0.0120	Manning's N: 0.0120
To Node:	CHAMBERS 2	Geometry: Circular	Geometry: Circular
	WEST	Max Depth: 1.25 ft	Max Depth: 1.25 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	2.00 ft	Ref Node:	Ref Node:
FHWA Code:	1	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	1.00	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment:			

Pipe Link: PIPE 4		Upstream	Downstream
Scenario:	Scenario1	Invert: 17.50 ft	Invert: 17.21 ft
From Node:	CS-1 OPEN LID	Manning's N: 0.0120	Manning's N: 0.0120
To Node:	DS-3	Geometry: Circular	Geometry: Circular
Link Count:	1	Max Depth: 1.25 ft	Max Depth: 1.25 ft
Flow Direction:	Both	Bottom Clip	
Damping:	0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length:	64.00 ft	Op Table:	Op Table:
FHWA Code:	1	Ref Node:	Ref Node:
Entr Loss Coef:	0.50	Manning's N: 0.0000	Manning's N: 0.0000
Exit Loss Coef:	1.00	Top Clip	
Bend Loss Coef:	0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location:	0.00 dec	Op Table:	Op Table:
Energy Switch:	Energy	Ref Node:	Ref Node:
		Manning's N: 0.0000	Manning's N: 0.0000
Comment:			

Pipe Link: PIPE 5		Upstream	Downstream
Scenario:	Scenario1	Invert: 17.02 ft	Invert: 15.75 ft
From Node:	CS-1 SOLID COVER	Manning's N: 0.0120	Manning's N: 0.0120
To Node:	DS-4	Geometry: Circular	Geometry: Circular

Link Count:	1	Max Depth:	1.13 ft	Max Depth:	1.13 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000	Default:	0.00 ft	Default:	0.00 ft
Length:	62.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Pipe Link: PIPE 6		Upstream		Downstream	
Scenario:	Scenario1	Invert:	15.40 ft	Invert:	14.45 ft
From Node:	DS-4	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	FACTORY POST	Geometry: Circular		Geometry: Circular	
	INLET	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	47.00 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	1.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Pipe Link: PIPE 7		Upstream		Downstream	
Scenario:	Scenario1	Invert:	12.75 ft	Invert:	12.45 ft
From Node:	DS-6	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	DS-5	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	11.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RIM DS-1 WEIR 1

Scenario:	Scenario1	Bottom Clip
From Node:	DS-1	Default: 0.00 ft
To Node:	BREVARD ROW POST	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Horizontal	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	24.75 ft	Discharge Coefficients
Control Elevation:	24.75 ft	Weir Default: 2.800
Max Depth:	2.00 ft	Weir Table:
Max Width:	3.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Weir Link: RIM DS-2 WEIR 2

Scenario:	Scenario1	Bottom Clip
From Node:	DS-2	Default: 0.00 ft
To Node:	JOHN ROW POST	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Horizontal	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	24.00 ft	Discharge Coefficients
Control Elevation:	24.00 ft	Weir Default: 2.800
Max Depth:	2.00 ft	Weir Table:
Max Width:	3.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Weir Link: WEIR PERVIOUS

Scenario:	Scenario1	Bottom Clip
From Node:	PERVIOUS CONCRETE	Default: 0.00 ft
To Node:	DS-6	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:

Geometry Type: Rectangular
 Invert: 16.75 ft
 Control Elevation: 16.75 ft
 Max Depth: 9999.00 ft
 Max Width: 0.50 ft
 Fillet: 0.00 ft

Ref Node:

Discharge Coefficients

Weir Default: 2.800
 Weir Table:
 Orifice Default: 0.600
 Orifice Table:

Comment:

Simulation: 100Y-24H

Scenario: Scenario1
 Run Date/Time: 3/24/2022 9:05:47 AM
 Program Version: ICPR4 4.07.00

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	24.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		30.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph

Lookup Tables

Boundary Stage Set:
 Extern Hydrograph Set:
 Curve Number Set: 1

Folder:

Green-Ampt Set:
Vertical Layers Set:
Impervious Set: 1

Tolerances & Options

Time Marching: SAOR	IA Recovery Time: 72.0000 hr
Max Iterations: 6	
Over-Relax Weight 0.5 dec	
Fact:	
dZ Tolerance: 0.0010 ft	Smp/Man Basin Rain Global
	Opt:
Max dZ: 1.0000 ft	Rainfall Name: ~FLMOD
Link Optimizer Tol: 0.0001 ft	Rainfall Amount: 13.20 in
	Storm Duration: 24.0000 hr
Edge Length Option: Automatic	
	Dflt Damping (1D): 0.0050 ft
	Min Node Srf Area 100 ft2
	(1D):
	Energy Switch (1D): Energy

Comment:

Simulation: 25Y-24H

Scenario: Scenario1
Run Date/Time: 3/24/2022 9:07:08 AM
Program Version: ICPR4 4.07.00

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	24.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		30.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
------	-------	-----	-----------	----------------------

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph
Folder:

Lookup Tables

Boundary Stage Set:

Extern Hydrograph Set:

Curve Number Set: 1

Green-Ampt Set:

Vertical Layers Set:

Impervious Set: 1

Tolerances & Options

Time Marching: SAOR

Max Iterations: 6

Over-Relax Weight 0.5 dec

Fact:

dZ Tolerance: 0.0010 ft

Max dZ: 1.0000 ft

Link Optimizer Tol: 0.0001 ft

Edge Length Option: Automatic

IA Recovery Time: 72.0000 hr

Smp/Man Basin Rain Global
Opt:

Rainfall Name: ~FLMOD

Rainfall Amount: 9.57 in

Storm Duration: 24.0000 hr

Dflt Damping (1D): 0.0050 ft

Min Node Srf Area 100 ft2

(1D):

Energy Switch (1D): Energy

Comment:

Simulation: MEAN

Scenario: Scenario1

Run Date/Time: 3/24/2022 9:12:49 AM

Program Version: ICPR4 4.07.00

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	24.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		30.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph
Folder:

Lookup Tables

Boundary Stage Set:

Extern Hydrograph Set:

Curve Number Set: 1

Green-Ampt Set:

Vertical Layers Set:

Impervious Set: 1

Tolerances & Options

Time Marching: SAOR

Max Iterations: 6

Over-Relax Weight: 0.5 dec

Fact:

dZ Tolerance: 0.0010 ft

Max dZ: 1.0000 ft

Link Optimizer Tol: 0.0001 ft

Edge Length Option: Automatic

IA Recovery Time: 72.0000 hr

Smp/Man Basin Rain: Global
Opt:

Rainfall Name: ~FLMOD

Rainfall Amount: 5.00 in

Storm Duration: 24.0000 hr

Dflt Damping (1D): 0.0050 ft

Min Node Srf Area 100 ft2

(1D):

Energy Switch (1D): Energy

Comment:

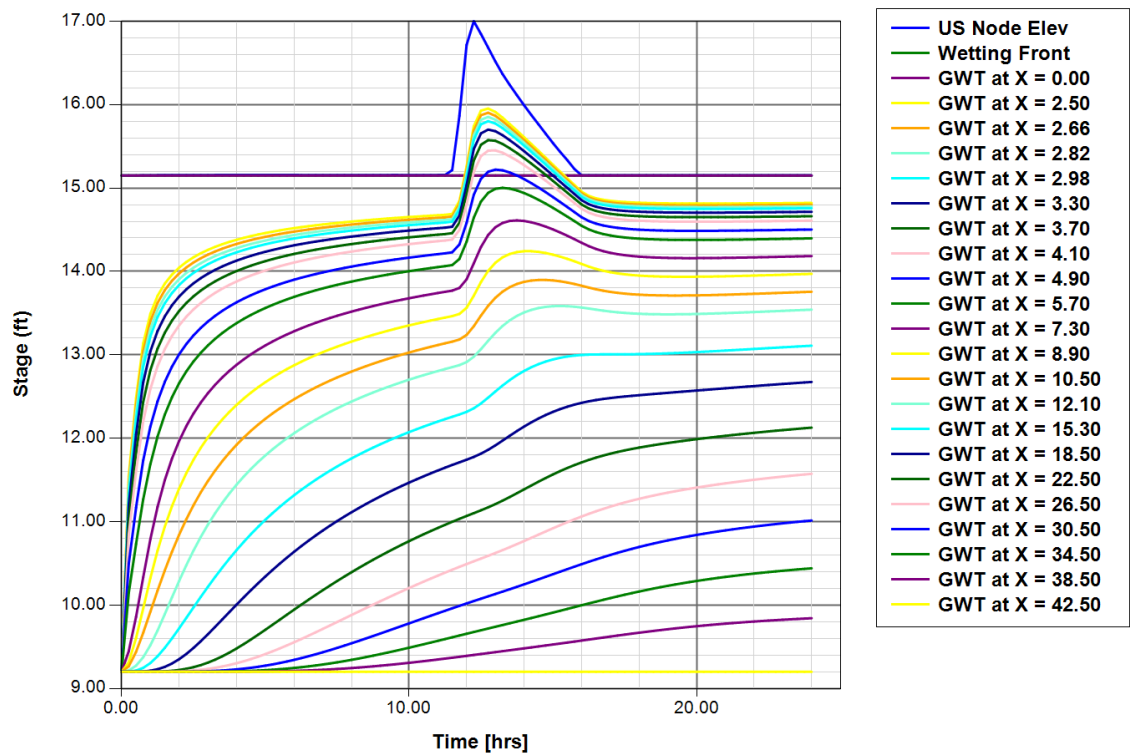
Curve Number: 1 [Set]

Land Cover Zone	Soil Zone	Curve Number [dec]
IMPERVIOUS	A	98.0
PERVIOUS	A	39.0

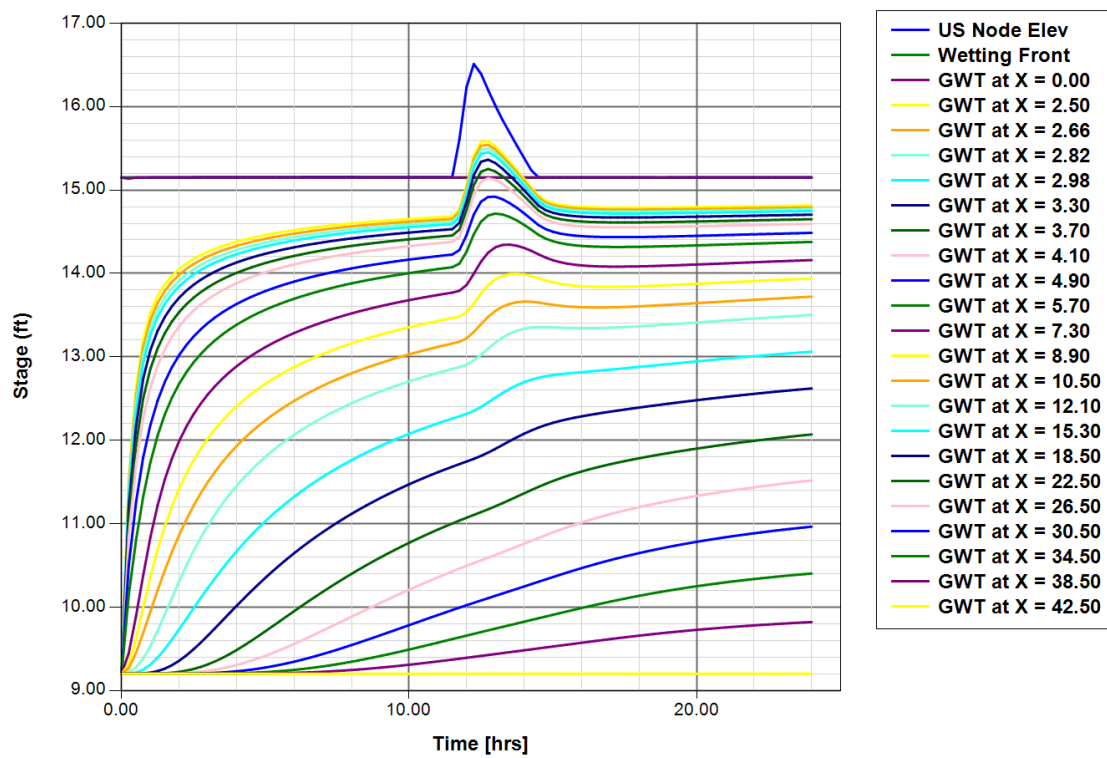
APPENDIX C

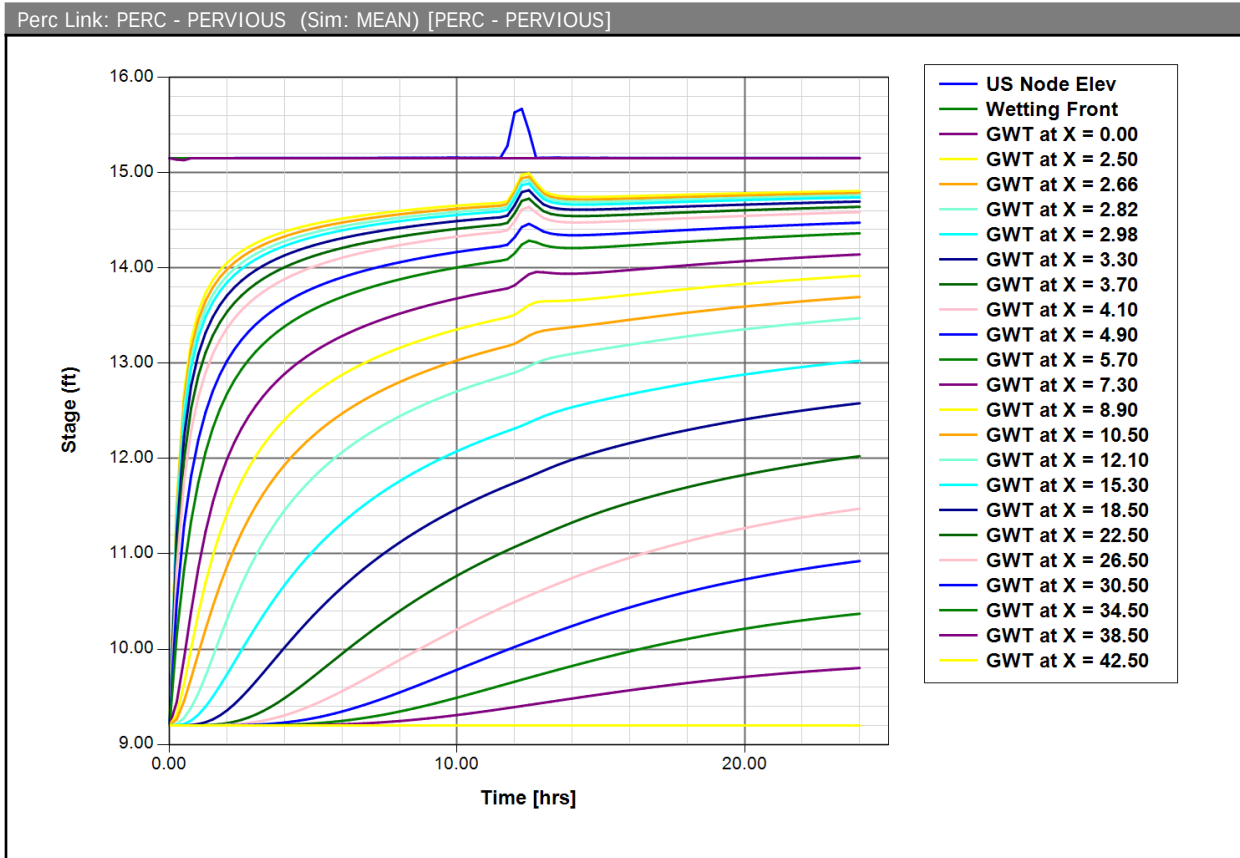
RECOVERY ANALYSIS

Perc Link: PERC - PERVIOUS (Sim: 100Y-24H) [PERC - PERVIOUS]

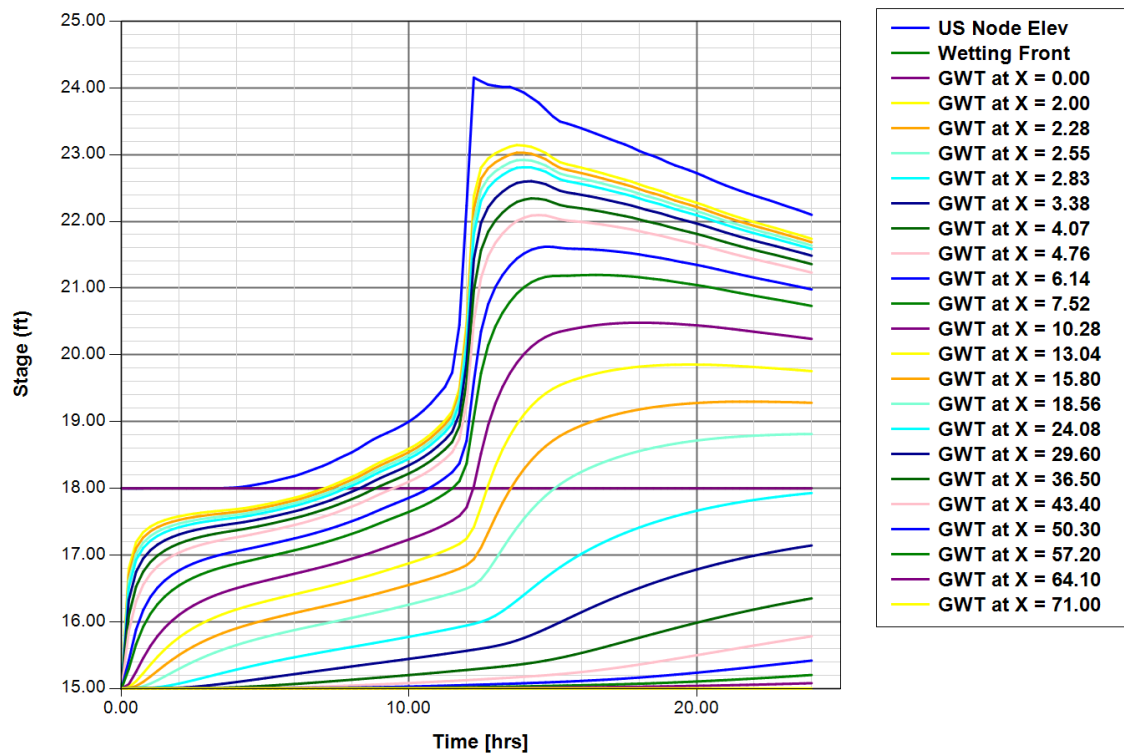


Perc Link: PERC - PERVIOUS (Sim: 25Y-24H) [PERC - PERVIOUS]

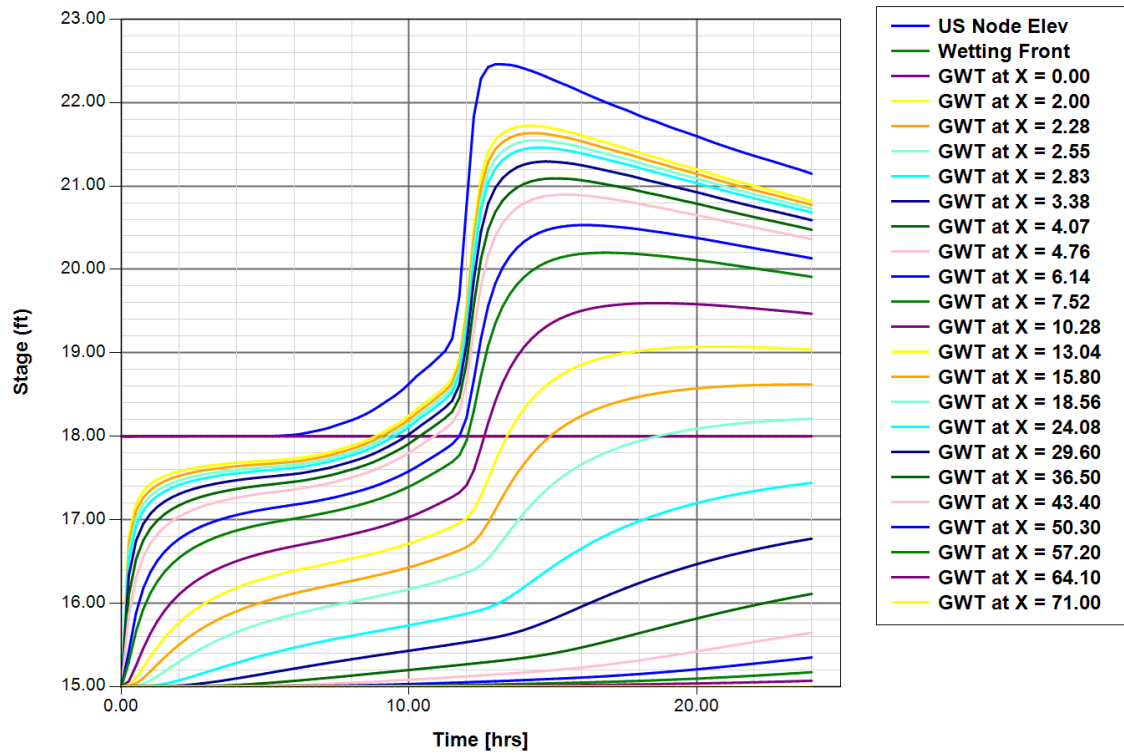


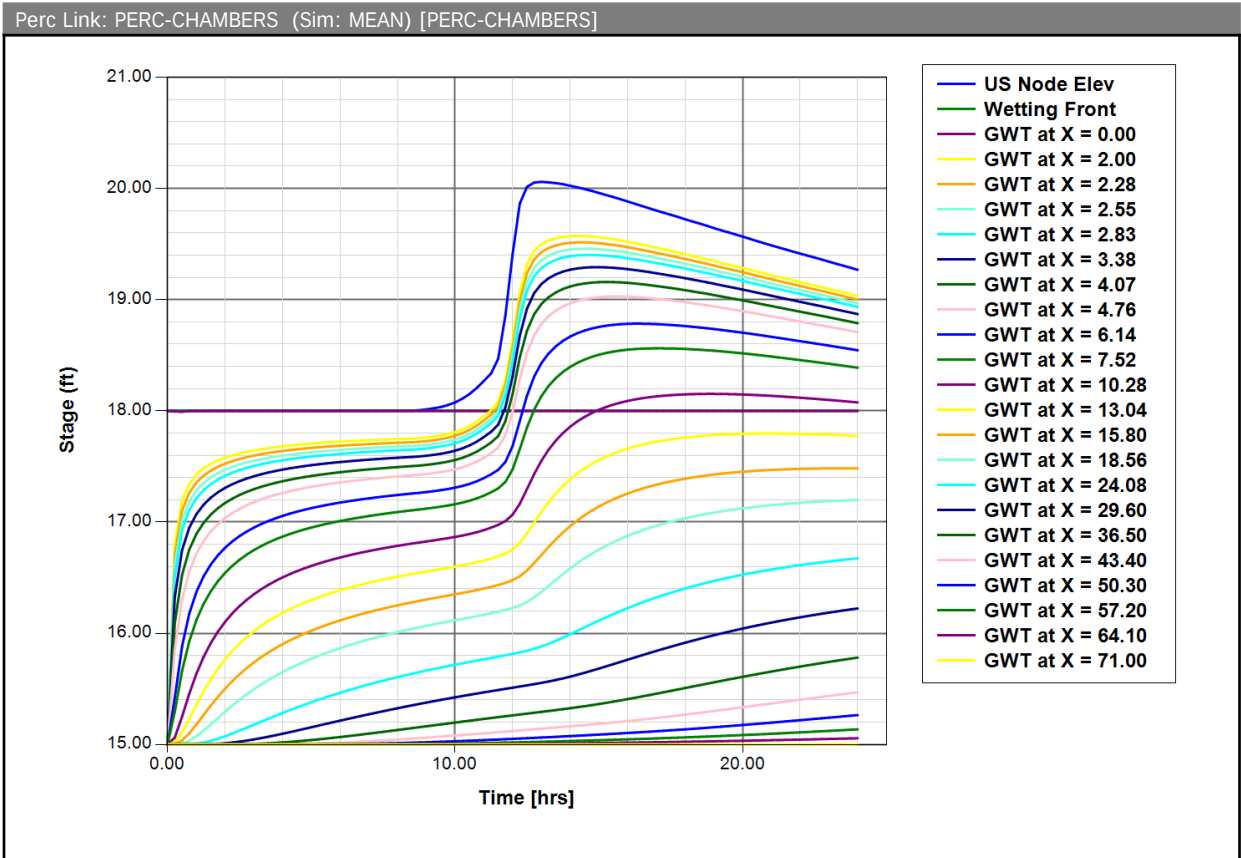


Perc Link: PERC-CHAMBERS (Sim: 100Y-24H) [PERC-CHAMBERS]

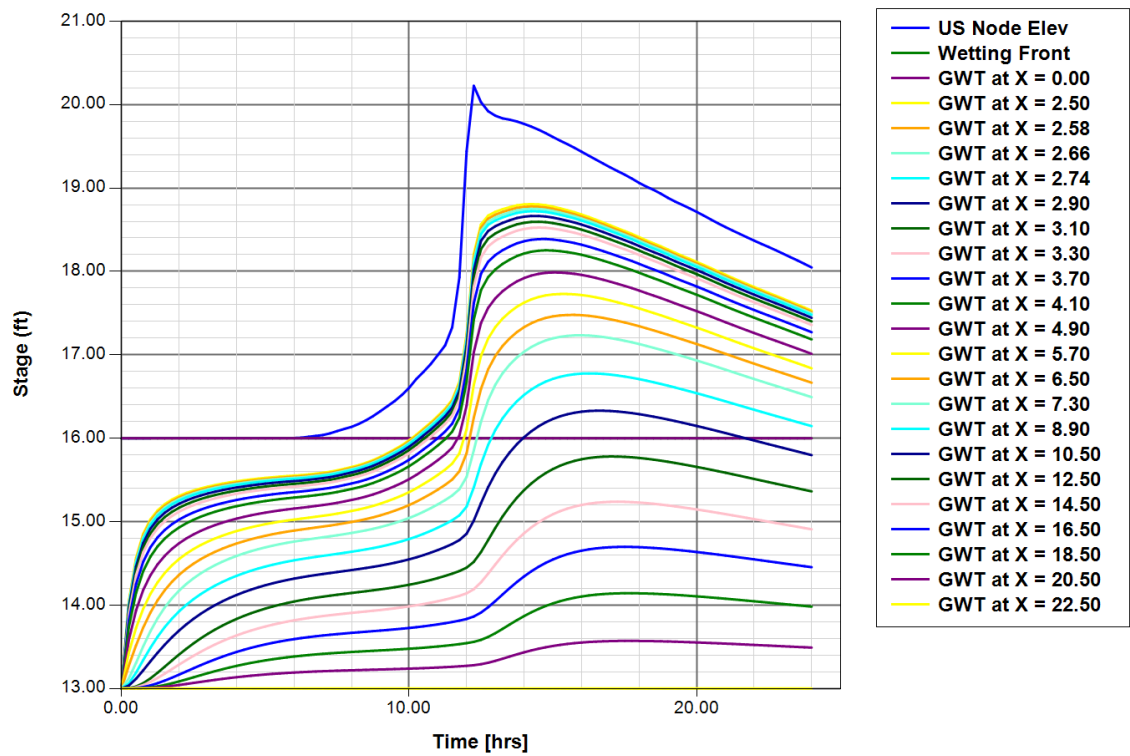


Perc Link: PERC-CHAMBERS (Sim: 25Y-24H) [PERC-CHAMBERS]

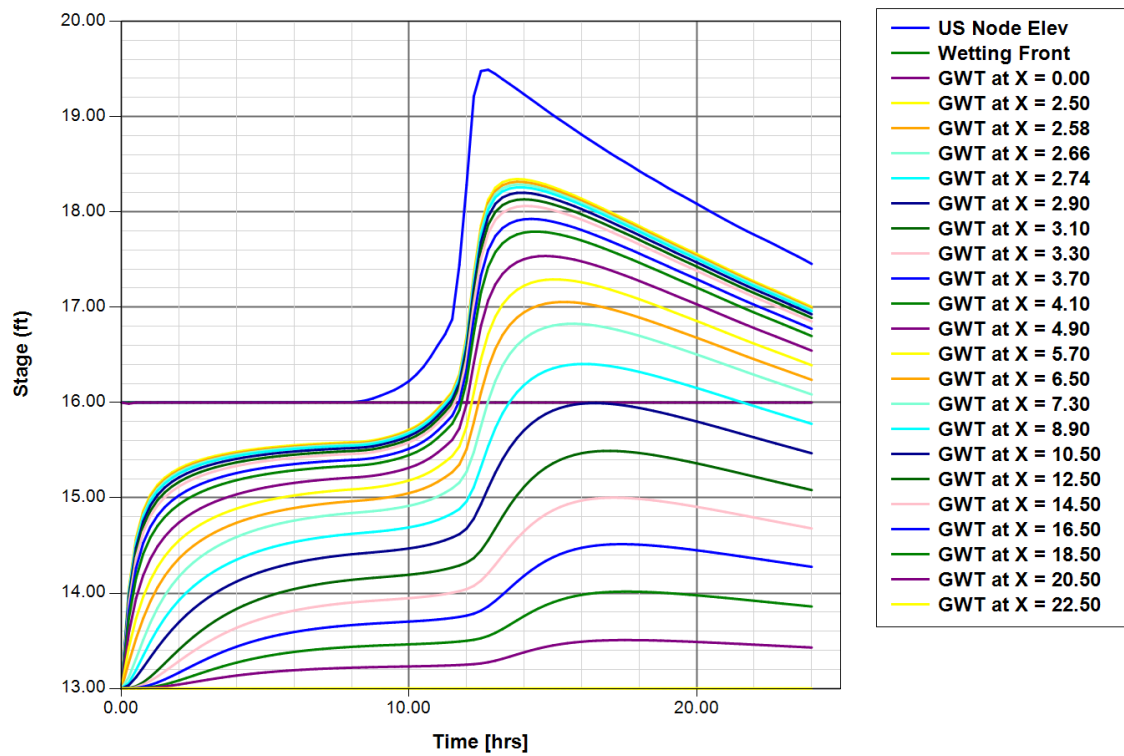


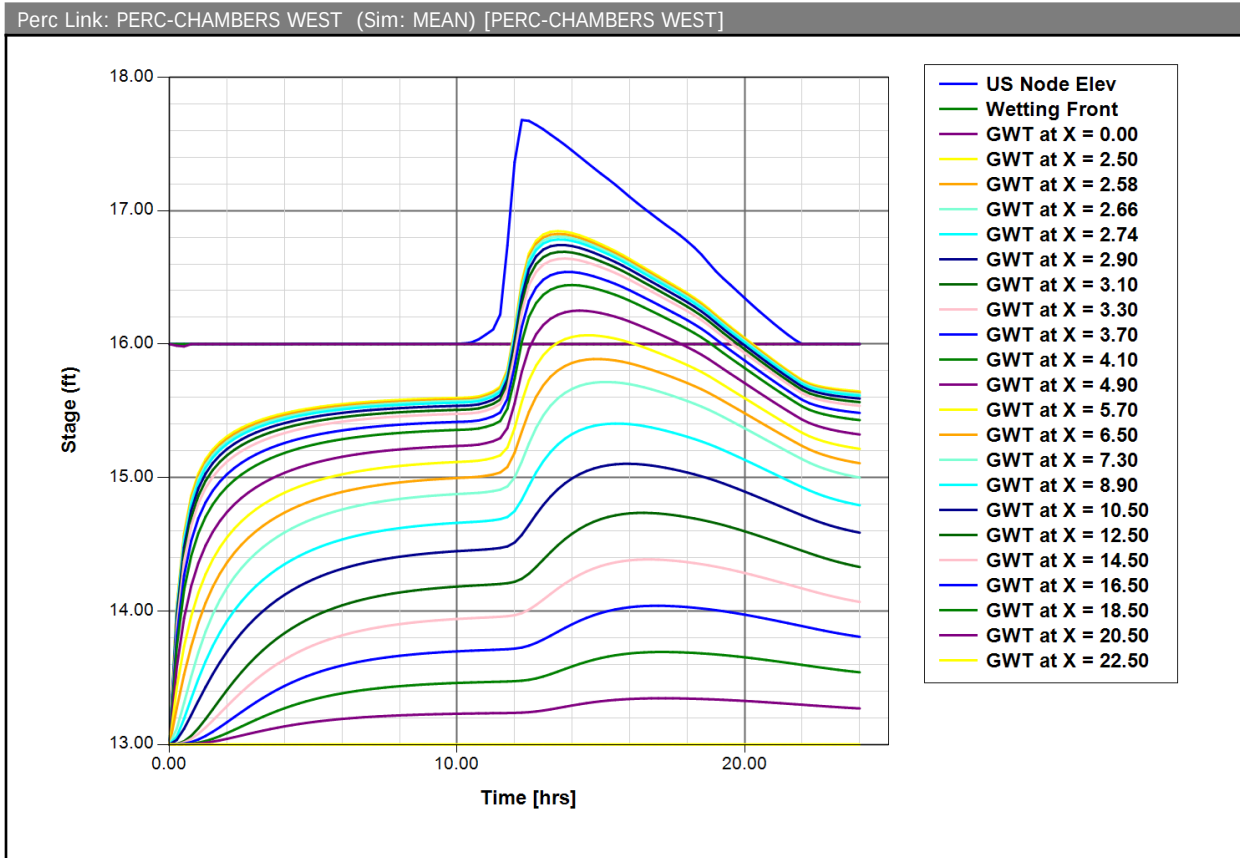


Perc Link: PERC-CHAMBERS WEST (Sim: 100Y-24H) [PERC-CHAMBERS WEST]



Perc Link: PERC-CHAMBERS WEST (Sim: 25Y-24H) [PERC-CHAMBERS WEST]





MODRET

SUMMARY OF UNSATURATED & SATURATED INPUT PARAMETERS

PROJECT NAME : COCOA VILLAGE HOTEL - CHAMBERS 1 PARKING
POLLUTION VOLUME RUNOFF DATA USED
UNSATURATED ANALYSIS INCLUDED

Pond Bottom Area	3,988.00 ft ²
Pond Volume between Bottom & DHWL	13,433.00 ft ³
Pond Length to Width Ratio (L/W)	2.30
Elevation of Effective Aquifer Base	5.00 ft
Elevation of Seasonal High Groundwater Table	15.00 ft
Elevation of Starting Water Level	18.00 ft
Elevation of Pond Bottom	18.00 ft
Design High Water Level Elevation	23.50 ft
Avg. Effective Storage Coefficient of Soil for Unsaturated Analysis	0.18
Unsaturated Vertical Hydraulic Conductivity	20.00 ft/d
Factor of Safety	2.00
Saturated Horizontal Hydraulic Conductivity	20.00 ft/d
Avg. Effective Storage Coefficient of Soil for Saturated Analysis	0.30
Avg. Effective Storage Coefficient of Pond/Exfiltration Trench	1.00

Hydraulic Control Features:

Groundwater Control Features - Y/N

	Top	Bottom	Left	Right
Distance to Edge of Pond	N	N	N	N
Elevation of Water Level	0.00	0.00	0.00	0.00

Impervious Barrier - Y/N

	Top	Bottom	Left	Right
Elevation of Barrier Bottom	N	N	N	N
	0.00	0.00	0.00	0.00

MODRET

TIME - RUNOFF INPUT DATA

PROJECT NAME: COCOA VILLAGE HOTEL - CHAMBERS 1 PARKING

STRESS PERIOD NUMBER	INCREMENT OF TIME (hrs)	VOLUME OF RUNOFF (ft³)
Unsat	1.30	2,153.52
1	1.00	11,279.48
2	1.79	0.00
3	1.79	0.00
4	1.79	0.00
5	1.79	0.00
6	1.79	0.00
7	1.79	0.00
8	1.79	0.00
9	1.79	0.00
10	1.79	0.00
11	1.79	0.00
12	1.79	0.00
13	1.79	0.00
14	1.79	0.00
15	1.79	0.00
16	1.79	0.00
17	1.79	0.00
18	1.79	0.00
19	1.79	0.00
20	1.79	0.00
21	1.79	0.00
22	1.79	0.00
23	1.79	0.00
24	1.79	0.00
25	1.79	0.00
26	1.79	0.00
27	1.79	0.00
28	1.79	0.00
29	1.79	0.00
30	1.79	0.00

Analysis Date: 3/10/2022

MODRET

SUMMARY OF RESULTS

PROJECT NAME : COCOA VILLAGE HOTEL - CHAMBERS 1 PARKING

CUMULATIVE TIME (hrs)	WATER ELEVATION (feet)	INSTANTANEOUS INFILTRATION RATE (cfs)	AVERAGE INFILTRATION RATE (cfs)	CUMULATIVE OVERFLOW (ft³)
00.00 - 0.00	15.000	0.000 *		
			0.00000	
0.00	15.000	0.28268		
			0.28268	
2.30	22.543	0.28268		0.00
			0.28268	
4.08	21.799	0.28268		0.00
			0.28268	
5.87	21.054	0.26467		0.00
			0.24665	
7.66	20.404	0.18089		0.00
			0.11514	
9.45	20.101	0.10591		0.00
			0.09669	
11.23	19.846	0.09007		0.00
			0.08344	
13.02	19.626	0.07842		0.00
			0.07341	
14.81	19.433	0.06946		0.00
			0.06550	
16.59	19.260	0.06231		0.00
			0.05912	
18.38	19.105	0.05646		0.00
			0.05380	
20.17	18.963	0.05157		0.00
			0.04933	
21.96	18.833	0.04741		0.00
			0.04549	
23.74	18.713	0.04383		0.00

MODRET

SUMMARY OF RESULTS

PROJECT NAME : COCOA VILLAGE HOTEL - CHAMBERS 1 PARKING

CUMULATIVE TIME (hrs)	WATER ELEVATION (feet)	INSTANTANEOUS INFILTRATION RATE (cfs)	AVERAGE INFILTRATION RATE (cfs)	CUMULATIVE OVERFLOW (ft³)
			0.04216	
25.53	18.602	0.04072		0.00
			0.03928	
27.32	18.499	0.03799		0.00
			0.03670	
29.11	18.402	0.03556		0.00
			0.03442	
30.89	18.311	0.03340		0.00
			0.03238	
32.68	18.226	0.03146		0.00
			0.03054	
34.47	18.145	0.02971		0.00
			0.02889	
36.25	18.069	0.02814		0.00
			0.02739	
37.97	18.000	0.02669		0.00
			0.02599	
39.83	17.929	0.02536		0.00
			0.02474	
41.62	17.863	0.02415		0.00
			0.02357	
43.40	17.801	0.02303		0.00
			0.02250	
45.19	17.742	0.02200		0.00
			0.02151	
46.98	17.685	0.02104		0.00
			0.02058	
48.77	17.631	0.02015		0.00

MODRET

SUMMARY OF RESULTS

PROJECT NAME : COCOA VILLAGE HOTEL - CHAMBERS 1 PARKING

CUMULATIVE TIME (hrs)	WATER ELEVATION (feet)	INSTANTANEOUS INFILTRATION RATE (cfs)	AVERAGE INFILTRATION RATE (cfs)	CUMULATIVE OVERFLOW (ft³)
			0.01972	
50.55	17.579	0.01932		0.00
			0.01892	
52.34	17.529	0.01854		0.00
			0.01816	
54.13	17.482	0.01781		0.00
			0.01747	
55.91	17.436	0.01714		0.00
			0.01681	
57.70	17.391	0.01649		0.00
			0.01618	
59.49	17.349	0.01589		0.00
			0.01560	
61.28	17.308	0.01533		0.00
			0.01505	
63.06	17.268	0.01479		0.00
			0.01453	
64.85	17.230	0.01428		0.00
			0.01403	
66.64	17.193	0.01380		0.00
			0.01357	
68.43	17.157	0.01335		0.00
			0.01313	
70.21	17.122	0.01292		0.00
			0.01271	
72.00	17.089			0.00

Maximum Water Elevation: 22.543 feet @ 2.30 hours

Recovery @ 37.971 hours

* Time increment when there is no runoff

Maximum Infiltration Rate: 10.000 ft/day

Analysis Date: 3/10/2022

MODRET

SUMMARY OF UNSATURATED & SATURATED INPUT PARAMETERS

PROJECT NAME : COCOA VILLAGE HOTEL - CHAMBERS 2 WEST
POLLUTION VOLUME RUNOFF DATA USED
UNSATURATED ANALYSIS INCLUDED

Pond Bottom Area	786.00 ft ²
Pond Volume between Bottom & DHWL	1,879.00 ft ³
Pond Length to Width Ratio (L/W)	3.30
Elevation of Effective Aquifer Base	8.00 ft
Elevation of Seasonal High Groundwater Table	13.00 ft
Elevation of Starting Water Level	16.00 ft
Elevation of Pond Bottom	16.00 ft
Design High Water Level Elevation	19.80 ft
Avg. Effective Storage Coefficient of Soil for Unsaturated Analysis	0.18
Unsaturated Vertical Hydraulic Conductivity	20.00 ft/d
Factor of Safety	2.00
Saturated Horizontal Hydraulic Conductivity	20.00 ft/d
Avg. Effective Storage Coefficient of Soil for Saturated Analysis	0.27
Avg. Effective Storage Coefficient of Pond/Exfiltration Trench	1.00

Hydraulic Control Features:

Groundwater Control Features - Y/N

	Top	Bottom	Left	Right
Distance to Edge of Pond	N	N	N	N
Elevation of Water Level	0.00	0.00	0.00	0.00

Impervious Barrier - Y/N

	Top	Bottom	Left	Right
Elevation of Barrier Bottom	N	N	N	N
	0.00	0.00	0.00	0.00

MODRET

TIME - RUNOFF INPUT DATA

PROJECT NAME: COCOA VILLAGE HOTEL - CHAMBERS 2 WEST

STRESS PERIOD NUMBER	INCREMENT OF TIME (hrs)	VOLUME OF RUNOFF (ft³)
Unsat	1.30	424.44
1	1.00	1,454.56
2	1.79	0.00
3	1.79	0.00
4	1.79	0.00
5	1.79	0.00
6	1.79	0.00
7	1.79	0.00
8	1.79	0.00
9	1.79	0.00
10	1.79	0.00
11	1.79	0.00
12	1.79	0.00
13	1.79	0.00
14	1.79	0.00
15	1.79	0.00
16	1.79	0.00
17	1.79	0.00
18	1.79	0.00
19	1.79	0.00
20	1.79	0.00
21	1.79	0.00
22	1.79	0.00
23	1.79	0.00
24	1.79	0.00
25	1.79	0.00
26	1.79	0.00
27	1.79	0.00
28	1.79	0.00
29	1.79	0.00
30	1.79	0.00

Analysis Date: 3/10/2022

MODRET

SUMMARY OF RESULTS

PROJECT NAME : COCOA VILLAGE HOTEL - CHAMBERS 2 WEST

CUMULATIVE TIME (hrs)	WATER ELEVATION (feet)	INSTANTANEOUS INFILTRATION RATE (cfs)	AVERAGE INFILTRATION RATE (cfs)	CUMULATIVE OVERFLOW (ft ³)
00.00 - 0.00	13.000	0.000 *		
			0.00000	
0.00	13.000	0.05723		
			0.05723	
2.30	18.843	0.05723		0.00
			0.05723	
4.08	18.099	0.05723		0.00
			0.05723	
5.87	17.354	0.05723		0.00
			0.05723	
7.66	16.609	0.05520		0.00
			0.05317	
9.23	16.000	0.03517		0.00
			0.01717	
11.23	15.694	0.01574		0.00
			0.01431	
13.02	15.508	0.01325		0.00
			0.01219	
14.81	15.349	0.01138		0.00
			0.01056	
16.59	15.212	0.00992		0.00
			0.00927	
18.38	15.091	0.00875		0.00
			0.00822	
20.17	14.984	0.00779		0.00
			0.00735	
21.96	14.889	0.00699		0.00
			0.00663	
23.74	14.802	0.00632		0.00

MODRET

SUMMARY OF RESULTS

PROJECT NAME : COCOA VILLAGE HOTEL - CHAMBERS 2 WEST

CUMULATIVE TIME (hrs)	WATER ELEVATION (feet)	INSTANTANEOUS INFILTRATION RATE (cfs)	AVERAGE INFILTRATION RATE (cfs)	CUMULATIVE OVERFLOW (ft³)
			0.00602	
25.53	14.724	0.00576		0.00
			0.00549	
27.32	14.652	0.00527		0.00
			0.00504	
29.11	14.587	0.00484		0.00
			0.00465	
30.89	14.526	0.00447		0.00
			0.00430	
32.68	14.471	0.00414		0.00
			0.00399	
34.47	14.419	0.00385		0.00
			0.00372	
36.25	14.370	0.00359		0.00
			0.00347	
38.04	14.325	0.00336		0.00
			0.00325	
39.83	14.283	0.00315		0.00
			0.00305	
41.62	14.243	0.00296		0.00
			0.00287	
43.40	14.206	0.00279		0.00
			0.00271	
45.19	14.171	0.00263		0.00
			0.00255	
46.98	14.137	0.00248		0.00
			0.00242	
48.77	14.106	0.00235		0.00

MODRET

SUMMARY OF RESULTS

PROJECT NAME : COCOA VILLAGE HOTEL - CHAMBERS 2 WEST

CUMULATIVE TIME (hrs)	WATER ELEVATION (feet)	INSTANTANEOUS INFILTRATION RATE (cfs)	AVERAGE INFILTRATION RATE (cfs)	CUMULATIVE OVERFLOW (ft³)
			0.00229	
50.55	14.076	0.00223		0.00
			0.00217	
52.34	14.048	0.00211		0.00
			0.00206	
54.13	14.021	0.00201		0.00
			0.00196	
55.91	13.996	0.00191		0.00
			0.00187	
57.70	13.971	0.00182		0.00
			0.00178	
59.49	13.948	0.00174		0.00
			0.00170	
61.28	13.926	0.00166		0.00
			0.00162	
63.06	13.905	0.00159		0.00
			0.00155	
64.85	13.885	0.00152		0.00
			0.00149	
66.64	13.865	0.00146		0.00
			0.00143	
68.43	13.847	0.00140		0.00
			0.00137	
70.21	13.829	0.00134		0.00
			0.00131	
72.00	13.812			0.00

Maximum Water Elevation: 18.843 feet @ 2.30 hours

Recovery @ 9.232 hours

* Time increment when there is no runoff

Maximum Infiltration Rate: 10.000 ft/day

Analysis Date: 3/10/2022

MODRET

SUMMARY OF UNSATURATED & SATURATED INPUT PARAMETERS

**PROJECT NAME : COCOA VILLAGE HOTEL - PERVIOUS CONCRETE
POLLUTION VOLUME RUNOFF DATA USED
UNSATURATED ANALYSIS INCLUDED**

Pond Bottom Area	756.00 ft ²
Pond Volume between Bottom & DHWL	2,340.00 ft ³
Pond Length to Width Ratio (L/W)	8.90
Elevation of Effective Aquifer Base	6.70 ft
Elevation of Seasonal High Groundwater Table	9.20 ft
Elevation of Starting Water Level	15.15 ft
Elevation of Pond Bottom	15.15 ft
Design High Water Level Elevation	18.15 ft
Avg. Effective Storage Coefficient of Soil for Unsaturated Analysis	0.30
Unsaturated Vertical Hydraulic Conductivity	20.00 ft/d
Factor of Safety	2.00
Saturated Horizontal Hydraulic Conductivity	20.00 ft/d
Avg. Effective Storage Coefficient of Soil for Saturated Analysis	0.30
Avg. Effective Storage Coefficient of Pond/Exfiltration Trench	1.00

Hydraulic Control Features:

Groundwater Control Features - Y/N

	Top	Bottom	Left	Right
Distance to Edge of Pond	N	N	N	N
Elevation of Water Level	0.00	0.00	0.00	0.00

Impervious Barrier - Y/N

	Top	Bottom	Left	Right
Elevation of Barrier Bottom	N	N	N	N
	0.00	0.00	0.00	0.00

MODRET

TIME - RUNOFF INPUT DATA

PROJECT NAME: COCOA VILLAGE HOTEL - PERVIOUS CONCRETE

STRESS PERIOD NUMBER	INCREMENT OF TIME (hrs)	VOLUME OF RUNOFF (ft³)
Unsat	4.28	1,349.46
1	1.00	990.54
2	1.71	0.00
3	1.71	0.00
4	1.71	0.00
5	1.71	0.00
6	1.71	0.00
7	1.71	0.00
8	1.71	0.00
9	1.71	0.00
10	1.71	0.00
11	1.71	0.00
12	1.71	0.00
13	1.71	0.00
14	1.71	0.00
15	1.71	0.00
16	1.71	0.00
17	1.71	0.00
18	1.71	0.00
19	1.71	0.00
20	1.71	0.00
21	1.71	0.00
22	1.71	0.00
23	1.71	0.00
24	1.71	0.00
25	1.71	0.00
26	1.71	0.00
27	1.71	0.00
28	1.71	0.00
29	1.71	0.00
30	1.71	0.00

Analysis Date: 3/24/2022

MODRET

SUMMARY OF RESULTS

PROJECT NAME : COCOA VILLAGE HOTEL - PERVIOUS CONCRETE

CUMULATIVE TIME (hrs)	WATER ELEVATION (feet)	INSTANTANEOUS INFILTRATION RATE (cfs)	AVERAGE INFILTRATION RATE (cfs)	CUMULATIVE OVERFLOW (ft ³)
00.00 - 0.00	9.200	0.000 *		
			0.00000	
0.00	9.200	0.09028		
			0.09028	
5.28	15.948	0.09028		0.00
			0.09028	
6.99	15.236	0.09028		0.00
			0.09028	
8.71	15.150	0.09028		0.00
			0.09028	
10.42	15.150	0.09028		0.00
			0.09028	
12.13	15.150	0.09028		0.00
			0.09028	
13.84	15.150	0.09028		0.00
			0.09028	
15.55	15.150	0.09028		0.00
			0.09028	
17.26	15.150	0.09028		0.00
			0.09028	
18.97	15.150	0.09028		0.00
			0.09028	
20.68	15.150	0.09028		0.00
			0.09028	
22.39	15.150	0.09028		0.00
			0.09028	
24.10	15.150	0.09028		0.00
			0.09028	
25.81	15.150	0.09028		0.00

MODRET

SUMMARY OF RESULTS

PROJECT NAME : COCOA VILLAGE HOTEL - PERVIOUS CONCRETE

CUMULATIVE TIME (hrs)	WATER ELEVATION (feet)	INSTANTANEOUS INFILTRATION RATE (cfs)	AVERAGE INFILTRATION RATE (cfs)	CUMULATIVE OVERFLOW (ft³)
			0.09028	
27.52	15.150	0.09028		0.00
			0.09028	
29.23	15.150	0.09028		0.00
			0.09028	
30.94	15.150	0.09028		0.00
			0.09028	
32.65	15.150	0.09028		0.00
			0.09028	
34.37	15.150	0.09028		0.00
			0.09028	
36.08	15.150	0.09028		0.00
			0.09028	
37.79	15.150	0.09028		0.00
			0.09028	
39.50	15.150	0.09028		0.00
			0.09028	
41.21	15.150	0.09028		0.00
			0.09028	
42.92	15.150	0.09028		0.00
			0.09028	
44.63	15.150	0.09028		0.00
			0.09028	
46.34	15.150	0.09028		0.00
			0.09028	
48.05	15.150	0.09028		0.00
			0.09028	
49.76	15.150	0.09028		0.00

MODRET

SUMMARY OF RESULTS

PROJECT NAME : COCOA VILLAGE HOTEL - PERVIOUS CONCRETE

CUMULATIVE TIME (hrs)	WATER ELEVATION (feet)	INSTANTANEOUS INFILTRATION RATE (cfs)	AVERAGE INFILTRATION RATE (cfs)	CUMULATIVE OVERFLOW (ft³)
			0.09028	
51.47	15.150	0.09028		0.00
			0.09028	
53.18	15.150	0.09028		0.00
			0.09028	
54.89	15.150	0.09028		0.00
			0.09028	
56.60	15.150	0.09028		0.00
			0.09028	
58.31	15.150	0.09028		0.00
			0.09028	
60.03	15.150	0.09028		0.00
			0.09028	
61.74	15.150	0.09028		0.00
			0.09028	
63.45	15.150	0.09028		0.00
			0.09028	
65.16	15.150	0.09028		0.00
			0.09028	
66.87	15.150	0.09028		0.00
			0.09028	
68.58	15.150	0.09028		0.00
			0.09028	
70.29	15.150	0.09028		0.00
			0.09028	
72.00	15.150			0.00

Maximum Water Elevation: 15.948 feet @ 5.28 hours

Recovery @ 72.000 hours

* Time increment when there is no runoff

Maximum Infiltration Rate: 10.000 ft/day

Analysis Date: 3/24/2022

APPENDIX D

SOILS REPORT - KSM Engineering and Testing, Inc.



November 14, 2019

File No.19-23-5273

Page 1 of 2

Lodging Decisions, Inc.
9889 Bainbridge Road
Chagrin Falls, Ohio 44022

Attention: Mr. Jack D. Brown, Chairman

Subject: Soil Sampling and Permeability Testing
Proposed 9-Story Hotel Site
603 Brevard Avenue
Cocoa, Florida

Dear Mr. Brown:

As requested, and authorized by you, we have completed a shallow subsurface soil exploration program for the subject project. The purpose of performing this exploration was to provide the results of soil permeability tests at the site. This report documents our findings and presents our engineering conclusions.

FIELD EXPLORATION PROGRAM

The field exploration program consisted of performing two shallow test pits at the proposed stormwater infiltration areas on the project site. Test Pits TP-1 and TP-2 were excavated by hand to a depth of 1.5 feet below existing ground surface at locations selected by a client representative. One 3-inch diameter Shelby-tube sample was obtained in a vertical orientation from the bottom of each excavation. The Shelby-tube samples were capped and transported to our laboratory for soil permeability testing.

The approximate locations of the test pits are schematically illustrated on a site plan shown on Figure 1. These locations were determined in the field by estimating distances from existing site features and should be considered accurate only to the degree implied by the method of measurement used.

LABORATORY PROGRAM

A laboratory constant-head permeability test was conducted on the Shelby-tube samples obtained from the test pits on the project site. The results of the laboratory constant-head permeability tests are presented in the "Soil Permeability" section of this report.

SOIL PERMEABILITY

The results of the laboratory permeability tests are tabulated in the following table.

Sample Location/Orientation	Sample Depth (feet)	Measured Permeability (inches/hour)
TP-1/Vertical	1½ to 2	20
TP-2/Vertical	1½ to 2	20

It is noted that a suitable factor of safety should be used with these values. In addition, for the type of soil tested, a transformation ratio of 1 horizontal to 1 vertical is appropriate (i.e.; the estimated ratio of horizontal to vertical permeability).

CLOSURE

The conclusions submitted herein are based on the data obtained from the test pits presented on Figure 1. This report does not reflect any variations which may occur adjacent to or between the test pits. The nature and extent of the variations between the test pits may not become evident until during construction. If variations then appear evident, it will be necessary to re-evaluate the recommendations presented in this report after performing on-site observations during the construction period and noting the characteristics of the variations.

This report has been prepared for the exclusive use of Lodging Decisions, Inc. in accordance with generally accepted geotechnical engineering practices. In the event any changes occur in the design, nature, or location of the proposed facility, we should review the applicability of conclusions in this report.

We are pleased to be of assistance to you on this phase of the project. When we may be of further service to you or should you have any questions, please contact us.

Very truly yours,
ARDAMAN & ASSOCIATES, INC.
Certificate of Authorization No. 5950



Dustin M. Cone
Assistant Project Engineer



Jason P. Manning, P.E.
Branch Manager
Florida License No. 53265

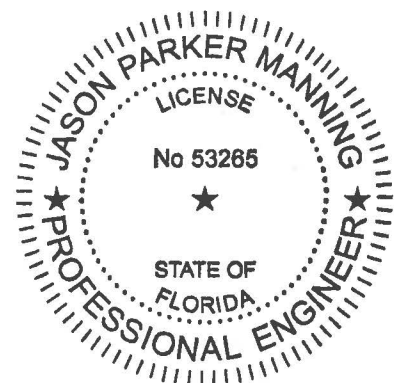
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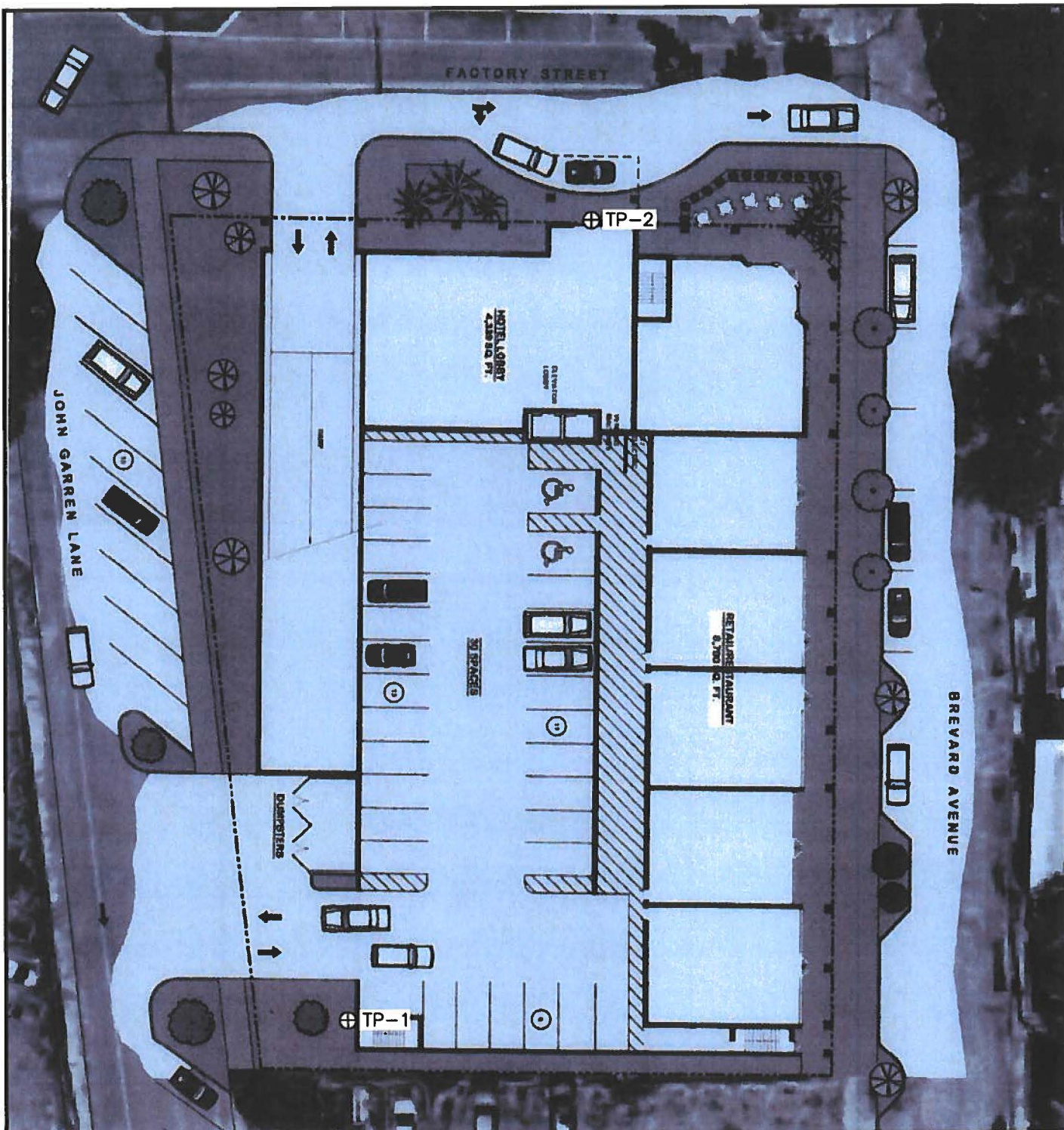
Jason P.
Manning,
P.E.

DMC/JPM/dk

Digitally signed by: Jason P. Manning, P.E.
DN: CN = Jason P. Manning, P.E. email = jmanning@ardaman.
com C = US OU = Ardaman and Associates
Date: 2019.11.15 07:10:31 -05'00'

Attachment: Figure 1 – Test Pit Location Plan





NOT TO SCALE

LEGEND

⊕ TP TEST PIT LOCATION

TEST PIT LOCATION PLAN



Ardaman & Associates, Inc.
Geotechnical, Environmental and
Materials Consultants

SUBSURFACE SOIL EXPLORATION
PROPOSED 9-STORY HOTEL BUILDING
COCOA, FLORIDA

DRAWN BY: TAT	CHECKED BY:	DATE: 11/13/19
FILE NO. 19-5273	APPROVED BY:	FIGURE: 1

**Subsurface Soil Exploration and
Geotechnical Engineering Evaluation
Proposed 9-Story Hotel Building
Cocoa, Florida**



Ardaman & Associates, Inc.

CORPORATE HEADQUARTERS

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Ardaman & Associates, Inc.

Geotechnical, Environmental and
Materials Consultants

September 25, 2019
File No.19-23-5273

Lodging Decisions, Inc.
9889 Bainbridge Road
Chagrin Falls, Ohio 44022

Attention: Mr. Jack D. Brown, Chairman

Subject: Subsurface Soil Exploration and
Geotechnical Engineering Evaluation
Proposed 9-Story Hotel Building
603 Brevard Avenue
Cocoa, Florida

Dear Mr. Brown:

As requested and authorized by you, we have completed a shallow subsurface soil exploration program for the subject project. The purposes of performing this exploration were to evaluate the general subsurface conditions within the building area and to provide recommendations for site preparation and foundation support. In addition, we have estimated the normal seasonal high groundwater level at the boring locations. This report documents our findings and presents our engineering recommendations.

SITE LOCATION AND SITE DESCRIPTION

The project site is located at the southwest corner of the intersection of Brevard Avenue and Factory Street in Cocoa, Brevard County, Florida (Section 33, Township 24 South, Range 36 East). The general project site location is shown superimposed on the Cocoa, Florida USGS quadrangle map presented on Figure 1.

The project site was developed with an asphalt paved parking lot at the time our field exploration was performed. In addition, a dirt parking area was located on the northeast corner of the site. Several existing buildings are located in close proximity to the project site.

PROPOSED CONSTRUCTION AND GRADING

It is our understanding that the proposed development includes a 9-story, mixed-use, mid-rise hotel with three levels of integral parking. The building will encompass nearly the entire site (approximate footprint plan dimensions of 120 feet by 225 feet). For the purposes of our analysis, we have assumed the maximum loading conditions for the building to be on the order of 1,200 kips for individual column foundations, and 150 pounds per square foot (psf) for slab-on-grade floors.

Grading plans are not complete at this time. However, we have assumed that no more than approximately 1 foot of fill is required to raise the building area to final elevation. If actual building loads, cut depth or fill height exceed our assumptions, then the recommendations in this report may not be valid.

FIELD EXPLORATION PROGRAM

SPT Borings

The field exploration program included performing five Standard Penetration Test (SPT) borings within the proposed footprint of the hotel building. The borings were advanced to depths of 70 and 100 feet below ground surface (bgs) using the methodology outlined in ASTM D-1586. A summary of this field procedure is included in Appendix I. Split-spoon soil samples recovered during performance of the borings were visually classified in the field and representative portions of the samples were transported to our laboratory in sealed sample jars.

An attempt was made to measure the groundwater level at each of the boring locations during drilling. Upon completion, the SPT borings were grouted with neat cement grout and the pavement surface was filled with hand compacted asphalt cold patch at the boring locations.

Test Locations

The approximate locations of the borings are schematically illustrated on a site plan shown on Figure 2. These locations were determined in the field by estimating distances from existing site features and should be considered accurate only to the degree implied by the method of measurement used.

LABORATORY PROGRAM

Representative soil samples obtained during our field sampling operation were packaged and transferred to our laboratory for further visual examination and classification. The soil samples were visually classified in general accordance with the Unified Soil Classification System (ASTM D-2488). The resulting soil descriptions are shown on the soil boring profiles presented in Appendix II.

In addition, we conducted five percent fines analyses (ASTM D1140) on selected soil samples obtained from the borings. The results of these tests are presented adjacent to the sample depth on the soil boring profiles in Appendix II.

GENERAL SUBSURFACE CONDITIONS

General Soil Profile

The results of the field exploration and laboratory programs are graphically summarized on the soil boring profiles presented in Appendix II. The stratification of the boring profiles represents our interpretation of the field boring logs and the results of laboratory examinations of the recovered samples. The stratification lines represent the approximate boundary between soil types. The actual transitions may be more gradual than implied.

Asphalt pavement and pavement base material were encountered at the surface of Boring TH-1. The results of the borings indicate the following general soil profile below the existing pavement in the proposed building area:

Depth Below Ground Surface (feet)	Description (Unified Soil Classification)
0 to 12.5	Medium dense to dense fine sand (SP), fine sand with silt (SP-SM), and silty fine sand (SM), some with varying amounts of shell
12.5 to 47.5	Medium dense to very dense fine sand (SP), fine sand with silt (SP-SM), and partially-cemented sand and shell (possible coquina-type soils), with varying amounts of shell
47.5 to 77.5	Loose to medium dense fine sand with silt (SP-SM) and silty fine sand (SM), with varying amounts of shell
77.5 to 87.5	Loose clayey fine sand (SC)
87.5 to 100	Medium dense to dense fine sand with silt (SP-SM), silty fine sand (SM), and medium dense partially-cemented sand and shell.

The above soil profile is outlined in general terms only. Please refer to the soil boring profiles in Appendix II for soil profile details.

Groundwater Level

An attempt was made to measure the groundwater level in the boreholes on the day drilled. As shown on the soil boring profiles in Appendix II, groundwater was not encountered in the borings to a depth of 10.5 feet below the existing ground surface on the date indicated. Fluctuations in groundwater levels should be anticipated throughout the year primarily due to seasonal variations in rainfall and other factors that may vary from the time the borings were conducted.

At the locations of Borings TH-1 through TH-5 where "GNM" is indicated at the bottom of the boring profiles in Appendix II, groundwater was not encountered within the top 10.5 feet (and could not be measured below a depth of 10.5 feet due to the use of bentonite drill fluid to stabilize the borehole). However, this does not necessarily mean that groundwater would not be encountered within the top 10.5 feet of the boring at some other time.

NORMAL SEASONAL HIGH GROUNDWATER LEVEL

The normal seasonal high groundwater level each year is the level in the August-September period at the end of the rainy season during a year of normal (average) rainfall. The water table elevations associated with a higher than normal rainfall and in the extreme case, flood, would be higher to much higher than the normal seasonal high groundwater level. The normal high water levels would more approximate the normal seasonal high groundwater levels.

The seasonal high groundwater level is affected by a number of factors. The drainage characteristics of the soils, the land surface elevation, relief points such as drainage ditches, lakes, rivers, swamp areas, etc., and distance to relief points are some of the more important factors influencing the seasonal high groundwater level.

In addition to evaluating the conditions above, we have reviewed annual precipitation data available from the Melbourne Office of the National Weather Service. Based on this data, the rainfall to date in Brevard County upon completion of the field exploration program is approximately 36.5 inches, which is approximately 5.6 inches above normal for this time of year.

Based on our interpretation of the site conditions using our boring logs, we estimate the normal seasonal high groundwater level at the boring locations to be approximately at a depth greater than 10 feet below existing ground surface.

The groundwater level may temporarily "perch" at a higher level during or after heavy or prolonged rainfall due to the shallow partially-cemented sand and shell (possible coquina) soils present on the site.

ENGINEERING EVALUATION AND RECOMMENDATIONS

General

The results of our exploration indicate that, with proper site preparation as recommended in this report, the existing soils are suitable for supporting the proposed 9-story hotel building on conventional shallow spread foundations, provided that the preliminary calculated settlement, as presented in a subsequent report section, is deemed acceptable by the owner and design team. If so, spread footings should provide an adequate support system for the structure. If the calculated settlement is deemed unacceptable, then an alternative deep foundation system (i.e. piles) may be required.

The results of our exploration indicate that partially-cemented sand and shell soils and soils with a high shell content, designated by "and shell" in Appendix II, were encountered within Borings TH-1 through TH-5 at depths ranging from existing ground surface to 100 feet below ground surface. These soils are possibly coquina-type soils. Excavation within these soils may be difficult and the contractor should be prepared for difficulty associated with excavating within these soils.

A preconstruction survey of existing structures located adjacent to and in close proximity to the project site should be performed prior to the initiation of any construction at the site. This will be important to document the existing condition of the nearby structures before construction of the new building. Additionally, a post construction survey of the nearby existing buildings should be performed. Ardaman & Associates would be pleased to provide these services.

The following are our recommendations for overall site preparation and foundation support which we feel are best suited for the proposed building and existing soil conditions. The recommendations are made as a guide for the design engineer and/or architect, parts of which should be incorporated into the project's specifications.

Stripping and Grubbing

The "footprint" of the proposed building area, plus a minimum margin of 5 feet, should be stripped of all surface vegetation, stumps, debris, asphalt, concrete, organic topsoil or other deleterious materials, as encountered. Buried utilities should be removed or plugged to eliminate conduits into which surrounding soils could erode. The actual depth(s) of stripping must be determined by visual observation and judgment during the earthwork operation. Buried utilities that must remain

in place during the construction should be well marked and protected from damage as a result of the construction.

All existing foundations, slabs and any other underground structures should be removed from the proposed construction areas. If pipes or any collapsible or leak prone utilities are not removed or completely filled (with grout or concrete), they might serve as conduits for subsurface erosion resulting in excessive settlements. Over-excavated areas resulting from the removal of underground structures and unsuitable materials should be backfilled in accordance with the fill soils section of this report.

It has been our experience that soils surrounding existing and former buildings and pavement sometimes contain pockets of construction debris or other deleterious materials requiring removal and replacement with compacted clean fine sands. Therefore, we strongly recommend that the stripped surface be inspected by Ardaman & Associates, Inc.

Proof-rolling

We recommend proof-rolling the cleared surface to locate any unforeseen soft areas or unsuitable surface or near-surface soils, to increase the density of the upper soils, and to prepare the existing surface for the addition of the fill soils (as required). Proof-rolling of the building area should consist of at least 10 passes of a compactor capable of achieving the density requirements described in the next paragraph. Each pass should overlap the preceding pass by 30 percent to achieve complete coverage. If deemed necessary, in areas that continue to "yield", remove all deleterious material and replace with clean, compacted sand backfill. The proof-rolling should occur after cutting and before filling.

A density equivalent to or greater than 95 percent of the modified Proctor (ASTM D-1557) maximum dry density value for a depth of 2 feet in the building area must be achieved beneath the stripped and grubbed ground surface. Additional passes and/or overexcavation and recompaction may be required if these minimum density requirements are not achieved. The soil moisture should be adjusted as necessary during compaction.

Care should be exercised to avoid damaging any neighboring structures while the compaction operation is underway. Prior to commencing compaction, occupants of adjacent structures should be notified and the existing condition (i.e. cracks) of the structures documented with photographs and survey (if deemed necessary). If requested, Ardaman & Associates could assist with pre- and post-construction surveys of existing structures. Compaction should cease if deemed detrimental to adjacent structures, and Ardaman & Associates should be notified immediately. Heavy vibratory compaction should not be used within 200 feet of existing structures. Ardaman & Associates, Inc. would be pleased to provide vibration monitoring during compaction activities at the project site.

Suitable Fill Material and the Compaction of Fill Soils

All fill soil should be free of organic materials, such as roots and vegetation. We recommend using fill with less than 12 percent by dry weight of material passing the U.S. Standard No. 200 sieve size. The fine sand and fine sand with silt (Strata Nos. 1 and 2, as shown on the soil boring profiles presented in Appendix II) are suitable for use as fill soil and, with proper moisture control, should

densify using conventional compaction methods. Soils with more than 12 percent passing the No. 200 sieve (Strata Nos. 3 and 4) can be used in some applications, but will be more difficult to compact due to their inherent nature to retain soil moisture.

All structural fill should be placed in level lifts not to exceed 12 inches in uncompacted thickness. Each lift should be compacted to at least 95 percent of the modified Proctor (ASTM D-1557) maximum dry density value. The filling and compaction operations should continue in lifts until the desired elevation(s) is achieved. If hand-held compaction equipment is used, the lift thickness should be reduced to no more than 6 inches.

We note that partially-cemented sand and shell soils and soils with a high shell content, designated by "and shell" in Appendix II, were encountered in Borings TH-1 through TH-5 at depths ranging from existing ground surface to 100 feet below ground surface. These soils are possibly coquina-type soils. Partially-cemented soils can be problematic for several reasons. First, partially-cemented soils can be difficult to excavate, often requiring special equipment; especially in confined excavations such as utility trenches, footings, etc. Excavated partially-cemented soils are often boulder-size chunks of cemented soils which are not easily broken down for re-use as structural fill. In addition, when pulverized into fragments that can be compacted to an adequately dense matrix, the in-place soil often fails the relative compaction test because the laboratory test continues to pulverize the soil into smaller particles resulting in a denser laboratory matrix than that which occurs in the field. Alternative acceptance criteria may need to be used for partially-cemented soils used as fill. This criteria would need to be developed on a site specific basis after observing the contractor's earthwork methodology and the nature and condition of the compacted partially-cemented soils.

Foundation Support by Spread Footings and Foundation Compaction Criteria

A preliminary evaluation of foundation settlement for the 9-story hotel building was performed using the assumed, maximum individual column foundation load of 1,200 kips and a maximum allowable soil bearing pressure of 4,000 pounds per square foot (psf) for the foundations. The analyses were performed using the computer program SETTLE3D. A maximum fill thickness of 1 foot and depth to the bottom of the foundations of 2 feet were utilized in the evaluation. For the sandy soils encountered, published correlations relying on SPT N-values were used to estimate the elastic moduli. The Westergard stress distribution method was used for calculating the stress changes caused by the estimated foundation load in the underlying foundation soils.

Settlement calculated under the assumed loading conditions consisted of up to roughly 1½ inches of total settlement calculated for an individual column foundation. It is estimated that the majority (approximately 70 percent) of the calculated settlement will occur during construction as the loads are applied.

We note that the settlement evaluation presented above was performed for a single isolated column foundation using the assumed maximum load. Once the building foundation arrangement plan and actual design foundation loads are available, we should be provided with this information so that our settlement calculations can be updated including for the effect of adjacent foundations on settlement can be evaluated and differential settlement can be evaluated.

The following recommendations are contingent upon the preliminary magnitude of calculated settlement being acceptable to the design team. If not acceptable, then pile foundations may be required.

Excavate the foundations to the proposed bottom of footing elevations and, thereafter, verify the in-place compaction for a depth of 2 feet below the footing bottoms. If necessary, compact the soils at the bottom of the excavations to at least 95 percent of the modified Proctor maximum dry density (ASTM D-1557) for a depth of 2 feet below the footing bottoms. Based on the existing soil conditions and, assuming the above outlined proof-rolling and compaction criteria are implemented, an allowable soil bearing pressure of 4,000 pounds per square foot (psf) may be used in the foundation design.

All bearing wall foundations should be a minimum of 36 inches wide and column foundations 42 inches wide. A minimum soil cover of 24 inches should be maintained from the bottom of the foundations to the adjacent finished grades.

We note that the minimum foundation dimensions may be reduced to 24 inches wide with 18 inches of soil cover, however an allowable bearing pressure of 2,000 pounds per square foot (psf) will apply to these minimum dimensions.

Floor Slab Moisture Reducer and Slab Compaction Requirements

Compaction beneath all floor slabs should be verified for a depth of 12 inches and meet the 95 percent criteria (modified Proctor, ASTM D-1557).

Precautions should be taken during the slab construction to reduce moisture entry from the underlying subgrade soils. Moisture entry can be reduced by installing a membrane between the subgrade soils and floor slab. Care should be exercised when placing the reinforcing steel (or mesh) and slab concrete such that the membrane is not punctured. We note that the membrane alone does not prevent moisture from occurring beneath or on top of the slab.

If interior columns are isolated from the floor slab, an expansion joint should be provided around the columns and sealed with a water-proof sealant.

Dewatering

If the control of groundwater is required to achieve the necessary stripping, excavation, proof-rolling, filling, compaction, and any other earthwork, sitework, and/or foundation subgrade preparation operations required for the project, the actual method(s) of dewatering should be determined by the contractor. Dewatering should be performed to lower the groundwater level to depths that are adequately below excavations and compaction surfaces. Adequate groundwater level depths below excavations and compaction surfaces vary depending on soil type and construction method, and are usually 2 feet or more. Dewatering solely with sump pumps may not achieve the desired results.

QUALITY ASSURANCE

We recommend establishing a comprehensive quality assurance program to verify that all site preparation and foundation construction is conducted in accordance with the appropriate plans and specifications. Materials testing and inspection services should be provided by Ardaman & Associates.

As a minimum, an on-site engineering technician should monitor all stripping to verify that all deleterious materials have been removed and should observe the proof-rolling operation to verify that the appropriate number of passes are applied to the subgrade. In-situ density tests should be conducted during filling activities and below all footings and floor slabs to verify that the required densities have been achieved. In-situ density values should be compared to laboratory Proctor moisture-density results for each of the different natural and fill soils encountered.

Finally, we recommend inspecting and testing the construction materials for the foundations and other structural components.

IN-PLACE DENSITY TESTING FREQUENCY

In Central Florida, earthwork testing is typically performed on an on-call basis when the contractor has completed a portion of the work. The test result from a specific location is only representative of a larger area if the contractor has used consistent means and methods and the soils are practically uniform throughout. The frequency of testing can be increased and full-time construction inspection can be provided to account for variations. We recommend that the following minimum testing frequencies be utilized.

In proposed structural areas, we recommend a minimum frequency of in-place density testing of one test for each 2,500 square feet of structural area. In-place density testing should be performed at this minimum frequency for a depth of 2 feet below natural ground and for every 1-foot lift of fill placed in the structural area. In addition, density tests should be performed in each column footing for a depth of 2 feet below the bearing surface. For continuous or wall footings, density tests should be performed at a minimum frequency of one test for every 50 linear feet of footing, and for a depth of 2 feet below the bearing surface.

Representative samples of the various natural ground and fill soils should be obtained and transported to our laboratory for Proctor compaction tests. These tests will determine the maximum dry density and optimum moisture content for the materials tested and will be used in conjunction with the results of the in-place density tests to determine the degree of compaction achieved.

CLOSURE

The analyses and recommendations submitted herein are based on the data obtained from the soil borings presented on Figure 2 and in Appendix II, as well as the assumed loading conditions. This report does not reflect any variations which may occur adjacent to or between the borings. The nature and extent of the variations between the borings may not become evident until during construction. If variations then appear evident, it will be necessary to re-evaluate the recommendations presented in this report after performing on-site observations during the

construction period and noting the characteristics of the variations. This study does not include an evaluation of the environmental (ecological or hazardous/toxic material related) condition of the site and subsurface.

This report has been prepared for the exclusive use of Lodging Decisions, Inc. in accordance with generally accepted geotechnical engineering practices. In the event any changes occur in the design, nature, or location of the proposed facility, we should review the applicability of conclusions and recommendations in this report. We recommend a general review of final design and specifications by our office to verify that earthwork and foundation recommendations are properly interpreted and implemented in the design specifications. Ardaman & Associates should attend the pre-bid and preconstruction meetings to verify that the bidders/contractor understand the recommendations contained in this report.

We are pleased to be of assistance to you on this phase of the project. When we may be of further service to you or should you have any questions, please contact us.

Very truly yours,

ARDAMAN & ASSOCIATES, INC.

Certificate of Authorization No. 5950



Dustin M. Cone
Assistant Project Engineer



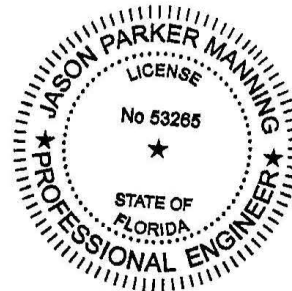
Jason P. Manning, P.E.
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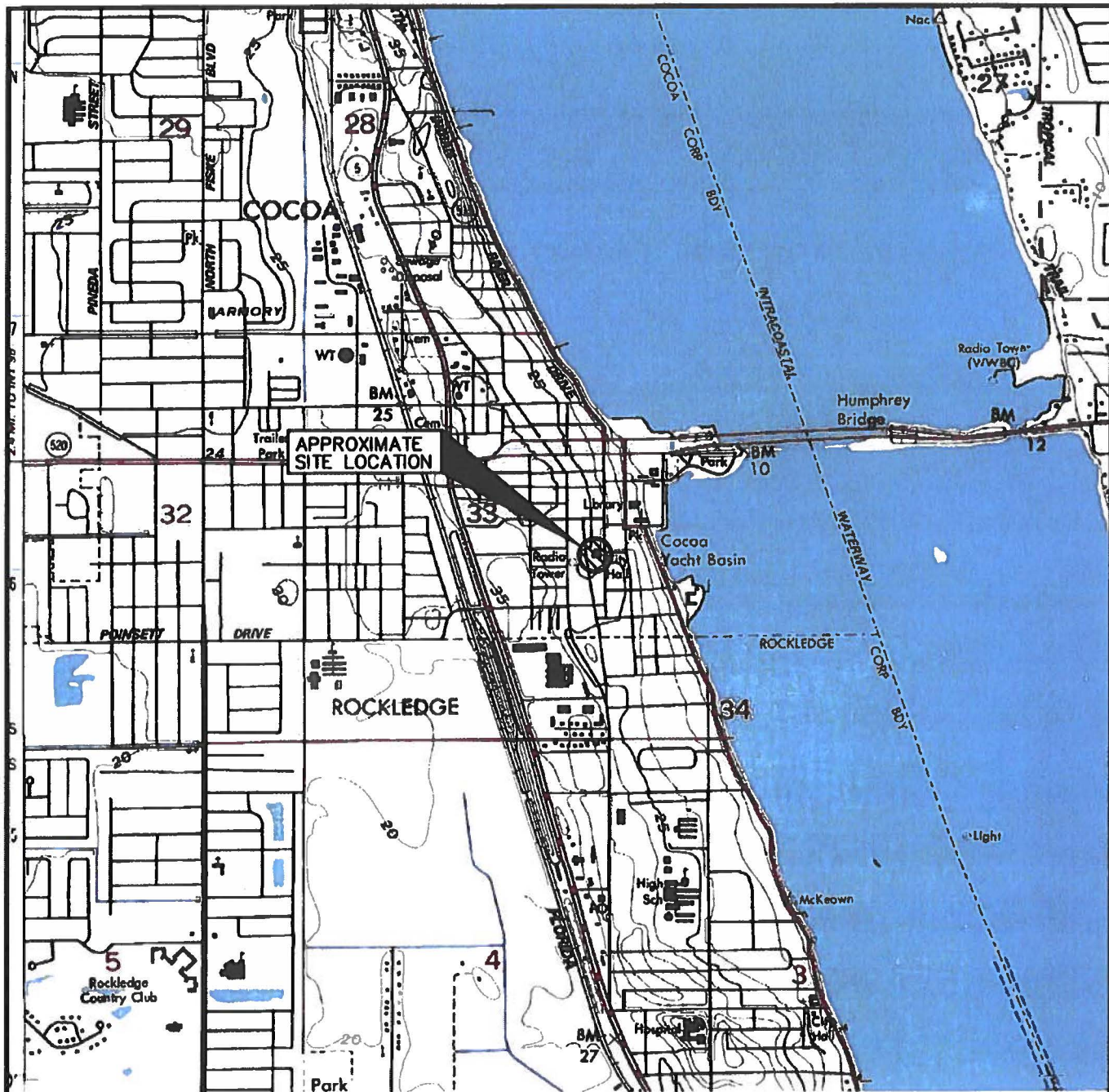
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Date: 2019.09.25 08:20:
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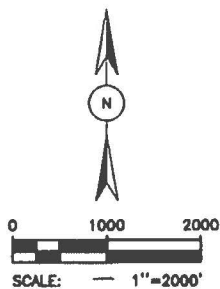


DMC/JPM/dk



SECTION 33
TOWNSHIP 24 SOUTH
RANGE 36 EAST

OBTAINED FROM U.S.G.S. QUAD MAP: COCOA, FLORIDA



QUADRANGLE LOCATION

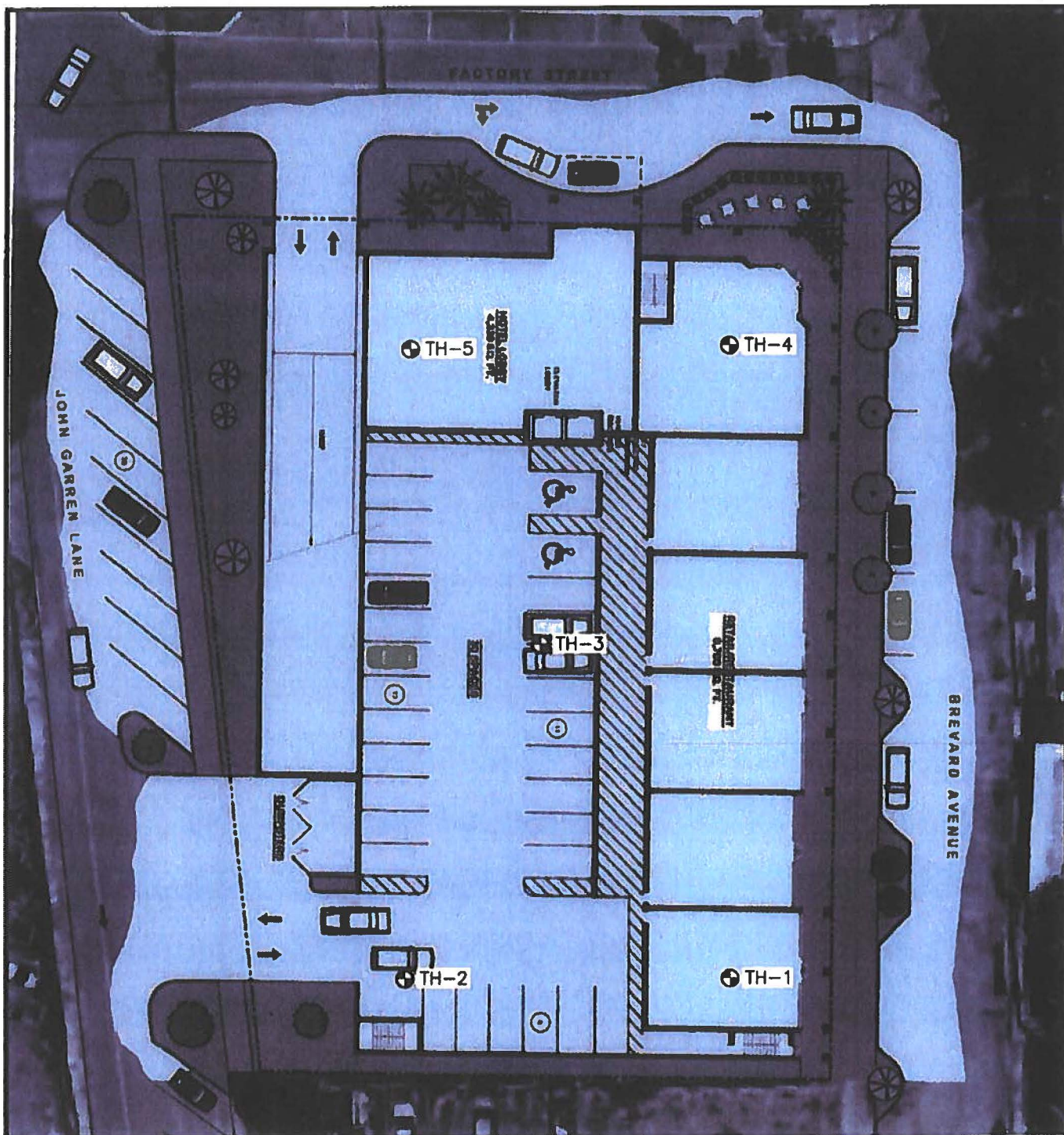
SITE LOCATION MAP



Ardaman & Associates, Inc.
Geotechnical, Environmental and
Materials Consultants

**SUBSURFACE SOIL EXPLORATION
PROPOSED 9-STORY HOTEL BUILDING
COCOA, FLORIDA**

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LEGEND

- ⊕ TH STANDARD PENETRATION TEST (SPT)
BORING LOCATION



NOT TO SCALE

BORING LOCATION PLAN

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Geotechnical, Environmental and
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SUBSURFACE SOIL EXPLORATION
PROPOSED 9-STORY HOTEL BUILDING
COCOA, FLORIDA

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FILE NO.
19-5273

APPROVED BY:

FIGURE:

2

APPENDIX I

Standard Penetration Test Boring Procedures

STANDARD PENETRATION TEST

The standard penetration test is a widely accepted test method of *in situ* testing of foundation soils (ASTM D 1586). A 2-foot long, 2-inch O.D. split-barrel sampler attached to the end of a string of drilling rods is driven 18 inches into the ground by successive blows of a 140-pound hammer freely dropping 30 inches. The number of blows needed for each 6 inches of penetration is recorded. The sum of the blows required for penetration of the second and third 6-inch increments of penetration constitutes the test result or N-value. After the test, the sampler is extracted from the ground and opened to allow visual examination and classification of the retained soil sample. The N-value has been empirically correlated with various soil properties allowing a conservative estimate of the behavior of soils under load.

The tests are usually performed at 5-foot intervals. However, more frequent or continuous testing is done by our firm through depths where a more accurate definition of the soils is required. The test holes are advanced to the test elevations by rotary drilling with a cutting bit, using circulating fluid to remove the cuttings and hold the fine grains in suspension. The circulating fluid, which is a bentonitic drilling mud, is also used to keep the hole open below the water table by maintaining an excess hydrostatic pressure inside the hole. In some soil deposits, particularly highly pervious ones, NX-size flush-coupled casing must be driven to just above the testing depth to keep the hole open and/or prevent the loss of circulating fluid.

Representative split-spoon samples from the soils at every 5 feet of drilled depth and from every different stratum are brought to our laboratory in air-tight jars for further evaluation and testing, if necessary. Samples not used in testing are stored for 30 days prior to being discarded. After completion of a test boring, the hole is kept open until a steady state groundwater level is recorded. The hole is then sealed, if necessary, and backfilled.

APPENDIX II

Soil Boring Profiles

LEGEND

SOIL DESCRIPTIONS

- | | |
|---|-------------------------------------|
|  | ① FINE SAND (SP) |
|  | ② FINE SAND WITH SILT (SP-SM) |
|  | ③ SILTY FINE SAND (SM) |
|  | ④ CLAYEY FINE SAND (SC) |
|  | ⑤ PARTIALLY CEMENTED SAND AND SHELL |

COLORS

- | | |
|---|-------------------------------------|
| Ⓐ | REDDISH BROWN TO DARK REDDISH BROWN |
| Ⓑ | LIGHT BROWN TO BROWN |
| Ⓒ | LIGHT GRAY TO GRAY |
| Ⓓ | DARK GRAY TO DARK BROWN |

TH STANDARD PENETRATION TEST (SPT) BORING

N STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT

50/2 50 BLOWS FOR 2-INCHES PENETRATION INTO SOIL

-200 PERCENT PASSING NO. 200 SIEVE SIZE (PERCENT FINES)(ASTM D-1140)

GNM GROUNDWATER NOT MEASURED ABOVE 10.5 FEET ON DATE DRILLED

SP,SP-SM
SM,SC,CH UNIFIED SOIL CLASSIFICATION SYSTEM

ENGINEERING CLASSIFICATION

I COHESIONLESS SOILS

DESCRIPTION	BLOW COUNT "N"
VERY LOOSE	0 TO 4
LOOSE	4 TO 10
MEDIUM DENSE	10 TO 30
DENSE	30 TO 50
VERY DENSE	>50

II COHESIVE SOILS

DESCRIPTION	UNCONFINED COMPRESSIVE STRENGTH, QU, TSF	BLOW COUNT "N"
VERY SOFT	<1/4	0 TO 2
SOFT	1/4 TO 1/2	2 TO 4
MEDIUM STIFF	1/2 TO 1	4 TO 8
STIFF	1 TO 2	8 TO 15
VERY STIFF	2 TO 4	15 TO 30
HARD	>4	>30

WHILE THE BORINGS ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THEIR RESPECTIVE LOCATIONS AND FOR THEIR RESPECTIVE VERTICAL REACHES, LOCAL VARIATIONS CHARACTERISTIC OF THE SUBSURFACE MATERIALS OF THE REGION ARE ANTICIPATED AND MAY BE ENCOUNTERED. THE BORING LOGS AND RELATED INFORMATION ARE BASED ON THE DRILLER'S LOGS AND VISUAL EXAMINATION OF SELECTED SAMPLES IN THE LABORATORY. THE DELINEATION BETWEEN SOIL TYPES SHOWN ON THE LOGS IS APPROXIMATE AND THE DESCRIPTION REPRESENTS OUR INTERPRETATION OF SUBSURFACE CONDITIONS AT THE DESIGNATED BORING LOCATIONS ON THE PARTICULAR DATE DRILLED.

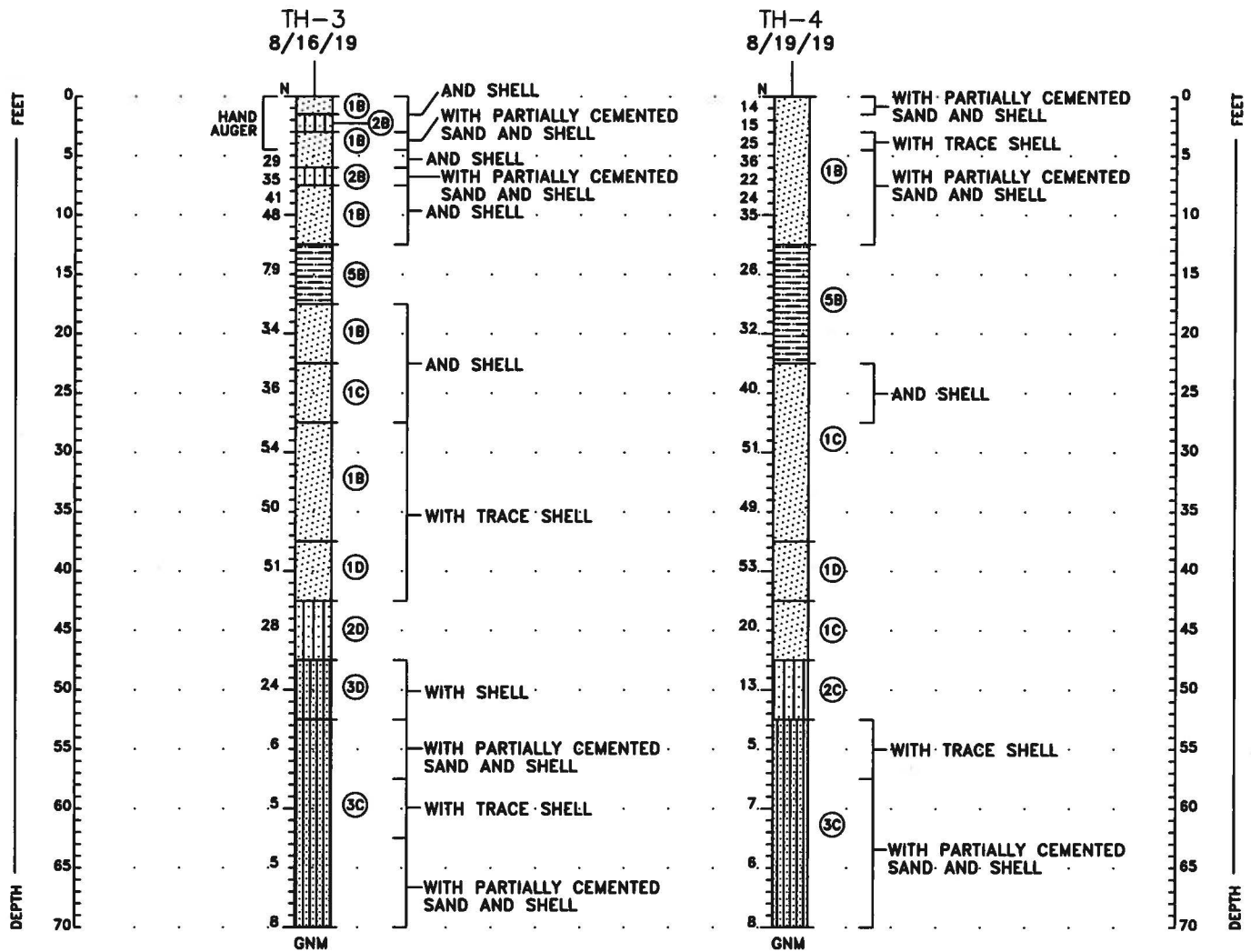
GROUNDWATER ELEVATIONS SHOWN ON THE BORING LOGS REPRESENT GROUNDWATER SURFACES ENCOUNTERED ON THE DATES SHOWN. FLUCTUATIONS IN WATER TABLE LEVELS SHOULD BE ANTICIPATED THROUGHOUT THE YEAR. ABSENCE OF WATER SURFACE DATA ON CERTAIN BORINGS IMPLIES THAT NO GROUNDWATER DATA IS AVAILABLE, BUT DOES NOT NECESSARILY MEAN THAT GROUNDWATER WILL NOT BE ENCOUNTERED AT THESE LOCATIONS OR WITHIN THE VERTICAL REACHES OF THESE BORINGS IN THE FUTURE.

SOIL PROFILES LEGEND



SUBSURFACE SOIL EXPLORATION
PROPOSED 9-STORY HOTEL BUILDING
COCOA, FLORIDA

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SOIL BORING PROFILES



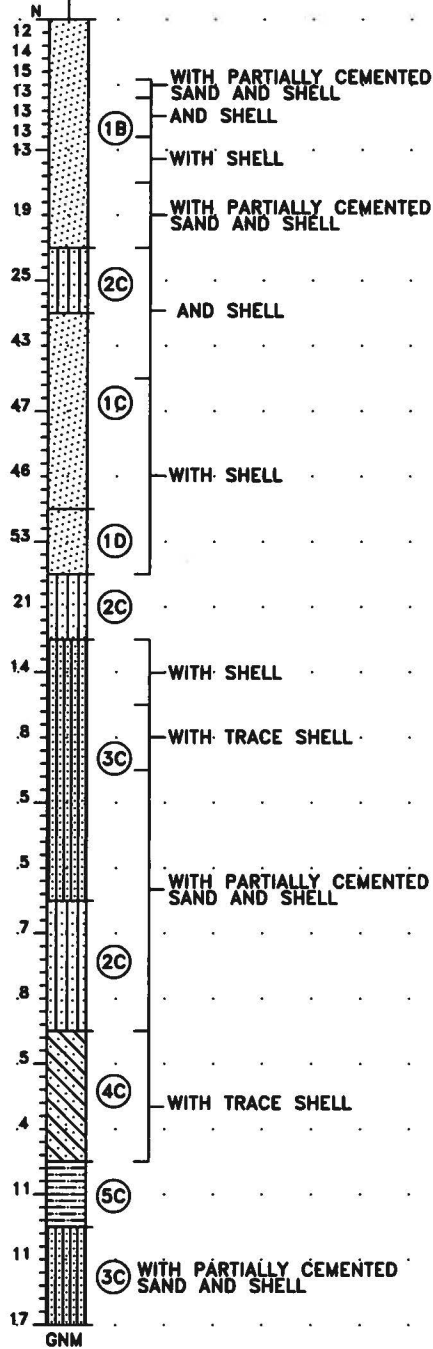
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SUBSURFACE SOIL EXPLORATION
PROPOSED 9-STORY HOTEL BUILDING
COCOA, FLORIDA

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FILE NO. 19-5273	APPROVED BY:	FIGURE:

TH-5
8/12/19

DEPTH
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90
95
100



DEPTH
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90
95
100

SOIL BORING PROFILES



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SUBSURFACE SOIL EXPLORATION
PROPOSED 9-STORY HOTEL BUILDING
COCOA, FLORIDA

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APPENDIX E

PHOSPHORUS/NITROGEN CALCS

Complete Report (not including cost) Ver 4.3.3

Project: Cocoa Village Hotel

Date: 3/10/2022 7:47:49 AM

Site and Catchment Information

Analysis: Net Improvement

Catchment Name	Exfiltration-Pervious Concrete-Retention
Rainfall Zone	Florida Zone 2
Annual Mean Rainfall	52.00

Pre-Condition Landuse Information

Landuse	Low-Intensity Commercial: TN=1.13 TP=0.188
Area (acres)	1.25
Rational Coefficient (0-1)	0.57
Non DCIA Curve Number	39.00
DCIA Percent (0-100)	70.40
Nitrogen EMC (mg/l)	1.130
Phosphorus EMC (mg/l)	0.188
Runoff Volume (ac-ft/yr)	3.098
Groundwater N (kg/yr)	0.000
Groundwater P (kg/yr)	0.000
Nitrogen Loading (kg/yr)	4.317
Phosphorus Loading (kg/yr)	0.718

Post-Condition Landuse Information

Landuse	High-Intensity Commercial: TN=2.40 TP=0.345
Area (acres)	1.25
Rational Coefficient (0-1)	0.71
Non DCIA Curve Number	39.00
DCIA Percent (0-100)	87.20
Wet Pond Area (ac)	0.00
Nitrogen EMC (mg/l)	2.400
Phosphorus EMC (mg/l)	0.345
Runoff Volume (ac-ft/yr)	3.827

Groundwater N (kg/yr)	0.000
Groundwater P (kg/yr)	0.000
Nitrogen Loading (kg/yr)	11.326
Phosphorus Loading (kg/yr)	1.628

Catchment Number: 1 Name: Exfiltration-Pervious Concrete-Retention

Project: Cocoa Village Hotel

Date: 3/10/2022

Multiple BMP in Series Design Parameters

BMP in Series Number: 1

BMP Type: Exfiltration

Pipe Span (in)	45.0
Pipe Rise (in)	45.0
Pipe Length (ft)	90.0
Trench Width (ft)	43.0
Trench Depth (ft)	5.5
Trench Length (ft)	96.0
Aggregate Void %	0.00
Storage Volume (Ac-ft)	0.02
Retention Depth (in over CA)	0.219

BMP in Series Number: 2

BMP Type: Pervious Pavement

Surface Area of Pavement (acres)	0.080
Treatment Volume (in over watershed)	0.499

Pavement Type	Thickness (in)	Storage (in)	Storage (ac-ft)
Concrete Permeable Pavement	6.00	1.500	0.010
#57 rock(non-calcareous)	12.00	2.520	0.017
Recycled (crushed) concrete	18.00	3.780	0.025
Total		7.800	0.052

BMP in Series Number: 3

BMP Type: None

BMP in Series Number: 4

BMP Type: None

Watershed Characteristics

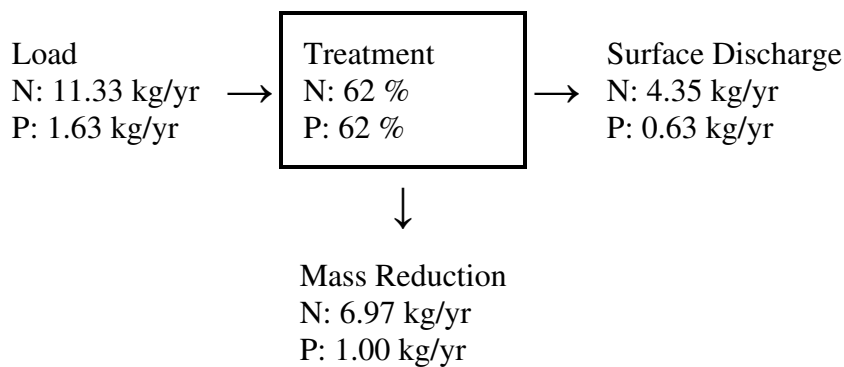
Catchment Area (acres)	1.25
------------------------	------

Contributing Area (acres) 1.250
Non-DCIA Curve Number 39.00
DCIA Percent 87.20
Rainfall Zone Florida Zone 2
Rainfall (in) 52.00

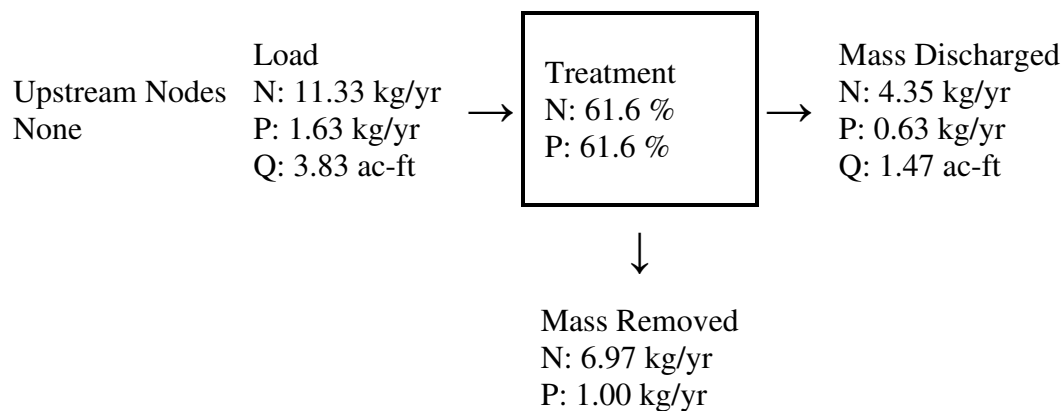
Surface Water Discharge

Required TN Treatment Efficiency (%) 62
Provided TN Treatment Efficiency (%) 62
Required TP Treatment Efficiency (%) 56
Provided TP Treatment Efficiency (%) 62

Load for Multiple BMP in Series



Load Diagram for Multiple BMP (As Used In Routing)



Summary Treatment Report Version: 4.3.3

Project: Cocoa Village Hotel

Analysis Type: Net Improvement

Date:3/10/2022

BMP Types:

Catchment 1 - (Exfiltration-Pervious
Concrete-Retention) Multiple BMP
Based on % removal values to the nearest
percent

Routing Summary

Catchment 1
Routed to Outlet

Total nitrogen target removal met? **Yes**

Total phosphorus target removal met? **Yes**

Summary Report

Nitrogen

Surface Water Discharge

Total N pre load	4.32 kg/yr	
Total N post load	11.33 kg/yr	
Target N load reduction	62 %	
Target N discharge load	4.32 kg/yr	
Percent N load reduction	62 %	
Provided N discharge load	4.35 kg/yr	9.6 lb/yr
Provided N load removed	6.97 kg/yr	15.37 lb/yr

Phosphorus

Surface Water Discharge

Total P pre load	.718 kg/yr	
Total P post load	1.628 kg/yr	
Target P load reduction	56 %	
Target P discharge load	.718 kg/yr	
Percent P load reduction	62 %	
Provided P discharge load	.626 kg/yr	1.38 lb/yr
Provided P load removed	1.002 kg/yr	2.21 lb/yr

APPENDIX F

ADS Exfiltration Trench System

PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER	
ADS SALES REP	
PROJECT NO.	



COCOA VILLAGE

COCOA, FL

MC-3500 STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH MC-3500.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 450 LBS/IN/IN. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
 - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
 - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
 - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-3500 CHAMBER SYSTEM

- STORMTECH MC-3500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
 - STONESHOOTER LOCATED OFF THE CHAMBER BED.
 - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
 - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
- INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
- STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

- STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
- THE USE OF EQUIPMENT OVER MC-3500 CHAMBERS IS LIMITED:
 - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
 - NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
 - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
- FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

PROPOSED LAYOUT		PROPOSED ELEVATIONS		*INVERT ABOVE BASE OF CHAMBER				
				PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW
69	STORMTECH MC-3500 CHAMBERS	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	30.50					
12	STORMTECH MC-3500 END CAPS	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	24.50	PREFABRICATED END CAP	A	24" BOTTOM CORED END CAP, PART#: MC3500IEPP24BC / TYP OF ALL 24" BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS	2.06"	
12	STONE ABOVE (in)	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	24.00					
9	STONE BELOW (in)	MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	24.00	PREFABRICATED END CAP	B	18" BOTTOM CORED END CAP, PART#: MC3500IEPP18BC / TYP OF ALL 18" BOTTOM CONNECTIONS	1.77"	
40	STONE VOID	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	24.00					
13433	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED) (COVER STONE INCLUDED) (BASE STONE INCLUDED)	TOP OF STONE:	23.50	FLAMP	C	INSTALL FLAMP ON 24" ACCESS PIPE / PART#: MC350024RAMP		
		TOP OF MC-3500 CHAMBER:	22.50	MANIFOLD	D	18" x 18" BOTTOM MANIFOLD, ADS N-12	1.77"	
		24" ISOLATOR ROW PLUS INVERT:	18.92	MANIFOLD	E	18" x 18" BOTTOM MANIFOLD, ADS N-12	1.77"	
		18" x 18" BOTTOM MANIFOLD INVERT:	18.90	CONCRETE STRUCTURE	F	OCS (DESIGN BY ENGINEER / PROVIDED BY OTHERS)		8.0 CFS OUT
3988	SYSTEM AREA (SF)	18" x 18" BOTTOM MANIFOLD INVERT:	18.90	CONCRETE STRUCTURE	G	(DESIGN BY ENGINEER / PROVIDED BY OTHERS)		20.9 CFS IN
286.0	SYSTEM PERIMETER (ft)	18" BOTTOM CONNECTION INVERT:	18.90					
		BOTTOM OF MC-3500 CHAMBER:	18.75	W/WEIR				
		BOTTOM OF STONE:	18.00					



 ISOLATOR ROW PLUS
(SEE DETAIL)

 PLACE MINIMUM 17.50' OF ADSPLUS175 WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS

 BED LIMITS

NOTES

- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE #6.32 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.
- NOT FOR CONSTRUCTION:** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

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Chamber System

COCOA VILLAGE
COCOA, FL

DATE: PROJECT #:

DRAWN: TC
CHECKED: N/A

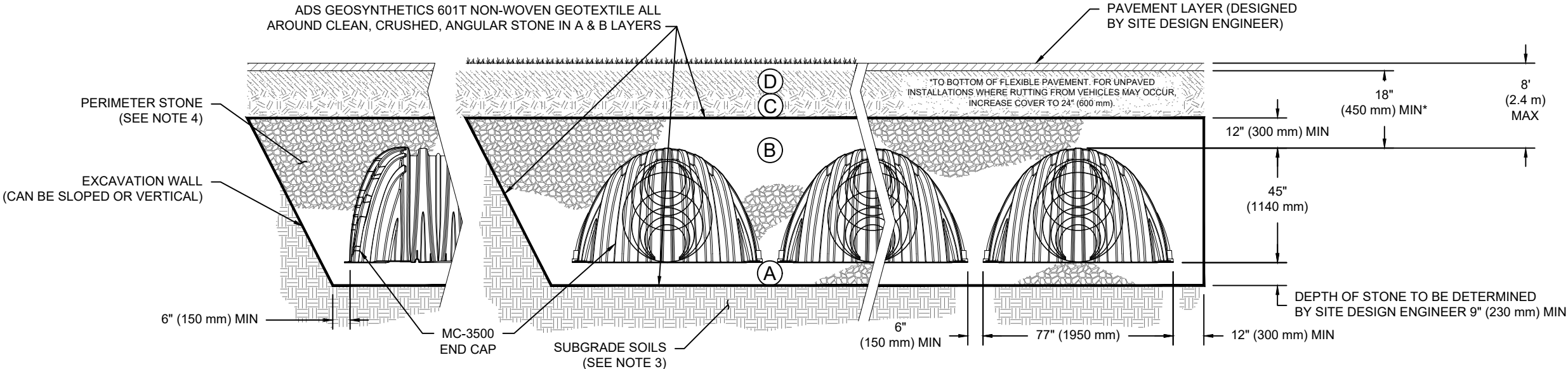
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SHEET
2 OF 5

ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145 ¹ A-1, A-2-4, A-3 OR AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 ¹ 3, 4	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 ¹ 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3}

- PLEASE NOTE:
- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
 - STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
 - WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
 - ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOTES:

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
- MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 450 LBS/IN/IN. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

COCOA VILLAGE

COCOA, FL

DRAWN: TC

CHECKED: N/A

DATE:

PROJECT #:

DESCRIPTION

CHK

DRW

DATE

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SHEET

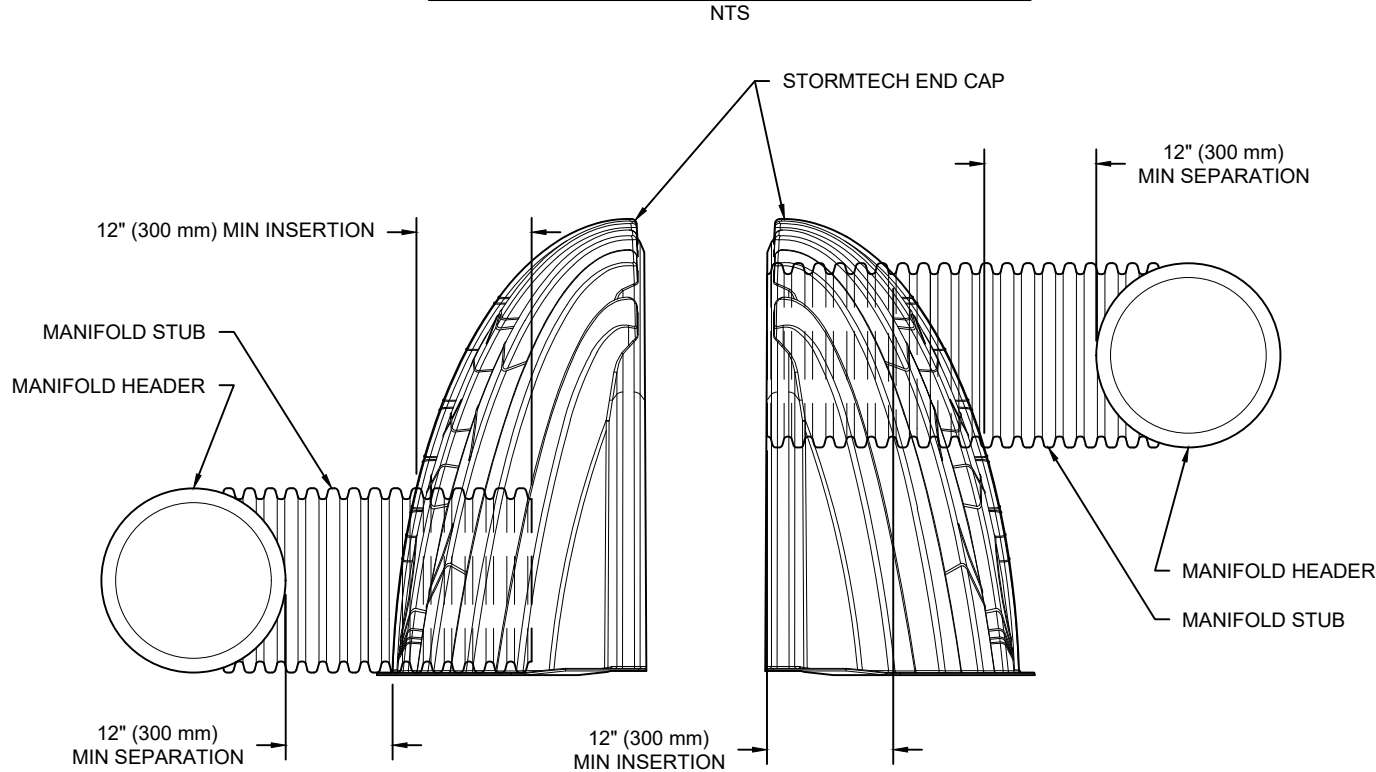
3 OF 5

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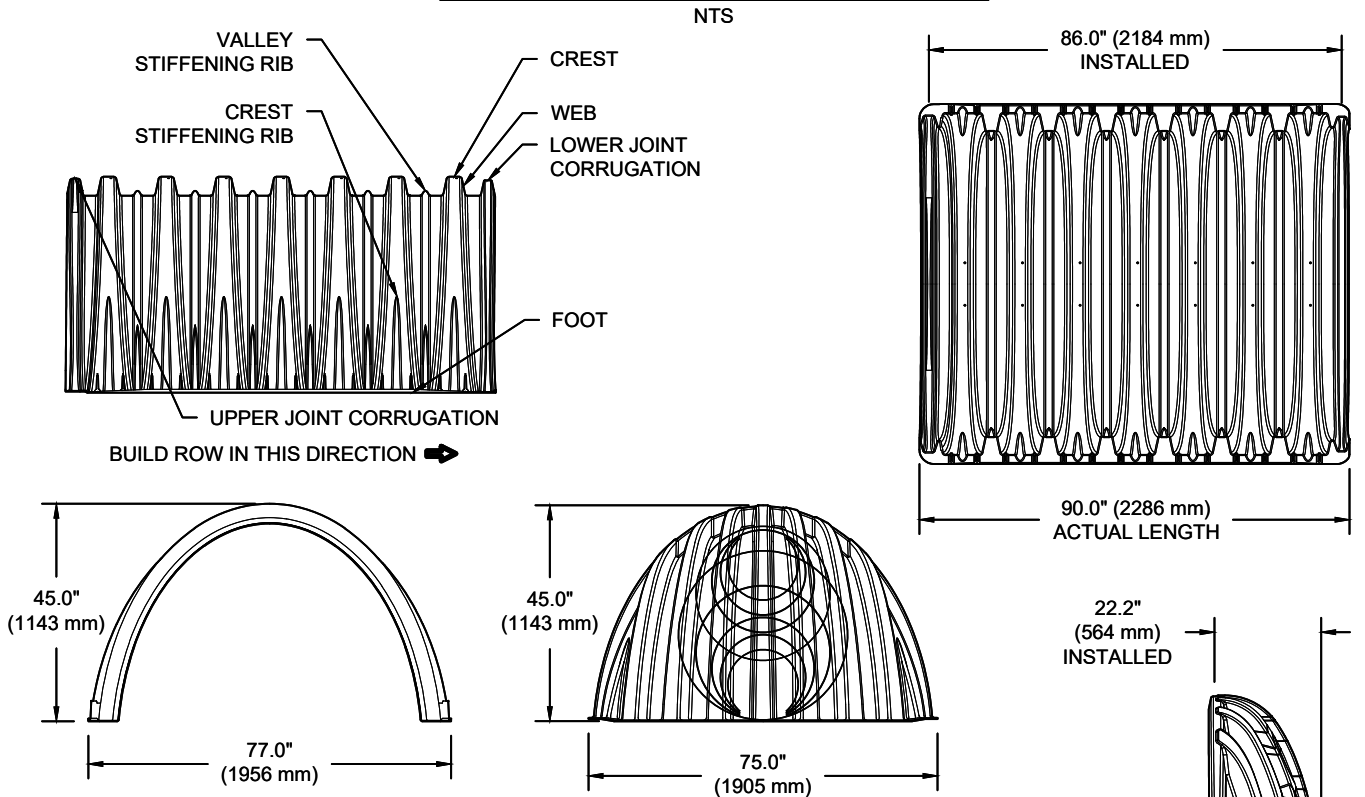
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MC-SERIES END CAP INSERTION DETAIL



NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

MC-3500 TECHNICAL SPECIFICATION



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)		
CHAMBER STORAGE	77.0" X 45.0" X 86.0"	(1956 mm X 1143 mm X 2184 mm)
MINIMUM INSTALLED STORAGE*	109.9 CUBIC FEET	(3.11 m³)
WEIGHT	175.0 CUBIC FEET	(4.96 m³)
	134 lbs.	(60.8 kg)

NOMINAL END CAP SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)		
END CAP STORAGE	75.0" X 45.0" X 22.2"	(1905 mm X 1143 mm X 564 mm)
MINIMUM INSTALLED STORAGE*	14.9 CUBIC FEET	(0.42 m³)
WEIGHT	45.1 CUBIC FEET	(1.28 m³)
	49 lbs.	(22.2 kg)

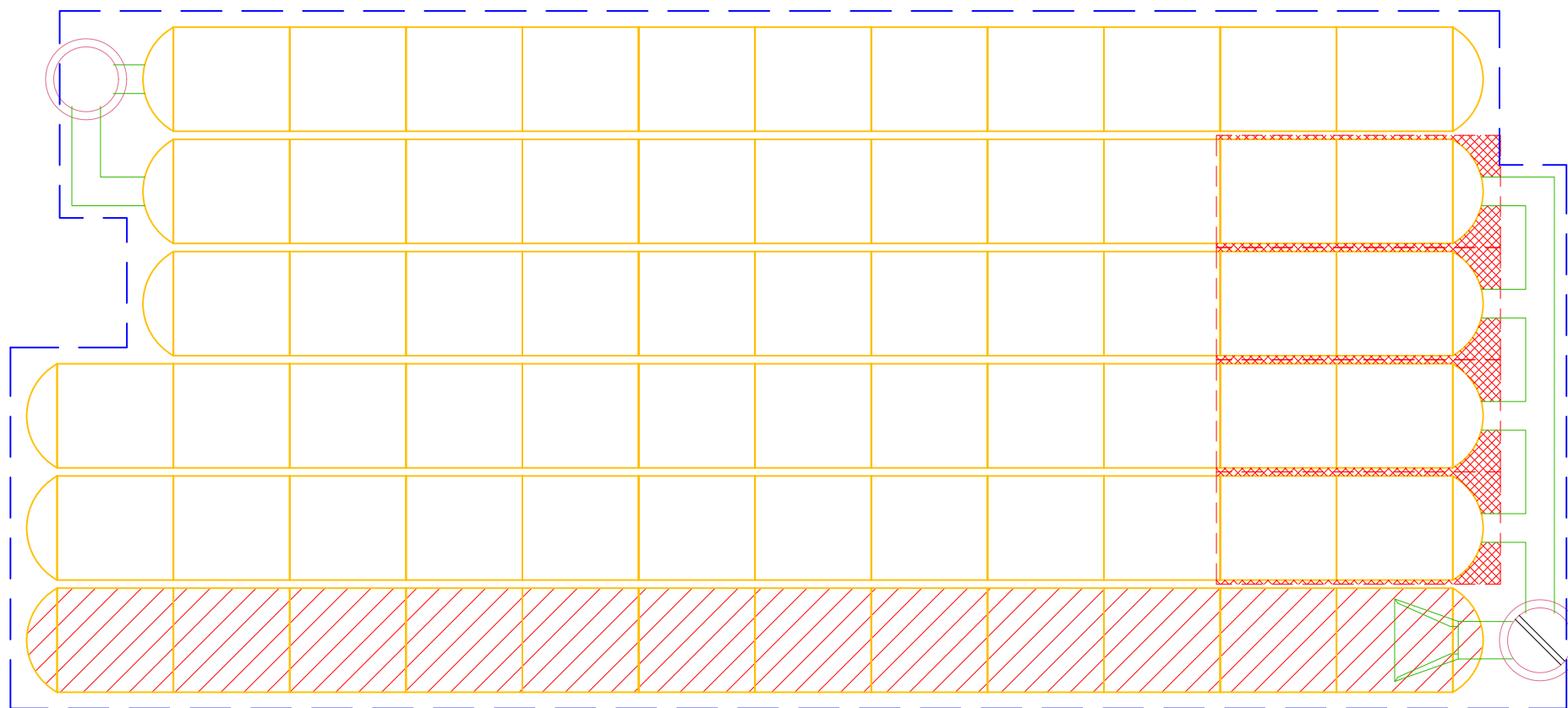
*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION, 6" SPACING BETWEEN CHAMBERS, 6" (152 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY

STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
END CAPS WITH A WELDED CROWN PLATE END WITH "C"
END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"

PART #	STUB	B	C
MC3500IEPP06T	6" (150 mm)	33.21" (844 mm)	---
MC3500IEPP06B		---	0.66" (17 mm)
MC3500IEPP08T	8" (200 mm)	31.16" (791 mm)	---
MC3500IEPP08B		---	0.81" (21 mm)
MC3500IEPP10T	10" (250 mm)	29.04" (738 mm)	---
MC3500IEPP10B		---	0.93" (24 mm)
MC3500IEPP12T	12" (300 mm)	26.36" (670 mm)	---
MC3500IEPP12B		---	1.35" (34 mm)
MC3500IEPP15T	15" (375 mm)	23.39" (594 mm)	---
MC3500IEPP15B		---	1.50" (38 mm)
MC3500IEPP18TC	18" (450 mm)	20.03" (509 mm)	---
MC3500IEPP18TW		---	1.77" (45 mm)
MC3500IEPP18BC			
MC3500IEPP18BW			
MC3500IEPP24TC	24" (600 mm)	14.48" (368 mm)	---
MC3500IEPP24TW		---	2.06" (52 mm)
MC3500IEPP24BC			
MC3500IEPP24BW			
MC3500IEPP30BC	30" (750 mm)	---	2.75" (70 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL

CUSTOM PRECORED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-3500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.



PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER	
ADS SALES REP	
PROJECT NO.	



COCOA VILLAGE HOTEL 2

COCOA, FL

MC-3500 STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH MC-3500.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 450 LBS/IN/IN. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
 - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
 - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
 - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-3500 CHAMBER SYSTEM

- STORMTECH MC-3500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
 - STONESHOOTER LOCATED OFF THE CHAMBER BED.
 - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
 - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
- INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
- STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

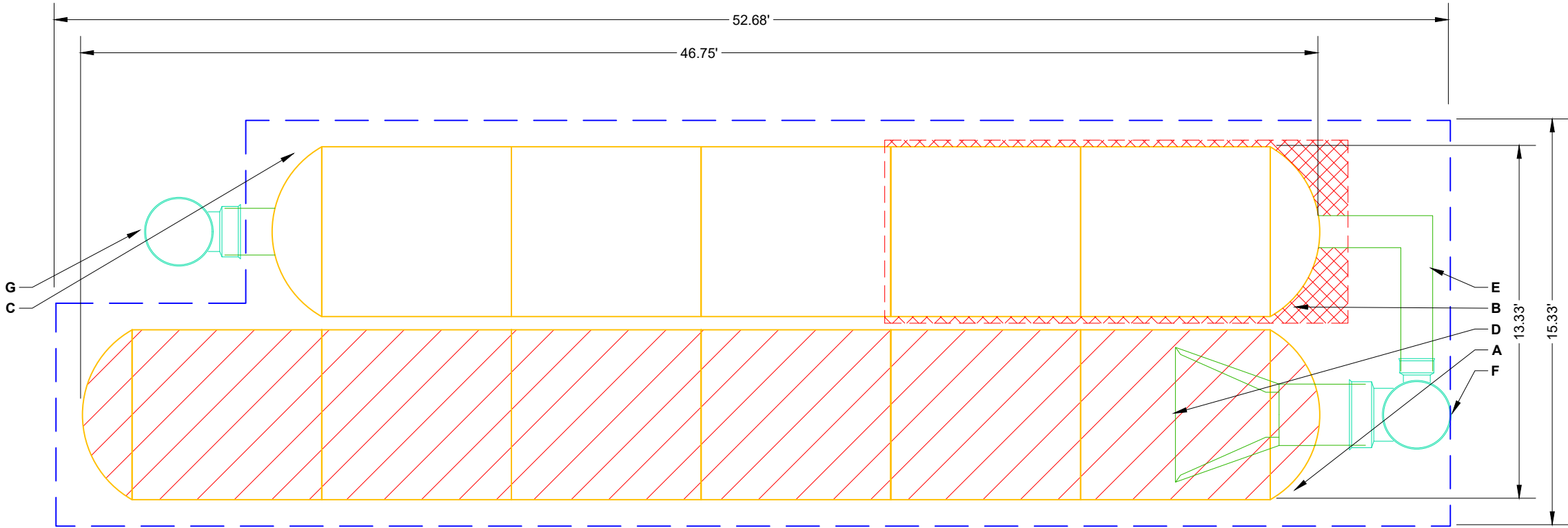
NOTES FOR CONSTRUCTION EQUIPMENT

- STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
- THE USE OF EQUIPMENT OVER MC-3500 CHAMBERS IS LIMITED:
 - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
 - NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
 - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
- FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

PROPOSED LAYOUT		PROPOSED ELEVATIONS			*INVERT ABOVE BASE OF CHAMBER			
				PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW
11	STORMTECH MC-3500 CHAMBERS	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	28.50					
4	STORMTECH MC-3500 END CAPS	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	22.50	PREFABRICATED END CAP	A	24" BOTTOM CORED END CAP, PART#: MC3500IEPP24BC / TYP OF ALL 24" BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS	2.06"	
12	STONE ABOVE (in)	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	22.00	PREFABRICATED END CAP	B	12" TOP CORED END CAP, PART#: MC3500IEPP12T / TYP OF ALL 12" TOP CONNECTIONS	26.40"	
9	STONE BELOW (in)	MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	22.00	PREFABRICATED END CAP	C	18" BOTTOM CORED END CAP, PART#: MC3500IEPP18BC / TYP OF ALL 18" BOTTOM CONNECTIONS	1.77"	
40	STONE VOID	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	22.00	FLAMP	D	INSTALL FLAMP ON 24" ACCESS PIPE / PART#: MC350024RAMP		
2430	INSTALLED SYSTEM VOLUME (CF)	TOP OF STONE:	21.50	MANIFOLD	E	12" x 12" TOP MANIFOLD, ADS N-12	26.36"	
	(PERIMETER STONE INCLUDED)	TOP OF MC-3500 CHAMBER:	20.50	NYLOPLAST (INLET W/ ISO PLUS ROW)	F	30" DIAMETER (24.00" SUMP MIN)		2.5 CFS IN
	(COVER STONE INCLUDED)	12" x 12" TOP MANIFOLD INVERT:	18.95	NYLOPLAST (OUTLET)	G	30" DIAMETER (DESIGN BY ENGINEER)		4.0 CFS OUT
758	SYSTEM AREA (SF)	24" ISOLATOR ROW PLUS INVERT:	16.92					
136.0	SYSTEM PERIMETER (ft)	18" BOTTOM CONNECTION INVERT:	16.90					
		BOTTOM OF MC-3500 CHAMBER:	16.75					
		BOTTOM OF STONE:	16.00					





ISOLATOR ROW PLUS
(SEE DETAIL)



PLACE MINIMUM 17.50' OF ADSPLUS175 WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS



BED LIMITS

NOTES

- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE #6.32 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.
- NOT FOR CONSTRUCTION:** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

COCOA VILLAGE HOTEL 2

COCOA, FL

DATE:

PROJECT #:

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Chamber System

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4640 TRUEMAN BLVD
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10'



SHEET

2 OF 6

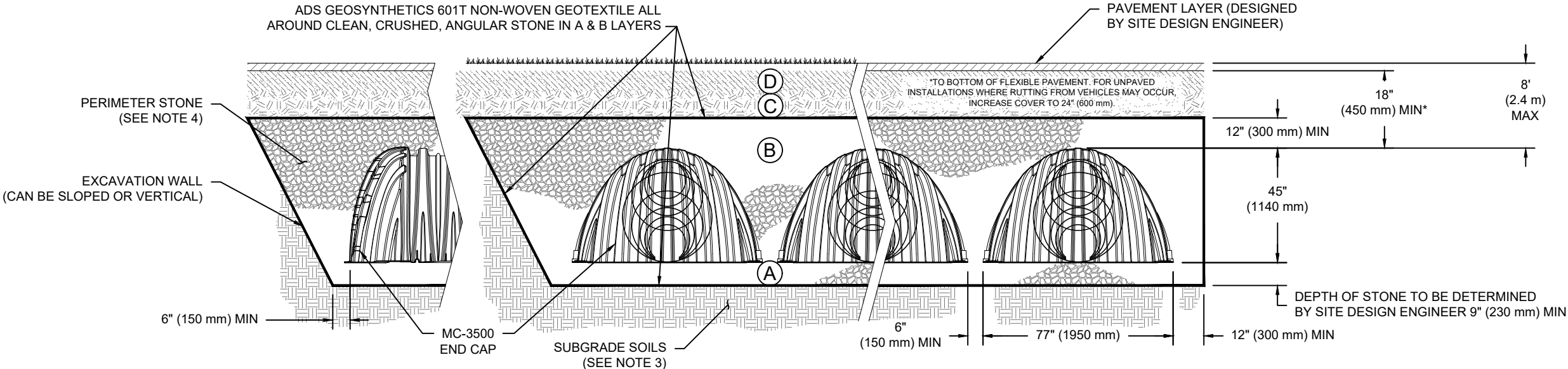
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ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145 ¹ A-1, A-2-4, A-3 OR AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 ¹ 3, 4	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 ¹ 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3}

PLEASE NOTE:

1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
2. MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 450 LBS/IN/IN. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

COCOA VILLAGE HOTEL 2

COCOA, FL

DATE:

PROJECT #:

DESCRIPTION

CHK

DRW

DATE

StormTech®
Chamber System

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4640 TRUEMAN BLVD
HILLIARD, OH 43026
1-800-733-7473

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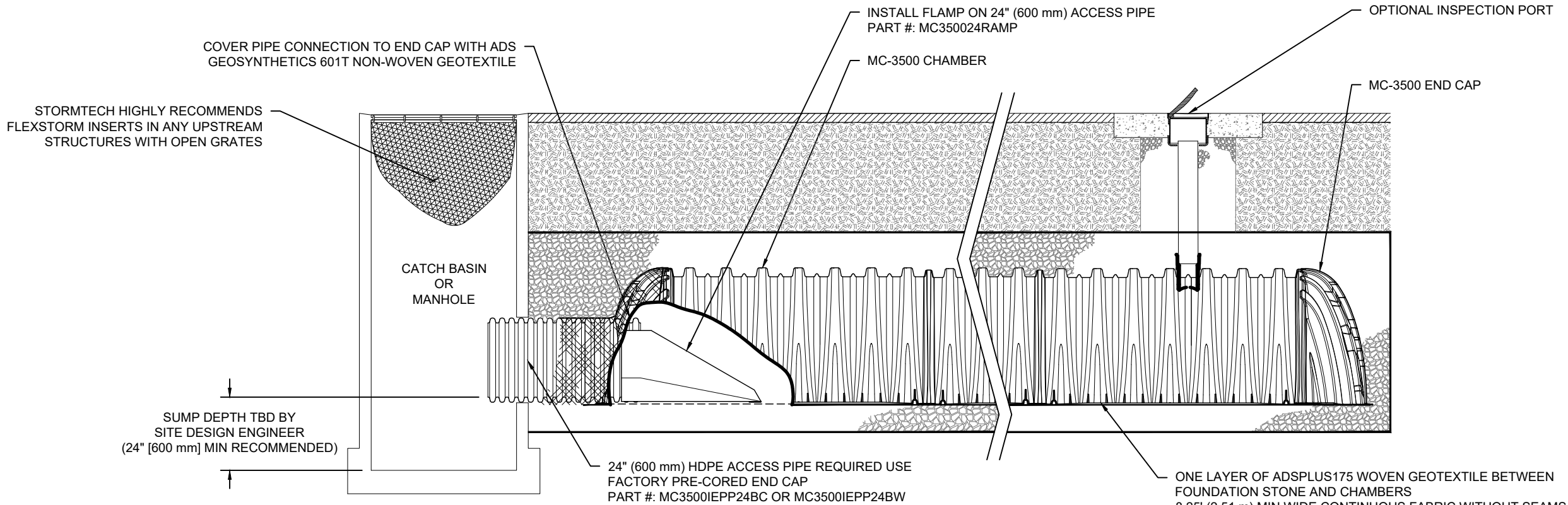
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3 OF 6

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MC-3500 ISOLATOR ROW PLUS DETAIL
NTS

INSPECTION & MAINTENANCE

- STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
 - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
 - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
 - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
 - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
 - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
 - B. ALL ISOLATOR PLUS ROWS
 - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
 - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
 - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
 - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
 - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
 - B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
 - C. VACUUM STRUCTURE SUMP AS REQUIRED
- STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

COCOA VILLAGE HOTEL 2

COCOA, FL

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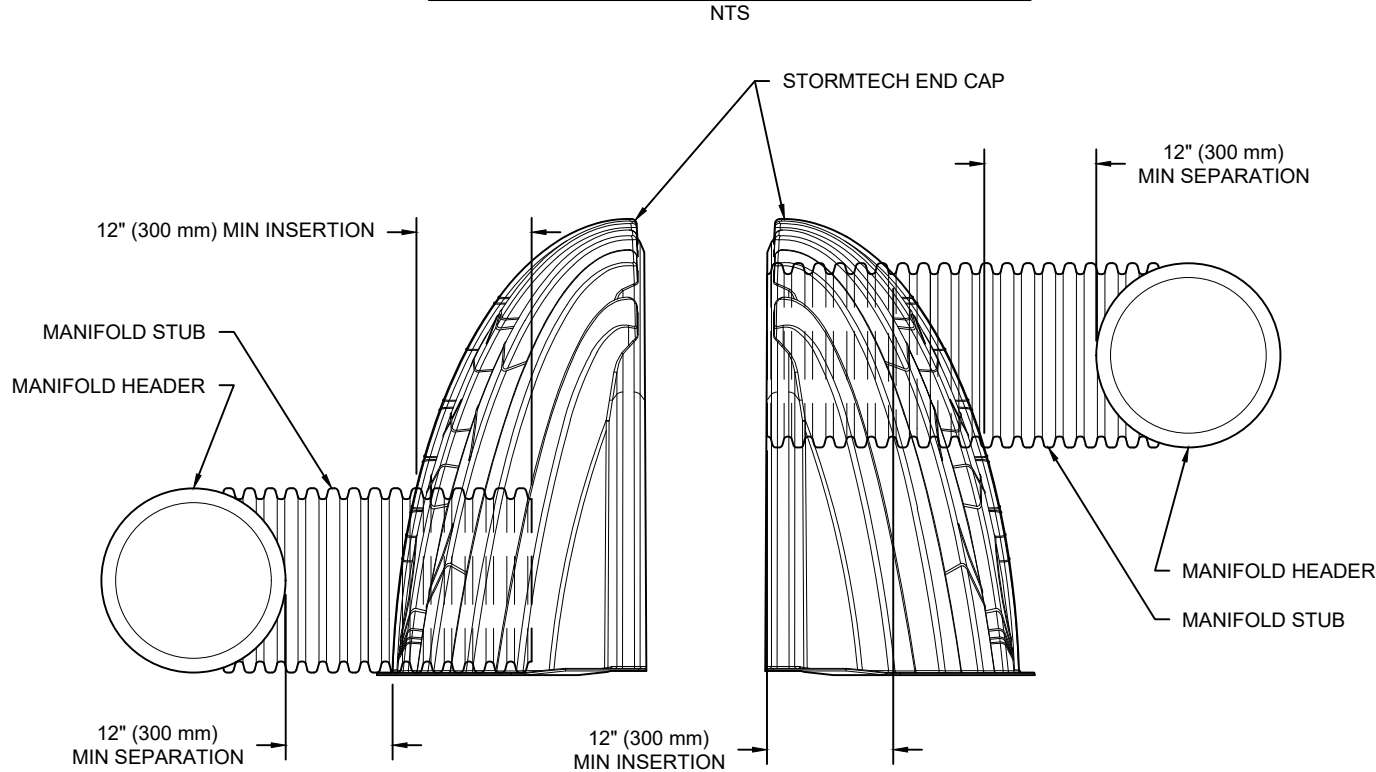
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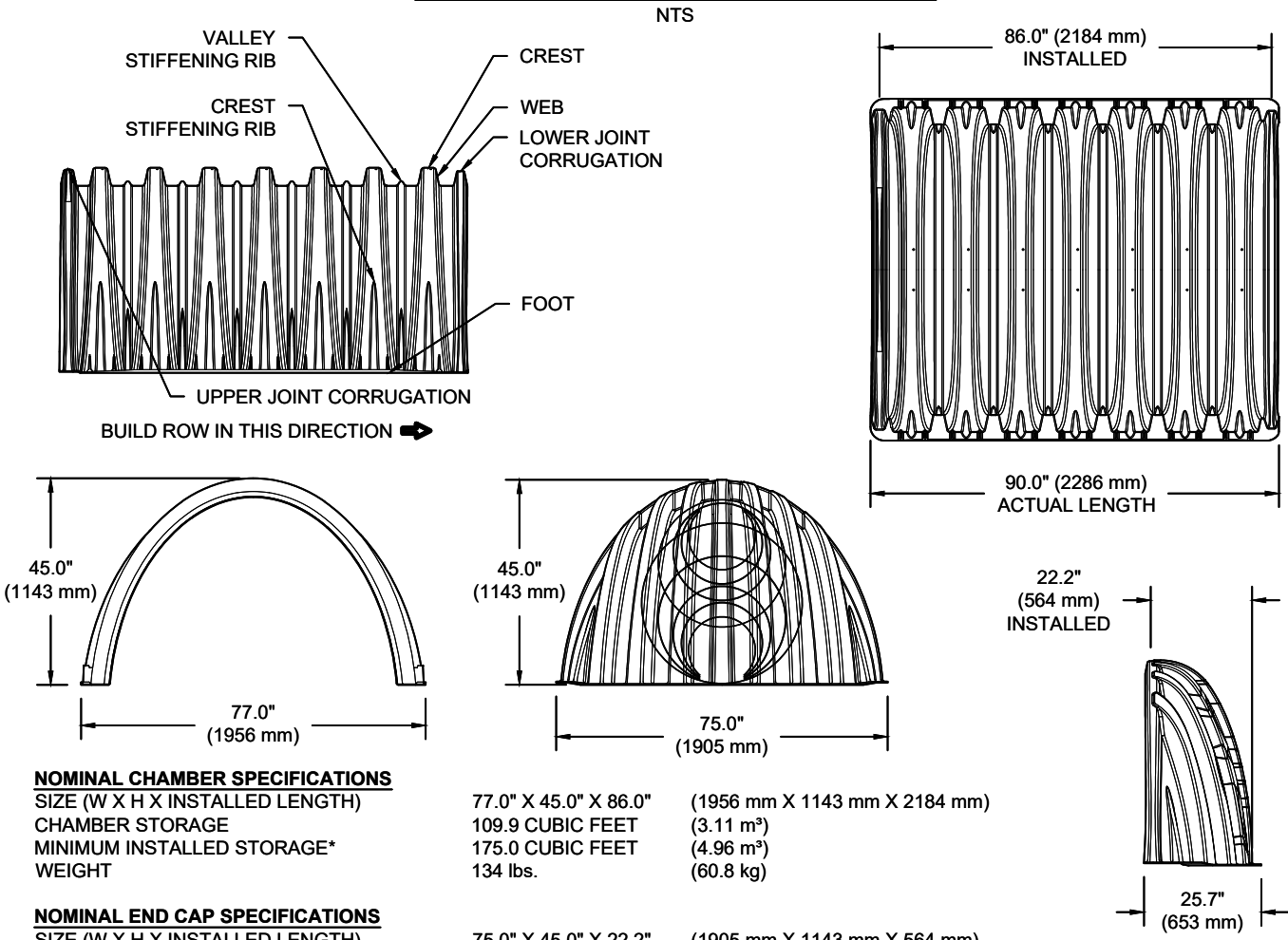
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MC-SERIES END CAP INSERTION DETAIL



NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

MC-3500 TECHNICAL SPECIFICATION



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	77.0" X 45.0" X 86.0"	(1956 mm X 1143 mm X 2184 mm)
CHAMBER STORAGE	109.9 CUBIC FEET	(3.11 m³)
MINIMUM INSTALLED STORAGE*	175.0 CUBIC FEET	(4.96 m³)
WEIGHT	134 lbs.	(60.8 kg)

NOMINAL END CAP SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	75.0" X 45.0" X 22.2"	(1905 mm X 1143 mm X 564 mm)
END CAP STORAGE	14.9 CUBIC FEET	(0.42 m³)
MINIMUM INSTALLED STORAGE*	45.1 CUBIC FEET	(1.28 m³)
WEIGHT	49 lbs.	(22.2 kg)

*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION, 6" SPACING BETWEEN CHAMBERS, 6" (152 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY

STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
END CAPS WITH A WELDED CROWN PLATE END WITH "C"
END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"

PART #	STUB	B	C
MC3500IEPP06T	6" (150 mm)	33.21" (844 mm)	---
MC3500IEPP06B		---	0.66" (17 mm)
MC3500IEPP08T	8" (200 mm)	31.16" (791 mm)	---
MC3500IEPP08B		---	0.81" (21 mm)
MC3500IEPP10T	10" (250 mm)	29.04" (738 mm)	---
MC3500IEPP10B		---	0.93" (24 mm)
MC3500IEPP12T	12" (300 mm)	26.36" (670 mm)	---
MC3500IEPP12B		---	1.35" (34 mm)
MC3500IEPP15T	15" (375 mm)	23.39" (594 mm)	---
MC3500IEPP15B		---	1.50" (38 mm)
MC3500IEPP18TC	18" (450 mm)	20.03" (509 mm)	---
MC3500IEPP18TW		---	1.77" (45 mm)
MC3500IEPP18BC			
MC3500IEPP18BW			
MC3500IEPP24TC	24" (600 mm)	14.48" (368 mm)	---
MC3500IEPP24TW		---	2.06" (52 mm)
MC3500IEPP24BC			
MC3500IEPP24BW			
MC3500IEPP30BC	30" (750 mm)	---	2.75" (70 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL

CUSTOM PRECORED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-3500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

COCOA VILLAGE HOTEL 2

COCOA, FL

DATE:

DRAWN: TC

PROJECT #:

CHECKED: N/A

DESCRIPTION

CHK

DATE

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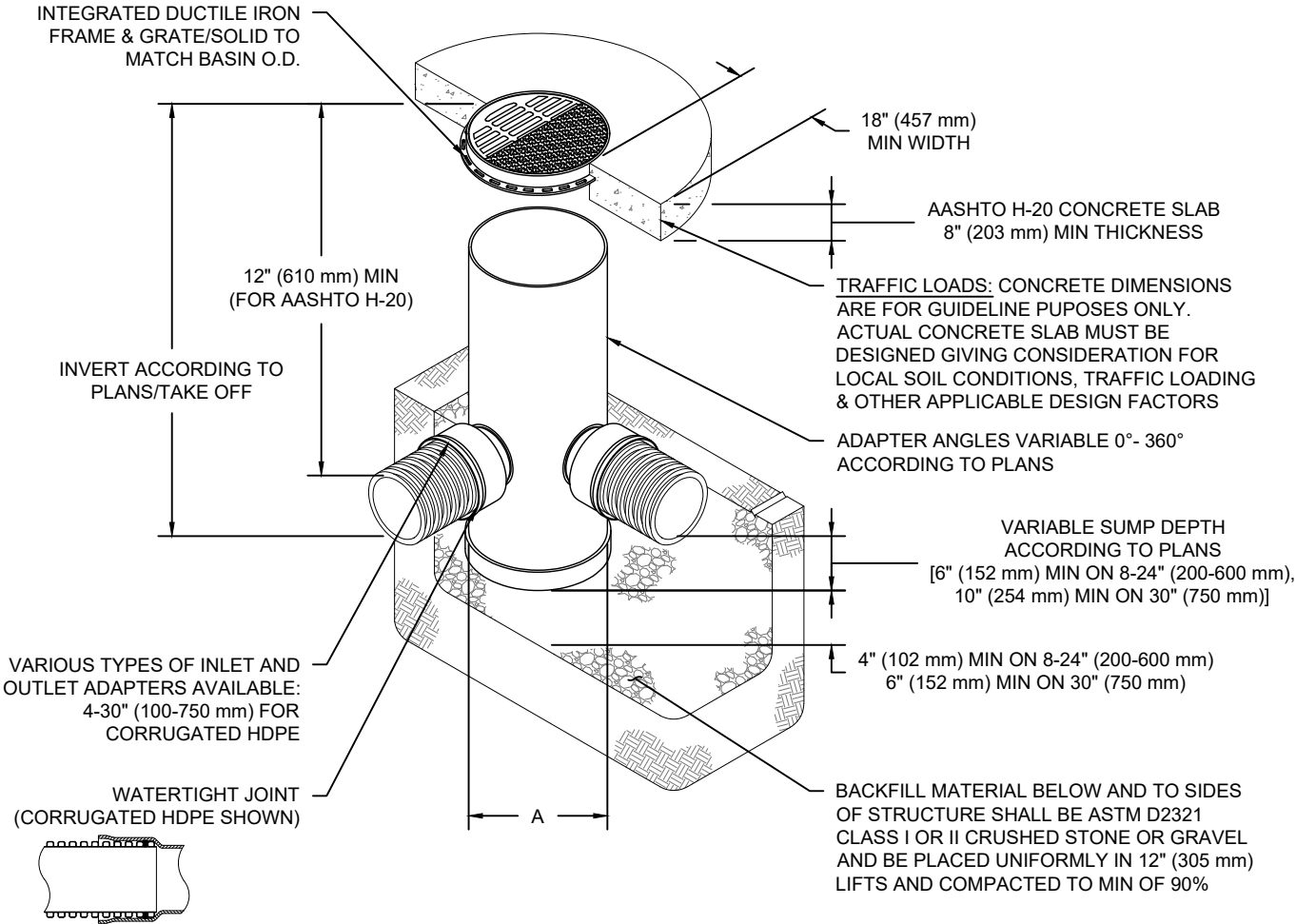
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NYLOPLAST DRAIN BASIN

NTS



NOTES

- 8-30" (200-750 mm) GRATES/SOLID COVERS SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
- 12-30" (300-750 mm) FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
- DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS
- DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS & HANCOR DUAL WALL) & SDR 35 PVC
- FOR COMPLETE DESIGN AND PRODUCT INFORMATION: **WWW.NYLOPLAST-US.COM**
- TO ORDER CALL: **800-821-6710**

A	PART #	GRATE/SOLID COVER OPTIONS		
8" (200 mm)	2808AG	PEDESTRIAN LIGHT DUTY	STANDARD LIGHT DUTY	SOLID LIGHT DUTY
10" (250 mm)	2810AG	PEDESTRIAN LIGHT DUTY	STANDARD LIGHT DUTY	SOLID LIGHT DUTY
12" (300 mm)	2812AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
15" (375 mm)	2815AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
18" (450 mm)	2818AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
24" (600 mm)	2824AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
30" (750 mm)	2830AG	PEDESTRIAN AASHTO H-20	STANDARD AASHTO H-20	SOLID AASHTO H-20

COCOA VILLAGE HOTEL 2

COCOA, FL

DATE:

DRAWN: TC

PROJECT #:

CHECKED: N/A

DESCRIPTION

CHK

DRW

DATE

Nyloplast®

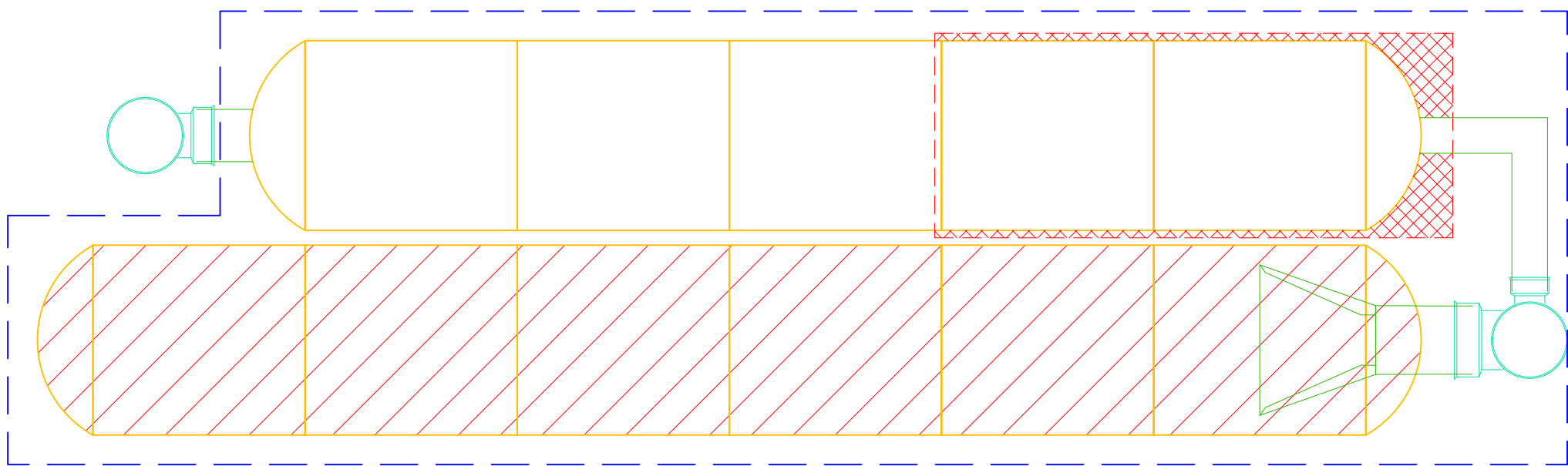
770-932-2443 | WWW.NYLOPLAST-US.COM

4640 TRUEMAN BLVD
HILLIARD, OH 43026
1-800-733-7473



SHEET

6 OF 6



COCOA VILLAGE HOTEL WATERMAIN ANALYSIS CALCULATIONS

City of Cocoa Beach
Brevard County, Florida

February 2022

Revised March 22, 2022

Prepared by:

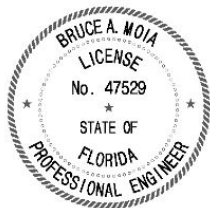


CIVIL ■ STRUCTURAL ■ SURVEYING ■ ENVIRONMENTAL

1250 W. Eau Gallie Blvd., Unit L
Melbourne, Florida 32935
321.253.1510 ■ Fax: 321.253.0911
www.mbveng.com

CA#3728

MBV Engineering, Inc.
1250 West Eau Gallie Blvd.
Unit H
Melbourne, Florida 32935
(321) 253-1510
Certificate of Authorization #: 3728
Engineers Project #: 21-1092
Designed By: TAC



Mr. Bruce A. Moia, P.E.
FL License No. 47529

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SUMMARY

The existing City of Cocoa watermain distribution system provided flow test results that have been analyzed to show that the proposed Cocoa Village Hotel water distribution meets the City of Cocoa flow and pressure criteria.

SITE DESCRIPTION

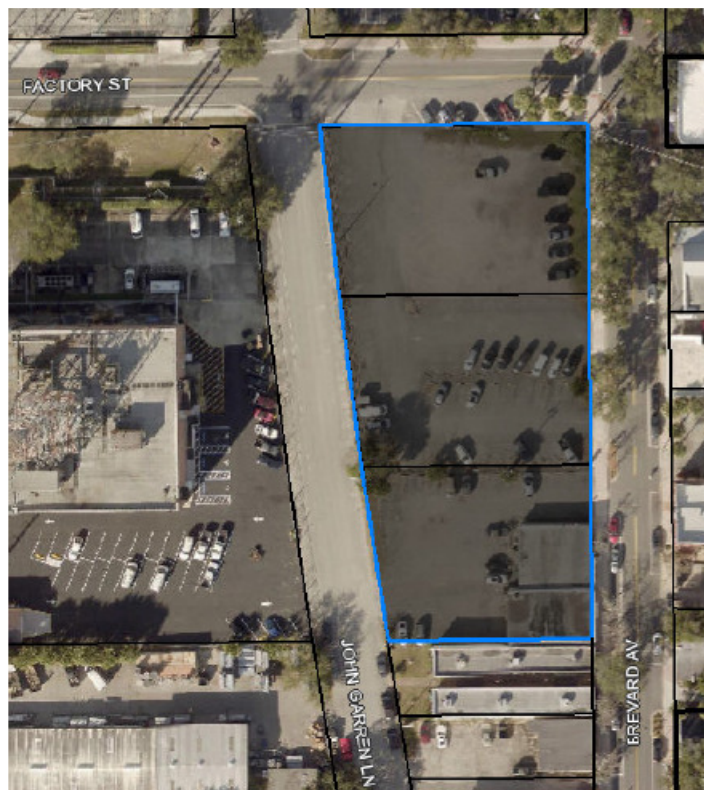
Cocoa Village Hotel is located on Brevard Ave, Factory St and John Garren Lane in Cocoa, FL. The project consists of an eight story 107-unit hotel with garage parking, retail areas, restaurants and roof top bar within hotel building. The proposed development will require a water meter installation, double detector check valve, fire line, water service, water main tap, FDC and one new fire hydrant is proposed. Refer to building water fixture count and water meter size at the end of this report Pages 23-25.

EXISTING CONDITIONS

Cocoa Village Hotel is a redevelopment of an existing commercial building to be demolished along with infrastructure and an open parking paved and gravel area to be removed. There is an existing 6" watermain on Brevard Ave and Factory St. and 2 existing fire hydrants on Brevard Ave and one existing fire hydrant on John Garren Lane. The City of Cocoa provided existing static and residual pressures at hydrant number 0066 and 0067 both close by fire hydrants, see Page 19 through 21 for information.

PROPOSED SYSTEM

The proposed potable/fire water system consists of connecting from Factory St and installing 190 lf of 8" PVC fire line, 57 lf of 3" PVC water service, 2" water meter, 8"x 6" reducer, 6" DDC, one fire hydrant and one FDC within the 1.25 acre site.



LOCATION MAP

HYDRAULIC CALCULATION ASSUMPTIONS

The hydraulic calculations were performed using the Hazen Williams formula for head elevation based on static pressure $z = 2.31p$. The Hazen Williams friction coefficient, “C”, used for PVC pipe is 130. Table 1 (next page) contains the calculations for the flow demand based on City of Cocoa Code or Ordinances. A peaking factor of 4.0 was used in the analysis as well as a fire flow for a maximum condition of one (1) fire hydrant in use. The system is analyzed using a reservoir and pump at the fire hydrant test locations. For the purposes of including minor losses for fittings the loss coefficients were built into each segment of pipe based on the table below;

Table 3.3 Minor Loss Coefficients for Selected Fittings

<i>FITTING</i>	<i>LOSS COEFFICIENT</i>
Globe valve, fully open	10.0
Angle valve, fully open	5.0
Swing check valve, fully open	2.5
Gate valve, fully open	0.2
Short-radius elbow	0.9
Medium-radius elbow	0.8
Long-radius elbow	0.6
45 degree elbow	0.4
Closed return bend	2.2
Standard tee - flow through run	0.6
Standard tee - flow through branch	1.8
Square entrance	0.5
Exit	1.0

Cocoa Village Hotel Hydraulic Justification

Head Losses in Pipe (Hazen-Williams Equation)

$$f = 0.2083 \left(\frac{100}{C} \right)^{1.852} \frac{Q^{1.852}}{D_h^{4.8655}}$$

f= Frictional head loss per 100 ft of pipe, ft_{h2o}/100 ft pipe
Q= Volumetric flow rate, gal/min
C= Roughness coefficient, 130 for PVC
D_h= Inside hydraulic diameter, inches
P_d= Pressure drop (psi/ft pipe)

Pressure Drop in Pipe (Hazen-Williams Equation)

$$P_d = 4.52 \frac{Q^{1.852}}{C^{1.852} D_h^{4.8655}}$$

Demand - Commercial Project						
	Quantity	Q (gpd) per Unit	ERU Factor	Q (gpm) per Unit	Peak (2.5X)	Q (gpm) Utilized
Hotel & Retail	1	129,600	1	90.0	225	225
Fire Suppression	1					750
Fire Hydrant	1					1,000
Total	3					1,975
Use :						1,975

Flow Test Data

Hydrant ID	0066	0067
Static Pressure	64 psi (147.8 ft)	60 psi (138.6 ft)
Residual Pressure	56 psi (129.4 ft)	56 psi (129.4 ft)
Test Flow	920 gpm	1010 gpm
Data Pressure	30 psi (69.3 ft)	36 psi (83.2 ft)
Data Flow	2010 gpm	2658 gpm

EPANET Input Data

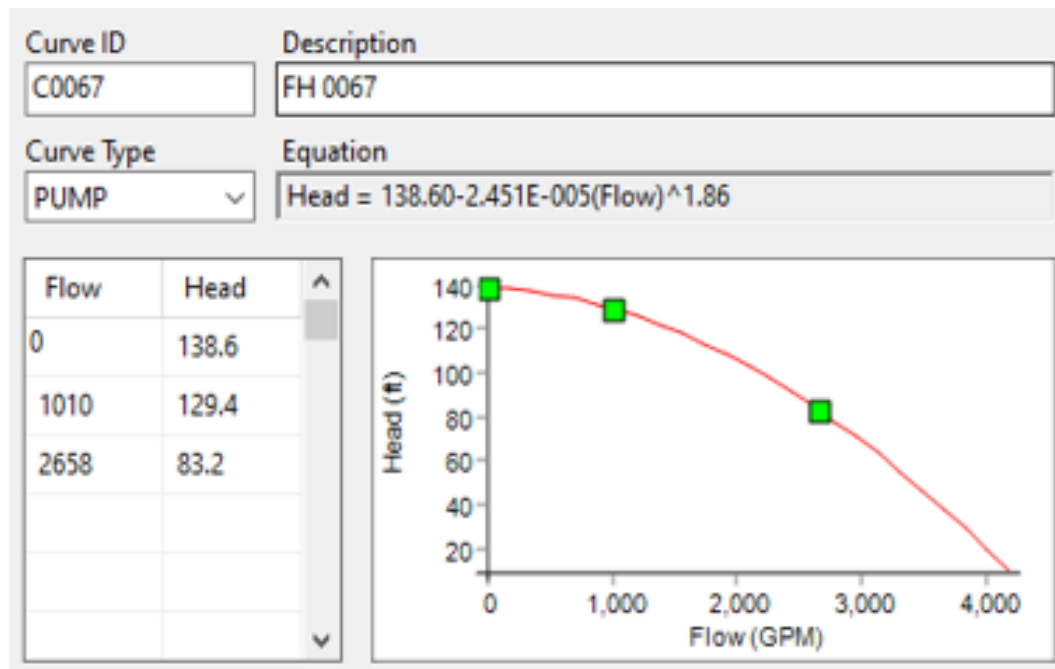
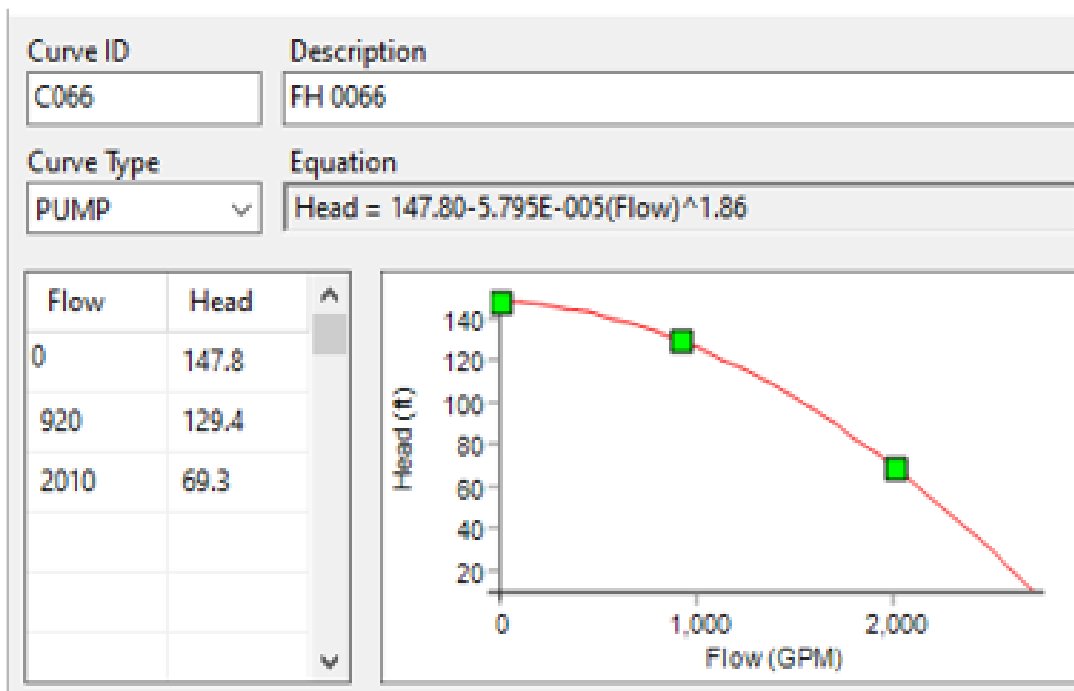
0066		0067	
Flow (gpm)	Head (ft)	Flow (gpm)	Head (ft)
0	147.8	0	138.6
920 gpm	129.4	1010 gpm	129.4
2010	69.3	2658	83.2

$$Q_A = Q_M \times \left\{ \left(\frac{S - 20}{S - R} \right)^{0.54} \right\}$$

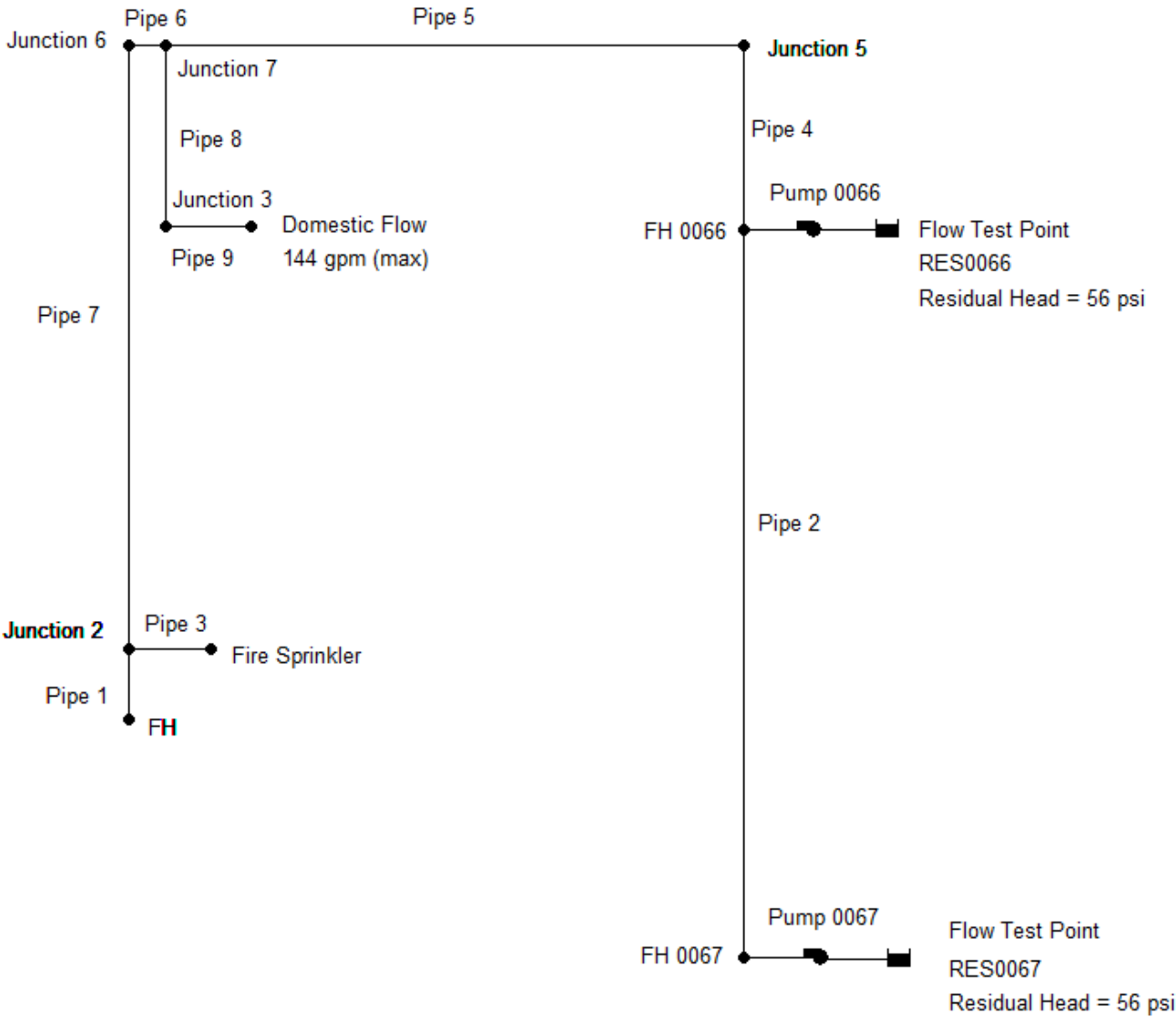
Fire flow Calculations (NFPA) used min 1000 gpm for existing and new fire hydrant flow. Two fire hydrants required in total. Four fire hydrants provided within 500 ft of building.

Based on AWWA M22 Manual

Maximum Day Water Demand (90 gpm x 1.6) = 144 gpm



EPANET NODAL MAP



EPANET JUNCTION REPORT

Maximum Day plus Fire Flow

Network Table - Nodes

Node ID	Demand GPM	Head ft	Pressure psi
Junc FH0066	1000.00	100.62	43.60
Junc FH0067	1000.00	116.59	50.52
Junc 5	0.00	90.96	39.41
Junc 6	0.00	66.93	29.00
Junc 7	0.00	67.74	29.35
Junc 2	0.00	63.03	27.31
Junc 3	0.00	63.71	27.60
Junc FIRE	0.00	63.03	27.31
Junc DWF	144.00	62.60	27.13
Junc FH	1000.00	62.09	26.90
Resvr RES0067	-1616.10	0.00	0.00
Resvr RES0066	-1527.90	0.00	0.00

Fire Service only

Network Table - Nodes

Node ID	Demand GPM	Head ft	Pressure psi
Junc FH0066	1000.00	112.33	48.67
Junc FH0067	1000.00	120.84	52.36
Junc 5	0.00	108.04	46.81
Junc 6	0.00	97.04	42.05
Junc 7	0.00	97.50	42.25
Junc 2	0.00	94.77	41.07
Junc 3	0.00	97.50	42.25
Junc FIRE	750.00	93.04	40.31
Junc DWF	0.00	97.50	42.25
Junc FH	0.00	94.77	41.07
Resvr RES0067	-1439.71	0.00	0.00
Resvr RES0066	-1310.29	0.00	0.00

Maximum Day Demand - Water Only

Network Table - Nodes

Node ID	Demand GPM	Head ft	Pressure psi
Junc FH0066	0.00	137.29	59.49
Junc FH0067	0.00	138.35	59.95
Junc 5	0.00	137.11	59.41
Junc 6	0.00	136.63	59.20
Junc 7	0.00	136.63	59.20
Junc 2	0.00	136.63	59.20
Junc 3	0.00	132.59	57.45
Junc FIRE	0.00	136.63	59.20
Junc DWF	144.00	131.48	56.97
Junc FH	0.00	136.63	59.20
Resvr RES0067	-144.00	0.00	0.00
Resvr RES0066	0.00	0.00	0.00

Peak Hour Water Demand - Water Only

Network Table - Nodes

Node ID	Demand GPM	Head ft	Pressure psi
Junc FH0066	0.00	135.59	58.75
Junc FH0067	0.00	138.03	59.81
Junc 5	0.00	135.17	58.57
Junc 6	0.00	134.06	58.09
Junc 7	0.00	134.06	58.09
Junc 2	0.00	134.06	58.09
Junc 3	0.00	124.60	53.99
Junc FIRE	0.00	134.06	58.09
Junc DWF	225.00	122.04	52.88
Junc FH	0.00	134.06	58.09
Resvr RES0067	-225.00	0.00	0.00
Resvr RES0066	0.00	0.00	0.00

EPANET PIPE REPORT

Maximum Day plus Fire flow

Network Table - Links

Link ID	Diameter in	Flow GPM	Velocity fps	Unit Headloss ft/Kft
Pipe 2	6	616.10	6.99	33.42
Pipe 4	6	1144.00	12.98	185.72
Pipe 5	6	1144.00	12.98	110.03
Pipe 6	8	1000.00	6.38	271.28
Pipe 7	8	1000.00	6.38	22.68
Pipe 8	3	144.00	6.54	93.89
Pipe 3	6	0.00	0.00	0.00
Pipe 9	3	144.00	6.54	78.91
Pipe 1	8	1000.00	6.38	94.17
Pump P0067	#N/A	1616.10	0.00	-116.59
Pump P0066	#N/A	1527.90	0.00	-100.62

Fire Service only

Network Table - Links

Link ID	Diameter in	Flow GPM	Velocity fps	Unit Headloss ft/Kft
Pipe 2	6	439.71	4.99	17.81
Pipe 4	6	750.00	8.51	82.46
Pipe 5	6	750.00	8.51	49.93
Pipe 6	8	750.00	4.79	153.04
Pipe 7	8	750.00	4.79	13.20
Pipe 8	3	0.00	0.00	0.00
Pipe 3	6	750.00	8.51	123.86
Pipe 9	3	0.00	0.00	0.00
Pipe 1	8	0.00	0.00	0.00
Pump P0067	#N/A	1439.71	0.00	-120.84
Pump P0066	#N/A	1310.29	0.00	-112.33

Maximum Day Demand - Water Only

Network Table - Links

Link ID	Diameter in	Flow GPM	Velocity fps	Unit Headloss ft/Kft
Pipe 2	6	144.00	1.63	2.22
Pipe 4	6	144.00	1.63	3.48
Pipe 5	6	144.00	1.63	2.28
Pipe 6	8	0.00	0.00	0.00
Pipe 7	8	0.00	0.00	0.00
Pipe 8	3	144.00	6.54	93.89
Pipe 3	6	0.00	0.00	0.00
Pipe 9	3	144.00	6.54	78.91
Pipe 1	8	0.00	0.00	0.00
Pump P0067	#N/A	144.00	0.00	-138.35
Pump P0066	#N/A	0.00	0.00	0.00

Peak Hour Water Demand - Water Only

Network Table - Links

Link ID	Diameter in	Flow GPM	Velocity fps	Unit Headloss ft/Kft
Pipe 2	6	225.00	2.55	5.11
Pipe 4	6	225.00	2.55	8.19
Pipe 5	6	225.00	2.55	5.26
Pipe 6	8	0.00	0.00	0.00
Pipe 7	8	0.00	0.00	0.00
Pipe 8	3	225.00	10.21	219.87
Pipe 3	6	0.00	0.00	0.00
Pipe 9	3	225.00	10.21	183.28
Pipe 1	8	0.00	0.00	0.00
Pump P0067	#N/A	225.00	0.00	-138.03
Pump P0066	#N/A	0.00	0.00	0.00

FIRE FLOW TEST RESULTS & FIRE FLOW CALCS



City of Cocoa, Florida

UTILITIES DEPARTMENT
600 School Street Cocoa, Florida 32922
PHONE (321) 639-7653 FAX (321) 639-7522

FIRE HYDRANT FLOW INFORMATION REQUEST

Information requested by: _____ (Company)
_____ (Person)
_____ (Phone #)
_____ (Fax #)

Project Name: _____

Project Location: _____

Hydrant from which information is needed: _____

Is a True Residual Pressure Required? ☒ YES ☐ NO

Date: _____ Prepared By: _____

RECORDED FIRE HYDRANT FLOW INFORMATION

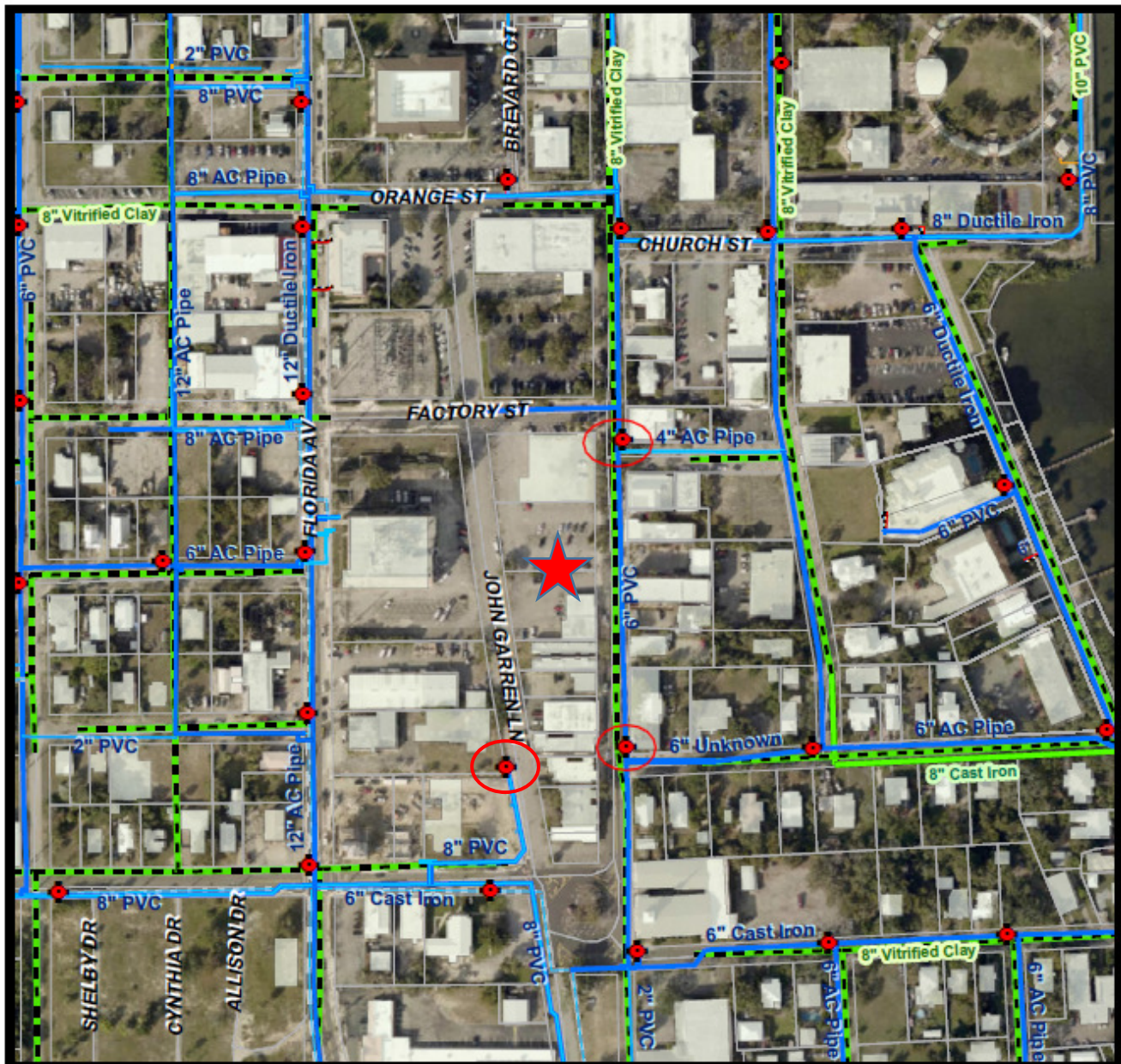
Hydrant Number Flowed:	<u>0066</u>	<u>0067</u>
Hydrant Location:	<u>Brevard Ave/Maryland Ave</u>	<u>Brevard Ave/Derby St</u>
Recorded Static Pressure:	<u>64</u> p.s.i.	<u>60</u> p.s.i.
Recorded Residual Pressure:	<u>56</u> p.s.i.	<u>56</u> p.s.i.
Recorded Flow:	<u>30 / 920</u> p.s.i./g.p.m.	<u>36 / 1010</u> p.s.i./g.p.m.
Residual taken from hydrant:	_____	_____

Date of Recording: _____ Completed by: _____

Flow Recorded from 2.5" nozzle unless otherwise specified.

IMPORTANT NOTE: The above information is supplied for use in calculation of available fire flow. The information is an instantaneous recording and does not reflect flow and pressure variations in the City of Cocoa potable water system. A minimum of a 5 p.s.i. safety factor will be required for approval by the City. A larger safety factor may be required due to the location of the proposed project. Should you have any questions, please call the City of Cocoa, Utilities Engineering Department @ (321) 639-7659.

Revised 1/2008



Water Hydrants

 Cocoa Utilities

Water Mains

 Water Main

Force Mains

 Cocoa

Gravity Mains

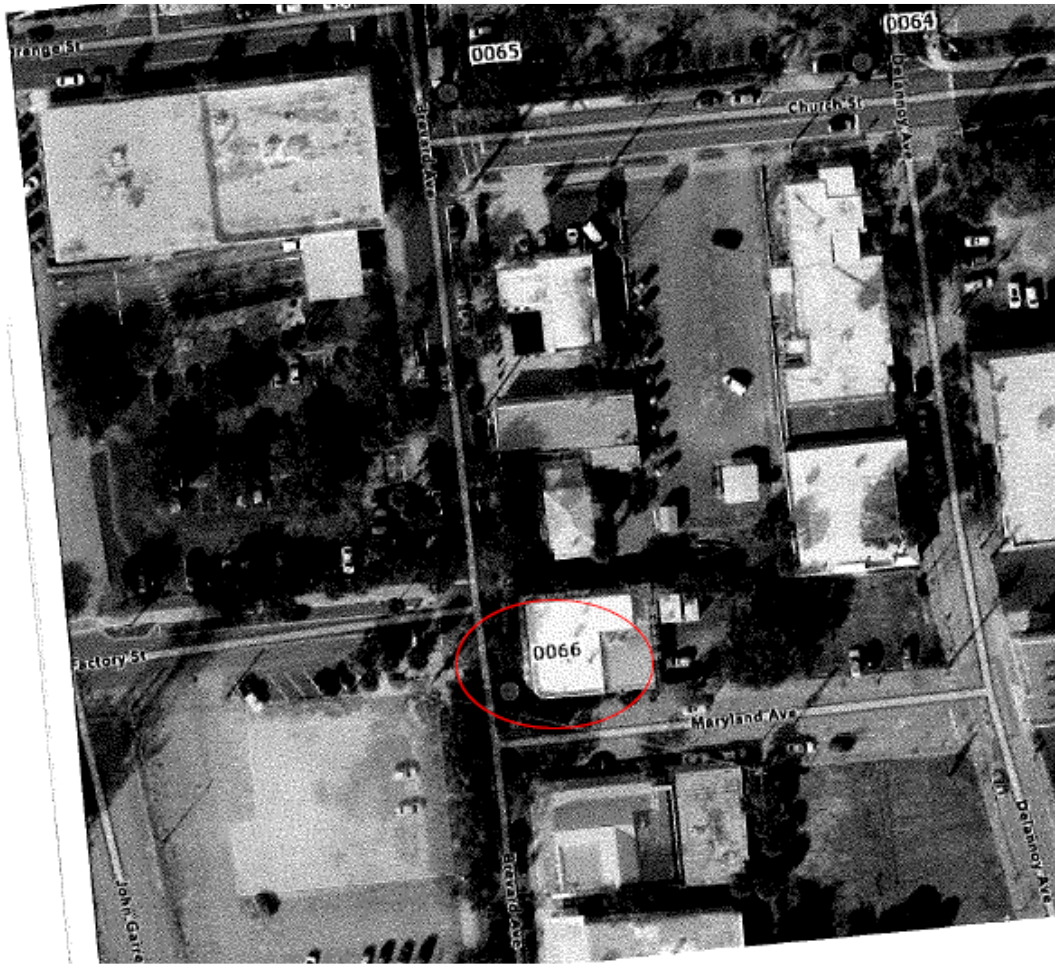
 Cocoa

John Garren Ln & Factory St Cocoa, FL



0 110 220 330 440 550 Feet

Disclaimer: Maps are for reference purposes only and are not intended to replace any official record. The user is responsible for confirming the accuracy of all data contained herein.



FIRE FLOW CALCS

FIRE FLOW CALCULATIONS (NFPA)								
BUILDING DESCRIPTION	FLOOR AREA (Sq. Ft.)	FIRE FLOW (TABLE 18.4.5.1.2)	EXPOSURE %	INITIAL FIRE FLOW SUB-TOTAL (GPM)	FIRE SPRINKLER DECREASE (75 %)	TOTAL MINIMUM FLOW (GPM)	HYDRANTS REQUIRED	HYDRANTS SUPPLIED
HOTEL/RETAIL COMMERCIAL	202,846	4,750	0%	4,750	3,563	1,188	2.0	4*
* ONE PROPOSED FIRE HYDRANT ONSITE.								
** THREE FIRE HYDRANTS ARE EXISTING WITHIN 500 FT. OF BUILDING (OFFSITE). TWO ON BREVARD AVE AND ONE ON JOHN GARREN LANE.								
CONSTRUCTION TYPE:		TYPE I-B IBC II (222) NFPA						
HAZARD CLASSIFICATION:		COMPLETE AUTO SPRINKLER						
STRUCTURE OCCUPANCY:		HOTEL/RETAIL COMMERCIAL						
IN ACCORDANCE WITH NFPA 1, SECTION 3.3. OCCUPANCY (2015 EDITION)								

Fire flow Calculations (NFPA) used min 1000 gpm for existing and new fire hydrant flow. Two fire hydrants required in total. Four fire hydrants provided within 500 ft of building.

WATER METER SIZE CALCS

Water Demand Estimate and Meter Sizing Using Fixture Values

(Based on AWWA M22 Manual, Second Edition)

Project Number	21-1092 COCOA VILLAGE HOTEL
Building address or number	603 BREVARD AVE - HOTEL & RETAIL COMBINED
Residential or Non-Residential	Non-Residential
Pressure Zone at Project	40

Fixture or Appliance	Fixture Value (at 60 psi)	Number of Fixtures	Subtotal Fixture Value
Aspirator	2		0
Bathtub Faucet	8		0
Bedpan Washers	10		0
Bidet	2		0
Combination Fixture	8		0
Dental Units	2		0
Dishwashing Machine	2		0
Drinking Fountain	2	4	8
Hose Bib or Sillcock, 1/2"	5		0
Hose Bib, 5/8"	9		0
Hose Bib, 3/4"	12	12	144
Laundry Faucet 1/2"	4		0
Laundry Machine (Washer)	6	3	18
Lavatory Faucet, Ordinary	1.5	128	192
Lavatory Faucet, Self Closing	1.5		0
Shower Head	2.5	109	272.5
Shower, Temperature Controlled	2.5		0
Sink Faucet 3/8", 1/2"	2.2	4	8.8
Sink Faucet 3/4"	4	7	28
Urinal Wall Flush Valve	16	3	48
Urinal Flush Valve	35		0
Water Closet with Flush Valve	35		0
Water Closet with Gravity Tank	6		0
Water Closet with Coupled Tank	4	131	524

Combined Fixture Value 1243.3

Demand (gpm) 112.5

Pressure Adjustment Factor 0.8

Total Adjusted demand (gpm) **90**

Preliminary Demand Meter Size 1 1/2"

Velocity (fps) 16.3

Required Meter Size 2"

Review by: _____ Date: _____

Approved by: _____ Date: _____

Building Hotel (rooms, restaurants, roof top bar) & Retail - Water Fixture Counts per floor

1 st Floor:	15 lavs 17 wc 2 urinals 4 ewc 1 service sink 3 laundry commercial washers 1 laundry hand sink 1 kitchen hand sink 1 kitchen prep sink 1 kitchen 3 compartment sink 3 hose bibs
2 nd Floor:	2 hose bibs
3 rd Floor:	2 hose bibs
4 th Floor:	2 hose bibs
5 th Floor:	37 lavs 37 wc 35 showers 2 pool hose bibs 2 pool showers
6 th Floor:	36 lavs 36 wc 36 showers
7 th Floor:	36 lavs 36 wc 36 showers
8 th Floor:	4 lavs 5 wc 1 urinal 1 bar hand sink 1 bar 3 compartment sink 1 kitchen hand sink 1 kitchen prep sink 1 kitchen 3 compartment sink 1 hose bib 1 service sink

THIS INSTRUMENT WAS PREPARED BY
AND SHOULD BE RETURNED TO:

Anthony A. Garganese
City Attorney of Cocoa
Garganese, Weiss, D'Agresta & Salzman, P.A.
111 N. Orange Avenue, Suite 2000
Orlando, FL 32802

(407) 425-9566

FOR RECORDING DEPARTMENT USE ONLY

CITY OF COCOA

DEVELOPMENT AGREEMENT FOR 603 BREVARD AVENUE HOTEL PROJECT

THIS DEVELOPMENT AGREEMENT ("Agreement") is made and executed this 10th day of December, 2020, by and between the **CITY OF COCOA**, a Florida Municipal Corporation ("City"), whose address is 65 Stone Street, Cocoa, Florida 32922 and **LODGING DECISIONS, INC.**, an Ohio corporation ("Developer"), whose address is 9889 Bainbridge Road, Chagrin Falls, Ohio 44023.

WITNESSETH:

WHEREAS, the Cocoa Community Redevelopment Agency ("Agency") is the owner of certain property with an address of 603 Brevard Avenue, Cocoa, Florida, located at the intersection of Brevard Avenue and Factory Street, being more particularly described on Exhibit "A", attached hereto and incorporated by this reference, consisting of Tax Parcel IDs 24-36-33-75-*2 and 24-36-33-75-*3 (the "**Agency Property**"); and

WHEREAS, the Agency acquired the Agency Property for redevelopment purposes in accordance with the Florida Community Redevelopment Act of 1969 (the "**Act**"); and

WHEREAS, in January 2018, Jack D. Brown and Lodging Decisions, Inc. submitted a proposal to the Agency titled "Proposal for Former Cocoa City Hall Redevelopment Site," which proposed that the Agency Property be redeveloped as a mixed-use hotel project consisting of at least seven stories, which exceeded the height limitation of the Commercial Business District-Cocoa Village Overlay zoning district; and

WHEREAS, after multiple public hearings and workshops, the City of Cocoa (hereinafter “City” or “City of Cocoa”) adopted via Ordinance No. 06-2018 on October 24, 2018, a zoning text amendment to allow for Large Scale Commercial/Mixed-Use Buildings on the Agency Property, among other properties, which effectively increased the allowed height on the Agency Property, though such maximum height could only be achieved with approval of a Development Agreement with the City of Cocoa, after Cocoa City Council consideration of certain factors; and

WHEREAS, on June 10, 2020, the Agency and the Developer entered into that certain Amended and Restated Redevelopment Agreement (“Redevelopment Agreement”), which established the development schedule and time periods during which the Agency Property would be expeditiously redeveloped for the betterment of the Cocoa Community Redevelopment Area as a mixed-use hotel project; and

WHEREAS, the Redevelopment Agreement further established three development “phases” for the Project: (1) Phase I, the primary objective of which is the preparation and execution of a Development Agreement with the City of Cocoa to approve the maximum height on the Agency Property and to approve a Conceptual Development Plan, subject to conditions; (2) Phase II, which involves a second round of review of the Project by the City and Agency, including the Developer’s chosen national hotel brand, project financing commitments, a market feasibility study, and any revisions to the Conceptual Development Plan required by the national hotel brand; and (3) Phase III, which includes the actual permitting and construction of the Project; and

WHEREAS, this Agreement is intended to fulfill the requirements of Phase I of the Project, as described in the Redevelopment Agreement, which includes conditional approval of an eight-story (8) mixed-use hotel and the Conceptual Development Plan; and

WHEREAS, the Developer has also entered into a contract to purchase approximately 0.38 acres, more or less, of certain real property with an address of 625, 627 and 629 Brevard Avenue, located immediately south of the Agency Property, with Tax Parcel ID 24-36-33-75-*-4 and more particularly described in Exhibit “B”, attached hereto and incorporated by this reference (the “Contract Purchase Property”); and

WHEREAS, the Contract Purchase Property is also necessary to accommodate the Large Scale Commercial/Mixed-Use Building for the hotel project as depicted in the Conceptual Development Plan addressed in this Agreement; and

WHEREAS, upon the City Council and Agency’s approval of this Agreement, the Developer shall have demonstrated initial suitability of the Agency Property and Contract Purchase Property for the Project and obtained initial City and Agency approval of the Project’s design subject to additional conditions stated in the Redevelopment Agreement and development permits; and

WHEREAS, the Agency approved the Conceptual Development Plan described and attached herein at its meeting of October 27, 2020; and

NOW THEREFORE, in consideration of the mutual promises and covenants contained herein, the parties mutually agree as follows:

1.0 Recitals. The foregoing recitals are true and correct and are hereby incorporated herein by this reference.

2.0 Authority. This Agreement is entered into pursuant to the Florida Municipal Home Rule Powers Act and Section 15-21 of the City Code.

3.0 Redevelopment Agreement. The City and Developer recognize and agree that the City is not a party to the Redevelopment Agreement and that the Agency – not the City – is the owner of the Agency Property. Accordingly, this Agreement is not intended to alter the terms and obligations of the Redevelopment Agreement, including but not limited to, future permitting requirements, permitting schedule, effect of City and Agency approvals, and property acquisition schedule and requirements. Rather, this Agreement is intended to supplement the Redevelopment Agreement and refine any requirements that may be necessary from the City's perspective as the regulatory and permitting authority for the Property. Should any term or condition of the Agreement conflict with any term or condition of the Redevelopment Agreement, the Redevelopment Agreement shall control.

4.0 Condition – Acquisition of Contract Purchase Property and Agency Property by Developer; Partial Vacation of Factory Street. Developer represents and warrants to the City that it has entered into a binding written contract ("Purchase Agreement") to purchase the Contract Purchase Property and that the Developer intends to expeditiously pursue the completion of the closing on the Contract Purchase Property upon the Effective Date of this Agreement. Based on this representation and warranty to the City, Developer further represents and warrants to the City that it is empowered to negotiate and enter into this Agreement. However, the acquisition of fee title to the Contract Purchase Property by the Developer shall be a condition to the City's approval of a final site plan. As such, Developer shall keep the City fully apprised of the status of said closing and shall faithfully and expeditiously complete the closing no later than the date on which the Agency conveys the Agency's Property to the Developer. ("Closing Date"). If Developer fails to complete the closing by the Closing Date and the Agency does not convey the Agency's Property to the Developer as required by the Redevelopment Agreement, the City Council shall have the right, but not obligation, to terminate this Agreement by written notice. Upon the submittal of applications for a final site plan to the City, the Developer shall provide the City Manager and City Attorney a complete copy of a current title opinion for the Contract Purchase Property so the Parties can determine whether the title opinion, including exceptions, causes any material impediment to the development of the Property as described herein and in the Redevelopment Agreement. The City in its reasonable and sole discretion may declare any such impediment as a default, and Developer shall be afforded an opportunity to cure said default under Section 26.0 of this Agreement. If the Developer fails to cure said default, the City Council, in its sole discretion and by written notice, shall have the right to terminate this Agreement. Because the Conceptual Development Plan demonstrates that the Contract Purchase Property is necessary to accommodate the size of building and amenities contemplated for the Project, any references

hereinafter in this Agreement to the “**Property**” shall include both the Agency Property and the Contract Purchase Property unless otherwise expressly stated.

In addition, the City recognizes that the Conceptual Development Plan depicts that an additional approximately 4,200 square-foot portion of the right-of-way on Factory Street is intended to be vacated and redeveloped for the Project. Pursuant to Section 9.B of the Redevelopment Agreement, vacation of the right-of-way shall occur no sooner than the commencement of construction. After the effective date of any vacation of Factory Street, references in this Agreement to the “**Property**” shall also automatically include such portion of Factory Street that is vacated.

5.0 Project Description and Requirements. Developer shall, at its expense, design, permit and construct an approximately 87,870 square-foot mixed-use hotel project with public access retail space fronting Brevard Avenue on the first floor and a parking garage. The project shall specifically consist of at least 100 hotel rooms and not more than 112 hotel rooms with ancillary meeting space, hotel office space, hotel sundries retail shop, breakfast area and lounge, kitchen, swimming pool, and roof top bar and lounge. The public access retail space, which is distinct from the hotel sundries retail shop, shall consist of a minimum of 3,600 square feet of space with pedestrian access from and onto Brevard Avenue. The parking garage shall be incorporated into the hotel building on floors one through four, and 100 parking spaces in the parking garage shall be reserved for public parking use without charge or fee to the public.

(Hereinafter the project description and requirements are referred to as the “**Project**”).

The Developer shall be specifically required to develop the Project to incorporate all amenities described above and as further required in this Agreement into the final site plan, and such amenities shall be maintained in good and working condition throughout the life of the Project. The Project is generally depicted on the Conceptual Development Plan, which consists of a proposed concept site plan that is attached hereto and fully incorporated by reference herein as **Exhibit “C”** (“Conceptual Development Plan”). The Project shall be constructed in accordance with the requirements set forth in this Agreement.

6.0 Conceptual Development Plan; Building Height. The Project shall be substantially developed in accordance with the Conceptual Development Plan which is attached hereto **Exhibit C**. The Conceptual Development Plan is intended to be the general blueprint which details key aspects of the future physical development of the Property. The Conceptual Development Plan shall also serve as a necessary guide for future permit applications and permitting necessary to complete the construction of the Project. Developer shall have the obligation to further submit and obtain the City’s approval of a final site plan and final engineering plans (“**Final Site Plan**”) consistent with the Conceptual Development Plan in all material respects and in compliance with the City Code. The City and Developer expressly acknowledge and agree that the Conceptual Development Plan attached as **Exhibit C** was prepared prior to application for and submittal of attendant engineering plans, including detailed engineering analysis of required stormwater retention and fire flow for the Project. During the Final Site Plan process, the Project shall be duly engineered and provided to the City for consideration under applicable City Codes,

which must be observed and compliance achieved. Developer acknowledges and agrees that Developer shall proceed with Phase II of the Project at its own risk given that a full engineering analysis of the Property's suitability for the Project has not been performed. Should the City determine that the Conceptual Development Plan cannot be achieved while maintaining compliance with the City Code during the Final Site Plan process the City shall have the right to deny Final Site Plan approval and may terminate this Agreement at its discretion. Upon termination, the City shall have revoked any approval of the Conceptual Development Plan obtained in either Phase I or Phase II of the Project, which is expressly required as a condition of redeveloping the Property in accordance with the Redevelopment Agreement. In effect, upon termination, the Developer shall have no further right or obligation to develop the Property. As further described below in Section 20.0 and 25.0, the City further reserves its right to process any Final Site Plan application in accordance with its police power and regulatory authority, which may result in denial of the application should compliance with City Codes and this Agreement not be achieved. In either the case of termination or denial of Final Site Plan approval, each Party shall bear their own costs and expenses incurred up to such date. The execution of this Agreement and approval of the Conceptual Development Plan herein shall not be construed under any circumstances as binding the Agency to convey the Agency Property to the Developer, but merely constitutes initial approval of the Project design subject to future conditions imposed by the City or Agency and assurances of the Developer.

While the City recognizes this Conceptual Development Plan may be reasonably modified to accommodate necessary changes associated with final engineering of the Project, any such modification may not include (a) a different use of the Property; (b) an increase in the building height as approved herein; (c) a reduction in the required amenities as provided in Sections 5.0 and 8.0; or (d) a deviation from any condition provided in this Agreement. The Conceptual Development Plan shall be subject to reasonable adjustments at the Final Engineering Plan phase in order to bring the Project into full compliance with the City Code, and as a result, the exact location, layout and dimensions of the building, landscaping, entrances, utilities, parking and other site improvements may vary slightly between Conceptual Development Plan approval and approval of the Final Engineering Plans. These changes shall be allowed as long as the changes are consistent with the development standards noted in this Agreement and preserve the general character of the development shown on the Conceptual Development Plan.

In approving the Conceptual Development Plan attached hereto as **Exhibit C**, the City Council expressly authorizes herein through this Agreement as provided in Appendix A, Zoning, Article XI, Section 22(I), a Large Scale Commercial/Mixed-Use Building to be constructed on the Property, which may be a total of eight (8) stories in height. The City Council has considered the factors described in Section 22(I), including the economic and social benefits to the City and the Agency, aesthetic quality and character, architectural design, physical and visual scale in comparison with the surrounding buildings, and compatibility with the special and distinctive character of the Cocoa Village.

7.0 Building Elevations and Floor Plans. The building and related floor plans shall be constructed substantially in accordance with the building elevations and floor plans depicted and set forth on **Exhibit "D,"** which is attached hereto and incorporated herein by this

reference (“**Building Plans**”). Further, other aspects of the building façade and roof lines, color scheme, and architectural features depicted on the building may have to be adjusted during the City’s final review and approval procedures to satisfy the requirements of the City Code.

8.0 Project Enhancements. In accordance with Section 15-21 of the City Code and in consideration of the variances and waivers granted in Section 9.0 below and, further, as a condition of the approval of a Large-Scale Commercial/Mixed-Use Building on the Property, the Developer agrees to incorporate the following development enhancements into the Final Site Plan:

- (A) Parking. Pursuant to the requirements of the Redevelopment Agreement, 100 parking spaces in the parking garage shall be reserved for public parking use without charge or fee to the public. Prior to the issuance of any certificate of occupancy, the Developer shall deliver to the City a written, perpetual covenant in favor of the City of Cocoa and in a form acceptable to the City Attorney, reserving the parking spaces for the benefit of and use by the public in perpetuity and without charge or fee unless the City imposes such charge or fee for municipal purposes. In addition and in accordance with the Conceptual Development Plan, the Developer shall mill and resurface John Garren Lane and Factory Street along the entire length of the Project frontage, including all travel lanes and shoulders on both sides of each street. The Developer shall further install a total of fourteen (14) parallel, on-street parking spaces and a pave drain system along both sides of John Garren Lane. Sidewalks shall also be installed on both sides of John Garren Lane and Factory Street along the entire length of the Project frontage.
- (B) Prior to the issuance of a certificate of occupancy, the Developer shall provide to the City public access easements in a form acceptable to the City Attorney for the portion of the future sidewalk located on the Property along the length of John Garren and a 24-foot wide public access easement for the drive aisle located on the southern portion of the Property between the 28 hotel parking spaces. The Developer and the City both acknowledge that the 24-foot wide public access easement for the drive aisle may be altered in the future should any changes to the Conceptual Development Plan in Phase II of the Project be approved by the City to include an expansion of the building footprint to the south. Additional easements for sidewalk and utilities shall be reserved for the City when vacating the portion of Factory Street as described in the Conceptual Development Plan.
- (C) All utilities constructed on the Property including, but not limited to, electric, water, sewer, cable, phone, fiber optics, natural gas and other similar kinds of utilities to service the Property shall be constructed underground unless otherwise necessary to be above ground and approved by the City.
- (D) The Project shall incorporate the use of energy efficient lighting systems, insulation and ENERGY STAR rated windows, low-flow water fixtures, modern heat pumps, and energy efficient HVAC systems.

9.0 Variances and Waivers. In accordance with Section 15-21 of the City Code and, in exchange for the significant project enhancements described above in Section 8.0, the City Council hereby approves the following variance and waiver from the City Code:

- (A) Appendix A Zoning, Article XI, Section 22(I) Cocoa Waterfront Overlay District. The minimum frontage buildout of ninety percent (90%) may be decreased to seventy-eight percent (78%).
- (B) Appendix A Zoning, Article XI, Section 22(I) Cocoa Waterfront Overlay District. Upon the partial vacation of Factory Street, the maximum street setback from Factory Street of 10 feet shall be exceeded to a minimum of 20 feet and a maximum of 36 feet on the Property.
- (C) Appendix A Zoning, Article XI, Section 22(I) Cocoa Waterfront Overlay District. The maximum side street setback from Brevard Avenue of 10 feet shall be exceeded to a maximum of 23.2 feet.
- (D) Appendix A Zoning, Article XI, Section 22(I) Cocoa Waterfront Overlay District. The maximum side street setback from John Garren Lane of 10 feet shall be exceeded to a maximum of 29 feet.
- (E) Appendix A Zoning, Article XII, Section 1(c) Off-Street Parking and Loading Regulations. The definition of "off-street" parking shall be relaxed to include rectangular parking areas measuring nine (9) feet by eighteen (18) feet, exclusive of access drives and aisles, for purposes of this Project, rather than ten (10) feet by twenty (20) feet as is typically required.

10.0 Representations of the Parties. The City and Developer hereby each represent and warrant to the other that it has the power and authority to execute, deliver and perform the terms and provisions of this Agreement and has taken all necessary action to authorize the execution, delivery and performance of this Agreement. This Agreement will, when duly executed and delivered by the City and Developer, constitute a legal, valid and binding obligation enforceable against the parties hereto. Upon acquisition of the Property by the Developer and the recording of this Agreement in the Public Records of Brevard County, Florida, the Agreement shall be a binding obligation upon the Property in accordance with the terms and conditions of this Agreement. Developer represents that it has voluntarily and willfully executed this Agreement for purposes of binding himself and the Property to the terms and conditions set forth in this Agreement.

11.0 Successors and Assigns. This Agreement shall automatically be binding upon and shall inure to the benefit of the City and Developer and their respective successors and assigns. The terms and conditions of this Agreement similarly shall be binding upon the Property and shall run with title to the same upon being duly recorded against the Property by the City.

12.0 Applicable Law; Venue. This Agreement shall be governed by and construed in accordance with the laws of the State of Florida. The venue of any litigation arising out of this Agreement shall be in Brevard County, Florida or, for federal court actions, in Orlando, Florida.

13.0 Amendments. This Agreement shall not be modified or amended except by written agreement duly executed by both parties hereto (or their successors or assigns) and approved by the City Council.

14.0 Entire Agreement; Exhibits. This Agreement and all attached exhibits hereto supersede any other agreement, oral or written, regarding the Property and contain the entire agreement between the City and Developer as to the subject matter hereof. The Exhibits attached hereto and referenced herein are hereby fully incorporated herein by this reference.

15.0 Severability. If any provision of this Agreement shall be held to be invalid or unenforceable to any extent by a court of competent jurisdiction, the same shall not affect in any respect the validity or enforceability of the remainder of this Agreement.

16.0 Effective Date. This Agreement shall become effective upon approval by the City Council and execution of this Agreement by both parties hereto.

17.0 Recordation. Upon full execution by the Parties and the closings on the Contract Purchase Property and Agency Property as required by Section 4.0, this Agreement shall be recorded in the Public Records of Brevard County, Florida by the City.

18.0 Relationship of the Parties. The relationship of the parties to this Agreement is contractual and Developer is an independent contractor and not an agent of the City. Nothing herein shall be deemed to create a joint venture or principal-agent relationship between the parties, and neither party is authorized to, nor shall either party act toward third persons or the public in any manner, which would indicate any such relationship with the other.

19.0 Sovereign Immunity. Notwithstanding any other provision set forth in this Agreement, nothing contained in this Agreement shall be construed as a waiver of the City's right to sovereign immunity under section 768.28, Florida Statutes, or other limitations imposed on the City's potential liability under state or federal law. As such, the City shall not be liable under this Agreement for punitive damages or interest for the period before judgment. Further, the City shall not be liable for any claim or judgment, or portion thereof, to any one person for more than two hundred thousand dollars (\$200,000.00), or any claim or judgment, or portion thereof, which, when totaled with all other claims or judgments paid by the State or its agencies and subdivisions arising out of the same incident or occurrence, exceeds the sum of three hundred thousand dollars (\$300,000.00).

20.0 City's Police Power. Developer agrees and acknowledges that the City hereby reserves all police powers granted to the City by law. In no way shall this Agreement be construed as the City bargaining away or surrendering its police powers.

21.0 Interpretation. The parties hereby agree and acknowledge that they have both participated equally in the drafting of this Agreement and no party shall be favored or disfavored regarding the interpretation to this Agreement in the event of a dispute between the parties.

22.0 Third-Party Rights. This Agreement is not a third-party beneficiary contract and shall not in any way whatsoever create any rights on behalf of any third party.

23.0 Specific Performance. Strict compliance shall be required with each and every provision of this Agreement. The parties agree that failure to perform the obligations provided by this Agreement shall result in irreparable damage and that specific performance of these obligations may be obtained by a suit in equity.

24.0 Attorney's Fees. In connection with any arbitration or litigation arising out of this Agreement, each party shall be responsible for their own attorney's fees and costs.

25.0 Development Permits. Nothing herein shall limit the City's authority to grant or deny any development permit applications or requests subsequent to the effective date of this Agreement. The failure of this Agreement to address any particular City, County, State and/or Federal permit, condition, term or restriction shall not relieve Developer or the City of the necessity of complying with the law governing said permitting requirement, condition, term or restriction. Without imposing any limitation on the City's police powers, the City reserves the right to withhold, suspend or terminate any and all certificates of occupancy for any building, trailer, structure or unit if Developer is in breach of any term and condition of this Agreement.

26.0 Default. Failure by either party to perform each and every one of its obligations hereunder shall constitute a default, entitling the non-defaulting party to pursue whatever remedies are available to it under Florida law or equity including, without limitation, termination of this Agreement or an action for specific performance and/or injunctive relief. Prior to any party filing any action as a result of a default under this Agreement, the non-defaulting party shall first provide the defaulting party with written notice of said default. Upon receipt of said notice, the defaulting party shall be provided a thirty (30) day opportunity in which to cure the default to the reasonable satisfaction of the non-defaulting party prior to filing said action.

27.0 Termination. In addition to those circumstances allowing termination as already expressly provided herein, the City shall have the unconditional right, but not obligation, to terminate this Agreement, without notice or penalty, if Developer fails to adhere to the development schedule and deadlines as established in the Redevelopment Agreement. In addition, the City shall have the right, but not obligation, to terminate the Agreement if Developer permanently abandons construction of the Project, provided, however, the City shall first deliver written notice and an opportunity to cure to the defaulting party as set forth in Section 26.0 above. If the City terminates this Agreement, the City shall record a notice of termination against the Property in the public records of Brevard County, Florida. This Agreement may otherwise be terminated by mutual written agreement of the Parties.

28.0 Indemnification and Hold Harmless. Developer shall be solely responsible for designing, permitting, constructing, operating and maintaining this Project. As such, Developer

hereby agrees to indemnify, release, and hold harmless the City and its elected officials, employees and attorneys from and against all claims, losses, damages, personal injuries (including, but not limited to, death), or liability (including reasonable attorney's fees and costs through all appellate proceedings), directly or indirectly arising from, out of, or caused by Developer and Developer's contractor's and subcontractor's performance of design, permit and construction activities in furtherance of constructing the Project under this Agreement and the operation and maintenance of the Project thereafter. This indemnification shall survive the termination of this Agreement.

29.0 Force Majeure. The parties agree that in the event that the failure by either party to accomplish any action required hereunder within a specified time period ("Time Period") constitutes a default under the terms of this Agreement and, if any such failure is due to any unforeseeable or unpredictable event or condition beyond the control of such party, including, but not limited to, acts of God, acts of government authority (other than the City's own acts), acts of public enemy or war, riots, civil disturbances, power failure, shortages of labor or materials, injunction or other court proceedings beyond the control of such party, or severe adverse weather conditions ("Uncontrollable Event"), then, notwithstanding any provision of this Agreement to the contrary, that failure shall not constitute a default under this Agreement and any Time Period proscribed hereunder shall be extended by the amount of time that such party was unable to perform solely due to the Uncontrollable Event. The extended time period shall be agreed to in writing by the parties and said agreement shall not be unreasonably withheld by either party.

30.0 Notice. Whenever either party desires to give notice to the other, notice shall be sent by hand delivery or certified mail, return receipt requested, and shall be sent to:

For the City:

City Manager
City of Cocoa
65 Stone Street
Cocoa, FL 32922

For Developer:

Jack D. Brown and Lodging Decisions, Inc.
514 L.M. Davey, L.E.
Titusville, FL 32780

With additional notice to:

Patrick D. Quinn
Registered Agent
2802 Som Center Road
Suite 102
Willoughby Hills, OH 44094

Either party may freely modify their respective contact person and address contained in this Paragraph by providing written notice of the modification to the other party. Any Notice given as provided herein shall be deemed received as follows: if delivered by personal service, on the date so delivered; and if mailed, on the third business day after mailing.

31.0 Assignment. Prior to completing the construction of the Project and reaching final build-out of the Project, Developer shall not assign this Agreement without the prior written consent of the City. However, Developer shall be entitled to assign its rights and obligations under this Agreement to a parent, subsidiary, or affiliated entity in which Developer or its members are members or interest holders. Any assignment authorized by this subparagraph shall require the assignee to be a formal signatory to this Agreement and fully assume all of Developer's obligations, commitments, representations, and warranties under this Agreement. Such assignment shall also require the written approval of the City by amendment to this Agreement, which shall not require a public hearing and shall not be unreasonably withheld. In any assignment, the rights and obligations contained herein shall be binding on successors in interest to the Property, and the terms and conditions of this Agreement shall bind and inure to the benefit of the parties hereto and any respective successors and assigns.

IN WITNESS WHEREOF, the parties hereto attached their hands and seals on the dates set forth below.

Signed, sealed and delivered in the presence of the following witnesses:

[Signature]
Signature of Witness
Monica Arment
Printed Name of Witness

[Signature]
Signature of Witness
Colleen O'Donnell
Printed Name of Witness

CITY OF COCOA

By: [Signature]
Stockton Whitten, City Manager

Date: 12/16/2020

ATTEST:

By: [Signature]
Carie Shealy, City Clerk

APPROVED AS TO FORM AND LEGALITY

By: [Signature]
Anthony A. Garganese, City Attorney



STATE OF FLORIDA
COUNTY OF BREVARD

The foregoing instrument was acknowledged before me by means of (✓) physical presence or () online notarization, this 10 day of December, 2020, by Stockton Whitten, the City Manager of the City of Cocoa, a Florida municipal corporation, on behalf of the corporation, who is personally known to me or produced _____ as identification.

(NOTARY SEAL)



MONICA R. ARSENAULT
Commission # GG 985789
Expires June 16, 2024
Bonded Thru Budget Notary Services

Monica Arsenault
(Notary Public Signature)
Monica Arsenault
(Print Name)
Notary Public, State of Florida
Commission No.: GG 985789
My Commission Expires: 6.16.24

Signed, sealed and delivered in the presence of the following witnesses:

[Signature]
Signature of Witness
RICHARD FERNANDEZ
Printed Name of Witness

LODGING DECISIONS, INC.

[Signature]
Print name and title: JACK D. BROWN
Chairman/CEO
Date: 12/10/20

[Signature]
Signature of Witness
Cane Shcally
Printed Name of Witness

STATE OF Florida
COUNTY OF Brevard

The foregoing instrument was acknowledged before me by means of (✓) physical presence or () online notarization, this 10 day of December, 2020, by Jack Brown, the Chairman/CEO of Lodging Decisions, Inc., a foreign corporation, on behalf of the corporation, who is personally known to me or produced _____ as identification.

(NOTARY SEAL)



MONICA R. ARSENAULT
Commission # GG 985789
Expires June 16, 2024
Bonded Thru Budget Notary Services

Monica Arsenault
(Notary Public Signature)

Monica Arsenault
(Print Name)

Notary Public, State of Florida

Commission No.: GG 985789

My Commission Expires: 6.16.24

EXHIBIT A
LEGAL DESCRIPTION OF AGENCY PROPERTY

**LOTS 2 AND 3, SINGLETON'S FIRST ADDITION TO COCOA, ACCORDING TO THE
PLAT THEREOF, AS RECORDED IN PLAT BOOK 1, PAGE 28, OF THE PUBLIC
RECORDS OF BREVARD COUNTY, FLORIDA**

EXHIBIT B
LEGAL DESCRIPTION OF CONTRACT PURCHASE PROPERTY

**LOT 4 OF PLAT OF SINGLETON'S ADDITION TO COCOA, ACCORDING TO THE
PLAT THEREOF, AS RECORDED IN PLAT BOOK 1, PAGE 28 OF THE PUBLIC
RECORDS OF BREVARD COUNTY, FLORIDA.**

EXHIBIT C
CONCEPTUAL DEVELOPMENT PLAN

EXHIBIT D
BUILDING PLANS

CONCEPTUAL HOTEL SITE PLAN

COCOA, FLORIDA

603 BREVARD AVE.

DEVELOPMENT TEAM

LAND OWNER
COCOA REDEVELOPMENT AGENCY
603 BREVARD AVE.
COCOA, FL 32922

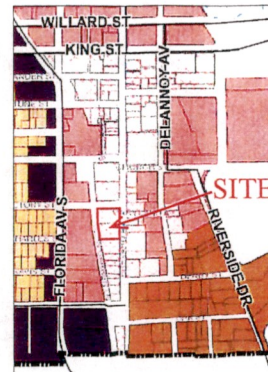
DEVELOPER
LODGING DECISIONS INC.
JACK BROWN
514 L.M. DAVEY LANE
TITUSVILLE, FL 32780
216-970-6599
EMAIL: jbrown217@gmail.com

ARCHITECT
ARCHITECTURAL DESIGN AND ASSOCIATES
ADELSON RAMOS
601 YONGE ST., SUITE 4
ORMOND BEACH, FL 32174
386-676-2686
EMAIL: adelson@architecturalad.com

LANDSCAPE ARCHITECT
SUSAN HALL
EMAIL: susan@hall-la.com
321-449-0790

CIVIL ENGINEER
HONEYCUTT AND ASSOCIATES, INC.
3700 S. WASHINGTON AVE.
TITUSVILLE, FL 32780
321-267-6233
EMAIL: rhc@honeycutt.cc

SITE



ZONING MAP

VICINITY MAP

FLOOR TO AREA CALCULATION F.A.R.

CODE	AREA	F.A.R.
1	1.00	1.00
2	2.00	2.00
3	3.00	3.00
4	4.00	4.00
5	5.00	5.00
6	6.00	6.00
7	7.00	7.00
8	8.00	8.00
9	9.00	9.00
10	10.00	10.00
11	11.00	11.00
12	12.00	12.00
13	13.00	13.00
14	14.00	14.00
15	15.00	15.00
16	16.00	16.00
17	17.00	17.00
18	18.00	18.00
19	19.00	19.00
20	20.00	20.00
21	21.00	21.00
22	22.00	22.00
23	23.00	23.00
24	24.00	24.00
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27	27.00	27.00
28	28.00	28.00
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31	31.00	31.00
32	32.00	32.00
33	33.00	33.00
34	34.00	34.00
35	35.00	35.00
36	36.00	36.00
37	37.00	37.00
38	38.00	38.00
39	39.00	39.00
40	40.00	40.00
41	41.00	41.00
42	42.00	42.00
43	43.00	43.00
44	44.00	44.00
45	45.00	45.00
46	46.00	46.00
47	47.00	47.00
48	48.00	48.00
49	49.00	49.00
50	50.00	50.00

SITE COVERAGE

ITEM	DESCRIPTION	AREA	PERCENT
1	ROOF	1.00	1.00
2	WALLS	1.00	1.00
3	FLOOR	1.00	1.00
4	CEILING	1.00	1.00
5	MECHANICAL	1.00	1.00
6	ELECTRICAL	1.00	1.00
7	PLUMBING	1.00	1.00
8	HVAC	1.00	1.00
9	STAIRS	1.00	1.00
10	ELEVATOR	1.00	1.00
11	LOBBY	1.00	1.00
12	RESTROOM	1.00	1.00
13	BAR	1.00	1.00
14	KITCHEN	1.00	1.00
15	RESTAURANT	1.00	1.00
16	CONFERENCE	1.00	1.00
17	OFFICE	1.00	1.00
18	RETAIL	1.00	1.00
19	ENTERTAINMENT	1.00	1.00
20	SPORTS	1.00	1.00
21	RECREATION	1.00	1.00
22	ARTS	1.00	1.00
23	SCIENCE	1.00	1.00
24	TECHNOLOGY	1.00	1.00
25	HEALTHCARE	1.00	1.00
26	EDUCATION	1.00	1.00
27	RESEARCH	1.00	1.00
28	DEVELOPMENT	1.00	1.00
29	INDUSTRY	1.00	1.00
30	TRANSPORTATION	1.00	1.00
31	UTILITIES	1.00	1.00
32	WATER	1.00	1.00
33	SEWER	1.00	1.00
34	STORMWATER	1.00	1.00
35	LANDSCAPE	1.00	1.00
36	PLANTING	1.00	1.00
37	IRRIGATION	1.00	1.00
38	MAINTENANCE	1.00	1.00
39	SECURITY	1.00	1.00
40	ACCESS	1.00	1.00
41	PARKING	1.00	1.00
42	LOADING	1.00	1.00
43	UNLOADING	1.00	1.00
44	STORAGE	1.00	1.00
45	WAREHOUSE	1.00	1.00
46	FACTORY	1.00	1.00
47	MANUFACTURING	1.00	1.00
48	ASSEMBLY	1.00	1.00
49	FINISHING	1.00	1.00
50	PACKAGING	1.00	1.00

BUILDING SETBACKS FROM ROW

ITEM	DESCRIPTION	SETBACK
1	FRONT	5.0'
2	REAR	5.0'
3	SIDE	5.0'
4	ADJACENT	5.0'
5	STREET	5.0'
6	ALLEY	5.0'
7	YARD	5.0'
8	PLAZA	5.0'
9	PARKING	5.0'
10	LOADING	5.0'
11	UNLOADING	5.0'
12	STORAGE	5.0'
13	WAREHOUSE	5.0'
14	FACTORY	5.0'
15	MANUFACTURING	5.0'
16	ASSEMBLY	5.0'
17	FINISHING	5.0'
18	PACKAGING	5.0'
19	DEVELOPMENT	5.0'
20	INDUSTRY	5.0'
21	TRANSPORTATION	5.0'
22	UTILITIES	5.0'
23	WATER	5.0'
24	SEWER	5.0'
25	STORMWATER	5.0'
26	LANDSCAPE	5.0'
27	PLANTING	5.0'
28	IRRIGATION	5.0'
29	MAINTENANCE	5.0'
30	SECURITY	5.0'
31	ACCESS	5.0'
32	PARKING	5.0'
33	LOADING	5.0'
34	UNLOADING	5.0'
35	STORAGE	5.0'
36	WAREHOUSE	5.0'
37	FACTORY	5.0'
38	MANUFACTURING	5.0'
39	ASSEMBLY	5.0'
40	FINISHING	5.0'
41	PACKAGING	5.0'
42	DEVELOPMENT	5.0'
43	INDUSTRY	5.0'
44	TRANSPORTATION	5.0'
45	UTILITIES	5.0'
46	WATER	5.0'
47	SEWER	5.0'
48	STORMWATER	5.0'
49	LANDSCAPE	5.0'
50	PLANTING	5.0'

ZONING: CBD-CVO CENTRAL BUSINESS DISTRICT
COCOA VILLAGE OVERLAY

GENERAL STATEMENT

THE PROPOSED PROJECT WILL BE DEVELOPED AS A HOTEL IN COCOA VILLAGE. THE HOTEL WILL BE 8 FLOORS WITH A TOTAL HEIGHT OF 85 FT. THERE WILL BE A TOTAL OF 107 HOTEL UNITS, LOCATED ON 3 FLOORS, LEVELS 5,6,7. THERE WILL BE A PARKING GARAGE, ON LEVELS 1,2,3,4. FIRST FLOOR IS THE CHECK IN LOBBY, HOTEL OFFICES, KITCHEN, BREAKFAST AREA. 3,300 SF HOTEL, SUNDECK, RETAIL, MAINTENANCE, 2,520 SF MEETING AREA. 3,600 SF PUBLIC ACCESS RETAIL OFF BREVARD AVE. THERE WILL BE AN OUTDOOR EATING AREA ASSOCIATED WITH THE HOTEL, ALONG BREVARD AVE. A 28 SPACE PARKING LOT WILL BE ADDED TO THE SOUTH SIDE OF THE BUILDING.

THERE WILL BE A SWIMMING POOL ON THE 5TH LEVEL. FACTORY STREET WILL REMAIN 2 WAY. PARKING ON THE NORTH SIDE WILL BE REMOVED. THE SITE WILL HAVE A COVERED DROP OFF AREA WHICH EXTENDS TO THE MIDDLE OF THE EXISTING FACTORY ST. RW. 4,237 SF OF FACTORY ST. WILL BE VACATED AND INCORPORATED INTO THE SITE PLAN. DEVELOPER SHALL BE RESPONSIBLE FOR RELOCATION OF UNDERGROUND UTILITIES AND DRAINAGE OUTSIDE OF BUILDING AND CANOPY AREAS. VACATED PORTION OF FACTORY ST. WILL BE REPLACED WITH PUBLIC ACCESS, DRAINAGE, UTILITY AND SIDEWALK EASEMENTS.

100 OF THE TOTAL PARKING SPACES PROVIDED SHALL BE DESIGNATED AS PUBLIC PARKING.

THE HOTEL SHALL HAVE A FULLY AUTOMATIC SPRINKLER SYSTEM. PARKING GARAGE HEIGHT CLEARANCE: 8.0' PARKING GARAGE WILL HAVE STANDPIPES.

STORMWATER MANAGEMENT WILL BE PROVIDED IN ACCORDANCE WITH CITY OF COCOA CODE. STORMWATER MANAGEMENT SHALL BE UNDERGROUND.

TWO OF THE LARGE CONCRETE PPL POWER POLES ARE THE FRONT ENTRANCE, WILL HAVE TO BE REMOVED, AND THE ELECTRIC LINES BURIED UNDERGROUND ACROSS THE ENTIRE NORTH SIDE OF THE SITE. THIS WORK IS TO BE DONE BY PPL AND PAID FOR BY THE DEVELOPER.

THE CONCRETE POWER POLE AT THE NE CORNER WILL BE PRESERVED. WATER AND SEWER TREATMENT PLANT CAPACITY SHALL BE PROVIDED BY THE CITY OF COCOA. DEVELOPER IS RESPONSIBLE FOR BRINGING WATER AND SEWER FACILITIES OF ADEQUATE CAPACITY TO THE SITE TO SERVE THE PROPOSED BUILDING. DEVELOPER SHALL PROVIDE ANY ADDITIONAL FIRE HYDRANTS AND WATER MAINS NEEDED FOR THE SITE PLAN.

SITE AREA: 54,555 SF (1.25 AC)
FACTORY ST. VACATION: 4,237 SF
TOTAL PROPOSED SITE AREA: 58,792 SF (1.35 AC)

CENTRAL BUSINESS DISTRICT STANDARDS

	CODE	PROVIDED
MINIMUM LOT AREA	4,000 SF	59,319 SF
MINIMUM LOT WIDTH	40 FT	152 FT
MINIMUM LOT DEPTH	100 FT	228 FT
MAXIMUM BUILDING HEIGHT	65 FT	85 FT
MAXIMUM NUMBER OF FLOORS	8	8

104 FT ALLOWABLE BUILDING HEIGHT APPROVED LAST YEAR FOR ALL THE LAND IN THIS SITE PLAN. PROPOSED BUILDING HEIGHT: 85 FT. ROOF: 72'3". TOP OF STRUCTURE 8TH FLOOR: 81'4". PARAPET: 85'0".

DESCRIPTION:

LOTS 2,3 AND 4 OF PLAT OF SINGLETON'S ADDITION TO COCOA, ACCORDING TO THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 1, PAGE 28 OF THE PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA.

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- C 2.2 EXISTING AERIAL
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- C 3.2 PAVING, DRAINAGE AND GRADING PLAN
- C 3.3 SITE PLAN WITH AERIAL
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- A 0.1 GROUND FLOOR PLAN
- A 1 GROUND FLOOR PLAN
- A 2 2ND-3RD FLOOR PLANS
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- A 5 6TH AND 7TH FLOOR PLAN
- A 6 8TH FLOOR ROOF PLAN
- A 9 CONCEPTUAL RENDERING

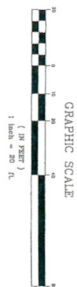
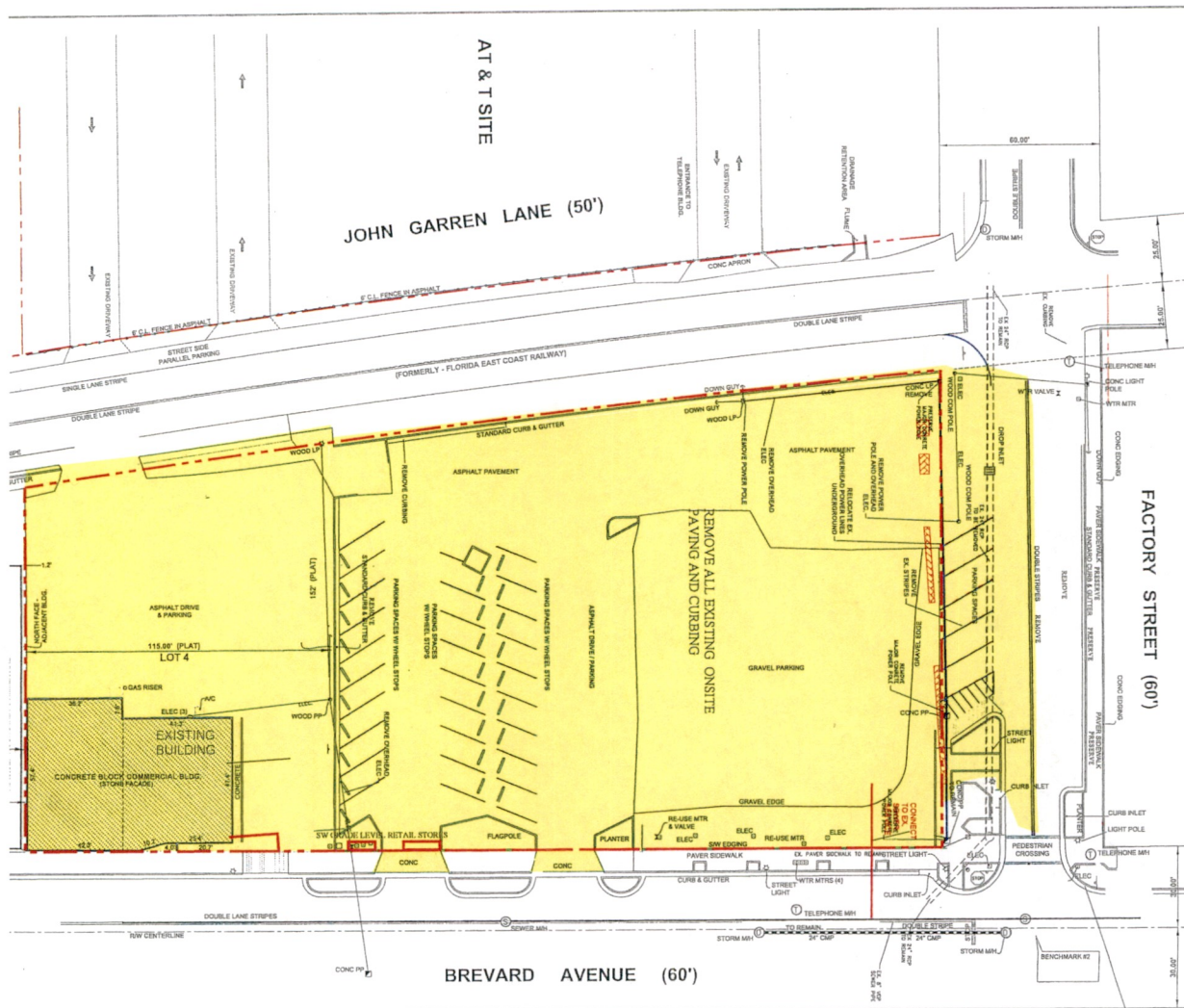
HILTON HOTEL PARKING REQUIREMENTS

ITEM	DESCRIPTION	AREA	PERCENT
1	ROOF	1.00	1.00
2	WALLS	1.00	1.00
3	FLOOR	1.00	1.00
4	CEILING	1.00	1.00
5	MECHANICAL	1.00	1.00
6	ELECTRICAL	1.00	1.00
7	PLUMBING	1.00	1.00
8	HVAC	1.00	1.00
9	STAIRS	1.00	1.00
10	ELEVATOR	1.00	1.00
11	LOBBY	1.00	1.00
12	RESTROOM	1.00	1.00
13	BAR	1.00	1.00
14	KITCHEN	1.00	1.00
15	RESTAURANT	1.00	1.00
16	CONFERENCE	1.00	1.00
17	OFFICE	1.00	1.00
18	RETAIL	1.00	1.00
19	ENTERTAINMENT	1.00	1.00
20	SPORTS	1.00	1.00
21	RECREATION	1.00	1.00
22	ARTS	1.00	1.00
23	SCIENCE	1.00	1.00
24	TECHNOLOGY	1.00	1.00
25	HEALTHCARE	1.00	1.00
26	EDUCATION	1.00	1.00
27	RESEARCH	1.00	1.00
28	DEVELOPMENT	1.00	1.00
29	INDUSTRY	1.00	1.00
30	TRANSPORTATION	1.00	1.00
31	UTILITIES	1.00	1.00
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COVER SHEET

HILTON GARDEN HOTEL
603 BREVARD AVE.
COCOA, FLORIDA



DEMOLITION PLAN

CONCEPTUAL HOTEL SITE PLAN

COCOA, FLORIDA



Honeycutt & Associates, Inc.
ENGINEERS • SURVEYORS • PLANNERS
3700 South Washington Avenue
Titusville, Florida 32780
(321) 267-8233 Fax (321) 269-7847
Certificate of Authorization EB-0007623

RECEIVED J. KERN PE
STATE OF FLORIDA

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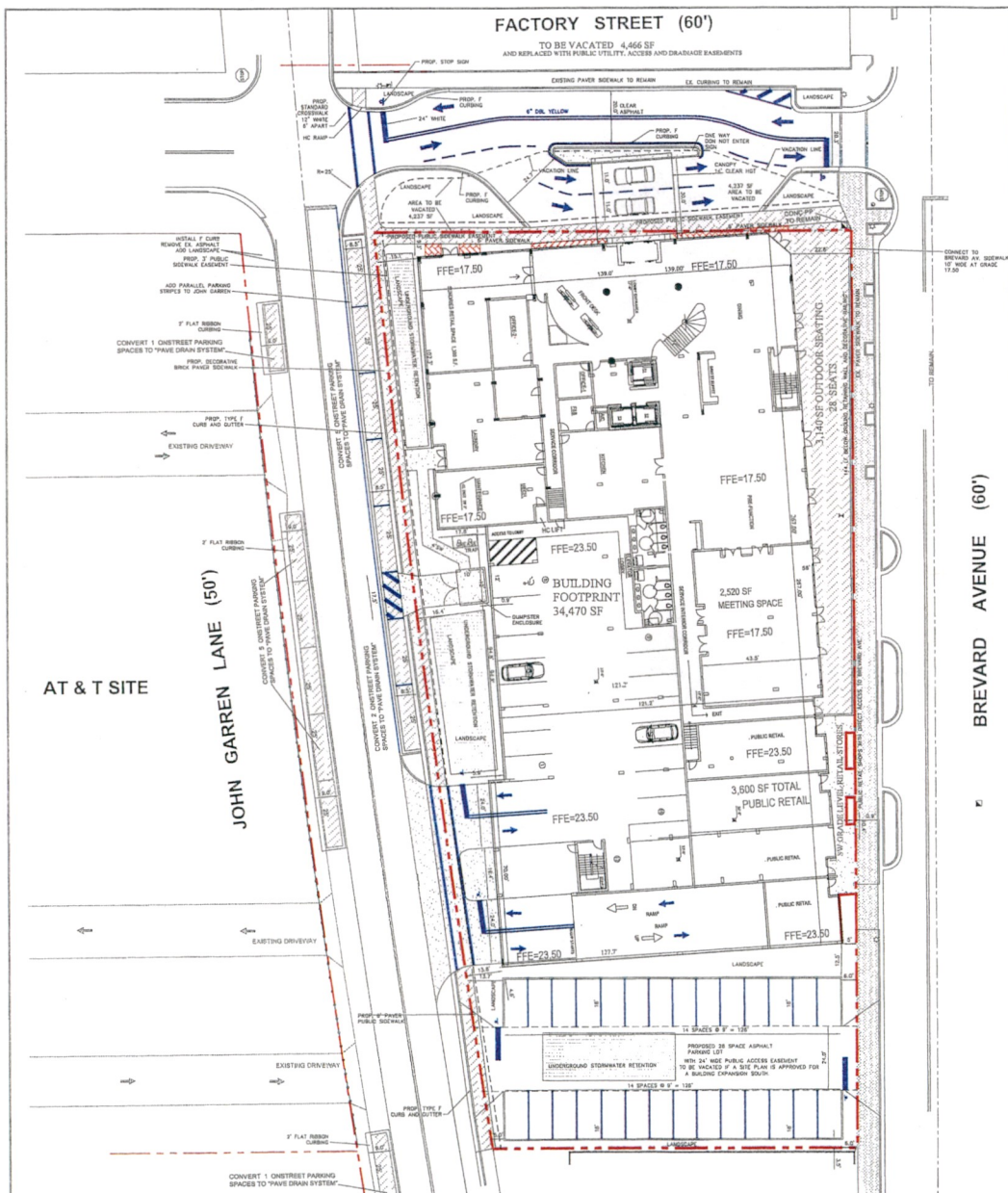
DATE 10-14-20

REVISION NUMBER

DATE

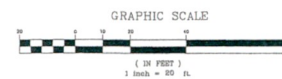
REVISION DESCRIPTION

RETAIL PLAN SUBMITTAL DATE



SITE PLAN NOTES

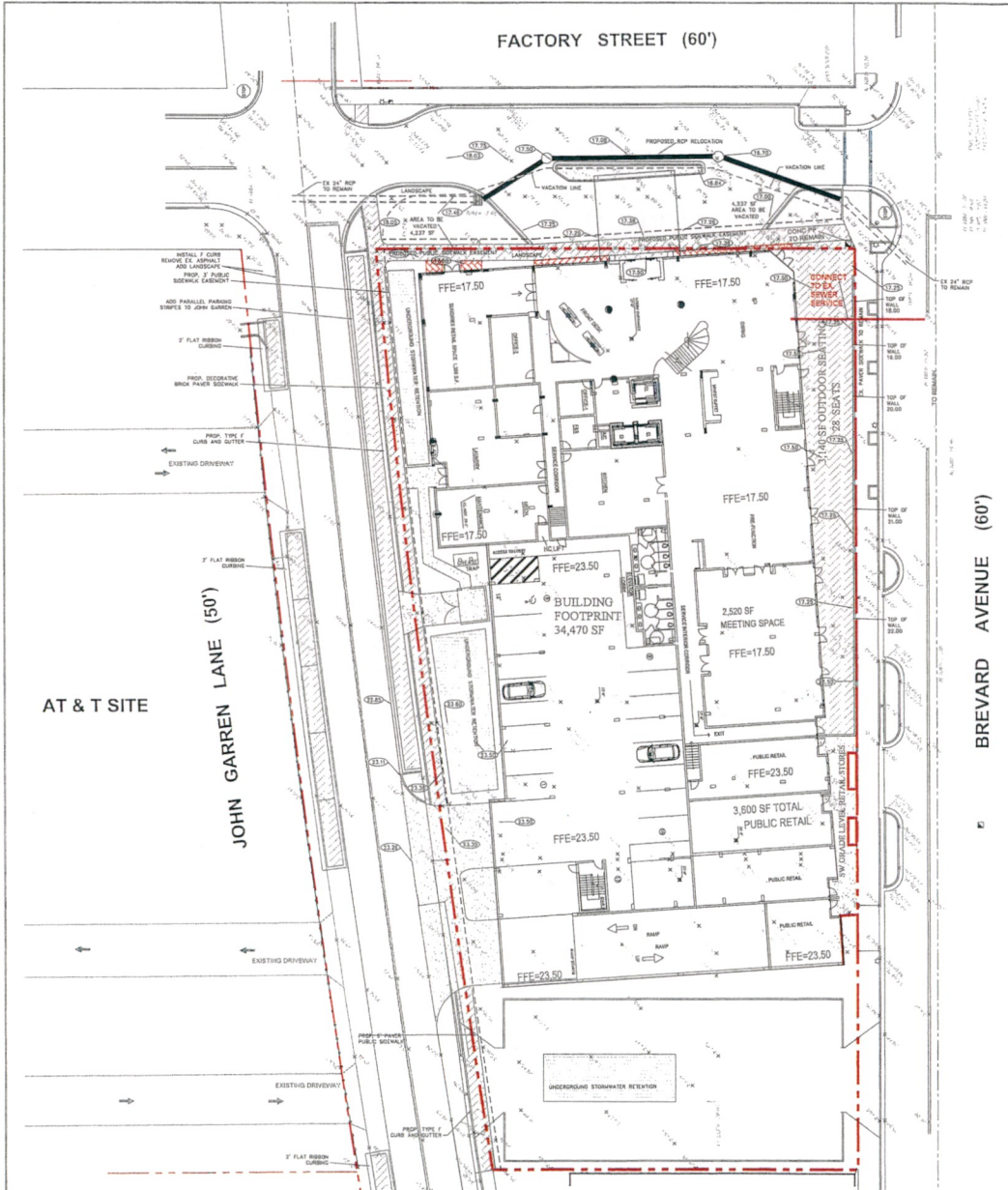
1. DEVELOPER SHALL HAVE JOHN GARREN LANE MILLED AND RESURFACED ALONG THE ENTIRE LENGTH THE PROJECT FRONTAGE.
2. CONSTRUCTION OF ON STREET PARKING SHOULD MATCH THE LOOK OF BREVARD AVE.
3. THE ENTIRE PORTION OF FACTORY STREET BEING VACATED SHALL BE REPLACED WITH A PUBLIC ACCESS EASEMENT, PUBLIC DRAINAGE AND UTILITY EASEMENT, AND A PUBLIC SIDEWALK EASEMENT. THESE SHALL BE DONE CONCURRENTLY WITH THE VACATION.



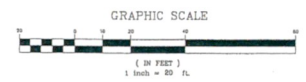
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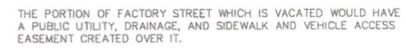
SITE PLAN
CONCEPTUAL HOTEL SITE PLAN
COCOA, FLORIDA



- ### DRAINAGE
1. PROVIDE FOR 1" OF RUNOFF.
SITE AREA: 54,555 SF
1" OF RUNOFF X 54,555 SF = 4,545 CF MINIMUM REQUIRED.
 2. DRAINAGE SYSTEM SHALL BE DESIGNED TO HANDLE THE 25 YEAR 24 HOUR STORM EXPERIENCE.
 3. THE STORMWATER TREATMENT SYSTEM SHALL BE CONNECTED TO THE CITY OF COCOA SYSTEM FOR OVERFLOW.
 4. DRAINAGE SYSTEM SHALL BE DESIGNED TO MEET CITY CODE OF ORDINANCES AND COMPREHENSIVE PLAN, AS WELL AS SURVMD REQUIREMENTS.

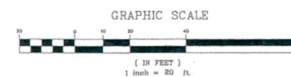


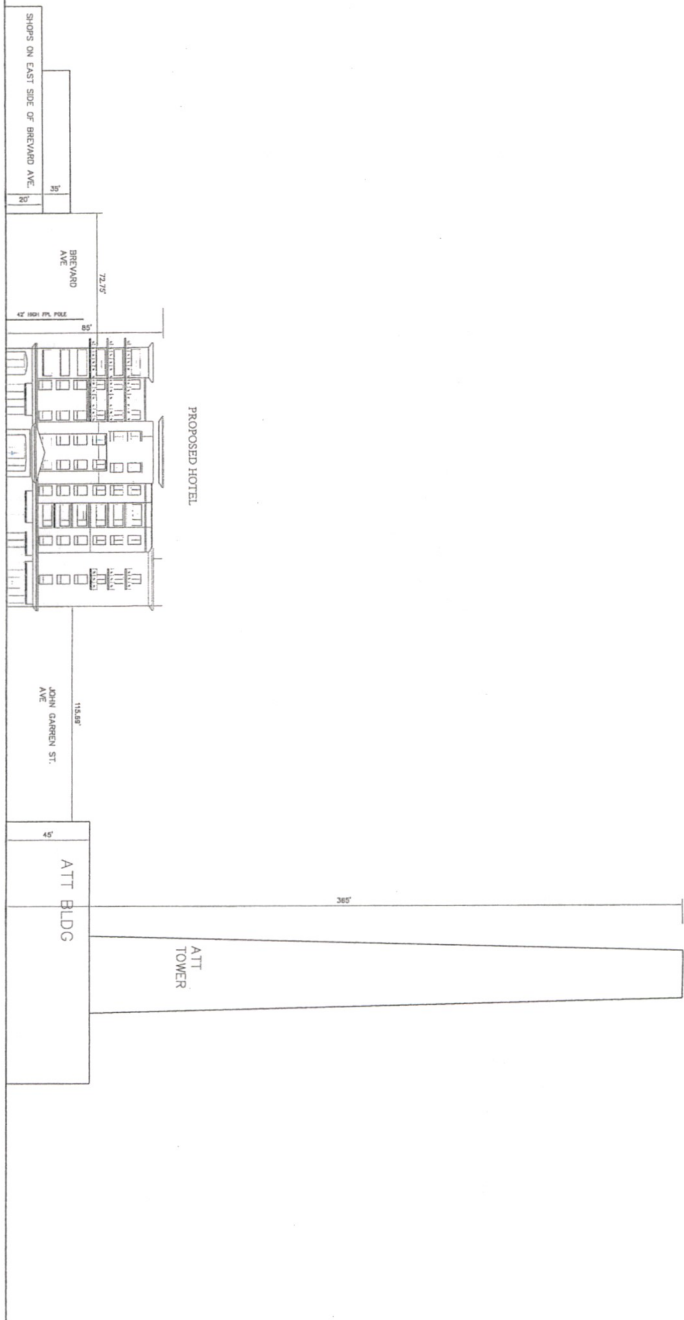
Honeycutt & Associates, Inc. ENGINEERS-SURVEYORS-PLANNERS 3700 South Washington Avenue Ft. Lauderdale, Florida 33309 (371) 371-1111 or (371) 371-1112 Fax: (371) 371-1113 Email: mh@honeycutt.com Certificate of Authorization EB-0007923	PAVING, GRADING AND DRAINAGE PLAN CONCEPTUAL HOTEL SITE PLAN COCOA, FLORIDA	REVISION NO. DATE DESCRIPTION	REVISION NO. DATE DESCRIPTION
	REVISION NO. DATE DESCRIPTION	REVISION NO. DATE DESCRIPTION	REVISION NO. DATE DESCRIPTION



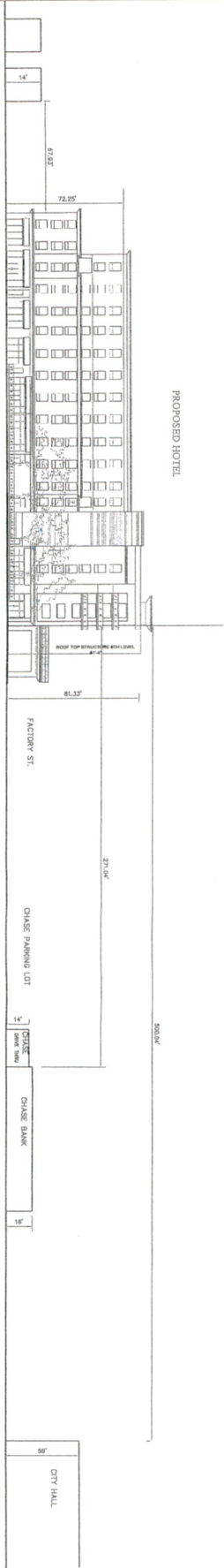
THE PROPOSED HOTEL SH. CONNECT TO CITY OF COCOA WATER AND SEWER SYSTEM. THE BUILDING SHALL HAVE AN AUTOMATIC SPRINKLER SYSTEM TO COVER THE ENTIRE BUILDING AS REQUIRED BY THE CITY OF COCOA BUILDING DEPARTMENT. IT IS THE PROJECT DEVELOPERS RESPONSIBILITY TO PROVIDE ADEQUATE WATER TO THE SITE FOR FIRE PROTECTION AS WELL AS DOMESTIC POTABLE WATER DEMANDS. DEVELOPER SHALL PROVIDE THE CITY OF COCOA WITH A WATER SYSTEM ANALYSIS AS PART OF THE FINAL SITE CONSTRUCTION PLAN APPROVAL. THE ANALYSIS CLEARLY DEMONSTRATES THAT THERE IS ADEQUATE FIRE FLOW TO MEET THE CITY REQUIREMENTS FOR THIS BUILDING. DEVELOPER SHALL BE RESPONSIBLE TO DESIGN, AND BUILD AND PAY FOR ANY WATER MAIN EXTENSIONS OR IMPROVEMENTS REQUIRED TO PROVIDE THE FIRE FLOW AND POTABLE DRINKING WATER REQUIRED BY THE CITY OF COCOA.

BREVARD AVENUE (60")





PERSPECTIVE SECTION LOOKING SOUTH
HORIZONTAL SCALE 1" = 30'
VERTICAL SCALE 1" = 30'



PERSPECTIVE SECTION LOOKING WEST
HORIZONTAL SCALE 1" = 30'
VERTICAL SCALE 1" = 30'

PERSPECTIVE SECTIONS		 Honeycutt & Associates, Inc. ENGINEERS • SURVEYORS • PLANNERS 3700 South Washington Avenue Titusville, Florida 32780 (321) 287-6233 Fax (321) 269-7847 Certificate of Registration EB-0007623	RICHARD J. KERN PE REGISTRATION # 35737 STATE OF FLORIDA SEAL DATE 10-14-20	<table border="1"> <thead> <tr> <th>REVISION NUMBER</th> <th>DATE</th> <th>REVISION DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	REVISION NUMBER	DATE	REVISION DESCRIPTION																														
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CONCEPTUAL HOTEL SITE PLAN COCOA, FLORIDA		INITIAL PLAN SUBMITTAL DATE: COPYRIGHT © 2013 HONEYCUTT & ASSOCIATES, INC., ALL RIGHTS RESERVED.																																			

Susan Hall, ASLA
 LANDSCAPE ARCHITECTURE
 LC26000317
 4425 CROOKED MILE RD.
 MERRITT ISLAND, FL 32952
 PHONE: (321) 449-0790
 FAX: (321) 449-1225
 www.hall-ta.com

Hilton Garden Inn
 Cocoa Village
 Cocoa, FL

Site
 Landscape
 Concept

DATE 07-08-20

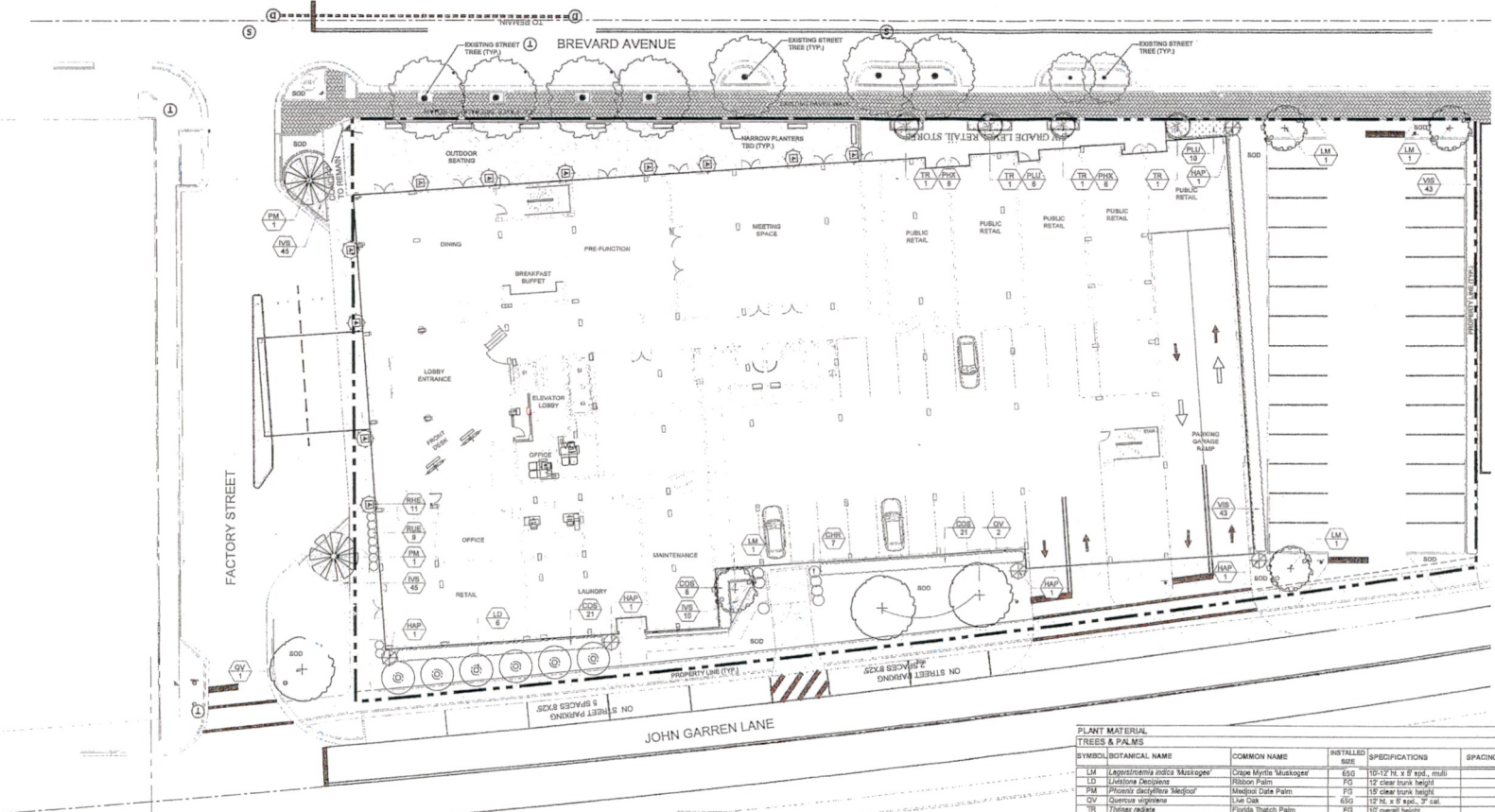
DESIGN S.H.

DRAWN M.M.

SCALE 1/16" = 1' - 0"

REVISIONS

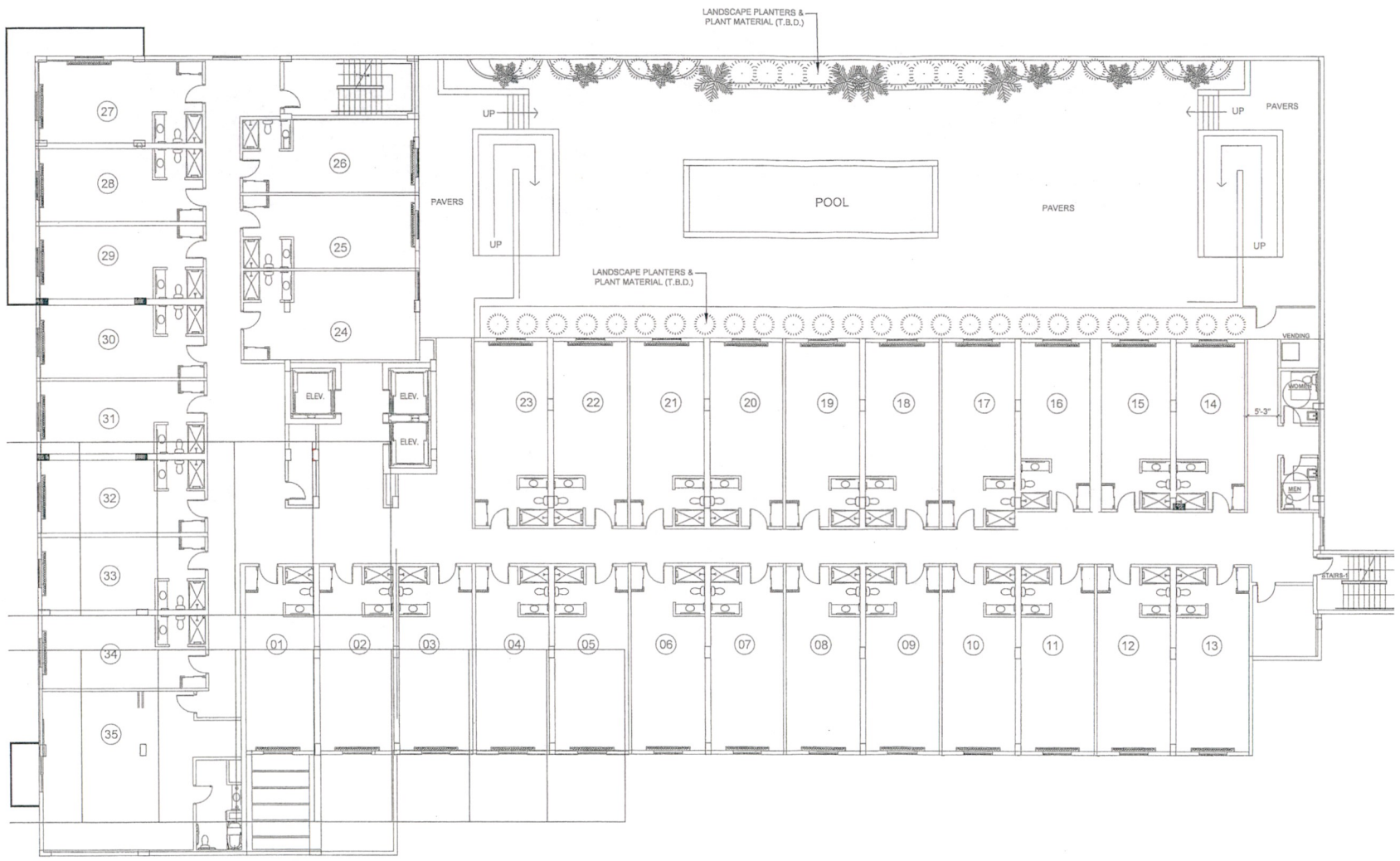
BSA



PLANT MATERIAL						
TREES & PALMS					NATIVE	WATER
SYMBOL	BOTANICAL NAME	COMMON NAME	INSTALLED SIZE	SPECIFICATIONS	SPACING	WATER
LM	Leptostemum indicum 'Mistakey'	Crape Myrtle 'Mistakey'	650	10-12 ft. x 8" dbh, multi		✓
LM	Leptostemum indicum	Ribbon Palm	70	12' clear trunk height		✓
PM	Phoenix dactyloides 'Medio'	Medio Palm	70	12' clear trunk height		✓
QV	Quercus virginiana	Live Oak	650	12" dbh. x 8" spd. 3" cal.		✓
TR	Trichomanes	Florida Thatch Palm	70	10' overall height		✓

GROUNDCOVERS						
SYMBOL	BOTANICAL NAME	COMMON NAME	INSTALLED SIZE	SPECIFICATIONS	SPACING	WATER
COB	Cordia alliodora 'Serpent'	Silver Buttonwood	30	18" dbh. x 18" ht.	36" oc	✓
CHI	Chrysanthemum 'Red Tip'	Red Tip Coccoloba	30	18" dbh. x 18" ht.	36" oc	✓
VIB	Viburnum 'Black & Blue'	Black & Blue Viburnum	30	18" dbh. x 18" ht.	36" oc	✓
HAP	Hemelia patens	Firebush	70	28" dbh. x 24" ht.	As shown	✓
PLU	Plumbago indica 'Imperial Blue'	Imperial Blue Plumbago	30	18" dbh. x 18" ht.	36" oc	✓
POC	Podocarpus neriifolia	Podocarpus 'Neriifolia'	30	14" dbh. x 14" ht.	24" oc	✓
REI	Rapanea indica	Lady Palm	70	2" dbh. in soil	As shown	✓
REI	Rapanea indica	Rapanea 'Purple Shrimp'	70	14" dbh. x 14" ht.	36" oc	✓
VS	Viburnum acerifolium	Sandbarke Viburnum	70	24" dbh.	36" oc	✓







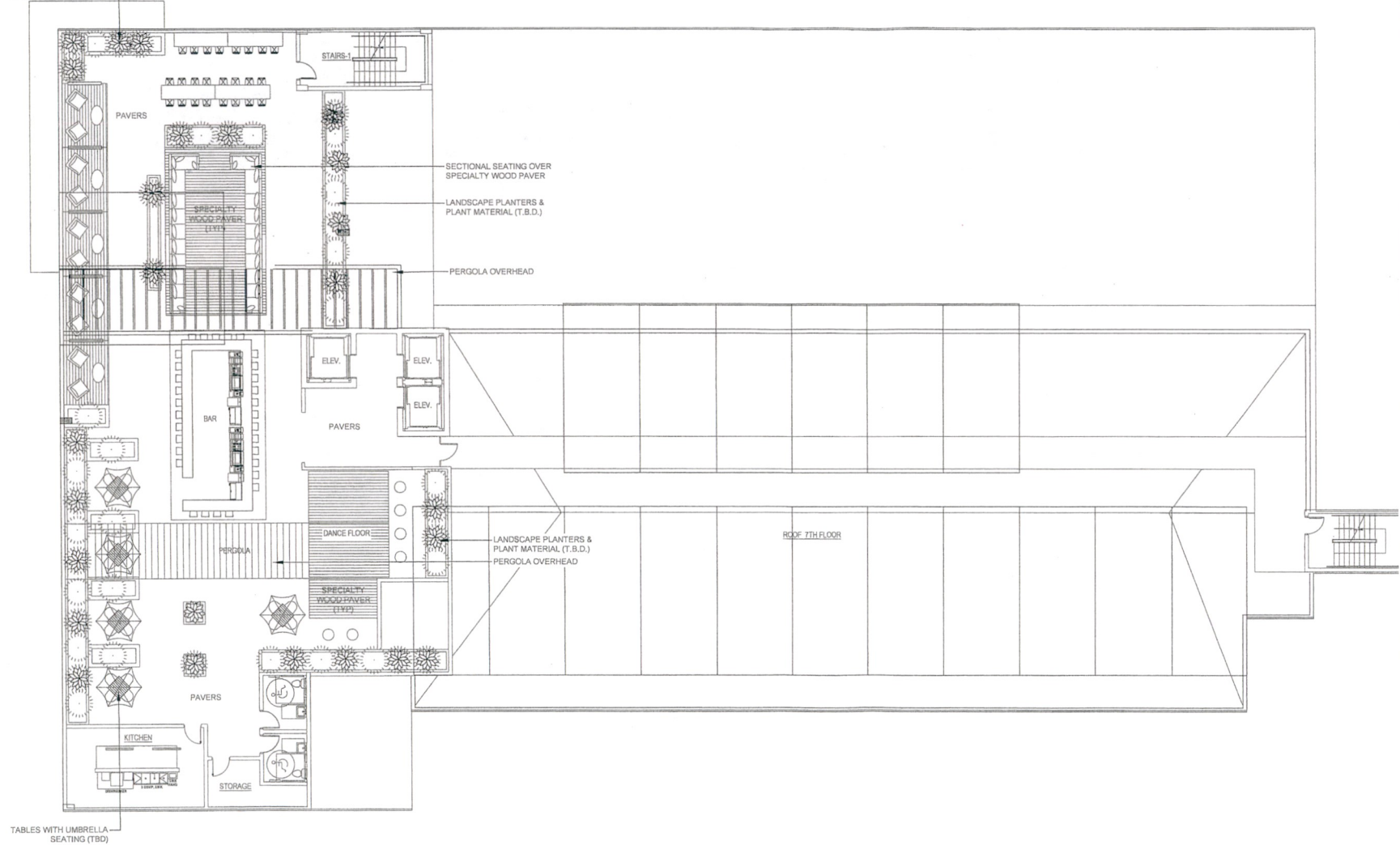
Susan Hall, ASLA
 LANDSCAPE ARCHITECTURE
 LC14000317
 4425 CROOKED MILE RD.
 MERRITT ISLAND, FL 32952
 PHONE: (321) 449-0790
 FAX: (321) 449-1223
 www.hall-la.com

Hilton Garden Inn
 Cocoa Village
 Cocoa, FL

SHEET TITLE	Pool Deck Landscape Concept
DATE	07-08-20
DESIGN	S.H.
DRAWN	M.M.
SCALE	1/8" = 1' - 0"
REVISIONS	
REAL	



LANDSCAPE PLANTERS &
PLANT MATERIAL (T.B.D.)



TABLES WITH UMBRELLA
SEATING (TBD)

Susan Hall, ASLA
LANDSCAPE ARCHITECTURE
LC1809317
4425 CROOKED MILE RD.
MERRITT ISLAND, FL 32952
PHONE: (321) 449-0790
FAX: (321) 449-1225
www.hall-la.com

Hilton Garden Inn
Cocoa Village
Cocoa, FL

SHEET TITLE
Roof Bar
Landscape
Concept

DATE
07-08-20

DESIGN
S.H.

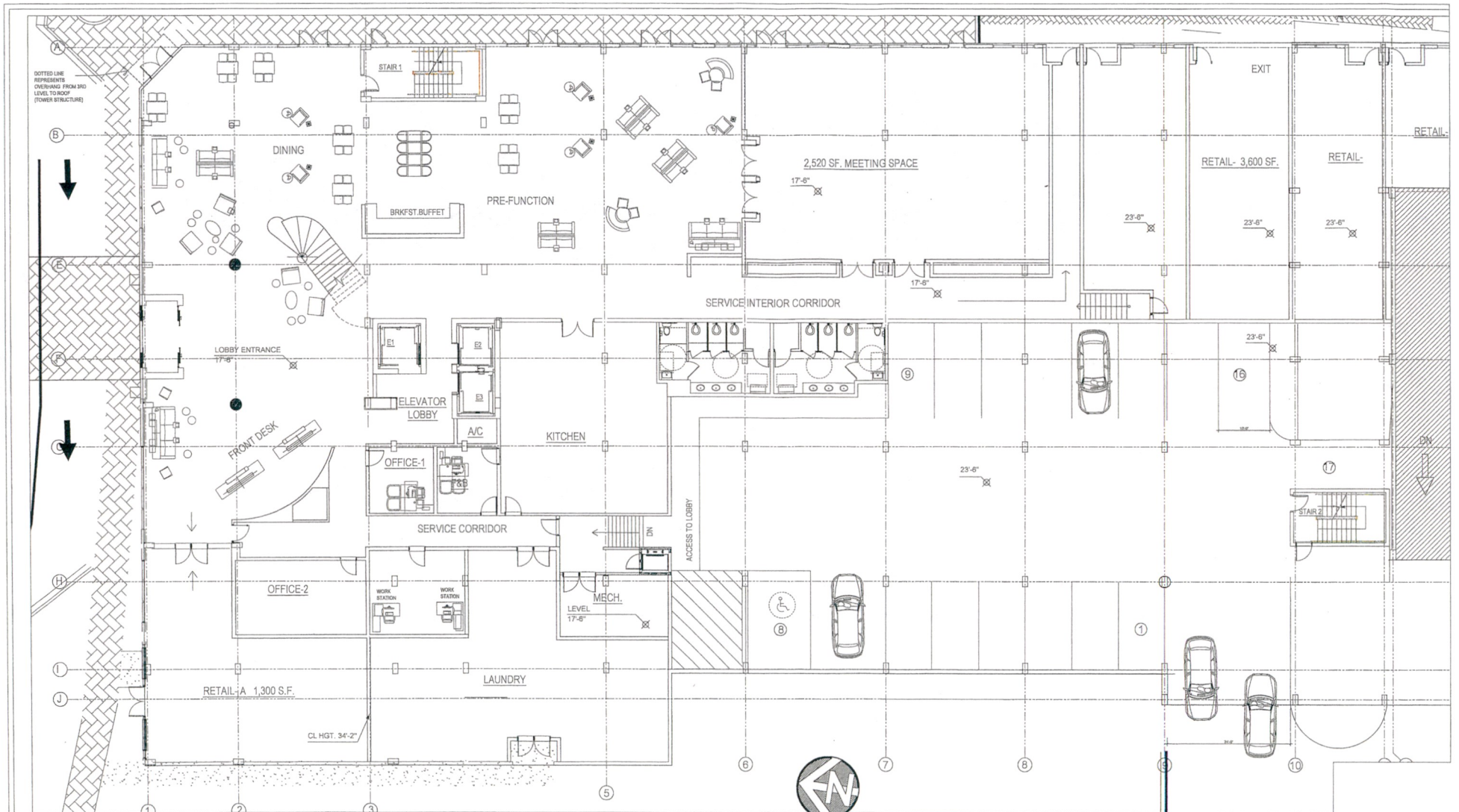
DRAWING
M.M.

SCALE
1/8" = 1' - 0"

REVISIONS

SEAL





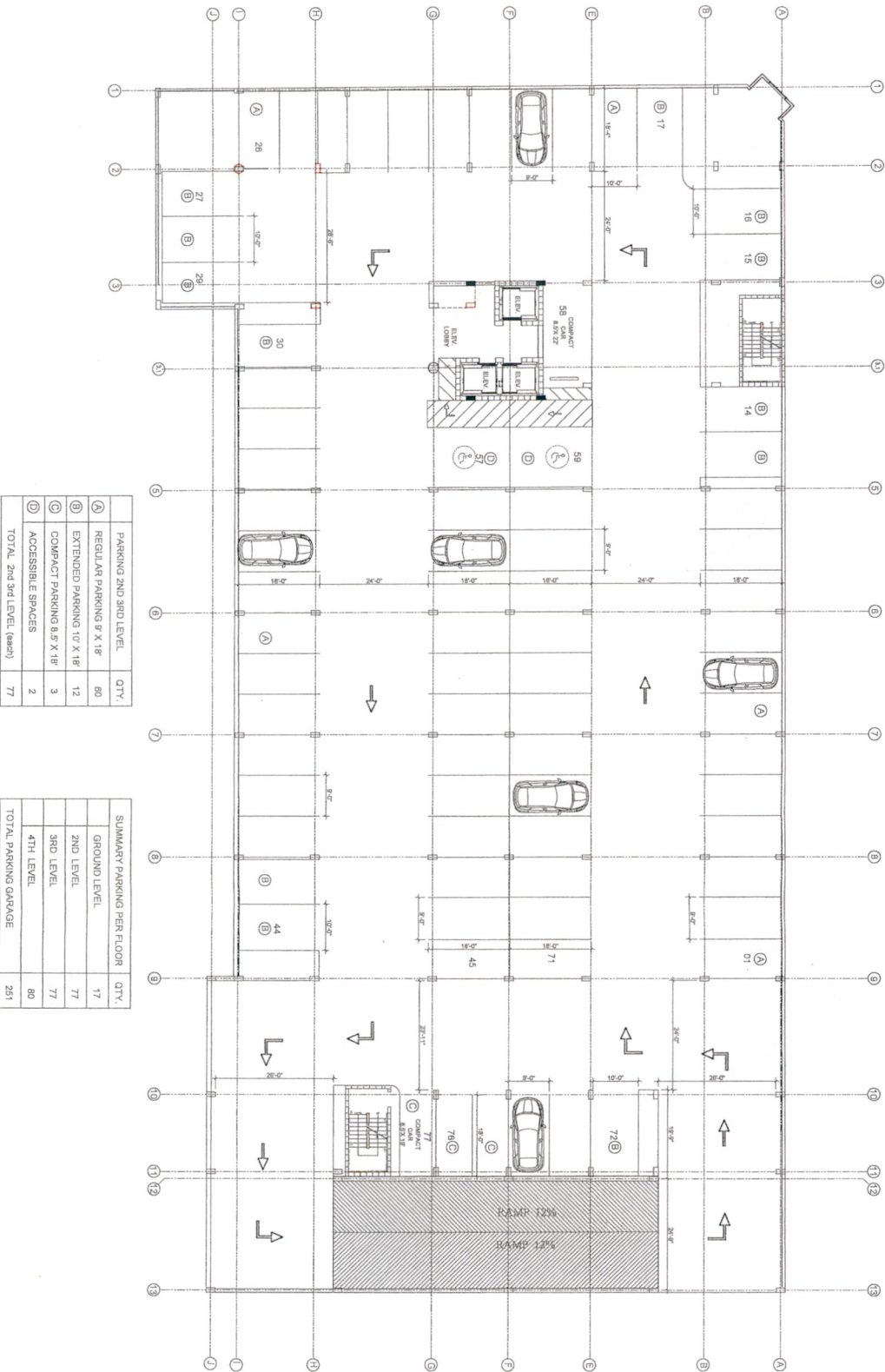
CONCEPTUAL

GROUND FLOOR PLAN
SCALE: 1/8" = 1'-0"

11-27-20

A
1

CONCEPTUAL



PARKING 2ND 3RD LEVEL		QTY.
A	REGULAR PARKING 9' X 18'	
12	EXTENDED PARKING 10' X 18'	12
3	COMPACT PARKING 8.5' X 18'	3
2	ACCESSIBLE SPACES	2
TOTAL 2nd 3rd LEVEL (max)		77

SUMMARY PARKING PER FLOOR		QTY.
GROUND LEVEL		17
2ND LEVEL		77
3RD LEVEL		77
4TH LEVEL		80
TOTAL PARKING GARAGE		251

2ND 3TH FLOOR PLAN

SCALE 1/8" = 1'-0"

REV#	DATE	DESCRIPTION
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SEAL
RICHARD BROOKFIELD
ARCHITECT
TO THE BEST OF THE
ARCHITECT'S KNOWLEDGE, THE
OWNER WITH THE APPLICABLE
MINIMUM BUILDING CODES AND
STANDARDS AS DETERMINED BY
THE LOCAL BUILDING DEPARTMENT
AND ACCORDANCE WITH SECTION
1001.4 OF THE INTERNATIONAL
BUILDING CODE, THE ARCHITECT
GIVES NO WARRANTY OR
GUARANTEE FOR THE
DESIGN OR CONSTRUCTION
OF THE PROJECT.

OWNER:
ADP-A INC.

CONCEPTUAL
HILTON HOTEL PRODUCT
COCOA FLORIDA
2ND - 3RD FLOOR

ARCHITECTURAL DESIGN
+ ASSOCIATES, INC.
AA26001959
11-27-20
11-27-20



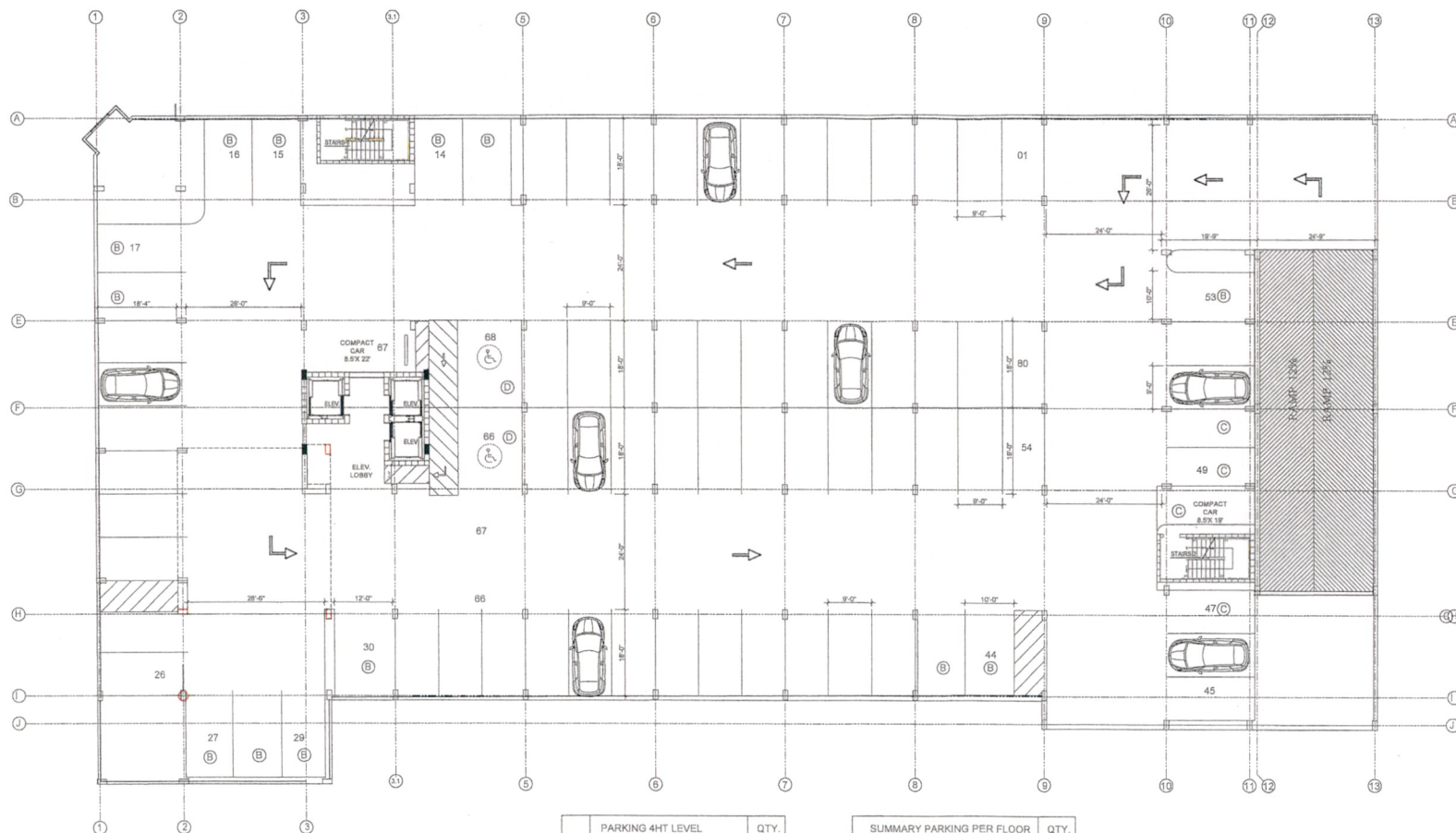
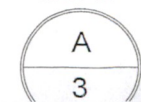
CONCEPTUAL
HILTON HOTEL PRODUCT
COCOA FLORIDA
4TH FLOOR

SEAL
RICHARD BROOKFIELD
PRINCIPAL ARCHITECT
TO THE BEST OF THE
ARCHITECT'S KNOWLEDGE, THE
PLANS AND SPECIFICATIONS
COMPLY WITH THE APPLICABLE
MINIMUM BUILDING CODES AND
THE APPLICABLE FIRE SAFETY
STANDARDS AS DETERMINED BY
THE LOCAL AUTHORITY IN
ACCORDANCE WITH SECTION
110.8.4.4 FBC-8 AND CHAPTER 633,
FLORIDA STATUTES.

DRAWN BY: AD-A INC
OWNER:

REV#	DATE	DESCRIPTION

11-27-20

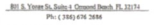


	PARKING 4TH LEVEL	QTY.
(A)	REGULAR PARKING 9' X 18'	62
(B)	EXTENDED PARKING 10' X 18'	13
(C)	COMPACT PARKING 8.5' X 18'	3
(D)	ACCESSIBLE SPACES	2
	TOTAL 4TH LEVEL	80

	SUMMARY PARKING PER FLOOR	QTY.
	GROUND LEVEL	17
	2ND LEVEL	77
	3RD LEVEL	77
	4TH LEVEL	80
	TOTAL PARKING GARAGE	251

CONCEPTUAL

4TH FLOOR PLAN
SCALE: 3/32" = 1'-0"



SEAL

RICHARD BROOKFIELD
PRINCIPAL ARCHITECT

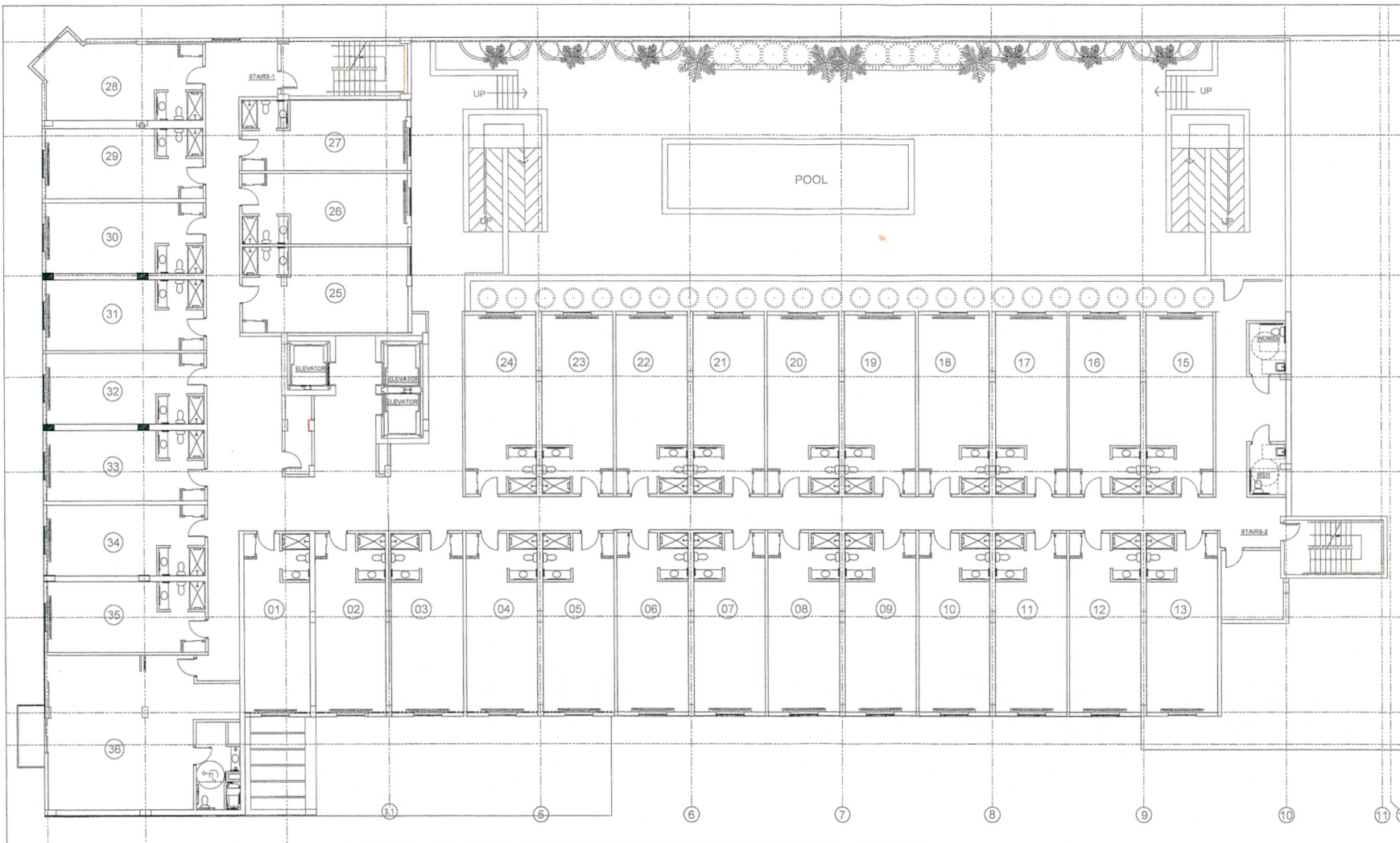
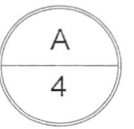
TO THE BEST OF THE ARCHITECT'S KNOWLEDGE, THE PLANS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE MINIMUM BUILDING CODES AND THE APPLICABLE FIRE SAFETY STANDARDS AS DETERMINED BY THE LOCAL AUTHORITY IN ACCORDANCE WITH SECTION 110.8.4.4 FBC-B AND CHAPTER 633, FLORIDA STATUTES.

DRAWN BY: AD+A INC

OWNER:

[illegible]

11-27-20

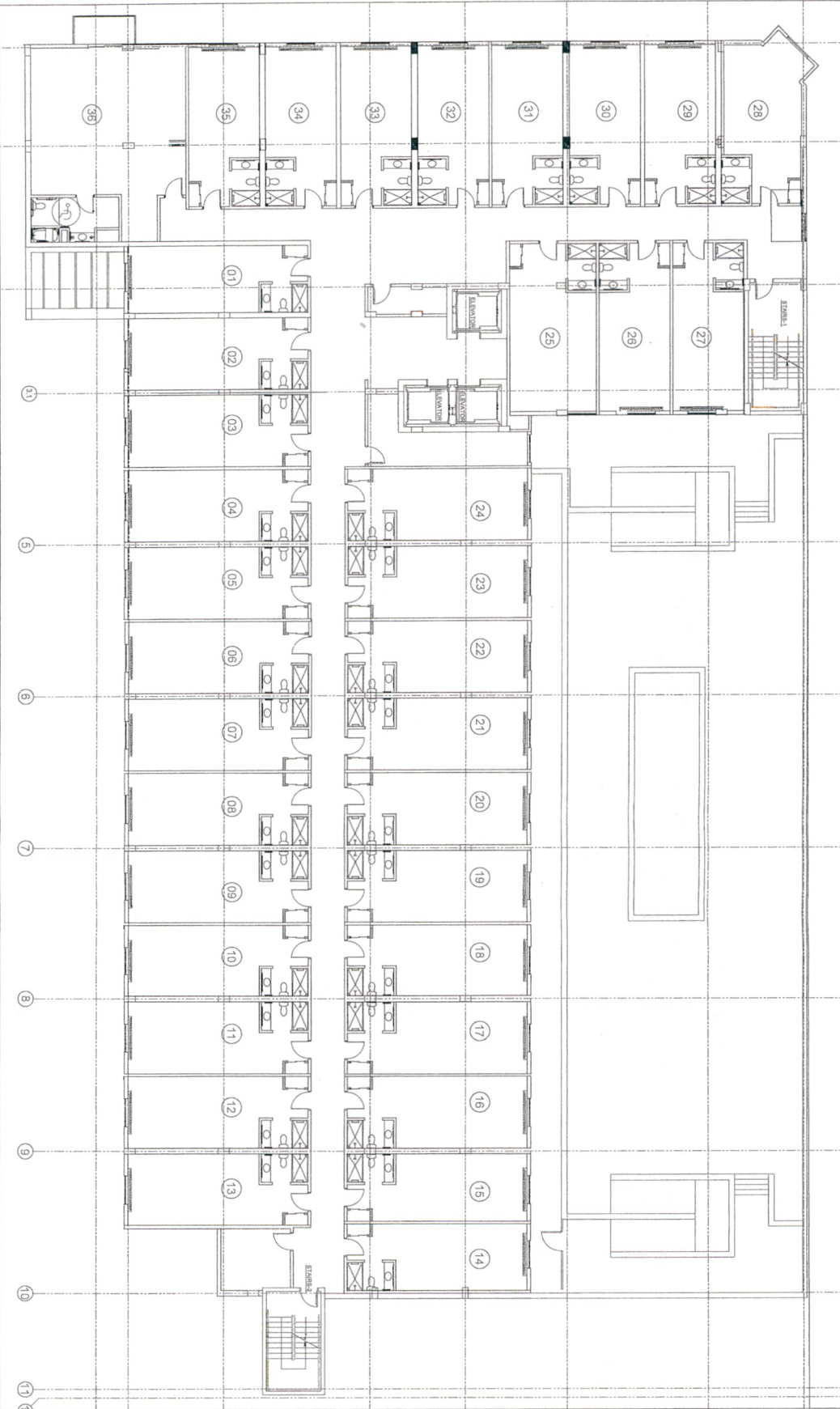


CONCEPTUAL

5TH FLOOR PLAN
SCALE: 1/8" = 1'-0"

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6TH-7TH FLOOR PLAN

[illegible]

RICHARD BROOKFIELD
PRINCIPAL ARCHITECT

TO THE BEST OF THE
ARCHITECT'S KNOWLEDGE, THE
PLANS AND SPECIFICATIONS
COMPLY WITH THE APPLICABLE
MINIMUM BUILDING CODES AND
THE APPLICABLE FIRE SAFETY
STANDARDS AS DETERMINED BY
THE LOCAL AUTHORITY IN
ACCORDANCE WITH SECTION
1103.4.2 FBC-8 AND CHAPTER 833,
FLORIDA STATUTES.

DRAWN BY: ADA-INC
OWNER:

CONCEPTUAL
HILTON HOTEL PRODUCT
COCOA FLORIDA
6TH -7TH FLOOR PLAN

+ ASSOCIATES INC.
AA26001959
181 S. Yermoland Blvd. & Concord Beach, P.O. 31714
Ph: (360) 676 2888





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REV#	DATE	DESCRIPTION

OWNER:
DRAWN BY: AD&A INC.
CHECKED BY: AD&A INC.
DESIGNED BY: AD&A INC.
TO THE BEST OF THE KNOWLEDGE OF THE ARCHITECT, THE INFORMATION CONTAINED HEREIN IS TRUE AND CORRECT. THE ARCHITECT MAKES NO WARRANTY, EXPRESS OR IMPLIED, FOR THE ACCURACY, COMPLETENESS, OR SUITABILITY OF THE INFORMATION CONTAINED HEREIN. THE ARCHITECT SHALL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS IN THE INFORMATION CONTAINED HEREIN. THE ARCHITECT SHALL NOT BE RESPONSIBLE FOR ANY CONSEQUENCES OF THE USE OF THE INFORMATION CONTAINED HEREIN.

CONCEPTUAL
HILTON HOTEL PRODUCT
COCOA FLORIDA
CONCEPTUAL RENDERING

ARCHITECTURAL DESIGN
ASSOCIATES INC.
AA26001959
1000 N. W. 10TH AVE., SUITE 100
FORT LAUDERDALE, FL 33304
TEL: 772-437-1000
FAX: 772-437-1001
WWW.ADA-FLA.COM





**Community Services Department
Planning & Zoning Division**

65 Stone Street | Cocoa, FL 32922

Phone: (321) 433-8535 | Fax: (321) 433-8543

**COURTESY NOTICE OF PUBLIC HEARING
TO PROPERTY OWNERS WITHIN 500 FEET OF THE SUBJECT SITE**

603 Brevard Ave. is petitioning the **Planning & Zoning Board** for the following item:

PZ-21-0200022 (603 BREVARD AVE)

APPROVAL OF A LARGE-SCALE SITE PLAN (COCOA HOTEL AND HOSPITALITY) CONSISTENT WITH APPENDIX A ZONING, ARTICLE XIII, SECTION 1, OF THE CITY CODE. THE APPLICANT DESIRES TO DEVELOP THE EXISTING VACANT SITE AS A HOTEL. THE SUBJECT PROPERTY IS LOCATED ON THE WEST SIDE OF BREVARD AVE AT 603 BREVARD AVE AND CONTAINS +/- 1.25 ACRES. THE PROPERTY IS IDENTIFIED BY PARCEL: 24-36-53-75-*2; PARCEL :24-36-53-75-*3 AND PARCEL #: 24-36-53-75-*4.

The Board will hold a public hearing on this request at 6:00 p.m. on
Wednesday, **April 6th, 2022.**

in the City of Cocoa Council Chambers located at 65 Stone Street, Cocoa, Florida. All interested parties are invited to attend and will be heard if desired.

Cynthia Thurman, Planning and Zoning Manager

March 21, 2022

This meeting may include the attendance of one (1) or more members of the Cocoa City Council who may or may not participate in the Board discussions held at this public hearing.

General Notice Information:

This is a public meeting. Interested parties are hereby advised that they may appear at said meeting and be heard. The facility wherein this public meeting will be held is accessible to the physically handicapped. In accordance with the Americans With Disabilities Act, persons needing assistance to participate in any of these proceedings should contact the City Clerk of the City of Cocoa, listed below, at least 48 hours prior to the meeting: Carie Shealy, City Clerk, 65 Stone Street, Cocoa, by telephone at (321) 433-8484 or via email at cshealy@cocoafl.org.

Pursuant to Section 286.0105, Florida Statutes, the City hereby advises the public that if a person decides to appeal any decision made by the BOA, P&Z Board/LPA or City Council with respect to any matter considered at its meeting or hearing, that person will need a record of the proceedings and for such purpose, affected persons may need to assure that a verbatim record of the proceedings is made, and such record shall include the testimony and evidence upon which the appeal is to be based. This notice does not constitute consent by the City for the introduction or admission into evidence of otherwise inadmissible or irrelevant evidence, nor does it authorize challenges or appeals otherwise not allowed by law.

The BOA or PZ Board/LPA meeting may include the attendance of one (1) or more members of the Cocoa City Council who may or may not participate in the Board discussions held at this public hearing. The BOA, PZ Board/LPA and City Council reserve the right to continue or postpone hearings to a date certain without re-advertising.

Public Participation Information:

Members of the public may view the meeting agenda, ordinances, project applications, supporting documents, and staff reports on the City's website at the following link prior to attending or commenting:

- City of Cocoa meeting calendar at <https://cocoa.legistar.com/Calendar.aspx>

Documents pertaining to the above may also be inspected at the Community Services Department, between 8:00 a.m. and 5:00 p.m., Monday through Friday, or by phoning (321) 433-8535.

Interested persons may submit their written comments or questions prior to the meeting through Email at meetings@cocoafl.org, or via E-comments through the online agenda at the link above. Any electronic comments submitted will be made part of the meeting record.

Viewing In Real Time. Interested persons are encouraged to view and listen to the hearings live by accessing the meetings at the following internet address:

- City of Cocoa meeting calendar at <https://cocoa.legistar.com/Calendar.aspx>

However, the City is not responsible for technical difficulties that may occur while attempting to view or listen to the meeting on the internet.

Special Information for Quasi-Judicial Hearings:

Any person that (1) can demonstrate that they may suffer special damages different in kind and degree from that of the general public at large; and (2) wishes to present factual or expert witnesses and/or evidence at the quasi-judicial hearing is highly encouraged to immediately contact Cynthia Thurman, Planning and Zoning Manager, at (321) 433-8510 or Cthurman@cocoafl.gov, to make proper arrangements for presentation of witnesses and/or evidence. All witnesses should be identified and all evidentiary documents and exhibits that are intended to be distributed to the BOA, P&Z/LPA and City Council should be submitted to Mrs. Thurman via email or mail at least three (3) days prior to the hearing.

Prepared by and return to:
Anthony A. Garganese, Agency Attorney
Garganese, Weiss, D'Agresta & Salzman, P.A.
P.O. Box 2873
Orlando, Florida 32802
(407) 425-9566

**CITY OF COCOA REDEVELOPMENT AGENCY
AMENDED AND RESTATED REDEVELOPMENT PROJECT AGREEMENT**

THIS REDEVELOPMENT PROJECT AGREEMENT (this "Agreement" or "Amendment") is entered into as of the 10th day of June, 2020 (the "Effective Date"), by and between the **COCOA COMMUNITY REDEVELOPMENT AGENCY**, a Florida Community Redevelopment Agency formed pursuant to Section 163.330 et. seq., Florida Statutes, located in Brevard County, Florida (the "**Agency**"), and **LODGING DECISIONS, INC.**, an Ohio corporation, with an address of 9889 Bainbridge Road, Chagrin Falls, Ohio 44023 ("**Developer**").

STATEMENT OF PURPOSE

WHEREAS, the Agency is the owner of certain property with an address of 603 Brevard Avenue, Cocoa, Florida, located at the intersection of Brevard Avenue and Factory Street, being more particularly described on Exhibit "A", attached hereto and incorporated by this reference, consisting of Tax Parcel IDs 24-36-33-75-*2 and 24-36-33-75-*3 (the "**Property**"); and

WHEREAS, the Agency acquired the Property for redevelopment purposes in accordance with the Florida Community Redevelopment Act of 1969 (the "**Act**"); and

WHEREAS, on January 22, 2018, the Agency issued a request for proposal (which was titled Request for Proposals for the Purchase of Real Estate and Development of Real Property for 603 Brevard Avenue (also known as the former location of the City Hall), Cocoa, Florida, (the "**RFP**")) soliciting proposals from interested parties to redevelop the Property; and

WHEREAS, Jack D. Brown and Lodging Decisions, Inc. responded to the RFP by submitting a proposal to the Agency titled "Proposal for Former Cocoa City Hall Redevelopment Site," (the "**Proposal**"); and

WHEREAS, the Proposal proposed that the Property be redeveloped as a mixed-use hotel project consisting of at least seven stories, which exceeded the height limitation of the Commercial Business District-Cocoa Village Overlay zoning district; and

WHEREAS, on April 10, 2018, the Agency at a duly held public meeting selected the Developer as the developer for purposes of commencing negotiations regarding an agreement for the redevelopment of the Property and noted the necessity to address zoning issues (text amendment) and to hold at least one public meeting regarding the size and impacts of the project; and

WHEREAS, based on those negotiations, the Agency and Developer desired that the Property be redeveloped into a mixed-use hotel project with commercial and/or office uses fronting Brevard Avenue, consistent and compatible with the aesthetic architectural and urban theme of Cocoa Village, and in furtherance of the Agency's Community Redevelopment Plan and the Act; and

WHEREAS, after multiple public hearings and workshops, the City of Cocoa (hereinafter "**City**" or "**City of Cocoa**") adopted via Ordinance No. 06-2018 on October 24, 2018, a zoning text amendment to allow for Large Scale Commercial/Mixed-Use Buildings on the Property, among other properties, which effectively increased the allowed height on the Property, though such maximum height may only be achieved with approval of a Development Agreement with the City of Cocoa, after Cocoa City Council consideration of certain factors; and

WHEREAS, the Property is the subject of the previously executed Redevelopment Project Agreement, dated March 15, 2019, (the "Agreement"), which established a process by which the Property would be redeveloped by Developer as a mixed-use hotel project; and

WHEREAS, in the Agreement, the Agency established certain conditions precedent that had to be satisfied prior to the Agency's approval of the proposed conceptual plan for the mixed-use hotel with associated parking, along with a redevelopment schedule; and

WHEREAS, the Agency has granted multiple extensions and has found the Developer to be in default of the Agreement, having not met the deadlines of the redevelopment schedule; and

WHEREAS, upon further negotiation with Developer, the Agency desires to modify the conditions precedent to conceptual development plan approval and amend the redevelopment schedule to facilitate the Project, which must also receive concurrent approvals from the selected hotel brand; and

WHEREAS, the Agency and the Developer desire that the Property be expeditiously redeveloped for the betterment of the Redevelopment Area in accordance with the development schedule and time periods required by this Amended and Restated Redevelopment Project Agreement; and

WHEREAS, in furtherance of this desire, the Agency herein establishes the conditions precedent that must be satisfied prior to the Agency's approval of the proposed conceptual plan and further establishes the revised redevelopment schedule and method of conveyance of the Property for purposes of redevelopment as provided herein; and

WHEREAS, both parties acknowledge and agree that the previously executed Redevelopment Project Agreement is rescinded in its entirety and replaced as restated and amended herein; and

NOW, THEREFORE, in consideration of the mutual covenants contained herein, and for other good and valuable consideration, the receipt and adequacy of which is hereby acknowledged by all parties, the parties hereto agree as follows:

1. **Recitals.** The foregoing recitals are true and correct and are hereby fully incorporated herein by this reference.

2. **Project Description.** The Agency intends that the Property will serve as a catalyst development to reduce slum and blight and economically revitalize the Agency Redevelopment Area in furtherance of the Community Redevelopment Plan. In accordance with the process established below, the Developer will redevelop the Property, at its expense, into a mixed-use hotel project with commercial and/or office uses fronting Brevard Avenue and a parking garage (the “**Project**”). The Project, at a minimum, shall consist of at least 100 hotel rooms and no more than 112 hotel rooms with ancillary meeting space, retail stores, office space, restaurant and lounge, pool, and a roof top bar and lounge. The minimum development program shall consist of 77,784 square feet and a maximum of 86,201 square feet.

3. **PHASE I: Development Agreement with City of Cocoa and Initial Approval of Conceptual Development Plan.**

A. **Development Agreement with City of Cocoa.** The primary objective of the first phase in the development and preparation of the Project is for the Developer to obtain a Development Agreement with the City of Cocoa and to obtain initial approval of a Conceptual Development Plan from the Agency. Developer shall apply for a Development Agreement with the City to achieve an increase in allowed building height from five (5) stories to eight (8) stories. Pursuant to Ordinance No. 06-2018, a Development Agreement with the City of Cocoa is required to construct a Large Scale Commercial/Mixed-Use Building on the Property, as described in the Zoning Ordinance of the City of Cocoa, Appendix A, Article XI, Sec. 22(I). The City Council may authorize execution of a Development Agreement to achieve up to eight (8) stories in building height, after consideration of certain factors, including the economic and social benefits to the City and Agency, aesthetic quality and character, architectural design, physical and visual scale, and compatibility with the special and distinctive character of the Cocoa Village. Accordingly, in order to satisfy the Development Agreement criteria in Appendix A, Article XI, Sec. 22(I), the Developer shall be required to demonstrate that the Property is sufficiently sized and suitable for the Project and that the Project will have a catalytic economic impact on the Cocoa Village. Subparagraph 3.C herein is intended to identify the minimum necessary studies and information that should be submitted with the Development Agreement application to demonstrate compliance with the Development Agreement criteria, but the parties agree that the City Council may require additional information in its discretion. In addition to establishing allowed building height, the City Council may also approve a Conceptual Development Plan through the Development Agreement, conditioned upon Agency approval, which shall further guide the development of the Property. Upon execution of a Development Agreement with the City and Agency approval of the Conceptual Development Plan, the Developer shall have written confirmation of City and Agency approval of the Project design and further have initially demonstrated that the Property is sufficiently sized and

suitable for the Project. The execution of the Development Agreement and approval of the Conceptual Development Plan shall not be construed as binding the Agency to convey the Property to Developer, but merely constitutes initial approval of the Project design subject to other future conditions imposed by the City or Agency and assurances of the Developer.

B. Agency Decision on Extra Floor of Parking. The Developer has provided the Agency with the option, in its sole discretion, to require the Developer to build one additional floor of public parking in the parking garage serving the Project at the Agency's expense. The Agency and Developer agree that the Agency must make this decision, which would directly impact the height of the Project, prior to the City and Agency's consideration of the Development Agreement and Conceptual Development Plan. However, both the Agency and Developer recognize that the extra floor of public parking may or may not be feasible, given the existing requirements to include sufficient parking spaces to serve the Project, 100 public parking spaces pursuant to the RFP, utility and site constraints, and the maximum possible height of the Project. Therefore, the Developer must, in the course of preparing its Development Agreement Application Submittals as defined in Paragraph 3.C below, conduct a feasibility analysis to determine whether the additional floor of public parking may be included in the Project. The feasibility analysis shall consist of the Developer providing an explanation by its Project engineer, with supporting appropriate documentation, regarding whether the additional floor of public parking is possible to be included in the Project. If the Developer's Project engineer determines the additional floor is possible, the feasibility analysis must also be accompanied by an estimate of the cost to build one additional floor of public parking in the Project's attached parking garage. The estimate must provide the incremental cost for the additional floor of parking, without including costs for the structure which the Developer would otherwise bear absent the additional floor. This feasibility analysis must be conducted and submitted to the Agency no later than three (3) months following execution of this Amendment. If the Developer's Project engineer concludes the additional floor of public parking may be included in the Project, the Agency shall make a final decision on the issue of the additional floor at its next regularly or specially scheduled public meeting. If the additional floor of public parking is built at the Agency's expense, the additional floor of public parking shall be subject to a written, perpetual covenant in favor of the City of Cocoa, reserving the public parking spaces for the benefit of and use by the public in perpetuity and without charge or fee unless the City imposes such charge or fee for municipal purposes.

C. Development Agreement Application Submittals. The following studies and information shall be intended as the minimum application submittals for the Development Agreement described in Paragraph 3.A:

(1) Site Development Suitability Analysis. Analysis of the Property's suitability for the Project must be provided, analyzing the following elements:

i. Utilities and Stormwater Analysis. A utilities and stormwater engineering assessment is needed to determine if existing utility pipes and infrastructure can adequately handle the anticipated estimated flows (including consumption and fire flow), sewerage, and stormwater runoff for the Project. The assessment must further demonstrate

how stormwater runoff will be retained on- or off-site and, if underground vaults will be used, identification of any existing utility pipes and infrastructure that must be relocated.

ii. Floor Area Ratio (FAR) Analysis. The Developer shall identify the proposed minimum and maximum square footage of each use in the mixed-use Project, including retail, office, restaurant, banquet/bar, and hotel. The maximum square footage for the Project may not exceed the 2.0 FAR established for the Property in the City of Cocoa's Comprehensive Plan. The Agency will determine, in its sole discretion, whether the square footage proposed for each individual use will serve the Agency goals of economic revitalization and elimination of slum and blight. As part of the FAR Analysis, the Developer must provide the following proof, survey, analysis and documentation:

a. The total size of the property upon which the Project shall be built directly determines the maximum square footage of the Project, given the 2.0 FAR. Accordingly, the Developer must provide proof of ownership of or written, binding contractual options to purchase any additional parcels that it intends to combine with the Property to form the total development area.

b. The Developer must provide a survey of the area along the south side of Factory Street and east side of John Garren Lane proposed to be vacated.

c. The Developer shall prepare a Traffic Impact Analysis, determining the impact of vacating the east side of John Garren Lane to transform it into a one-way street. The Traffic Impact Analysis must provide professional recommendations regarding the best way to configure traffic direction and control within the Cocoa Village area following the proposed street vacations.

d. The Developer must obtain from the City of Cocoa City Manager or his designee a written confirmation of the feasibility of vacating the specific areas identified in the survey and the City's intent to recommend vacation of the rights-of-way to the City Council. The Developer shall cooperate and provide all necessary assistance to the City of Cocoa when the City investigates the feasibility of the proposed vacation with all relevant utility providers.

iii. Parking Analysis. The Developer shall provide the required number of parking spaces for all uses of the Project, consistent with the off-street parking requirements of the City Code, and shall further provide an additional 100 public parking spaces as required by the RFP. The additional 100 public parking spaces shall be subject to a written, perpetual covenant in favor of the City of Cocoa, reserving the parking spaces for benefit of and use by the public in perpetuity and without charge or fee unless the City imposes such charge or fee for municipal purposes. The Developer shall submit a detailed parking plan, indicating specifically where all spaces are to be located, whether on- or off-site. Except as provided in this subparagraph, only net increases in on-street parking shall count toward the required number of spaces; the Developer shall not be given credit for

existing on-street spaces. The Developer may count existing on-street parking spaces toward the 100 required public parking spaces provided that such existing spaces are upgraded to include a stormwater pave drain system similar to that already installed on Florida Avenue and Rosa L. Jones Drive.

(2) Economic Impact Analysis. An Economic and Fiscal Impact Analysis shall be submitted. The report shall be prepared by a duly qualified expert that details the associated economic and fiscal impacts of any proposed Project on the City. Although the City recognizes that the Project may have a regional economic and fiscal impact as well, said report shall predominantly address the economic and fiscal impacts on the Cocoa Village and the City of Cocoa, as its own economic system. The economic impact analysis portion of the report shall address the impacts of the Project on jobs, economic output, and wages. The fiscal impact analysis portion shall pertain to the net fiscal impact of the Project over a period of years which is the sum of those revenues (such as ad valorem taxes, public service taxes, sales taxes, and charges for service) directly received by the City minus the sum of expenditures incurred by the City (such as general government expenses, law enforcement, roads, and parks and recreation).

(3) Eco-Friendly. Developer shall provide to the Agency a plan to incorporate into the Project processes and technology that are environmentally responsible, resource-efficient and sustainable throughout the Project's life-cycle, including whether the Developer will endeavor to have the proposed building LEED certified. At minimum, the Project shall incorporate the use of energy efficient lighting systems, insulation and ENERGY STAR rated windows, low-flow water fixtures, and energy efficient HVAC systems.

(4) Conceptual Development Plan. The Developer shall prepare a Conceptual Development Plan, including a complete set of proposed interior and exterior architectural renderings and building elevations of the Project and a preliminary site plan based on the Site Development and Suitability Analysis. Said renderings and elevations shall contain significant and realistic preliminary detail, be in color, be drawn to scale and shall reflect proposed color and design schemes for the Project. In addition, the Conceptual Development Plan must include scaled renderings of the Project in the context of the surrounding buildings and utilities. For example, the renderings should demonstrate how the Project will be viewed in comparison to the AT&T tower site and adjacent buildings for height comparison purposes.

D. Timeline for Development Agreement and Initial Approval of Conceptual Development Plan; Effect of Approval. The Development Agreement application submittals as described in Paragraph 3.C., including the Site Development Suitability Analysis (with the Utilities and Stormwater Analysis, FAR Analysis with determination of the total project site and right-of-way vacation confirmation, and Parking Analysis), Economic Impact Analysis, Eco-Friendly Plan and Conceptual Development Plan (collectively, the **"Development Agreement Application**

Submittals”), shall be completed and submitted to the City within four (4) months of execution of this Amendment. Upon receipt of a complete Development Agreement application, the application will be scheduled for a public hearing before the Planning and Zoning Board and City Council on the Development Agreement. If the City Council approves the Development Agreement, the Agency shall, at a public meeting, consider the Development Agreement and the Conceptual Development Plan. The Agency shall either grant approval of the initial Conceptual Development Plan and Development Agreement, request additional information and extend applicable timelines, or decline to approve the Project and Conceptual Development Plan and Development Agreement. The City and Agency’s approval of the Development Agreement and Conceptual Development Plan shall be considered an express condition precedent to the Developer’s and Agency’s responsibility to perform the remaining obligations of this Agreement. Should the City or Agency decline to approve the Development Agreement and Conceptual Development Plan in Phase I, the Developer shall have no further right or obligation to develop the Property, this Agreement shall terminate, and each party shall bear their own costs and expenses incurred since receipt of the Proposal.

4. **PHASE II: Hotel Brand Adjustments and Financing; Approval of Revisions to Conceptual Development Plan.**

Upon Agency approval of the Project’s Conceptual Development Plan and Development Agreement, the Developer shall have demonstrated initial suitability of the Property for the Project and obtained initial City and Agency approval of the Project design. With the Development Agreement and Conceptual Development Plan in hand, the Developer will be able to pursue and obtain further approval of the Project from the desired national hotel brand. The chosen national hotel brand is anticipated to request or require further revisions and adjustments to the Development Agreement and Conceptual Development Plan to ensure consistency with its corporate development standards. Therefore, the Developer acknowledges and agrees that the City and the Agency must consider and either accept or deny the proposed adjustments, as they may change fundamental elements of the Project, including the architectural design, square footage of internal spaces, or floor plan. In addition, the City and Agency must approve the national hotel brand itself. Nothing herein shall be construed or interpreted as requiring the City or Agency to approve any proposed adjustments or the Developer’s chosen national hotel brand. Accordingly, the primary objective of the second phase in the development and preparation of the Project is for the Developer to obtain and present for approval to the City and Agency: (A) any revisions to the Conceptual Development Plan deemed necessary by the chosen national hotel brand; (B) the national hotel brand’s written approval of the Project; (C) written evidence of a binding project financing commitment; and (D) a market feasibility study, as further specified herein.

A. **Hotel Brand Approval; Financing.** After Phase I, the Developer shall proceed with obtaining the necessary national hotel brand approval and construction financing for the Project. Specifically, the Developer shall provide the Agency with the following:

(1) Hotel Brand. Written approval to utilize the selected hotel brand for the Project from the relevant corporate entity, which shall be a Hilton Garden Inn or similar upscale national brand.

(2) Market Feasibility Study. During the process of obtaining the national hotel brand approval, the Developer shall either complete or have the hotel brand complete a market feasibility study for the Project, demonstrating that the market will support and sustain the Project.

(3) Evidence of Project Financing. Adequate written evidence of Project financing shall be submitted from a lending institution, private lender or equity group indicating that the Project has been fully financed, or will be fully financed, to commence and complete construction in accordance with the terms and conditions of this Agreement. Such proof shall be in the form of a binding loan commitment consistent with commercial lending practices and standards and shall also include any documentation and proof of any personal or business guarantees or collateral to be used to obtain the financing commitment.

(4) Hotel Revisions to the Conceptual Development Plan. During the course of obtaining national hotel brand approval, it is anticipated that some adjustments may be required to the Conceptual Development Plan by the national hotel brand, including to the architectural design elements of the Project to conform to corporate brand specifications. If adjustments are required by the hotel brand, these adjustments must be enumerated and presented in a proposed, revised Conceptual Development Plan to the Agency and City Council, if necessary.

B. Agency Consideration of Hotel Brand, Market Feasibility, Revisions to the Conceptual Development Plan and Project Financing; Timeline for Consideration.

(1) Purpose of Agency and City Phase II Consideration. The Developer acknowledges and agrees that because the Agency acquired the Property for purposes of economic development and revitalization, the Agency must be afforded a final opportunity to review the Developer's selection of the national hotel brand and that brand's written approval of the Project; the Market Feasibility Study; Evidence of Project Financing; and, if necessary, the revisions to the Conceptual Development Plan (collectively, the "**Hotel Approvals**"), prior to committing to convey the Property to Developer. In addition, because the Development Agreement Application Submittals may have been adjusted to accommodate the national hotel brand's corporate development standards, the City must be afforded another opportunity to review the adjustments, if necessary, where a height increase was premised upon such Submittals.

(2) Timing of Agency and City Phase II Consideration. The Developer shall obtain the Hotel Approvals, which must be either approved or denied by the Agency and, if necessary, the City within twelve (12) months of execution of this Amendment.

(3) Effect of Agency and City Phase II Consideration. Upon receipt of the Hotel Approvals, the Agency and, if necessary, the City shall each consider such Hotel Approvals and either grant approval of the mixed-use hotel Project, request additional information and extend the timeline for completion of the Hotel Approvals, or decline to approve the Project. The Developer shall be required to obtain this final Agency approval of the Project and, if necessary, City Council approval of the Project, prior to the remaining performance obligations of the Agency and the Developer set forth in this Agreement becoming effective. The Agency's Phase II approval of the Project shall be considered an express condition precedent to the Developer's and the Agency's responsibilities to perform the remaining obligations as provided herein, including conveyance of the Property. Should the Agency or the City decline to approve the Project, the Developer shall have no further right or obligation to develop the Property, this Agreement shall terminate, and each party shall bear their own costs and expenses incurred since receipt of the Proposal.

(4) Revised Conceptual Development Plan. If the City and Agency approve revisions to the Conceptual Development Plan arising from the national hotel brand's demands, the revisions shall be incorporated therein and shall thereafter be considered part of the Conceptual Development Plan. References in this Agreement to the "Conceptual Development Plan" following City and Agency approval of hotel brand revisions to such Plan shall be inclusive of the revisions.

(5) Developer's Obligation following Agency and City Phase II Approval. If the Agency and, if necessary, the City approve the Phase II Hotel Approvals, the Developer represents and warrants to the Agency that it shall expeditiously redevelop the Property thereafter, at its expense, consistent with the Conceptual Development Plan, which shall become automatically fully incorporated herein as if it were presently attached hereto. The Conceptual Development Plan shall be subject to final engineering, site plan approval, site development permit, and/or a unity of title agreement by the City of Cocoa or a subdivision to the extent that portions of additional parcels may be added to the total Project area. The Conceptual Development Plan may be subject to reasonable adjustments by the City of Cocoa in order to bring the project into compliance with the City Code of Cocoa (the "**City Code**"), but the Project shall be developed consistent with and in substantial conformance to the Conceptual Development Plan. In addition, development of the Project shall be consistent and compatible with the aesthetic architectural and urban theme of Cocoa Village, and in compliance with the Agency's Community Redevelopment Plan, the City Code, and the Act. The Conceptual Development Plan is intended to be the general blueprint which depicts key aspects of the future physical development of the Property. The Conceptual Development Plan shall also serve as a necessary guide for future permit applications and permitting.

5. **Phase III: Future Permitting.** For purposes of the future permitting and construction timelines herein, the last date upon which the Agency and, if necessary, the City, have both approved the Hotel Approvals shall be referred to as the "**Phase III Commencement Date.**" Within three (3) months from the Phase III Commencement Date, the Developer, at its expense, shall prepare and file

all required applications, information, and engineering plans with the City of Cocoa that are necessary to obtain final site plan approval for the Project, consistent with the Conceptual Development Plan and to obtain final approval for all off-site parking improvements required and represented in the Conceptual Development Plan and/or Parking Analysis. The Developer shall diligently pursue and obtain, in good faith, final approval of the site plan and off-site parking improvements within five (5) months of the approval of the Phase III Commencement Date. If the Developer fails to obtain such final approval from the City (a/k/a - a final development order) within the aforesaid five (5) months, the Agency shall have the right to declare the Developer in default pursuant to Paragraph 11 of this Agreement. If the Developer does not cure the default within the cure period, the Agency shall have the right, but not obligation to, terminate this Agreement without penalty.

In addition, should a replat or unity of title agreement be necessary to combine or split the Property or other parcels that may be added to the total development area reflected in the Conceptual Development Plan and the site plan application, the Developer shall, at its expense, prepare and file such necessary replat or unity of title applications and all required information and engineering plans with the City of Cocoa in conjunction with submittal of the final site plan. The Developer shall obtain final site plan approval and approval of the necessary replat or unity of title applications contingent upon closing on the other parcels and the Property. The Agency's conveyance of the Property as provided in Paragraph 8 herein shall be contingent upon the Developer first closing on any other required real property conveyances necessary to effectuate the final site plan approved by the City and to finalize the replat or unity of title for recording in the Official Records of Brevard County. The replat or unity of title shall be recorded simultaneously with the Agency's conveyance of the Property required by Paragraph 8; at that point, the Project shall be ready for construction and development by the Developer.

6. **Construction/Development Schedule.** The Project shall be permitted and constructed by the Developer in accordance with the following construction/development schedule:

A. Infrastructure and Off-Site Improvement Development. Within eight (8) months of the Phase III Commencement Date, the Developer shall substantially commence construction of all utility improvements for potable water, reuse, sewage, stormwater, electrical and other utility services required by the City for the Project. In addition, in conjunction with the utility improvements, the Developer shall also substantially commence construction of the off-site parking improvements. The utility improvements and off-site parking improvements shall be constructed at Developer's expense. Further, all utility and off-site parking shall comply with applicable local and state regulations and the City Code. If the Developer fails to substantially commence construction (defined as the utility infrastructure and off-site parking improvements actually being constructed and installed on or for the benefit of the Property pursuant to applicable City building permits beyond excavation) within said time period, the Agency shall have the right to declare the Developer in default of this Agreement. Termination shall automatically become effective at the end of the cure period as provided in Paragraph 11 in the event the Developer fails to substantially commence such construction during said period, and the Agency may exercise its security option for payment of the Purchase Price pursuant to Paragraph 7 of this Agreement.

B. **Mixed-Use Hotel.** Within twelve (12) months of the Phase III Commencement Date, the Developer shall substantially commence vertical construction (defined as the hotel building and attached parking garage and vertical structural elements thereof being constructed on the Property pursuant to applicable City building permits beyond foundation footings, pilings and slabs, utility infrastructure, and outside improvements such as streetscape and landscaping). The Developer shall obtain a final certificate of occupancy issued by the City for the Project within twenty-four (24) months of the Phase III Commencement Date. If the Developer fails to substantially commence vertical construction of, or obtain a final certificate occupancy for, the mixed-use hotel within said time periods, the Agency shall have the right to declare the Developer in default pursuant to Paragraph 11 of this Agreement. If the Developer does not cure the default within the cure period, the Agency shall have the right to terminate this Agreement and exercise its security option for payment of the Purchase Price pursuant to Paragraph 7 of this Agreement.

C. **Other Permits.** The Developer shall be solely responsible for obtaining any and all necessary local and state permits including, but not limited to, a site development permit, a building permit, and environmental permit approvals which are required in order to allow the Developer to satisfy the construction/development schedule and other terms and conditions of this Agreement.

D. **Schedule of Major Performance Obligations.** A Schedule of Major Performance Obligations required by this Agreement is attached as Exhibit "B" (the "**Schedule of Major Performance Obligations**"). The Schedule of Major Performance Obligations is intended to summarize several major benchmarks set forth in the Agreement and is set forth for convenience purposes only. To the extent of any conflict between any provision set forth in this Agreement and the Schedule of Major Performance Obligations, the conflicting provision in the Agreement shall control.

7. **Purchase Price of Property; Agency Security.**

A. **Purchase Price – Valuation.** The Agency and the Developer agree that the purchase price of the Property shall be either seven hundred and sixty thousand dollars (\$760,000.00), the market value of the Property at the Effective Date of this Agreement, or the appraised value of the Property prior to its conveyance, whichever is greater (the "**Purchase Price**").

B. **Conditional Contribution of Property to Project.** The Agency agrees to contribute the Property to the Project, at no cost to the Developer, under the condition that the Developer completes construction of the mixed-use hotel Project, specifically including the one-hundred required public parking spaces.

C. **Securitization of the Agency's Public Interest in the Redevelopment of the Property.** The Developer agrees that in consideration of the Agency's real property contribution to the Project, the Agency has an overriding and legitimate public interest in ensuring that the Property be redeveloped in accordance with the terms and conditions of this Agreement. Therefore,

the Developer agrees to provide the Agency assurances that it will fulfill its commitment to develop the Property once the Agency conveys any portion thereof to the Developer by providing the Agency with financial security equal to the Purchase Price. The Purchase Price security will be tied to the Developer's development of the Project in accordance with the terms and conditions of this Paragraph 5.

D. **Letter of Credit Security.** At the time the Agency conveys the Property to the Developer, the Developer, at its expense, shall secure the Purchase Price by providing the Agency with an irrevocable stand-by letter of credit in the amount of the Purchase Price. The letter of credit shall be in favor of the Agency and shall be issued by a bank mutually agreed to by the parties and shall be in a form acceptable to the Agency to effectuate the purpose of this Agreement. The letter of credit shall be subject to being drawn upon by the Agency in the event that the Developer fails to complete timely construction of the Project in accordance with the Schedule of Major Performance Obligations. Upon failure to complete timely construction of the Project and expiration of any cure periods, the Developer agrees to pay the Agency the Purchase Price. Said payment shall be made within thirty (30) days of the demand by the Agency, but in no case beyond the term of the letter of credit. If the Developer fails to make such payment, the Agency shall have the right to immediately draw upon the letter of credit by presenting it to the bank for payment of the amount due the Agency. Upon payment of the Purchase Price by the Developer or the bank issuing the Letter of Credit, this Agreement shall be considered terminated. The letter of credit shall remain in effect until such time either the Developer timely completes construction and obtains final certificate of occupancies for the Project or the Agency receives payment of the Purchase Price from the Developer, whichever occurs sooner.

8. **Conveyance of Property; Closing Terms.** No sooner than the date that the Developer obtains final site plan approval for the Project from the City, the Developer may request that the Agency convey the Property. Conveyance shall be required before the Developer commences any construction on the Project and shall occur under the following conditions:

A. **Notice.** The Developer shall provide the Agency a written notice requesting conveyance of the Property (the "**Conveyance Notice**").

B. **Financing and Construction Commitments.** As a condition precedent to the Agency's obligation to convey the Property, or any portion thereof, as required by this Paragraph 8, the Developer shall provide and deliver to the Agency the following prior to closing:

(1) **Financing.** Written proof of a binding financing commitment to construct the Project from a lending institution, private lender or equity group indicating that the Project has been financed to commence and complete construction in accordance with the terms and conditions of this Agreement. Such proof shall also include any documentation of proof of pre-leasing associated with the financing secured as referenced above and of any personal or business guarantees or collateral to be used to obtain the financing commitment.

(2) **Performance Bonds.** Written proof of a performance bond or other surety by the Project's general contractor for the completion of the construction of the applicable portion of the

Project, in a form acceptable to the lending institution, private lender, or equity group financing the Project construction. Further, to the extent that the general contractor will be making public improvements on the Property (the public parking portion of the parking garage), proof of a performance bond or other surety by the general contractor listing the Agency and/or the City as an obligee/beneficiary, as their interests may appear, securing the completion of the construction of the public improvements shall be required. Such bond or other surety shall be in a form acceptable to the Agency and/or City as their interests may appear.

C. **Closing Terms.** The following closing terms shall apply with respect to the conveyances:

(1) Unless otherwise agreed to by the parties in writing, the closing date for conveyance of the Property by the Agency to the Developer shall be sixty (60) days from the applicable Conveyance Notice unless the Developer fails to satisfy the condition precedents set forth in this Paragraph 8. If the Developer fails to satisfy the condition precedents within said sixty (60) day time period, the Agency shall have the right to declare the Developer in default pursuant to Paragraph 11 of this Agreement. If the Developer does not cure said default within the cure period, the Agency shall have the option to terminate the conveyance and/or this Agreement without penalty. The Agency shall convey the Property to the Developer at no cost pursuant to a special warranty deed subject only to the Purchase Price security provided by the Developer pursuant to Paragraph 8 of this Agreement. Said deed shall set forth the development covenants required by Paragraph 10 of this Agreement which shall be binding upon the Property. Documentary stamps on the special warranty deed shall be the expense of the Developer. The Developer shall pay for the cost of recording curative instruments, the title insurance commitment, and the Owner's policy if issued, and recording of the deed. Each party shall pay their respective attorney's fees.

(2) Except as otherwise provided for herein, the Developer shall accept the Property in "as-is" condition subject to the development covenants required by Paragraph 10 of this Agreement. The Agency shall not be liable to the Developer for any condition of the Property.

(3) The Developer shall obtain at the Developer's expense within fifteen (15) days from the Notice Date, a commitment for an Owner's Title Insurance Policy (ALTA FORM B-1970) from a title insurance company ("Title Company") acceptable to the Developer, agreeing to insure title to the Property in an amount equal to the Purchase Price, and subject to: no exceptions other than those matters herein permitted; those which will be discharged prior to or at Closing; and the standard printed exceptions and exclusions from coverage customarily contained in an Owner's Policy from the Title Company. The Developer shall provide the Agency a copy of the title commitment upon receipt of same. The Agency shall have twenty (20) days to examine the commitment and tender any objections thereto. At closing, Title Company shall provide the Developer standard "gap" coverage in the custom as established by title insurance practices in Florida. Subsequent to closing, Title Company, at the Developer's expense, shall provide an owner's title policy showing title up to and including the recording of the deed delivered at closing, said policy showing the continuation of good and marketable title in the Agency to the moment of recording the special warranty deed and subject only to the Permitted Exceptions and any matters created at closing.

(4) If the title commitment discloses unpermitted exceptions or matters that render the title non-marketable, Agency, at its option, shall have forty-five (45) days from the date of receiving written notice of defects from the Developer within which to have the exceptions removed from the commitment or the defects cured to the reasonable satisfaction of the Developer. In such event, the time of closing shall be thirty (30) days after delivery of the commitment or the time expressly specified in this Agreement, whichever is later. If the Agency fails to have the commitment exceptions removed or the defects cured within the specified time, the Developer may terminate this Agreement or the Developer may elect, upon notice to the Agency within ten (10) days after the expiration of the ninety (90) day curative period, to take title as it then is notwithstanding such exceptions or title defects.

(5) Notwithstanding anything herein contained to the contrary, the Agency shall exercise reasonable diligence in the curing of any defects in title, including the payment and discharge of any liens or encumbrances affecting the title status of the Property.

(6) The Developer shall take title subject to zoning, restrictions and prohibitions imposed by governmental authority which would not inhibit, restrict or prohibit redevelopment of the Property consistent with the Conceptual Development Plan. No other restrictions and/or easements shall affect the title except for the development covenants required by Paragraph 8 of this Agreement.

9. **Agency Obligations.** In consideration of the Developer undertaking the Project, and provided the Developer shall not be in default of this Agreement, the Agency shall undertake the actions set forth in this Paragraph. Unless otherwise provided below, the Agency shall undertake such actions at its sole cost.

A. **Application authorization; Interim Property Maintenance/Use.** The Agency, as owner of the Property during the permitting process, shall authorize the Developer to file and pursue any pre-construction application for development orders or permits associated with redevelopment of the Property consistent with the Conceptual Development Plans and this Agreement, including, but not limited to, applications for final site plan approval and stormwater permits. The Agency shall maintain the Property in its current condition less reasonable wear and tear during the term of this Agreement prior to conveyance of the Property. However, this Agreement shall not be construed to prohibit the Agency from using the Property, or any portion thereof, for any temporary government purpose deemed necessary by the Agency so long as said use will not prohibit or prevent the redevelopment of the Property in accordance with the Conceptual Development Plans and this Agreement.

B. **Vacation of Right-of-Way.** At such time the Developer files all required applications, information, and engineering plans with the City of Cocoa that are necessary to obtain final site plan approval for the Project consistent with the Conceptual Development Plan, the Agency shall apply to the City for vacation of the right-of-way area of existing diagonal parking along Factory Street and area of existing parallel parking on John Garren Lane immediately abutting the Property, in accordance with the survey initially required by the Agency prior to approval of the Conceptual Development Plan. The Agency shall request that the vacation of the right-of-way have a

conditional effective date of no sooner than date the Developer commences construction under Paragraph 6 herein. The Agency shall complete the approval process for the right-of-way vacation in conjunction with the City's consideration and final approval of the aforementioned applications and subject to the conditional effective date. If the Agency delays pursuing, or the City delays taking final action, on the right-of-way vacation beyond the date that the City grants final approval of the aforementioned applications, the time period for the Developer to perform under this Agreement shall be tolled by the amount of time equal to the delay until such time the City takes final action on the right-of-way vacation. Furthermore, if the vacation of right-of-way is not approved by the City in conjunction with or prior to the City granting final approval on the Developer's application for site plan approval, the Developer shall have the option of either: (i) terminating this Agreement by providing written notice to the Agency within ten (10) days of the City's decision not to vacate the right-of-way, or (ii) redesigning the Project without incorporation of the right-of-way and filing all required applications, information, and engineering plans with the City of Cocoa that are necessary to obtain final site plan approval for the redesigned Project within six (6) months of the City's decision not to vacate the right-of-way. The aforesaid filing shall be treated in the same manner as the original filing pursuant to Paragraph 3 of this Agreement and shall reset the development order approval time periods and construction/development schedule stated herein for purposes of requiring the Developer to expeditiously complete the Project. Notwithstanding the provisions set forth in this subsection, this subsection shall not prohibit or limit the Agency's or City's discretion to pursue the vacation of the aforementioned rights-of-way at any time of the Agency's or City's choosing.

D. **Conveyance of the Property.** The Agency shall convey to the Developer the Property in accordance with the terms and conditions of this Agreement.

E. **Conditional Payment for Additional Floor of Public Parking.** Should the Agency opt to require the Developer to build an additional floor of public parking in the Project's attached parking garage, the Agency shall pay, no sooner that the Developer obtaining a final certificate of occupancy for the Project and the City receiving an easement agreement or public dedication of the additional floor of public parking and ingress and egress, the estimated amount submitted to the Agency prior to Agency approval of the Conceptual Development Plan. This estimated amount shall constitute full and final payment for the additional floor of parking, and the Agency shall not be responsible for any cost overruns that are the result of unforeseen and unbudgeted conditions or events of force majeure. Prior to any payment, the Agency shall require the Developer to furnish release of all liens from any unpaid work, labor, or materials with respect to the Developer's, its contractor's, or its subcontractor's performance under this Agreement, and/or receipt in full covering all work, labor, or materials for which a lien could be filed.

10. **Development Covenants.** The following development covenants in favor of the Agency and the City of Cocoa shall be set forth in the special warranty deed conveying any portion of the Property from the Agency to the Developer:

A. The Property shall be maintained and used as a mixed-use hotel and commercial development consistent and compatible with the aesthetic architectural and urban theme of Cocoa Village, and that the owner of the Property shall be obligated to devote the Property to the uses

specified in the Agency's Community Redevelopment Plan, as may be amended from time to time. The use of the Property shall not be permitted to be converted to efficiency or one-bedroom multi-family or condominium dwelling units without the written approval of the Agency and City.

B. The Property shall be subject to a final development order issued by the City of Cocoa for the Project including, but not limited to, any development agreement that is entered into between the Developer and the City of Cocoa.

C. The covenants shall provide that the Developer is without the power to sell, lease, or otherwise transfer the Property without the prior written consent of the Agency until such time that the Developer has completed the construction of any or all improvements which the Developer has obligated itself to complete pursuant to this Agreement.

D. Except for the first mortgage required by the Developer's primary lender on the Project, the Developer shall not encumber the Property with any other mortgage, lien, or other encumbrance without the prior written consent of the Agency until such time the City issues a final certificate of occupancy for the Project on the Property.

E. The covenants shall run with the land and be binding upon any subsequent owners of the Property. Further, the covenants shall provide that the Agency and/or the City of Cocoa shall have the right to enforce the covenants against any owner of the Property in accordance with any and all applicable legal or equitable remedies afforded the Agency and/or the City of Cocoa by law. Such remedies shall include the Agency's and City of Cocoa's right to seek reimbursement for reasonable attorney's fees and costs incurred by the Agency and/or the City of Cocoa to enforce the covenants in a court of competent jurisdiction through all appellate court proceedings.

In addition, prior to the final certificate of occupancy being issued by the City, the Agency shall present to the Developer an easement agreement or public dedication in a form approved by the City Attorney to provide for perpetual public access and maintenance, including ingress and egress through the parking garage, to the public parking spaces therein required by the Conceptual Development Plan. Developer shall be responsible for the structural maintenance of the parking garage including all public and private parking spaces. Further, Developer shall also be responsible for routine maintenance and cleaning of the parking spaces in conjunction with and in the same manner as the non-public parking spaces in the parking garage, subject to the City's right to provide public signage and additional maintenance to the public parking spaces if deemed necessary by the City. This easement agreement or public dedication may also include an additional floor of public parking if the Agency has opted to require the Developer to construct such additional floor. Such agreement shall require the public spaces to be identified and reserved as public.

11. **Default.**

A. **The Developer's Default.** In the event that the Developer shall fail to satisfy any of its obligations set forth in this Agreement, the Agency shall provide the Developer written notice of such default. The Developer shall then have thirty (30) days from receipt of such notice to cure such default. If the Developer shall fail to cure such default within the thirty (30) day time period, then the

Agency may, in its sole discretion and without penalty, exercise any of its rights and remedies provided by law including, but not limited to, exercising any applicable rights and remedies expressly set forth in this Agreement such as (i) terminating this Agreement in its entirety; (ii) exercising the security obligations pursuant to Paragraph 7; or (iii) terminating the Agency's obligation to convey the Property. Upon termination of the Agreement or specific Agency obligation, as the case may be under the terms and conditions of this Agreement, the Developer and the Agency will no longer have any obligations or rights regarding the Agreement or specific Agency obligation terminated hereunder.

B. Agency Default. Except as otherwise provided herein, in the event that the Agency shall fail to satisfy the obligations under this Agreement, the Developer shall provide the Agency written notice of such default. The Agency shall have thirty (30) days from receipt of such notice to cure such default. If the Agency shall fail to cure such default within the thirty (30) day time period, then the Developer may, in its sole discretion, terminate this Agreement. However, in the event that the Agency shall fail to convey the Property as set forth in Paragraph 8 of this Agreement, and the Developer shall not otherwise be in default of this Agreement, then the Developer shall provide the Agency written notice of such default. The Agency shall have thirty (30) days from receipt of such notice to cure said default. If the Agency shall fail to cure such default within the thirty (30) day time period, then the Developer's sole remedy shall be to terminate this Agreement and be reimbursed for all actual out-of-pocket geotechnical, engineering, construction, architectural, permitting, and title examination costs (excluding attorney's fees and related costs) related to the Property which were incurred subsequent to the Agency's approval of the Conceptual Development Plan and prior to the Agency's failure to convey the Property. The Agency shall reimburse the Developer within sixty (60) days of written termination of this Agreement. At time of payment, the Developer shall deliver to the Agency all original plans, reports, permits, and other documents provided to the Developer by any company, consultant, or agency related to the Agency's reimbursement payment required under this subparagraph.

C. Force Majeure. The foregoing notwithstanding, neither party shall be held in default of this Agreement for any delay or failure of such party in performing its obligations pursuant to this Agreement if such delay or failure is caused by Acts of God, court imposed order, wars, insurrections, acts of terrorism, and/or any other public emergencies beyond the reasonable control of the party whose performance is effected.

D. Administrative Extension. Upon good cause shown, the City Manager may grant an extension of up to sixty (60) days for any completion deadline related to required Development Agreement Application Submittals, Hotel Approvals, future permitting, and development or construction schedules. Any further extensions shall require approval by the Agency.

12. **Notice.** Whenever either party desires to give notice to the other, notice shall be sent by hand delivery or certified mail, return receipt requested, and shall be sent to:

For the Agency:

City Manager

City of Cocoa
65 Stone Street
Cocoa, FL 32922

For the Developer:

Jack D. Brown
Lodging Decisions, Inc.
9889 Bainbridge Rd
Chagrin Falls, OH 44023

Either party may freely modify their respective contact person and address contained in this Paragraph by providing written notice of the modification to the other party. Any Notice given as provided herein shall be deemed received as follows: if delivered by personal service, on the date so delivered; and if mailed, on the third business day after mailing.

13. **City's Police and Permit Powers.** The Developer acknowledges and agrees that this Agreement is not binding on the City of Cocoa. As such, nothing in this Agreement shall serve to affect or limit any power of the City of Cocoa including, but not limited to, the City's police, legislative, quasi-judicial, permitting, zoning, land use and development, and building code powers in the exercise of its decision making authority associated with the proposed redevelopment of the Property or any related application associated therewith. If the Developer is in default under any of its material obligations to complete the construction of the Project after the Property has been conveyed to the Developer, the Developer agrees that the City shall have the right to withhold, suspend, or terminate any and all certificates of occupancy for any building or unit being constructed in furtherance of this Agreement until such time the breach is cured.

14. **Assignment; Recordation - Agreement to Run with the Land.**

A. The Developer shall be entitled to assign its rights and obligations under this Agreement to a parent, subsidiary, or affiliated entity in which the Developer or its members are members or interest holders. Such assignment shall require the assignee to be a formal signatory to this Agreement and fully assume all of the Developer's obligations, commitments, representations, and warranties under this Agreement. Such assignment shall also require the written approval of the Agency by amendment to this Agreement, which shall not require a public hearing and shall not be unreasonably withheld. In any assignment, the rights and obligations contained herein shall be binding on successors in interest to the Property, and the terms and conditions of this Agreement shall bind and inure to the benefit of the parties hereto and any respective successors and assigns.

B. The Developer shall record this Agreement in the Official Records of Brevard County, Florida. This Agreement shall run with the land and be binding upon the Property and successors in interest to the Property unless amended or terminated by mutual agreement of the Parties or in accordance with Paragraph 11.

15. **Sovereign Immunity.** Notwithstanding any other provision set forth in this Agreement, nothing contained in this Agreement shall be construed as a waiver of the Agency's or the City's right to sovereign immunity under Section 768.28, Florida Statutes, or other limitations imposed on the Agency's or the City's potential liability under state or federal law. As such, neither the Agency nor the City shall be liable under this Agreement for punitive damages or interest for the period before judgment. Further, the Agency and the City shall not be liable for any claim or judgment, or portion thereof, to any one person or more than two hundred thousand dollars (\$200,000.00), or any claim or judgment, or portion thereof, which, when totaled, with all other claims or judgments paid by the State or its agencies and subdivisions arising out of the same incident or occurrence, exceeds the sum of three hundred thousand dollars (\$300,000.00). This paragraph shall survive termination of this Agreement.

16. **Indemnification by Developer.** Developer shall be solely responsible for designing, permitting, constructing and maintaining the Project required by this Agreement. Accordingly, to the extent allowed by law, the Developer agrees to indemnify and hold the Agency and its employees, officers, attorneys and contractors harmless from and against any and all damages, losses or claims, including but not limited to legal fees and expenses, to the extent that such damages, losses or claims are attributable to actions, omissions or negligence of the Developer and its employees, members, agents and contractors in the exercise of the rights arising under this Agreement. This paragraph shall survive termination of this Agreement.

17. **Miscellaneous.** The effective date of this Agreement shall be June 14 2020 (the "***Effective Date***"). The execution of this Agreement has been duly authorized by the appropriate body of each of the parties hereto. Each party has complied with all the applicable requirements of law and has full power and authority to comply with the terms and conditions of this Agreement. In the event any of the parties hereto are required to enforce this Agreement by court proceedings or otherwise, each party involved in such enforcement proceedings shall bear its own attorneys' fees, whether incurred at trial, on appeal, or in conjunction with any alternative dispute resolution or bankruptcy proceeding. The venue of any litigation arising out of this Agreement shall be Brevard County, Florida. The exhibits attached hereto and incorporated by reference herein are by such attachment and incorporation made a part of this Agreement for all purposes. The fact that one of the parties to this Agreement may be deemed to have drafted or structured the provisions of this Agreement, whether in whole or in part, shall not be considered in construing or interpreting any particular provision hereof, whether in favor of or against such party. This Agreement is solely for the benefit of the parties hereto and their respective successors and assigns, and no right or cause of action shall accrue upon or result by reason hereof to or for the benefit of any third party not a formal party hereto except for the benefits granted the City of Cocoa hereunder; in which case, the City of Cocoa shall be deemed a third party beneficiary under this Agreement with full rights and privileges to enforce the benefits bestowed hereunder by the parties. Nothing in this Agreement, whether express or implied, is intended or shall be construed to confer upon any person other than the parties hereto any right, remedy, or claim under or by reason of this Agreement or any of the provisions hereof. Each party agrees to deal with the other party hereto in good faith. This Agreement may not be changed, amended, or modified in any respect whatsoever, nor may any covenant, condition,

agreement, requirement, provision, or obligation contained herein be waived, except in writing signed by all of the parties hereto.

IN WITNESS WHEREOF, the parties hereto attached their hands and seals on the dates set forth below.

Signed, sealed and delivered in the presence of the following witnesses:

**COCOA COMMUNITY
REDEVELOPMENT AGENCY**

[Signature]
Signature of Witness
Ronca Greenwalt
Printed Name of Witness

By: [Signature]
Jake Williams, Jr., Chairman
Date: 6-16-2020

[Signature]
Signature of Witness
Amy Dunegan
Printed Name of Witness

APPROVED AS TO FORM AND LEGALITY
By: [Signature]
Anthony A. Garganese, Agency Attorney

ATTEST:



STATE OF FLORIDA
COUNTY OF BREVARD

The foregoing instrument was acknowledged before me by means of (☒) physical presence or (☐) online notarization, this 16th day of June, 2020, by Jake Williams, Jr., the Chairperson of the Cocoa Community Redevelopment Agency, on behalf of the Agency, who is personally known to me or produced _____ as identification.

(NOTARY SEAL)

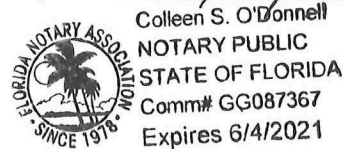
Colleen S. O'Donnell
(Notary Public Signature)

Colleen S. O'Donnell
(Print Name)

Notary Public, State of Florida

Commission No.: GG 087367

My Commission Expires: 06/04/2021



Signed, sealed and delivered in the presence of the following witnesses:

[Signature]
Signature of Witness
David J. Lemmon
Printed Name of Witness

[Signature]
Signature of Witness
Karen Brown
Printed Name of Witness

LODGING DECISIONS, INC.

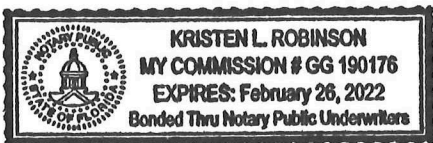
[Signature]
Print name and title: JACK BROWN
C.E.O.

Date: 6/15/20

STATE OF Florida
COUNTY OF Brevard

The foregoing instrument was acknowledged before me by means of (☒) physical presence or (☐) online notarization, this 15 day of June, 2020, by JACK D. BROWN the _____ of Lodging Decisions, Inc., a foreign corporation, on behalf of the corporation, who is personally known to me or produced _____ as identification.

(NOTARY SEAL)



[Signature]
(Notary Public Signature)
Kristen L. Robinson
(Print Name)

Notary Public, State of Florida

Commission No.: GG 190176

My Commission Expires: Feb 26, 2022

EXHIBIT A

(Legal Description for the Property)

Lots 2 and 3, SINGLETON'S FIRST ADDITION TO COCOA, according to the plat thereof,
as recorded in Plat Book 1, Page 28, of the Public records of Brevard County, Florida.

EXHIBIT B

(Schedule of Major Performance Obligations)

Schedule below is provided for convenience purposes only and does not take precedent over the terms and conditions stated in the body of the Agreement. The Schedule assumes an Effective Date of June 10, 2020.

Time for Performance	Phase	Action	Section Reference
September 1, 2020	I	Extra Floor of Parking Feasibility Analysis submitted to the Agency; Agency makes final decision on additional floor of parking at next regularly scheduled meeting (September 9, 2020)	3.B
October 1, 2020	I	Development Agreement Application Submittals must be provided to City	3.D
November 2020	I	Development Agreement considered by Planning and Zoning Board, City Council Agency considers approval of initial Conceptual Development Plan and Development Agreement (including height increase under Waterfront Overlay)	3.D
June 2021	II	Agency and, if necessary, City consider Hotel Approvals to obtain Phase II Approval <u>NOTE:</u> If Hotel Revisions to the Conceptual Development Plan are necessary and require amendment to the Development Agreement, Hotel Revisions must be submitted by April 2021 to allow for review, advertising and public hearings to be scheduled	4.B
September 2021 (assuming Phase III Commencement Date in June 2021)	III	Site plan application filed with City	5
November 2021	III	Site plan approval obtained; Developer may request Agency begin conveyance process for the Property	5 and 8
January 2022	III	Closing on Conveyance of Property/Letter of Credit Received by Agency - Construction can only begin after closing	8
February 2022	III	Substantially commence construction of utility improvements and off-site parking	6.A

		improvements	
June 2022	III	Substantially commence vertical construction of hotel building and parking garage	6.B
June 2023	III	Final certificate of occupancy for the Project	6.B



Classified Ad Receipt
(For Info Only - NOT A BILL)

Customer: CITY OF COCOA (TE)

Ad No.: 0005180152

Address: 65 STONE ST
COCOA FL 32922
USA

Pymt Method Invoice

Net Amt: \$437.12

Run Times: 1

No. of Affidavits: 1

Run Dates: 03/22/22

Text of Ad:

Ad#5180152 3/22/2022
**CITY OF COCOA NOTICE OF PUBLIC
HEARING, COMPREHENSIVE PLAN
MAP AND ZONING MAP AMENDMENT**
NOTICE IS HEREBY GIVEN THAT
THE PLANNING & ZONING BOARD/LOCAL
PLANNING AGENCY AND THE COCOA
CITY COUNCIL
PROPOSE TO CONSIDER THE FOLLOWING:

A. PZ-22-00500001 (MODWASH, LLC)
AN ORDINANCE OF THE CITY COUNCIL
OF THE CITY OF COCOA, BREVARD
COUNTY, FLORIDA; A COMPREHENSIVE
PLAN MAP AMENDMENT CHANGING
THE FUTURE LAND USE MAP DESIGNA-
TION OF MIXED USE ON 1.38 ACRES OF
LAND LOCATED ON THE SOUTHWEST
CORNER OF THE INTERSECTION OF
SR520 (W. KING STREET) AND HIGHWAY
US1 (S. COCOA BLVD.) TO
COMMERCIAL.: 24-36-33-31-A-5; 24-36-
33-31-C-1; 24-36-33-31-*R.1; 24-36-33-31-
*R.2; 24-36-33-31-*R.3; 24-36-33-31-*
R.4; 24-36-33-31-* R.5; 24-36-33-31-D-11;
24-36-33-31-D-12; 24-36-33-31-D-13

B. PZ-22-02100001 (MODWASH, LLC)
AN ORDINANCE OF THE CITY COUNCIL
OF THE CITY OF COCOA, BREVARD
COUNTY, FLORIDA; CHANGING THE
ZONING MAP DESIGNATION OF CP
(COMMERCIAL PARKWAY DISTRICT) ON
1.38 ACRES OF LAND LOCATED ON THE
SOUTHWEST CORNER OF THE INTERSEC-
TION OF SR520 (W. KING STREET) AND
HIGHWAY US1 (S. COCOA BLVD.) TO CG
(GENERAL COMMERCIAL DISTRICT):. 24-
36-33-31-A-5; 24-36-33-31-C-1; 24-36-33-
31-*R.1; 24-36-33-31-*R.2; 24-36-33-31-
*R.3; 24-36-33-31-*R.4; 24-36-33-31-*
R.5; 24-36-33-31-D-11; 24-36-33-31-D-12;
24-36-33-31-D-13

C. PZ-21-0200022 (603 BREVARD AVE)
APPROVAL OF A LARGE-SCALE SITE
PLAN (COCOA HOTEL AND HOSPITALI-
TY) CONSISTENT WITH APPENDIX A
ZONING, ARTICLE XIII, SECTION 1, OF
THE CITY CODE. THE APPLICANT DE-
SIRE TO DEVELOP THE EXISTING VA-
CANT SITE AS A HOTEL. THE SUBJECT
PROPERTY IS LOCATED ON THE WEST
SIDE OF BREVARD AVE AT 603 BREVARD
AVE AND CONTAINS +/- 1.25 ACRES.
THE PROPERTY IS IDENTIFIED BY PAR-
CEL: 24-36-53-75-*2; PARCEL :24-36-53-
75-*3 AND PARCEL #: 24-36-53-75-*4.

D. PZ-21-02100001 (CAREY PROPERTIES
LLC)
AN ORIDNANCE OF THE CITY COUNCIL
OF THE CITY OF COCOA, BREVARD
COUNTY FLORIDA; CHANGING THE ZON-
ING MAP DESIGNATION OF RE (RESIDEN-
TIAL ESTATE) DISTRICT ON 1.06 ACRES
OF LAND LOCATED ON THE SOUTHWEST
CORNER OF DIXON BLVD AND NORTH
INDIAN RIVER DRIVE, EAST OF HIGHWAY
US1 TO RU-2-15 (MULTI-FAMILY
DISTRICT):. 24-36-21-BM-*5; 24-36-21-
BM-*5.12

**PLANNING & ZONING BOARD/ LOCAL
PLANNING AGENCY PUBLIC HEARING
WILL BE HELD ON**
April 6th, 2022
**AT 6:00 P.M. OR SOON THEREAFTER
IN THE COCOA CITY HALL COUNCIL
CHAMBERS LOCATED AT 65 STONE
STREET, COCOA, FL**

General Notice Information:

This is a public meeting. Interested parties are hereby advised that they may appear at said meeting and be heard. The facility wherein this public meeting will be held is accessible to the physically handicapped. In accordance with the Americans With Disabilities Act, persons needing assistance to participate in any of these proceedings should contact the City Clerk of the City of Cocoa, listed below, at least 48 hours prior to the meet-
ing: Carrie Shealy, City Clerk, 65 Stone

Street, Cocoa, by telephone at (321) 433-8484 or via email at cshealy@cocoafl.org. Pursuant to Section 286.0105, Florida Statutes, the City hereby advises the public that if a person decides to appeal any decision made by the BOA, P&Z Board/LPA or City Council with respect to any matter considered at its meeting or hearing, that person will need a record of the proceedings and for such purpose, affected persons may need to assure that a verbatim record of the proceedings is made, and such record shall include the testimony and evidence upon which the appeal is to be based. This notice does not constitute consent by the City for the introduction or admission into evidence of otherwise inadmissible or irrelevant evidence, nor does it authorize challenges or appeals otherwise not allowed by law.

The BOA or PZ Board/LPA meeting may include the attendance of one (1) or more members of the Cocoa City Council who may or may not participate in the Board discussions held at this public hearing. The BOA, PZ Board/LPA and City Council reserve the right to continue or postpone hearings to a date certain without re-advertising.

Public Participation Information:

Members of the public may view the meeting agenda, ordinances, project applications, supporting documents, and staff reports on the City's website at the following link prior to attending or commenting:

- City of Cocoa meeting calendar at <https://cocoa.legistar.com/Calendar.aspx>
- Documents pertaining to the above may also be inspected at the Community Services Department, between 8:00 a.m. and 5:00 p.m., Monday through Friday, or by phoning (321) 433-8451.

Interested persons may submit their written comments or questions prior to the meeting through Email at meetings@cocoafl.org, or via E-comments through the online agenda at the link above. Any electronic comments submitted will be made part of the meeting record.

Viewing In Real Time. Interested persons are encouraged to view and listen to the hearings live by accessing the meetings at the following internet address:

- City of Cocoa meeting calendar at <https://cocoa.legistar.com/Calendar.aspx>
- However, the City is not responsible for technical difficulties that may occur while attempting to view or listen to the meeting on the internet.

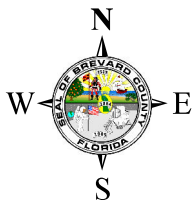
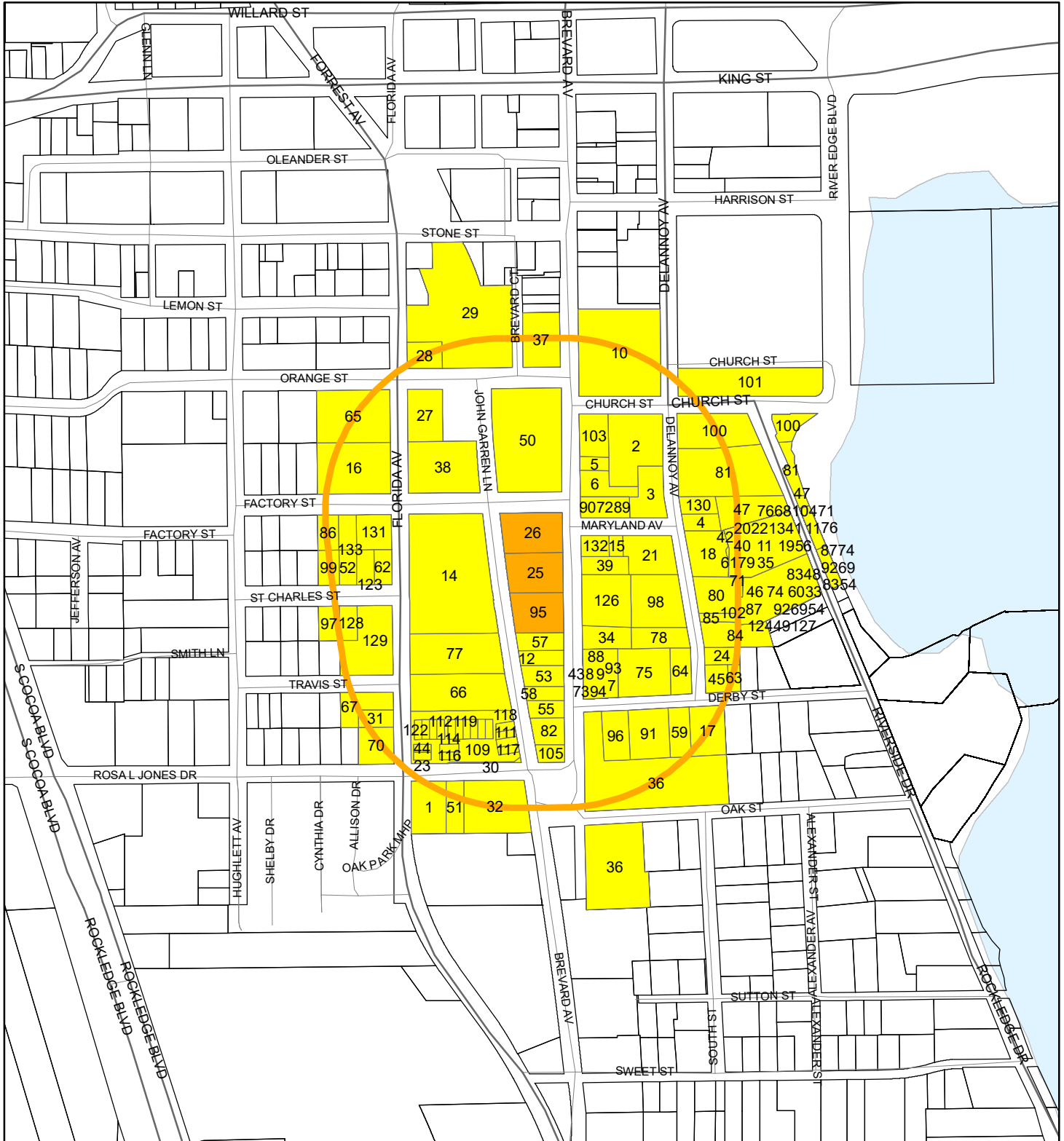
Special Information for Quasi-Judicial Hearings:

Any person that (1) can demonstrate that they may suffer special damages different in kind and degree from that of the general public at large; and (2) wishes to present factual or expert witnesses and/or evidence at the quasi-judicial hearing is highly encouraged to immediately contact Cynthia Thurman, Planning and Zoning Manager, at (321) 433-8510 or Cthurman@cocoafl.org, to make proper arrangements for presentation of witnesses and/or evidence. All witnesses should be identified and all evidentiary documents and exhibits that are intended to be distributed to the BOA, P&Z/LPA and City Council should be submitted to Mrs. Thurman via email or mail at least three (3) days prior to the hearing.

RADIUS MAP

RLR GROUP LLC

cocoa15001



1:4,800 or 1 inch = 400 feet

Buffer Distance: 500 feet

This map was compiled from recorded documents and does not reflect an actual survey. The Brevard County Board of County Commissioners does not assume responsibility for errors or omissions hereon.

Produced by BoCC - GIS Date: 3/22/2022

- Buffer
- Subject Property
- Notify Property
- Parcels



Cocoa Village Hotel – Cocoa, FL

Traffic Impact Analysis

March 2022

Kimley»Horn

TRAFFIC IMPACT ANALYSIS

Cocoa Village Hotel

Cocoa, FL

Prepared for:

Gulfstream Equity Management, LLC

Prepared by:

Kimley-Horn and Associates, Inc.

March 2022

Vincent E. Spahr, P.E.

PE #88747

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Appendices

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Appendix B: SCTPO Data

Appendix C: Traffic Data

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Appendix E: Synchro Outputs

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Appendix G: Growth Rate Calculations

Appendix H: NCHRP Report 457 Worksheets

1.0 INTRODUCTION

Kimley-Horn has been retained by Gulfstream Equity Management, LLC to analyze and document the traffic impacts associated with a proposed hotel development located in Cocoa, Florida. The proposed development is generally located in the southwest quadrant of the intersection at Brevard Avenue and Factory Street. The proposed development will consist of a 107-room hotel and up to 6,280 square feet of ground-floor retail. Access to the site will be provided via three full-access driveways on John Garren Lane and one full-access driveway on Brevard Avenue, as shown in **Figure 1**. Project driveways are shown in the site plan included in **Appendix A**.

1.1 STUDY AREA

As per Brevard County requirements, the study area of the project will include those roadway segments where project trips consume 5% or more of the daily Maximum Acceptable Volume (MAV). Roadway data was obtained from the latest Urban Area Boundary & Federal Functional Classification Map for Brevard County and the Space Coast Transportation Planning Organization (SCTPO) 2020 *Segments Functional Classification, Maximum Acceptable Volume (MAV), and Level of Service (LOS)* Table. Excerpts from SCTPO data is provided in **Appendix B**. As shown in **Table 1**, the project will only consume 5% or more of the daily MAV on the segment of Factory Street from Hughett Avenue to Brevard Avenue.

In addition, the two other directly-accessed roadway segments are included in this analysis:

- John Garren Lane from Orange Street to Rosa Jones Boulevard
- Brevard Avenue from Factory Street to Rosa Jones Boulevard

The following three intersections, in addition to all project driveways, are included in this analysis:

- Factory Street & Florida Avenue (All-way stop-controlled)
- Factory Street & John Garren Lane (Two-way stop-controlled)
- Factory Street & Brevard Avenue (All-way stop controlled)

The project location and study intersections are shown in **Figure 1**.



Figure 1: Project Location & Study Area Intersections
Cocoa Village Hotel | Cocoa, Florida

Table 1: Study Area Determination

Roadway FromTo		Roadway Attributes ¹				Maximum Acceptable Volume ²	Daily Project Traffic			Significant? ⁵	Include In Study Area? ⁶	
		FDOT Classification	Area Type	Adopted LOS	Number of Lanes		% Assign ³	Daily Traffic	Max % Impact ⁴			
Florida Avenue SR 520Rosa Jones Blvd		Rosa Jones Blvd	Minor Arterial	U	E	2U	15,600	38.0%	458	2.94%	No	No
		US 1	Minor Arterial	U	E	2U	15,600	8.0%	96	0.62%	No	No
SR 520 (EB) Florida Ave		Brevard Ave	Principal Arterial	U	D	3D (one-way)	19,440	11.0%	133	0.68%	No	No
SR 520 (WB) Florida Ave		Brevard Ave	Principal Arterial	U	D	3D (one-way)	19,440	10.0%	121	0.62%	No	No
US 1 Florida Ave		Rosa Jones Blvd	Principal Arterial	U	D	6D	62,900	2.0%	24	0.04%	No	No
John Garren Lane Orange St		Rosa Jones Blvd	Local Road	U	E	2U	11,200	26.0%	313	2.79%	No	Yes
		Rosa Jones Blvd	Local Road	U	E	2U	11,200	26.0%	313	2.79%	No	No
Factory Street Hughett Ave		Brevard Ave	Local Road	U	E	2U	11,200	61.0%	735	6.56%	Yes	Yes
Brevard Avenue Factory St		Rosa Jones Blvd	Local Road	U	E	2U	11,200	4.0%	48	0.43%	No	Yes

K:\ORL_TPT\01249160000_Cocoa Village Hotel\03_Excel[Traffic Calcs_CocoaHotel.xlsx]StudyArea

3/16/2022

Notes:

1. The roadway attributes were obtained from the latest FDOT Urban Area Boundary & Federal Functional Classification Map and the Space Coast Transportation Planning Organization (SCTPO) 2020 Functional Classification, MAV and LOS Table.
2. Maximum Acceptable Volumes (MAV) were obtained from the FDOT Quality/Level of Service Handbook (June 2020) and the Space Coast Transportation Planning Organization (SCTPO) 2020 Functional Classification, MAV and LOS Table.
3. Percent project traffic was calculated as the maximum across the segment.
4. Percent impact was calculated as the daily project traffic across the segment divided by the MAV.
5. In accordance with Brevard County requirements, the minimum threshold for significance is 5% impact.
6. Segments directly accessed by the project site are to be included in the study area.

2.0 EXISTING CONDITIONS ANALYSIS – YEAR 2022

2.1 EXISTING TRAFFIC COUNTS

Existing turning movement data was collected during the AM Peak Period (7:00 AM to 9:00 AM) and PM Peak Period (4:00 PM to 6:00 PM) at the study intersections on Tuesday, March 8, 2022 and is provided in **Appendix C**. Turning movement counts were adjusted to peak season volumes using the peak season conversion factor (PSCF) from FDOT's Florida Traffic Online (FTO) publication. PSCF data is provided in **Appendix C**. Turning movement volume development worksheets including adjusted existing (2022) turning movement volumes for the study intersections are provided in **Appendix D**.

2.2 EXISTING ROADWAY CONDITIONS

A roadway segment analysis was performed for existing (2022) daily conditions on the study segments. Roadway data was obtained from the latest Urban Area Boundary & Federal Functional Classification Map for Brevard County and the SCTPO 2020 *Segments Functional Classification, MAV, and LOS* Table, provided in **Appendix B**. Existing daily volumes on the study segments were estimated by dividing PM peak hour approach and departure volumes at the study intersections by an assumed "K" factor of 0.09.

As shown in **Table 2**, all segments are currently operating within their adopted service volumes.

Table 2: Existing (2022) Roadway Segment Analysis

Roadway From To		Roadway Attributes ¹				Maximum Acceptable Volume ²	Existing (2022) Daily Conditions		
		FDOT Classification	Area Type	Adopted LOS	Number of Lanes		AADT ³	V/C Ratio	LOS
Factory Street Hughett Ave	Brevard Ave	Local Road	U	E	2U	11,200	833	0.07	C
John Garren Lane Orange St	Rosa Jones Blvd	Local Road	U	E	2U	11,200	433	0.04	C
Brevard Avenue Factory St	Rosa Jones Blvd	Local Road	U	E	2U	11,200	1,489	0.13	C

Notes:

1. The roadway attributes were obtained from the latest FDOT Urban Area Boundary & Federal Functional Classification Map and the Space Coast Transportation Planning Organization (SCTPO) 2020 Functional Classification, MAV and LOS Table.

2. Maximum Acceptable Volumes (MAV) were obtained from the FDOT Quality/Level of Service Handbook (June 2020) and the Space Coast Transportation Planning Organization (SCTPO) 2020 Functional Classification, MAV and LOS Table.

3. Existing (2022) volumes were estimated by applying a "K" factor of 0.09 to collected PM peak hour approach and departure volumes. If multiple intersection volumes were collected along the segment, the maximum approach and departure volumes were used.

2.3 EXISTING INTERSECTION CONDITIONS

Intersection operational analyses were performed for existing (2022) conditions in the AM and PM peak hours using procedures outlined in the *Highway Capacity Manual, 6th Edition* with Synchro (v11) software. Intersection LOS, delay, maximum volume to capacity (v/c) ratios, and 95th percentile queues for existing conditions are provided in **Table 3**. Synchro outputs are provided in **Appendix E**.

Table 3: Existing (2022) Intersection Conditions

		AM Peak Hour				PM Peak Hour			
		Delay (sec/veh)	LOS	Max V/C	Max 95th %ile queue (veh)	Delay (sec/veh)	LOS	Max V/C	Max 95th %ile queue (veh)
Factory Street & Florida Avenue (AWSC)	Overall Intersection	8.0	A	-	-	8.4	A	-	-
	Eastbound	7.5	A	0.01	< 1	8.1	A	0.01	< 1
	Westbound	7.6	A	0.03	< 1	7.8	A	0.07	< 1
	Northbound	8.1	A	0.20	< 1	8.6	A	0.25	1.0
	Southbound	7.9	A	0.15	< 1	8.4	A	0.21	< 1
Factory Street & John Garren Lane (TWSC)	Eastbound Left	7.3	A	0.00	< 1	7.3	A	0.00	< 1
	Westbound Left	7.2	A	0.00	< 1	7.3	A	0.00	< 1
	Northbound	9.2	A	0.02	< 1	9.1	A	0.02	< 1
	Southbound	9.1	A	0.01	< 1	9.3	A	0.03	< 1
Factory Street & Brevard Avenue (AWSC)	Overall Intersection	7.4	A	-	-	7.6	A	-	-
	Eastbound	6.7	A	0.01	< 1	6.8	A	0.01	< 1
	Northbound	7.4	A	0.02	< 1	7.4	A	0.02	< 1
	Southbound	7.5	A	0.13	< 1	7.7	A	0.19	< 1

As shown in the table above, the study intersections and approaches operate with LOS A under existing (2022) AM and PM peak hour conditions.

3.0 DEVELOPMENT TRAFFIC

The proposed development will consist of a 107-room hotel and up to 6,280 square feet of ground-floor retail. The latest industry standards were referenced to evaluate the new external trips to be generated by the site at buildout. An excerpt from a client-provided study dated August 2019 was referenced for the distribution of trips throughout the study area.

3.1 TRIP GENERATION

The 11th Edition of the Institute of Transportation Engineers' (ITE) *Trip Generation Manual* was reviewed for available Land Use Codes (LUC) that are representative of the proposed hotel and retail development. LUCs that were reviewed include:

- LUC 310 – Hotel
- LUC 822 – Strip Retail Plaza (<40,000 SF)

As shown in **Table 4**, the proposed facility is anticipated to generate 1,205 daily trips, 61 AM peak hour trips (35 in/26 out), and 90 PM peak hour trips (46 in/44 out). Overall internal capture reductions of 2.1% for daily trips and 2.2% for PM peak hour trips were applied based on data published in the 3rd Edition of the ITE *Trip Generation Handbook*. To provide a conservative analysis, no reduction was applied for potential pass-by capture.

Table 4: Trip Generation Summary

Land Use	Intensity	Daily Trips	AM Peak Hour of Adjacent Street			PM Peak Hour of Adjacent Street		
			Total	In	Out	Total	In	Out
Proposed Development								
Hotel	107 Rooms	736	46	26	20	51	26	25
Strip Retail Plaza (<40k)	6,280 KSF	495	15	9	6	41	21	20
	Subtotal	1,231	61	35	26	92	47	45
Internal Capture								
Overall Development	Daily AM PM 2.1% 0.0% 2.2%	26	0	0	0	2	1	1
TOTAL NET NEW TRIPS		1,205	61	35	26	90	46	44

Note 1: Trip Generation were calculated using the data from ITE's Trip Generation Manual, 11th Edition

Note 2: Internal capture percentages were calculated using the data from the ITE's Trip Generation Handbook, 3rd Edition

Hotel [ITE 310]

Daily T = 10.84*X - 423.41; (X is Rooms)

AM Peak Hour of Adjacent Street T = 0.50*X - 7.45; (X is Rooms); (56% in, 44% out)

PM Peak Hour of Adjacent Street T = 0.74*X - 27.89; (X is Rooms); (51% in, 49% out)

Strip Retail Plaza (<40k) [ITE 822]

Daily T = 42.20*X + 229.68; (X is 1,000 square feet)

AM Peak Hour of Adjacent Street T = 2.36*X; (X is 1,000 square feet); (60% in, 40% out)

PM Peak Hour of Adjacent Street T = 6.59*X; (X is 1,000 square feet); (50% in, 50% out)

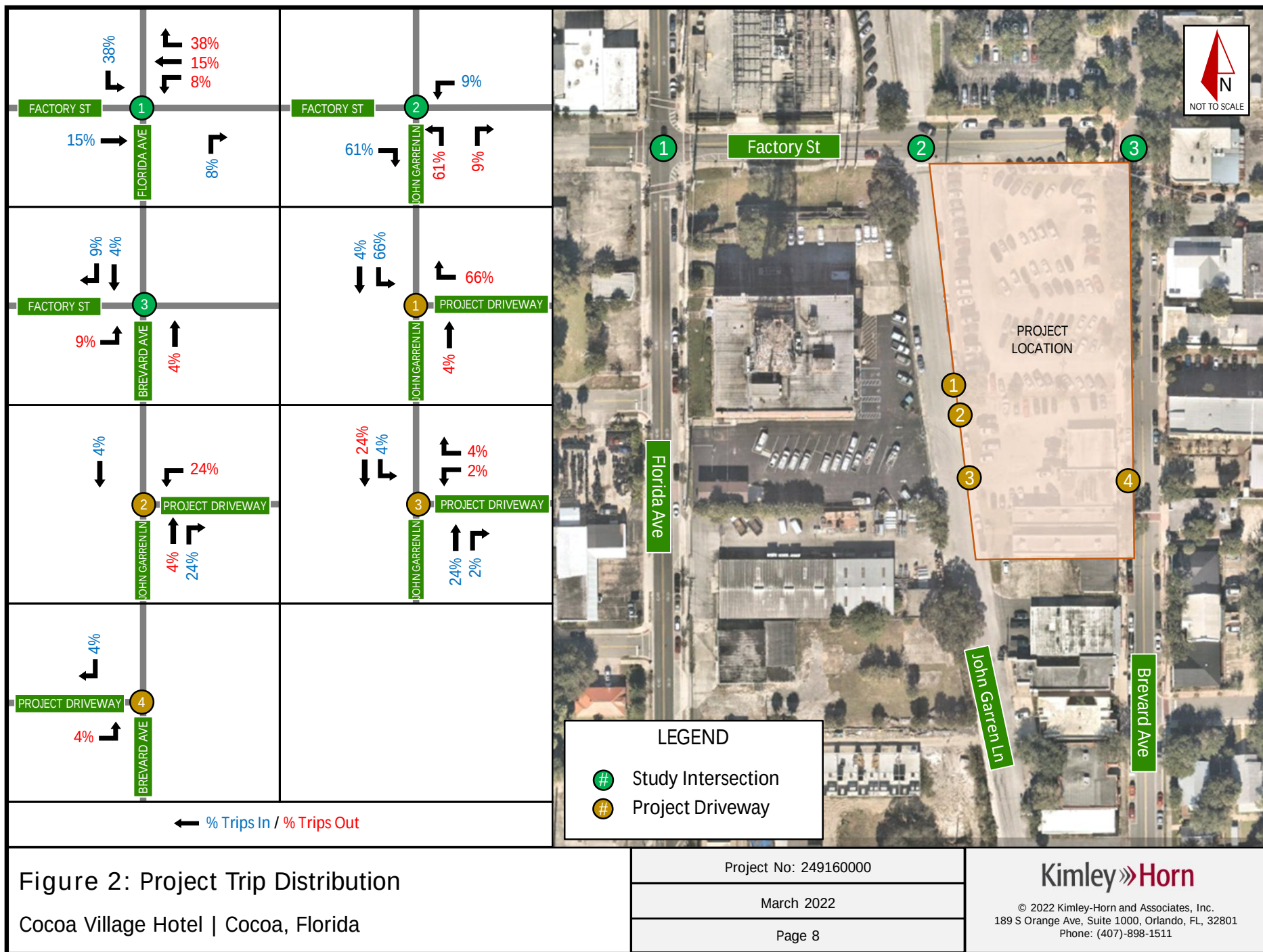
3.2 TRIP DISTRIBUTION

Projected traffic demand of project trips on study roadways was provided by the client in a previous Traffic Impact Study dated August 2019. An excerpt from that report showing the percent of daily project distribution is provided in **Appendix F**.

The model project distribution was referenced to manually assign project distribution at study area intersections and driveways in general accordance with model output. **Figure 2** illustrates the intersection movement project distribution generated by the proposed development within the study area.

3.3 TRIP ASSIGNMENT

Project trip distribution percentages were used to assign the anticipated project trips to the study area roadways and intersections. **Figures 3** illustrates the anticipated AM and PM peak hour project trips at the study area intersections.



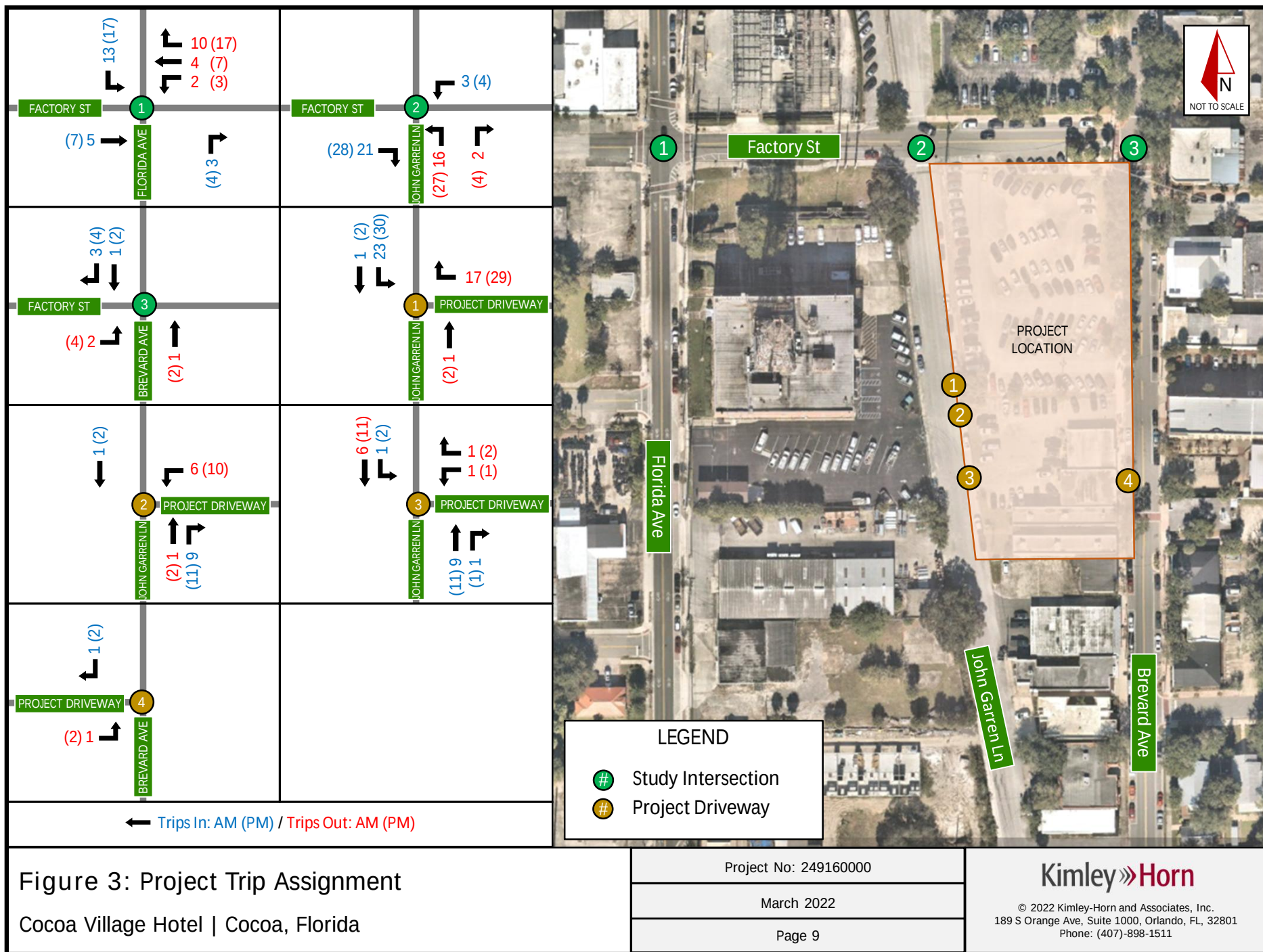
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4.0 BACKGROUND CONDITIONS ANALYSIS – YEAR 2023

4.1 BACKGROUND TRAFFIC

Traffic conditions were evaluated for background (2023) conditions, prior to the inclusion of project trips on the roadway network. Historical growth in the study area was determined to be less than 0% based on five years of historical data on Florida Avenue, so a minimum 2% annual growth rate was applied to forecast existing (2022) volumes to background year 2023 volumes. Growth rate calculations are provided in **Appendix G**. Intersection turning movement volume development worksheets are provided in **Appendix D**.

4.2 BACKGROUND INTERSECTION ANALYSIS

Intersection operational analyses were performed for background (2023) conditions in the AM and PM peak hours using procedures outlined in the *Highway Capacity Manual, 6th Edition* with Synchro (v11) software. Intersection LOS, delay and maximum v/c ratios for the background conditions are provided in **Table 5**. Synchro outputs are provided in **Appendix E**.

Table 5: Background (2023) Intersection Conditions

		AM Peak Hour				PM Peak Hour			
		Delay (sec/veh)	LOS	Max V/C	Max 95th %ile queue (veh)	Delay (sec/veh)	LOS	Max V/C	Max 95th %ile queue (veh)
Factory Street & Florida Avenue (AWSC)	Overall Intersection	8.0	A	-	-	8.5	-	-	-
	Eastbound	7.5	A	0.01	< 1	8.1	A	0.01	< 1
	Westbound	7.6	A	0.03	< 1	7.8	A	0.07	< 1
	Northbound	8.2	A	0.21	< 1	8.7	A	0.25	1.0
	Southbound	7.9	A	0.16	< 1	8.4	A	0.21	< 1
Factory Street & John Garren Lane (TWSC)	Eastbound Left	7.3	A	0.00	< 1	7.3	A	0.00	< 1
	Westbound Left	7.2	A	0.00	< 1	7.3	A	0.00	< 1
	Northbound	9.2	A	0.02	< 1	9.1	A	0.02	< 1
	Southbound	9.1	A	0.01	< 1	9.3	A	0.03	< 1
Factory Street & Brevard Avenue (AWSC)	Overall Intersection	7.4	A	-	-			-	-
	Eastbound	6.7	A	0.01	< 1	6.8	A	0.01	< 1
	Northbound	7.4	A	0.02	< 1	7.4	A	0.02	< 1
	Southbound	7.5	A	0.14	< 1	7.7	A	0.19	< 1

As shown in the table above, the study intersections and approaches are expected operate with LOS A under the background (2023) AM and PM peak hour conditions.

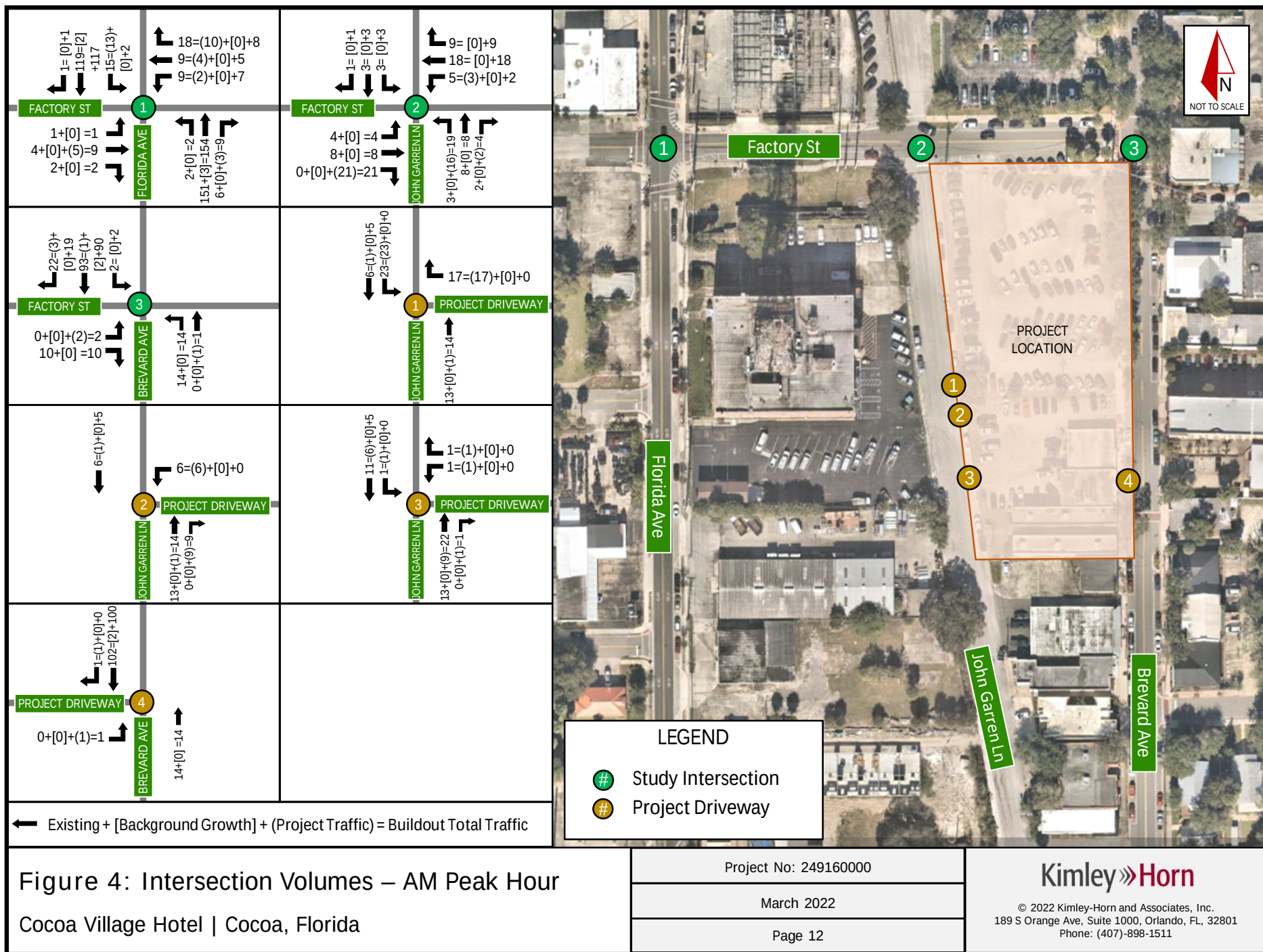
5.0 BUILDOUT CONDITIONS ANALYSIS – YEAR 2023

5.1 BUILDOUT TRAFFIC

Traffic conditions were evaluated for buildout (2023) conditions with the inclusion of project trips. Buildout volumes were developed by adding anticipated project trips to background (2023) volumes. Intersection turning movement volume development worksheets for all intersections are provided in **Appendix D**. **Figures 4 and 5** illustrate buildout (2023) turning movement volumes at the study intersections for the AM and PM peak hours, respectively.

5.2 BUILDOUT ROADWAY SEGMENT ANALYSIS

Daily roadway segment analyses were performed for future (2023) buildout conditions. Background volumes were developed by applying a minimum growth rate of 2.0% to existing volumes. Buildout volumes were developed by summing background volume and project trips. As shown in **Table 6**, all roadway segments are anticipated to operate at acceptable LOS through buildout (2023) conditions.



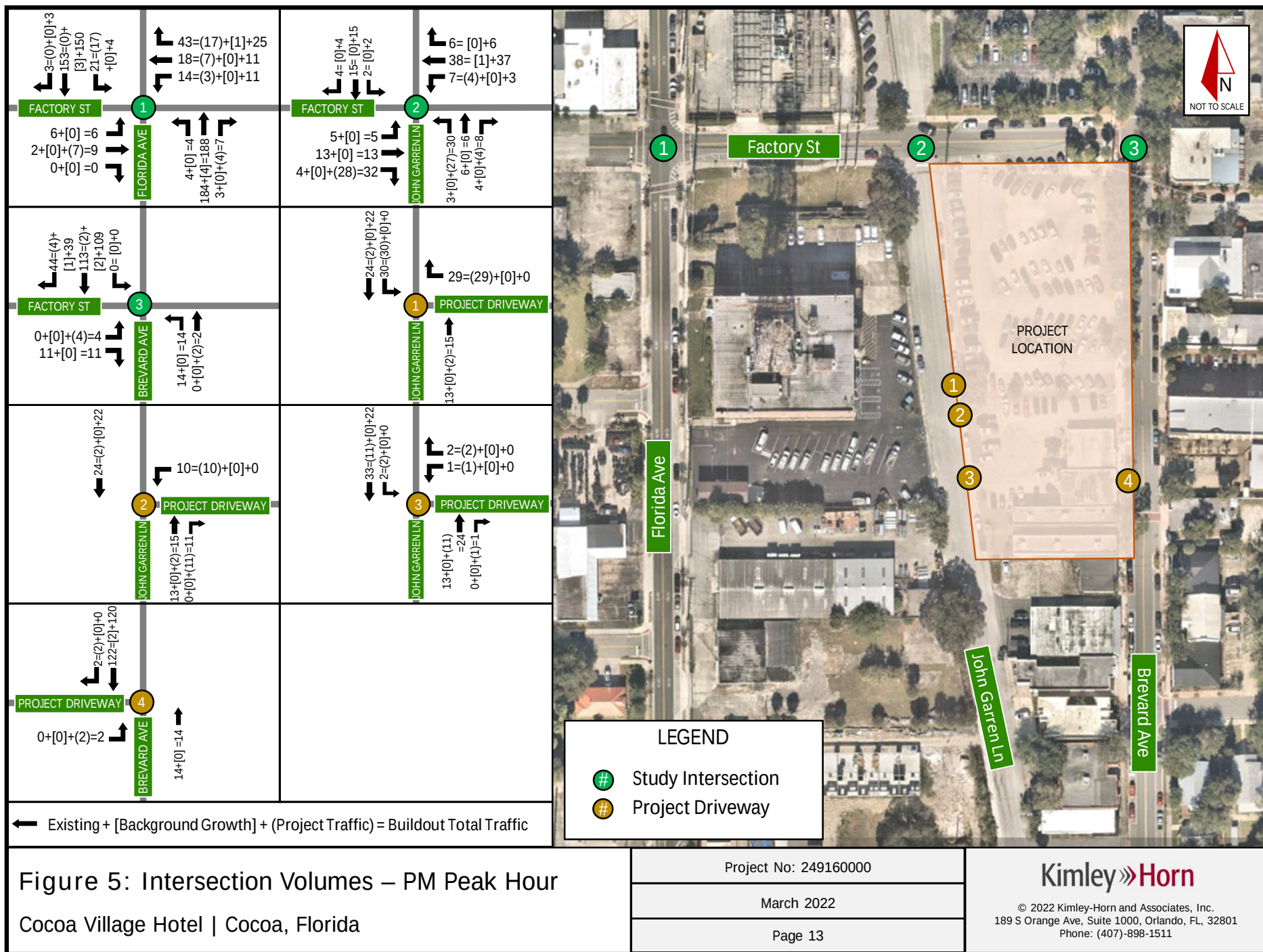


Figure 5: Intersection Volumes – PM Peak Hour
 Cocoa Village Hotel | Cocoa, Florida

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Table 6: Future (2023) Buildout Roadway Segment Analysis

Roadway From To		Roadway Attributes ¹				Maximum Acceptable Volume ²	2022 Volumes	Applied Growth Rate	2023 Background AADT ³	Daily Project Traffic		2023 Project Buildout AADT		
		FDOT Classification	Area Type	Adopted LOS Std.	Number of Lanes					% Assign ⁴	Two-Way Daily Traffic	Volumes ⁵	V/C Ratio	LOS
Factory Street														
Hughett Ave	Brevard Ave	Local Road	U	E	2U	11,200	833	2.0%	850	61.0%	368	1,218	0.11	C
John Garren Lane														
Orange St	Rosa Jones Blvd	Local Road	U	E	2U	11,200	433	2.0%	442	26.0%	157	599	0.05	C
Brevard Avenue														
Factory St	Rosa Jones Blvd	Local Road	U	E	2U	11,200	1,489	2.0%	1,519	4.0%	24	1,543	0.14	C
Notes: 1. The roadway attributes were obtained from the latest FDOT Urban Area Boundary & Federal Functional Classification Map and the Space Coast Transportation Planning Organization (SCTPO) 2020 Functional Classification, MAV and LOS Table. 2. Maximum Acceptable Volumes (MAV) were obtained from the FDOT Quality/Level of Service Handbook (June 2020) and the Space Coast Transportation Planning Organization (SCTPO) 2020 Functional Classification, MAV and LOS Table. 3. Future background traffic volumes are the summation of the existing volumes and background growth. 4. Project trip assignment was based on the maximum percentage along the study roadway segment. 5. Future buildout traffic volumes are the summation of the non-project traffic volumes and project traffic volumes.														

5.3 BUILDOUT INTERSECTION ANALYSIS

Intersection operational analyses were performed for buildout (2023) conditions in the AM and PM peak hours using procedures outlined in the *Highway Capacity Manual, 6th Edition* with Synchro (v11) software. Intersection LOS, delay, and maximum v/c ratios for the buildout conditions are provided in **Table 7**. Synchro outputs are provided in **Appendix E**.

Table 7: Buildout (2023) Intersection Conditions

		AM Peak Hour				PM Peak Hour			
		Delay (sec/veh)	LOS	Max V/C	Max 95th %ile queue (veh)	Delay (sec/veh)	LOS	Max V/C	Max 95th %ile queue (veh)
Factory Street & Florida Avenue (AWSC)	Overall Intersection	8.2	A	-	-	8.7	A	-	-
	Eastbound	7.7	A	0.02	< 1	8.2	A	0.02	< 1
	Westbound	7.7	A	0.05	< 1	8.1	A	0.10	< 1
	Northbound	8.3	A	0.21	< 1	8.9	A	0.27	1.1
	Southbound	8.2	A	0.18	< 1	8.8	A	0.24	< 1
Factory Street & John Garren Lane (TWSC)	Eastbound Left	7.3	A	0.00	< 1	7.3	A	0.00	< 1
	Westbound Left	7.3	A	0.01	< 1	7.3	A	0.01	< 1
	Northbound	9.4	A	0.05	< 1	9.4	A	0.05	< 1
	Southbound	9.3	A	0.01	< 1	9.5	A	0.03	< 1
Factory Street & Brevard Avenue (AWSC)	Overall Intersection	7.4	A	-	-	7.7	A	-	-
	Eastbound	6.8	A	0.01	< 1	7.1	A	0.02	< 1
	Northbound	7.4	A	0.02	< 1	7.4	A	0.02	< 1
	Southbound	7.5	A	0.14	< 1	7.8	A	0.20	< 1

As shown in the table above, all study intersections and approaches are expected operate with LOS A under the buildout (2023) AM and PM peak hour conditions.

Additionally, egress movements from each of the project driveways were analyzed for buildout (2023) conditions in the AM and PM peak hours using procedures outlined in the *Highway Capacity Manual, 6th Edition* with Synchro (v11) software. Driveway LOS, delay, and maximum v/c ratios for the buildout conditions are provided in **Table 8**. Synchro outputs are provided in **Appendix E**. **Figures 4 and 5** illustrate turning movement volumes at the project driveways for the AM and PM peak hours, respectively.

Table 8: Buildout (2023) Project Driveway Conditions

		AM Peak Hour				PM Peak Hour			
		Delay (sec/veh)	LOS	Max V/C	Max 95th %ile queue (veh)	Delay (sec/veh)	LOS	Max V/C	Max 95th %ile queue (veh)
Project Driveway 1 & John Garren Lane	Westbound Left/Right	8.5	A	0.02	< 1	8.5	A	0.03	< 1
	Southbound Left	7.3	A	0.02	< 1	7.3	A	0.02	< 1
Project Driveway 2 & John Garren Lane	Westbound Left/Right	8.7	A	0.01	< 1	8.8	A	0.01	< 1
Project Driveway 3 & John Garren Lane	Westbound Left/Right	8.6	A	0.00	< 1	8.6	A	0.00	< 1
	Southbound Left	7.3	A	0.00	< 1	7.3	A	0.00	< 1
Project Driveway 4 & Brevard Avenue	Eastbound Left/Right	9.2	A	0.00	< 1	9.4	A	0.00	< 1

As shown in the table above, egress movements from all driveways are anticipated to operate with LOS A under the buildout (2023) AM and PM peak hour conditions.

5.3 TURN LANE ANALYSIS

The need for ingress right-turn lanes and left-turn lanes was evaluated utilizing the procedures outlined in National Highway Cooperative Research Program (NCHRP) Report 457 based on the anticipated buildout (2023) turning volumes into the proposed development and posted speed limits in the study area. Due to the low traffic volumes along John Garren Lane, Factory Street, and Brevard Avenue, the analysis indicated that no ingress turn lanes are warranted at the proposed project driveways. Printouts of the NCHRP Report 457 worksheets for the AM and PM peak hour buildout (2023) conditions are provided in **Appendix H**.

6.0 CONCLUSION

This traffic impact analysis was performed to analyze the traffic impacts associated with a proposed development generally located in the southwest quadrant of the intersection at Brevard Avenue and Factory Street in Cocoa, Florida. The proposed development will consist of a 107-room hotel and up to 6,280 square feet of ground-floor retail. Access to the site will be provided via three full-access driveways on John Garren Lane and one full-access driveway on Brevard Avenue.

The proposed development is anticipated to generate approximately 1,205 daily trips, 61 AM peak hour trips (35 in/26 out), and 90 PM peak hour trips (46 in/44 out). Project trips were distributed onto the surrounding existing roadway network using an excerpt from a previously-completed Traffic Impact Analysis provided by the client.

Daily roadway segment analyses were performed for existing and buildout (2023) conditions for study segments. All segments are expected to operate within their adopted LOS capacity through buildout (2023) conditions.

An operational analysis for existing, background, and buildout conditions was performed at the study area intersection and project driveways. All study intersection approaches and egress movements from the proposed project driveways are expected to operate with LOS A through future (2023) buildout conditions during the AM and PM peak hours.

The need for exclusive ingress right-turn lanes and left-turn lanes at the proposed project driveways was evaluated utilizing the procedures outlined in NCHRP Report 457 based on the anticipated buildout (2023) turning volumes into the proposed development and posted speed limits in the study area. The analysis indicated that no ingress turn lanes are warranted at the proposed project driveways.

APPENDIX A

Site Plan

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APPENDIX B

SCTPO Data

Segments Functional Classification, Maximum Acceptable Volume (MAV) and Level of Service (LOS)

ID	Road	From	To	Functional Classification	Existing Volume 2020 or Most Recent	Existing MAV	Existing Vol/MAV	Acceptable LOS*
41	FISKE (SR 519)	ST. ANDREWS	PLUCKEBAUM	Urban Principal Arterial-Other	23,516	41,790	0.56	D
40	FISKE (SR 519)	PLUCKEBAUM	ROSA JONES	Urban Principal Arterial-Other	18,963	41,790	0.45	D
38	FISKE (SR 519)	ROSA JONES	SR 520	Urban Principal Arterial-Other	15,538	41,790	0.37	D
37	FISKE	SR 520	DIXON	Urban Minor Arterial	6,976	15,600	0.45	E
55	FLORIDA	US 1	ROSA JONES	Urban Minor Arterial	6,561	15,600	0.42	E
54	FLORIDA	ROSA JONES	SR 520	Urban Minor Arterial	4,556	15,600	0.29	E
52	FORREST	SR 520	PEACHTREE	Urban Minor Arterial	12,661	15,600	0.81	E
53	FORREST	PEACHTREE	US 1	Urban Minor Arterial	9,059	15,600	0.58	E
67	FRIDAY	SR 520	SR 524	Urban Major Collector	1,787	15,600	0.11	E
64	FRIDAY	SR 524	JAMES	Urban Local	2,958	17,700	0.17	D
593	JDG F JAMIESON	TAVISTOCK DRIVE	STADIUM	Urban Local	4,647	17,700	0.26	D
80	JDG F JAMIESON	STADIUM	GOV'T CENTER/SCH. BOARD ENTRANCE	Urban Minor Arterial	16,351	39,800	0.41	D
78	JDG F JAMIESON	GOV'T CENTER/SCH. BOARD ENTRANCE	LAKE ANDREW	Urban Minor Arterial	16,793	39,800	0.42	D
85	LAKE	COX	RANGE	Urban Major Collector	3,357	17,700	0.19	D
62	LAKE	RANGE	CLEARLAKE	Urban Major Collector	4,105	15,600	0.26	E
68	LAKE	CLEARLAKE	SR 520	Urban Major Collector	4,306	15,600	0.28	E
81	LAKE ANDREW	WICKHAM	THE AVENUES ENTRANCE	Urban Minor Arterial	19,458	39,800	0.49	D
82	LAKE ANDREW	THE AVENUES ENTRANCE	JUDGE FRAN JAMIESON WAY	Urban Minor Arterial	15,324	39,800	0.39	D
86	MICHIGAN	RANGE	CLEARLAKE	Urban Major Collector	4,119	15,600	0.26	E
48	MICHIGAN	CLEARLAKE	US 1	Urban Minor Arterial	11,420	39,800	0.29	D
528	MURRELL	WICKHAM	SPYGLASS	Urban Minor Arterial	15,829	33,800	0.47	E
59	MURRELL	SPYGLASS	VIERA BLVD.	Urban Minor Arterial	15,373	39,800	0.39	D
529	MURRELL	VIERA BLVD.	CLUB HOUSE DRIVE	Urban Minor Arterial	18,694	39,800	0.47	D
57	MURRELL	CLUB HOUSE DRIVE	BARNES	Urban Minor Arterial	15,818	39,800	0.40	D
592	PEACHTREE	LAKE DRIVE	FISKE	Urban Major Collector	559	15,600	0.04	E
17	PINEHURST	WICKHAM	SPYGLASS HILL	Urban Minor Collector	7,247	15,600	0.46	E
530	PINEHURST	SPYGLASS HILL	FARGO	Urban Minor Collector	6,173	15,600	0.40	E
16	PINEHURST	FARGO	HOLIDAY SPRINGS	Urban Minor Collector	4,463	15,600	0.29	E
94	HOLIDAY SPRINGS	PINEHURST	VIERA BLVD.	Urban Minor Collector	4,994	15,600	0.32	E
568	PLUCKEBAUM	CLEARLAKE	FISKE	Urban Major Collector	6,820	15,600	0.44	E
531	RANGE	SR 520	LAKE DRIVE	Urban Major Collector	4,361	15,600	0.28	E
532	RANGE	LAKE DRIVE	ROSETINE	Urban Major Collector	5,994	15,600	0.38	E
74	ROSETINE	RANGE	CLEARLAKE	Urban Minor Collector	3,144	15,600	0.20	E
18	SPYGLASS HILL	MURRELL	PINEHURST	Urban Minor Collector	4,408	15,600	0.28	E
534	SR 520	ORANGE CO	SR 524	Rural Principal Arterial Other	18,679	40,300	0.46	C
1	SR 520	SR 524	FRIDAY ROAD	Urban Principal Arterial-Other	14,697	41,790	0.35	D
84	SR 520	FRIDAY ROAD	I-95	Urban Principal Arterial-Other	19,916	41,790	0.48	D
2	SR 520	I-95	BURNETT	Urban Principal Arterial-Other	24,195	41,790	0.58	D
3	SR 520	BURNETT	RANGE	Urban Principal Arterial-Other	19,839	41,790	0.47	D
14	SR 520	RANGE	CLEARLAKE	Urban Principal Arterial-Other	19,537	41,790	0.47	D
4	SR 520	CLEARLAKE	LAKE DRIVE	Urban Principal Arterial-Other	21,721	39,800	0.55	D
5	SR 520	LAKE DRIVE	FISKE	Urban Principal Arterial-Other	21,735	39,800	0.55	D
6	SR 520	FISKE	BLAKE	Urban Principal Arterial-Other	25,284	41,790	0.61	D
7	SR 520	BLAKE	US 1	Urban Principal Arterial-Other	23,308	41,790	0.56	D
8	SR 520 (EB)	US 1	FORREST	Urban Principal Arterial-Other	15,455	19,440	0.80	D
9	SR 520 (EB)	FORREST	BREVARD	Urban Principal Arterial-Other	20,931	19,440	1.08	D
10	SR 520 (EB)	BREVARD	DELANNOY	Urban Principal Arterial-Other	19,994	19,440	1.03	D

Appendix B: SCTPO Data

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*Acceptable LOS is Level of Service based on FDOT Generalized Tables and is for planning purposes only. Local governments may adopt their own LOS and one should contact the jurisdiction that maintains the segment.

Segments Functional Classification, Maximum Acceptable Volume (MAV) and Level of Service (LOS)

ID	Road	From	To	Functional Classification	Existing Volume 2020 or Most Recent	Existing MAV	Existing Vol/MAV	Acceptable LOS*
11	SR 520 (EB)	DELANNOY	RIVEREDGE	Urban Principal Arterial-Other	20,681	19,440	1.06	D
12	SR 520 (WB)	CAUSEWAY	DELANNOY	Urban Principal Arterial-Other	20,341	19,440	1.05	D
13	SR 520 (WB)	DELANNOY	BREVARD	Urban Principal Arterial-Other	21,420	19,440	1.10	D
15	SR 520 (WB)	BREVARD	FORREST	Urban Principal Arterial-Other	19,838	19,440	1.02	D
87	SR 520 (WB)	FORREST	US 1	Urban Principal Arterial-Other	14,766	19,440	0.76	D
66	SR 524	SR 520	I-95	Urban Minor Arterial	6,597	24,200	0.27	D
73	SR 524	I-95	COX	Urban Minor Arterial	11,015	18,590	0.59	D
76	SR 524	COX	INDUSTRY ROAD	Urban Minor Arterial	12,527	19,470	0.64	D
91	SR 528	ORANGE CO	SR 407	Rural Principal Arterial - Freeways & Expressways	49,688	43,000	1.16	C
90	SR 528	SR 407	I-95	Rural Principal Arterial - Freeways & Expressways	37,934	43,000	0.88	C
93	SR 528	I-95	INDUSTRY ROAD	Urban Principal Arterial - Freeways & Expressways	33,778	74,400	0.45	D
92	SR 528	INDUSTRY ROAD	US 1	Urban Principal Arterial - Freeways & Expressways	42,136	74,400	0.57	D
25	STADIUM PKWY	WICKHAM	JAMIESON	Urban Minor Arterial	10,620	17,700	0.60	D
26	STADIUM PKWY	JAMIESON	VIERA BLVD	Urban Minor Arterial	24,187	39,800	0.61	D
535	STADIUM PKWY	VIERA BLVD	ROSEMOUNT DR	Urban Minor Arterial	15,372	39,800	0.39	D
606	STADIUM PKWY	ROSEMOUNT DR	I-95/FISKE	Urban Minor Arterial	15,784	39,800	0.40	D
607	TAVISTOCK	JAMIESON	VIERA BLVD	Urban Local	3,312	15,600	0.21	E
608	TAVISTOCK	VIERA BLVD	STADIUM PARKWAY	Urban Local	2,252	15,600	0.14	E
89	US 1	PINEDA	SUNTREE BLVD.	Urban Principal Arterial-Other	38,146	41,790	0.91	D
567	US 1	SUNTREE BLVD.	VIERA BLVD.	Urban Principal Arterial-Other	31,800	41,790	0.76	D
36	US 1	VIERA BLVD.	BARNES	Urban Principal Arterial-Other	26,159	41,790	0.63	D
70	US 1	BARNES	EYSTER	Urban Principal Arterial-Other	25,876	41,790	0.62	D
34	US 1	EYSTER	BARTON	Urban Principal Arterial-Other	32,082	62,900	0.51	D
33	US 1	BARTON	FLORIDA	Urban Principal Arterial-Other	38,487	62,900	0.61	D
88	US 1	FLORIDA	ROSA JONES	Urban Principal Arterial-Other	34,965	62,900	0.56	D
24	US 1	ROSA JONES	SR 520	Urban Principal Arterial-Other	33,771	62,900	0.54	D
23	US 1	SR 520	PEACHTREE	Urban Principal Arterial-Other	21,821	62,900	0.35	D
22	US 1	PEACHTREE	FORREST	Urban Principal Arterial-Other	22,512	62,900	0.36	D
21	US 1	FORREST	DIXON	Urban Principal Arterial-Other	32,281	62,900	0.51	D
20	US 1	DIXON	MICHIGAN	Urban Principal Arterial-Other	27,254	62,900	0.43	D
19	US 1	MICHIGAN	SR 528	Urban Principal Arterial-Other	32,674	62,900	0.52	D
572	VIERA BLVD	TAVISTOCK DRIVE	STADIUM	Urban Local	8,613	39,800	0.22	D
536	VIERA BLVD	STADIUM	MURRELL	Urban Minor Arterial	22,317	39,800	0.56	D
58	VIERA BLVD	MURRELL	HOLIDAY SPRINGS	Urban Minor Arterial	17,578	39,800	0.44	D
537	VIERA BLVD	HOLIDAY SPRINGS	US 1	Urban Minor Arterial	14,441	30,300	0.48	E

South

503	DR. MARTIN LUTHER KING JR. BLV	US 192	HIBISCUS	Urban Minor Arterial	9,802	32,400	0.30	E
502	DR. MARTIN LUTHER KING JR. BLV	HIBISCUS	NASA	Urban Minor Arterial	8,777	34,020	0.26	E
501	DR. MARTIN LUTHER KING JR. BLV	NASA	APOLLO	Urban Minor Arterial	11,885	39,800	0.30	D
510	APOLLO	DR. MARTIN LUTHER KING JR. BLVD	ST. MICHAELS	Urban Minor Arterial	18,830	41,790	0.45	D
538	APOLLO	ST. MICHAELS	SARNO	Urban Minor Arterial	19,058	41,790	0.46	D
571	APOLLO	SARNO	EAU GALLIE BLVD	Urban Minor Arterial	9,630	33,800	0.28	E
507	AURORA	J RODES	TURTLEMOUND	Urban Major Collector	7,415	15,600	0.48	E
514	AURORA	TURTLEMOUND	WICKHAM	Urban Major Collector	5,649	17,700	0.32	D
515	AURORA	WICKHAM	CROTON	Urban Minor Arterial	10,494	39,800	0.26	D
366	AURORA	CROTON	STEWART	Urban Minor Arterial	10,548	39,800	0.27	D

Appendix B: SCTPO Data

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APPENDIX C

Traffic Data



ALL TRAFFIC DATA SERVICES

(303) 216-2439

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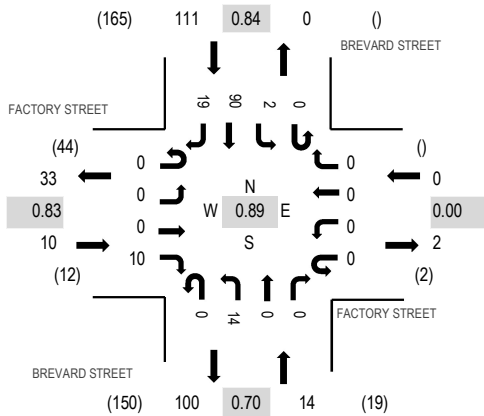
Location: 1 BREVARD STREET & FACTORY STREET AM

Date: Tuesday, March 8, 2022

Peak Hour: 08:00 AM - 09:00 AM

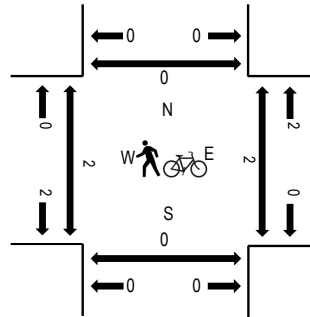
Peak 15-Minutes: 08:15 AM - 08:30 AM

Peak Hour - Motorized Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	FACTORY STREET Eastbound				FACTORY STREET Westbound				BREVARD STREET Northbound				BREVARD STREET Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	6	1	8	61	0	1	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	6	1	8	82	0	1	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	13	1	16	112	0	1	0	0
7:45 AM	0	0	0	1	0	0	0	0	0	2	0	0	0	0	23	3	29	130	0	2	0	0
8:00 AM	0	0	0	3	0	0	0	0	0	1	0	0	0	0	21	4	29	135	0	0	0	0
8:15 AM	0	0	0	2	0	0	0	0	0	3	0	0	0	0	28	5	38		0	1	0	0
8:30 AM	0	0	0	3	0	0	0	0	0	5	0	0	0	0	21	5	34		2	1	0	0
8:45 AM	0	0	0	2	0	0	0	0	0	5	0	0	0	2	20	5	34		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	0	0	10	0	0	0	0	0	14	0	0	0	2	90	19	135
Mediums	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	10	0	0	0	0	0	14	0	0	0	2	90	19	135



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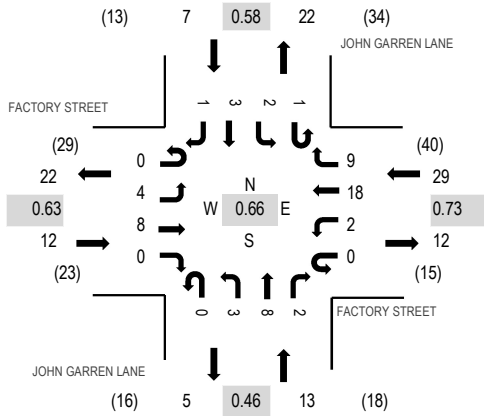
Location: 2 JOHN GARREN LANE & FACTORY STREET AM

Date: Tuesday, March 8, 2022

Peak Hour: 08:00 AM - 09:00 AM

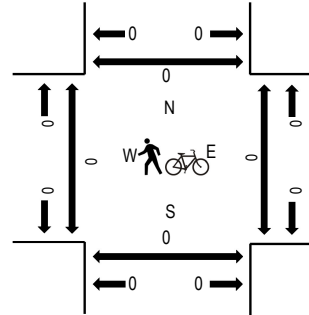
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - Motorized Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	FACTORY STREET Eastbound				FACTORY STREET Westbound				JOHN GARREN LANE Northbound				JOHN GARREN LANE Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	1	1	0	0	2	0	0	0	0	1	0	0	0	0	5	33	0	0	0	0
7:15 AM	0	1	0	1	0	0	1	0	0	0	1	0	0	0	3	0	7	39	0	0	0	0
7:30 AM	0	0	0	1	0	1	3	1	0	0	1	0	0	0	1	0	8	44	0	0	0	0
7:45 AM	0	4	1	1	0	0	1	2	0	0	2	0	0	0	2	0	13	59	0	0	0	0
8:00 AM	0	1	3	0	0	1	3	1	0	0	1	0	0	0	0	1	11	61	0	0	0	0
8:15 AM	0	1	1	0	0	1	2	4	0	1	1	1	0	0	0	0	12		0	0	0	0
8:30 AM	0	1	2	0	0	0	7	3	0	1	5	1	1	1	1	0	23		0	0	0	0
8:45 AM	0	1	2	0	0	0	6	1	0	1	1	0	0	1	2	0	15		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	4	8	0	0	2	18	9	0	3	8	2	1	2	3	1	61
Mediums	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	4	8	0	0	2	18	9	0	3	8	2	1	2	3	1	61



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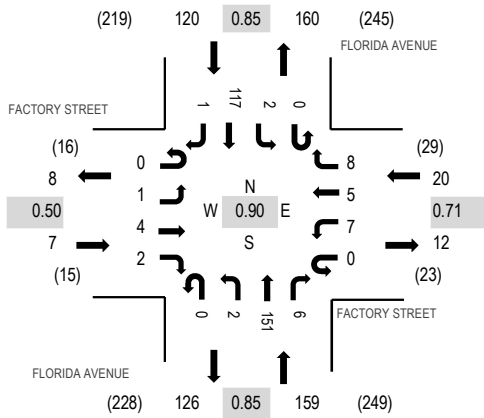
Location: 3 FLORIDA AVENUE & FACTORY STREET AM

Date: Tuesday, March 8, 2022

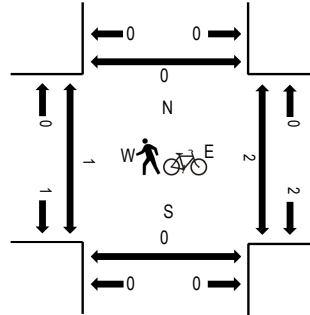
Peak Hour: 08:00 AM - 09:00 AM

Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - Motorized Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	FACTORY STREET Eastbound				FACTORY STREET Westbound				FLORIDA AVENUE Northbound				FLORIDA AVENUE Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	2	2	0	0	2	0	0	0	11	0	0	0	16	0	33	206	0	0	0	0
7:15 AM	0	0	0	1	0	0	0	1	0	1	13	2	0	0	25	0	43	253	0	1	0	0
7:30 AM	0	1	0	1	0	0	2	1	0	1	29	1	0	0	20	0	56	285	0	0	0	0
7:45 AM	0	0	0	1	0	1	1	1	0	0	28	4	0	2	35	1	74	295	1	0	0	0
8:00 AM	0	0	2	2	0	1	3	0	0	0	34	1	0	1	36	0	80	306	0	0	0	0
8:15 AM	0	0	0	0	0	1	1	1	0	0	40	2	0	0	30	0	75		1	0	0	0
8:30 AM	0	0	1	0	0	4	1	1	0	1	33	1	0	1	23	0	66		0	2	0	0
8:45 AM	0	1	1	0	0	1	0	6	0	1	44	2	0	0	28	1	85		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	1	4	2	0	7	5	8	0	1	151	6	0	2	117	1	305
Mediums	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Total	0	1	4	2	0	7	5	8	0	2	151	6	0	2	117	1	306



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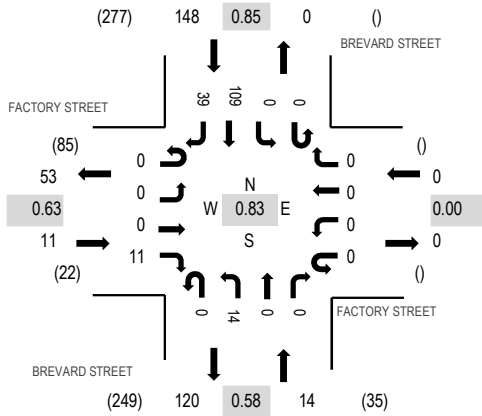
Location: 1 BREVARD STREET & FACTORY STREET PM

Date: Tuesday, March 8, 2022

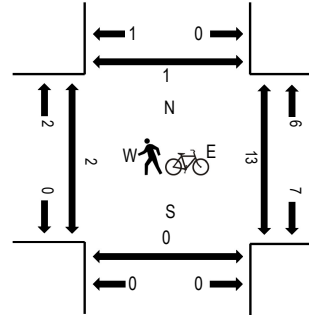
Peak Hour: 04:15 PM - 05:15 PM

Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - Motorized Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	FACTORY STREET				FACTORY STREET				BREVARD STREET				BREVARD STREET				Total	Rolling Hour	Pedestrian Crossings				
	Eastbound				Westbound				Northbound				Southbound						West	East	South	North	
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right							
4:00 PM	0	0	0	2	0	0	0	0	0	6	0	0	0	0	0	25	7	40	161	1	1	0	2
4:15 PM	0	0	0	3	0	0	0	0	0	4	0	0	0	0	0	28	10	45	173	0	2	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	32	12	45	171	2	4	0	1
4:45 PM	0	0	0	2	0	0	0	0	0	3	0	0	0	0	0	15	11	31	172	0	4	0	0
5:00 PM	0	0	0	6	0	0	0	0	0	6	0	0	0	0	0	34	6	52	173	0	2	0	0
5:15 PM	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	39	1	43		0	0	0	0
5:30 PM	0	0	0	6	0	0	0	0	0	9	0	0	0	0	0	28	3	46		0	2	0	0
5:45 PM	0	0	0	2	0	0	0	0	0	4	0	0	0	0	0	26	0	32		0	7	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	0	0	11	0	0	0	0	0	14	0	0	0	0	109	39	173
Mediums	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	11	0	0	0	0	0	14	0	0	0	0	109	39	173



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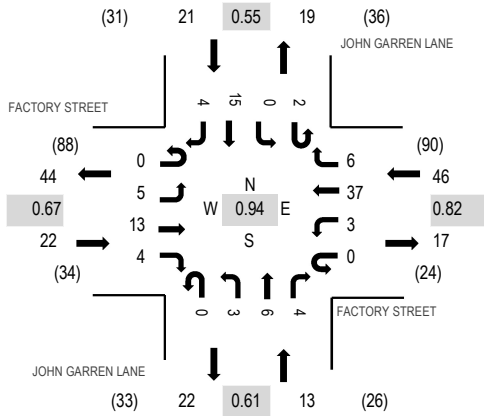
Location: 2 JOHN GARREN LANE & FACTORY STREET PM

Date: Tuesday, March 8, 2022

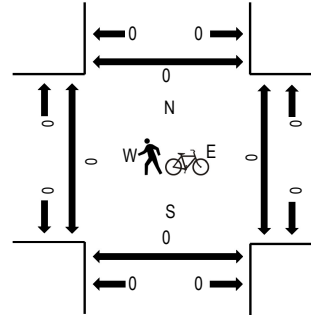
Peak Hour: 04:45 PM - 05:45 PM

Peak 15-Minutes: 04:45 PM - 05:00 PM

Peak Hour - Motorized Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	FACTORY STREET Eastbound				FACTORY STREET Westbound				JOHN GARREN LANE Northbound				JOHN GARREN LANE Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	1	1	1	0	0	14	0	0	1	3	0	1	0	1	1	24	92	0	0	0	0
4:15 PM	0	0	2	1	0	1	11	1	0	0	0	1	0	0	1	0	18	93	0	0	1	0
4:30 PM	0	1	1	0	0	0	11	1	0	2	4	0	0	0	3	0	23	99	2	0	2	2
4:45 PM	0	0	1	1	0	0	14	3	0	0	1	1	2	0	2	2	27	102	0	0	0	0
5:00 PM	0	0	3	0	0	2	9	1	0	3	3	1	0	0	3	0	25	89	0	0	0	0
5:15 PM	0	3	4	1	0	1	2	1	0	0	1	1	0	0	8	2	24		0	0	0	0
5:30 PM	0	2	5	2	0	0	12	1	0	0	1	1	0	0	2	0	26		0	0	0	0
5:45 PM	0	3	1	0	0	0	4	1	0	0	1	1	0	0	3	0	14		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	5	13	4	0	3	37	6	0	3	6	4	2	0	15	4	102
Mediums	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	5	13	4	0	3	37	6	0	3	6	4	2	0	15	4	102



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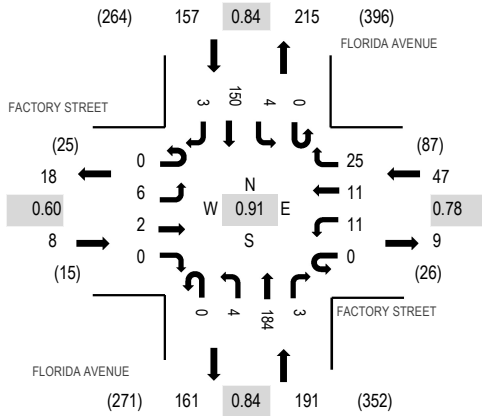
Location: 3 FLORIDA AVENUE & FACTORY STREET PM

Date: Tuesday, March 8, 2022

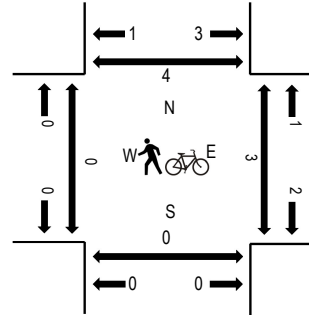
Peak Hour: 04:30 PM - 05:30 PM

Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - Motorized Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	FACTORY STREET Eastbound				FACTORY STREET Westbound				FLORIDA AVENUE Northbound				FLORIDA AVENUE Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	1	0	0	1	3	11	0	1	43	1	0	0	32	0	93	377	2	0	0	0
4:15 PM	0	0	0	0	0	5	0	5	0	1	37	2	0	1	31	0	82	395	0	0	0	1
4:30 PM	0	0	1	0	0	2	4	7	0	1	44	0	0	0	43	0	102	403	0	1	0	1
4:45 PM	0	2	0	0	0	6	4	8	0	2	49	0	0	2	27	0	100	388	0	1	0	0
5:00 PM	0	2	1	0	0	2	3	7	0	1	57	0	0	2	36	0	111	341	0	1	0	1
5:15 PM	0	2	0	0	0	1	0	3	0	0	34	3	0	0	44	3	90		0	0	0	2
5:30 PM	0	1	4	0	0	2	1	8	0	0	42	2	0	3	24	0	87		0	2	0	1
5:45 PM	0	1	0	0	0	1	0	3	0	0	30	2	0	1	14	1	53		0	3	0	4

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	6	2	0	0	11	11	25	0	4	184	3	0	4	149	3	402
Mediums	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	6	2	0	0	11	11	25	0	4	184	3	0	4	150	3	403

2019 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
 CATEGORY: 7000 BREVARD COUNTYWIDE

WEEK	DATES	SF	MOCF: 0.91 PSCF
1	01/01/2019 - 01/05/2019	1.03	1.13
2	01/06/2019 - 01/12/2019	1.00	1.10
3	01/13/2019 - 01/19/2019	0.97	1.07
4	01/20/2019 - 01/26/2019	0.96	1.05
* 5	01/27/2019 - 02/02/2019	0.94	1.03
* 6	02/03/2019 - 02/09/2019	0.92	1.01
* 7	02/10/2019 - 02/16/2019	0.90	0.99
* 8	02/17/2019 - 02/23/2019	0.90	0.99
* 9	02/24/2019 - 03/02/2019	0.89	0.98
* 10	03/03/2019 - 03/09/2019	0.88	0.97
* 11	03/10/2019 - 03/16/2019	0.88	0.97
* 12	03/17/2019 - 03/23/2019	0.89	0.98
* 13	03/24/2019 - 03/30/2019	0.90	0.99
* 14	03/31/2019 - 04/06/2019	0.91	1.00
* 15	04/07/2019 - 04/13/2019	0.92	1.01
* 16	04/14/2019 - 04/20/2019	0.93	1.02
* 17	04/21/2019 - 04/27/2019	0.94	1.03
18	04/28/2019 - 05/04/2019	0.96	1.05
19	05/05/2019 - 05/11/2019	0.98	1.08
20	05/12/2019 - 05/18/2019	0.99	1.09
21	05/19/2019 - 05/25/2019	1.01	1.11
22	05/26/2019 - 06/01/2019	1.02	1.12
23	06/02/2019 - 06/08/2019	1.03	1.13
24	06/09/2019 - 06/15/2019	1.05	1.15
25	06/16/2019 - 06/22/2019	1.05	1.15
26	06/23/2019 - 06/29/2019	1.05	1.15
27	06/30/2019 - 07/06/2019	1.05	1.15
28	07/07/2019 - 07/13/2019	1.05	1.15
29	07/14/2019 - 07/20/2019	1.06	1.16
30	07/21/2019 - 07/27/2019	1.06	1.16
31	07/28/2019 - 08/03/2019	1.07	1.18
32	08/04/2019 - 08/10/2019	1.08	1.19
33	08/11/2019 - 08/17/2019	1.08	1.19
34	08/18/2019 - 08/24/2019	1.10	1.21
35	08/25/2019 - 08/31/2019	1.11	1.22
36	09/01/2019 - 09/07/2019	1.12	1.23
37	09/08/2019 - 09/14/2019	1.13	1.24
38	09/15/2019 - 09/21/2019	1.14	1.25
39	09/22/2019 - 09/28/2019	1.12	1.23
40	09/29/2019 - 10/05/2019	1.10	1.21
41	10/06/2019 - 10/12/2019	1.07	1.18
42	10/13/2019 - 10/19/2019	1.05	1.15
43	10/20/2019 - 10/26/2019	1.05	1.15
44	10/27/2019 - 11/02/2019	1.04	1.14
45	11/03/2019 - 11/09/2019	1.04	1.14
46	11/10/2019 - 11/16/2019	1.03	1.13
47	11/17/2019 - 11/23/2019	1.03	1.13
48	11/24/2019 - 11/30/2019	1.03	1.13
49	12/01/2019 - 12/07/2019	1.03	1.13
50	12/08/2019 - 12/14/2019	1.03	1.13
51	12/15/2019 - 12/21/2019	1.03	1.13
52	12/22/2019 - 12/28/2019	1.00	1.10
53	12/29/2019 - 12/31/2019	0.97	1.07

* PEAK SEASON

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APPENDIX D

Turning Movement Volume Worksheets

TRAFFIC VOLUMES AT STUDY INTERSECTIONS

INTERSECTION: Factory Street & Florida Avenue

COUNT DATE: March 8, 2022

AM PEAK HOUR FACTOR: 0.9

PM PEAK HOUR FACTOR: 0.91

"AM EXISTING TRAFFIC"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
AM Raw Turning Movements		1	4	2	7	5	8	2	151	6	2	117	1		
Peak Season Conversion Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
AM EXISTING CONDITIONS		1	4	2	7	5	8	2	151	6	2	117	1		
"PM EXISTING TRAFFIC"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
PM Raw Turning Movements		6	2	0	11	11	25	4	184	3	4	150	3		
Peak Season Conversion Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
PM EXISTING CONDITIONS		6	2	0	11	11	25	4	184	3	4	150	3		
"AM BACKGROUND TRAFFIC"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Years To Buildout		1	1	1	1	1	1	1	1	1	1	1	1		
Yearly Growth Rate		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%		
AM BACKGROUND TRAFFIC GROWTH		0	0	0	0	0	0	0	3	0	0	2	0		
AM NON-PROJECT TRAFFIC		1	4	2	7	5	8	2	154	6	2	119	1		
"PM BACKGROUND TRAFFIC"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Years To Buildout		1	1	1	1	1	1	1	1	1	1	1	1		
Yearly Growth Rate		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%		
PM BACKGROUND TRAFFIC GROWTH		0	0	0	0	0	1	0	4	0	0	3	0		
PM NON-PROJECT TRAFFIC		6	2	0	11	11	26	4	188	3	4	153	3		
"AM PROJECT DISTRIBUTION"		LAND USE	TYPE	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Net New Distribution	Entering		15.0%									8.0%	38.0%		
	Exiting				8.0%	15.0%	38.0%								
"PM PROJECT DISTRIBUTION"		LAND USE	TYPE	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Net New Distribution	Entering		15.0%									8.0%	38.0%		
	Exiting				8.0%	15.0%	38.0%								
"AM PROJECT TRAFFIC"		LAND USE	TYPE	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project Trips		Net New		5		2	4	10				3	13		
AM TOTAL PROJECT TRAFFIC			0	5	0	2	4	10	0	0	3	13	0	0	
AM TOTAL TRAFFIC			1	9	2	9	9	18	2	154	9	15	119	1	
"PM PROJECT TRAFFIC"		LAND USE	TYPE	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project Trips		Net New		7		3	7	17				4	17		
PM TOTAL PROJECT TRAFFIC			0	7	0	3	7	17	0	0	4	17	0	0	
PM TOTAL TRAFFIC			6	9	0	14	18	43	4	188	7	21	153	3	

TRAFFIC VOLUMES AT STUDY INTERSECTIONS

INTERSECTION: Factory Street & John Garren Lane

COUNT DATE: March 8, 2022

AM PEAK HOUR FACTOR: 0.66

PM PEAK HOUR FACTOR: 0.94

"AM EXISTING TRAFFIC"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
AM Raw Turning Movements		4	8	0	2	18	9	3	8	2	3	3	1
Peak Season Conversion Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AM EXISTING CONDITIONS		4	8	0	2	18	9	3	8	2	3	3	1
"PM EXISTING TRAFFIC"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
PM Raw Turning Movements		5	13	4	3	37	6	3	6	4	2	15	4
Peak Season Conversion Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PM EXISTING CONDITIONS		5	13	4	3	37	6	3	6	4	2	15	4
"AM BACKGROUND TRAFFIC"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Years To Buildout		1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
AM BACKGROUND TRAFFIC GROWTH		0	0	0	0	0	0	0	0	0	0	0	0
AM NON-PROJECT TRAFFIC		4	8	0	2	18	9	3	8	2	3	3	1
"PM BACKGROUND TRAFFIC"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Years To Buildout		1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
PM BACKGROUND TRAFFIC GROWTH		0	0	0	0	1	0	0	0	0	0	0	0
PM NON-PROJECT TRAFFIC		5	13	4	3	38	6	3	6	4	2	15	4
"AM PROJECT DISTRIBUTION"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Net New Distribution	Entering			61.0%	9.0%								
	Exiting							61.0%		9.0%			
"PM PROJECT DISTRIBUTION"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Net New Distribution	Entering			61.0%	9.0%								
	Exiting							61.0%		9.0%			
"AM PROJECT TRAFFIC"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project Trips	Net New			21	3			16		2			
AM TOTAL PROJECT TRAFFIC		0	0	21	3	0	0	16	0	2	0	0	0
AM TOTAL TRAFFIC		4	8	21	5	18	9	19	8	4	3	3	1
"PM PROJECT TRAFFIC"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project Trips	Net New			28	4			27		4			
PM TOTAL PROJECT TRAFFIC		0	0	28	4	0	0	27	0	4	0	0	0
PM TOTAL TRAFFIC		5	13	32	7	38	6	30	6	8	2	15	4

TRAFFIC VOLUMES AT STUDY INTERSECTIONS

INTERSECTION: Factory Street & Brevard Avenue
COUNT DATE: March 8, 2022
AM PEAK HOUR FACTOR: 0.89
PM PEAK HOUR FACTOR: 0.83

"AM EXISTING TRAFFIC"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
AM Raw Turning Movements		0	0	10	0	0	0	14	0	0	2	90	19
Peak Season Conversion Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AM EXISTING CONDITIONS		0	0	10	0	0	0	14	0	0	2	90	19
"PM EXISTING TRAFFIC"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
PM Raw Turning Movements		0	0	11	0	0	0	14	0	0	0	109	39
Peak Season Conversion Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PM EXISTING CONDITIONS		0	0	11	0	0	0	14	0	0	0	109	39
"AM BACKGROUND TRAFFIC"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Years To Buildout		1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
AM BACKGROUND TRAFFIC GROWTH		0	0	0	0	0	0	0	0	0	0	2	0
AM NON-PROJECT TRAFFIC		0	0	10	0	0	0	14	0	0	2	92	19
"PM BACKGROUND TRAFFIC"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Years To Buildout		1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
PM BACKGROUND TRAFFIC GROWTH		0	0	0	0	0	0	0	0	0	0	2	1
PM NON-PROJECT TRAFFIC		0	0	11	0	0	0	14	0	0	0	111	40
"AM PROJECT DISTRIBUTION"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Net New Distribution	Entering											4.0%	9.0%
	Exiting	9.0%							4.0%				
"PM PROJECT DISTRIBUTION"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Net New Distribution	Entering											4.0%	9.0%
	Exiting	9.0%							4.0%				
"AM PROJECT TRAFFIC"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project Trips	Net New	2							1			1	3
AM TOTAL PROJECT TRAFFIC		2	0	0	0	0	0	0	1	0	0	1	3
AM TOTAL TRAFFIC		2	0	10	0	0	0	14	1	0	2	93	22
"PM PROJECT TRAFFIC"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project Trips	Net New	4							2			2	4
PM TOTAL PROJECT TRAFFIC		4	0	0	0	0	0	0	2	0	0	2	4
PM TOTAL TRAFFIC		4	0	11	0	0	0	14	2	0	0	113	44

TRAFFIC VOLUMES AT STUDY INTERSECTIONS

INTERSECTION: Project Driveway 1 & John Garren Lane
COUNT DATE: March 8, 2022
AM PEAK HOUR FACTOR: 0.66
PM PEAK HOUR FACTOR: 0.94

"AM EXISTING TRAFFIC"			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
AM Raw Turning Movements			0	0	0	0	0	0	0	13	0	0	5	0		
Peak Season Conversion Factor			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
AM EXISTING CONDITIONS			0	0	0	0	0	0	0	13	0	0	5	0		
"PM EXISTING TRAFFIC"			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
PM Raw Turning Movements			0	0	0	0	0	0	0	13	0	0	22	0		
Peak Season Conversion Factor			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
PM EXISTING CONDITIONS			0	0	0	0	0	0	0	13	0	0	22	0		
"AM BACKGROUND TRAFFIC"			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Years To Buildout			1	1	1	1	1	1	1	1	1	1	1	1		
Yearly Growth Rate			2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%		
AM BACKGROUND TRAFFIC GROWTH			0	0	0	0	0	0	0	0	0	0	0	0		
AM NON-PROJECT TRAFFIC			0	0	0	0	0	0	0	13	0	0	5	0		
"PM BACKGROUND TRAFFIC"			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Years To Buildout			1	1	1	1	1	1	1	1	1	1	1	1		
Yearly Growth Rate			2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%		
PM BACKGROUND TRAFFIC GROWTH			0	0	0	0	0	0	0	0	0	0	0	0		
PM NON-PROJECT TRAFFIC			0	0	0	0	0	0	0	13	0	0	22	0		
"AM PROJECT DISTRIBUTION"			LAND USE	TYPE	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Net New Distribution	Entering													66.0%	4.0%	
	Exiting								66.0%		4.0%					
"PM PROJECT DISTRIBUTION"			LAND USE	TYPE	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Net New Distribution	Entering													66.0%	4.0%	
	Exiting								66.0%		4.0%					
"AM PROJECT TRAFFIC"			LAND USE	TYPE	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project Trips		Net New								17		1		23	1	
AM TOTAL PROJECT TRAFFIC					0	0	0	0	0	17	0	1	0	23	1	0
AM TOTAL TRAFFIC					0	0	0	0	0	17	0	14	0	23	6	0
"PM PROJECT TRAFFIC"			LAND USE	TYPE	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project Trips		Net New								29		2		30	2	
PM TOTAL PROJECT TRAFFIC					0	0	0	0	0	29	0	2	0	30	2	0
PM TOTAL TRAFFIC					0	0	0	0	0	29	0	15	0	30	24	0

TRAFFIC VOLUMES AT STUDY INTERSECTIONS

INTERSECTION: Project Driveway 2 & John Garren Lane
COUNT DATE: March 8, 2022
AM PEAK HOUR FACTOR: 0.66
PM PEAK HOUR FACTOR: 0.94

"AM EXISTING TRAFFIC"			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
AM Raw Turning Movements			0	0	0	0	0	0	0	13	0	0	5	0
Peak Season Conversion Factor			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AM EXISTING CONDITIONS			0	0	0	0	0	0	0	13	0	0	5	0
"PM EXISTING TRAFFIC"			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
PM Raw Turning Movements			0	0	0	0	0	0	0	13	0	0	22	0
Peak Season Conversion Factor			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PM EXISTING CONDITIONS			0	0	0	0	0	0	0	13	0	0	22	0
"AM BACKGROUND TRAFFIC"			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Years To Buildout			1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate			2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
AM BACKGROUND TRAFFIC GROWTH			0	0	0	0	0	0	0	0	0	0	0	0
AM NON-PROJECT TRAFFIC			0	0	0	0	0	0	0	13	0	0	5	0
"PM BACKGROUND TRAFFIC"			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Years To Buildout			1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate			2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
PM BACKGROUND TRAFFIC GROWTH			0	0	0	0	0	0	0	0	0	0	0	0
PM NON-PROJECT TRAFFIC			0	0	0	0	0	0	0	13	0	0	22	0
"AM PROJECT DISTRIBUTION"			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LAND USE	TYPE													
Net New	Entering										24.0%		4.0%	
Distribution	Exiting				24.0%					4.0%				
"PM PROJECT DISTRIBUTION"			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LAND USE	TYPE													
Net New	Entering										24.0%		4.0%	
Distribution	Exiting				24.0%					4.0%				
"AM PROJECT TRAFFIC"			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LAND USE	TYPE													
Project Trips	Net New				6					1	9		1	
AM TOTAL PROJECT TRAFFIC			0	0	0	6	0	0	0	1	9	0	1	0
AM TOTAL TRAFFIC			0	0	0	6	0	0	0	14	9	0	6	0
"PM PROJECT TRAFFIC"			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LAND USE	TYPE													
Project Trips	Net New				10					2	11		2	
PM TOTAL PROJECT TRAFFIC			0	0	0	10	0	0	0	2	11	0	2	0
PM TOTAL TRAFFIC			0	0	0	10	0	0	0	15	11	0	24	0

TRAFFIC VOLUMES AT STUDY INTERSECTIONS

INTERSECTION: Project Driveway 3 & John Garren Lane
COUNT DATE: March 8, 2022
AM PEAK HOUR FACTOR: 0.66
PM PEAK HOUR FACTOR: 0.94

"AM EXISTING TRAFFIC"			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
AM Raw Turning Movements			0	0	0	0	0	0	0	13	0	0	5	0		
Peak Season Conversion Factor			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
AM EXISTING CONDITIONS			0	0	0	0	0	0	0	13	0	0	5	0		
"PM EXISTING TRAFFIC"			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
PM Raw Turning Movements			0	0	0	0	0	0	0	13	0	0	22	0		
Peak Season Conversion Factor			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
PM EXISTING CONDITIONS			0	0	0	0	0	0	0	13	0	0	22	0		
"AM BACKGROUND TRAFFIC"			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Years To Buildout			1	1	1	1	1	1	1	1	1	1	1	1		
Yearly Growth Rate			2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%		
AM BACKGROUND TRAFFIC GROWTH			0	0	0	0	0	0	0	0	0	0	0	0		
AM NON-PROJECT TRAFFIC			0	0	0	0	0	0	0	13	0	0	5	0		
"PM BACKGROUND TRAFFIC"			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Years To Buildout			1	1	1	1	1	1	1	1	1	1	1	1		
Yearly Growth Rate			2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%		
PM BACKGROUND TRAFFIC GROWTH			0	0	0	0	0	0	0	0	0	0	0	0		
PM NON-PROJECT TRAFFIC			0	0	0	0	0	0	0	13	0	0	22	0		
"AM PROJECT DISTRIBUTION"			LAND USE	TYPE	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Net New		Entering									24.0%	2.0%	4.0%			
Distribution		Exiting					2.0%		4.0%					24.0%		
"PM PROJECT DISTRIBUTION"			LAND USE	TYPE	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Net New		Entering									24.0%	2.0%	4.0%			
Distribution		Exiting					2.0%		4.0%					24.0%		
"AM PROJECT TRAFFIC"			LAND USE	TYPE	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project Trips		Net New					1			1		9	1	1	6	
AM TOTAL PROJECT TRAFFIC					0	0	0	1	0	1	0	9	1	1	6	0
AM TOTAL TRAFFIC					0	0	0	1	0	1	0	22	1	1	11	0
"PM PROJECT TRAFFIC"			LAND USE	TYPE	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project Trips		Net New					1			2		11	1	2	11	
PM TOTAL PROJECT TRAFFIC					0	0	0	1	0	2	0	11	1	2	11	0
PM TOTAL TRAFFIC					0	0	0	1	0	2	0	24	1	2	33	0

TRAFFIC VOLUMES AT STUDY INTERSECTIONS

INTERSECTION: Project Driveway 4 & Brevard Avenue
COUNT DATE: March 8, 2022
AM PEAK HOUR FACTOR: 0.89
PM PEAK HOUR FACTOR: 0.83

"AM EXISTING TRAFFIC"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
AM Raw Turning Movements		0	0	0	0	0	0	0	14	0	0	100	0
Peak Season Conversion Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AM EXISTING CONDITIONS		0	0	0	0	0	0	0	14	0	0	100	0
"PM EXISTING TRAFFIC"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
PM Raw Turning Movements		0	0	0	0	0	0	0	14	0	0	120	0
Peak Season Conversion Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PM EXISTING CONDITIONS		0	0	0	0	0	0	0	14	0	0	120	0
"AM BACKGROUND TRAFFIC"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Years To Buildout		1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
AM BACKGROUND TRAFFIC GROWTH		0	0	0	0	0	0	0	0	0	0	2	0
AM NON-PROJECT TRAFFIC		0	0	0	0	0	0	0	14	0	0	102	0
"PM BACKGROUND TRAFFIC"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Years To Buildout		1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
PM BACKGROUND TRAFFIC GROWTH		0	0	0	0	0	0	0	0	0	0	2	0
PM NON-PROJECT TRAFFIC		0	0	0	0	0	0	0	14	0	0	122	0
"AM PROJECT DISTRIBUTION"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LAND USE	TYPE												
Net New Distribution	Entering												4.0%
	Exiting	4.0%											
"PM PROJECT DISTRIBUTION"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LAND USE	TYPE												
Net New Distribution	Entering												4.0%
	Exiting	4.0%											
"AM PROJECT TRAFFIC"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LAND USE	TYPE												
Project Trips	Net New	1											1
AM TOTAL PROJECT TRAFFIC		1	0	0	0	0	0	0	0	0	0	0	1
AM TOTAL TRAFFIC		1	0	0	0	0	0	0	14	0	0	102	1
"PM PROJECT TRAFFIC"		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LAND USE	TYPE												
Project Trips	Net New	2											2
PM TOTAL PROJECT TRAFFIC		2	0	0	0	0	0	0	0	0	0	0	2
PM TOTAL TRAFFIC		2	0	0	0	0	0	0	14	0	0	122	2

APPENDIX E

Synchro Outputs

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	4	2	7	5	8	2	151	6	2	117	1
Future Vol, veh/h	1	4	2	7	5	8	2	151	6	2	117	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	4	2	8	6	9	2	168	7	2	130	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.5	7.6	8.1	7.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	1%	14%	35%	2%
Vol Thru, %	95%	57%	25%	97%
Vol Right, %	4%	29%	40%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	159	7	20	120
LT Vol	2	1	7	2
Through Vol	151	4	5	117
RT Vol	6	2	8	1
Lane Flow Rate	177	8	22	133
Geometry Grp	1	1	1	1
Degree of Util (X)	0.2	0.01	0.027	0.153
Departure Headway (Hd)	4.067	4.489	4.443	4.118
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	878	802	810	864
Service Time	2.116	2.489	2.444	2.174
HCM Lane V/C Ratio	0.202	0.01	0.027	0.154
HCM Control Delay	8.1	7.5	7.6	7.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	0	0.1	0.5

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	4	8	0	2	18	9	3	8	2	3	3	1
Future Vol, veh/h	4	8	0	2	18	9	3	8	2	3	3	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	66	66	66	66	66	66	66	66	66	66	66	66
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	12	0	3	27	14	5	12	3	5	5	2
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	41	0	0	12	0	0	68	71	12	72	64	34
Stage 1	-	-	-	-	-	-	24	24	-	40	40	-
Stage 2	-	-	-	-	-	-	44	47	-	32	24	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1568	-	-	1607	-	-	925	819	1069	919	827	1039
Stage 1	-	-	-	-	-	-	994	875	-	975	862	-
Stage 2	-	-	-	-	-	-	970	856	-	984	875	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1568	-	-	1607	-	-	916	814	1069	902	822	1039
Mov Cap-2 Maneuver	-	-	-	-	-	-	916	814	-	902	822	-
Stage 1	-	-	-	-	-	-	990	872	-	971	860	-
Stage 2	-	-	-	-	-	-	962	854	-	964	872	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	2.4			0.5			9.2			9.1		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	868	1568	-	-	1607	-	-	882				
HCM Lane V/C Ratio	0.023	0.004	-	-	0.002	-	-	0.012				
HCM Control Delay (s)	9.2	7.3	0	-	7.2	0	-	9.1				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0				

HCM 6th AWSC
3: Brevard Avenue & Factory Street/Business Driveway

Cocoa Village Hotel
Existing Conditions, AM Peak Hour

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	10	0	0	0	14	0	0	2	90	19
Future Vol, veh/h	0	0	10	0	0	0	14	0	0	2	90	19
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	11	0	0	0	16	0	0	2	101	21
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.7	0	7.4	7.5
HCM LOS	A	-	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	0%	0%	2%
Vol Thru, %	0%	0%	100%	81%
Vol Right, %	0%	100%	0%	17%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	14	10	0	111
LT Vol	14	0	0	2
Through Vol	0	0	0	90
RT Vol	0	10	0	19
Lane Flow Rate	16	11	0	125
Geometry Grp	1	1	1	1
Degree of Util (X)	0.019	0.011	0	0.134
Departure Headway (Hd)	4.247	3.576	4.187	3.866
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	844	992	0	932
Service Time	2.268	1.63	2.242	1.872
HCM Lane V/C Ratio	0.019	0.011	0	0.134
HCM Control Delay	7.4	6.7	7.2	7.5
HCM Lane LOS	A	A	N	A
HCM 95th-tile Q	0.1	0	0	0.5

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	2	0	11	11	25	4	184	3	4	150	3
Future Vol, veh/h	6	2	0	11	11	25	4	184	3	4	150	3
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	2	0	12	12	27	4	202	3	4	165	3
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.1	7.8	8.6	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	75%	23%	3%
Vol Thru, %	96%	25%	23%	96%
Vol Right, %	2%	0%	53%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	191	8	47	157
LT Vol	4	6	11	4
Through Vol	184	2	11	150
RT Vol	3	0	25	3
Lane Flow Rate	210	9	52	173
Geometry Grp	1	1	1	1
Degree of Util (X)	0.243	0.012	0.065	0.201
Departure Headway (Hd)	4.165	4.989	4.509	4.193
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	850	721	799	842
Service Time	2.253	2.992	2.509	2.289
HCM Lane V/C Ratio	0.247	0.012	0.065	0.205
HCM Control Delay	8.6	8.1	7.8	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1	0	0.2	0.7

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	5	13	4	3	37	6	3	6	4	2	15	4
Future Vol, veh/h	5	13	4	3	37	6	3	6	4	2	15	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	14	4	3	39	6	3	6	4	2	16	4
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	45	0	0	18	0	0	84	77	16	79	76	42
Stage 1	-	-	-	-	-	-	26	26	-	48	48	-
Stage 2	-	-	-	-	-	-	58	51	-	31	28	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1563	-	-	1599	-	-	903	813	1063	910	814	1029
Stage 1	-	-	-	-	-	-	992	874	-	965	855	-
Stage 2	-	-	-	-	-	-	954	852	-	986	872	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1563	-	-	1599	-	-	882	809	1063	897	810	1029
Mov Cap-2 Maneuver	-	-	-	-	-	-	882	809	-	897	810	-
Stage 1	-	-	-	-	-	-	989	871	-	962	853	-
Stage 2	-	-	-	-	-	-	930	850	-	972	869	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.7			0.5			9.1			9.3		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	NBLn1	EBL	EBT	EBR
Capacity (veh/h)	892	1563	-	-	1599	-	-	852	892	1563	-	-
HCM Lane V/C Ratio	0.016	0.003	-	-	0.002	-	-	0.026	0.016	0.003	-	-
HCM Control Delay (s)	9.1	7.3	0	-	7.3	0	-	9.3	9.1	7.3	0	-
HCM Lane LOS	A	A	A	-	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1	0	0	-	-

HCM 6th AWSC
3: Brevard Avenue & Factory Street/Business Driveway

Cocoa Village Hotel
Existing Conditions, PM Peak Hour

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	11	0	0	0	14	0	0	0	109	39
Future Vol, veh/h	0	0	11	0	0	0	14	0	0	0	109	39
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	13	0	0	0	17	0	0	0	131	47
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.8	0	7.4	7.7
HCM LOS	A	-	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	0%	0%	0%
Vol Thru, %	0%	0%	100%	74%
Vol Right, %	0%	100%	0%	26%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	14	11	0	148
LT Vol	14	0	0	0
Through Vol	0	0	0	109
RT Vol	0	11	0	39
Lane Flow Rate	17	13	0	178
Geometry Grp	1	1	1	1
Degree of Util (X)	0.02	0.014	0	0.189
Departure Headway (Hd)	4.291	3.671	4.284	3.812
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	834	963	0	945
Service Time	2.32	1.738	2.354	1.82
HCM Lane V/C Ratio	0.02	0.013	0	0.188
HCM Control Delay	7.4	6.8	7.4	7.7
HCM Lane LOS	A	A	N	A
HCM 95th-tile Q	0.1	0	0	0.7

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	4	2	7	5	8	2	154	6	2	119	1
Future Vol, veh/h	1	4	2	7	5	8	2	154	6	2	119	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	4	2	8	6	9	2	171	7	2	132	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.5	7.6	8.2	7.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	1%	14%	35%	2%
Vol Thru, %	95%	57%	25%	98%
Vol Right, %	4%	29%	40%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	162	7	20	122
LT Vol	2	1	7	2
Through Vol	154	4	5	119
RT Vol	6	2	8	1
Lane Flow Rate	180	8	22	136
Geometry Grp	1	1	1	1
Degree of Util (X)	0.203	0.01	0.027	0.155
Departure Headway (Hd)	4.068	4.498	4.452	4.12
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	877	800	809	863
Service Time	2.118	2.498	2.453	2.177
HCM Lane V/C Ratio	0.205	0.01	0.027	0.158
HCM Control Delay	8.2	7.5	7.6	7.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.8	0	0.1	0.5

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	4	8	0	2	18	9	3	8	2	3	3	1
Future Vol, veh/h	4	8	0	2	18	9	3	8	2	3	3	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	66	66	66	66	66	66	66	66	66	66	66	66
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	12	0	3	27	14	5	12	3	5	5	2
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	41	0	0	12	0	0	68	71	12	72	64	34
Stage 1	-	-	-	-	-	-	24	24	-	40	40	-
Stage 2	-	-	-	-	-	-	44	47	-	32	24	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1568	-	-	1607	-	-	925	819	1069	919	827	1039
Stage 1	-	-	-	-	-	-	994	875	-	975	862	-
Stage 2	-	-	-	-	-	-	970	856	-	984	875	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1568	-	-	1607	-	-	916	814	1069	902	822	1039
Mov Cap-2 Maneuver	-	-	-	-	-	-	916	814	-	902	822	-
Stage 1	-	-	-	-	-	-	990	872	-	971	860	-
Stage 2	-	-	-	-	-	-	962	854	-	964	872	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	2.4			0.5			9.2			9.1		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	NBLn1	EBL	EBT	EBR
Capacity (veh/h)	868	1568	-	-	1607	-	-	882	868	1568	-	-
HCM Lane V/C Ratio	0.023	0.004	-	-	0.002	-	-	0.012	0.023	0.004	-	-
HCM Control Delay (s)	9.2	7.3	0	-	7.2	0	-	9.1	9.2	7.3	0	-
HCM Lane LOS	A	A	A	-	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0	0.1	0	-	-

Intersection

Intersection Delay, s/veh 7.4

Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	10	0	0	0	14	0	0	2	92	19
Future Vol, veh/h	0	0	10	0	0	0	14	0	0	2	92	19
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	11	0	0	0	16	0	0	2	103	21
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.7	0	7.4	7.5
HCM LOS	A	-	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	0%	0%	2%
Vol Thru, %	0%	0%	100%	81%
Vol Right, %	0%	100%	0%	17%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	14	10	0	113
LT Vol	14	0	0	2
Through Vol	0	0	0	92
RT Vol	0	10	0	19
Lane Flow Rate	16	11	0	127
Geometry Grp	1	1	1	1
Degree of Util (X)	0.019	0.011	0	0.136
Departure Headway (Hd)	4.249	3.58	4.191	3.868
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	843	991	0	931
Service Time	2.27	1.634	2.246	1.874
HCM Lane V/C Ratio	0.019	0.011	0	0.136
HCM Control Delay	7.4	6.7	7.2	7.5
HCM Lane LOS	A	A	N	A
HCM 95th-tile Q	0.1	0	0	0.5

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	2	0	11	11	26	4	188	3	4	153	3
Future Vol, veh/h	6	2	0	11	11	26	4	188	3	4	153	3
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	2	0	12	12	29	4	207	3	4	168	3
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.1	7.8	8.7	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	75%	23%	3%
Vol Thru, %	96%	25%	23%	96%
Vol Right, %	2%	0%	54%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	195	8	48	160
LT Vol	4	6	11	4
Through Vol	188	2	11	153
RT Vol	3	0	26	3
Lane Flow Rate	214	9	53	176
Geometry Grp	1	1	1	1
Degree of Util (X)	0.248	0.012	0.066	0.205
Departure Headway (Hd)	4.17	5.006	4.519	4.198
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	849	719	798	840
Service Time	2.259	3.01	2.519	2.295
HCM Lane V/C Ratio	0.252	0.013	0.066	0.21
HCM Control Delay	8.7	8.1	7.8	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1	0	0.2	0.8

Intersection												
Int Delay, s/veh	3.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	5	13	4	3	38	6	3	6	4	2	15	4
Future Vol, veh/h	5	13	4	3	38	6	3	6	4	2	15	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	14	4	3	40	6	3	6	4	2	16	4
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	46	0	0	18	0	0	85	78	16	80	77	43
Stage 1	-	-	-	-	-	-	26	26	-	49	49	-
Stage 2	-	-	-	-	-	-	59	52	-	31	28	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1562	-	-	1599	-	-	901	812	1063	908	813	1027
Stage 1	-	-	-	-	-	-	992	874	-	964	854	-
Stage 2	-	-	-	-	-	-	953	852	-	986	872	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1562	-	-	1599	-	-	880	808	1063	895	809	1027
Mov Cap-2 Maneuver	-	-	-	-	-	-	880	808	-	895	809	-
Stage 1	-	-	-	-	-	-	989	871	-	961	852	-
Stage 2	-	-	-	-	-	-	929	850	-	972	869	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.7			0.5			9.1			9.3		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	NBLn1	EBL	EBT	EBR
Capacity (veh/h)	891	1562	-	-	1599	-	-	851	891	1562	-	-
HCM Lane V/C Ratio	0.016	0.003	-	-	0.002	-	-	0.026	0.016	0.003	-	-
HCM Control Delay (s)	9.1	7.3	0	-	7.3	0	-	9.3	9.1	7.3	0	-
HCM Lane LOS	A	A	A	-	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1	0	0	-	-

Intersection

Intersection Delay, s/veh 7.6

Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	11	0	0	0	14	0	0	0	111	40
Future Vol, veh/h	0	0	11	0	0	0	14	0	0	0	111	40
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	13	0	0	0	17	0	0	0	134	48
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.8	0	7.4	7.7
HCM LOS	A	-	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	0%	0%	0%
Vol Thru, %	0%	0%	100%	74%
Vol Right, %	0%	100%	0%	26%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	14	11	0	151
LT Vol	14	0	0	0
Through Vol	0	0	0	111
RT Vol	0	11	0	40
Lane Flow Rate	17	13	0	182
Geometry Grp	1	1	1	1
Degree of Util (X)	0.02	0.014	0	0.193
Departure Headway (Hd)	4.294	3.676	4.29	3.811
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	833	962	0	946
Service Time	2.324	1.745	2.362	1.819
HCM Lane V/C Ratio	0.02	0.014	0	0.192
HCM Control Delay	7.4	6.8	7.4	7.7
HCM Lane LOS	A	A	N	A
HCM 95th-tile Q	0.1	0	0	0.7

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	9	2	9	9	18	2	154	9	15	119	1
Future Vol, veh/h	1	9	2	9	9	18	2	154	9	15	119	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	10	2	10	10	20	2	171	10	17	132	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.7	7.7	8.3	8.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	1%	8%	25%	11%
Vol Thru, %	93%	75%	25%	88%
Vol Right, %	5%	17%	50%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	165	12	36	135
LT Vol	2	1	9	15
Through Vol	154	9	9	119
RT Vol	9	2	18	1
Lane Flow Rate	183	13	40	150
Geometry Grp	1	1	1	1
Degree of Util (X)	0.209	0.017	0.049	0.174
Departure Headway (Hd)	4.111	4.624	4.425	4.185
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	864	778	814	848
Service Time	2.182	2.627	2.426	2.261
HCM Lane V/C Ratio	0.212	0.017	0.049	0.177
HCM Control Delay	8.3	7.7	7.7	8.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.8	0.1	0.2	0.6

Intersection												
Int Delay, s/veh	4.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	4	8	21	5	18	9	19	8	4	3	3	1
Future Vol, veh/h	4	8	21	5	18	9	19	8	4	3	3	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	66	66	66	66	66	66	66	66	66	66	66	66
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	12	32	8	27	14	29	12	6	5	5	2
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	41	0	0	44	0	0	94	97	28	99	106	34
Stage 1	-	-	-	-	-	-	40	40	-	50	50	-
Stage 2	-	-	-	-	-	-	54	57	-	49	56	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1568	-	-	1564	-	-	889	793	1047	883	784	1039
Stage 1	-	-	-	-	-	-	975	862	-	963	853	-
Stage 2	-	-	-	-	-	-	958	847	-	964	848	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1568	-	-	1564	-	-	877	786	1047	862	777	1039
Mov Cap-2 Maneuver	-	-	-	-	-	-	877	786	-	862	777	-
Stage 1	-	-	-	-	-	-	971	859	-	959	849	-
Stage 2	-	-	-	-	-	-	947	843	-	941	845	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.9			1.1			9.4			9.3		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	869	1568	-	-	1564	-	-	843				
HCM Lane V/C Ratio	0.054	0.004	-	-	0.005	-	-	0.013				
HCM Control Delay (s)	9.4	7.3	0	-	7.3	0	-	9.3				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0				

Intersection

Intersection Delay, s/veh 7.4

Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	0	10	0	0	0	14	1	0	2	93	22
Future Vol, veh/h	2	0	10	0	0	0	14	1	0	2	93	22
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	11	0	0	0	16	1	0	2	104	25
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	6.8			0			7.4			7.5		
HCM LOS	A			-			A			A		

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	93%	17%	0%	2%
Vol Thru, %	7%	0%	100%	79%
Vol Right, %	0%	83%	0%	19%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	15	12	0	117
LT Vol	14	2	0	2
Through Vol	1	0	0	93
RT Vol	0	10	0	22
Lane Flow Rate	17	13	0	131
Geometry Grp	1	1	1	1
Degree of Util (X)	0.02	0.014	0	0.141
Departure Headway (Hd)	4.243	3.723	4.202	3.861
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	844	953	0	932
Service Time	2.267	1.779	2.26	1.869
HCM Lane V/C Ratio	0.02	0.014	0	0.141
HCM Control Delay	7.4	6.8	7.3	7.5
HCM Lane LOS	A	A	N	A
HCM 95th-tile Q	0.1	0	0	0.5

HCM 6th TWSC
4: John Garren Lane & Project Driveway 1

Cocoa Village Hotel
Future Buildout Conditions, AM Peak Hour

Intersection						
Int Delay, s/veh	5.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	17	14	0	23	6
Future Vol, veh/h	0	17	14	0	23	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	66	66	66	66	66	66
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	26	21	0	35	9
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	100	21	0	0	21	0
Stage 1	21	-	-	-	-	-
Stage 2	79	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	899	1056	-	-	1595	-
Stage 1	1002	-	-	-	-	-
Stage 2	944	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	879	1056	-	-	1595	-
Mov Cap-2 Maneuver	879	-	-	-	-	-
Stage 1	1002	-	-	-	-	-
Stage 2	923	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.5	0		5.8		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	1056	1595	-	
HCM Lane V/C Ratio	-	-	0.024	0.022	-	
HCM Control Delay (s)	-	-	8.5	7.3	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-	

HCM 6th TWSC
5: John Garren Lane & Project Driveway 2

Cocoa Village Hotel
Future Buildout Conditions, AM Peak Hour

Intersection						
Int Delay, s/veh	1.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	0	14	9	0	6
Future Vol, veh/h	6	0	14	9	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	66	66	66	66	66	66
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	0	21	14	0	9
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	37	28	0	0	35	0
Stage 1	28	-	-	-	-	-
Stage 2	9	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	975	1047	-	-	1576	-
Stage 1	995	-	-	-	-	-
Stage 2	1014	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	975	1047	-	-	1576	-
Mov Cap-2 Maneuver	975	-	-	-	-	-
Stage 1	995	-	-	-	-	-
Stage 2	1014	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	8.7		0		0	
HCM LOS	A					
Minor Lane/Major Mvmt		NBT	NBRWBLn1	SBL	SBT	
Capacity (veh/h)		-	-	975	1576	-
HCM Lane V/C Ratio		-	-	0.009	-	-
HCM Control Delay (s)		-	-	8.7	0	-
HCM Lane LOS		-	-	A	A	-
HCM 95th %tile Q(veh)		-	-	0	0	-

Intersection						
Int Delay, s/veh	0.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	1	1	22	1	1	11
Future Vol, veh/h	1	1	22	1	1	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	66	66	66	66	66	66
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	2	33	2	2	17
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	55	34	0	0	35	0
Stage 1	34	-	-	-	-	-
Stage 2	21	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	953	1039	-	-	1576	-
Stage 1	988	-	-	-	-	-
Stage 2	1002	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	952	1039	-	-	1576	-
Mov Cap-2 Maneuver	952	-	-	-	-	-
Stage 1	988	-	-	-	-	-
Stage 2	1001	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.6	0		0.6		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	994	1576	-	
HCM Lane V/C Ratio	-	-	0.003	0.001	-	
HCM Control Delay (s)	-	-	8.6	7.3	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0	0	-	

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			W	W	
Traffic Vol, veh/h	1	0	0	14	102	1
Future Vol, veh/h	1	0	0	14	102	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	0	0	16	115	1
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	132	116	116	0	-	0
Stage 1	116	-	-	-	-	-
Stage 2	16	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	862	936	1473	-	-	-
Stage 1	909	-	-	-	-	-
Stage 2	1007	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	862	936	1473	-	-	-
Mov Cap-2 Maneuver	862	-	-	-	-	-
Stage 1	909	-	-	-	-	-
Stage 2	1007	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.2	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR		
Capacity (veh/h)	1473	-	862	-	-	
HCM Lane V/C Ratio	-	-	0.001	-	-	
HCM Control Delay (s)	0	-	9.2	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	9	0	14	18	43	4	188	7	21	153	3
Future Vol, veh/h	6	9	0	14	18	43	4	188	7	21	153	3
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	10	0	15	20	47	4	207	8	23	168	3
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.2	8.1	8.9	8.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	40%	19%	12%
Vol Thru, %	94%	60%	24%	86%
Vol Right, %	4%	0%	57%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	199	15	75	177
LT Vol	4	6	14	21
Through Vol	188	9	18	153
RT Vol	7	0	43	3
Lane Flow Rate	219	16	82	195
Geometry Grp	1	1	1	1
Degree of Util (X)	0.265	0.023	0.105	0.238
Departure Headway (Hd)	4.358	5.043	4.568	4.412
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	827	710	785	815
Service Time	2.378	3.074	2.593	2.433
HCM Lane V/C Ratio	0.265	0.023	0.104	0.239
HCM Control Delay	8.9	8.2	8.1	8.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.1	0.1	0.4	0.9

Intersection												
Int Delay, s/veh	4.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	5	13	32	7	38	6	30	6	8	2	15	4
Future Vol, veh/h	5	13	32	7	38	6	30	6	8	2	15	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	14	34	7	40	6	32	6	9	2	16	4
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	46	0	0	48	0	0	108	101	31	106	115	43
Stage 1	-	-	-	-	-	-	41	41	-	57	57	-
Stage 2	-	-	-	-	-	-	67	60	-	49	58	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1562	-	-	1559	-	-	871	789	1043	873	775	1027
Stage 1	-	-	-	-	-	-	974	861	-	955	847	-
Stage 2	-	-	-	-	-	-	943	845	-	964	847	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1562	-	-	1559	-	-	848	783	1043	856	769	1027
Mov Cap-2 Maneuver	-	-	-	-	-	-	848	783	-	856	769	-
Stage 1	-	-	-	-	-	-	971	858	-	952	843	-
Stage 2	-	-	-	-	-	-	917	841	-	946	844	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			1			9.4			9.5		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	868	1562	-	-	1559	-	-	816				
HCM Lane V/C Ratio	0.054	0.003	-	-	0.005	-	-	0.027				
HCM Control Delay (s)	9.4	7.3	0	-	7.3	0	-	9.5				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1				

Intersection

Intersection Delay, s/veh 7.7

Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	11	0	0	0	14	2	0	0	113	44
Future Vol, veh/h	4	0	11	0	0	0	14	2	0	0	113	44
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	13	0	0	0	17	2	0	0	136	53
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.1	0	7.4	7.8
HCM LOS	A	-	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	88%	27%	0%	0%
Vol Thru, %	12%	0%	100%	72%
Vol Right, %	0%	73%	0%	28%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	16	15	0	157
LT Vol	14	4	0	0
Through Vol	2	0	0	113
RT Vol	0	11	0	44
Lane Flow Rate	19	18	0	189
Geometry Grp	1	1	1	1
Degree of Util (X)	0.023	0.02	0	0.2
Departure Headway (Hd)	4.282	3.906	4.309	3.812
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	834	905	0	944
Service Time	2.317	1.979	2.387	1.825
HCM Lane V/C Ratio	0.023	0.02	0	0.2
HCM Control Delay	7.4	7.1	7.4	7.8
HCM Lane LOS	A	A	N	A
HCM 95th-tile Q	0.1	0.1	0	0.7

HCM 6th TWSC
4: John Garren Lane & Project Driveway 1

Cocoa Village Hotel
Future Buildout Conditions, PM Peak Hour

Intersection						
Int Delay, s/veh	4.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	29	15	0	30	24
Future Vol, veh/h	0	29	15	0	30	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	31	16	0	32	26
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	106	16	0	0	16	0
Stage 1	16	-	-	-	-	-
Stage 2	90	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	892	1063	-	-	1602	-
Stage 1	1007	-	-	-	-	-
Stage 2	934	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	874	1063	-	-	1602	-
Mov Cap-2 Maneuver	874	-	-	-	-	-
Stage 1	1007	-	-	-	-	-
Stage 2	915	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.5	0		4.1		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	1063	1602	-	
HCM Lane V/C Ratio	-	-	0.029	0.02	-	
HCM Control Delay (s)	-	-	8.5	7.3	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-	

Intersection						
Int Delay, s/veh	1.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	10	0	15	11	0	24
Future Vol, veh/h	10	0	15	11	0	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	0	16	12	0	26
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	48	22	0	0	28	0
Stage 1	22	-	-	-	-	-
Stage 2	26	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	962	1055	-	-	1585	-
Stage 1	1001	-	-	-	-	-
Stage 2	997	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	962	1055	-	-	1585	-
Mov Cap-2 Maneuver	962	-	-	-	-	-
Stage 1	1001	-	-	-	-	-
Stage 2	997	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	8.8	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	962	1585	-	
HCM Lane V/C Ratio	-	-	0.011	-	-	
HCM Control Delay (s)	-	-	8.8	0	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	0	0	-	

HCM 6th TWSC
6: John Garren Lane & Project Driveway 3

Cocoa Village Hotel
Future Buildout Conditions, PM Peak Hour

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	2	24	1	2	33
Future Vol, veh/h	1	2	24	1	2	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	2	26	1	2	35
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	66	27	0	0	27	0
Stage 1	27	-	-	-	-	-
Stage 2	39	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	939	1048	-	-	1587	-
Stage 1	996	-	-	-	-	-
Stage 2	983	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	938	1048	-	-	1587	-
Mov Cap-2 Maneuver	938	-	-	-	-	-
Stage 1	996	-	-	-	-	-
Stage 2	982	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.6	0		0.4		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	1009	1587	-	
HCM Lane V/C Ratio	-	-	0.003	0.001	-	
HCM Control Delay (s)	-	-	8.6	7.3	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0	0	-	

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			W	W	
Traffic Vol, veh/h	2	0	0	14	122	2
Future Vol, veh/h	2	0	0	14	122	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	0	0	17	147	2
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	165	148	149	0	-	0
Stage 1	148	-	-	-	-	-
Stage 2	17	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	826	899	1432	-	-	-
Stage 1	880	-	-	-	-	-
Stage 2	1006	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	826	899	1432	-	-	-
Mov Cap-2 Maneuver	826	-	-	-	-	-
Stage 1	880	-	-	-	-	-
Stage 2	1006	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.4	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR		
Capacity (veh/h)	1432	-	826	-	-	
HCM Lane V/C Ratio	-	-	0.003	-	-	
HCM Control Delay (s)	0	-	9.4	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

APPENDIX F

Excerpt from 2019 Study – CFRPMv6.1 Model
Plot

Trip Distribution



CFRPM 2020 Model Year



CFRPM 2020 Model Year

APPENDIX G

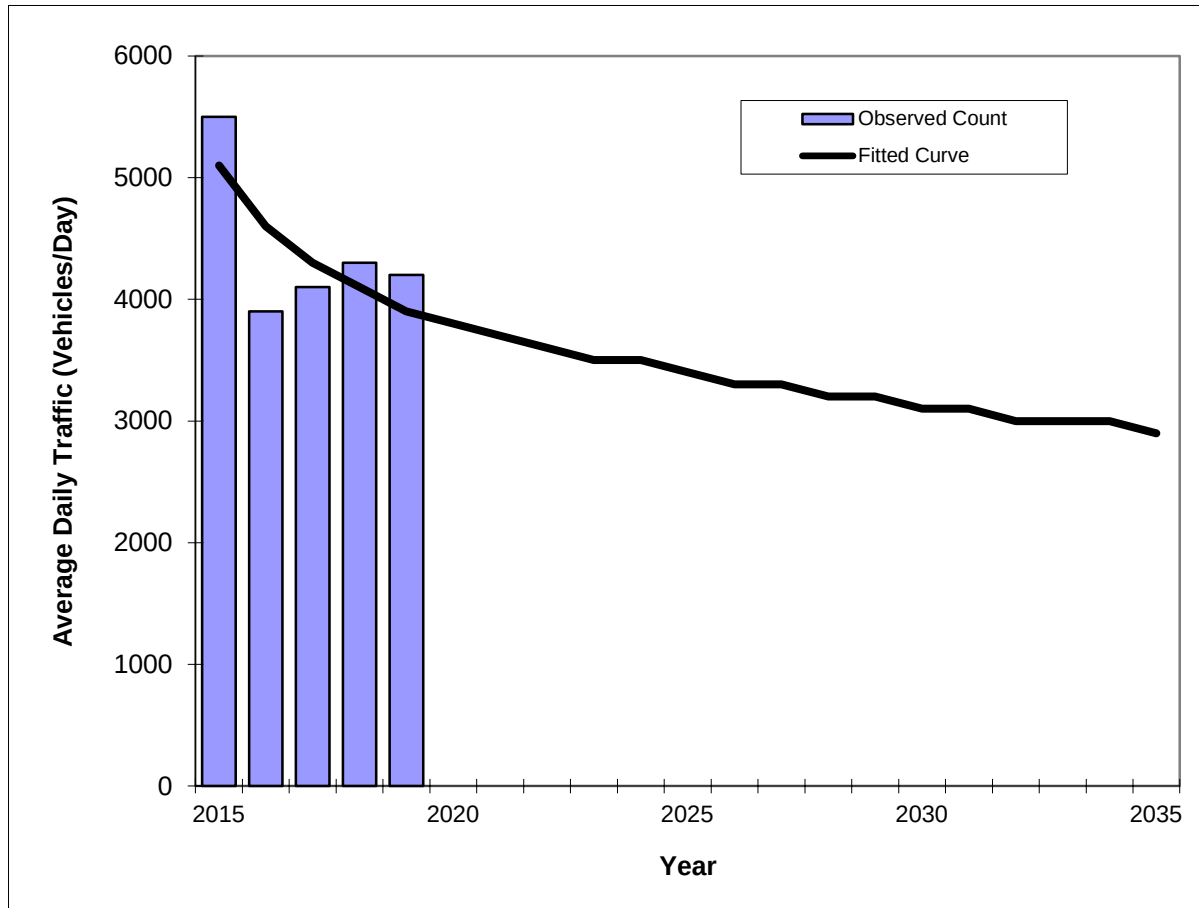
Growth Rate Calculations

Traffic Trends - V03.a

FLORIDA AVE -- Bouganvillea Drive to SR-520/King Street

FIN#	0
Location	1

County:	Brevard (70)
Station #:	7023
Highway:	FLORIDA AVE



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2015	5500	5100
2016	3900	4600
2017	4100	4300
2018	4300	4100
2019	4200	3900
2022 Opening Year Trend		
2022	N/A	3600
2023 Mid-Year Trend		
2023	N/A	3500
2024 Design Year Trend		
2024	N/A	3500
TRANPLAN Forecasts/Trends		

Trend R-squared:	49.99%
Compounded Annual Historic Growth Rate:	-6.49%
Compounded Growth Rate (2019 to Design Year):	-2.14%
Printed:	9-Mar-22
Decaying Exponential Growth Option	

*Axle-Adjusted

APPENDIX H

NCHRP Report 457 Worksheets

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

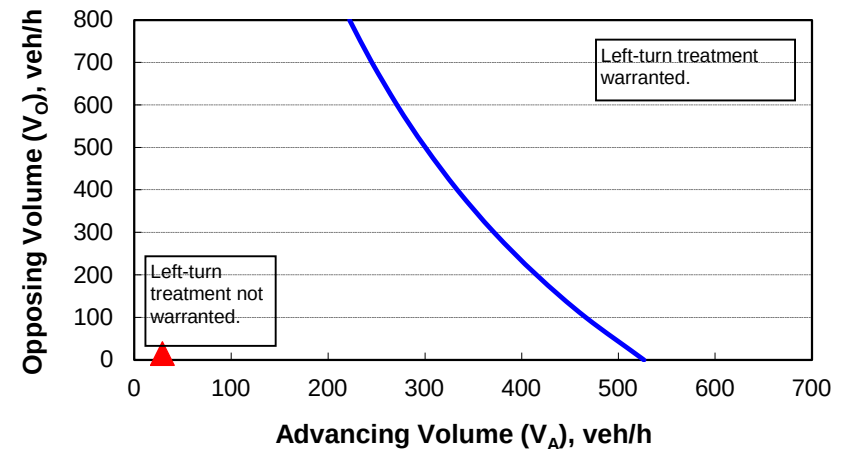
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	20
Percent of left-turns in advancing volume (V_A), %:	79%
Advancing volume (V_A), veh/h:	29
Opposing volume (V_O), veh/h:	14

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	517
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

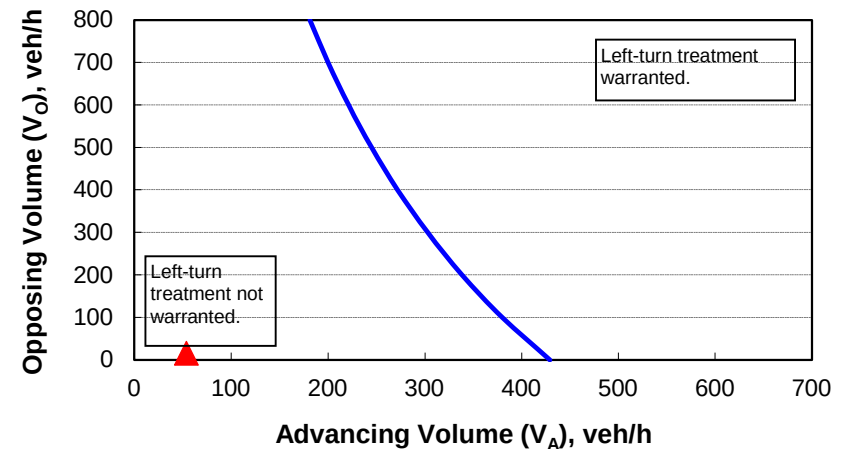
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	20
Percent of left-turns in advancing volume (V_A), %:	56%
Advancing volume (V_A), veh/h:	54
Opposing volume (V_O), veh/h:	15

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	421
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

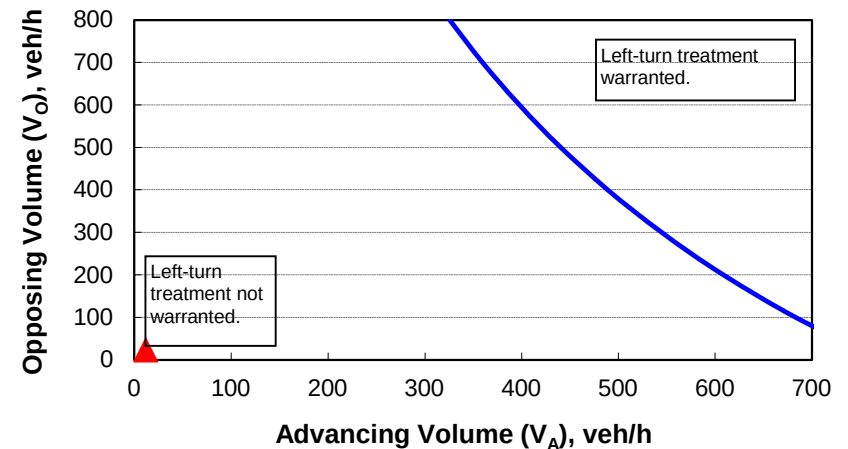
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	20
Percent of left-turns in advancing volume (V_A), %:	8%
Advancing volume (V_A), veh/h:	12
Opposing volume (V_O), veh/h:	23

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	750
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

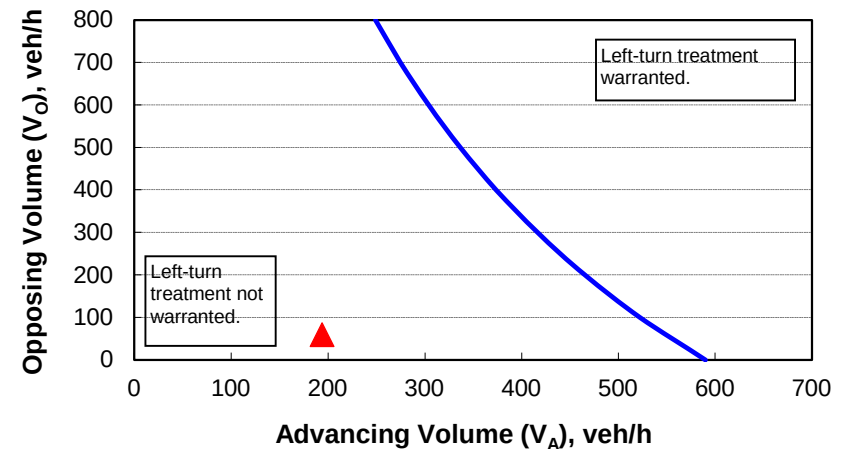
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	20
Percent of left-turns in advancing volume (V_A), %:	15%
Advancing volume (V_A), veh/h:	194
Opposing volume (V_O), veh/h:	59

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	548
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

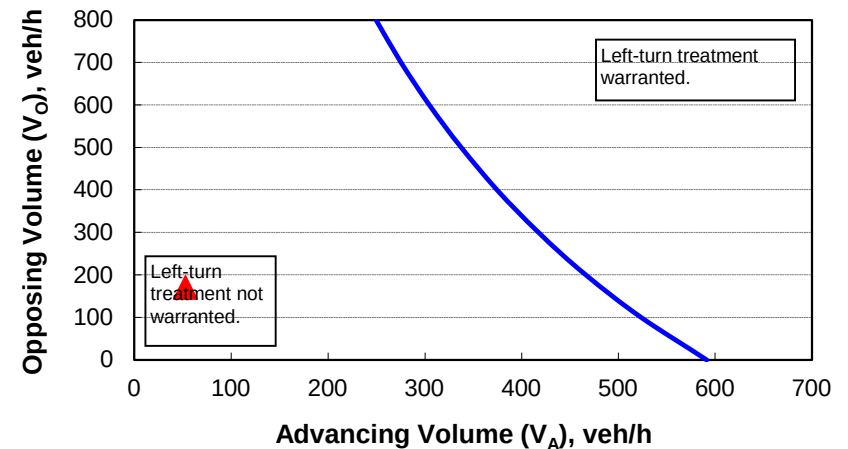
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	15
Percent of left-turns in advancing volume (V_A), %:	17%
Advancing volume (V_A), veh/h:	53
Opposing volume (V_O), veh/h:	170

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	482
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

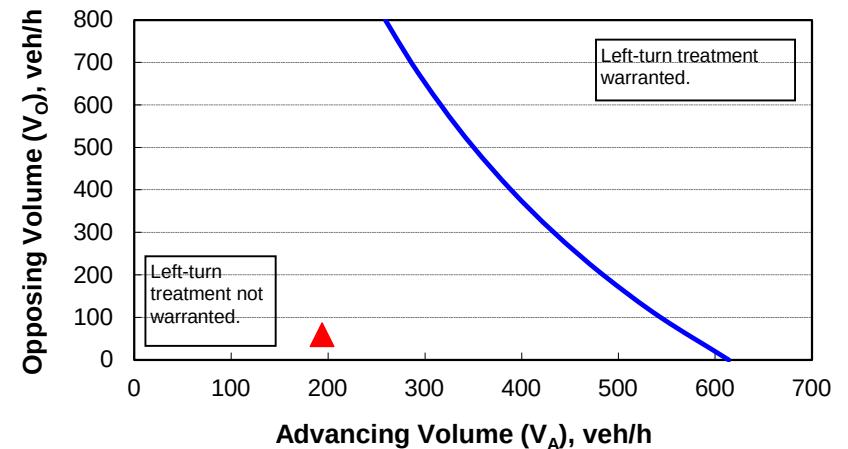
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	15
Percent of left-turns in advancing volume (V_A), %:	15%
Advancing volume (V_A), veh/h:	194
Opposing volume (V_O), veh/h:	59

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	571
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

INPUT

Roadway geometry:	2-lane roadway
Variable	Value
Major-road speed, mph:	20
Major-road volume (one direction), veh/h:	23
Right-turn volume, veh/h:	9

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	#####
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	

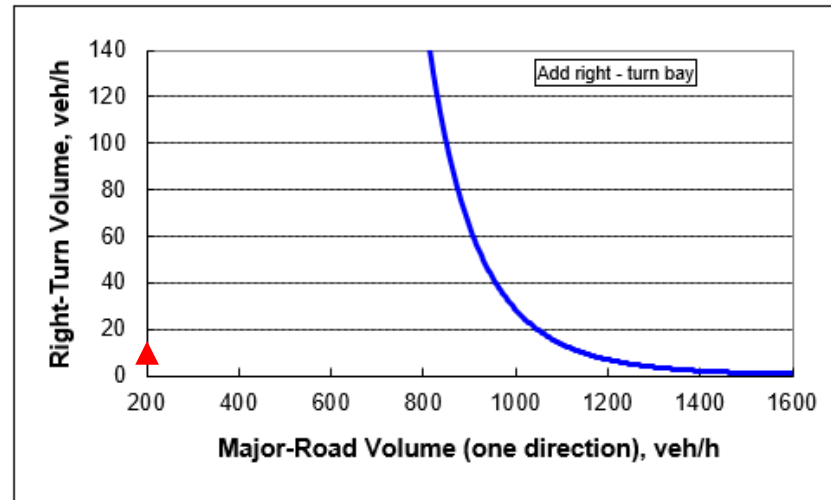


Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

INPUT

Roadway geometry:	2-lane roadway
Variable	Value
Major-road speed, mph:	20
Major-road volume (one direction), veh/h:	26
Right-turn volume, veh/h:	11

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	#####
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	

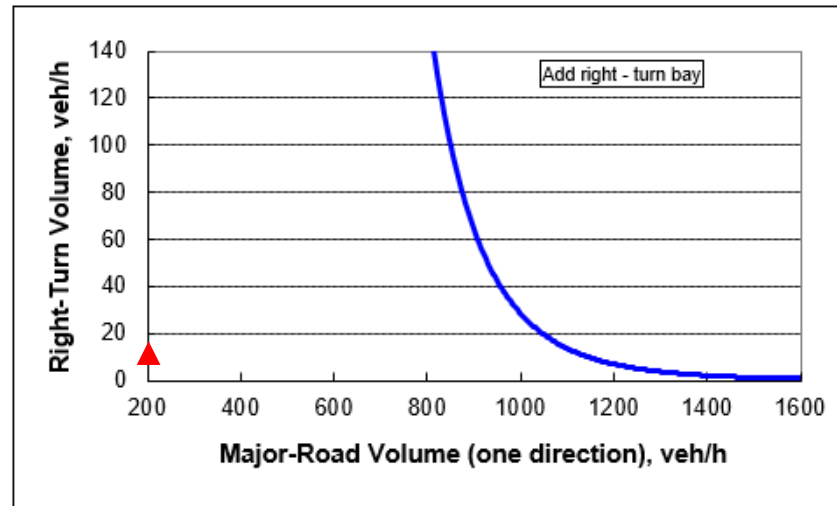


Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

INPUT

Roadway geometry:	2-lane roadway
Variable	Value
Major-road speed, mph:	20
Major-road volume (one direction), veh/h:	23
Right-turn volume, veh/h:	1

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	#####
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	

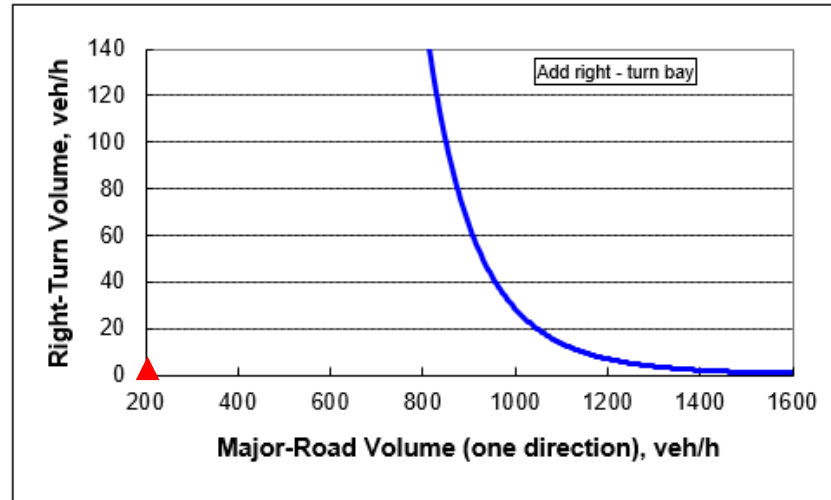


Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

INPUT

Roadway geometry:	2-lane roadway
Variable	Value
Major-road speed, mph:	20
Major-road volume (one direction), veh/h:	25
Right-turn volume, veh/h:	1

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	#####
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	

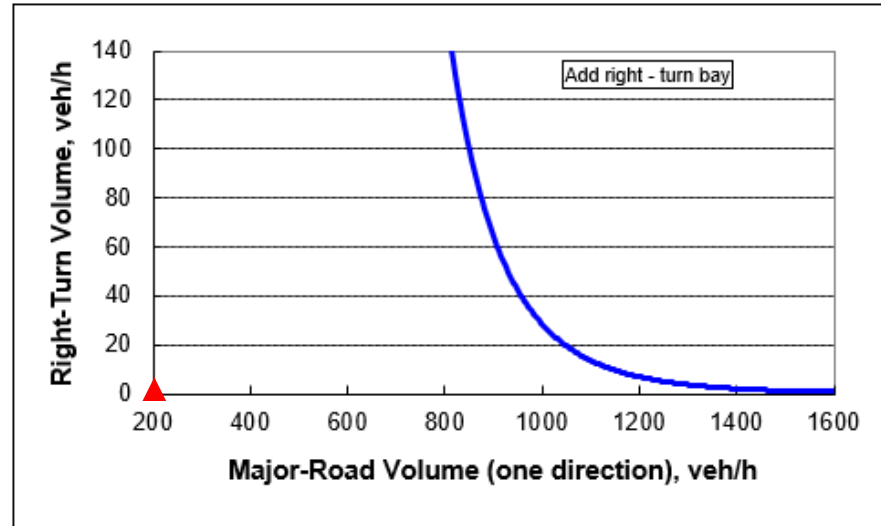


Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

INPUT

Roadway geometry:	2-lane roadway
Variable	Value
Major-road speed, mph:	15
Major-road volume (one direction), veh/h:	103
Right-turn volume, veh/h:	1

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	#####
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	

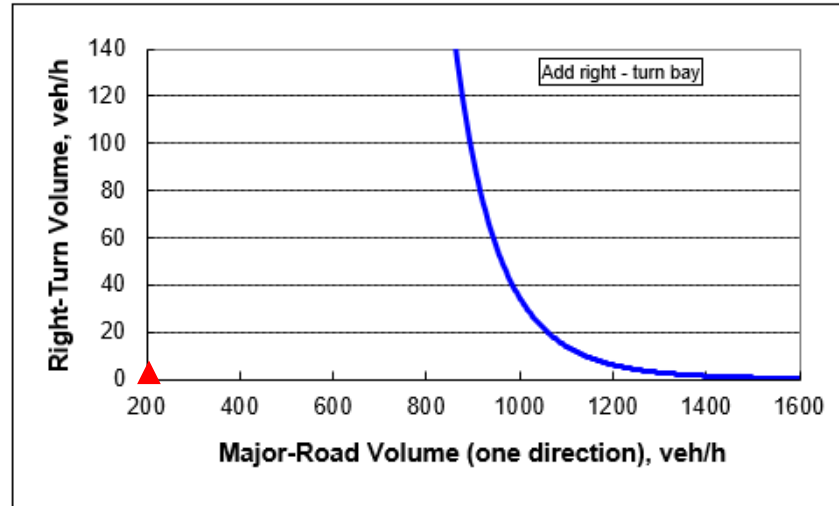


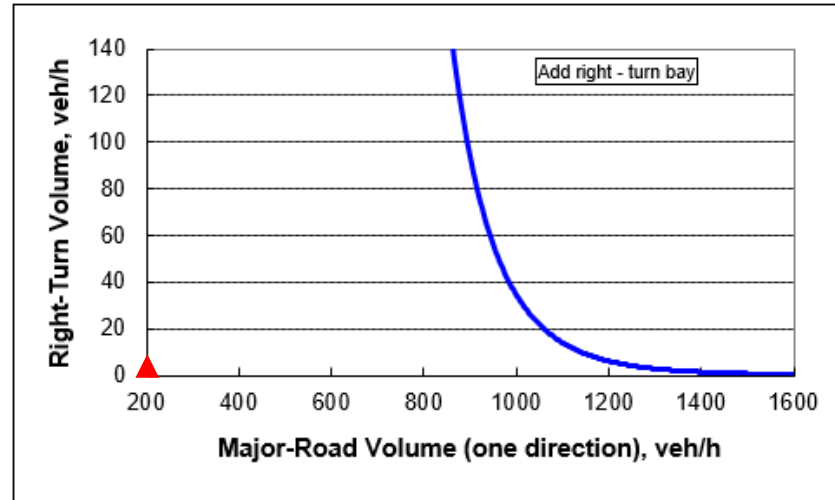
Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

INPUT

Roadway geometry:	2-lane roadway
Variable	Value
Major-road speed, mph:	15
Major-road volume (one direction), veh/h:	124
Right-turn volume, veh/h:	2

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	#####
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	



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Page1

BODY, Paul
City of Cocoa

15 ROSA L JONES DRIVE LLC
13155 IXORA CT APT 504
N MIAMI FL 33181-

503 DELANNOY HOLDINGS LLC
503 DELANNOY AVE
COCOA FL 32922-7813

511 DELANNOY LLC
516 DELANNOY AVE
COCOA FL 32922-

516 DELANNOY LLC
516 DELANNOY AVE
COCOA FL 32922-7814

520 BREVARD AVENUE LAND TRUST
526 BREVARD AVENUE LAND TRUST
520 BREVARD AVE
COCOA FL 32922-7974

640 BREVARD AVENUE LLC
1287 HARMON AVE
WINTER PARK FL 32789-5511

ALLERAND COCOA LLC
675 W INDIANTOWN RD, STE 103
JUPITER FL 33458-7555

ANDERSEN, JOAN M TRUSTEE
21 RIVERSIDE DR #702
COCOA FL 32922-

B & K MANAGEMENT SERVICES LLC
380 LEMON STREET
SATELLITE BCH FL 32937-

BAKER, BRADLEY K
BAKER, LORETTA A
21 RIVERSIDE DR 502
COCOA FL 32922-

BELLSOUTH TELECOMMUNICATIONS INC
D/B/A A T & T FLORIDA
1010 PINE ST, # 9E-L-01
ATTN PROPERTY TAX DEPT
SAINT LOUIS MO 63101-2015

BOLOS, HOWARD B TRUSTEE
113 MARYLAND AVE
COCOA FL 32922-7832

BYRON RAYMOND BEARD & REBECCA
LYNN BEARD LIVING TRUST
2051 ROCKLEDGE DR
ROCKLEDGE FL 32955-5303

CARBONE, JOSEPH F III
STRAUCHMAN, MARK A
41 DERBY ST
COCOA FL 32922-7815

CARRICK, FREDERICK DR
CARRICK, EVE
8941 LAKE DR STE 203
CAPE CANAVERAL FL 32920-

CARRICK, FREDERICK R
CARRICK, EVE
21 RIVERSIDE DR UNIT 302
COCOA FL 32922-

CHAMBERLAIN, JAMES C
DYSON, KAREN E
21 RIVERSIDE DR, APT 601
COCOA FL 32922-8213

CHAMBERLIN REDEVELOPMENT LLC
PO BOX 320727
COCOA BCH FL 32932-0727

CHARLES D MAYS & TONI SICILIANO-MAYS
REVOCABLE TRUST
21 RIVERSIDE DR, APT 402
COCOA FL 32922-8213

CHOWANSKY, ALBERT S
MOORE, KATHRYN M
100 S EOLA DR, UNIT 505
ORLANDO FL 32801-2892

CLINE, KATHY A
546 DELANNOY AVE
COCOA FL 32922-7814

COCOA REDEVELOPMENT AGENCY
65 STONE ST
COCOA FL 32922-

COCOA VILLAGE PARTNERS INC
600 FLORIDA AVE, STE 201
COCOA FL 32922-7953

COCOA, CITY OF
65 STONE STREET
COCOA FL 32922-

COCOA, CITY OF
65 STONE ST
COCOA FL 32922-7982

COLLINS, DAVID
COLLINS, LEA
102 RIVERSIDE DR
COCOA FL 32922-

COMMUNITY WOMANS CLUB
PO BOX 001043
COCOA FL 32923-1043

CUSEO, GEORGE J JR
29 RIVERSIDE DR, APT 301
COCOA FL 32922-8212

FARM BAR INC
133 VALENCIA RD
ROCKLEDGE FL 32955-2813

FELKNER, JOSEPH G
FELKNER, CINDA A
21 RIVERSIDE DR, APT 501
COCOA FL 32922-8213

FIRST BAPTIST CHURCH OF COCOA
HOLDING CORP
750 BREVARD AVE
COCOA FL 32922-

FLORIDA HISTORICAL SOCIETY INC,
THE
435 BREVARD AVE
COCOA FL 32922-

FLORIDA POWER & LIGHT CO
PROPERTY TAX - PSX/JB
700 UNIVERSE BLVD
JUNO BEACH FL 33408-

GENERAL COLOR CORP
604 BREVARD AVE
COCOA FL 32922-7808

GIAQUINTO, JOSEPH N
GIAQUINTO, SUSAN M
21 RIVERSIDE DR, APT 901
COCOA FL 32922-8214

GRAHAM, GUY N
GRAHAM, BARBARA L
21 RIVERSIDE DR #902
COCOA FL 32922-

GRALLA, MAURICE B
GRALLA, DALE S
21 RIVERSIDE DR #1001
COCOA FL 32922-

GREENWOOD, ALECK J
PO BOX 1077
COCOA FL 32923-1077

GROGAN, MICHAEL SEAN
3425 ARCHDALE ST
MELBOURNE FL 32940-7632

GUN GODBEER TRUST
40 DERBY ST
COCOA FL 32922-7874

GUNDERSON, KENT H
GUNDERSON, BARBARA P TRUSTEES
29 RIVERSIDE DR #302
COCOA FL 32922-

HALGREN, BARBARA D
1041 INDIAN RIVER DRIVE
COCOA FL 32922-

HARE, JOHN,IV
HARE, LINDA N
29 RIVERSIDE DR, APT 402
COCOA FL 32922-8212

HARVEY FAMILY TRUST
29 RIVERSIDE DR, PH 601
COCOA FL 32922-8211

HICKORY PLACE INC
1301 W EAU GALLIE BLVD STE 100
MELBOURNE FL 32935-

HOOG, ROBERT E
HOOG, BOON RUANG
210 JEFFERSON AVE
CAPE CANAVERAL FL 32920-

HOOPER, KEVIN S
PO BOX 000580
COCOA FL 32923-0580

HOOVER HOLDINGS OF FLORIDA LLC
4515 RECTOR RD
COCOA FL 32926-

HYNES, RICHARD J
HYNES, MARCIA E
29 RIVERSIDE DR, APT 202
COCOA FL 32922-8212

ISLAND VILLAGE LAND COMPANY LLC
653 BREVARD AVENUE
COCOA FL 32922-

KATHLEEN M KILLEAVY TRUST
21 RIVERSIDE DR, UNIT 701
COCOA FL 32922-8214

KAYDENLEW LLC
6780 STILL POINT DR
MELBOURNE FL 32940-

KEARNEY, WAYNE W
KEARNEY, DEBORAH L
2179 JULIAN AVE NE
PALM BAY FL 32905-4042

KETTNER, DONNA LIFE ESTATE
103 DERBY ST
COCOA FL 32922-

KITCHEN, DAVID P
KITCHEN, BETTINA E
29 RIVERSIDE DR, APT 201
COCOA FL 32922-8212

LADD, RICHARD C
LADD, NANCY M TRUSTEES
21 RIVERSIDE DR, APT 802
COCOA FL 32922-8214

LOONEY, KEVIN P
709 FLORIDA AVE
COCOA FL 32922-7820

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LOPEZ, MARTHA L
36 DERBY ST
COCOA FL 32922-7874

LOUDEN, RICHARD E
LOUDEN, LINDA GARVEY
547 DELANNOY AVE
COCOA FL 32922-

LUCAS, MARIA G
405 FLORIDA AVE
COCOA FL 32922-7929

MARC T LLC
5505 N ATLANTIC AVE STE #107
COCOA BCH FL 32931-

MATUS, ROBERTO T
MATUS, CYNTHIA
PO BOX 579
SHARPES FL 32959-0579

MCDONALD, JACKSON C
MCDONALD, BARBARA L
21 RIVERSIDE DR, # 602
COCOA FL 32922-8213

MOELLER, PATRICK J
MOELLER, AMY JO
PO BOX 975
NEW PHILADELPHIA OH 44663-0975

MOLITOR, DONALD N TR
5919 CROYDON CT
MELBOURNE FL 32940-8032

N/A - CONDO COMMON AREA
0
0 00000-

N/A - CONDO COMMON AREA
-

NANCY MALONEY TRUST
1167 N INDIAN RIVER DR
COCOA FL 32922-7533

NAPPI, MARK J
NAPPI, JANA A
10 ROSS NW ST NW
HUNTSVILLE AL 35806-5205

NORTHBROOK PROPERTIES INC
555 SKOKIE BLVD SUITE 555
NORTHBROOK IL 60062-

NORTON, APRIL T
541 DELANNOY AVE
COCOA FL 32922-

O'NEAL, DAVID
O'NEAL, MARY V
21 RIVERSIDE DR, APT 401
COCOA FL 32922-8213

ONE DELANNOY LLC
8125 SW 52ND AVE
MIAMI FL 33143-8436

OVERLAND MISSIONS INC
11 RIVERSIDE DR, STE 201
COCOA FL 32922-8209

P & C PROPERTIES OF BREVARD LLC
657 BREVARD AVE
COCOA FL 32922-

PALMER, GARY G
PALMER, LINDA
29 RIVERSIDE DR UNIT 501
COCOA FL 32922-

PARRISH, HENRY U III
542 DELANNOY AVE
COCOA FL 32922-

PARRISH, HENRY,III U
542 DELANNOY AVE
COCOA FL 32922-7814

PELTON, TERRY A
PELTON, SHALENE A
2101 LANCE BLVD
COCOA FL 32926-4472

PRATHER, DAVID D
PRATHER, RUTH L
29 RIVERSIDE DR, APT 401
COCOA FL 32922-8212

PRIVATE PROPERTY DEV INC
PO BOX 1077
COCOA FL 32923-1077

PRIVATE PROPERTY DEVELOPMENT INC
PO BOX 1077
COCOA FL 32923-1077

RAYMOND, KEVIN J
109 DERBY ST
COCOA FL 32922-7872

REEVES LIVING TRUST
29 RIVERSIDE DR, PH 502
COCOA FL 32922-8212

RIVER EDGE PROPERTIES LLC
PO BOX 540331
MERRITT ISLAND FL 32954-0331

RLR GROUP LLC
1125 INDIAN RIVER DR N
COCOA FL 32922-

ROBERTS, SEAN J
5359 BROOKLINE DR
ORLANDO FL 32819-4058

SAUNDERS, LACEY M
1011 PINEDALE RD
ROCKLEDGE FL 32955-2206

SEECTR INC
535 DELANNOY AVE
COCOA FL 32922-

SMITH, EMMA LOIS
TAYLOR, RUBY LEE
713 IXORA AVE
COCOA FL 32922-

ST MARK'S CHURCH
4 CHURCH ST
COCOA FL 32922-7912

ST MARKS CHURCH
4 CHURCH ST
COCOA FL 32922-

STATMORE-SMIRL, LAURIE B
KNIEVEL, MICHAEL J
29 RIVERSIDE DR, APT 403
COCOA FL 32922-8212

STEPHAN PROPERTIES OF FLORIDA INC
411 MAGNOLIA AVE
MERRITT ISLAND FL 32952-4821

SULLIVAN, ROBERT L
SULLIVAN, DONNA J
21 RIVERSIDE DR #301
COCOA FL 32922-

SYDNOR, RICHARD B JR TRUST
1824 S FISKE BLVD
ROCKLEDGE FL 32955-

THE VILLAS OF COCOA VILLAGE LLC
PO BOX 140882
ORLANDO FL 32814-0882

THOMAS J PRICE JR & THERESA
ABRUZZO-PRICE LIVING TRUST
11 WINCOVE LN
ROCKLEDGE FL 32955-3750

THOMAS, BRYAN L
29 RIVERSIDE DR, APT 203
COCOA FL 32922-8212

TWENTY-ONE RIVERSIDE CONDOMINIUM
ASSOCIATION INC
21 RIVERSIDE DR
COCOA FL 32922-8213

WASDIN FAMILY LTD
29 RIVERSIDE DR, #602
COCOA FL 32922-8210

WASDIN, THOMAS E FAMILY TRUST
WASDIN, L SUE FAMILY TRUST
29 RIVERSIDE DR UNIT 602
COCOA FL 32922-

WHEELER DEALER ENTERPRISES LLC
805 FLORIDA AVE
COCOA FL 32922-7845

WHITLEY, JOSEPH B
WHITLEY, DIANE P
93 DELANNOY AVE APT 1205
COCOA FL 32922-8013

WHITNABLE, JUDY L PARRISH TRUSTEE
301 TAFT AVE
COCOA BEACH FL 32931-3929