



AGENDA

LOCAL PLANNING AGENCY

AUGUST 4, 2022

AT 5:30 PM

COMMISSION CHAMBERS

121 SW FLAGLER AVE.

STUART, FLORIDA 34994

LOCAL PLANNING AGENCY

Chair - Kelly Laurine

Vice Chair - Margaret Bromfield

Board Member - Larry Massing

Board Member - Bill Mathers

Board Member - Campbell Rich

Board Member - Ryan Strom

Board Member - Jackie Vitale

Ex Officio Board Member - Kimberly Everman

ADMINISTRATIVE

Acting Development Director, Erin Wohlitka

Board Secretary, Jordan Pinkston

Agenda items are available on our website at <http://www.cityofstuart.us>
Phone: (772) 288-5306. Fax: (772) 288-5305. E-mail: mkindel@ci.stuart.fl.us

In compliance with the Americans with Disabilities Act (ADA), anyone who needs a special accommodation to attend this meeting should contact the City's ADA coordinator at 772-288-5306 at least 48 hours in advance of the meeting, excluding Saturday and Sunday.

If a person decides to appeal any decision made by the Board with respect to any matter considered at this meeting, he will need a record of the proceeding, and that for such purpose he may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based.

(RC) next to an item denotes there is a City Code requirement for a Roll Call vote.

(QJ) next to an item denotes that it is a quasi-judicial matter or public hearing.

WHAT IS CIVILITY? Civility is caring about one's identity, needs and beliefs without degrading someone else's in the process. Civility is more than merely being polite. Civility requires staying "present" even with those persons with whom we have deep-rooted and perhaps strong disagreements. It is about constantly being open to hear, learn, teach and change. It seeks common ground as a beginning point for dialogue. It is patience, grace, and strength of character. Civility is practiced in our City Hall.

PUBLIC COMMENT: If a member of the public wishes to comment upon ANY subject matter, including quasi-judicial matters, please submit a Request to Speak form. These forms are available in the back of the Commission Chambers, and should be given to the City Clerk prior to introduction of the item number you would like to address.

CONSENT CALENDAR: Those matters included under the Consent Calendar are self-explanatory, non-controversial, and are not expected to require review or discussion. All items will be enacted by one motion. If discussion on an item is desired by any City Commissioner that item may be removed by a City Commissioner from the Consent Calendar and considered separately. If an item is quasi-judicial it may be removed by a Commissioner or any member of the public from the Consent Calendar and considered separately.

QUASI-JUDICIAL HEARINGS: Some of the matters on the Agenda may be "quasi-judicial" in nature. City Commissioners will disclose all ex-parte communications, and may be subject to voir dire by any interested party regarding those communications. All witnesses testifying will be "sworn" prior to their testimony. However, the public is permitted to comment without being sworn. Unsworn testimony will be given appropriate weight and credibility by the City Commission.

CALL TO ORDER

ROLL CALL

PLEDGE OF ALLEGIANCE

APPROVAL OF AGENDA

APPROVAL OF MINUTES

1. APPROVAL OF JUNE 9, 2022 MINUTES

COMMENTS FROM THE PUBLIC (3 Minutes Max.)

COMMENTS BY BOARD MEMBERS (Non-Agenda Items)

ACTION ITEMS

2. WATERBLASTING - MAJOR AMENDMENT TO IPUD (QUASI-JUDICIAL) (RC)

ORDINANCE NUMBER 2497-2022: AN ORDINANCE OF THE CITY COMMISSION OF THE CITY OF STUART, FLORIDA, AMENDING THE WATERBLASTING INDUSTRIAL PLANNED UNIT DEVELOPMENT (IPUD) LOCATED ON THE SOUTH SIDE OF MARKET STREET AND WEST SIDE OF COMMERCE AVE TO ALLOW THE ADDITION OF 28,327 SQUARE FEET OF INDUSTRIAL/WAREHOUSE BUILDING; APPROVING A FINAL SITE PLAN; PROVIDING DIRECTIONS TO THE CITY CLERK; PROVIDING FOR CERTAIN DEVELOPMENT DOCUMENTS AND CONDITIONS; PROVIDING FOR SEVERABILITY; PROVIDING FOR AN EFFECTIVE DATE; AND FOR OTHER PURPOSES.

STAFF UPDATE

ADJOURNMENT

**CITY OF STUART, FLORIDA
AGENDA ITEM REQUEST
Local Planning Agency**

Meeting Date: 8/4/2022

Prepared by: Jordan Pinkston

Title of Item:

APPROVAL OF JUNE 9, 2022 MINUTES

Summary Explanation/Background Information on Agenda Request:

N/A.

Funding Source:

N/A.

Recommended Action:

APPROVE.

ATTACHMENTS:

1. LPA Minutes_06092022

**MINUTES
LOCAL PLANNING AGENCY OF THE CITY OF STUART
JUNE 9, 2022
AT 5:30 PM
COMMISSION CHAMBERS
121 SW FLAGLER AVE.
STUART, FLORIDA 34994**

LOCAL PLANNING AGENCY

**Chair - Kelly Laurine
Vice Chair - Margaret Bromfield
Board Member - Larry Massing
Board Member - Bill Mathers
Board Member - Campbell Rich
Board Member - Ryan Strom
Board Member - Jackie Vitale
Ex Officio Board Member - Kimberly Everman**

ADMINISTRATIVE

**Development Director, Kev Freeman
Board Secretary, Jordan Pinkston**

CALL TO ORDER

ROLL CALL

**PRESENT: Chairperson Laurine, Vice Chairperson Bromfield, Board Member Massing,
Board Member Mathers, Board Member Vitale
ABSENT: Board Member Rich, Board Member Strom**

PLEDGE OF ALLEGIANCE

APPROVAL OF AGENDA

APPROVAL OF AGENDA

Action: Approve with the following conditions:

1. Move item #2 (Ordinance 2487-2022) after item #3 (Ordinance 2486-2022)

Moved by: Margaret Bromfield

Second by: Larry Massing

Motion passed unanimously.

APPROVAL OF MINUTES

1. APPROVAL OF APRIL 14, 2022 LPA MINUTES

APPROVAL OF MINUTES

Action: Approve April 14, 2022 LPA Minutes

Moved by: Larry Massing
Second by: Bill Mathers
Motion passed unanimously.

COMMENTS FROM THE PUBLIC (3 Minutes Max.)

None.

COMMENTS BY BOARD MEMBERS (Non-Agenda Items)

None.

ACTION ITEMS

2. Ordinance 2487-2022: Request to consider a rezoning from Commercial Planned Unit Development (CPUD) to Residential Planned Unit Development (RPUD), and site plan approval to allow 60 townhouse units on 4.88 acres of land for the Sailfish Cay RPUD. The subject property is located at 751 SE Central Parkway. (Quasi-Judicial)(RC)

RECOGNIZED AS ITEM #3 IN THE AGENDA, PER AGENDA APPROVAL.

PRESENTATION: Erin Wohlitka, Senior Planner
Ryan Johnston, Johnston Group Development & Construction

PUBLIC COMMENT (3-minute max): None.

PUBLIC COMMENTS VIA ZOOM: None.

BOARD COMMENT:

Jackie Vitale asked for clarification on the amount of native vegetation on the property.

Erin Wohlitka clarified what the applicant is proposing.

Larry Massing asked about on-street parking on Central Parkway.

Erin Wohlitka read Ryan Strom's comments on the project into the record.

Bill Mathers confirmed that the board is comfortable with him voting.

Margaret Bromfield said that she feels the project is refreshing.

PUBLIC COMMENT (3-minute max): None.

1. Charles Berger (SE Central Parkway) - asked if there is an age restriction for the development and lease agreements.

Action: Approve.
Moved by: Margaret Bromfield
Second by: Jackie Vitale
Motion passed unanimously.

3. Ordinance 2486-2022: Request to consider a small-scale comprehensive plan amendment from Commercial to Multi-Family Residential on 4.88 acres of land. The subject property is located at 751 SE Central Parkway. (Quasi-Judicial)(RC)

RECOGNIZED AS ITEM #2 IN THE AGENDA, PER AGENDA APPROVAL.

PRESENTATION: Erin Wohlitka, Senior Planner
Bob Raynes, Gunster Law Firm

BOARD COMMENT:

The board disclosed ex parte communications.

PUBLIC COMMENT (3-minute max):

1. Charles Beger (SE Central Parkway) - Concerned about vegetation being removed from the site and traffic. He suggested a light on Kanner.
2. Jane Cornett (Address not provided) - Attorney of Town Park North and expressed full support for the project.

PUBLIC COMMENTS VIA ZOOM: None.

BOARD COMMENT: None.

Action: Approve.
Moved by: Larry Massing
Second by: Margaret Bromfield
Motion passed unanimously.

STAFF UPDATE

Kev Freeman shared that he has accepted a position elsewhere, but will still be assisting with projects.

Mike Mortell gave an update on the job search for Urban Planners and Costco.

Ex-Efficio, Kimberly Everman spoke on behalf of the School Board.

ADJOURNMENT

**CITY OF STUART, FLORIDA
AGENDA ITEM REQUEST
Local Planning Agency**

Meeting Date: 8/4/2022

Prepared by: Kevin Freeman

Title of Item:

WATERBLASTING - MAJOR AMENDMENT TO IPUD (QUASI-JUDICIAL) (RC)

ORDINANCE NUMBER 2497-2022: AN ORDINANCE OF THE CITY COMMISSION OF THE CITY OF STUART, FLORIDA, AMENDING THE WATERBLASTING INDUSTRIAL PLANNED UNIT DEVELOPMENT (IPUD) LOCATED ON THE SOUTH SIDE OF MARKET STREET AND WEST SIDE OF COMMERCE AVE TO ALLOW THE ADDITION OF 28,327 SQUARE FEET OF INDUSTRIAL/WAREHOUSE BUILDING; APPROVING A FINAL SITE PLAN; PROVIDING DIRECTIONS TO THE CITY CLERK; PROVIDING FOR CERTAIN DEVELOPMENT DOCUMENTS AND CONDITIONS; PROVIDING FOR SEVERABILITY; PROVIDING FOR AN EFFECTIVE DATE; AND FOR OTHER PURPOSES.

Summary Explanation/Background Information on Agenda Request:

The intent of this application is to request approval for a proposed expansion of Hog Technologies (Waterblasting) operation located on Commerce Ave/Market Street. The site currently consists of a 35,250 sq.ft. one-story warehouse building and a 61,644 sq.ft. two-story building with associated site improvements. All approved within the original IPUD; Ordinance# 2368-2018.

The petitioner is proposing an additional 28,936 sq.ft. (one-story) warehouse expansion to the site. The application is therefore a major amendment to Ordinance# 2368-2018.

Funding Source:

N/A.

Recommended Action:

Motion to find in compliance and move approval with conditions to the City Commission.

ATTACHMENTS:

1. A1 - Ordinance 2497-2022
2. A2 - Exhibit D - Landscape Plans
3. A2 - Exhibit D - Architectural Plans
4. A2 - Exhibit D - Drainage Report - SFWMD ERP
5. A2 - Exhibit D - Preliminary Engineering Plan
6. A2 - Exhibit D - Site Plan
7. A2 - Exhibit D - Survey
8. A2 - Exhibit D - Traffic Statement
9. B1 - Waterblasting Staff Report
10. C1 - Application Z22030002
11. C2 - Applicant Narrative
12. D1 - Affidavit Attesting to Notification
13. D2 - Site Notice
14. D3 - Site Notice
15. D4 - Site Notice

16. D5 - Site Notice
17. D6 - Site Notice
18. D7 - Site Notice
19. D8 - Auto turn



**BEFORE THE CITY COMMISSION
CITY OF STUART, FLORIDA**

ORDINANCE NUMBER 2497-2022

AN ORDINANCE OF THE CITY COMMISSION OF THE CITY OF STUART, FLORIDA, AMENDING THE WATERBLASTING INDUSTRIAL PLANNED UNIT DEVELOPMENT (IPUD) LOCATED ON THE SOUTH SIDE OF MARKET STREET AND WEST OF COMMERCE AVE TO ALLOW THE ADDITION OF 28,327 SQUARE FEET OF INDUSTRIAL/WAREHOUSE BUILDING; APPROVING A FINAL SITE PLAN; PROVIDING DIRECTIONS TO THE CITY CLERK; PROVIDING FOR CERTAIN DEVELOPMENT DOCUMENTS AND CONDITIONS; PROVIDING FOR SEVERABILITY; PROVIDING FOR AN EFFECTIVE DATE; AND FOR OTHER PURPOSES.

* * * * *

WHEREAS, on **DATE**, the City Commission of the City of Stuart adopted Ordinance 2368-2018, thereby approving a IPUD zoning classification, project plans, and authorizing a IPUD Agreement for the Waterblasting Industrial PUD, which included conditions of development; and

WHEREAS, on March 14, 2022, an application was submitted to the City of Stuart for an amendment to the Waterblasting Industrial Planned Unit Development to allow the addition of a 23,387 square foot industrial/warehouse building; and

WHEREAS, on August 4, 2022 the Local Planning Agency board held a properly noticed hearing at a regularly scheduled meeting to consider the applicant’s request for a Major Amendment to the Waterblasting Industrial Planned Unit development; and

WHEREAS, on _____, 2022, the City Commission held a properly noticed hearing at a regularly scheduled City Commission to consider the Petitioner’s voluntary request approve a Major Amendment to the Waterblasting Industrial Planned Unit Development, and has also considered the recommendation of the City of Stuart staff; and

WHEREAS, at the hearing the applicant showed by substantial competent evidence that the application does not create any detrimental effects on adjacent land uses; and

WHEREAS, the owners have committed to the City that its development will comply with all development codes, plans, standards and conditions approved by the City Commission; and that it will bind its successors in title to any such commitments made upon this ordinance; and

WHEREAS, at the hearing the applicant showed by substantial competent evidence that the application is consistent with the Stuart Comprehensive Plan, and the Land Development Code of the City, and with the procedural requirements of law; and

WHEREAS, the new building and its use will be in harmony with surrounding properties and their anticipated development; and

WHEREAS, the foregoing recitals are true and adopted as findings of fact and conclusions of law.

NOW THEREFORE, BE IT ORDAINED BY THE CITY COMMISSION OF THE CITY OF STUART, FLORIDA THAT:

SECTION 1: The foregoing recitals are true and adopted as findings of fact and conclusions of law.

SECTION 2: The legal description of the property is set forth in **Exhibit ‘A’** attached hereto and made a part hereof by reference. A Map depicting the Property is attached hereto as **Exhibit ‘B’** and made a part hereof by reference. The conditions of development attached hereto as **Exhibit ‘C’** and made a part hereof by reference, and each shall constitute one of the approved documents.

SECTION 3: The following new documents are on file as public records of the City, at the office of the City Clerk in City Hall, and attached hereto as **Exhibit “D”**, hereinafter the “Development Documents”, shall be deemed a part of the development conditions, and shall supplement any earlier approvals:

- a. **Boundary and Topographic Survey: By EDC 21-487, dated February 7, 2022.**
- b. **Site Plan: By EDC, ref 21-487 dated March 3, 2022 (2 sheets).**
- c. **Landscape Plan: By Conceptual Design Group, ref 17-0802 dated May 23, 2022 (6 sheets).**
- d. **Architectural Renderings: Ahern Associates Architects, ref 22-2329, dated March 4, 2022 (2 sheets).**
- e. **Conceptual Engineering Plans: By EDC, ref 21-487, dated March 3, 2022, (2 sheets).**
- f. **Traffic Statement: By EDC, dated April 7, 2022.**
- g. **Drainage Report - attached to SFWMD ERP Permit. By EDC.**

SECTION 4: Except as otherwise provided herein, no development permits, site permits, or building permits shall be issued by the City except in compliance with the aforesaid Development Documents. The failure of the Applicant to comply with the Development Documents, or with any term or condition of development set forth in this resolution, shall be deemed a zoning violation and no further permits, or other development approvals or orders shall be issued by the City to the owner until the violation has been resolved, and the matter may become subject of a code enforcement action brought by the City. This section shall not impair the due process or other legal rights of the Applicant to seek administrative or judicial redress.

SECTION 5: Following the adoption and acceptance of this ordinance by the Owners, and in addition to any other action for failure to complete development or otherwise comply with the Development Documents, the City Development Director may obtain a hearing before the City Commission and shall thereupon give at least five (5) days written notice of the time, date and location of the hearing, along with specific notice of the alleged breach. At the hearing before the City Commission the developer may appear, and may contest the allegation of breach or explain the reason or reasons for the breach. Upon a finding of a material breach of the Development Documents and therefore, the Ordinance(s) adopting the same, the City Commission may impose any or all of the following:

- a. Initiate the process to amend or repeal this or any other ordinance pertaining to the development.
- b. Impose an administrative penalty of up to \$1,000.00 for each violation, and up to \$5,000.00 for each repeat violation that occurs, along with all reasonable costs, including attorney's fees incurred by the City.

Any breach of any provision or condition of this ordinance by the applicant shall be considered a zoning violation subject to any remedies provided herein, or as otherwise provided by law. In the event a violation found continues from day to day, each day the violation is found to continue shall be deemed a separate violation.

SECTION 6: All development orders in conflict with this ordinance or any part thereof is hereby repealed to the extent of such conflict. If any provision of this ordinance conflicts with any contractual provision between the City and the Property Owner(s) or Applicant(s) of the site, this ordinance shall prevail.

SECTION 7: If any provision of this ordinance or the application thereof to any person or circumstance is held invalid, the invalidity shall not affect other provisions or applications which can be given effect without the invalid provision or application, and to this end the provisions of this ordinance are declared severable.

SECTION 8: The complete execution and recording of this Ordinance by the City Clerk shall occur no later than 60 days from the date of this approval, failing which this ordinance shall be void.

SECTION 9: This ordinance shall be effective upon the following to occur: adoption by the City Commission, and proper execution and acceptance by the Owner.

SECTION 10: Upon complete execution of this Ordinance, including the Acceptance and Agreement by the Owner, the City Clerk is directed to record a Certified Copy of the same in the Public Records of Martin County, Florida.

Passed on first reading the _____ day of _____, 2022.

Commissioner _____ offered the foregoing Ordinance and moved its adoption.

The motion was seconded by Commissioner _____ and upon being put to a roll call vote, the vote was as follows:

MERRITT MATHESON, MAYOR
TROY MCDONALD, VICE MAYOR
BECKY BRUNER, COMMISSIONER
EULA R. CLARKE, COMMISSIONER
MIKE MEIER, COMMISSIONER

YES	NO	ABSENT	ABSTAIN

ADOPTED on second and final reading this _____ day of _____, 2022.

ATTEST:

MARY R. KINDEL
CITY CLERK

MERRITT MATHESON
MAYOR

APPROVED AS TO FORM
AND CORRECTNESS:

MICHAEL J. MORTELL, ESQ.
CITY ATTORNEY

ACCEPTANCE AND AGREEMENT

BY SIGNING THIS ACCEPTANCE AND AGREEMENT, THE UNDERSIGNED HEREBY ACCEPTS AND AGREES TO ALL OF THE TERMS AND CONDITIONS CONTAINED IN A COMMERCIAL PLANNED UNIT DEVELOPMENT AND IN ALL EXHIBITS, ATTACHMENTS AND DEVELOPMENT DOCUMENTS, INTENDING TO BE BOUND THEREBY, AND THAT SUCH ACCEPTANCE AND AGREEMENT IS DONE FREELY, KNOWINGLY, AND WITHOUT ANY RESERVATION, AND FOR THE PURPOSES EXPRESSED WITHIN THE ABOVE ORDINANCE. IF IT IS LATER DISCOVERED THAT THE UNDERSIGNED, OR ITS SUCCESSORS OR ASSIGNS HAVE FAILED IN ANY MATERIAL WAY TO DEVELOP THIS COMMERCIAL PLANNED UNIT DEVELOPMENT ACCORDING TO THIS ORDINANCE, ITS CONDITIONS, AND THE DEVELOPMENT PLANS AND DOCUMENTS, THE UNDERSIGNED UNDERSTANDS AND AGREES THAT THIS ORDINANCE MAY BE AMENDED OR REPEALED BY THE CITY COMMISSION, AND THAT OTHER ACTIONS MAY BE TAKEN AGAINST THE UNDERSIGNED BY THE CITY, INCLUDING BUT NOT LIMITED TO CODE ENFORCEMENT ACTIONS, PERMIT AND LICENSING REVOCATIONS, AND ALL APPLICABLE CIVIL AND CRIMINAL ACTIONS.

IN WITNESS WHEREOF THE UNDERSIGNED HAS EXECUTED THIS ACCEPTANCE AND AGREEMENT:

WITNESSES:

Print Name: _____

Print Name: _____

OWNER

By: _____
Print Name: _____

OWNERS ACKNOWLEDGMENT

The above Ordinance, Acceptance and Agreement was acknowledged before me this ____ day
of _____, 2022, by _____.

Notary Public, State of Florida

My Commission Expires:

Notary Seal

Personally Known _____ OR Produced Identification _____

Type of Identification Produced _____

CITY'S ACKNOWLEDGEMENT

STATE OF FLORIDA,

COUNTY OF _____

The above Ordinance, Acceptance and Agreement was acknowledged before me by means of

☐ physical presence or ☐ online notarization this ____ day of _____, 2022 by

Merritt Matheson, Mayor, and Mary Kindel, City Clerk, respectively, of the City of Stuart,

Florida, a Florida municipal corporation, who ☐ are personally known to me or ☐ have produced

_____ as identification.

Personally Known OR Produced Identification

Type of ID Produced _____

Signature of Notary Public: _____

Commission Expires:

Notary Seal:

EXHIBIT A – Legal Description

**A PORTION OF TRACTS 208, 209, 210 & 211 PORT SEWALL ACCORDING TO
THE PLAT THEREOF RECORDED IN PLAT BOOK 3 PAGE 7 PUBLIC RECORDS
PALM BEACH NOW MARTIN COUNTY FLORIDA BEING MORE
PARTICULARLY DESCRIBED IN OR 2994/2585 & 2950/292**

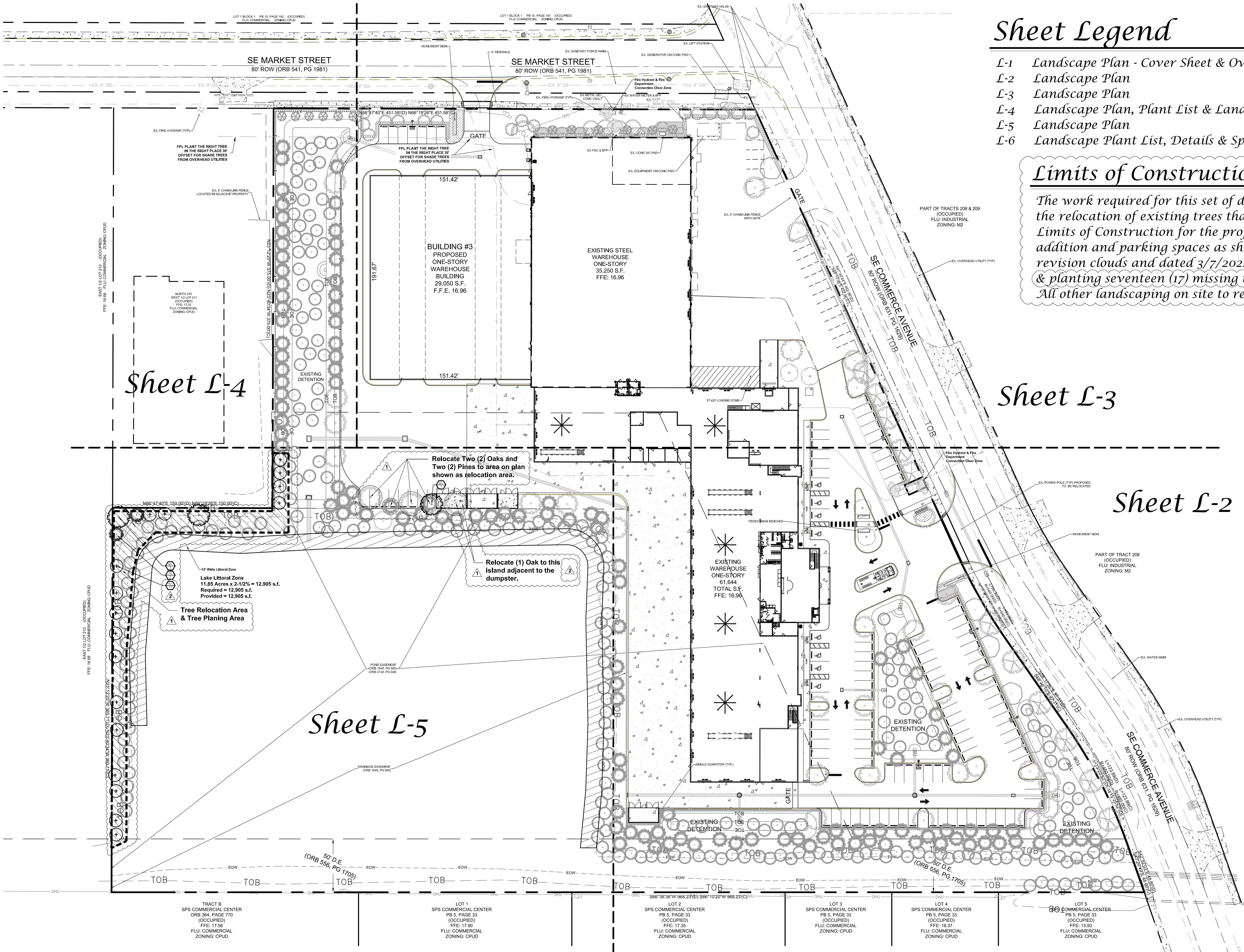
EXHIBIT B – LOCATION MAP



EXHIBIT C – DEVELOPMENT CONDITIONS

The Major Amendment to the Waterblasting Industrial Planned Unit Development shall comply with the following documents (Exhibit ‘C’):

1. All applicable state or federal permits must be obtained before the commencement any development activities. Issuance of this development order/permit/approval by the City of Stuart does not in any way 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 of Stuart for the issuance of this order/permit/approval 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. Prior to certificate of occupancy for the industrial/warehouse building, the applicant shall provide an engineer’s written confirmation attesting that the IPUD’s storm water system is in place and functioning in compliance with all approved plans and specifications.
3. Prior to certificate of occupancy the replacement landscaping shall be inspected and approved by a registered landscape architect.
4. Construction activity shall be limited from 7:00 am to 6:00 pm Monday – Saturday.
5. Any existing infrastructure, sidewalk or private property that is damaged during construction shall be repaired or replaced prior to the issuance of a Certificate of Occupancy.
6. In the event of any conflict in the provisions of Exhibit ‘C’ Development Conditions and attached exhibits or Ordinance 2368-2018, then Exhibit ‘C’ shall prevail.



Sheet Legend

- L-1 Landscape Plan - Cover Sheet & Overall Plan
- L-2 Landscape Plan
- L-3 Landscape Plan
- L-4 Landscape Plan, Plant List & Landscape Data
- L-5 Landscape Plan
- L-6 Landscape Plant List, Details & Specifications

Limits of Construction Notes

The work required for this set of drawings is only the relocation of existing trees that are within the Limits of Construction for the proposed building addition and parking spaces as shown with revision clouds and dated 3/7/2022 & planting seventeen (17) missing trees. All other landscaping on site to remain.

Conceptual
Design
Group, Inc.

Landscape Architecture - Site Planning
900 East Ocean Boulevard, Suite 130d
Stuart, Florida 34994
(772) 344-2340
L.C. 26000198

Waterblasting

City of Stuart, Florida

City Project Number:

Jeffrey W. Smith, RLA
Florida Registration Number:
LA 0001635

Job No.	17-0802
Drawn By	JWS
Submittal Dates	12-21-2017
	1-31-2018
	4-20-2018
	3-7-2022
	5-23-2022

Revision Dates	
New Base	1-31-2018
New Base&Mitigation	4-20-2018
New Base	3-7-2022
New Base	5-23-2022

These drawings are the property of the landscape architect and are not to be used for other projects except by written permission from the landscape architect. Report any discrepancies immediately to the landscape architect.

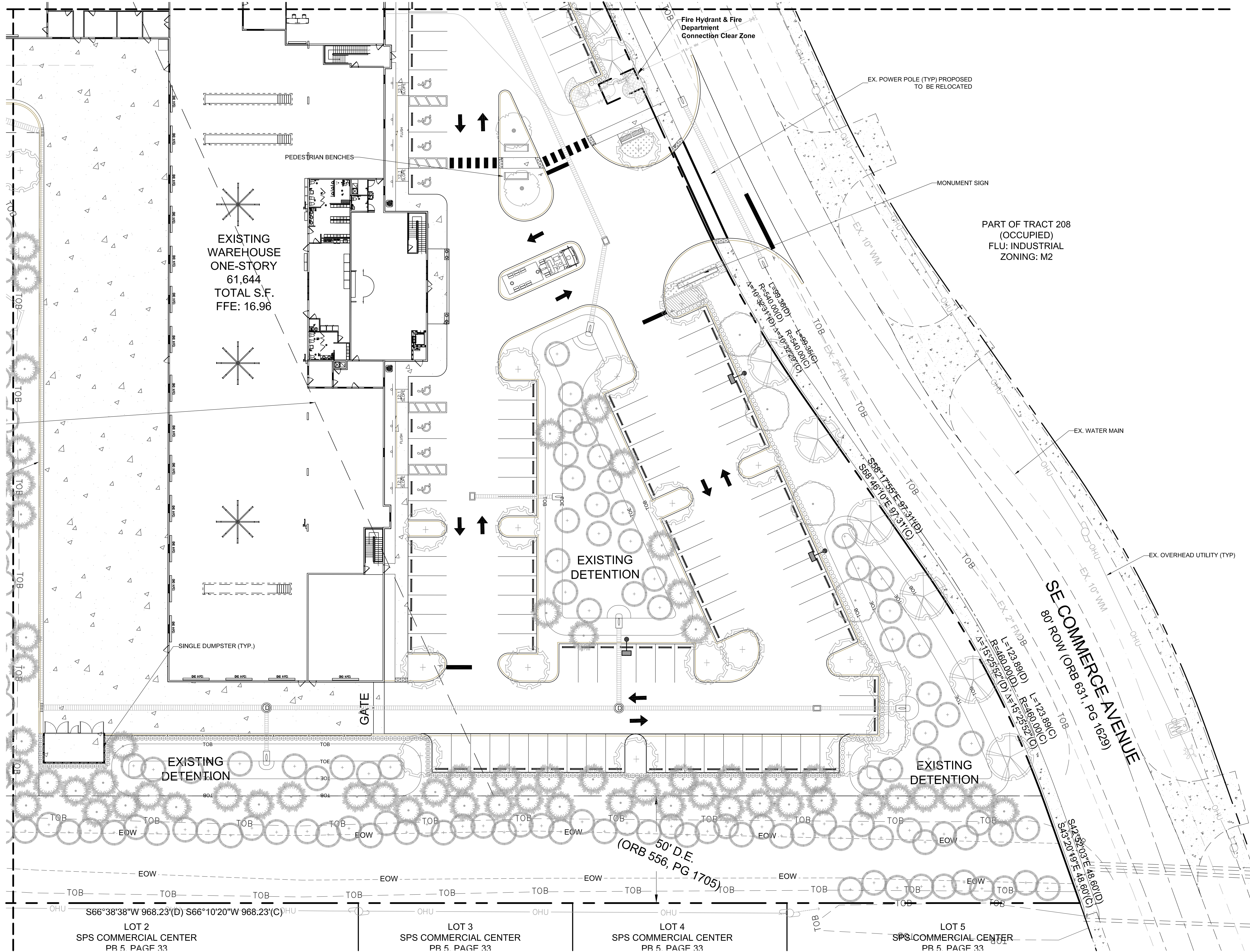
1 6
Sheet of



North
Scale: 1" = 40'



Landscape Plan



Waterblasting

City of Stuart, Florida

City Project Number:

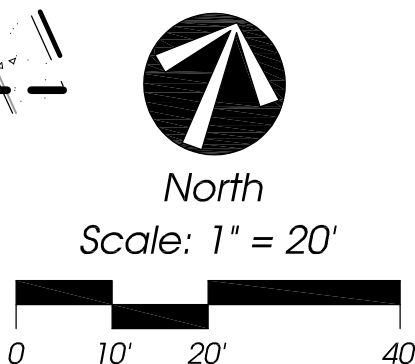
Jeffrey W. Smith, RLA
Florida Registration Number:
LA 0001635

Job No.	17-0802
Drawn By	JWS
Submital Dates	12-21-2017
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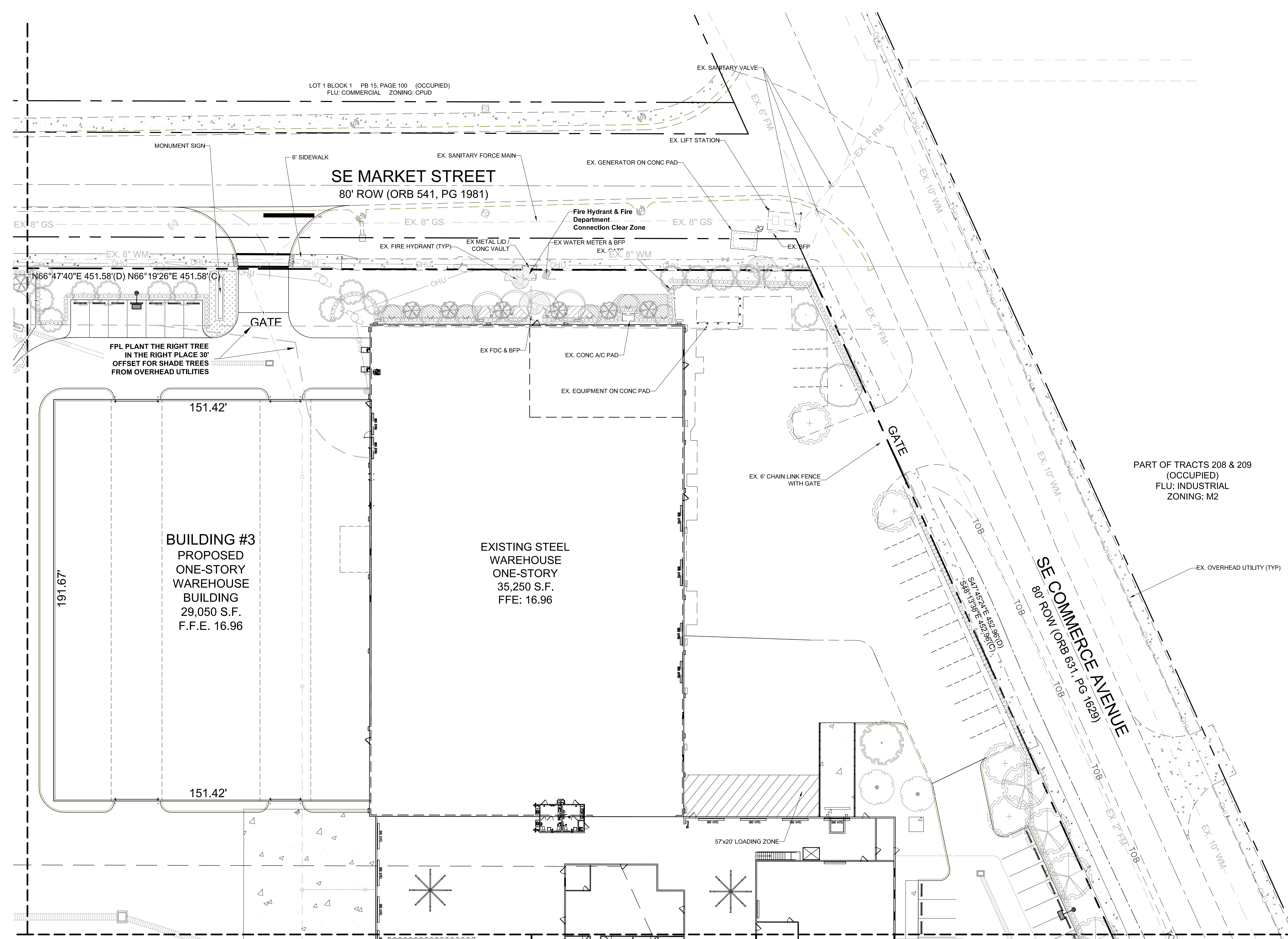
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3 6
Sheet of



Landscape Plan



Landscape Data

Total Site Area: 516,176 s.f. 11.85 Ac. 100%

Trees:

Commercial Area: (6.04.08)

Required: 1 Tree / 2,500 s.f. = 516,176 / 2,500 = 206

Provided: 206

Landscape Area: (6.04.03.B.1)

Required: 20% of developed area = 516,176 x 20% = 103,235.20

Provided: 128,009

Parking Buffer Adjacent to Right of Way (6.04.07.A)

Required: 1 Tree / 30 L.F. = 1,274' / 30' = 43

Provided: 43

Required: Shrub Hedge @ 2' O.C. = 637

Provided: 640

Required: 25% of strip in Ground Cover = 319 l.f.

Provided: 325 l.f.

Notes:

1. Low shrubs are used to not block safe sight lines.

Parking Buffer Adjacent to Private Property (6.04.07.B.2)

Required: 1 Tree / 30 L.F. = 471' / 30' = 16

Provided: 16

Required: Shrub Hedge @ 2' O.C. = 236

Provided: 240

Required: 25% of strip in Ground Cover = 118 l.f.

Provided: 125 s.f.

Interior & Terminal Islands (6.04.07.C.5 & 6)

Required: 1 Tree / Island = 27

Provided: (24 + 3 TD - See Note Below) 27

Note: Three trees were relocated to the retention pond area as Cypress trees due to utilities / conflicts being located within the islands.

Additional Parking Stalls (6.04.03.B.7)

Extra Spaces Provided = 7 (7 x 100 = 700 / 500 s.f. = 2)

Required: 1 Tree / 500 s.f. = 2

Provided: (See Note Below) 2

Total Trees Required: (6.04.08) 206

Total Trees Provided: 203 Trees + 10 Palms @ 3:1 = 3 = 206

Total Shade Trees Required: (6.04.02.A.2) 50% of total required trees = 206 x 50% = 103

Total Shade Trees Provided: 178

Total Native Trees Required: (6.04.02.A.1) 50% of total required trees = 209 x 50% = 103

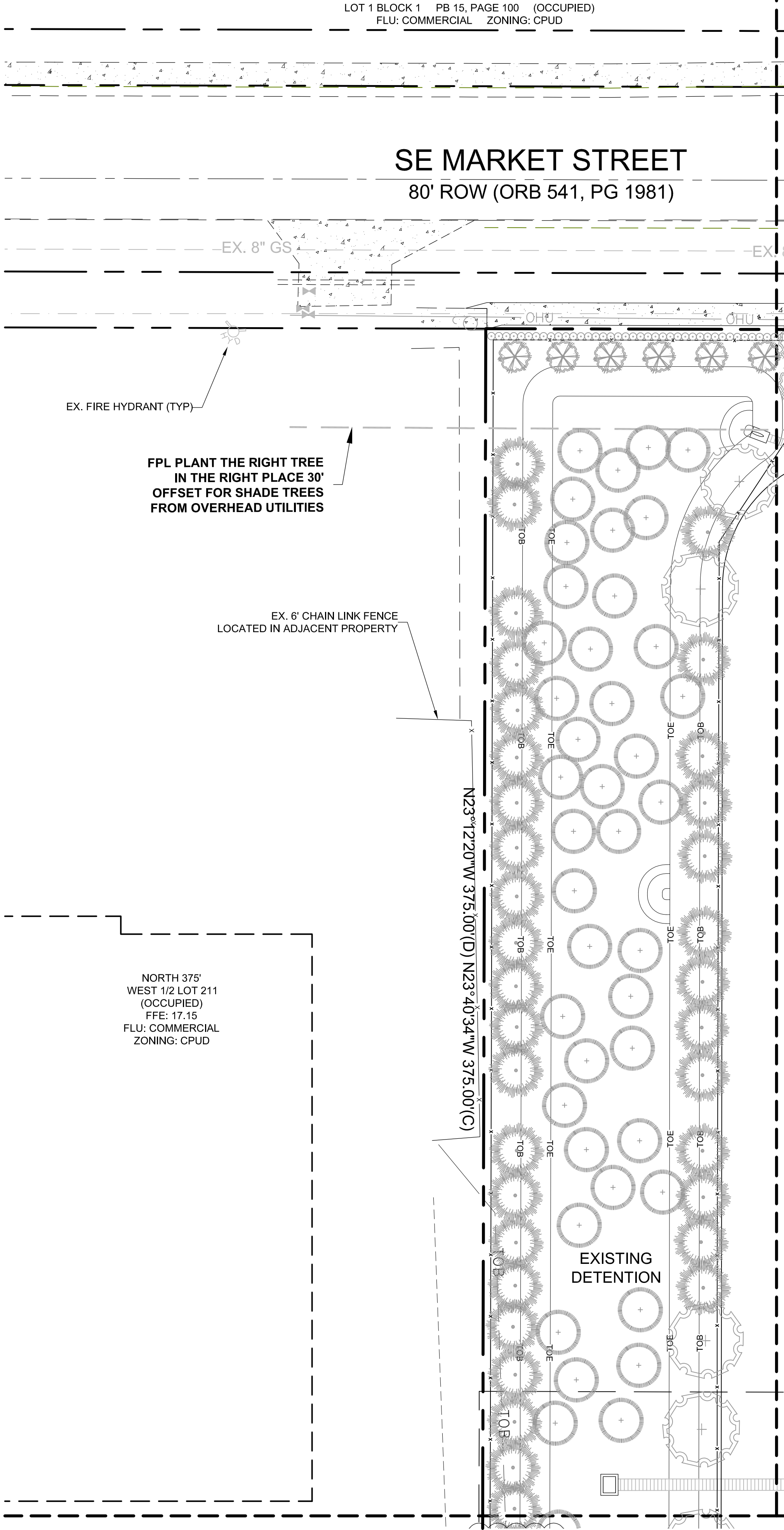
Native Trees Provided: 183 (89%)

Total Native Shrubs Required: (6.04.02.A.1) 50% of total required shrubs = 1,270 x 50% = 1,270

Native Shrubs Provided: 1,070 (89%)

Plant List

QTY	SYM	SPECIES	COMMON NAME/DESCRIPTION	SIZE	SPACING	REMARKS	WATER USAGE
CANOPY / ORNAMENTAL TREES							
17	PE-1*	PINUS ELLIOTTI	SLASH PINE	12' x 6', 2.5" CAL.	A.S.	FULL CANOPY	LOW
2	PE*	PINUS ELLIOTTI	SLASH PINE	EXISTING	A.S.	RELOCATED FROM ON SITE	LOW
3	QV*	QUERCUS VIRGINIANA	LIVE OAK	EXISTING	A.S.	RELOCATED FROM ON SITE	LOW
* = Florida Native							



Conceptual
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Landscape Architecture - Site Planning
900 East Ocean Boulevard, Suite 130d
Stuart, Florida 34994
(772) 344-2340
LC: 26000198

Waterblasting

City of Stuart, Florida

City Project Number:

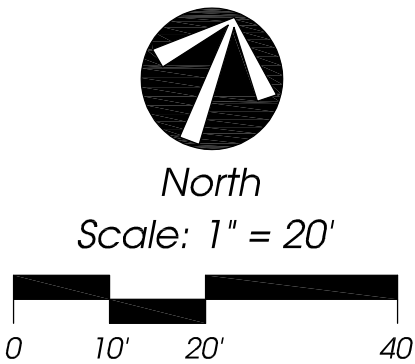
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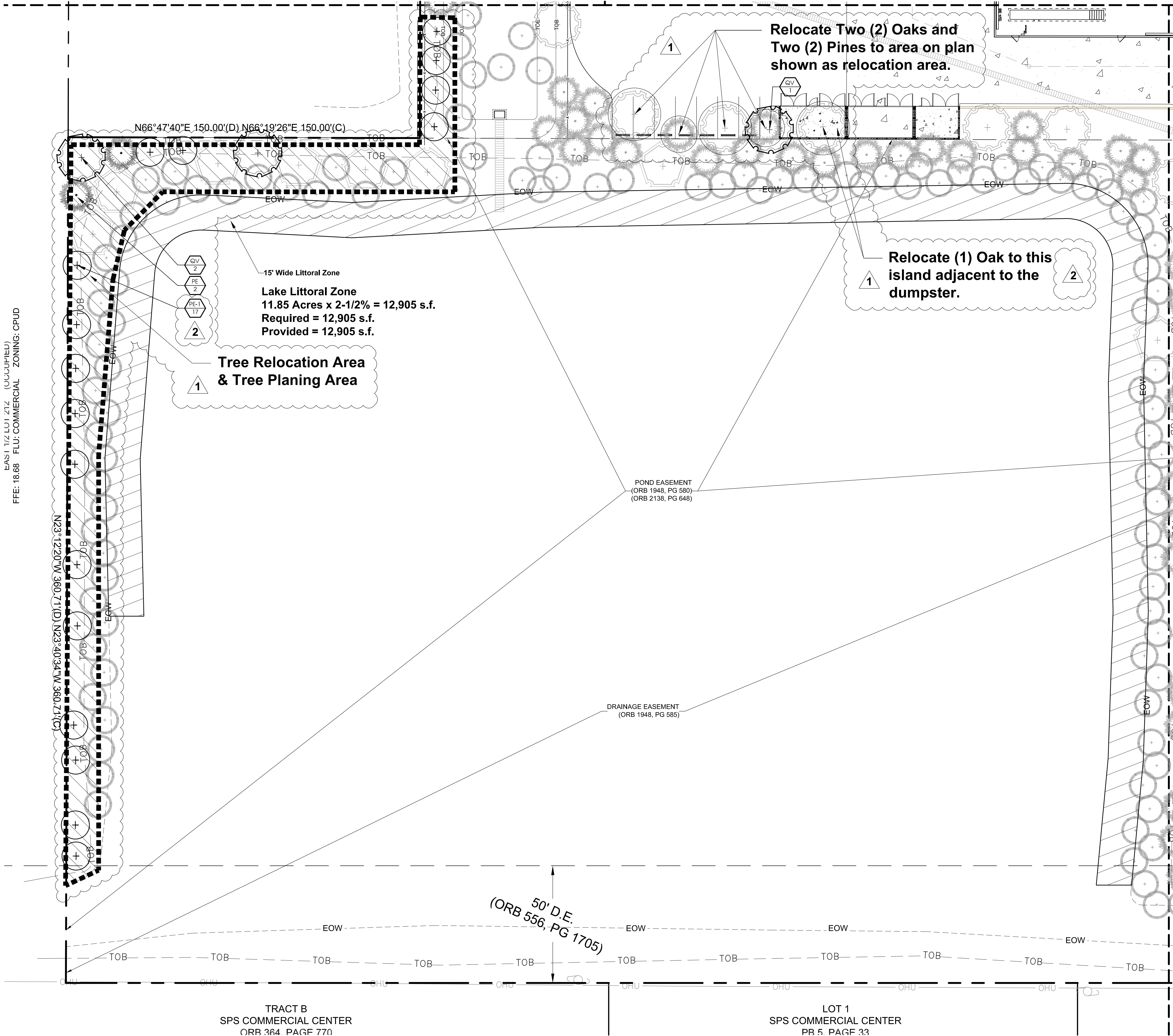
Revision Dates
New Base 1-31-2018
New Base&Mitigation 4-20-2018
New Base 3-7-2022
New Base 5-23-2022

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used for other projects except by written
permission from the landscape architect.
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to the landscape architect.

4 6
Sheet of



Landscape Plan



EAST 1/2 LOT 1 Z12 (OCCUPIED)
FFE: 18.68 FLU: COMMERCIAL ZONING: CPUD

N23°12'20"W 360.71'(D) N23°40'34"W 360.71'(C)

N66°47'40"E 150.00'(D) N66°19'26"E 150.00'(C)

QV
2
PE
2
PE-1
17
2

15' Wide Littoral Zone
Lake Littoral Zone
11.85 Acres x 2-1/2% = 12,905 s.f.
Required = 12,905 s.f.
Provided = 12,905 s.f.

Tree Relocation Area
& Tree Planing Area

Relocate Two (2) Oaks and
Two (2) Pines to area on plan
shown as relocation area.

Relocate (1) Oak to this
island adjacent to the
dumpster.

POND EASEMENT
(ORB 1948, PG 580)
(ORB 2138, PG 648)

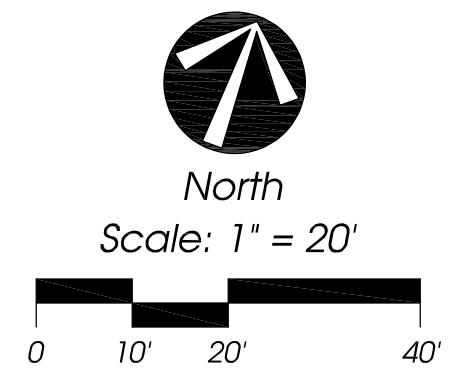
DRAINAGE EASEMENT
(ORB 1948, PG 585)

50' D.E.
(ORB 556, PG 1705)

TRACT B
SPS COMMERCIAL CENTER
ORB 364 PAGE 770

LOT 1
SPS COMMERCIAL CENTER
PR 5 PAGE 33

Landscape Plan



**Conceptual
Design
Group, Inc.**
Landscape Architecture - Site Planning
900 East Ocean Boulevard, Suite 130d
Stuart, Florida 34994
(772) 344-2340
LC: 26000198

Waterblasting

City of Stuart, Florida

City Project Number:	
Jeffrey W. Smith, RLA Florida Registration Number: LA 0001635	
Job No.	17-0802
Drawn By	JWS
Submittal Dates	12-21-2017
1-31-2018	4-20-2018
3-7-2022	5-23-2022
Revision Dates	
New Base	1-31-2018
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New Base	3-7-2022
New Base	5-23-2022
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Sheet	5 of 6

Landscape Specifications

1. All tree and plant material to be Florida No. 1 or better, as classified in "Grades and Standards for Nursery Plants", Part 1 and Part II, State of Florida, Dept. of Agriculture, Tallahassee. All plants not listed in "Grades and Standards for Nursery Plants" shall conform to a Florida No. 1 as to: (1) health and vitality, (2) condition of foliage, (3) root system, (4) freedom from pest or mechanical damage, (5) heavily branched and densely foliated according to the accepted normal shape of the species.
2. Undersizing or substitution of one species or cultivar for another species is a breach of contract and will be "Rejected" at the time of final landscape inspection unless approved by Landscape Architect.
3. Project Warranty: All plant material shall be warranted for a period of one (1) year after date of substantial completion against defects, including death and unsatisfactory growth, except for defects resulting from abuse or damage by others or unusual phenomena or incidents which are beyond the contractor's control.
4. Any and all conditions which the contractor feels will be detrimental to the success of the planting shall be brought to the owner or representative's attention.
5. The contractor shall verify the location of underground utilities prior to commencing work on any project area. Call 811 - Sunshine State One Call of Florida, Inc. - www.sunshine811.com
6. Mulch planting areas with 3" layer of Melaleuca, Eucalyptus, or Enviro mulch. Cypress Mulch is NOT ACCEPTABLE. Planting beds to receive mulch throughout entire bed area.
7. All plants to be set to ultimate grade. No filling will be permitted around trunks or stems. Mulch to be kept a minimum of 2" away from trunks and stems.
8. Planting trees and shrubs: Excavate hole per planting detail. When plant is set, place additional backfill consisting of a 50% mixture of Peat humus and natural soil around the base and sides of ball, and work each layer to settle backfill and eliminate voids and air pockets. When excavation is approximately 2/3 full, water thoroughly before placing remainder of backfill. Water again after placing final layer of backfill and before installing mulch.
9. Guy and stake trees in 3 directions with galvanized wire, through flexible hose chafing guards, with wooden stake anchors immediately after planting. (See Detail)
10. All plant material and sod shall be fertilized in accordance with Martin County's fertilizer ordinance. Soil tests are required from the site to be in compliance with the ordinance and shall be taken from the minimum required areas as stated in the ordinance. Fertilizer shall be a complete natural organic fertilizer and slow release.

Fertilized with a complete natural organic fertilizer with a ratio as allowed by the County.

Palms should receive a complete granular fertilizer formulated for palms ("Palm Special") at a rate of 5 to 8 lbs. per palm.

Agriform 20-0-5 (If allowed by County) twenty-one gram planting tablets may be substituted for granular fertilizer. If utilized, the following rates shall be utilized: Position plant in hole. Backfill halfway up the rootball. Place tablet(s) beside rootball about 1" from root tips. Do not place tablet(s) in bottom of hole.

- 1 Gallon 1 Tablet
3 Gallon 2 Tablets
25 Gallon & B&B Trees 2 per 1" caliper

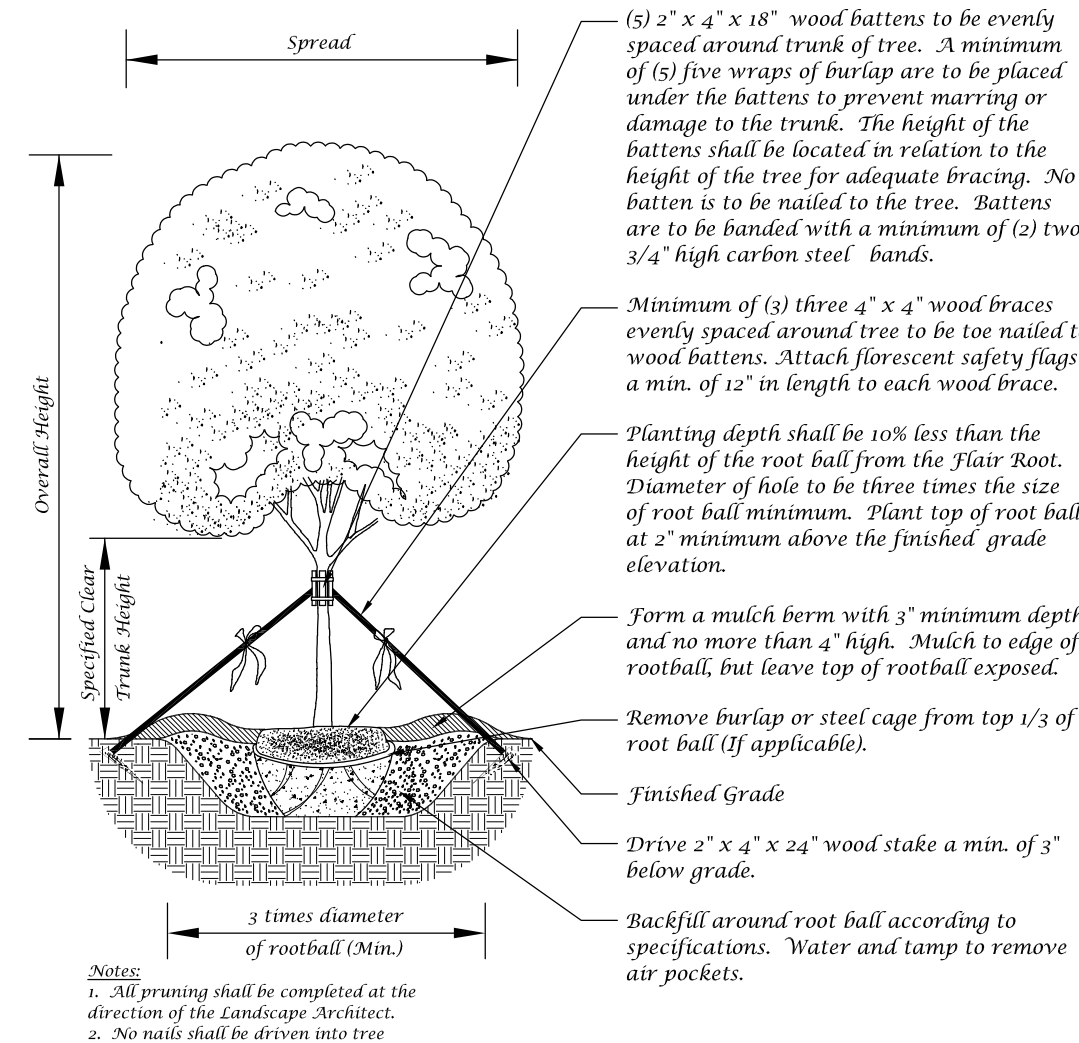
11. All planting areas and sod to be irrigated to provide 100% coverage. Shop drawings to be submitted by the irrigation contractor for approval prior to installation.
12. Maintain trees, shrubs, and other plants by watering, cultivating, and weeding as required for healthy growth. Restore planting saucers and mulch. Tighten and repair stake and guying and reset trees and shrubs to proper grade or vertical position as required. Spray as necessary to keep trees and shrubs free of insects and disease. The contractor shall begin maintenance immediately after planting and shall continue maintenance through final acceptance when Certificate of Occupancy is issued to the General Contractor by City and project is released by the General Contractor to Client.
13. Prune trees and shrubs only to remove damaged branches as directed by the Landscape Architect.
14. Planting Lawns: Provide clean, strongly rooted, uniformly sized strips of Stenotaphrom secundatus Floritarn (unless otherwise noted), machine stripped not more than 24 hours prior to laying. Grade and roll prepared lawn surface. Water thoroughly but not to create muddy soil conditions. Lay sod strips with tight joints, roll or tamp lightly, and water thoroughly.
15. Maintain positive drainage, no planting is to block drainage.
16. Drainage Testing
 - Prior to planting of trees, palms, and specimen material, each planting pit shall be tested in the following manner to verify adequate drainage.
 - A) Dig each planting pit to the minimum specified size.
 - B) Fill the planting pit with (12") twelve inches of water. If the water level in the planting pit drops (4") four or more inches within (4) four hours, the drainage is sufficient and a drainage channel is not required. If the water level drops less than (4") four inches within the (4) four hour period, then a drainage channel is required.
 - C) When a drainage channel is required, the drainage channel must extend down through the non porous soil and into porous soil. (See Drainage Testing Detail)
 - D) Discard all material removed from the drainage channel.
 - E) When backfilling the planting pit, add coarse gravel to the drainage channel. Also, care must be taken to keep the consistency of the soil mix the same throughout the planting pit.

NOTE:
Contractor to include drainage testing for all trees and palms in bid. If drainage is inadequate, the soil specification in item #8 above shall be revised for site conditions.
Contractor shall notify the Owner and Landscape Architect of poor drainage conditions in writing and written direction will be provided to the contractor of appropriate soil mixture specification to be used.

General Notes

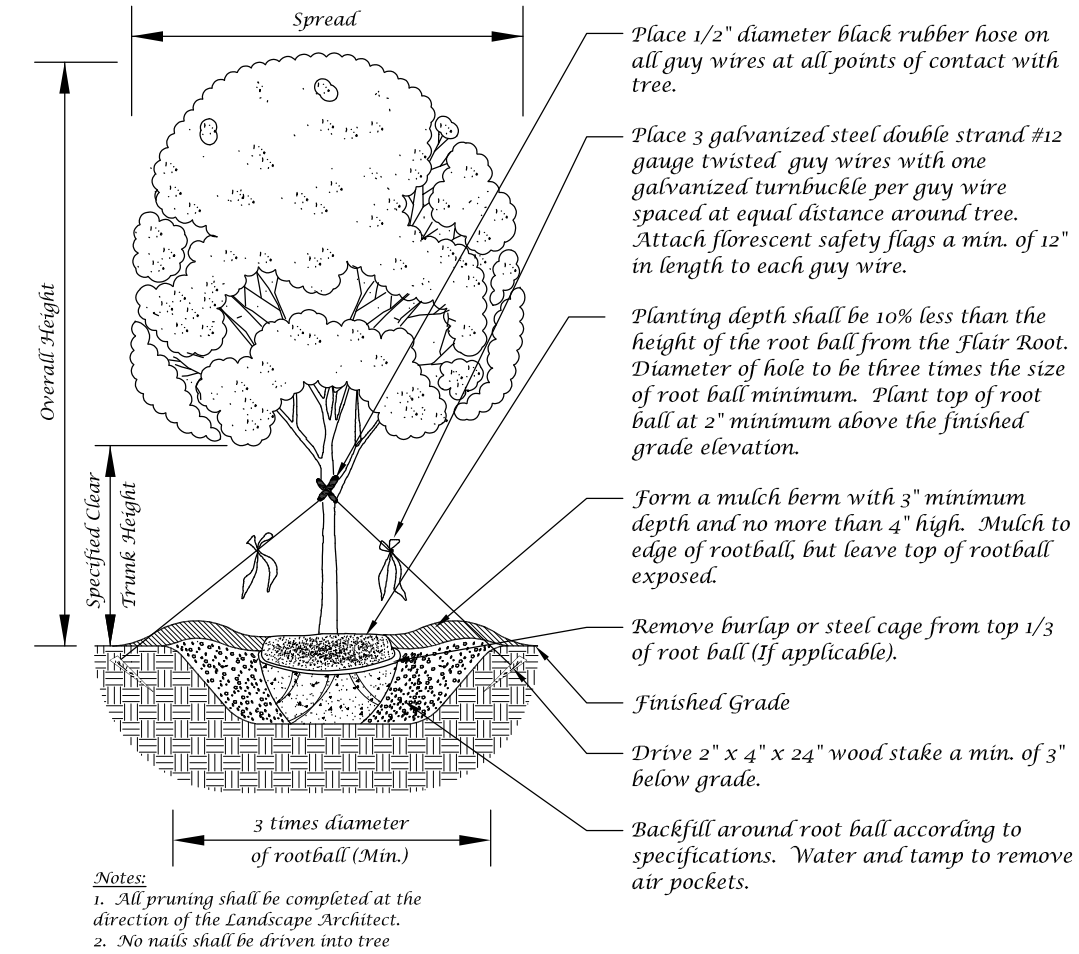
1. No plant substitutions can be made without City of Stuart approval.
2. All required landscape improvements must be inspected and approved by the City of Stuart prior to the issuance of a Certificate of Occupancy.
3. Any existing landscaping, sod, or irrigation damaged or destroyed during the construction shall be replaced prior to the final inspection.
4. All prohibited, exotic and invasive species shall be removed from the entire site prior to issuance of certificate of occupancy.
5. All planting areas and sod to be irrigated to provide 100% coverage and provide adequate irrigation of landscape areas for the first full growing season and continue thereafter only as necessary to maintain required vegetation in good and healthy condition. Shop drawings to be submitted by the irrigation contractor for approval prior to installation.
6. The irrigation system shall be continuously maintained in working order.
7. An automatic Rain sensor shall be placed on-site as part of the required irrigation system.
8. Planting adjacent to fire hydrants is to have a minimum clear radius of 7.5' as required by the NFPA Uniform Fire Code Florida Edition 18.3.4.1 Hydrants. All fire hydrants and fire check valves shall have a minimum of 7.5' from the front and sides with 4' from the rear to all landscape material per the Florida Fire Prevention Code.
9. All dead and/or missing plant material from the previously approved landscape plans shall be replaced prior to final inspection for Certificate of Occupancy.

Landscape Details



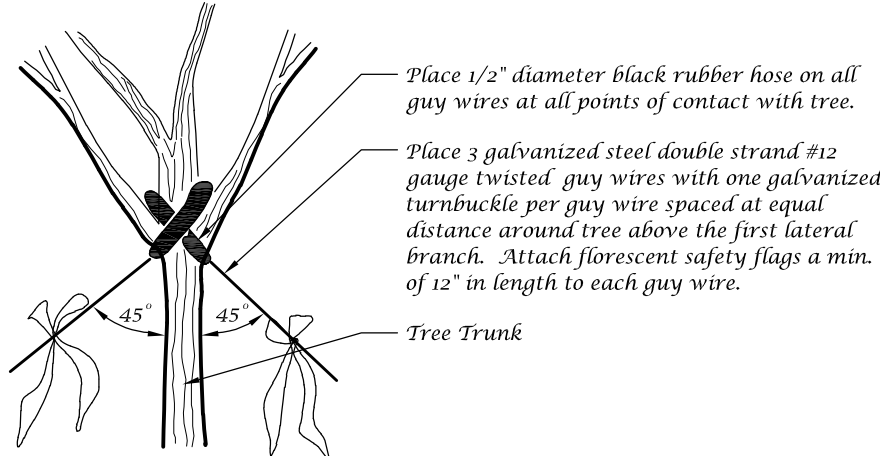
Large Tree Planting Detail (5" Caliper or Greater)

Not to Scale



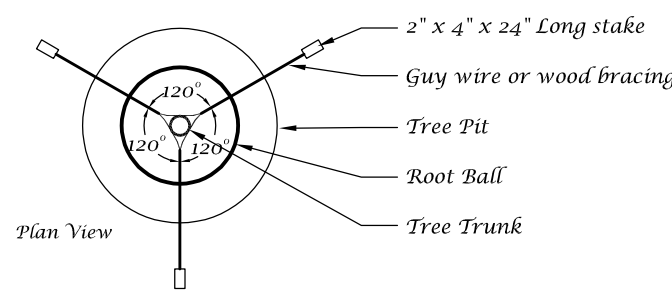
Tree Planting Detail

Not to Scale



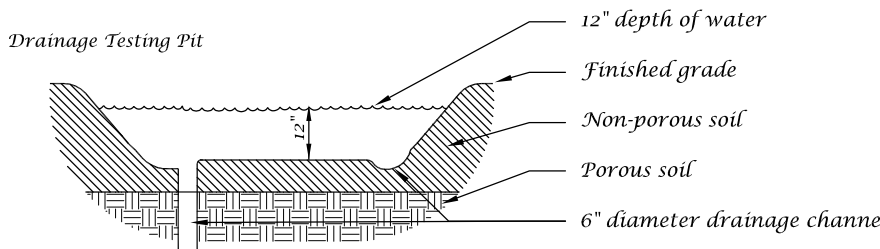
Guy Wire Attachment Detail

Not to Scale

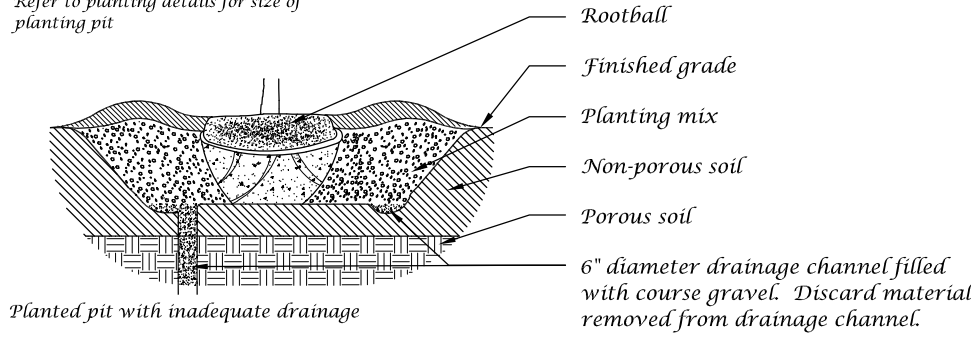


Staking Detail

Not to Scale



Notes:
Refer to planting details for size of planting pit



Planted pit with inadequate drainage

Drainage Testing Detail

Not to Scale

Conceptual Design Group, Inc.

Landscape Architecture - Site Planning

900 East Ocean Boulevard, Suite 130d
Stuart, Florida 34994
(772) 344-2340
LC: 26000198

Waterblasting

City of Stuart, Florida

City Project Number:

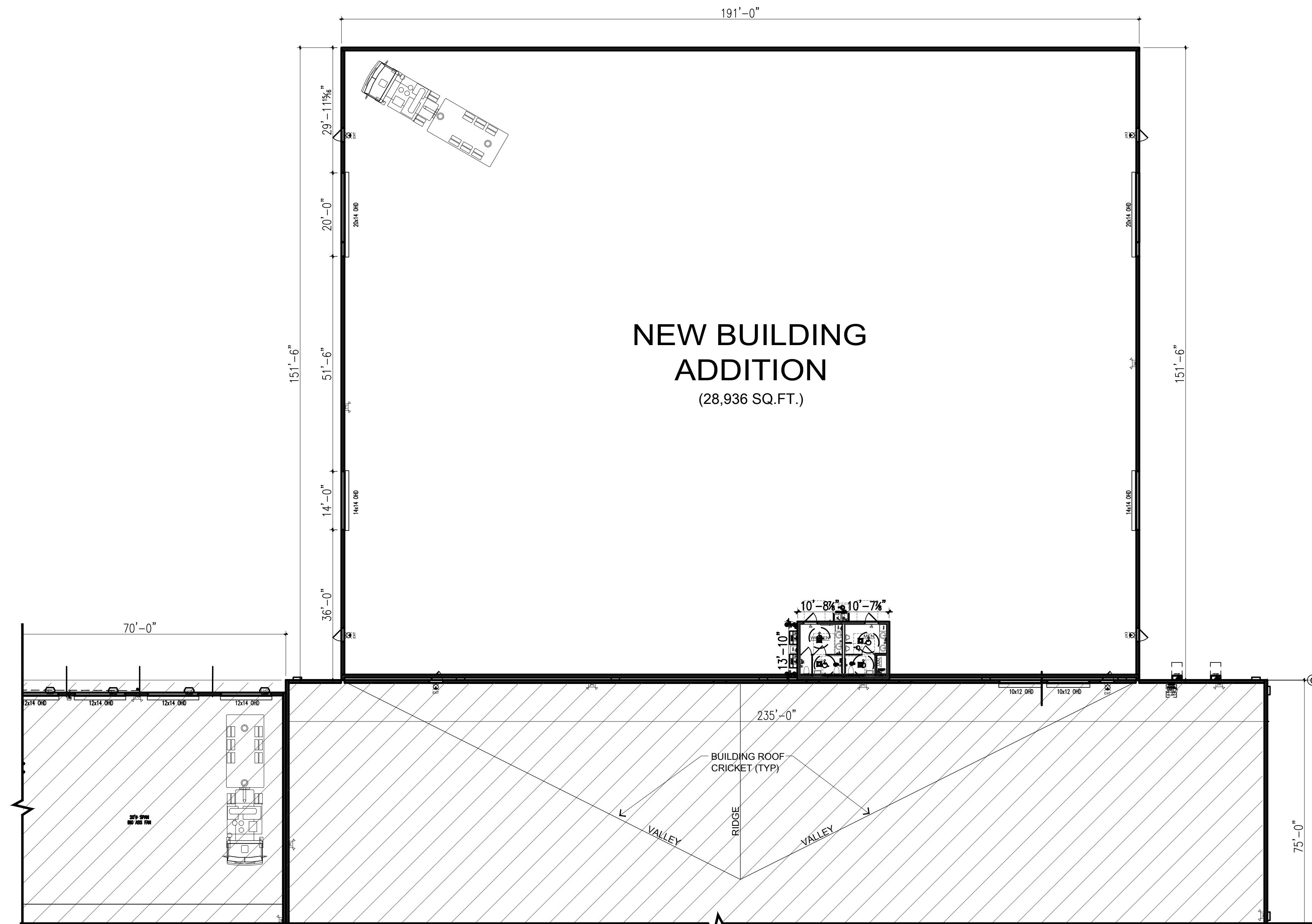
Jeffrey W. Smith, RLA
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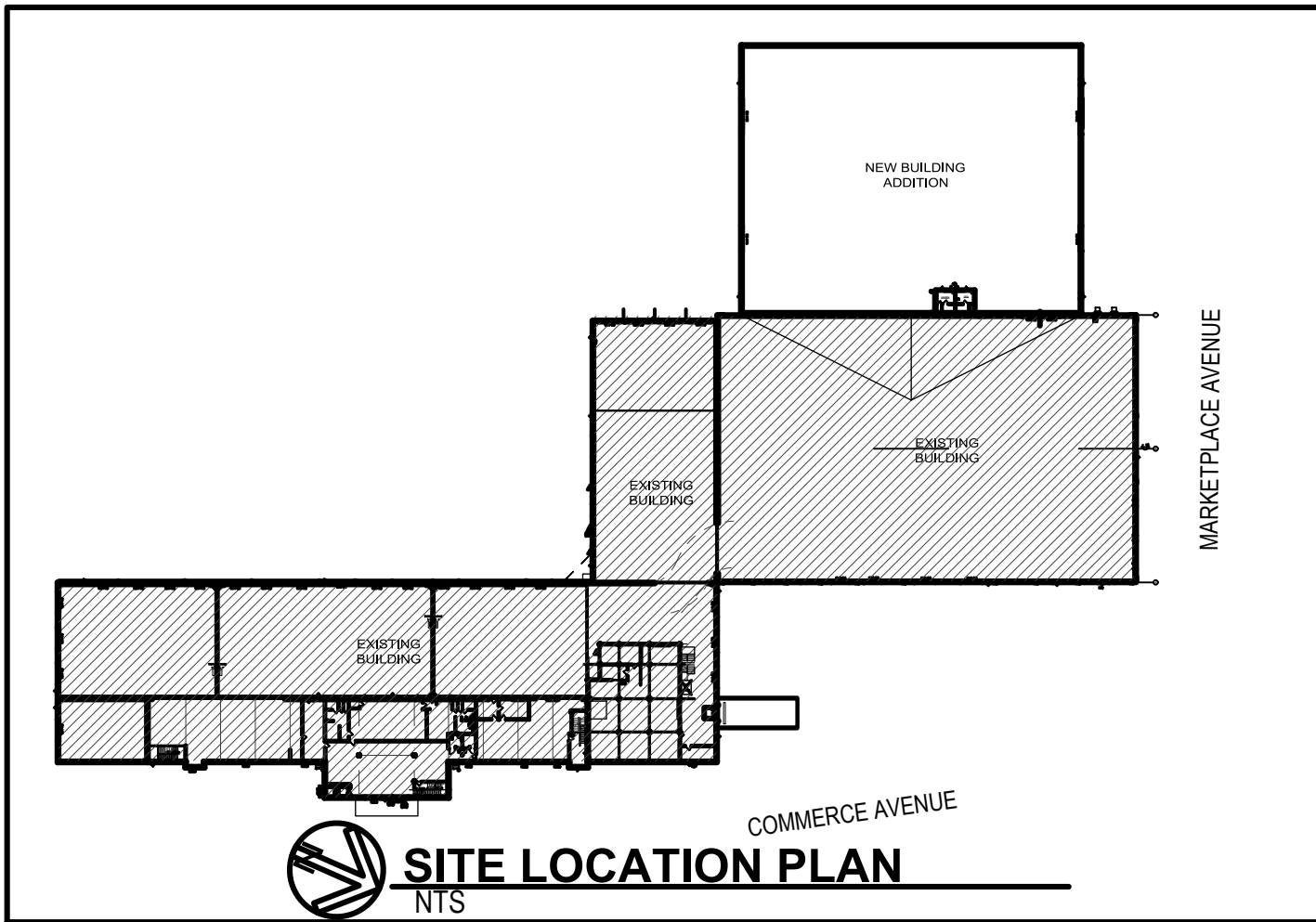
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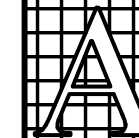
Landscape Plan



 **GROUND FLOOR BUILDING LAYOUT PLAN**
SCALE: 1/16" = 1'-0"

HOG TECHNOLOGIES, STUART, FLORIDA



**AHERN & ASSOCIATES,
ARCHITECTS, P.A.**
2674 S.E. Willoughby Blvd.
Stuart, Florida 34994
(772) 220 - 8907 AR-12958

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**DO NOT SCALE DRAWINGS
FIELD VERIFY ALL DIMENSIONS**

GENERAL NOTES:

1. CONTRACTOR SHALL VISIT THE JOB SITE AND VERIFY ALL CONDITIONS OF THE WORK PRIOR TO SUBMITTING A BID.
2. CONTRACTOR SHALL PROVIDE ALL REQUIRED INSURANCE FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF THE WORK. PROOF OF INSURANCE SHALL BE SUBMITTED TO THE OWNER PRIOR TO COMMENCEMENT OF WORK.
3. CONTRACTOR SHALL COORDINATE THE WORK OF ALL TRADES AT THE TIME THE WORK IS PERFORMED ON THE SITE. NO ADDITIONAL PAYMENTS SHALL BE MADE FOR THE CONTRACTOR'S FAILURE TO CORRECT CONFLICTING FIELD CONDITIONS.
4. CONTRACTOR SHALL GUARANTEE ALL WORK UNDER THIS CONTRACT TO BE FREE FROM DEFECTS IN MATERIALS OR WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE OR CERTIFICATE OF OCCUPANCY.
5. ALL WORK SHALL EQUAL OR EXCEED ALL APPLICABLE BUILDING CODES.
6. COMPARISON OF ALL ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS SHALL BE PERFORMED BY THE GENERAL CONTRACTOR AND ALL SUB-CONTRACTORS PRIOR TO THE BEGINNING OF CONSTRUCTION, AND ALL DIMENSIONS SHALL BE CHECKED BY THE SAME BEFORE STARTING THE WORK.
7. CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD. DO NOT SCALE DRAWINGS.
8. ANY DISCREPANCIES, ERRORS, OR OMISSIONS IN THE PLANS OR SPECIFICATIONS DISCOVERED BY THE GENERAL CONTRACTOR OR ANY SUB-CONTRACTORS SHALL BE REFERRED TO THE ARCHITECT FOR FURTHER CLARIFICATION BEFORE STARTING THE WORK IN QUESTION. IF THE GENERAL CONTRACTOR AND/OR SUB-CONTRACTORS FAIL TO GIVE WRITTEN NOTICE OF SUCH DISCREPANCIES, ERRORS, OR OMISSIONS AND OBTAIN CLARIFICATION FROM THE ARCHITECT, THE GENERAL CONTRACTOR SHALL BE HELD RESPONSIBLE FOR THE TOTAL COST (AT THE GENERAL CONTRACTOR'S EXPENSE) OF RECTIFYING THE DISCREPANCIES, ERRORS, OR OMISSIONS AND OTHER WORK DIRECTLY OR INDIRECTLY AFFECTED BY THE RECTIFICATION.
9. IN THE EVENT THAT CERTAIN FEATURES OF THE CONSTRUCTION ARE NOT FULLY SHOWN ON THE DRAWINGS NOR CALLED FOR IN THE SPECIFICATIONS, THEN THEIR CONSTRUCTION SHALL BE OF THE SAME CHARACTER AND QUALITY AS THOSE OF SIMILAR CONDITIONS THAT ARE SHOWN OR CALLED FOR. IN ALL INSTANCES, THE ARCHITECT SHALL BE CONSULTED FOR VERIFICATION OF ACCEPTABLE QUALITY AND CHARACTER PRIOR TO COMMENCEMENT OF WORK ON THE AFFECTED AREA.
10. THE ARCHITECT AND/OR ENGINEER SHALL NOT HAVE CHARGE, CONTROL, NOR BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, SEQUENCES, PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS.
11. IMPACT FEES, WATER CONNECTION FEES, AND DEPOSITS FOR PERMANENT UTILITY SERVICES SHALL BE PAID FOR BY THE OWNER. THE CONTRACTOR SHALL NOTIFY THE OWNER WHEN THESE FEES APPLY PRIOR TO THE START OF CONSTRUCTION OF THIS PROJECT.
12. CONTRACTOR'S "REQUEST FOR PAYMENT" SHALL INCLUDE RELEASES OF LIEN FOR ALL MATERIAL SUPPLIERS AND SUB-CONTRACTORS' WORK RELATING TO THE REQUEST FOR PAYMENT.
13. ALL "CHANGE ORDERS" SHALL BE SIGNED BY THE OWNER AND APPROVED BY THE ARCHITECT AND/OR ENGINEER.
14. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ALL PREFABRICATED ITEMS OF THE WORK, INCLUDING BUT NOT LIMITED TO THE FOLLOWING: TRUSSES, CABINETRY, AIR CONDITIONING, ETC. THE CONTRACTOR SHALL OBTAIN THE ARCHITECT'S WRITTEN APPROVAL OF SHOP DRAWINGS PRIOR TO FABRICATION. SAMPLES SHALL BE SUBMITTED UPON REQUEST.
15. ALL REQUIRED TESTS SHALL BE PERFORMED BY AN APPROVED TESTING LABORATORY AT THE CONTRACTOR'S EXPENSE. TEST RESULTS SHALL BE SUBMITTED TO THE ARCHITECT.
16. CONTRACTOR SHALL CLEAN ALL AREAS OF THE WORK ON A TIMELY BASIS AND AFTER CONSTRUCTION IS COMPLETED. ALL TRASH AND DEBRIS SHALL BE REMOVED FROM THE JOB SITE AT THE CONTRACTOR'S EXPENSE.

PROJECT TITLE
**HOG
TECHNOLOGIES**

NEW CONSTRUCTION
& RENOVATION
**SE COMMERCE AVENUE
STUART, FLORIDA 34996**

REV. DATE

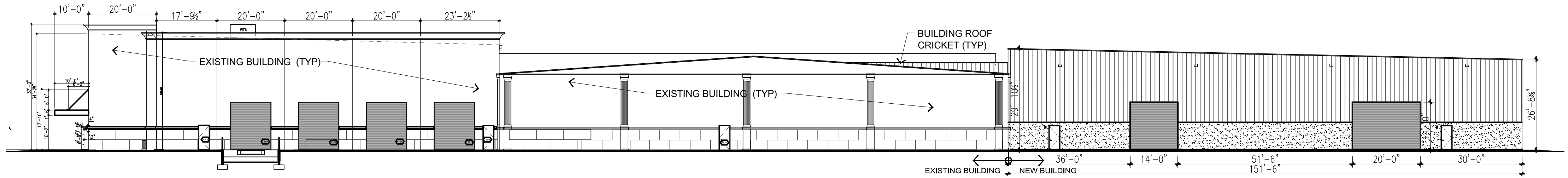
PROJECT 22-2329	ISSUED
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SD-1

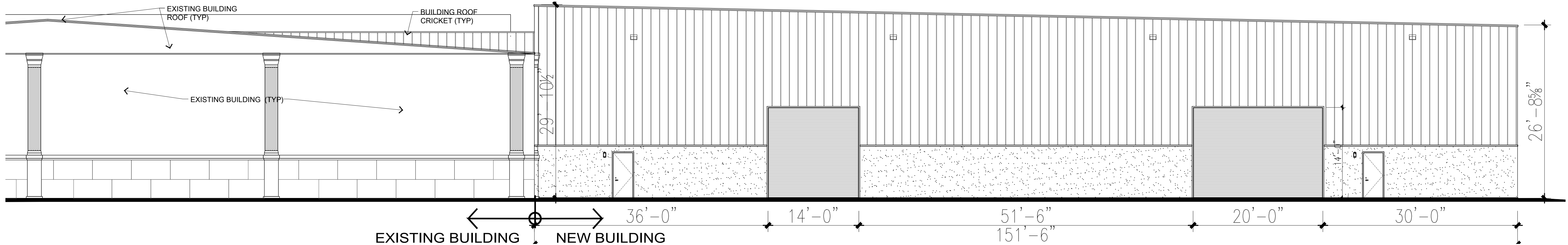
4-MAR-2022

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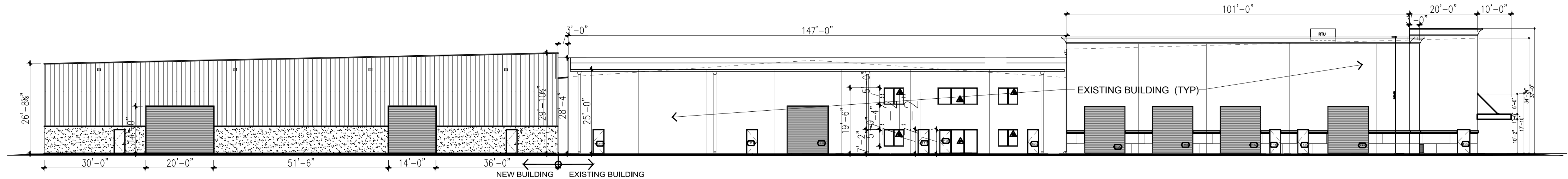
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FIELD VERIFY ALL DIMENSIONS



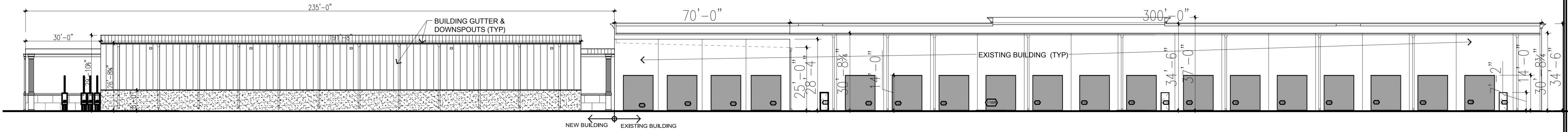
EXTERIOR ELEVATION - NORTH
SCALE: 1"=20'-0"



EXTERIOR ELEVATION - NORTH
SCALE: 1/8"=1'-0"



EXTERIOR ELEVATION - SOUTH
SCALE: 1"=20'-0"



EXTERIOR ELEVATION - WEST
SCALE: 1"=20'-0"

PROJECT TITLE
HOG
TECHNOLOGIES

NEW CONSTRUCTION
& RENOVATION
SE COMMERCE AVENUE
STUART, FLORIDA 34996

REV. DATE
PROJECT 22-2329
SHEET
SD-2

HOG TECHNOLOGIES,
STUART, FLORIDA 4-MAR-2022

Drainage Report

for

Waterblasting Technologies – Market Street City of Stuart, Florida

Prepared By:

Engineering Design & Construction, Inc.

10250 SW Village Parkway, Suite 201

Port St. Lucie, FL 34987

Board of Professional Engineers Certificate of Authorization Number 9935

March 2018

Date:

2018.03.0
9 16:35:38
-05'00'

David C. Baggett, P.E. #81375
10250 SW Village Parkway, Suite 201
Port St. Lucie, FL 34987
(772) 462-2455



Drainage Calculation Summary

Project Description

The Waterblasting Technologies – Market Street project is proposed to be constructed on the southwest corner of Market Place and Commerce Ave in Stuart, FL, specifically at 3920 SE Commerce Ave. The parcel ID numbers are 38-38-41-002-209-00001-8 and 38-38-41-002-208-00001-0. The site is located within Section 38, Township 38S, and Range 41 East. The project is located in an industrial park and permitted master drainage system known as the “Stuart Business Park”.

The site totals 11.85 acres with approximately 5.45 acres being proposed for new development. The project proposes expansion of the existing facility to include a new 49,126 SF (61,644 gross SF) building, additional parking, utilities, and a dry retention stormwater management system. The site will make a new driveway connection to SE Commerce Ave. The dry retention system will outfall directly into the wet detention lake.

Project Datum

The original plans and ERP 43-00014-S (app 120614-4) indicate the existing master system was permitted in reference to the National Geodetic Vertical Datum (NGVD) 1929. All provided exhibits from the permit file history documents are NGVD 1929 unless indicated otherwise.

All elevations included on the proposed project construction plans and calculations are in reference to the North American Vertical Datum (NAVD) 1988. The vertical datum conversion was confirmed to be approximately 1.50 feet in the project area. This is used to convert NGVD to NAVD, in other words NGVD elevation minus 1.50 feet = NAVD elevation. This datum conversion has been applied accordingly to any reported elevation from the original permit.

Existing Conditions and Master Drainage System

The total project site is 11.85 acres. The site area currently consists of an existing 35,250 SF fabrication facility with associated parking (1.87 acres total) that will remain. The rest of the property is undeveloped uplands consisting of mostly nuisance/exotic vegetation and one (1) isolated exotic wetland hardwood area. The wetland will be entirely impacted by the proposed project. A wet detention lake and a conveyance ditch are located within the project boundaries.

The project area currently drains south to a permitted and operational master drainage system known as the “Stuart Business Park”. The latest SFWMD master system permit is ERP 43-00014-S, application 120614-4. The master system is operated and maintained by the Stuart Business Park Owners Association, Inc. This project’s applicant (Crocker Group, LLC) currently owns the 1.87 acre developed parcel. They will own the entire 11.85 acre property area upon final sale (contract purchase) of parcel 38-38-41-002-208-00001-0. This includes the existing wet detention lake and conveyance ditch that functions as a part of the permitted

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master drainage system. There are existing drainage and pond easements placed over this portion of the master system for maintenance and operation by Stuart Business Park Owners Association, Inc. The easements shall remain as recorded. Changes to operation and maintenance of the master system are not proposed at this time.

In order to design the project drainage EDC reviewed the latest master system ERP 120614-4 and the permitted calculations/exhibits. The subject project is located within the boundaries of Node 14 (Basin N_14_Basin_1). A copy of the permitted basin map is provided in the appendices of this report for reference. The wet detention lake and conveyance ditch are considered a part of Node 14's contributing area and water quantity storage. Water quality treatment for new development is not provided in the master system. Node 14 is control by an existing downstream control structure that outfalls to the Florida Department of Transportation (FDOT) right-of-way system.

It is very important to note that the permitted calculations **did not** consider the currently developed portion of our project (FKA Fly Bob LLC) within the boundaries of Node 14. It was excluded from the master system under the assumption that 100% on-site retention has been provided. Upon further survey work and field investigation by EDC it has been confirmed that there is currently no on-site retention provided. Drainage from the developed property drains to a ditch at the south west corner of the site. Runoff is conveyed via the ditch into the Node 14 lake freely and untreated.

The remaining undeveloped portion of the site drains via sheet flow into the Node 14 lake.

Soils

Soils on-site are generally very loose to medium dense, light gray to gray and light brown to dark brown fine sand (Unified Soil Classification SP), fine sand with silt (SP-SM), and fine sand with clay (SP-SC) to the boring termination depth of 25 feet. As shown in the enclosed geotech report, the auger borings encountered similar soils to the depths of 5 and 10 feet below the existing ground surface. These soil profiles are outlined in general terms only. Please refer to the enclosed geotech report by Ardaman and Associates for further details.

Control Elevation

The control elevation was determined based on the historical permit information for the master surface water management system, recent survey data obtained by EDC, Inc., and the enclosed geotechnical investigation report.

Basin Control Elevation: 12.50 NAVD (14.00 NGVD)

Proposed Condition and Master Drainage System

The project proposes expansion of the existing facility to include a new 49,126 SF (61,644 gross SF) building, additional parking, utilities, and a dry retention stormwater management system.

In reviewing the existing environmental resource permit file for the master system, there are three significant design considerations that affect design of the proposed stormwater management system:

1. All water quality treatment shall be provided on-site prior to discharging into the master system. In our project's case – prior to discharging into the Node 14 lake.
2. The permitted calculations did not consider the currently developed portion of our project (FKA Fly Bob LLC) within the boundaries of Node 14. It was excluded from the master system under the assumption that 100% on-site retention has been provided. Upon further survey work and field investigation by EDC it has been confirmed that there is currently no on-site retention provided. In order to develop the surround acreage drainage must be provided for the existing site.
3. In the existing ICPR model of the master system, Node 14 accounted for contributing areas and storage over the existing wet detention lake, conveyance ditch, and developable acreage of the subject property. The upland development was not considered as a separate basin or node.

Based on the above information EDC has approached design of the Waterblasting Technology stormwater management system as one that must work in conjunction with the master system in order to adequately address all requirements of ERP permit.

The applicant proposes to construct a series of dry retention ponds on the Waterblasting site to account for the required treatment volume and the contributing area that should have been included in the master system model. EDC has modeled the entire master system to the outfall at Node 14 with the Waterblasting site discharging directly into it. The surrounding master system basins that discharge directly into Node 14 have been factored in using rating curves that match the permitted master system ICPR results. Conservatively, no storage in the upstream basins is considered. The dry retention ponds will retain sufficient runoff prior to discharging such that the overall system demonstrates the following:

1. Water quality treatment is provided prior to discharging into Node 14.
2. The allowable discharge rate from Node 14 (8.14 cfs) will remain consistent with the modeled results of ERP app 120614-4 at the project outfall. The discharge rate from the Waterblasting site is not limited as this acreage/storage was permitted as apart of Node 14, not a separate basin. However, the inflow discharge rates to Node have been evaluated and are consistent with the permit as well (44.96 cfs permit v.s. 45.25 cfs proposed).

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3. Design stages (on-site and in Node 14) satisfy the requirements of the master system EPR permit.

It is important to note that EDC obtained updated survey information for the lake and ditch system of Node 14. As such, this information has been incorporated into the Node 14 basin and stage storage relationship.

Design Criteria

The proposed stormwater management system has been designed to provide the required water quality treatment, attenuation, and flood protection per the SFWMD and City of Stuart in conjunction with the existing master system permit. The applicant has demonstrated the project remains consistent with the original permits and does not cause an adverse impact to the master system.

Water Quality Requirements

ERP 43-00014-S specifies that all future projects connecting to the Stuart Business Park master system shall provide water quality treatment equivalent to the greater of 1 inch or 2.5 inches times the percent imperviousness within the proposed project limits and ½ inch of dry pretreatment for all commercial projects prior to discharging to the Stuart Business Park stormwater master system. As such, a dry retention system is proposed to serve the 7.317 acres of upland development inclusive of the portion of the project that is currently developed. The system will provided water quality treatment in excess of that required by the ERP permit prior to discharging to the master system. The provided volume also exceeds 150% additional treatment as required for discharges to verified impaired waterbodies (OFW rule).

CRITERIA	Master System Permit 43-00014-S	Proposed System Requirement	Proposed System Provided
Water Quality Treatment Volume	Not Provided in Master System	0.74 acft (On-site Retention)	0.80 acft (On-site Retention)

Net Improvement

Due to the master system ultimately discharge to the St. Lucie basin the project is required to demonstrate no increase to the average annual nutrient load discharging off-site from the developed area. Please see the enclosed BMP Trains calculations. The proposed dry retention systems provided excess volume such that sufficient removal efficiency of nitrogen and phosphorus is provided. This is inclusive of the portion of the project that is currently developed.

Water Quantity and Grading Requirements

CRITERIA	Master System Permit 43-00014-S (App 120614-4)	Node 14 Model Results (Proposed Condition)	Waterblasting (WB) Site Model Results (Proposed Condition)	System/Project Provided (Proposed Condition)
Minimum Road 5-year, 24-hour event	14.73 NAVD 16.23 NGVD	14.83 NAVD 16.33 NGVD	15.44 NAVD 16.94 NGVD	15.50 NAVD 17.00 NGVD (WB Minimum Parking)
Allowable Discharge 25-year, 72-hour event	8.14 cfs at Node 14 Outfall	7.96 cfs at Node 14 Outfall	20.51 cfs at On-site Retention Outfall into Node 14 Lake	7.96 cfs at Node 14 Outfall
25-year, 72-hour event Stage Elevation	15.79 NAVD 17.29 NGVD	15.72 NAVD 17.22 NGVD	15.76 NAVD 17.26 NGVD	15.80 NAVD 17.30 NGVD (WB Perimeter Berm)
*Minimum FFE 100-year, 72-hour event	17.00 NAVD 18.50 NGVD	16.64 NAVD 18.14 NGVD	16.64 NAVD 18.14 NGVD	**16.96 NAVD 18.46 NGVD (Existing Bldg FFE)

*The original ICPR calculations permitted under ERP app 120614-4 for the 100-yr, 72-hr storm event factored in connected basin storage in Node 17. This resulted in a lower stage (17.27 NGVD) for this storm event under that model. Conservatively, the proposed model accepts all runoff as a rating curve and only storage in Node 14 with no discharge. Thus, higher staging is observed in the EDC model. The model stage is still below the minimum finished floor elevation of 17.00 NAVD (18.50 NGVD).

**The existing building finished floor has been surveyed at 16.96 NAVD (18.46 NGVD). The proposed building is required to be joined at the same finished floor elevation for functionality of the proposed operation. It is acknowledged by the applicant and SFWMD that the existing elevation is 0.04 feet lower than the required finished floor elevation of ERP 43-00014-S. However, it is demonstrated that the master system provides sufficient storage that the existing finished floor elevation remains above the 100-year, 72-hour storm event.

Conclusion

The proposed development satisfies the water quality and water quantity requirements of the original ERP permit 43-00014-S. Sufficient retention is provided on-site such that the additional stormwater runoff is not anticipated to cause adverse impacts to the Stuart Business Park master system. As such, the proposed project is consistent with the design criteria of both SFWMD and City of Stuart.

Appendix A – Drainage Calculations

Pre-Development Stormwater Calculations

Project: **Waterblasting - Market Street**
Project #: **17-274**

Engineer: **SGF**
Date: **3/7/2018**
Revised:

Land Use Table

Use	Imp. (ac)	Pervious (ac)	Total (ac)
Buildings =	0.809	0.000	0.809
Other Roof Area =	0.000	0.000	0.000
Impervious - Concrete, Asphalt =	0.572	0.000	0.572
Lake =	0.000	0.000	0.000
Wetlands =	0.835	0.000	0.835
Open Space / Pervious =	0.000	5.101	5.101
Upland/Wetland/Preserve =	0.000	0.000	0.000
TOTAL =	2.215	5.101	7.317

Stage-Area Table

:see stage-storage chart for information.

Find Curve Number:

Avg. Pervious Ground El. = **16.25**
Control Elevation = **12.50**
Distance to Water Table = **3.75**

Soil Storage Table

Depth to W.T. (ft)	Coastal Storage (in)	Flatwoods Storage (in)	Depression Storage (in)
1.0	0.6	0.6	0.6
1.5	1.6	1.6	1.4
2.0	2.5	2.5	2.1
2.5	4.6	4.0	3.3
3.0	6.6	5.4	4.4
3.25	7.7	6.3	5.0
3.5	8.8	7.2	5.6
4.0	10.9	9.0	6.8

Find the basin's soil classification and input below as "Soil Storage" using the above "Depth to W.T.".

Developed Compacted Pervious Area = **0.00** * BMP area excluded
Undeveloped Pervious Area = **5.10**
Soil Storage = **5.51**
Soil Moisture Storage (S) = 3.84 inches
Curve Number = **72** inches

Time of Concentration

The following formulas are per the SCS "Urban Hydrology for Small Watersheds" Technical Publication-55.

Sheet flow occurs over plane surfaces.

$$T_{sf} = \frac{.007 * (n * L)^{.8}}{(P_2)^{.5} * (s)^{.4}}$$

T_{sf} = Time of Sheet Flow (hour)
 n = Mannings Roughness Coefficient
 P_2 = 2-year 24-hour Rainfall (inches)
 s = Slope of Hydraulic Grade (feet/feet)
 L = Flow Length (feet)

After 300-feet sheet flow usually becomes shallow concentrated flow.

$$\begin{array}{l} \text{(Unpaved)} \quad V = 16.1345 * (s)^{.5} \\ \text{(Paved)} \quad V = 20.3282 * (s)^{.5} \end{array}$$

T_{cf} = Time of Concentrated Flow (hour)
 s = Slope of Hydraulic Grade (feet/feet)
 V = Average Velocity (feet/second)

Use the velocity to solve for travel time.

$$T_t = \frac{L}{3600 * V}$$

T_t = Travel Time (hour)
 L = Flow Length (feet)
 V = Average Velocity (feet/second)

When determining flows in open channels use Manning's equation.

$$V = \frac{1.49 * r^{.67} * s^{.5}}{n}$$

r = Hydraulic Radius (feet) equal to a/p_w
 s = Slope of Hydraulic Grade (feet/feet)
 V = Average Velocity (feet/second)
 n = Mannings Roughness Coefficient
 a = cross sectional area (sq.ft.)
 p_w = wetted perimeter (feet)

* Use the velocity to solve for travel time with the formula above.

This following calculations for the project have a segmented travel flow line.

T_1 = On site (sheet flow).

Parameters for T_{1A} :
 $n = 0.012$ coefficient
 $P_2 = 5.00$ inches
 $s = 0.001$ foot/foot
 $L = 0$ feet

$T_{1A} = 0.0000$ hour = 0.00 minutes
 $T_t = 0.0000$ hour = 0.0

Parameters for T_{1b} :
 $n = 0.011$ coefficient
 $P_2 = 5.00$ inches
 $s = 0.020$ foot/foot
 $L = 0$ feet

$T_{1B} = 0.0000$ hour = 0.00 minutes
 $T_t = 0.0000$ hour = 0.0

Parameter for T_2 :
 $V = 0.51021769$

$V = 0.16$
 $s = 0.005$ foot/foot
 $L = 0$ feet

$T_1 = 0.0000$ hour = 0.00 minutes
 $T_t = 0.0000$ hour = 0.0

TC= total T1A+T1B+T2 used 10 minutes
0.0

Post-Development Stormwater Calculations

Project: **Waterblasting - Market Street**
 Project #: **17-274**

Engineer: **JDF**
 Date: **3/7/2018**
 Revised:

Land Use Table

Use	Imp. (ac)	Pervious (ac)	Total (ac)
Buildings =	1.937	0.000	1.937
Other Roof Area =	0.000	0.000	0.000
Impervious - Concrete, Asphalt =	3.486	0.000	3.486
Lake =	0.000	0.000	0.000
Dry Detention Area =	0.000	0.767	0.767
Open Space / Pervious =	0.000	1.127	1.127
Upland/Wetland/Preserve =	0.000	0.000	0.000
TOTAL =	5.423	1.894	7.317

Stage-Area Table

:see stage-storage chart for information.

Find Curve Number:

Avg. Pervious Ground El. = **16.25**
 Control Elevation = **12.50**
 Distance to Water Table = **3.75**

Soil Storage Table

Depth to W.T. (ft)	Coastal Storage (in)	Flatwoods Storage (in)	Depression Storage (in)
1.0	0.6	0.6	0.6
1.5	1.6	1.6	1.4
2.0	2.5	2.5	2.1
2.5	4.6	4.0	3.3
3.0	6.6	5.4	4.4
3.25	7.7	6.3	5.0
3.5	8.8	7.2	5.6
4.0	10.9	9.0	6.8

Find the basin's soil classification and input below as "Soil Storage" using the above "Depth to W.T.".

Developed Compacted Pervious Area = **1.127** * BMP area excluded
 Undeveloped Pervious Area = **0.000**
 Soil Storage = **8.10**
 Soil Moisture Storage (S) = 0.94 inches
 Curve Number = **91** inches

Time of Concentration

The following formulas are per the SCS "Urban Hydrology for Small Watersheds" Technical Publication-55.

Sheet flow occurs over plane surfaces.

$$T_{sf} = \frac{.007 * (n * L)^{.8}}{(P_2)^{.5} * (s)^{.4}}$$

T_{sf} = Time of Sheet Flow (hour)
 n = Mannings Roughness Coefficient
 P_2 = 2-year 24-hour Rainfall (inches)
 s = Slope of Hydraulic Grade (feet/feet)
 L = Flow Length (feet)

After 300-feet sheet flow usually becomes shallow concentrated flow.

$$\begin{aligned} \text{(Unpaved)} \quad V &= 16.1345 * (s)^{.5} \\ \text{(Paved)} \quad V &= 20.3282 * (s)^{.5} \end{aligned}$$

T_{cf} = Time of Concentrated Flow (hour)
 s = Slope of Hydraulic Grade (feet/feet)
 V = Average Velocity (feet/second)

Use the velocity to solve for travel time.

$$T_t = \frac{L}{3600 * V}$$

T_t = Travel Time (hour)
 L = Flow Length (feet)
 V = Average Velocity (feet/second)

When determining flows in open channels use Manning's equation.

$$V = \frac{1.49 * r^{.67} * s^{.5}}{n}$$

r = Hydraulic Radius (feet) equal to a/p_w
 s = Slope of Hydraulic Grade (feet/feet)
 V = Average Velocity (feet/second)
 n = Mannings Roughness Coefficient
 a = cross sectional area (sq.ft.)
 p_w = wetted perimeter (feet)

* Use the velocity to solve for travel time with the formula above.

This following calculations for the project have a segmented travel flow line.

T_1 = On site (sheet flow).

Parameters for T_{1A} :

$n =$	0.012	coefficient
$P_2 =$	5.00	inches
$s =$	0.001	foot/foot
$L =$	0	feet

$T_{1A} =$	0.0000	hour	=	0.00	minutes
$T_t =$	0.0000	hour	=	0.0	

Parameters for T_{1b} :

$n =$	0.011	coefficient
$P_2 =$	5.00	inches
$s =$	0.020	foot/foot
$L =$	0	feet

$T_{1B} =$	0.0000	hour	=	0.00	minutes
$T_t =$	0.0000	hour	=	0.0	

Parameter for T_2 :

$V =$ 0.5102177

$V =$	0.16	
$s =$	0.005	foot/foot
$L =$	0	feet

$T_1 =$	0.0000	hour	=	0.00	minutes
$T_t =$	0.0000	hour	=	0.0	

TC= total $T_{1A} + T_{1B} + T_2$ 0.0 used 10 minutes

Post-Development Water Quality Calculations

Project: Waterblasting - Market Street
Project #: 17-274

Engineer: JDF
Date: 3/7/2018

1-inch Over the Project Area - per SFWMD, City of Stuart

$$\begin{array}{rclcl}
 \text{(Treated Volume)} & 1\text{-inch} & * & 1\text{-ft/12-in} & * & \frac{7.317}{\text{PROJECT AREA}} & = & \boxed{0.610} & \text{ac-ft} \\
 & & & & & & & \text{TREATED VOLUME} &
 \end{array}$$

2.5-inches Times the Percent Impervious - per SFWMD, City of Stuart

$$\begin{array}{rclcl}
 \text{(Site Area)} & \frac{7.317}{\text{PROJECT AREA (AC)}} & - & \left(\frac{0.000}{\text{LAKES (AC)}} + \frac{1.937}{\text{ROOFS (AC)}} \right) & = & \frac{5.380}{\text{SITE AREA}} & \text{ac} \\
 \\
 \text{(Impervious Area)} & \frac{5.380}{\text{SITE AREA (AC)}} & - & \frac{1.894}{\text{PERVIOUS AREA (AC)}} & = & \frac{3.486}{\text{IMPERVIOUS AREA}} & \text{ac} \\
 \\
 \text{(\% Impervious)} & \frac{\text{IMPERVIOUS AREA} * 100\%}{\text{SITE AREA (AC)}} & = & & & 64.79\% & \\
 \\
 \text{(2.5-in * \% Imp.)} & 2.5\text{-inches} & * & \frac{64.79\%}{\text{PERCENT IMPERVIOUS}} & = & \frac{1.620}{\text{INCHES TO BE TREATED}} & \\
 & \# & & & & & \\
 \text{(Treated Volume)} & \frac{1.620}{\text{TREATED (IN)}} & * & 1\text{-ft/12-in} & * & \frac{7.32}{\text{PROJECT AREA - LAKES (AC)}} & = & \boxed{0.988} & \\
 & & & & & & & \text{TREATED VOLUME} &
 \end{array}$$

	SFWMD - STND	SFWMD - 150%
Required Wet Detention =	0.988	1.482
Required Dry Detention =	0.741	1.111
Required Retention =	0.494	0.741

* An additional 0.5-inch of dry pretreatment required for industrial or commercial projects.

Post Development-Stage Storage Calculations for Waterblasting - Market Street

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)											
					13.50	14.00	14.50	15.00	15.50	16.00	16.50	17.00	17.50	18.00	18.50	19.00
Dry Detention	Vertical	0.431	13.50		0.00	0.22	0.43	0.65	0.86	1.08	1.29	1.51	1.72	1.94	2.15	2.37
Dry Detention Slopes	Linear	0.336	13.50	15.50	0.00	0.02	0.08	0.19	0.34	0.50	0.67	0.84	1.01	1.18	1.34	1.51
WATER QUALITY					0.00	0.24	0.51	0.84	1.20	1.58	1.96	2.35	2.73	3.11	3.50	3.88
Impervious	Linear	3.486	15.50	17.00	0.00	0.00	0.00	0.00	0.00	0.29	1.16	2.61	4.36	6.10	7.84	9.59
Pervious	Linear	1.127	15.50	17.00	0.00	0.00	0.00	0.00	0.00	0.09	0.38	0.85	1.41	1.97	2.54	3.10
	Sub-Total:	5.380		Totals:	0.00	0.24	0.51	0.84	1.20	1.97	3.50	5.81	8.50	11.19	13.88	16.57
Buildings / Roofs		1.937	*Not included in Stage-storage calculations													
	Total:	7.317														

ICPR Volume to Area Conversion			Set Water Quality Elevation		
$A_2 = 2((V_2 - V_1) / (S_2 - S_1)) - A_1$			Total Water Quality Volume Required:		<---
Stage	Volume	Area	Retention Volume Required:		<---
13.50	0.00	0.431	Weir Stage for Required Nutrient Load Retention:		
14.00	0.24	0.515	Water Quality Volume Remaining:		<--
14.50	0.51	0.599	Required Water Quality Retention Stage:		= Total WQTV - Nutrient Load Retention Volume
15.00	0.84	0.683	Water Quality Weir Provided:		
15.50	1.20	0.767	Total Water Quality Retention Volume Provided:		<---
16.00	1.97	2.304			<---
16.50	3.50	3.842			Sufficient Water Quality Volume Provided
17.00	5.81	5.380			
17.50	8.50	0.000			
18.00	11.19	0.000			
18.50	13.88	0.000			
19.00	16.57	0.000			

Post-Development Stormwater Calculations

Project: **Waterblasting - Market Street**
 Project #: **17-274**

Engineer: **JDF**
 Date: **3/7/2018**
 Revised:

Land Use Table

Use	Imp. (ac)	Pervious (ac)	Total (ac)
Buildings =	0.000	0.000	0.000
Other Roof Area =	0.000	0.000	0.000
Impervious - Concrete, Asphalt =	0.000	0.000	0.000
Lake =	3.425	1.108	4.533
Open Space / Pervious =	0.000	0.000	0.000
Upland/Wetland/Preserve =	0.000	0.000	0.000
TOTAL =	3.425	1.108	4.533

Stage-Area Table

:see stage-storage chart for information.

Find Curve Number:

Avg. Pervious Ground El. = **14.75**
 Control Elevation = **12.50**
 Distance to Water Table = **2.25**

Soil Storage Table

Depth to W.T. (ft)	Coastal Storage (in)	Flatwoods Storage (in)	Depression Storage (in)
1.0	0.6	0.6	0.6
1.5	1.6	1.6	1.4
2.0	2.5	2.5	2.1
2.5	4.6	4.0	3.3
3.0	6.6	5.4	4.4
3.25	7.7	6.3	5.0
3.5	8.8	7.2	5.6
4.0	10.9	9.0	6.8

Find the basin's soil classification and input below as "Soil Storage" using the above "Depth to W.T.".

Developed Compacted Pervious Area = **1.108** * BMP area excluded
 Undeveloped Pervious Area = **0.000**
 Soil Storage = **3.25**
 Soil Moisture Storage (S) = 0.60 inches
 Curve Number = **94** inches

Time of Concentration

The following formulas are per the SCS "Urban Hydrology for Small Watersheds" Technical Publication-55.

Sheet flow occurs over plane surfaces.

$$T_{sf} = \frac{.007 * (n * L)^8}{(P_2)^5 * (s)^4}$$

T_{sf} = Time of Sheet Flow (hour)

n = Mannings Roughness Coefficient

P_2 = 2-year 24-hour Rainfall (inches)

s = Slope of Hydraulic Grade (feet/feet)

L = Flow Length (feet)

After 300-feet sheet flow usually becomes shallow concentrated flow.

$$\begin{aligned} \text{(Unpaved)} \quad V &= 16.1345 * (s)^{.5} \\ \text{(Paved)} \quad V &= 20.3282 * (s)^{.5} \end{aligned}$$

T_{cf} = Time of Concentrated Flow (hour)

s = Slope of Hydraulic Grade (feet/feet)

V = Average Velocity (feet/second)

Use the velocity to solve for travel time.

$$T_t = \frac{L}{3600 * V}$$

T_t = Travel Time (hour)

L = Flow Length (feet)

V = Average Velocity (feet/second)

When determining flows in open channels use Manning's equation.

$$V = \frac{1.49 * r^{.67} * s^{.5}}{n}$$

r = Hydraulic Radius (feet) equal to a/p_w

s = Slope of Hydraulic Grade (feet/feet)

V = Average Velocity (feet/second)

n = Mannings Roughness Coefficient

a = cross sectional area (sq.ft.)

p_w = wetted perimeter (feet)

* Use the velocity to solve for travel time with the formula above.

This following calculations for the project have a segmented travel flow line.

T_1 = On site (sheet flow).

Parameters for T_{1A} :

n = 0.012 coefficient
 P_2 = 5.00 inches
 s = 0.001 foot/foot
 L = 0 feet

$$\begin{aligned} T_{1A} &= 0.0000 \text{ hour} = 0.00 \text{ minutes} \\ T_t &= 0.0000 \text{ hour} = 0.0 \end{aligned}$$

Parameters for T_{1b} :

n = 0.011 coefficient
 P_2 = 5.00 inches
 s = 0.020 foot/foot
 L = 0 feet

$$\begin{aligned} T_{1B} &= 0.0000 \text{ hour} = 0.00 \text{ minutes} \\ T_t &= 0.0000 \text{ hour} = 0.0 \end{aligned}$$

Parameter for T_2 :

$$V = 0.51021769$$

V = 0.16
 s = 0.005 foot/foot
 L = 0 feet

$$\begin{aligned} T_1 &= 0.0000 \text{ hour} = 0.00 \text{ minutes} \\ T_t &= 0.0000 \text{ hour} = 0.0 \end{aligned}$$

$$TC = \text{total} \quad T1A + T1B + T2 \quad 0.0 \text{ used 10 minutes}$$

Post Development-Stage Storage Calculations for SBP Lake & Drainage Easement

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)											
					12.50	13.00	13.50	14.00	14.50	15.00	15.50	16.00	16.50	17.00	17.50	18.00
Wet Pond @ C.E.	Vertical	3.425	12.50	16.00	0.00	1.71	3.42	5.14	6.85	8.56	10.27	11.99	13.70	15.41	17.12	18.84
Wet Pond Slopes	Linear	1.108	12.50		0.00	0.04	0.16	0.36	0.63	0.99	1.42	1.94	2.49	3.05	3.60	4.16
WATER QUALITY					0.00	1.75	3.58	5.49	7.48	9.55	11.70	13.93	16.19	18.46	20.73	22.99
Impervious	Linear	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pervious	Linear	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Sub-Total:	4.533	Totals:		0.00	1.75	3.58	5.49	7.48	9.55	11.70	13.93	16.19	18.46	20.73	22.99
Buildings / Roofs		0.000	*Not included in Stage-storage calculations													
	Total:	4.533														

ICPR Volume to Area Conversion		
$A_2 = 2((V_2 - V_1) / (S_2 - S_1)) - A_1$		
Stage	Volume	Area
12.50	0.00	3.425
13.00	1.75	3.583
13.50	3.58	3.741
14.00	5.49	3.900
14.50	7.48	4.058
15.00	9.55	4.216
15.50	11.70	4.375
16.00	13.93	4.533
16.50	16.19	0.000
17.00	18.46	0.000
17.50	20.73	0.000
18.00	22.99	0.000

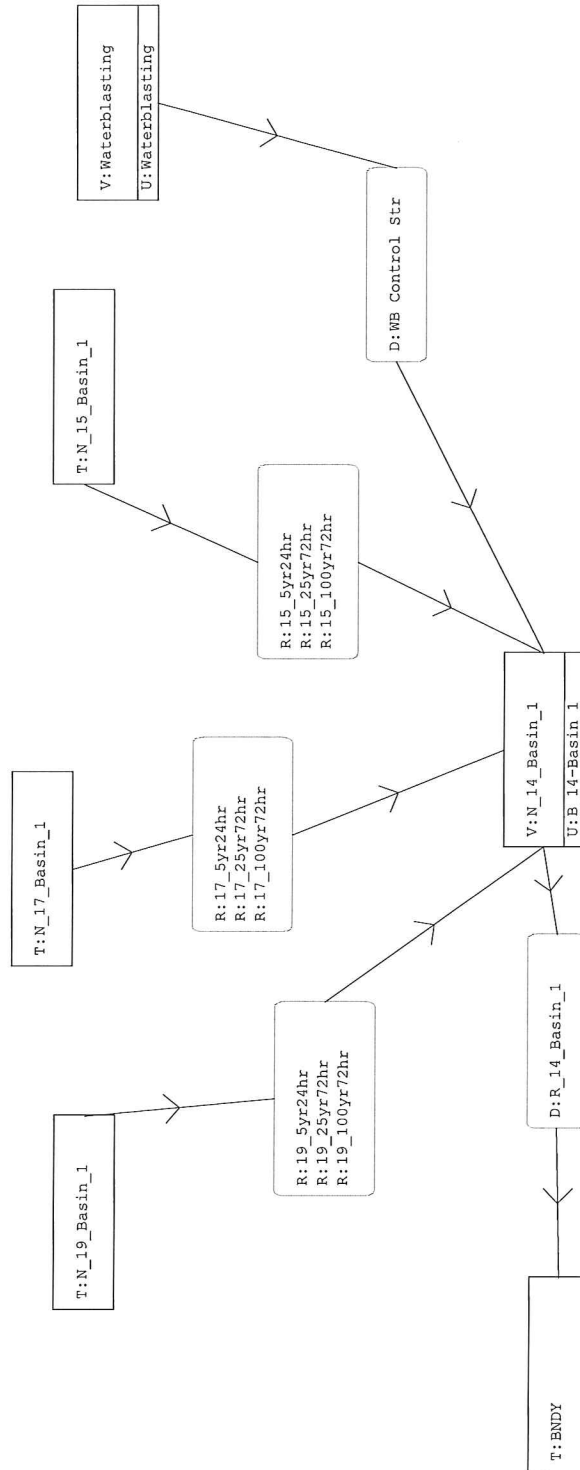
Appendix B – ICPR Model

17-274 Waterblasting Technologies
ICPR Model - Nodal Diagram

Nodes
A Stage/Area
V Stage/Volume
T Time/Stage
M Manhole

Basins
O Overland Flow
U SCS Unit CN
S SBUH CN
Y SCS Unit GA
Z SBUH GA

Links
P Pipe
W Weir
C Channel
D Drop Structure
B Bridge
R Rating Curve
H Breach
E Percolation
F Filter
X Exfil Trench



=====

Basins

```

Name: B_14-Basin_1      Node: N_14_Basin_1      Status: Onsite
Group: BASE             Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256      Peaking Factor: 256.0
Rainfall File:             Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000  Time of Conc(min): 10.00
                          Area(ac): 4.533      Time Shift(hrs): 0.00
                          Curve Number: 94.00   Max Allowable Q(cfs): 999999.000
                          DCIA(%): 0.00

```

```

Name: Waterblasting      Node: Waterblasting      Status: Onsite
Group: BASE              Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256      Peaking Factor: 256.0
Rainfall File:             Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000  Time of Conc(min): 10.00
                          Area(ac): 7.317      Time Shift(hrs): 0.00
                          Curve Number: 91.00   Max Allowable Q(cfs): 999999.000
                          DCIA(%): 0.00

```

=====

Nodes

```

Name: BNDY              Base Flow(cfs): 0.000      Init Stage(ft): 12.500
Group: BASE              Warn Stage(ft): 18.500
Type: Time/Stage

```

Time (hrs)	Stage (ft)
0.00	12.500
60.00	12.500
360.00	12.500

```

Name: N_14_Basin_1      Base Flow(cfs): 0.000      Init Stage(ft): 12.500
Group: BASE              Warn Stage(ft): 17.000
Type: Stage/Volume

```

Stage (ft)	Volume (af)
12.380	0.0000
13.000	1.7500
13.500	3.5800
14.000	5.4900
14.500	7.4800
15.000	9.5500
15.500	11.7000
16.000	13.9300
16.500	16.1900
17.000	18.4600
17.500	20.7300
18.000	22.9900

```

Name: N_15_Basin_1      Base Flow(cfs): 0.000      Init Stage(ft): 12.500
Group: BASE              Warn Stage(ft): 18.500
Type: Time/Stage

```


Time (hrs)	Stage (ft)
0.00	12.500
60.00	12.500
360.00	12.500

Name: N_17_Basin_1	Base Flow(cfs): 0.000	Init Stage(ft): 13.500
Group: BASE		Warn Stage(ft): 18.500
Type: Time/Stage		

Time (hrs)	Stage (ft)
0.00	13.500
60.00	13.500
360.00	13.500

Name: N_19_Basin_1	Base Flow(cfs): 0.000	Init Stage(ft): 12.500
Group: BASE		Warn Stage(ft): 18.500
Type: Time/Stage		

Time (hrs)	Stage (ft)
0.00	12.500
60.00	12.500
360.00	12.500

Name: Waterblasting	Base Flow(cfs): 0.000	Init Stage(ft): 12.500
Group: BASE		Warn Stage(ft): 16.970
Type: Stage/Volume		

Stage (ft)	Volume (af)
12.500	0.0000
13.500	0.0001
14.000	0.2400
14.500	0.5100
15.000	0.8400
15.500	1.2000
16.000	1.9700
16.500	3.5000
17.000	5.8100
17.500	8.5000
18.000	11.1900
18.500	13.8800
19.000	16.5700

==== Operating Tables =====

Name: 15_100yr72hr	Group: 100yr72hr
Type: Rating Curve	
Function: Time vs. Discharge	

Time (hrs)	Discharge (cfs)
0.00	0.00
30.00	0.00
60.00	0.00
73.56	0.00

Name: 15_25yr72hr Group: 25yr72hr
Type: Rating Curve
Function: Time vs. Discharge

Time(hrs)	Discharge(cfs)
0.00	0.00
30.00	0.14
64.00	0.43
90.00	0.00

Name: 15_5yr24hr Group: 5yr24hr
Type: Rating Curve
Function: Time vs. Discharge

Time(hrs)	Discharge(cfs)
0.00	0.00
6.00	0.00
12.00	0.00
30.00	0.00

Name: 17_100yr72hr Group: 100yr72hr
Type: Rating Curve
Function: Time vs. Discharge

Time(hrs)	Discharge(cfs)
0.00	0.00
30.00	1.04
60.03	3.13
73.56	0.00

Name: 17_25yr72hr Group: 25yr72hr
Type: Rating Curve
Function: Time vs. Discharge

Time(hrs)	Discharge(cfs)
0.00	0.00
30.00	0.67
82.48	2.00
90.00	0.00

Name: 17_5yr24hr Group: 5yr24hr
Type: Rating Curve
Function: Time vs. Discharge

Time(hrs)	Discharge(cfs)
0.00	0.00
6.00	1.58
12.37	4.73
30.00	0.00

Name: 19_100yr72hr Group: 100yr72hr
Type: Rating Curve
Function: Time vs. Discharge

Time(hrs)	Discharge(cfs)
0.00	0.00
30.00	0.00
60.00	0.00
73.56	0.00

Name: 19_25yr72hr Group: 25yr72hr
Type: Rating Curve
Function: Time vs. Discharge

Time(hrs)	Discharge(cfs)
0.00	0.00
30.00	0.78
62.03	2.32
90.00	0.00

Name: 19_5yr24hr Group: 5yr24hr
Type: Rating Curve
Function: Time vs. Discharge

Time(hrs)	Discharge(cfs)
0.00	0.00
6.00	0.19
15.56	0.57
30.00	0.00

==== Drop Structures =====

Name: R_14_Basin_1 From Node: N_14_Basin_1 Length(ft): 1000.00
Group: Outfall To Node: BNDY Count: 1

UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance
Geometry: Circular	Circular	Solution Algorithm: Automatic
Span(in): 24.00	24.00	Flow: Both
Rise(in): 24.00	24.00	Entrance Loss Coef: 0.000
Invert(ft): 12.500	12.500	Exit Loss Coef: 0.000
Manning's N: 0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dn
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

*** Weir 1 of 3 for Drop Structure R_14_Basin_1 ***

Count: 1	Bottom Clip(in): 0.000
Type: Vertical: Mavis	Top Clip(in): 0.000
Flow: Both	Weir Disc Coef: 3.200
Geometry: Circular	Orifice Disc Coef: 0.600
Span(in): 4.00	Invert(ft): 12.380
Rise(in): 4.00	Control Elev(ft): 12.380

TABLE

*** Weir 2 of 3 for Drop Structure R_14_Basin_1 ***

Count: 1	Bottom Clip(in): 0.000
----------	------------------------

TABLE

Type: Vertical: Mavis
Flow: Both
Geometry: Rectangular
Span(in): 60.00
Rise(in): 9.84
Top Clip(in): 0.000
Weir Disc Coef: 3.200
Orifice Disc Coef: 0.600
Invert(ft): 14.550
Control Elev(ft): 14.550

*** Weir 3 of 3 for Drop Structure R_14_Basin_1 ***

TABLE

Count: 1
Type: Horizontal
Flow: Both
Geometry: Rectangular
Span(in): 303.00
Rise(in): 24.00
Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Disc Coef: 3.200
Orifice Disc Coef: 0.600
Invert(ft): 15.370
Control Elev(ft): 15.370

Name: WB Control Str
Group: BASE
From Node: Waterblasting
To Node: N_14_Basin_1
Length(ft): 40.00
Count: 1

UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 36.00	36.00	Flow: Both
Rise(in): 36.00	36.00	Entrance Loss Coef: 0.000
Invert(ft): 8.500	8.500	Exit Loss Coef: 1.000
Manning's N: 0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:
Circular CMP: Projecting

*** Weir 1 of 1 for Drop Structure WB Control Str ***

TABLE

Count: 1
Type: Horizontal
Flow: Both
Geometry: Rectangular
Span(in): 54.00
Rise(in): 36.00
Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Disc Coef: 3.200
Orifice Disc Coef: 0.600
Invert(ft): 14.950
Control Elev(ft): 14.950

==== Rating Curves =====

Name: 15_100yr72hr
Group: 100yr72hr
From Node: N_15_Basin_1
To Node: N_14_Basin_1
Count: 1
Flow: Both

TABLE	ELEV ON(ft)	ELEV OFF(ft)
#1: 15_100yr72hr	12.500	0.000
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

Name: 15_25yr72hr
Group: 25yr72hr
From Node: N_15_Basin_1
To Node: N_14_Basin_1
Count: 1
Flow: Both

TABLE	ELEV ON(ft)	ELEV OFF(ft)
#1: 15_25yr72hr	12.500	0.000
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

Name: 15_5yr24hr	From Node: N_15_Basin_1	Count: 1
Group: 5yr24hr	To Node: N_14_Basin_1	Flow: Both

TABLE	ELEV ON(ft)	ELEV OFF(ft)
#1: 15_5yr24hr	12.500	0.000
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

Name: 17_100yr72hr	From Node: N_17_Basin_1	Count: 1
Group: 100yr72hr	To Node: N_14_Basin_1	Flow: Both

TABLE	ELEV ON(ft)	ELEV OFF(ft)
#1: 17_100yr72hr	13.500	0.000
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

Name: 17_25yr72hr	From Node: N_17_Basin_1	Count: 1
Group: 25yr72hr	To Node: N_14_Basin_1	Flow: Both

TABLE	ELEV ON(ft)	ELEV OFF(ft)
#1: 17_25yr72hr	13.500	0.000
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

Name: 17_5yr24hr	From Node: N_17_Basin_1	Count: 1
Group: 5yr24hr	To Node: N_14_Basin_1	Flow: Both

TABLE	ELEV ON(ft)	ELEV OFF(ft)
#1: 17_5yr24hr	13.500	0.000
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

Name: 19_100yr72hr	From Node: N_19_Basin_1	Count: 1
Group: 100yr72hr	To Node: N_14_Basin_1	Flow: Both

TABLE	ELEV ON(ft)	ELEV OFF(ft)
#1: 19_100yr72hr	12.500	0.000
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

Name: 19_25yr72hr	From Node: N_19_Basin_1	Count: 1
Group: 25yr72hr	To Node: N_14_Basin_1	Flow: Both

TABLE	ELEV ON(ft)	ELEV OFF(ft)
#1: 19_25yr72hr	12.500	0.000
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

Name: 19_5yr24hr From Node: N_19_Basin_1 Count: 1
Group: 5yr24hr To Node: N_14_Basin_1 Flow: Both

TABLE	ELEV ON(ft)	ELEV OFF(ft)
#1: 19_5yr24hr	12.500	0.000
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

==== Hydrology Simulations =====

Name: 100YR72HR
Filename: \\SERVER\EDC-Shared\EDC - Engineering\17 Projects\17-274 - Waterblasting - Market Street\EN

Override Defaults: Yes
Storm Duration(hrs): 72.00
Rainfall File: Sfwmd72
Rainfall Amount(in): 13.60

Time(hrs)	Print Inc(min)
360.000	5.00

Name: 25YR72HR
Filename: \\SERVER\EDC-Shared\EDC - Engineering\17 Projects\17-274 - Waterblasting - Market Street\EN

Override Defaults: Yes
Storm Duration(hrs): 72.00
Rainfall File: Sfwmd72
Rainfall Amount(in): 11.00

Time(hrs)	Print Inc(min)
360.000	5.00

Name: 5YR24HR
Filename: \\SERVER\EDC-Shared\EDC - Engineering\17 Projects\17-274 - Waterblasting - Market Street\EN

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Scsiii
Rainfall Amount(in): 6.00

Time(hrs)	Print Inc(min)
360.000	5.00

==== Routing Simulations =====

Name: 100YR72HR Hydrology Sim: 100YR72HR
Filename: \\SERVER\EDC-Shared\EDC - Engineering\17 Projects\17-274 - Waterblasting - Market Street\EN

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00	Delta Z Factor: 0.00500
Time Step Optimizer: 10.000	
Start Time(hrs): 0.000	End Time(hrs): 360.00
Min Calc Time(sec): 0.5000	Max Calc Time(sec): 60.0000
Boundary Stages:	Boundary Flows:

Time(hrs)	Print Inc(min)
-----------	----------------

360.000 15.000

Group Run

100yr72hr Yes
BASE Yes

Name: 25YR72HR Hydrology Sim: 25YR72HR
Filename: \\SERVER\EDC-Shared\EDC - Engineering_17 Projects\17-274 - Waterblasting - Market Street\EN

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 360.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)

360.000 15.000

Group Run

25yr72hr Yes
BASE Yes
Outfall Yes

Name: 5YR24HR Hydrology Sim: 5YR24HR
Filename: \\SERVER\EDC-Shared\EDC - Engineering_17 Projects\17-274 - Waterblasting - Market Street\EN

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 360.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)

360.000 15.000

Group Run

5yr24hr Yes
BASE Yes
Outfall Yes

17-274 Waterblasting Technologies
ICPR Model - Inputs

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
BNDY											
N_14_Basin_1	BASE	100YR72HR	0.00	12.50	18.50	0.0000	0	0.00	0.000	0.00	0.000
N_15_Basin_1	BASE	100YR72HR	73.50	16.64	17.00	0.0038	197449	60.00	48.357	0.00	0.000
N_17_Basin_1	BASE	100YR72HR	0.00	12.50	18.50	0.0000	0	0.00	0.000	0.00	0.000
N_19_Basin_1	BASE	100YR72HR	0.00	13.50	18.50	0.0000	0	0.00	0.000	60.03	3.126
N_19_Basin_1	BASE	100YR72HR	0.00	12.50	18.50	0.0000	0	0.00	0.000	0.00	0.000
Waterblasting	BASE	100YR72HR	73.77	16.64	16.97	0.0030	181411	60.00	43.571	60.09	18.629
BNDY											
N_14_Basin_1	BASE	25YR72HR	0.00	12.50	18.50	0.0000	0	62.30	7.955	0.00	0.000
N_15_Basin_1	BASE	25YR72HR	62.30	15.72	17.00	0.0029	192889	60.00	45.249	62.30	7.955
N_17_Basin_1	BASE	25YR72HR	0.00	12.50	18.50	0.0000	0	0.00	0.000	64.00	0.430
N_19_Basin_1	BASE	25YR72HR	0.00	13.50	18.50	0.0000	0	0.00	0.000	82.47	2.002
N_19_Basin_1	BASE	25YR72HR	0.00	12.50	18.50	0.0000	0	0.00	0.000	62.04	2.324
Waterblasting	BASE	25YR72HR	60.29	15.76	16.97	0.0050	75352	60.00	35.058	60.12	20.505
BNDY											
N_14_Basin_1	BASE	5YR24HR	0.00	12.50	18.50	0.0000	0	23.23	2.777	0.00	0.000
N_15_Basin_1	BASE	5YR24HR	23.23	14.83	17.00	0.0030	181437	12.33	34.801	23.23	2.777
N_17_Basin_1	BASE	5YR24HR	0.00	12.50	18.50	0.0000	0	0.00	0.000	0.00	0.000
N_19_Basin_1	BASE	5YR24HR	0.00	13.50	18.50	0.0000	0	0.00	0.000	12.37	4.728
N_19_Basin_1	BASE	5YR24HR	0.00	12.50	18.50	0.0000	0	0.00	0.000	15.56	0.567
Waterblasting	BASE	5YR24HR	12.43	15.44	16.97	0.0050	47042	12.25	24.530	12.43	16.621

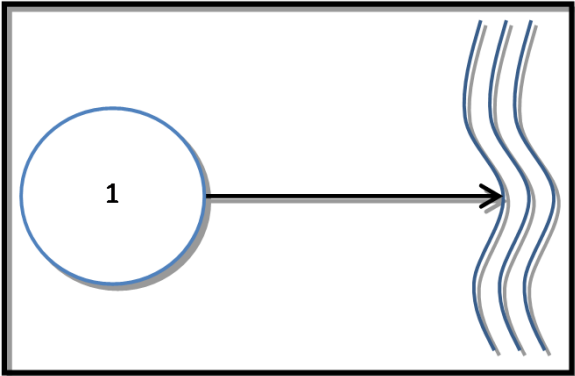
Appendix C – Net Improvement Calculations

ENGINEERING DESIGN & CONSTRUCTION, INC.
CIVIL ENGINEERS & SURVEYORS SPECIALIZING IN LAND DEVELOPMENT

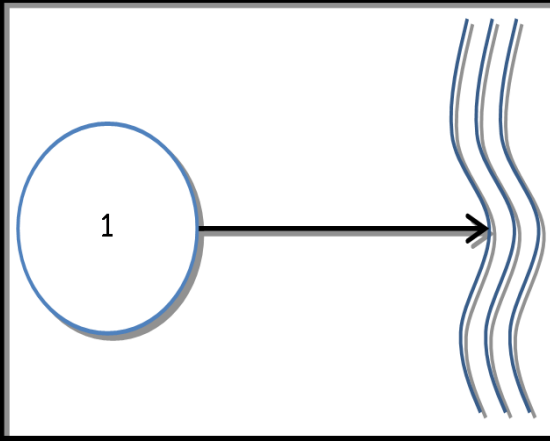
10250 SW Village Parkway, Suite 201
Port St. Lucie, FL 34987
772-462-2455

GENERAL SITE INFORMATION:		V 8.6	GO TO INTRODUCTION PAGE	3/9/2018	Blue Numbers =	Input data
		Red Numbers =	Calculated or Carryover			
Select the appropriate Meteorological Zone, input the appropriate Mean Annual Rainfall amount and select the type of analysis			NAME OF PROJECT Waterblasting - Market Street		HELP Rainfall	
Meteorological Zone (Please use zone map):			CLICK ON CELL BELOW TO SELECT Zone 5		VIEW ZONE MAP	
Mean Annual Rainfall (Please use rainfall map):			57.50 Inches		VIEW MEAN ANNUAL RAINFALL	
Type of analysis: Treatment efficiency (N, P) (ex 80 70 (no decimal points) use only for specified removal efficiency):			CLICK ON CELL BELOW TO SELECT Net improvement		GO TO WATERSHED	
			%			
Select the STORMWATER TREATMENT ANALYSIS Button below to begin analyzing the effectiveness of Best Management Practices.				Model documentation and example problems.		
STORMWATER TREATMENT ANALYSIS Systems available for analysis: - Retention Basin with option for calculating effluent concentration - Wet Detention - Exfiltration Trench - Pervious Pavement - Stormwater Harvesting - Biofiltration - Greenroof - Rainwater Harvesting - Managed Aquatic Plants Detention - Vegetated Natural Buffer - Vegetated Filter Strip - Swale - Rain Garden - Tree Well - Lined reuse pond - User Defined BMP				There is a user's manual for the BMPTRAINS model. It can be downloaded from www.stormwater.ucf.edu . The results from the example problems shown in the manual however may not reflect current model results due to ongoing updates of the model.		
				METHODOLOGY FOR CALCULATING REQUIRED TREATMENT		
				METHODOLOGY FOR		METHODOLOGY FOR WET
				METHODOLOGY FOR		METHODOLOGY FOR
RESET INPUT FOR STORMWATER TREATMENT ANALYSIS						

WATERSHED CHARACTERISTICS V 8.6		GO TO STORMWATER TREATMENT ANALYSIS		Blue Numbers =	Input data	LAND USES/EMC
SELECT CATCHMENT CONFIGURATION 3/9/2018		CLICK ON CELL BELOW TO SELECT CONFIGURATION		Red Numbers =	Calculated	
For comingling, the off-site catchment must be upstream. The delay is only for retention BMPs and must be used in hours as measured by the time of concentration at a one inch/hour rain Delay [hrs] CATCHMENT NO.1 NAME: Dry Detention max delay = 15 hrs. Pre-development land use: Undeveloped - Upland Hardwood: TN=1.042 TP=0.346 with default EMCs CLICK ON CELL BELOW TO SELECT Post-development land use: Light Industrial: TN=1.200 TP=0.260 with default EMCs Total pre-development catchment area: 7.317 AC Total post-development catchment or for BMP analysis: 7.317 AC Pre-development Non DCIA CN: 72.00 Pre-development DCIA percentage: 18.87 % Post-development Non DCIA CN: 91.00 Post-development DCIA percentage: 82.79 % Estimated BMP Area (No loading from this area) 0.767 AC		A - Single Catchment COMINGLING MULTILAND USE VIEW AVERAGE ANNUAL VIEW EMC & FLUCCS GO TO GIS LANDUSE DATA		VIEW CATCHMENT CONFIGURATION GO TO GENERAL SITE INFORMATION PAGE OVERWRITE DEFAULT CONCENTRATIONS USING: PRE: mg/L POST: mg/L EMC(N): mg/L EMC(P): mg/L USE DEFAULT CONCENTRATIONS Average annual pre runoff volume: 8.306 ac-ft/year Average annual post runoff volume (note no BMP area): 22.749 ac-ft/year Pre-development Annual Mass Loading - Nitrogen: 10.673 kg/year Pre-development Annual Mass Loading - Phosphorus: 3.544 kg/year Post-development Annual Mass Loading - Nitrogen: 33.666 kg/year Post-development Annual Mass Loading - Phosphorus: 7.294 kg/year		
CATCHMENT NO.2 NAME: Pre-development land use: CLICK ON CELL BELOW TO SELECT with default EMCs CLICK ON CELL BELOW TO SELECT Post-development land use: with default EMCs Total pre-development catchment area: AC Total post-development catchment or BMP analysis area: AC Pre-development Non DCIA CN: Pre-development DCIA percentage: % Post-development Non DCIA CN: Post-development DCIA percentage: % Estimated BMP Area (No loading from this area) AC				OVERWRITE DEFAULT CONCENTRATIONS: PRE: mg/L POST: mg/L EMC(N): mg/L EMC(P): mg/L USE DEFAULT CONCENTRATIONS Average annual pre runoff volume: ac-ft/year Average annual post runoff volume (note no BMP area): ac-ft/year Pre-development Annual Mass Loading - Nitrogen: kg/year Pre-development Annual Mass Loading - Phosphorus: kg/year Post-development Annual Mass Loading - Nitrogen: kg/year Post-development Annual Mass Loading - Phosphorus: kg/year		
CATCHMENT NO.3 NAME: Pre-development land use: CLICK ON CELL BELOW TO SELECT with default EMCs CLICK ON CELL BELOW TO SELECT Post-development land use: with default EMCs Total pre-development catchment area: AC Total post-development catchment or BMP analysis area: AC Pre-development Non DCIA CN: Pre-development DCIA percentage: % Post-development Non DCIA CN: Post-development DCIA percentage: % Estimated BMP Area (no loading from this area) AC				OVERWRITE DEFAULT CONCENTRATIONS: PRE: mg/L POST: mg/L EMC(N): mg/L EMC(P): mg/L USE DEFAULT CONCENTRATIONS Average annual pre runoff volume: ac-ft/year Average annual post runoff volume (note no BMP area): ac-ft/year Pre-development Annual Mass Loading - Nitrogen: kg/year Pre-development Annual Mass Loading - Phosphorus: kg/year Post-development Annual Mass Loading - Nitrogen: kg/year Post-development Annual Mass Loading - Phosphorus: kg/year		
CATCHMENT NO.4 NAME: Pre-development land use: CLICK ON CELL BELOW TO SELECT with default EMCs CLICK ON CELL BELOW TO SELECT Post-development land use: with default EMCs Total pre-development catchment area: AC Total post-development catchment or BMP analysis area: AC Pre-development Non DCIA CN: Pre-development DCIA percentage: % Post-development Non DCIA CN: Post-development DCIA percentage: % Estimated BMP Area (no loading from this area) AC				OVERWRITE DEFAULT CONCENTRATIONS: PRE: mg/L POST: mg/L EMC(N): mg/L EMC(P): mg/L USE DEFAULT CONCENTRATIONS Average annual pre runoff volume: ac-ft/year Average annual post runoff volume (note no BMP area): ac-ft/year Pre-development Annual Mass Loading - Nitrogen: kg/year Pre-development Annual Mass Loading - Phosphorus: kg/year Post-development Annual Mass Loading - Nitrogen: kg/year Post-development Annual Mass Loading - Phosphorus: kg/year		

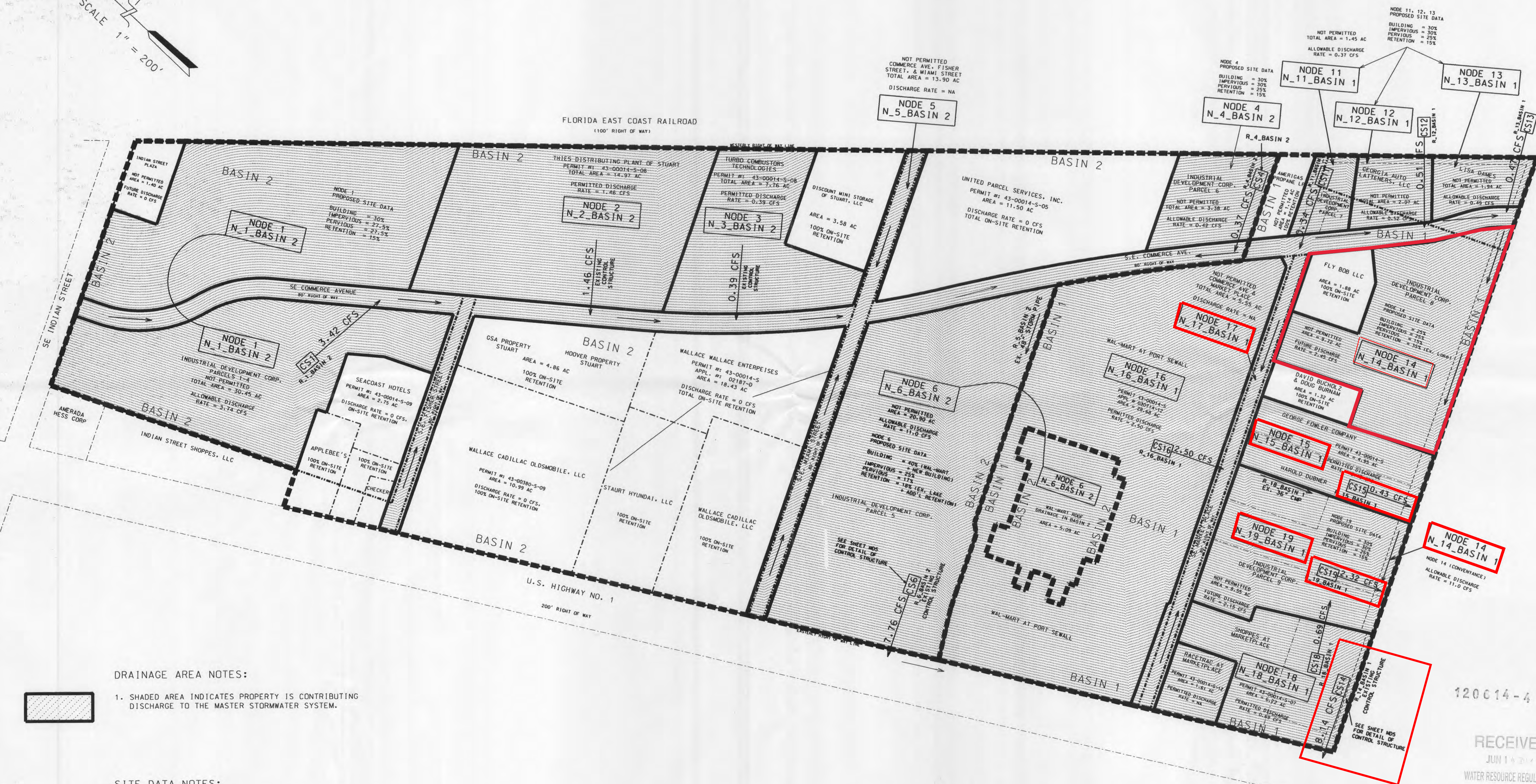
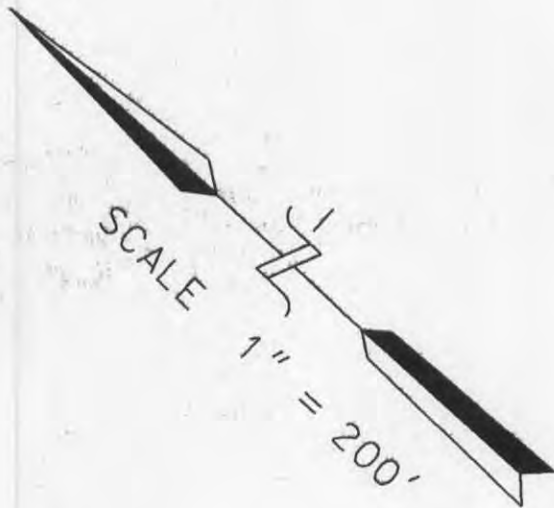
STORMWATER TREATMENT ANALYSIS:		V 8.6	GO TO GENERAL SITE INFORMATION PAGE		Blue Numbers =	Input data
					Red Numbers =	Calculated
If not done, specify pre- and post-development watershed characteristics.			3/9/2018			
GO TO WATERSHED CHARACTERISTICS						
<u>Total Required Treatment Efficiency:</u> Required Treatment Eff (Nitrogen): 68 % Required Treatment Eff (Phosphorus): 51 %						
Select one of the BMPs below to analyze efficiency or review the summary data.						
RETENTION BASIN	WET DETENTION / MAP	EXFILTRATION TRENCH	RAIN GARDEN / depression storage	SWALE	USER DEFINED BMP	
PERVIOUS PAVEMENT	STORMWATER HARVESTING	FILTRATION	View Media Mixes	NOTE !!!: All individual system must be sized prior to being analyzed in conjunction with other systems. Please read instructions in the CATCHMENT AND TREATMENT SUMMARY RESULTS tab for more information.		
GREENROOF	RAINWATER HARVESTING	LINED REUSE POND & UNDERDRAIN INPUT	GO TO COST			
VEGETATED NATURAL BUFFER	VEGETATED FILTER STRIP	TREE WELL	CATCHMENT AND TREATMENT SURFACE			

RETENTION BASIN:		3/9/2018	V 8.6																																								
RETENTION BASIN SERVING:		Waterblasting - Market Street																																									
GO TO STORMWATER TREATMENT ANALYSIS																																											
Loadings from BMP area are contained by the BMP, thus no BMP area load. Watershed area cotributing to basin: Required Treatment Eff (Nitrogen): Required Treatment Eff (Phosphorus): Required retention depth over the watershed to meet required efficiency: Required water quality retention volume:		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Dry Detention</th> <th>Catchment 2</th> <th>Catchment 3</th> <th>Catchment 4</th> <th></th> </tr> <tr> <td>6.550</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>ac</td> </tr> <tr> <td>68.297</td> <td></td> <td></td> <td></td> <td>%</td> </tr> <tr> <td>51.414</td> <td></td> <td></td> <td></td> <td>%</td> </tr> <tr> <td>1.151</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>in</td> </tr> <tr> <td>0.628</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>ac-ft</td> </tr> </table>		Dry Detention	Catchment 2	Catchment 3	Catchment 4		6.550	0.000	0.000	0.000	ac	68.297				%	51.414				%	1.151	0.000	0.000	0.000	in	0.628	0.000	0.000	0.000	ac-ft										
Dry Detention	Catchment 2	Catchment 3	Catchment 4																																								
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1.151	0.000	0.000	0.000	in																																							
0.628	0.000	0.000	0.000	ac-ft																																							
RETENTION BASIN FOR MULTIPLE TREATMENT SYSTEMS (if there is a need for additional removal efficiencies in a series of BMPs):																																											
Retention volume based on retention depth and Total area - BMP area Provided retention depth (0.1-3.99 inches over the watershed) Provided treatment efficiency (Nitrogen): Provided treatment efficiency (Phosphorus): Remaining treatment efficiency (Nitrogen): Remaining treatment efficiency (Phosphorus): Remaining retention depth needed:		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th></th> <th></th> <th></th> <th></th> <th></th> </tr> <tr> <td>0.803</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>ac-ft</td> </tr> <tr> <td>1.472</td> <td></td> <td></td> <td></td> <td>in</td> </tr> <tr> <td>75.664</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>%</td> </tr> <tr> <td>75.664</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>%</td> </tr> <tr> <td>0.000</td> <td></td> <td></td> <td></td> <td>%</td> </tr> <tr> <td>0.000</td> <td></td> <td></td> <td></td> <td>%</td> </tr> <tr> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>in</td> </tr> </table>							0.803	0.000	0.000	0.000	ac-ft	1.472				in	75.664	0.000	0.000	0.000	%	75.664	0.000	0.000	0.000	%	0.000				%	0.000				%	0.000	0.000	0.000	0.000	in
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— Efficiency Curve: ■ System Efficiency (N \$ P) CAT 2: ▲ System Efficiency (N \$ P) CAT 1: ● System Efficiency (N \$ P) CAT 3:		NOTE FOR TREATMENT EFFICIENCY GRAPH: The purpose of this graph is to help illustrate the treatment efficiency of the retention system as the function of retention depth for a single BMP and in a single catchment. The graph illustrates that there is a diminished return as the retention depth is increased. Thus evaluations of other alternatives in "treatment trains" and compensatory treatment should be considered. NOTE: the retention volume can not exceed 3.99 inches to be within the range of data used to determine effectiveness.																																									
HELP - EXAMPLE PROBLEM 3																																											
Estimate of groundwater impacts		View Media Mixes																																									
Use only down flow media mix before water enters the ground, specify type Nitrogen mass reduction in groundwater discharge (%) Phosphorus mass reduction in groundwater discharge (%)		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Catchment 1</th> <th>Catchment 2</th> <th>Catchment 3</th> <th>Catchment 4</th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>		Catchment 1	Catchment 2	Catchment 3	Catchment 4																																				
Catchment 1	Catchment 2	Catchment 3	Catchment 4																																								
		TYPICAL CROSS SECTION OF A "DRY" RETENTION SYSTEM																																									
		Source of Graphic: draft STORMWATER QUALITY APPLICANT'S HANDBOOK dated March 2010, by the Department of Environmental Protection, available at: http://www.dep.state.fl.us/water/wetlands/erp/rules/stormwater , March 2010.																																									

CATCHMENTS AND TREATMENT SURFACE DISCHARGE SUMMARY				V 8.6
CALCULATION METHODS: 1. The effectiveness of each BMP in a single catchment is converted to an equivalent capture volume. 2. Certain BMP treatment train combinations have not been evaluated and in practice they are at this time not used, an example is a greenroof following a tree well. 3. Wet detention is last when used in a single catchment with other BMPs, except when followed by filtration				
PROJECT TITLE	Waterblasting - Market Street	Optional Identification		
	Dry Detention	Catchment 2	Catchment 3	Catchment 4
BMP Name	Retention Basin			
BMP Name				
BMP Name				
Surface Water Discharge Summary Performance of Entire Watershed				
Catchment Configuration	A - Single Catchment	Treatment Objectives or Target for TN MET TP MET	3/9/2018	
Nitrogen Pre Load (kg/yr)	10.67		BMPTRAINS MODEL	
Phosphorus Pre Load (kg/yr)	3.54			
Nitrogen Post Load (kg/yr)	33.67			
Phosphorus Post Load (kg/yr)	7.29			
Target Load Reduction (N) %	68			
Target Load Reduction (P) %	51			
Target Discharge Load, N (kg/yr)	10.77			
Target Discharge Load, P (kg/yr)	3.57			
Provided Overall Efficiency, N (%):	76			
Provided Overall Efficiency, P (%):	76			
Discharged Load, N (kg/yr & lb/yr):	8.19	18.05		
Discharged Load, P (kg/yr & lb/yr):	1.78	3.91		
Load Removed, N (kg/yr & lb/yr):	25.47	56.11		
Load Removed, P (kg/yr & lb/yr):	5.52	12.16		

Appendix D – ERP 43-00014-S Supplemental Documents

STUART BUSINESS PARK MASTER NODAL MAP



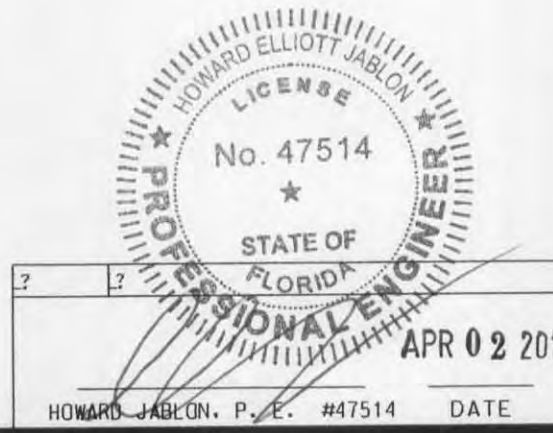
DRAINAGE AREA NOTES:

1. SHADED AREA INDICATES PROPERTY IS CONTRIBUTING DISCHARGE TO THE MASTER STORMWATER SYSTEM.

SITE DATA NOTES:

1. NODES 1, 4, AND 6 ARE NOT DEVELOPED. THE SITE DATA IS BASED ON ASSUMPTIONS. AS EACH PARCEL IS DEVELOPED THE CONSULTANT WILL BE REQUIRED TO PROVIDE FLOOD ROUTING CALCULATIONS TO PROVE THAT THE PROPOSED STAGES AND DISCHARGE FROM THE DEVELOPMENT IS CONSISTENT WITH THESE ASSUMPTIONS.

2. NODE 1 IS A COMBINATION OF FOUR PARCELS UNDER THE SAME OWNERSHIP. IT IS POSSIBLE THAT THESE PARCELS ARE DEVELOPED INDEPENDENTLY. IF SO, EACH PARCEL'S CONSULTANT SHALL PROVIDE FLOOD ROUTING CALCULATIONS INDICATING THAT THE DEVELOPMENT DISCHARGES ONLY IT'S PRO RATA SHARE OF THE ALLOWABLE DISCHARGE.

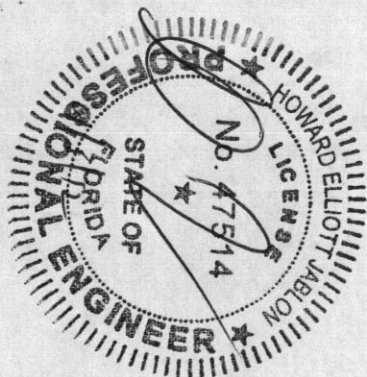


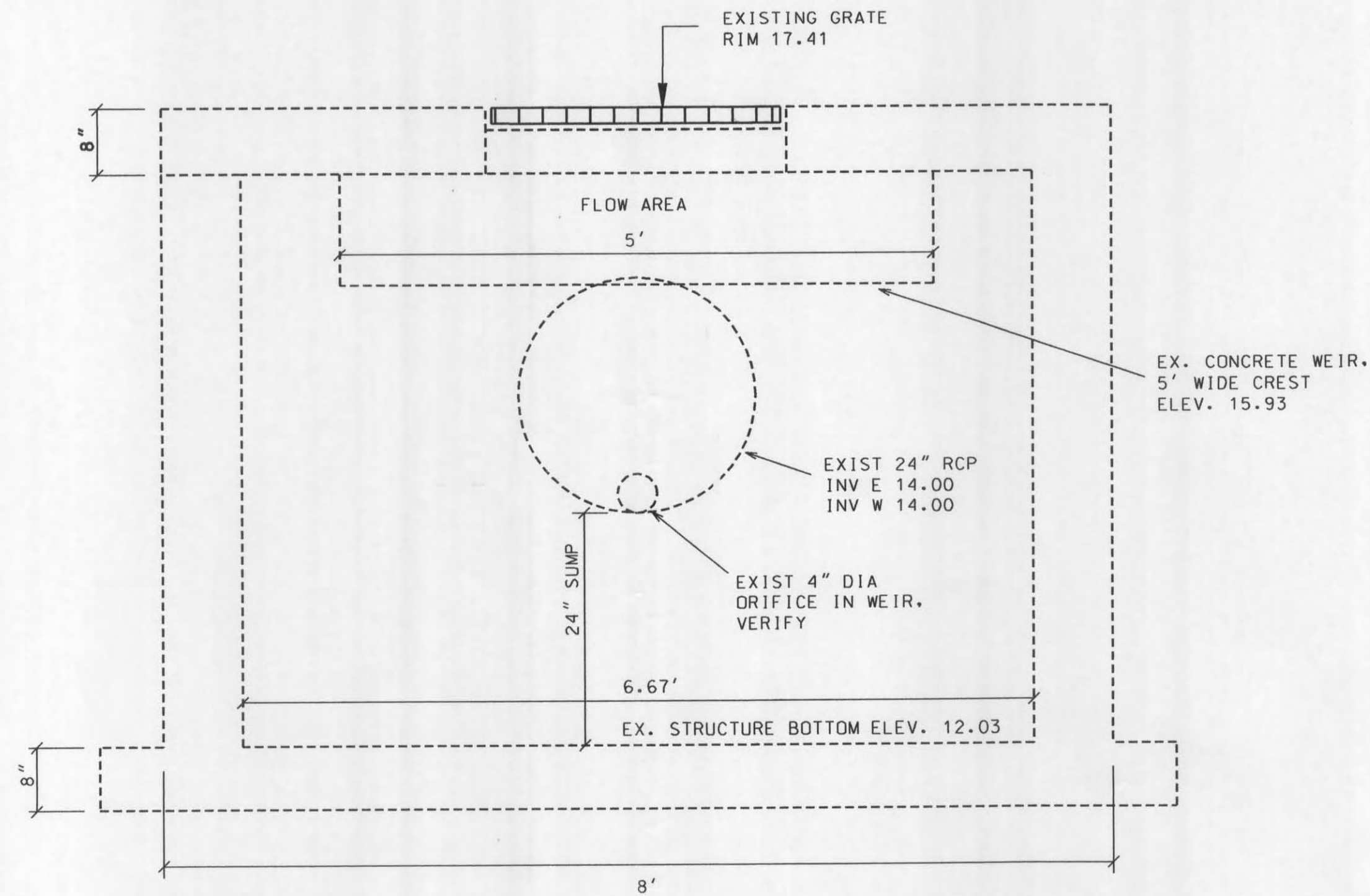
PROJECT: STUART BUSINESS PARK MASTER DRAINAGE PLAN		TITLE: BASIN 1 & BASIN 2 NODAL MAP	
DATE: 10/15/11	REVISIONS	AJ HYDRO ENGINEERING, INC. 5932 NW 73RD COURT PARKLAND, FL 33067 TEL (954) 344-7866 FAX (954) 344-7866	SHEET NUMBER MD4 OF 6
SCALE: 1" = 200'	DATE		
DRAWN BY: HEJ	COMMENTS		
CHECKED BY: J.L.			
APPROVED BY: HEJ			
PROJECT #: 10-0170			

120614-4
RECEIVED
JUN 14 2014
WATER RESOURCE REGULATION

Stuart Business Park Basin 1
All Nodes Routing Results

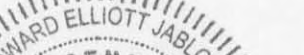
Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
N_11_Basin_1	POST-DEV	100_YR	73.52	18.162	20.000	-1.0000	36738	60.08	7.284	0.00	0.000
N_12_Basin_1	POST-DEV	100_YR	73.52	18.211	20.000	-1.0000	55776	60.08	10.399	0.00	0.000
N_13_Basin_1	POST-DEV	100_YR	73.52	18.261	20.000	-1.0000	53864	60.08	9.746	0.00	0.000
N_14_Basin_1	POST-DEV	100_YR	73.52	17.267	20.000	0.0042	222226	60.08	52.811	0.00	0.000
N_17_Basin_1	POST-DEV	100_YR	73.52	17.267	20.000	0.0050	153945	60.08	27.881	60.03	3.126
N_19_Basin_1	POST-DEV	100_YR	73.52	17.968	20.000	0.0050	217403	60.08	42.951	0.00	0.000
BNDY	POST-DEV	25_YR	0.00	14.000	20.000	0.0000	0	64.85	8.140	0.00	0.000
N_11_Basin_1	POST-DEV	25_YR	68.12	17.562	20.000	-1.0000	26130	60.08	5.811	5.10	0.342
N_12_Basin_1	POST-DEV	25_YR	64.77	17.577	20.000	-1.0000	37033	60.08	8.295	0.84	0.507
N_13_Basin_1	POST-DEV	25_YR	64.30	17.564	20.000	-1.0000	32553	60.08	7.774	8.27	0.472
N_14_Basin_1	POST-DEV	25_YR	64.85	17.287	20.000	0.0037	223754	60.00	44.957	64.85	8.140
N_15_Basin_1	POST-DEV	25_YR	64.00	18.000	20.000	-0.0019	0	0.00	0.000	64.00	0.430
N_16_Basin_1	POST-DEV	25_YR	64.00	18.000	20.000	-0.0019	0	0.00	0.000	64.00	2.500
N_17_Basin_1	POST-DEV	25_YR	67.45	17.336	20.000	0.0050	160118	60.08	22.927	82.48	2.002
N_18_Basin_1	POST-DEV	25_YR	64.00	18.000	20.000	-0.0019	0	0.00	0.000	64.00	0.690
N_19_Basin_1	POST-DEV	25_YR	64.32	17.600	20.000	0.0049	181990	60.08	34.910	62.03	2.324
N_11_Basin_1	POST-DEV	5_YR	30.01	16.226	20.000	-1.0000	17081	12.08	4.869	5.01	0.342
N_12_Basin_1	POST-DEV	5_YR	30.01	16.226	20.000	-1.0000	22581	12.08	6.951	0.84	0.507
N_13_Basin_1	POST-DEV	5_YR	30.01	16.226	20.000	-1.0000	21237	12.08	6.514	7.48	0.472
N_14_Basin_1	POST-DEV	5_YR	30.01	16.227	20.000	0.0029	158736	12.08	40.819	30.01	1.462
N_17_Basin_1	POST-DEV	5_YR	30.01	16.227	20.000	0.0050	60264	12.08	19.310	12.37	4.728
N_19_Basin_1	POST-DEV	5_YR	24.62	16.257	20.000	0.0050	72368	12.08	28.839	15.56	0.567





SECTION

BASIN 1
EXISTING CONTROL STRUCTURE
1" = 5'

	PROJECT: STUART BUSINESS PARK MASTER DRAINAGE PLAN		TITLE: CONTROL STRUCTURE DETAILS		SHEET NUMBER MD5 OF 6
	DATE : 10/15/11		REVISIONS		
	SCALE : NA		DATE COMMENTS		
	DRAWN BY: HEJ		2 2		
	CHECKED BY: LJ		2 2		
APPROVED BY: HEJ					
PROJECT # : 10-0170					



FORM #0157
Rev. 07/09

**SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ENVIRONMENTAL RESOURCE
PERMIT MODIFICATION NO. 43-00014-S
DATE ISSUED: AUGUST 6, 2012**

PERMITTEE: INDUSTRIAL DEVELOPMENT CORPORATION
(STUART BUSINESS PARK STORMWATER MASTER PLAN)
12994 170TH ROAD NORTH,
JUPITER, FL 33478

ORIGINAL PERMIT ISSUED: FEBRUARY 7, 1975

ORIGINAL PROJECT DESCRIPTION: STORM WATER DRAINAGE SERVING 213 ACRES BY MEANS OF SWALE CONNECTIONS TO RAILROAD DRAINAGE DITCH AND DISCHARGING TO THE MANATEE POCKET VIA COUNTY DITCH AT A1A APPROXIMATELY 1/4 MILE NORTH OF ST. LUCIE AVENUE.

APPROVED MODIFICATION: CONCEPTUAL APPROVAL OF A SURFACE WATER MANAGEMENT SYSTEM TO SERVE 83.55 ACRES AND OPERATION OF THE MASTER SYSTEM SERVING 230 ACRES OF COMMERCIAL PROPERTY KNOWN AS STUART BUSINESS PARK.

PROJECT LOCATION: MARTIN COUNTY, SECTION 38 TWP 38S RGE 41E

PERMIT DURATION: See Special Condition No:1. Pursuant to Rule 40E-4.321, Florida Administrative Code.

This is to notify you of the District's agency action concerning Permit Application No. 120614-4, dated June 14, 2012. This action is taken pursuant to the provisions of Chapter 373, Part IV, Florida Statutes (F.S.), and the Operation Agreement Concerning Regulation Under Part IV, Chapter 373 F.S., between South Florida Water Management District and the Department of Environmental Protection.

Based on the information provided, District rules have been adhered to and an Environmental Resource Permit Modification is in effect for this project subject to:

1. Not receiving a filed request for an administrative hearing pursuant to Section 120.57 and Section 120.569, or request a judicial review pursuant Section 120.68, Florida Statutes.
2. The attached 19 General Conditions.
3. The attached 18 Special Conditions.
4. The attached 2 Exhibits.

Should you object to these conditions, please refer to the attached "Notice of Rights" which addresses the procedures to be followed if you desire a public hearing or other review of the proposed agency action. Should you wish to object to the proposed agency action or file a petition, please provide written objections, petitions and/or waivers to:

Elizabeth Veguilla, Deputy Clerk, MSC2440
South Florida Water Management District
Post Office Box 24680
West Palm Beach, FL 33416-4680

Please contact this office if you have any questions concerning this matter. If we do not hear from you in accordance with the "Notice of Rights", we will assume that you concur with the District's action.

CERTIFICATION OF SERVICE

I HEREBY CERTIFY that the Staff Report, Conditions and Notice of Rights have been mailed to the Permittee (and the persons listed on the attached staff report distribution list) no later than 5:00 p.m. on this 7th day of August, 2012, in accordance with Section 120.60(3), Florida Statutes, and a copy has been filed and acknowledged with the Deputy District Clerk.

By Elizabeth Veguilla
DEPUTY CLERK
SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Attachments

PAGE 1 OF 6

SPECIAL CONDITIONS

1. The conceptual phase of this permit shall expire on August 6, 2017.
The construction phase of this permit shall expire on August 6, 2017.
2. Operation of the Stuart Business Park master surface water management system including conveyances and control structures (and maintenance of wetlands/mitigation areas, if applicable) shall be the responsibility of Stuart Business Park Owners Association, Inc.

Individual lot owners are responsible to operate and maintain the secondary water management systems within their property.

Within one year of permit issuance and prior to the sale of any lot within the conceptual approval area, the permittee shall submit to the District a copy of the deed restrictions that clearly describe the responsibility of future property owners to construct, operate, and maintain water management facilities within the individual lots. These deed restrictions shall be included in the deeds for the sale of any lots in the conceptual approval area.

3. Discharge Facilities: No New Discharge Facilities
4. The permittee shall be responsible for the correction of any erosion, shoaling or water quality problems that result from the construction or operation of the surface water management system.
5. Measures shall be taken during construction to insure that sedimentation and/or turbidity violations do not occur in the receiving water.
6. The District reserves the right to require that additional water quality treatment methods be incorporated into the drainage system if such measures are shown to be necessary.
7. Lake side slopes shall be no steeper than 4:1 (horizontal:vertical) to a depth of two feet below the control elevation. Side slopes shall be nurtured or planted from 2 feet below to 1 foot above control elevation to insure vegetative growth, unless shown on the plans.
8. Facilities other than those stated herein shall not be constructed without an approved modification of this permit.
9. A stable, permanent and accessible elevation reference shall be established on or within one hundred (100) feet of all permitted discharge structures no later than the submission of the certification report. The location of the elevation reference must be noted on or with the certification report.
10. The permittee shall provide routine maintenance of all of the components of the surface water management system in order to remove all trapped sediments, debris, and vegetation. All materials shall be properly disposed of as required by law. Failure to properly maintain the system may result in adverse flooding conditions.
11. This permit is issued based on the applicant's submitted information which reasonably demonstrates that adverse water resource related impacts will not be caused by the completed permit activity. Should any adverse impacts caused by the completed surface water management system occur, the District will require the permittee to provide appropriate mitigation to the District or other impacted party. The District will require the permittee to modify the surface water management system, if necessary, to eliminate the cause of the adverse impacts.
12. The permittee acknowledges that, pursuant to Rule 40E-4.101(2), F.A.C., a notice of Environmental Resource or Surface Water Management Permit may be recorded in the county public records. Pursuant to the specific language of the rule, this notice shall not be considered an encumbrance upon the property.
13. If prehistoric or historic artifacts, such as pottery or ceramics, stone tools or metal implements, dugout canoes, or any other physical remains that could be associated with Native American cultures, or early colonial or American settlement are encountered at any time within the project site area, the permitted project should cease all activities involving

subsurface disturbance in the immediate vicinity of such discoveries. The permittee, or other designee, should contact the Florida Department of State, Division of Historical Resources, Review and Compliance Section at (850) 245-6333 or (800) 847-7278, as well as the appropriate permitting agency office. Project activities should not resume without verbal and/or written authorization from the Division of Historical Resources. In the event that unmarked human remains are encountered during permitted activities, all work shall stop immediately and the proper authorities notified in accordance with Section 872.05, Florida Statutes.

14. Minimum building floor elevation: 18.50 ngvd
15. All commercial/industrial parcels shall provide a minimum dry pre-treatment volume of 1/2 inch of runoff prior to discharge into the master surface water management system.
16. The exhibits and special conditions in this permit apply only to this application. They do not supersede or delete any requirements for other applications covered in Permit No. 43-00014-S unless otherwise specified herein.
17. All future development connecting to the Stuart Business Park stormwater master system shall provide water quality treatment equivalent to the greater of 1 inch or 2.5 inches over the percent imperviousness within the proposed project limits prior to discharging to the Stuart Business Park stormwater master system.
18. Any future projects within the Stuart Business Park shall require a modification to this permit and will be subject to evaluation of wetland impacts and potential mitigation requirements in accordance with the environmental criteria in effect at the time of the application for any such proposed work.

GENERAL CONDITIONS

1. All activities authorized by this permit shall be implemented as set forth in the plans, specifications and performance criteria as approved by this permit. Any deviation from the permitted activity and the conditions for undertaking that activity shall constitute a violation of this permit and Part IV, Chapter 373, F.S.
2. This permit or a copy thereof, complete with all conditions, attachments, exhibits, and modifications shall be kept at the work site of the permitted activity. The complete permit shall be available for review at the work site upon request by District staff. The permittee shall require the contractor to review the complete permit prior to commencement of the activity authorized by this permit.
3. Activities approved by this permit shall be conducted in a manner which does not cause violations of State water quality standards. The permittee shall implement best management practices for erosion and pollution control to prevent violation of State water quality standards. Temporary erosion control shall be implemented prior to and during construction, and permanent control measures shall be completed within 7 days of any construction activity. Turbidity barriers shall be installed and maintained at all locations where the possibility of transferring suspended solids into the receiving waterbody exists due to the permitted work. Turbidity barriers shall remain in place at all locations until construction is completed and soils are stabilized and vegetation has been established. All practices shall be in accordance with the guidelines and specifications described in Chapter 6 of the Florida Land Development Manual; A Guide to Sound Land and Water Management (Department of Environmental Regulation, 1988), incorporated by reference in Rule 40E-4.091, F.A.C. unless a project-specific erosion and sediment control plan is approved as part of the permit. Thereafter the permittee shall be responsible for the removal of the barriers. The permittee shall correct any erosion or shoaling that causes adverse impacts to the water resources.
4. The permittee shall notify the District of the anticipated construction start date within 30 days of the date that this permit is issued. At least 48 hours prior to commencement of activity authorized by this permit, the permittee shall submit to the District an Environmental Resource Permit Construction Commencement Notice Form Number 0960 indicating the actual start date and the expected construction completion date.
5. When the duration of construction will exceed one year, the permittee shall submit construction status reports to the District on an annual basis utilizing an annual status report form. Status report forms shall be submitted the following June of each year.
6. Within 30 days after completion of construction of the permitted activity, the permittee shall submit a written statement of completion and certification by a professional engineer or other individual authorized by law, utilizing the supplied Environmental Resource/Surface Water Management Permit Construction Completion/Certification Form Number 0881A, or Environmental Resource/Surface Water Management Permit Construction Completion Certification - For Projects Permitted prior to October 3, 1995 Form No. 0881B, incorporated by reference in Rule 40E-1.659, F.A.C. The statement of completion and certification shall be based on onsite observation of construction or review of as-built drawings for the purpose of determining if the work was completed in compliance with permitted plans and specifications. This submittal shall serve to notify the District that the system is ready for inspection. Additionally, if deviation from the approved drawings are discovered during the certification process, the certification must be accompanied by a copy of the approved permit drawings with deviations noted. Both the original and revised specifications must be clearly shown. The plans must be clearly labeled as "as-built" or "record" drawings. All surveyed dimensions and elevations shall be certified by a registered surveyor.
7. The operation phase of this permit shall not become effective: until the permittee has complied with the requirements of condition (6) above, and submitted a request for conversion of Environmental Resource Permit from Construction Phase to Operation Phase, Form No. 0920; the District determines the system to be in compliance with the permitted plans and specifications; and the entity approved by the District in accordance with Sections 9.0 and 10.0 of the Basis of Review for Environmental Resource Permit Applications within the South Florida Water Management District, accepts responsibility for operation and maintenance of the system. The permit shall not be transferred to such approved operation and maintenance entity until the operation phase of the permit becomes effective. Following inspection and approval of the permitted system by the District, the permittee shall initiate transfer of the permit to the approved

responsible operating entity if different from the permittee. Until the permit is transferred pursuant to Section 40E-1.6107, F.A.C., the permittee shall be liable for compliance with the terms of the permit.

8. Each phase or independent portion of the permitted system must be completed in accordance with the permitted plans and permit conditions prior to the initiation of the permitted use of site infrastructure located within the area served by that portion or phase of the system. Each phase or independent portion of the system must be completed in accordance with the permitted plans and permit conditions prior to transfer of responsibility for operation and maintenance of the phase or portion of the system to a local government or other responsible entity.
9. For those systems that will be operated or maintained by an entity that will require an easement or deed restriction in order to enable that entity to operate or maintain the system in conformance with this permit, such easement or deed restriction must be recorded in the public records and submitted to the District along with any other final operation and maintenance documents required by Sections 9.0 and 10.0 of the Basis of Review for Environmental Resource Permit applications within the South Florida Water Management District, prior to lot or units sales or prior to the completion of the system, whichever comes first. Other documents concerning the establishment and authority of the operating entity must be filed with the Secretary of State, county or municipal entities. Final operation and maintenance documents must be received by the District when maintenance and operation of the system is accepted by the local government entity. Failure to submit the appropriate final documents will result in the permittee remaining liable for carrying out maintenance and operation of the permitted system and any other permit conditions.
10. Should any other regulatory agency require changes to the permitted system, the permittee shall notify the District in writing of the changes prior to implementation so that a determination can be made whether a permit modification is required.
11. This permit does not eliminate the necessity to obtain any required federal, state, local and special district authorizations prior to the start of any activity approved by this permit. This permit does not convey to the permittee or create in the permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the permittee, or convey any rights or privileges other than those specified in the permit and Chapter 40E-4 or Chapter 40E-40, F.A.C..
12. The permittee is hereby advised that Section 253.77, F.S. states that a person may not commence any excavation, construction, or other activity involving the use of sovereign or other lands of the State, the title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund without obtaining the required lease, license, easement, or other form of consent authorizing the proposed use. Therefore, the permittee is responsible for obtaining any necessary authorizations from the Board of Trustees prior to commencing activity on sovereign lands or other state-owned lands.
13. The permittee must obtain a Water Use permit prior to construction dewatering, unless the work qualifies for a general permit pursuant to Subsection 40E-20.302(3), F.A.C., also known as the "No Notice" Rule.
14. The permittee shall hold and save the District harmless from any and all damages, claims, or liabilities which may arise by reason of the construction, alteration, operation, maintenance, removal, abandonment or use of any system authorized by the permit.
15. Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered binding, unless a specific condition of this permit or a formal determination under Section 373.421(2), F.S., provides otherwise.
16. The permittee shall notify the District in writing within 30 days of any sale, conveyance, or other transfer of ownership or control of a permitted system or the real property on which the permitted system is located. All transfers of ownership or transfers of a permit are subject to the requirements of Rules 40E-1.6105 and 40E-1.6107, F.A.C.. The permittee transferring the permit shall remain liable for corrective actions that may be required as a result of any violations prior to the sale, conveyance or other transfer of the system.
17. Upon reasonable notice to the permittee, District authorized staff with proper identification shall have permission to enter, inspect, sample and test the system to insure conformity with the plans and specifications approved by the permit.

18. If historical or archaeological artifacts are discovered at any time on the project site, the permittee shall immediately notify the appropriate District service center.
19. The permittee shall immediately notify the District in writing of any previously submitted information that is later discovered to be inaccurate.

NOTICE OF RIGHTS

As required by Sections 120.569(1), and 120.60(3), Fla. Stat., following is notice of the opportunities which may be available for administrative hearing or judicial review when the substantial interests of a party are determined by an agency. Please note that this Notice of Rights is not intended to provide legal advice. Not all the legal proceedings detailed below may be an applicable or appropriate remedy. You may wish to consult an attorney regarding your legal rights.

RIGHT TO REQUEST ADMINISTRATIVE HEARING

A person whose substantial interests are or may be affected by the South Florida Water Management District's (SFWMD or District) action has the right to request an administrative hearing on that action pursuant to Sections 120.569 and 120.57, Fla. Stat. Persons seeking a hearing on a District decision which does or may determine their substantial interests shall file a petition for hearing with the District Clerk within 21 days of receipt of written notice of the decision, unless one of the following shorter time periods apply: 1) within 14 days of the notice of consolidated intent to grant or deny concurrently reviewed applications for environmental resource permits and use of sovereign submerged lands pursuant to Section 373.427, Fla. Stat.; or 2) within 14 days of service of an Administrative Order pursuant to Subsection 373.119(1), Fla. Stat. "Receipt of written notice of agency decision" means receipt of either written notice through mail, or electronic mail, or posting that the District has or intends to take final agency action, or publication of notice that the District has or intends to take final agency action. Any person who receives written notice of a SFWMD decision and fails to file a written request for hearing within the timeframe described above waives the right to request a hearing on that decision.

Filing Instructions

The Petition must be filed with the Office of the District Clerk of the SFWMD. Filings with the District Clerk may be made by mail, hand-delivery or facsimile. **Filings by e-mail will not be accepted.** Any person wishing to receive a clerked copy with the date and time stamped must provide an additional copy. A petition for administrative hearing is deemed filed upon receipt during normal business hours by the District Clerk at SFWMD headquarters in West Palm Beach, Florida. Any document received by the office of the SFWMD Clerk after 5:00 p.m. shall be filed as of 8:00 a.m. on the next regular business day. Additional filing instructions are as follows:

- Filings by mail must be addressed to the Office of the SFWMD Clerk, P.O. Box 24680, West Palm Beach, Florida 33416.
- Filings by hand-delivery must be delivered to the Office of the SFWMD Clerk. **Delivery of a petition to the SFWMD's security desk does not constitute filing. To ensure proper filing, it will be necessary to request the SFWMD's security officer to contact the Clerk's office.** An employee of the SFWMD's Clerk's office will receive and file the petition.
- Filings by facsimile must be transmitted to the SFWMD Clerk's Office at (561) 682-6010. Pursuant to Subsections 28-106.104(7), (8) and (9), Fla. Admin. Code, a party who files a document by facsimile represents that the original physically signed document will be retained by that party for the duration of that proceeding and of any subsequent appeal or subsequent proceeding in that cause. Any party who elects to file any document by facsimile shall be responsible for any delay, disruption, or interruption of the electronic signals and accepts the full risk that the document may not be properly filed with the clerk as a result. The filing date for a document filed by facsimile shall be the date the SFWMD Clerk receives the complete document.

Initiation of an Administrative Hearing

Pursuant to Rules 28-106.201 and 28-106.301, Fla. Admin. Code, initiation of an administrative hearing shall be made by written petition to the SFWMD in legible form and on 8 and 1/2 by 11 inch white paper. All petitions shall contain:

1. Identification of the action being contested, including the permit number, application number, District file number or any other SFWMD identification number, if known.
2. The name, address and telephone number of the petitioner and petitioner's representative, if any.
3. An explanation of how the petitioner's substantial interests will be affected by the agency determination.
4. A statement of when and how the petitioner received notice of the SFWMD's decision.
5. A statement of all disputed issues of material fact. If there are none, the petition must so indicate.
6. A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the SFWMD's proposed action.
7. A statement of the specific rules or statutes the petitioner contends require reversal or modification of the SFWMD's proposed action.
8. If disputed issues of material fact exist, the statement must also include an explanation of how the alleged facts relate to the specific rules or statutes.
9. A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the SFWMD to take with respect to the SFWMD's proposed action.

A person may file a request for an extension of time for filing a petition. The SFWMD may, for good cause, grant the request. Requests for extension of time must be filed with the SFWMD prior to the deadline for filing a petition for hearing. Such requests for extension shall contain a certificate that the moving party has consulted with all other parties concerning the extension and that the SFWMD and any other parties agree to or oppose the extension. A timely request for extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

If the District takes action with substantially different impacts on water resources from the notice of intended agency decision, the persons who may be substantially affected shall have an additional point of entry pursuant to Rule 28-106.111, Fla. Admin. Code, unless otherwise provided by law.

Mediation

The procedures for pursuing mediation are set forth in Section 120.573, Fla. Stat., and Rules 28-106.111 and 28-106.401-405, Fla. Admin. Code. The SFWMD is not proposing mediation for this agency action under Section 120.573, Fla. Stat., at this time.

RIGHT TO SEEK JUDICIAL REVIEW

Pursuant to Sections 120.60(3) and 120.68, Fla. Stat., a party who is adversely affected by final SFWMD action may seek judicial review of the SFWMD's final decision by filing a notice of appeal pursuant to Florida Rule of Appellate Procedure 9.110 in the Fourth District Court of Appeal or in the appellate district where a party resides and filing a second copy of the notice with the SFWMD Clerk within 30 days of rendering of the final SFWMD action.

**FINAL APPROVED BY
EXECUTIVE DIRECTOR
AUGUST 6, 2012**

Last Date For Agency Action: September 12, 2012

INDIVIDUAL ENVIRONMENTAL RESOURCE PERMIT STAFF REPORT

Project Name: Stuart Business Park Stormwater Master Plan

Permit No.: 43-00014-S

Application No.: 120614-4

Application Type: Environmental Resource (Conceptual Approval And Construction/Operation Modification)

Location: Martin County, S38/T38S/R41E

Permittee : Industrial Development Corporation

Operating Entity : Stuart Business Park Owners Association Inc

Project Area: 230.00 acres

Project Land Use: Commercial
Industrial

Drainage Basin: SOUTH COASTAL

Receiving Body: FDOT (US-1) system

Class: N/A

Special Drainage District: NA

Conservation Easement To District : No

Sovereign Submerged Lands: No

Project Description:

This application is a request for an Environmental Resource Permit modification of a surface water permit to authorize conceptual approval of a surface water management system to serve 83.55 acres and operation of the master system serving 230 acres of commercial property known as Stuart Business Park.

PROJECT EVALUATION:**PROJECT SITE DESCRIPTION:**

The site is located in the City of Stuart (Martin County) between U.S. 1 and the Florida East Coast (FEC) railroad line and between Indian Street and approximately 800 feet south of SE Market Place. Please see the Location Map Exhibit 1.

There are existing surface water management facilities that were previously permitted under Permit Nos. 43-00014-S, 43-00380-S, and 43-02368-P. The site contains commercial and industrial facilities, roads, supporting infrastructure, lakes, wetlands, and undeveloped tracts.

PROJECT BACKGROUND:

On February 7, 1975, the District authorized Surface Water Management Permit No. 43-00014-S (Application No. 22163) for the construction of a drainage system to serve 213 acres of industrial lands by means of swale connections to the Florida East Coast Railroad borrow ditch with ultimate discharge to Manatee Pocket.

On June 11, 1981, the District authorized (Application No. X000002020) a permit modification to change the outfall location from the southeast corner of the project to the southwest corner of the project. The outfall in the southwest corner discharges into the U.S. 1 Florida Department of Transportation (FDOT) ditch that flows south and then east and eventually discharging into Manatee Pocket. Also proposed with this modification was the construction of a 5 ft wide weir at elevation 16.0 ft NGVD with a bleeder at elevation 14.0 ft NGVD and a requirement for future phases to dedicate 25 percent of the project surface area to surface water management area at elevation 14.0 ft NGVD. In April of 1984, a modification was approved to enlarge the bleeder to 420 square inches.

In August of 1982, Florida East Coast Railway notified the permittee of its concern over the possibility of Stuart Business Park runoff washing out their tracks. Numerous meetings and field visits occurred during 1983 and 1984 to resolve the railroad and Stuart Business Park drainage issues. On May 9, 1985, the District authorized (Application X000002021) construction of two internal sites, individual water management systems within the park, master system design and the separation of the eastern ditch from the FEC right-of-way as well as the rip-rapping of the east ditch bank at the lateral inflow points.

On August 5, 1986, the District authorized (Permit No. 43-00014-S-04, Application 03106-H) construction of the Stuart Lincoln-Mercury car dealership. The surface water management system is not connected to the Stuart Business Park master system and retains all runoff up to the 100 year 1 day storm flood elevation of 16.2 NGVD.

On May 19, 1987, the District authorized (Permit No. 43-00380-S, Application 09306-K) construction of the 10.99 acre Fischer Automotive Dealership located on SE Fischer Street and US-1. The property is within the boundary of the Stuart Business Park, but does not connect to the Stuart Business Park stormwater management system. The project surface water management system retains all runoff up to the 100 year 3 day storm flood elevation of 18.2 NGVD. The system includes dry retention pre-treatment and wet retention.

On June 19, 1987, the District authorized (Permit No. 43-00014-S-04, Application 02187-D) construction of the Stuart Lincoln-Mercury and Stuart Toyota car dealerships. The 18.43 acre property (13.15 ac Lincoln-Mercury / 5.28 ac Toyota) is located on Miami Street and US-1. The surface water management system is not connected to the Stuart Business Park master system and retains all runoff up to the 100 year 1 day storm elevation of 17.2 NGVD within a lake between the two projects.

On July 14, 2004, the District authorized (Application 030714-12) modifications to the stormwater management system to accommodate additional parcels not currently part of the Stuart Business Park master system for a total of 234.83 acres. This application created two basins within Stuart Business Park and authorized a new control structure for Basin 2 and minor modifications to the Basin 1 control structure. Construction authorization was granted for the revised master drainage system design and Wal-Mart Store 1087-01.

On September 10, 2004, the District authorized (Permit 43-00014-S-06, Application 040524-4) a modification of the Stuart Business Park surface water management system to include the development of an Eckerd's Drug Store. Proposed construction consisted of an approximately 14,130 sf building, associated parking and utilities, and a dry detention pond to provide water quality pre-treatment. After receiving pre-treatment, runoff from the Eckerd's would overflow a drop inlet that is connected to the Stuart Business Park Master System. On July 21, 2006, the permit was transferred to K'bana, LLC.

On October 5, 2005, a letter modification (Application No. 050809-13) was issued, transferring 33.9 acres from Industrial Development Corporation (Stuart Business Park) to Wal-Mart Stores East, Inc. and indicating the construction limits of the project. The plans presented with this modification identified the facilities to be constructed, including features to provide stormwater management for the Wal-Mart store. The modification stated that there were no changes to the permit requirements for the area south of SE Market Place.

On September 30, 2006, a Reciprocal Easement Agreement was made between Mica Investments, the prior owners of The Shoppes at Market Place site, and K'bana, L.L.C., the owners of the project area permitted as Eckerd's Drug Store, subsequently transferred to K'bana, LLC (now under ownership of Racetrac Petroleum, Inc.). The agreement allows for the conveyance of runoff via a culvert from the permitted Eckerd's project (Permit No. 43-00014-S-06), through the Shoppes at Market Place, to the existing lake.

On December 8, 2006, the District authorized (Permit No. 43-00014-S-07, Application 060208-7) construction of The Shoppes at Market Place, within the previously permitted Stuart Business Park Basin No. 1. Proposed construction consists of approximately 1.12 acres of buildings with associated parking and utilities. Two interconnected dry detention ponds will provide water quality pre-treatment with discharge from the southernmost dry detention area through a control structure into the existing lake that adjoins the subject site along its eastern property line. The existing lake is connected to the Stuart Business Park master system through an open channel at the existing lake's southern limits.

On January 23, 2007, the District authorized (Permit No. 43-00013-S-06, Application. No. 060920-23) construction of the 1.61 acre K'bana Grill which directs runoff to the conveyance system of the Shoppes at Market Place within Stuart Business Park.

On March 4, 2011, the District authorized (Permit No. 43-00014-S-10, Application No. 100923-39) a modification of the Stuart Business Park surface water management system to include the development of a gas station, RaceTrac #934, within the Stuart Business Park Basin No. 1, and more specifically, the previously permitted project site for Eckerd's and K'bana Grill. Permitted construction consists of approximately 5,000 sf of building with associated parking and utilities. A series of inlets and culverts will direct runoff through a network of exfiltration trenches to a dry detention pond that provides water quality treatment. After receiving treatment, runoff discharges from the dry detention area, through the proposed control structure, to a drainage conveyance system within The Shoppes at Marketplace, which in turn discharges into the existing lake east of the subject properties' boundaries. This existing lake is part of the Stuart Business Park master system and discharges through an open channel at the existing lake's southern limits to the Basin 1 outfall ditch.

PROPOSED PROJECT:

This application is a request to modify the Stuart Business Park stormwater management system to clarify its boundaries, land use, water quality treatment, and attenuation of the system and provide for the future development and/or re-development of parcels within the Stuart Business Park.

The Stuart Business Park (SBP) is an existing 230 +/- acre commercial industrial business park that was originally permitted by the District in 1975 and has been modified by approximately 30 applications for various construction projects. Please see the project background for descriptions of significant permit modifications. The SBP surface water management system has been divided into two basins, Basin 1 and Basin 2. Please see the Master Basin Map sheet MD2 of Exhibit 2.0. Basin 1 is the southern 76 acres of the project and Basin 2 is the 154 acre northern portion of the project. Since 1975 several parcels within the project were designed and permitted to retain up to the 100 year 1-3 day storm event and do not connect to the Stuart Business Park stormwater master system for treatment or attenuation. Please see the Master Nodal Map sheet MD4 of Exhibit 2.0 which identifies those parcels that provide 100% retention.

Basin 1 conveys runoff via roadside swales, culverts and internal controls to an outfall ditch along the southern boundary of the SBP. Please refer to the Master Drainage Map sheet MD3 of Exhibit 2.0. The Basin 1 outfall ditch discharges to the US-1 system via a control structure (CS#1) in the ditch near the US-1 right-of-way in the southwest corner of the SBP.

Basin 2 conveys runoff via road side swales, culverts and internal controls to a 48 inch diameter culvert on SE Commerce Ave. east of Wal-Mart that connects to a 1.62 ac lake on parcel 5 located north of Wal-Mart. The parcel 5 lake is connected to a control structure (CS#2) via an open ditch and culvert system and discharges to the US-1 system just north of the Wal-Mart site. The Wal-Mart parcel is part of Basin 1. The Wal-Mart roof gutter system is directed to the parcel 5 lake in Basin 2.

The SBP stormwater master system will be operated and maintained by the Stuart Business Park Owners Association, Inc. (SBPOA). Please see the Maintenance Entity Map sheet MD6 of Exhibit 2 which identifies the common infrastructure to be maintained by SBPOA. Individual lot owners are responsible for operating and maintaining the secondary water management systems within their properties. Within one year of permit issuance the permittee shall submit a copy of the revised deed restrictions clearly describing the responsibility of existing and future property owners to construct and maintain water management facilities within individual lots by the lot owner (see Special Conditions).

The applicant's engineer has prepared detailed maps that describe the SBP stormwater master system including individual parcel characteristics. These maps have been included as Exhibit 2.0. Additional details can be found in the engineering analysis and reports in the permit file.

LAND USE:

The applicant's engineer reviewed previously issued permits to establish land use and design storm discharge for developed parcels. Assumptions were made for developed parcels that did not have permit information. For the purposes of establishing the land uses for the remaining undeveloped parcels, typical commercial land use assumptions were used. The SBP stormwater master system design storm analysis assumed the following land use for undeveloped parcels and or redevelopment parcels within the SBP:

BASIN 1:

Parcels 7, 8, 9 and any redevelopment would consist of 15% water management, 25% pervious, 30%

LAND USE:

impervious, and 30% building coverage. The Lisa Dames and Georgia Auto properties in the southeast corner of the project are currently developed, but not connected to the SBP stormwater master system. The analysis included these properties so they could be connected in the future.

BASIN 2:

Parcels 1-4, 6 and any redevelopment would consist of 15% water management, 25% pervious, 30% impervious, and 30% building coverage. Parcel 5 land use is 18% lake, 18% pervious, 24% impervious, 40% building coverage.

The land use in the table below represents the available land use within undeveloped parcels.

Construction**Basin : BASIN 1****Total Basin**

Building Coverage	7.12	acres
Impervious	7.12	acres
Pervious	5.93	acres
Water Mgnt Acreage	3.56	acres
Total:	23.73	

Basin : BASIN 2**Total Basin**

Building Coverage	20.55	acres
Impervious	15.65	acres
Pervious	13.87	acres
Water Mgnt Acreage	9.75	acres
Total:	59.82	

WATER QUALITY:

A significant part of the overall master system has been constructed. The design storm routing analysis that includes the existing system predicts that the SBP stormwater master system will not recover to the control elevation (14.0 NGVD) within 12 days. A second design storm routing was performed with the initial starting elevation set at the 12 day recovery elevation of the initial routing for the 25 year and 100 year design storms. This analysis was performed to demonstrate that the system would provide adequate flood protection. The peak stage prediction of the second routing of the 100 year storm was 18.48 NGVD which is below the previously permitted minimum building elevation of 18.50 NGVD.

Discharge Rate :

Application No. 030714-12 included an analysis of the overall system that indicated a design storm peak rate of 12.3 cfs for Basins 1 and 2. Earlier permits included higher 25 year 3 day design storm peak rates. The applicants engineer has reevaluated the existing system and determined that 22 cfs is the appropriate design storm rate. The peak discharge rate was divided between the two basins to develop a unit rate for future parcel development as follows:

The peak discharge rate for future development within Basin 1 contributing runoff to the SBP stormwater master system is 0.252 cfs/acre. This discharge rate is based on the permitted peak rate of 11.0 cfs over the 76 acre basin less previously permitted discharges to the SBP master system from Wal-Mart, Shoppes at Marketplace, and the Fowler/Dubner property.

The peak discharge rate for future development within Basin 2 contributing runoff to the SBP stormwater master system is 0.123 cfs/acre. This discharge rate is based on the permitted peak rate of 11.0 cfs over the 154 acre basin less previously permitted discharges to the SBP master system from Turbo Combustor and the Theis Distributing property.

The discharge rates for each parcel have been tabulated and can be found on the Master Basin Map sheet MD2 of Exhibit 2.0.

Discharge Storm Frequency : 25 YEAR-3 DAY

Design Rainfall : 11 inches

Finished Floors :

Building Storm Frequency : 100 YEAR-3 DAY

Design Rainfall : 13.6 inches

Road Design :

Road Storm Frequency : 5 YEAR-1 DAY

Design Rainfall: 6 inches

Control Elevation :

Basin	Area (Acres)	Ctrl Elev (ft, NGVD 29)	WSWT Ctrl Elev (ft, NGVD 29)	Method Of Determination
BASIN 1	23.73	14	14.00	Previously Permitted
BASIN 2	59.82	14	14.00	Previously Permitted

WATER QUALITY:

No adverse water quality impacts are anticipated as a result of the proposed project. The existing SBP stormwater master system provides water quality treatment equivalent to 2.5 inches over the percent imperviousness (1.65 inches over Basin 1 and 1.31 inches over Basin 2) for all existing projects and roadways connected to the SBP stormwater master system.

All future projects connecting to the SBP stormwater master system shall provide water quality treatment equivalent to the greater of 1 inch or 2.5 inches times the percent imperviousness within the proposed project limits and 1/2 inch of dry pre-treatment for all commercial projects prior to discharging to the SBP stormwater master system. Please see Special Conditions.

WETLANDS:

Since wetland areas may exist within some of the parcels that are neither proposed to be impacted or preserved from the proposed activities, all future applications for construction within the Stuart Business park development are subject to the wetland protection and mitigation requirements in effect at the time of permit application (see Special Conditions).

CERTIFICATION AND MAINTENANCE OF THE WATER MANAGEMENT SYSTEM:

It is suggested that the permittee retain the services of a Professional Engineer registered in the State of

Florida for periodic observation of construction of the surface water management (SWM) system. This will facilitate the completion of construction completion certification Form #0881 which is required pursuant to Section 10 of the Basis of Review for Environmental Resource Permit Applications within the South Florida Water Management District, and Rule 40E-4.361(2), Florida Administrative Code (F.A.C.).

Pursuant to Chapter 40E-4 F.A.C., this permit may not be converted from the construction phase to the operation phase until certification of the SWM system is submitted to and accepted by this District. Rule 40E-4.321(7) F.A.C. states that failure to complete construction of the SWM system and obtain operation phase approval from the District within the permit duration shall require a new permit authorization unless a permit extension is granted.

For SWM systems permitted with an operating entity who is different from the permittee, it should be noted that until the permit is transferred to the operating entity pursuant to Rule 40E-1.6107, F.A.C., the permittee is liable for compliance with the terms of this permit.

The permittee is advised that the efficiency of a SWM system will normally decrease over time unless the system is periodically maintained. A significant reduction in flow capacity can usually be attributed to partial blockages of the conveyance system. Once flow capacity is compromised, flooding of the project may result. Maintenance of the SWM system is required to protect the public health, safety and the natural resources of the state. Therefore, the permittee must have periodic inspections of the SWM system performed to ensure performance for flood protection and water quality purposes. If deficiencies are found, it is the responsibility of the permittee to correct these deficiencies in a timely manner.

RELATED CONCERNS:**Water Use Permit Status:**

The applicant has indicated that supplemental irrigation is not required as part of this application.

This application is not requesting any construction as part of this application and will not need authorization for short term dewatering at this time.

This permit does not release the permittee from obtaining all necessary Water Use authorization(s) prior to the commencement of activities which will require such authorization, including construction dewatering and irrigation.

CERP:

The proposed project is not located within or adjacent to a Comprehensive Everglades Restoration Project component.

Potable Water Supplier:

Martin County Utilities

Waste Water System/Supplier:

Martin County Utilities

Right-Of-Way Permit Status:

A District Right-of-Way Permit is not required for this project.

DRI Status:

This project is not a DRI.

Historical/Archeological Resources:

The District has received correspondence from the Florida Department of State, Division of Historical Resources indicating that no significant archaeological or historical resources are recorded in the project area and therefore is unlikely to have an effect upon any such properties.

DEO/CZM Consistency Review:

The issuance of this permit constitutes a finding of consistency with the Florida Coastal Management Program.

Third Party Interest:

No third party has contacted the District with concerns about this application.

Enforcement:

There has been no enforcement activity associated with this application.

STAFF RECOMMENDATION TO EXECUTIVE DIRECTOR:

The Staff recommends that the following be issued :

Conceptual approval of a surface water management system to serve 83.55 acres and operation of the master system serving 230 acres of commercial property known as Stuart Business Park.

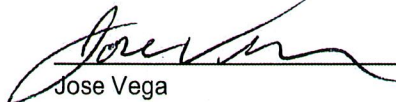
Based on the information provided, District rules have been adhered to.

Staff recommendation is for approval subject to the attached
General and Special Conditions.

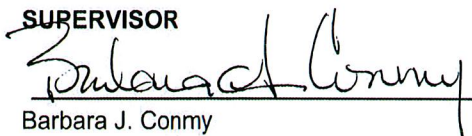
STAFF REVIEW:

NATURAL RESOURCE MANAGEMENT APPROVAL

ENVIRONMENTAL EVALUATION



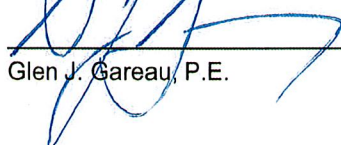
Jose Vega

SUPERVISOR


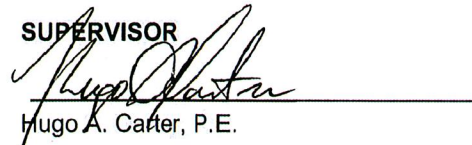
Barbara J. Conmy

SURFACE WATER MANAGEMENT APPROVAL

ENGINEERING EVALUATION



Glen J. Gareau, P.E.

SUPERVISOR


Hugo A. Carter, P.E.

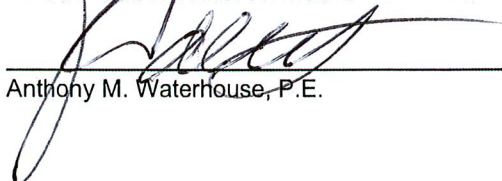
ENVIRONMENTAL RESOURCE PERMITTING BUREAU CHIEF :



Anita R. Bain

DATE: 7/31/12

REGULATION DIVISION ASSISTANT DIRECTOR :



Anthony M. Waterhouse, P.E.

DATE: 8/1/12

GENERAL CONDITIONS

1. All activities authorized by this permit shall be implemented as set forth in the plans, specifications and performance criteria as approved by this permit. Any deviation from the permitted activity and the conditions for undertaking that activity shall constitute a violation of this permit and Part IV, Chapter 373, F.S.
2. This permit or a copy thereof, complete with all conditions, attachments, exhibits, and modifications shall be kept at the work site of the permitted activity. The complete permit shall be available for review at the work site upon request by District staff. The permittee shall require the contractor to review the complete permit prior to commencement of the activity authorized by this permit.
3. Activities approved by this permit shall be conducted in a manner which does not cause violations of State water quality standards. The permittee shall implement best management practices for erosion and pollution control to prevent violation of State water quality standards. Temporary erosion control shall be implemented prior to and during construction, and permanent control measures shall be completed within 7 days of any construction activity. Turbidity barriers shall be installed and maintained at all locations where the possibility of transferring suspended solids into the receiving waterbody exists due to the permitted work. Turbidity barriers shall remain in place at all locations until construction is completed and soils are stabilized and vegetation has been established. All practices shall be in accordance with the guidelines and specifications described in Chapter 6 of the Florida Land Development Manual; A Guide to Sound Land and Water Management (Department of Environmental Regulation, 1988), incorporated by reference in Rule 40E-4.091, F.A.C. unless a project-specific erosion and sediment control plan is approved as part of the permit. Thereafter the permittee shall be responsible for the removal of the barriers. The permittee shall correct any erosion or shoaling that causes adverse impacts to the water resources.
4. The permittee shall notify the District of the anticipated construction start date within 30 days of the date that this permit is issued. At least 48 hours prior to commencement of activity authorized by this permit, the permittee shall submit to the District an Environmental Resource Permit Construction Commencement Notice Form Number 0960 indicating the actual start date and the expected construction completion date.
5. When the duration of construction will exceed one year, the permittee shall submit construction status reports to the District on an annual basis utilizing an annual status report form. Status report forms shall be submitted the following June of each year.
6. Within 30 days after completion of construction of the permitted activity, the permittee shall submit a written statement of completion and certification by a professional engineer or other individual authorized by law, utilizing the supplied Environmental Resource/Surface Water Management Permit Construction Completion/Certification Form Number 0881A, or Environmental Resource/Surface Water Management Permit Construction Completion Certification - For Projects Permitted prior to October 3, 1995 Form No. 0881B, incorporated by reference in Rule 40E-1.659, F.A.C. The statement of completion and certification shall be based on onsite observation of construction or review of as-built drawings for the purpose of determining if the work was completed in compliance with permitted plans and specifications. This submittal shall serve to notify the District that the system is ready for inspection. Additionally, if deviation from the approved drawings are discovered during the certification process, the certification must be accompanied by a copy of the approved permit drawings with deviations noted. Both the original and revised specifications must be clearly shown. The plans must be clearly labeled as "as-built" or "record" drawings. All surveyed dimensions and elevations shall be certified by a registered surveyor.
7. The operation phase of this permit shall not become effective: until the permittee has complied with the requirements of condition (6) above, and submitted a request for conversion of Environmental

GENERAL CONDITIONS

Resource Permit from Construction Phase to Operation Phase, Form No. 0920; the District determines the system to be in compliance with the permitted plans and specifications; and the entity approved by the District in accordance with Sections 9.0 and 10.0 of the Basis of Review for Environmental Resource Permit Applications within the South Florida Water Management District, accepts responsibility for operation and maintenance of the system. The permit shall not be transferred to such approved operation and maintenance entity until the operation phase of the permit becomes effective. Following inspection and approval of the permitted system by the District, the permittee shall initiate transfer of the permit to the approved responsible operating entity if different from the permittee. Until the permit is transferred pursuant to Section 40E-1.6107, F.A.C., the permittee shall be liable for compliance with the terms of the permit.

8. Each phase or independent portion of the permitted system must be completed in accordance with the permitted plans and permit conditions prior to the initiation of the permitted use of site infrastructure located within the area served by that portion or phase of the system. Each phase or independent portion of the system must be completed in accordance with the permitted plans and permit conditions prior to transfer of responsibility for operation and maintenance of the phase or portion of the system to a local government or other responsible entity.
9. For those systems that will be operated or maintained by an entity that will require an easement or deed restriction in order to enable that entity to operate or maintain the system in conformance with this permit, such easement or deed restriction must be recorded in the public records and submitted to the District along with any other final operation and maintenance documents required by Sections 9.0 and 10.0 of the Basis of Review for Environmental Resource Permit applications within the South Florida Water Management District, prior to lot or units sales or prior to the completion of the system, whichever comes first. Other documents concerning the establishment and authority of the operating entity must be filed with the Secretary of State, county or municipal entities. Final operation and maintenance documents must be received by the District when maintenance and operation of the system is accepted by the local government entity. Failure to submit the appropriate final documents will result in the permittee remaining liable for carrying out maintenance and operation of the permitted system and any other permit conditions.
10. Should any other regulatory agency require changes to the permitted system, the permittee shall notify the District in writing of the changes prior to implementation so that a determination can be made whether a permit modification is required.
11. This permit does not eliminate the necessity to obtain any required federal, state, local and special district authorizations prior to the start of any activity approved by this permit. This permit does not convey to the permittee or create in the permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the permittee, or convey any rights or privileges other than those specified in the permit and Chapter 40E-4 or Chapter 40E-40, F.A.C..
12. The permittee is hereby advised that Section 253.77, F.S. states that a person may not commence any excavation, construction, or other activity involving the use of sovereign or other lands of the State, the title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund without obtaining the required lease, license, easement, or other form of consent authorizing the proposed use. Therefore, the permittee is responsible for obtaining any necessary authorizations from the Board of Trustees prior to commencing activity on sovereignty lands or other state-owned lands.
13. The permittee must obtain a Water Use permit prior to construction dewatering, unless the work qualifies for a general permit pursuant to Subsection 40E-20.302(3), F.A.C., also known as the "No

GENERAL CONDITIONS

Notice" Rule.

14. The permittee shall hold and save the District harmless from any and all damages, claims, or liabilities which may arise by reason of the construction, alteration, operation, maintenance, removal, abandonment or use of any system authorized by the permit.
15. Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered binding, unless a specific condition of this permit or a formal determination under Section 373.421(2), F.S., provides otherwise.
16. The permittee shall notify the District in writing within 30 days of any sale, conveyance, or other transfer of ownership or control of a permitted system or the real property on which the permitted system is located. All transfers of ownership or transfers of a permit are subject to the requirements of Rules 40E-1.6105 and 40E-1.6107, F.A.C.. The permittee transferring the permit shall remain liable for corrective actions that may be required as a result of any violations prior to the sale, conveyance or other transfer of the system.
17. Upon reasonable notice to the permittee, District authorized staff with proper identification shall have permission to enter, inspect, sample and test the system to insure conformity with the plans and specifications approved by the permit.
18. If historical or archaeological artifacts are discovered at any time on the project site, the permittee shall immediately notify the appropriate District service center.
19. The permittee shall immediately notify the District in writing of any previously submitted information that is later discovered to be inaccurate.

SPECIAL CONDITIONS

1. The conceptual phase of this permit shall expire on August 6, 2017.
The construction phase of this permit shall expire on August 6, 2017.
2. Operation of the Stuart Business Park master surface water management system including conveyances and control structures (and maintenance of wetlands/mitigation areas, if applicable) shall be the responsibility of Stuart Business Park Owners Association, Inc.

Individual lot owners are responsible to operate and maintain the secondary water management systems within their property.

Within one year of permit issuance and prior to the sale of any lot within the conceptual approval area, the permittee shall submit to the District a copy of the deed restrictions that clearly describe the responsibility of future property owners to construct, operate, and maintain water management facilities within the individual lots. These deed restrictions shall be included in the deeds for the sale of any lots in the conceptual approval area.

3. Discharge Facilities: No New Discharge Facilities
4. The permittee shall be responsible for the correction of any erosion, shoaling or water quality problems that result from the construction or operation of the surface water management system.
5. Measures shall be taken during construction to insure that sedimentation and/or turbidity violations do not occur in the receiving water.
6. The District reserves the right to require that additional water quality treatment methods be incorporated into the drainage system if such measures are shown to be necessary.
7. Lake side slopes shall be no steeper than 4:1 (horizontal:vertical) to a depth of two feet below the control elevation. Side slopes shall be nurtured or planted from 2 feet below to 1 foot above control elevation to insure vegetative growth, unless shown on the plans.
8. Facilities other than those stated herein shall not be constructed without an approved modification of this permit.
9. A stable, permanent and accessible elevation reference shall be established on or within one hundred (100) feet of all permitted discharge structures no later than the submission of the certification report. The location of the elevation reference must be noted on or with the certification report.
10. The permittee shall provide routine maintenance of all of the components of the surface water management system in order to remove all trapped sediments, debris, and vegetation. All materials shall be properly disposed of as required by law. Failure to properly maintain the system may result in adverse flooding conditions.
11. This permit is issued based on the applicant's submitted information which reasonably demonstrates that adverse water resource related impacts will not be caused by the completed permit activity. Should any adverse impacts caused by the completed surface water management system occur, the District will require the permittee to provide appropriate mitigation to the District or other impacted party. The District will require the permittee to modify the surface water management system, if necessary, to eliminate the cause of the adverse impacts.
12. The permittee acknowledges that, pursuant to Rule 40E-4.101(2), F.A.C., a notice of Environmental Resource or Surface Water Management Permit may be recorded in the county public records. Pursuant to the specific language of the rule, this notice shall not be considered an encumbrance upon the property.
13. If prehistoric or historic artifacts, such as pottery or ceramics, stone tools or metal implements, dugout

SPECIAL CONDITIONS

canoes, or any other physical remains that could be associated with Native American cultures, or early colonial or American settlement are encountered at any time within the project site area, the permitted project should cease all activities involving subsurface disturbance in the immediate vicinity of such discoveries. The permittee, or other designee, should contact the Florida Department of State, Division of Historical Resources, Review and Compliance Section at (850) 245-6333 or (800) 847-7278, as well as the appropriate permitting agency office. Project activities should not resume without verbal and/or written authorization from the Division of Historical Resources. In the event that unmarked human remains are encountered during permitted activities, all work shall stop immediately and the proper authorities notified in accordance with Section 872.05, Florida Statutes.

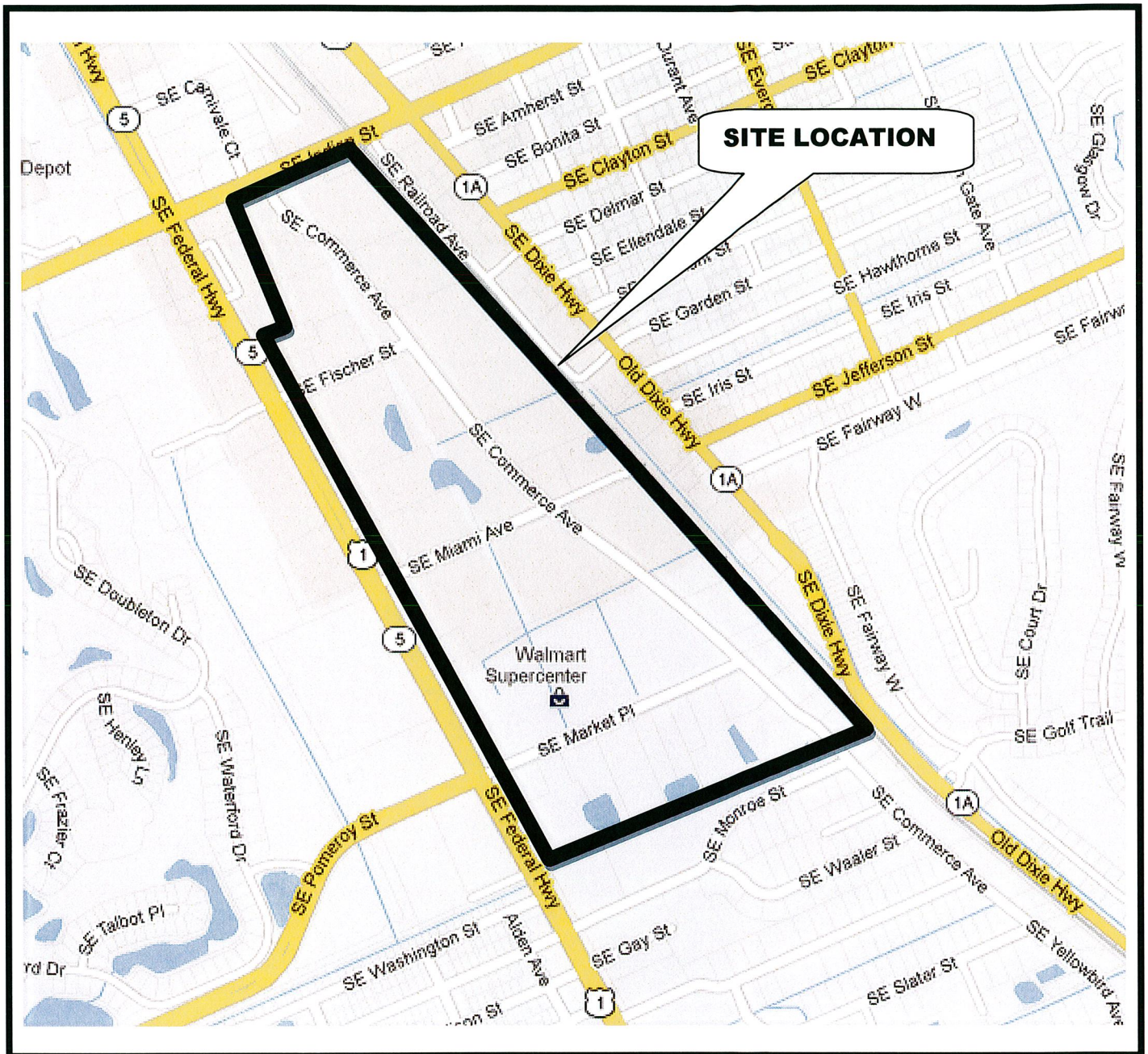
14. Minimum building floor elevation: 18.50 ngvd
15. All commercial/industrial parcels shall provide a minimum dry pre-treatment volume of 1/2 inch of runoff prior to discharge into the master surface water management system.
16. The exhibits and special conditions in this permit apply only to this application. They do not supersede or delete any requirements for other applications covered in Permit No. 43-00014-S unless otherwise specified herein.
17. All future development connecting to the Stuart Business Park stormwater master system shall provide water quality treatment equivalent to the greater of 1 inch or 2.5 inches over the percent imperviousness within the proposed project limits prior to discharging to the Stuart Business Park stormwater master system.
18. Any future projects within the Stuart Business Park shall require a modification to this permit and will be subject to evaluation of wetland impacts and potential mitigation requirements in accordance with the environmental criteria in effect at the time of the application for any such proposed work.

Table of Contents for Staff Report Exhibits

App. No. 120614-4

Stuart Business Park Stormwater Master Plan

- 1.0 Location Map
- 2.0 Plans and maps (6 sheets)



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N
(n.t.s.)

STUART BUSINESS PARK LOCATION MAP

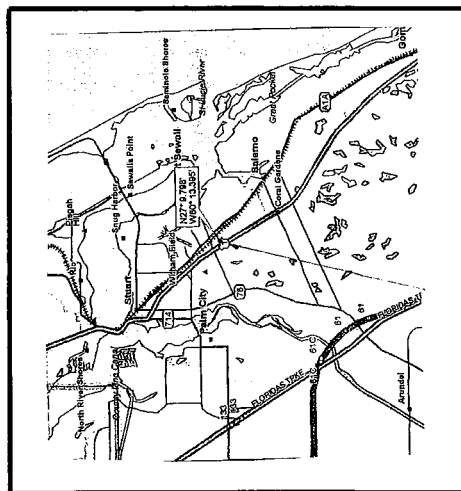
APPLICATION 120614-4

EXHIBIT 1.0

PAGE 1 OF 1

CITY OF STUART, MARTIN COUNTY, FLORIDA
INDUSTRIAL DEVELOPMENT CORP.
12994 170TH ROAD NORTH
JUPITER, FLORIDA 33478
(561) 745-6619

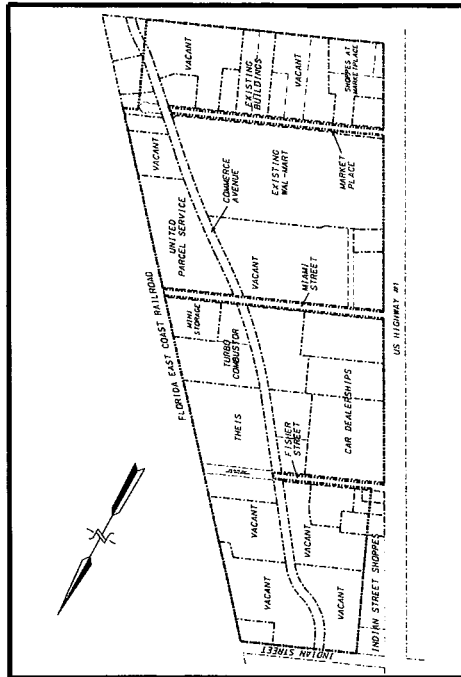
SECTION 38, TOWNSHIP 38S, RANGE 41E



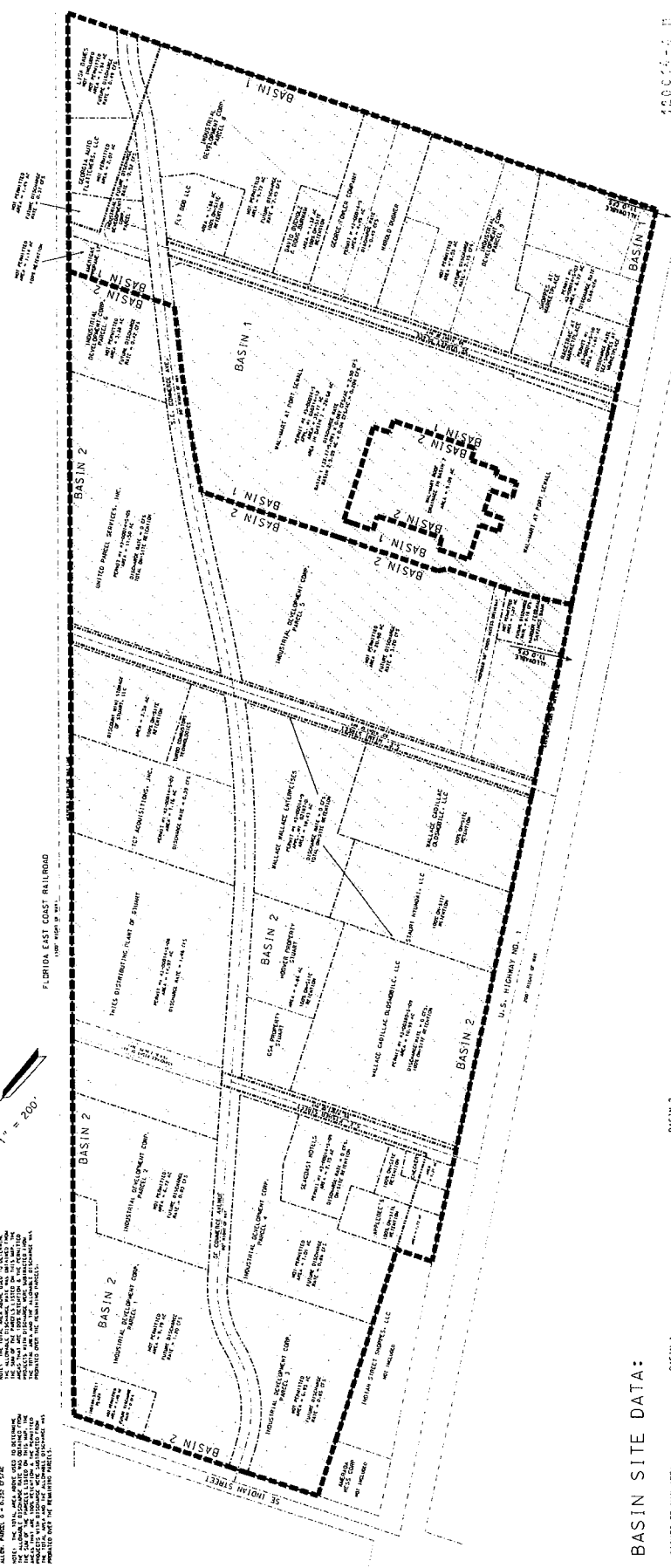
THIS SITE —
LOCATION MAP
NOT TO SCALE

SHEET INDEX:

- COVER SHEET
 MD1. MASTER BASIN MAP
 MD2. MASTER DRAINAGE MAP
 MMD3. BASIN 1 & BASIN 2 NODAL MAP
 MD4. CONTROL STRUCTURE DETAILS.
 MMD5. MAINTENANCE ENTITY MAP
 MD6.

STUART BUSINESS PARK MASTER DRAINAGE PLAN
NO. 1 OF 5 SHEETS
4000' x 4000' P.

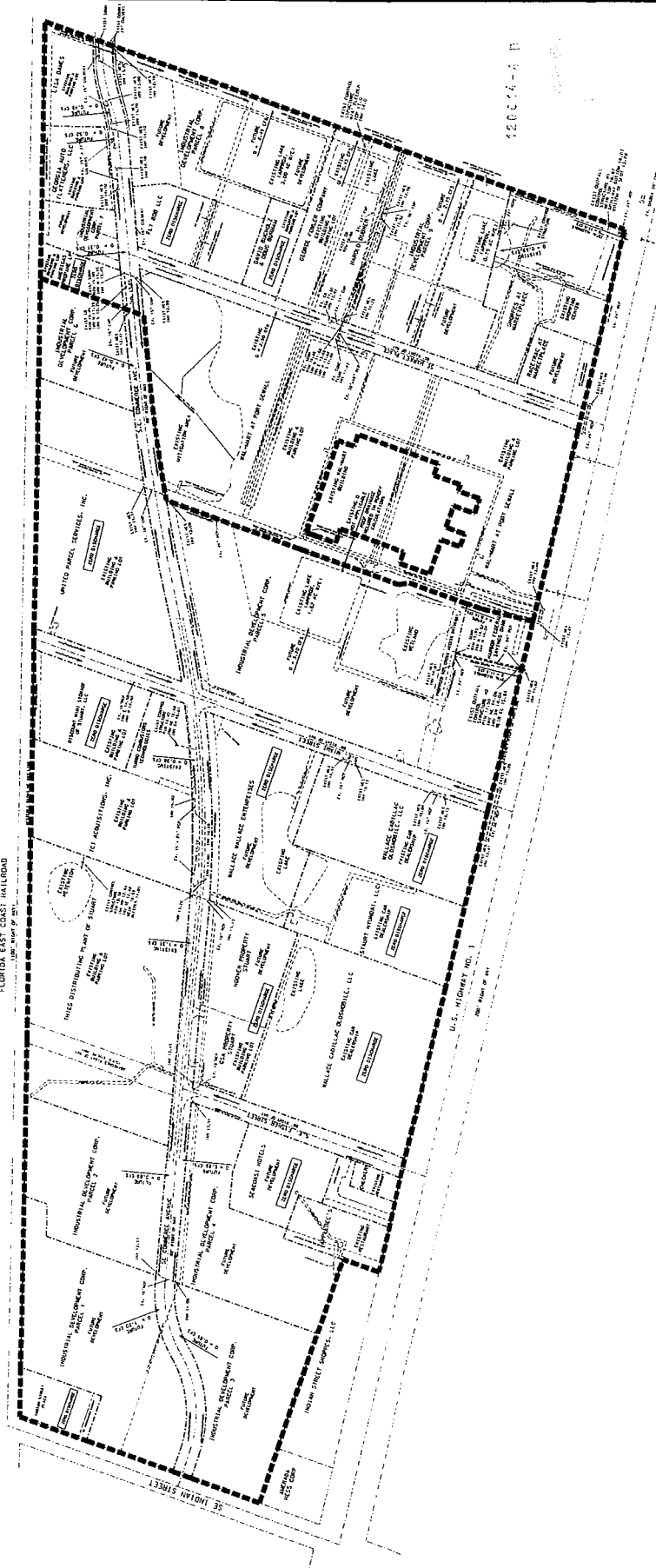
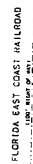
PROJECT		STUART BUSINESS PARK MASTER DRAINAGE PLAN		TOTAL		COVER SHEET	
DATE: 12/22/2011	SCALE: 1" = 40'	SHEET NO. 1	TOTAL SHEETS 1	REV: 0	DATE: 12/22/2011	BY: JH	CHECKED: JH
				AL MOORE ENGINEERING, INC. 5823 NORTH SHORE DRIVE PARKLAND, FL 33067 TEL. (954) 844-7868 FAX (954) 344-7886			
PROJECT NO. 11-03-010 SHEET NO. 1 OF 1				MDT 6			

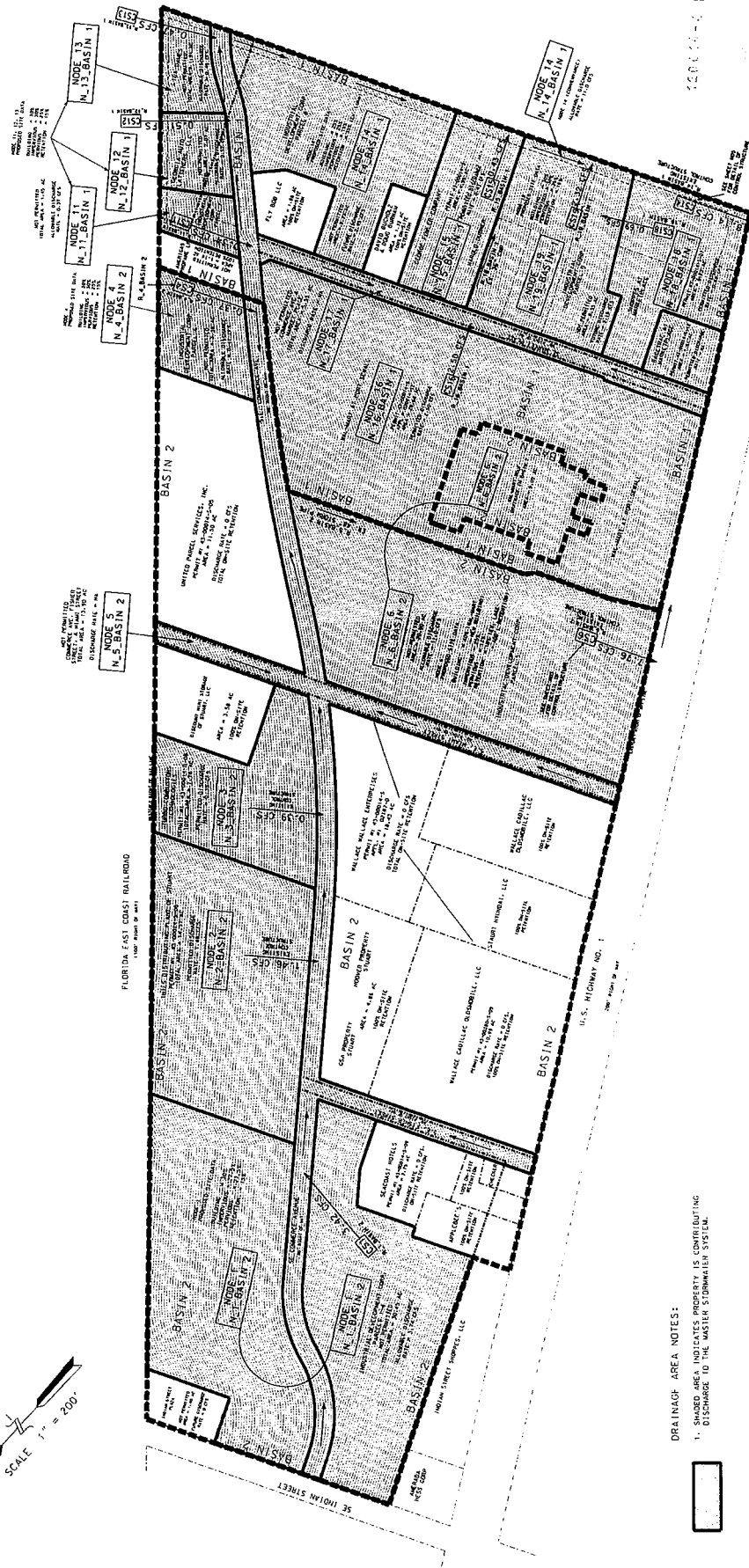
[illegible]

RIGHTS OF WAY AREA		BASIN 1		BASIN 2		TOTAL AREA	
	Q (CFS)	PROPERTY	AREA	Q (CFS)	PROPERTY	AREA	Q (CFS)
FISHER ST (BASIN 2)	1.69 AC				INDIAN ST, PLAZA	1.40 AC	0.00
MIAMI ST (BASIN 2)	3.49 AC	WAL-MART (LESS BLDG)	78.68 AC	2.50	IOC PARCEL 1	9.19 AC	1.20
COMMERCIAL AV (BASIN 1)	3.49 AC	AMERICA'S PROPANE	1.14 AC	0.00	IOC PARCEL 2	6.53 AC	0.85
COMMERCIAL AV (BASIN 2)	2.01 AC	GEORGIA AUTO	2.07 AC	0.52	IOC PARCEL 3	6.53 AC	0.85
		LISA DAKES	1.39 AC	0.49	IOC PARCEL 4	7.01 AC	0.86
		IOC PARCEL 5	9.72 AC	2.49	APPLC'S TOTALS	1.12 AC	0.00
		IOC PARCEL 6	3.32 AC	0.00	CHECKED PROPERTY (ESA	1.31 AC	0.00
		BLUCHER & BURNHAM	8.55 AC	2.15	WAL-MART (VACANT)	4.86 AC	0.00
		BLUCHER & BURNHAM	8.55 AC	2.15	WAL-MART (VACANT)	18.23 AC	0.00
		RACETRAC AT MARCET PL	1.81 AC	0.89	WAL-MART (VACANT)	18.23 AC	0.00
		MARCET PL	3.54 AC	0.89	THEIR'S DIRT PLANT	14.87 AC	0.37
		COMMERCIAL AVENUE	2.01 AC	0.51	DISCOUNT MINI STORAGE	3.58 AC	0.00
		TOTAL AREA	75.48 AC	11.0 CFS	UNITED PARCEL SERVICE	11.50 AC	0.00
					HARBOR FERRAL	1.27 AC	0.16
					IOC PARCEL 5	2.38 AC	0.42
					FISHER STREET	1.69 AC	0.21
					COMMERCIAL AVENUE	1.01 AC	0.00
					COMMERCIAL AVENUE	8.72 AC	0.00
					TOTAL AREA	154.26 AC	11.0 CFS

NO 47514
ENCLOSURE
RECEIVED
JAN 21 1957

Diagram illustrating a line with a break symbol (two parallel diagonal lines) and a scale of 1" = 200'.

[illegible]

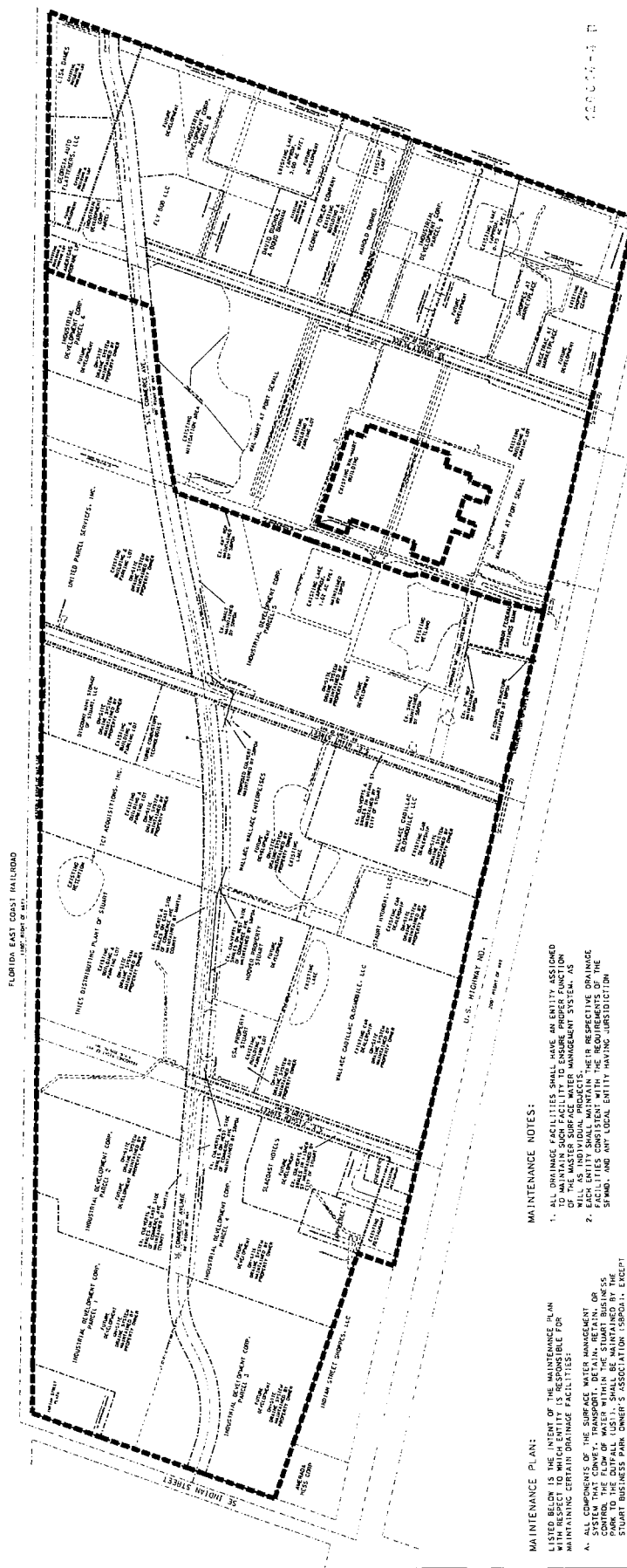


1. SHADED AREA INDICATES PROPERTY IS CONTRIBUTING DISCHARGE TO THE WASTEWATER SYSTEM.

1. NODES 1, 4, AND 6 ARE NOT DEVELOPED. THE SITE DATA IS BASED ON ASSUMPTIONS. AS EACH PARCEL IS DEVELOPED THE CONSULTANT WILL BE REQUIRED TO PROVIDE FLOOD ROUTING CALCULATIONS TO PROVE THAT THE PROPOSED STAGES AND DISCHARGE FROM THE DEVELOPMENT IS CONSISTENT WITH THESE ASSUMPTIONS.

2. NODE 1 IS A COMBINATION OF FOUR PARCELS UNDER THE SAME OWNERSHIP. IT IS POSSIBLE THAT THESE PARCELS ARE DEVELOPED INDEPENDENTLY. IF SO, EACH PARCEL'S CONSULTANT SHALL PROVIDE FLOOD REDUCTION CALCULATIONS INDICATING THAT THE DEVELOPMENT DISCHARGES ONLY IT'S PRO RATA SHARE OF THE ALLOWABLE DISCHARGE.

[illegible]



1. ALL DRAINAGE FACILITIES SHALL HAVE AN ENTITY ASSIGNED TO MAINTAIN SUCH FACILITY TO ENSURE PROPER FUNCTION OF THE MASTER SURFACE WATER MANAGEMENT SYSTEM, AS WELL AS INDIVIDUAL PROJECTS.
2. EACH ENTITY SHALL MAINTAIN THEIR RESPECTIVE DRAINAGE FACILITIES CONSISTENT WITH THE REQUIREMENTS OF THE SFMND, AND ANY LOCAL ENTITY HAVING JURISDICTION

STUART BLVD. IS THE INTENT OF THE MAINTENANCE, IN ALL RESPECT TO WHICH ENTITY IS RESPONSIBLE FOR MAINTAINING CERTAIN DRAINAGE FACILITIES:

- ALL COMPONENTS OF THE SURFACE WATER MANAGEMENT SYSTEM THAT CONVEY, TRANSPORT, RETAIN, OR STORE WATER TO THE DUTAIL LULU, SHALL BE MAINTAINED BY THE STUART BUSINESS PARK OWNER'S ASSOCIATION (SBOA), EXCEPT THE PROPERTY OWNER OF ANY UPSTREAM DEVELOPMENT THAT DISCHARGES INTO THE SBO CONFORMANCE SYSTEM SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF SUCH FACILITIES ON THE PROPERTY PRIOR TO DISCHARGING INTO THE CONFORMANCE SYSTEM.
- THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR ALL SOILS AND CULVERTS ON THE EAST SIDE OF COMMERCIAL AVENUE AND TO THE EAST SIDE OF COMMERCIAL AVENUE FROM THE WEST SIDE TO THE EAST SIDE.
- THE MARKET PLACE SHALL BE RESPONSIBLE FOR ALL DRAINAGE FACILITIES IN MARKET STREET, FISHBEE STREET, AND THE EXISTING LAKE, CONTROL STRUCTURE, AND DUTAIL LULU.
- THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR THE DUTAIL LULU. ONCE THIS PROPERTY IS DEVELOPED, THE DUTAIL LULU SHALL BE MAINTAINED BY THE PROPERTY OWNER. THE DUTAIL LULU SHALL BE MAINTAINED BY THE PROPERTY OWNER AND THE SBOA SHALL BE RESPONSIBLE FOR THE DUTAIL LULU, THE MARKET PLACE, AND THE PERMIT MODIFICATION.

STUART BUSINESS PARK MASTER DRAINAGE PLAN		SHEET		MAINTENANCE ENTITY MAP	
		REVISIONS DATE BY COMMENTS		AJ HYDRO ENGINEERING INC. 5800 W. WINTER ST. PARKLAND, FL 33047 TEL (954) 344-7866 FAX (954) 344-7866	
D.A.B. WILLIAMS SCALE: 1" = 50' TOWN OF BAY COUNTY OF BAY PROJECT NO. 10-00000000 DRAWING NO. 10-00000000		DATE: 01/14/2010 BY: [Signature] CHECKED BY: [Signature] APPROVED BY: [Signature]		SHEET 1 OF 6	

STAFF REPORT DISTRIBUTION LIST

STUART BUSINESS PARK STORMWATER MASTER PLAN

Application No: 120614-4

Permit No: 43-00014-S

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- X Engr Consultant - A J Hydro Engineering Inc

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- X Div of Recreation and Park - District 5 - FDEP
- X Martin County - County Administrator
- X Martin County Board of County Commissioners
- X Martin County Engineering Dept. - Don G. Donaldson, P.E.

Appendix E – Geotechnical Report

**Subsurface Soil Exploration
Waterblasting Facility Expansion
SE Commerce Avenue
Stuart, Florida**



Ardaman & Associates, Inc.

OFFICES

Orlando – 8008 S. Orange Avenue, Orlando Florida 328098 – Phone (407) 855-3860
Alexandria – 3609 Mac Lee Drive, Alexandria, Louisiana 71302 – Phone (318) 443-2888
Bartow – 1525 Centennial Drive, Bartow, Florida 33830 – Phone (863) 533-0858
Baton Rouge – 316 Highlandia Drive, Baton Rouge, Louisiana 70884 – Phone (225) 752-4790
Cocoa – 1300 N. Cocoa Blvd., Cocoa, Florida 32922 – Phone (321) 632-2503
Fort Myers – 9970 Bavaria Road, Fort Myers, Florida 33913 – Phone (239) 768-6600
Miami – 2608 W. 84th Street, Hialeah, Florida 33016 – Phone (305) 825-2683
Monroe – 1122 Hayes Street, West Monroe, Louisiana 71292 – Phone (318) 387-4103
New Orleans – 1305 Distributors Row, Suite I, Jefferson, Louisiana 70123 – Phone (504) 835-2593
Port St. Lucie – 460 Concourse Place NW, Unit 1, Port St. Lucie, Florida 34986 – Phone (772) 878-0072
Sarasota – 78 Sarasota Center Blvd., Sarasota, Florida 34240 – Phone (941) 922-3526
Shreveport – 7222 Greenwood Road, Shreveport, Louisiana 71119 – Phone (318) 636-3673
Tallahassee – 3175 West Tharpe Street, Tallahassee, Florida 32303 – Phone (850) 576-6131
Tampa – 3925 Coconut Palm Drive, Suite 115, Tampa, Florida 33619 – Phone (813) 620-3389
West Palm Beach – 2200 North Florida Mango Road, Suite 101, West Palm Beach, Florida 33409 – Phone (561) 687-8200

MEMBERS:
A.S.F.E.
American Concrete Institute
ASTM International
Florida Institute of Consulting Engineers



Ardaman & Associates, Inc.

Geotechnical, Environmental and
Materials Consultants

March 5, 2018

File No. 18-5404

Revised March 5, 2018

Waterblasting Technologies
3170 SE Slater Street
Stuart, Florida 34997

Attention: Mr. James Crocker, President

Subject: **Subsurface Soil Exploration
and Geotechnical Engineering Evaluation
Waterblasting Facility Expansion
SE Commerce Avenue
Stuart, Florida**

Mr. Crocker:

As requested and authorized, we have completed a shallow subsurface soil exploration and geotechnical engineering evaluation for the subject project. The purposes of performing this exploration were to evaluate the general subsurface conditions in the vicinity of the proposed single-story warehouse building, parking/drive and retention pond areas and to provide recommendations for site preparation and foundation and pavement support. This report documents our findings and presents our engineering recommendations.

SITE LOCATION AND SITE DESCRIPTION

The site for the proposed construction is located on the southwest corner of the intersection of Market Place and SW Commerce Avenue in Stuart, Florida (Hanson Grant, Township 38 South, Range 41 East). The general site location is shown superimposed on the St. Lucie Inlet, Florida USGS quadrangle map presented on Figure 1. The area for the proposed facility is currently undeveloped and densely wooded.

PROPOSED CONSTRUCTION AND GRADING

Based on review of a preliminary site plan that was provided to us by EDC, it is our understanding that the proposed development includes a single-story warehouse building along with asphalt and concrete parking and drive areas. Two stormwater retention ponds are also being proposed on the northwest and southeast portions of the site. For the purpose of our analysis, we assumed that the proposed building will consist of load bearing masonry walls and interior columns with slab-on-grade floors. Typical anticipated loading conditions for the structure were not provided, but have been assumed to be on the order of 5 to 7 kips per linear foot for wall foundations and 50 to 70 kips for individual column foundations. We have assumed that 2 to 3 feet of fill is anticipated to bring the building and pavement areas to final elevation. If actual building loads or fill heights exceed our assumptions, then the recommendations in this report may not be valid. We also understand that a recessed loading dock ramp is being considered for the proposed building on the site.

REVIEW OF SOIL SURVEY MAPS

The Soil Survey of Martin County, Florida, which was issued by the U.S. Department of Agriculture, Soil Conservation Service in 1981, states that the predominant surficial soil types in the area where the site is located are *Waveland sand* and *Waveland sand, depressional*. Brief descriptions of these soil types, as taken from the Soil Survey, are presented below.

According to the USDA Soil Survey, *Waveland sand* is poorly drained soil found in broad flatwoods areas. Slopes are dominantly smooth and range from 0 to 2 percent. Typically, the surface layer is light gray and grayish brown. The subsoil begins at a depth of 43 inches. The upper 4 inches of the subsoil is black and is not cemented. The next 30 inches is weakly cemented, black and dark reddish brown loamy sand. The next 14 inches is loose black sand, and below that is dark brown sand. The water table is at a depth of less than 10 inches for 2 to 4 months and within a depth of 40 inches for 6 months or more during most years. Permeability is rapid in the surface and subsurface layers and very slow to moderately slow in the subsoil.

Waveland sand, depressional is found in depressions and flatwoods areas. Slopes are smooth to concave and range from 0 to 2 percent. Typically, the surface layer is very dark gray sand. The subsurface layer is gray, light gray, and light brownish gray sand to a depth of 48 inches. The subsoil is black, weakly cemented sand and non-cemented, dark reddish brown sand. Below this is brown sand to a depth of 80 inches or more. This soil is ponded for 6 to 9 months or more in most years. Permeability is rapid in the surface and subsurface layers and very slow to moderately slow in the subsoil.

FIELD EXPLORATION PROGRAM

The field exploration program included performing three (3) Standard Penetration Test (SPT) borings (B-1 through B-3 on Figure 2) in the vicinity of the proposed warehouse building and eight (8) auger borings (AB-1 through AB-8) within or in the vicinity of the surrounding parking/drive areas and retention ponds. The SPT borings were advanced to a depth of 25 feet below the existing ground surface using the general methodology outlined in ASTM D-1586. The auger borings were conducted using 4-inch diameter, truck-mounted continuous flight auger and a hand-held, 3-inch diameter bucket auger to depths of 5 and 10 feet below the existing ground surface. Descriptions of these field procedures are included in the Appendix.

Soil samples were recovered from the sampler and auger during performance of the borings. The samples were visually classified in the field and representative portions of the samples were transported to our laboratory in sealed sample jars. The groundwater level at each of the boring locations was measured during drilling. Upon completion, the borings were backfilled with soil cuttings. The approximate locations of the borings are 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 on Figures 3 and 4.

In addition, we conducted percent fines content, organic content and natural moisture content tests on selected soil samples obtained from the borings to aid in the classification of the soils. The results of these tests are presented adjacent to the sample depth on the boring profiles on Figures 3 and 4.

GENERAL SUBSURFACE CONDITIONS

General Soil Profile

The results of the field exploration and laboratory programs are graphically summarized on the soil boring profiles presented on Figures 3 and 4. 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.

As shown on the soil boring profiles on Figures 3 and 4, the SPT borings typically encountered very loose to medium dense, light gray to gray and light brown to dark brown fine sand (Unified Soil Classification SP), fine sand with silt (SP-SM), and fine sand with clay (SP-SC) to the boring termination depth of 25 feet. As shown on Figures 3 and 4, the auger borings encountered similar soils to the depths of 5 and 10 feet below the existing ground surface. These soil profiles are outlined in general terms only. Please refer to Figures 3 and 4 for soil profile details.

We note that muck/peat with an organic content of 41% and a moisture content of 90% was encountered approximate depths ranging from 3 to 4 feet at the boring location AB-1. We also note that hardpan-type soils and soils with trace to relatively minor amounts of roots and organics (organic contents ranging from 4% to 12% and moisture contents ranging from 26% to 36%) were also noted in most of the borings as indicated on the boring profiles.

Groundwater Level

The groundwater level was measured in the boreholes on the day drilled. As shown on Figures 3 and 4, groundwater was encountered in the borings at approximate depths ranging from 4 to 4.5 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. We note that the groundwater table may temporarily “perch” at higher levels atop the shallow hardpan-type soils during or following periods of prolonged or heavy rainfall and during the wet season.

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.

Based on our interpretation of the site conditions using the soil borings and the Soil Survey, we preliminarily estimate the normal seasonal high groundwater level at the boring locations to be approximately 2 to 3 feet above the groundwater level measured in the boreholes at the time of our field exploration. We note that, after periods of heavy and/or prolonged rainfall, water may "perch" temporarily atop the shallow hardpan-type soils at the site. The groundwater table level needs to be especially considered for the design of the planned loading dock ramp.

ENGINEERING EVALUATION AND RECOMMENDATIONS

General

The results of our exploration and analysis indicate that, with proper site preparation as recommended in this report, the existing soils are suitable for supporting the proposed single-story warehouse building on a conventional shallow foundation system. Spread footings should provide an adequate support system for the structure. The soil borings typically encountered suitable soils at the locations and depths explored.

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 and pavement areas, plus a minimum margin of five feet, should be stripped of all surface vegetation, stumps, debris, organic topsoil or other deleterious materials, as encountered. Buried utilities should be removed or plugged to eliminate conduits into which surrounding soils could erode.

After stripping, the site should be grubbed or root-raked such that roots with a diameter greater than ½ inch, stumps, or small roots in a dense state, are completely removed. The actual depth(s) of stripping and grubbing must be determined by visual observation and judgment during the earthwork operation.

It has been our experience that soils surrounding existing buildings 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 and approved by Ardaman & Associates, Inc. prior to filling the site.

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 and pavement areas 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 1 foot must be achieved beneath the stripped and grubbed ground surface. Additional passes and/or over-excavation and recompaction may be required if these minimum density requirements are not achieved. The soil moisture should be adjusted as necessary during compaction.

Proof-rolling may cause upward movement or "pumping" of the groundwater. However, we recommend that the existing surface be level and firm prior to the addition of fill soils. Proof-rolling with a front-end loader may help achieve the desired surface and compaction condition before adding the fill soils. The site should be dewatered as necessary. Depending on the time of year, a 12- to 18-inch layer of clean fine sand (SP) fill may be required prior to proof-rolling.

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). Compaction should cease if deemed detrimental to adjacent structures, and Ardaman & Associates should be notified immediately.

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. Soils with more than 12 percent passing the No. 200 sieve can be used in some applications, but will be more difficult to compact due to their inherent nature to retain soil moisture.

The organic muck/peat encountered between approximate depths of 3 and 4 feet at the location of AB-1 is not suitable for use as structural fill material and should be disposed of offsite or used for landscaping material as directed by the owner. Careful attention should be made by the contractor not to mix the unsuitable soils with otherwise suitable soils while excavating the pond areas.

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 the partially cemented hardpan-type soils can be problematic for several reasons. Hardpan can be difficult to excavate, often requiring special equipment; especially in confined excavations such as utility trenches, footings, etc. Excavated hardpan-type 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 hardpan-type soils used as fill. This criterion 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 hardpan-type soils.

Foundation Support by Spread Footings and Foundation Compaction Criteria

Excavate the foundations to the proposed bottom of footing elevations and, thereafter, verify the in-place compaction for a depth of 1 foot 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 1 foot 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 2,500 pounds per square foot (psf) may be used in the foundation design. This bearing pressure should result in foundation settlement within tolerable limits (i.e., 1 inch or less).

All bearing wall foundations should be a minimum of 18 inches wide and column foundations 24 inches wide. A minimum soil cover of 24 inches should be maintained from the bottom of the foundations to the adjacent finished grades.

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. We note that the site could potentially have a relatively high groundwater table level during the wet season which needs to be considered if any recessed slabs or sump pits (i.e., loading docks, etc.) are being planned for the site.

Dewatering

Based on the groundwater conditions encountered, the control of the groundwater will likely be required to achieve proper compaction, particularly for utility installations. Depending on the time of the year and final site grades, groundwater control may also be required for foundation excavations. The actual method(s) of dewatering (if needed) should be determined by the contractor. However, regardless of the method(s) used, we suggest drawing down the water table sufficiently; say 2 feet below the bottom of any excavation or compaction surface to preclude "pumping" and/or compaction-related problems with the foundation soils.

Utility Installation

The hardpan layers and potentially high groundwater table conditions during the wet season may hinder backfilling and compacting activities related to utility installations (both for piping and structures) or other excavations. These soils are often boulder-size chunks of cemented soils which are not easily broken down for re-use, making such earthwork operations difficult. The importing of clean, free draining fine sand for excavation backfill is often conducted on projects of this nature to facilitate construction. The contractor should be made aware of the hardpan soils and potentially high groundwater conditions at the site.

Typical Asphaltic Concrete Surface Pavement Section

Site Preparation

All areas to be paved should be prepared as previously outlined. Prior to stabilized subgrade and pavement base installation, the subgrade soil compaction should be verified for a depth of 12 inches (i.e., compacted to at least 95 percent of the modified Proctor (ASTM D-1557, AASHTO T-180) maximum dry density value).

Limerock/Coquina Base

A 10-inch thick limerock or coquina base course having a minimum Limerock Bearing Ratio (LBR) value of 100, overlying a 12-inch thick stabilized subgrade can be used provided that grading and drainage plans preclude periodic saturation of the base material. The periodic saturation of a limerock/coquina base material could lead to premature pavement distress. A minimum clearance of 18 inches must be maintained between the bottom of the limerock/coquina base and the seasonal high groundwater table.

The limerock or coquina should be compacted to at least 98 percent of the modified Proctor (ASTM D-1557, AASHTO T-180) maximum density value. For bus and/or truck parking and drive areas, the base thickness should be increased to a minimum of 12 inches.

A minimum 12-inch thick stabilized subgrade having a minimum Limerock Bearing Ratio (LBR) value of 40 must be achieved beneath the base. The natural soils may have to be stabilized with suitable clayey soil or another approved stabilization material in order to achieve the required LBR value. The stabilized subgrade must be compacted to at least 98 percent of the modified Proctor maximum dry density (ASTM D-1557, AASHTO T-180). The stabilized subgrade must be firm

and unyielding immediately prior to placement of the base material.

Wearing Surface

A minimum 1½ inch layer of Type SP-9.5 or SP-12.5 asphaltic concrete should be used for a wearing surface in automobile parking/drive areas. For bus and/or truck parking/drive areas, at least 2½ inches of Type SP-9.5 or SP-12.5 asphaltic concrete should be used. The asphalt wearing surface must be placed on an adequately compacted and unyielding base course. Specific requirements for the Type-SP asphaltic concrete wearing surface are outlined in Section 334 in the Florida Department of Transportation, Standard Specifications for Road and Bridge Construction, latest Edition.

The latest specifications of Florida Department of Transportation shall govern the design and placement of the base and asphaltic concrete wearing surface. The above minimum requirements will satisfactorily support Traffic Level A*. If a heavier traffic pattern is anticipated, the design section should be increased accordingly.

Typical Concrete Pavement Section

It is our understanding that a rigid, Portland cement concrete pavement is desired for the proposed parking/drive areas. The design of a concrete pavement includes selecting dimensions and other details to provide a section that will adequately carry the anticipated traffic, provide the correct types of joints in the proper locations, and promote positive drainage. The pavement thickness recommendations are based on the "Guide for Design and Construction of Concrete Parking Lots" published by the American Concrete Institute (ACI 330R-08).

All areas to be paved should be stripped and grubbed of surficial debris including vegetation, roots and organic matter. Compaction of stripped and grubbed ground surface and all fill beneath pavement areas should comply with the recommendations (material types and compaction requirements) presented previously in this report. We recommend that the subgrade within 12 inches of the bottom of pavement consist of well-drained soils (Unified Classification SP) compacted to achieve a density equivalent to 95 percent of the modified Proctor (ASTM D-1557, AASHTO T-180) maximum dry density value for a depth of 12 inches. A minimum clearance of 2 feet must be maintained between the bottom of concrete pavement and the seasonal high water table.

Assuming the pavement will be subjected to Traffic Category C (ADTT=100) levels as described in Table 3.3 of ACI 330R-08, and the subgrade is prepared as outlined above, the concrete pavement should be a minimum of 6.5 inches in thickness and have a minimum compressive strength of 4,000 pounds per square inch.

The above minimum design recommendations can be used for unreinforced, fiber-reinforced or steel-reinforced pavements. Steel reinforcement and joint design should be in accordance with

* Reference: "Flexible Pavement Design Manual", Florida Department of Transportation. (latest edition)

the recommendations presented in ACI 330R-08.

Given the relatively high groundwater conditions encountered in the borings and based on the estimated seasonal high groundwater table level, the site does not appear well-suited for a recessed loading dock system. An experienced specialty waterproofing contractor needs to be consulted to further explore the feasibility of a recessed loading dock or a scissor-lift loading dock system at the site. Waterproofing alone should not be relied on and a permanent dewater system needs to be incorporated in the design.

Retention Ponds

We understand that two stormwater retention ponds are planned for the site. For this study, soil conditions were explored in the proposed pond area with two (2) auger borings (AB-1 and AB-2) to a depth of 10 feet. The borings generally encountered sandy soils with some fine sand with silt (Strata Nos. 1 and 2) as shown on Figure 3, which are considered to be relatively permeable.

We note that muck/peat soils with an organic content of 41% and a moisture content of 90% were encountered at approximately 3 to 4 feet below the existing ground surface at the boring location AB-1. We also note that hardpan-type soils and soils with trace to relatively minor amounts of roots and organics were also encountered between depths of 5 to 6 feet below the existing ground surface at the boring location AB-2 as indicated on the boring profiles. Organic muck/peat and soils mixed with roots and organics may exist at unexplored locations on the site. Ardaman should be notified immediately if such soils are encountered during construction so that recommendations can be provided.

For dry bottom retention ponds, pond performance will be significantly influenced by the soil permeability and the vertical separation between the pond bottom and the seasonal high groundwater level.

Wet detention ponds should be excavated to depths necessary to obtain a sufficient water depth to limit growth of aquatic vegetation. For the purpose of wet detention pond design, we preliminary estimate the normal low water level to be approximately 1 to 2 feet lower than the water levels encountered in the borings.

Ardaman & Associates, Inc. would be pleased to assist in evaluating the design exfiltration rates, underdrains and/or groundwater baseflow as pond geometry and stormwater volume requirements become available.

QUALITY ASSURANCE

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

As a minimum, an on-site engineering technician should monitor all stripping and grubbing to verify that all deleterious materials have been removed and should observe the proof-rolling operation to verify that the appropriate numbers of passes are applied to the subgrade. In-situ

density tests should be conducted during filling activities and below all footings, floor slabs and pavement areas 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.

Additionally for the pavements, Limerock Bearing Ratio tests should be performed. The stabilized subgrade and base courses should be tested for density and thickness. Samples of the asphaltic concrete should be obtained and tested in the laboratory for asphalt content and aggregate gradation. Also, the asphaltic concrete thickness should be verified in the field.

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

IN-PLACE DENSITY TESTING FREQUENCY

In Southeast 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 parking/drive areas, a minimum frequency of one in-place density test for each 2,500 square feet of area should be used (minimum of five test locations). The existing, natural ground should be tested to a depth of 12 inches at the prescribed frequency. Each 12-inch lift of fill should be tested at this frequency. Each 12-inch lift of fill, as well as the stabilized subgrade (where applicable) and base should be tested at this frequency.

Utility backfill should be tested at a minimum frequency of one in-place density test for each 12-inch lift for each 200 lineal feet of pipe. Additional tests should be performed in backfill for manholes, inlets, etc.

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

Representative samples of the various natural ground and fill soils, as well as the stabilized subgrade and base materials 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 Figures 3 and 4, and on the assumed loading conditions and fill heights. 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 Waterblasting Technologies 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 and 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.

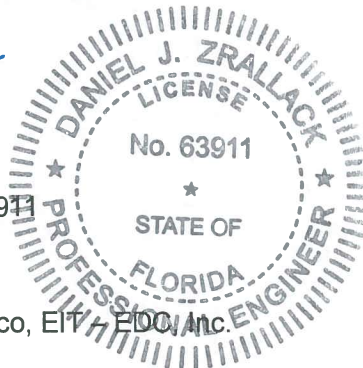
Best regards,

ARDAMAN & ASSOCIATES, INC.

Certificate of Authorization No. 5950

 3/5/18

Dan J. Zrallack, P.E.
Branch Manager
Florida License No. 63911





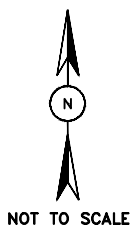
Sharmila Pant
Assistant Project Engineer

Cc: Mr. John D. Federico, EIT, EDC, Inc.



HANSON GRANT
TOWNSHIP 38 SOUTH
RANGE 41 EAST

OBTAINED FROM U.S.G.S. QUAD MAPS: ST. LUCIE INLET, FLORIDA 1948
(PHOTOREVISED 1970)



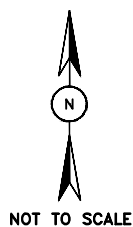
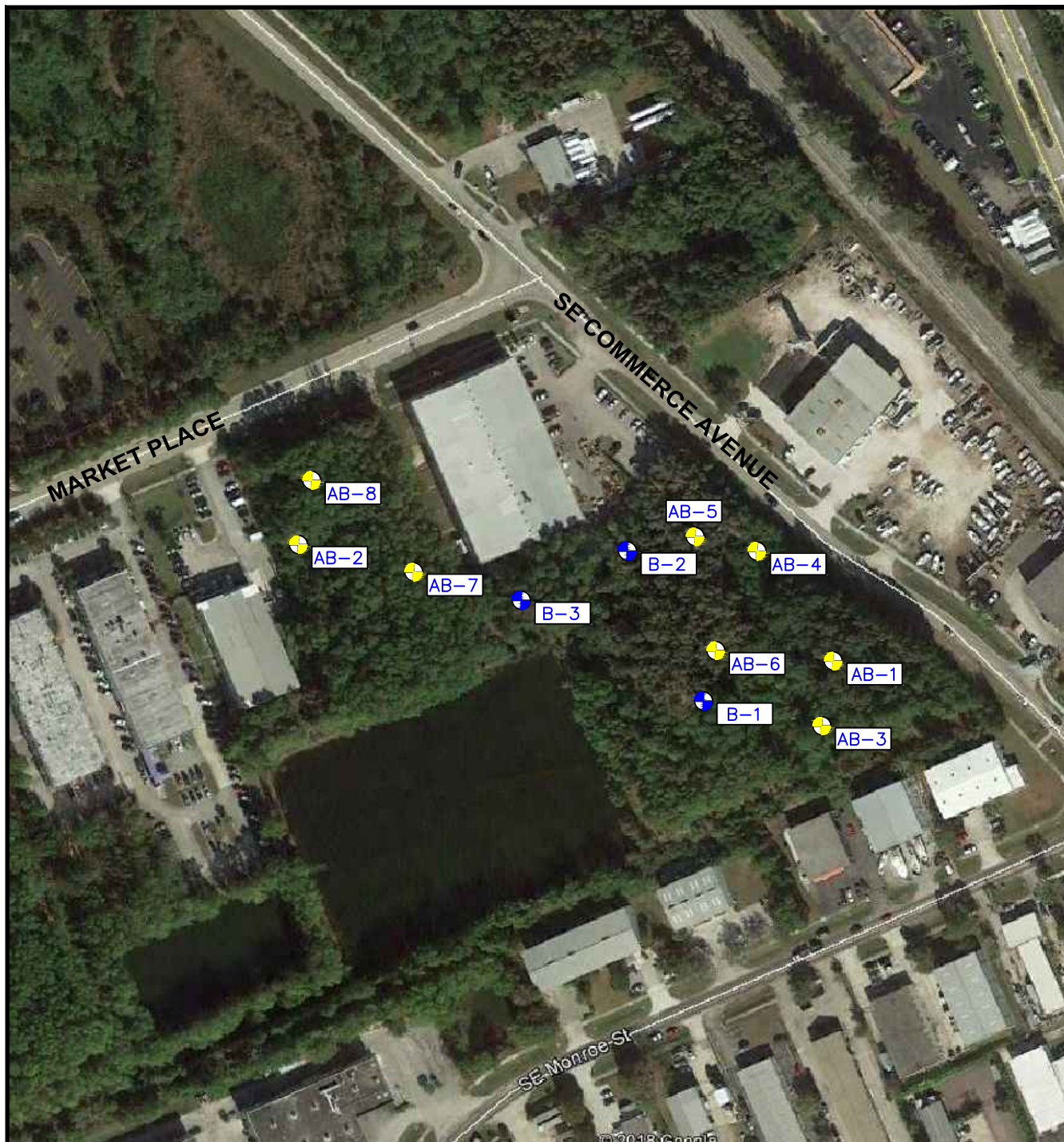
QUADRANGLE LOCATION

SITE LOCATION MAP

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

Subsurface Soil Exploration
Waterblasting Facility Expansion
SE Commerce Avenue
Stuart, Florida

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FILE NO. 18-5404	APPROVED BY:	FIGURE: 1



- AB AUGER BORING LOCATION
- B STANDARD PENETRATION TEST (SPT) BORING LOCATION

SOIL BORING LOCATIONS

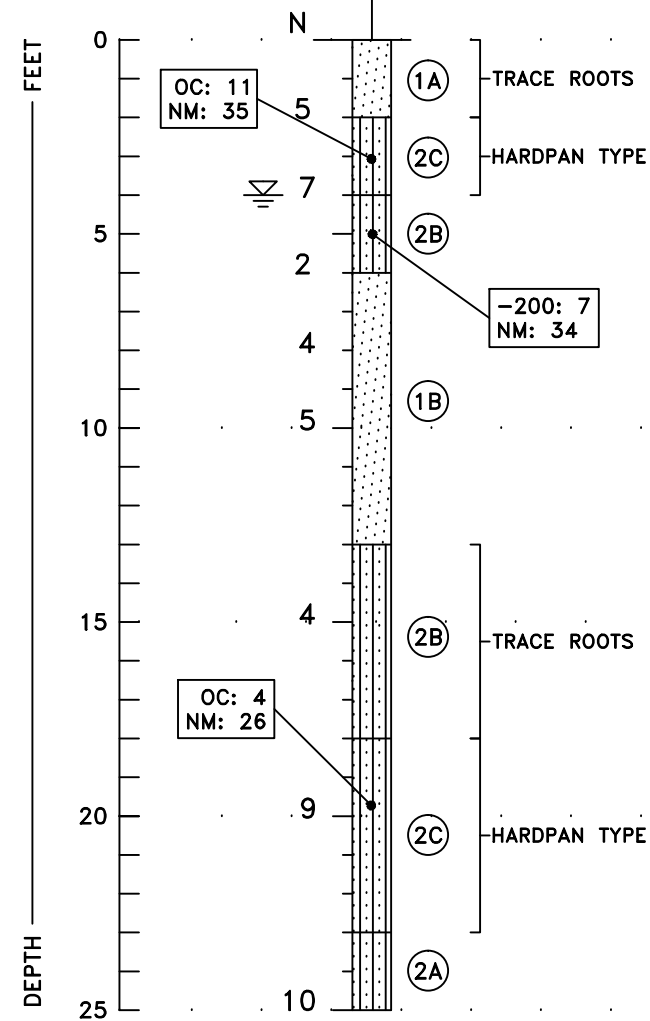
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Stuart, Florida

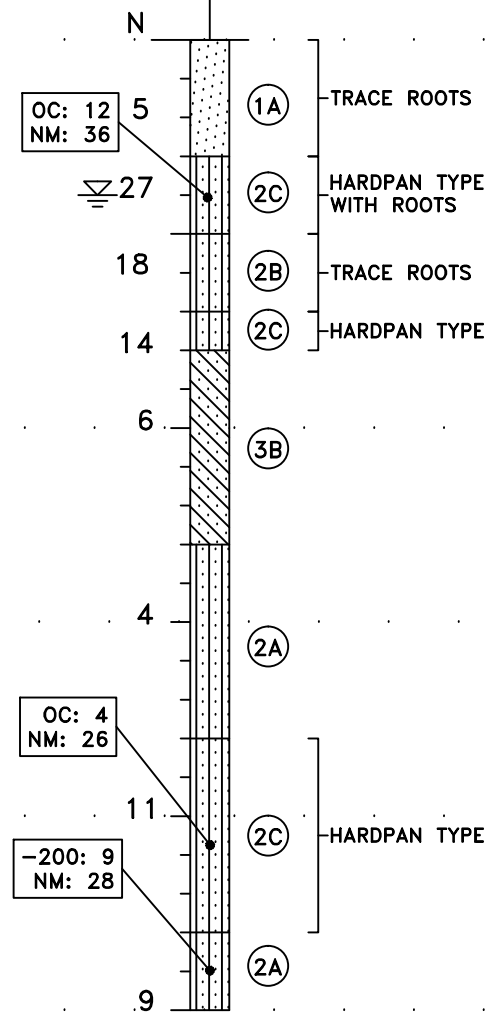
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BORING:
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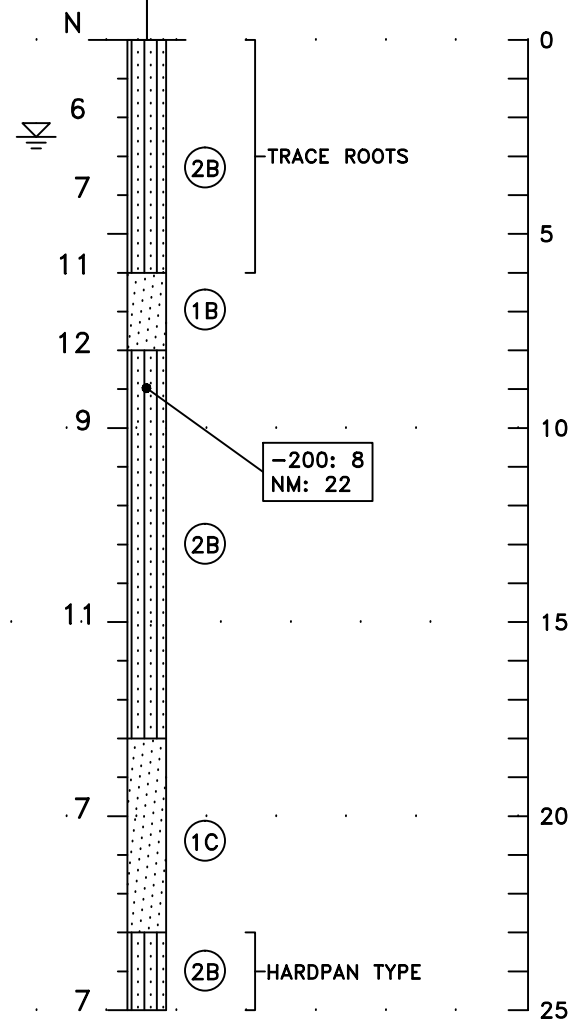
B-1
02/06/18



B-2
02/06/18



B-3
02/06/18



LEGEND

SOIL DESCRIPTIONS

- (1) FINE SAND (SP)
- (2) FINE SAND WITH SILT (SP-SM)
- (3) FINE SAND WITH CLAY (SP-SC)
- (4) MUCK/PEAT (PT)
- ORGANIC TOPSOIL

COLORS

- (A) LIGHT GRAY TO GRAY
- (B) LIGHT BROWN TO BROWN
- (C) DARK BROWN

- 200 PERCENT PASSING NO. 200 SIEVE SIZE (PERCENT FINES) (ASTM D-1140)
- OC ORGANIC CONTENT IN PERCENT (ASTM D-2974)
- NM NATURAL MOISTURE
- GROUNDWATER LEVEL MEASURED ON DATE DRILLED
- SP,SP-SM UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D-2487)
- SM,SC,CH

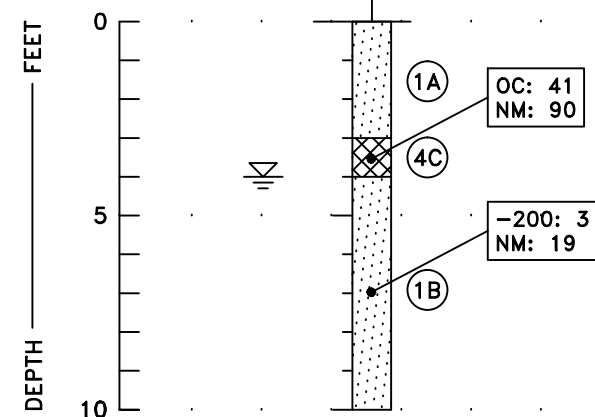
NOTE:

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.

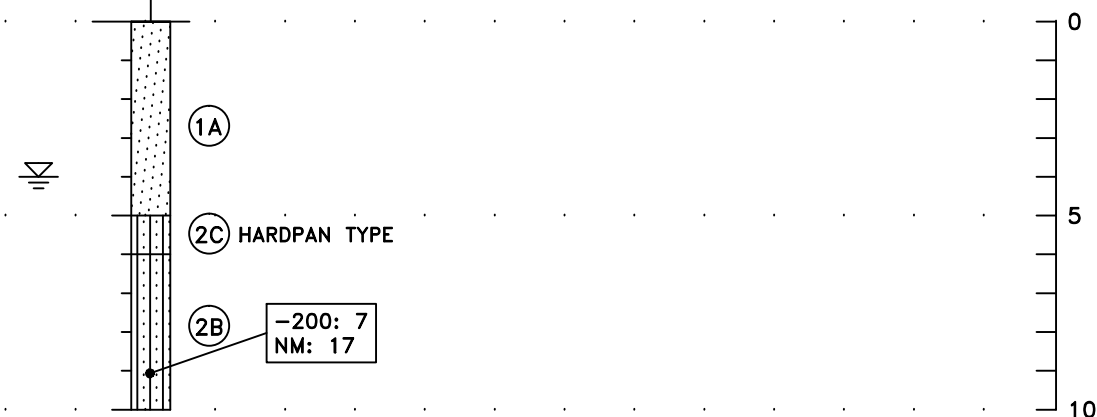
GROUNDWATER ELEVATIONS SHOWN ON THE BORING LOGS REPRESENT GROUNDWATER SURFACES ENCOUNTERED ON THE DATES SHOWN. FLUCTUATIONS IN WATER TABLE LEVELS SHOULD BE ANTICIPATED THROUGHOUT THE YEAR.

BORING:
DATE DRILLED:

AB-1
02/06/18



AB-2
02/06/18



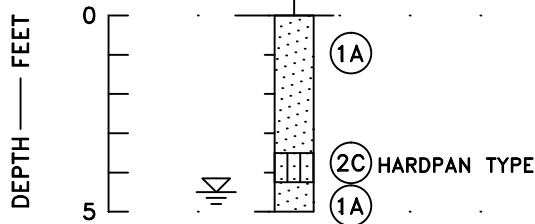
SOIL BORING PROFILES



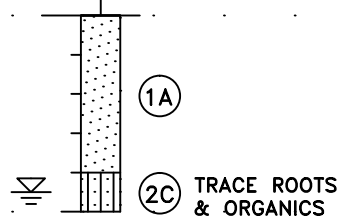
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FILE NO. 18-5404 APPROVED BY: FIGURE: 3

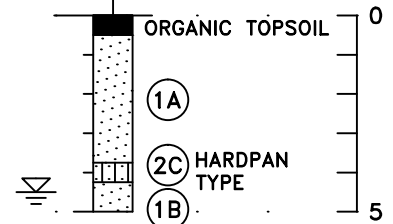
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DATE DRILLED: 01/31/18



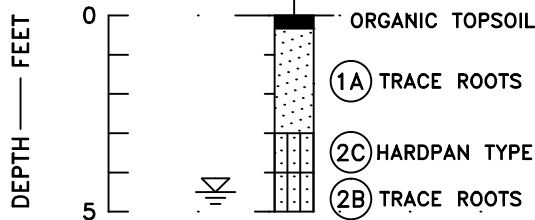
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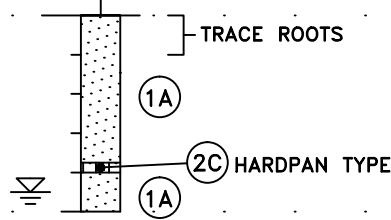
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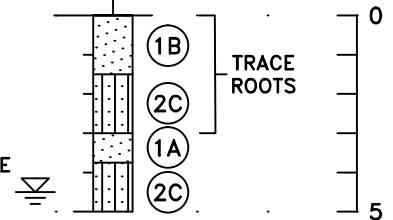
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DATE DRILLED: 01/31/18



BORING: AB-7
DATE DRILLED: 01/31/18



BORING: AB-8
DATE DRILLED: 01/31/18



LEGEND

SOIL DESCRIPTIONS

- ① FINE SAND (SP)
- ② FINE SAND WITH SILT (SP-SM)
- ③ FINE SAND WITH CLAY (SP-SC)
- ④ MUCK/PEAT (PT)
- ORGANIC TOPSOIL

COLORS

- Ⓐ LIGHT GRAY TO GRAY
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NM NATURAL MOISTURE

≡ GROUNDWATER LEVEL MEASURED ON DATE DRILLED

SP,SP-SM UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D-2487)

SM,SC,CH

NOTE:

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.

SOIL BORING LOCATIONS

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APPENDIX

Drilling 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. 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.

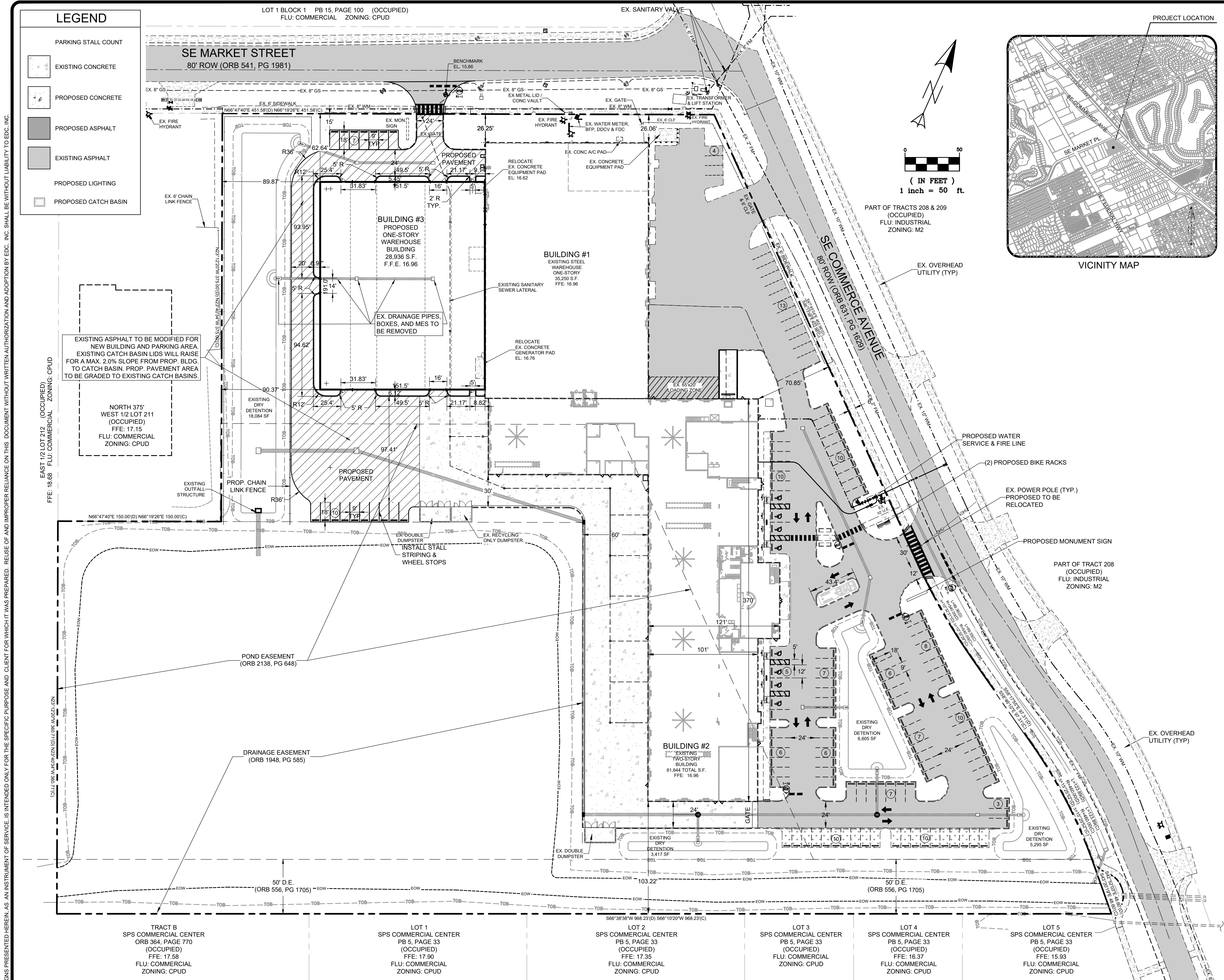
Representative split-spoon samples from the soils are brought to our laboratory in air-tight jars for further evaluation and testing, if necessary. Samples not used in testing are stored for 30 days prior to being discarded.

AUGER BORINGS

Auger borings are used when continuous sampling of soil strata close to ground surface is desired. A 4-inch diameter, continuous flite, helical auger with a cutting head at its end is screwed into the ground in 5-foot sections. It is powered by the rotating action of the Kelly bar of a rotary drill rig. The sample is recovered by withdrawing the auger out of the ground without rotating it. The soil sample so obtained, is classified and representative samples put in bags or jars and brought back to the laboratory for classification testing.

HAND AUGER BORING

Hand auger borings are used, if soil conditions are favorable, when the soil strata are to be determined within a shallow (approximately 5 foot) depth, or when access is not available for our truck-mounted drilling equipment. A 3-inch diameter hand bucket auger with a cutting head is simultaneously turned and pressed into the ground. The bucket auger is retrieved at approximately 6-inch increments and its content emptied for inspection. Sometimes post-hole diggers are used, especially in the upper 3 feet or so. The soil samples obtained are described and representative samples put in jars or bags and transported to the laboratory for further classification and testing, if necessary.



SITE DATA			
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PARCEL SIZE:	1.87 AC	PARCEL SIZE:	9.98 AC
SECTION:	38	SECTION:	38
TOWNSHIP:	38 SOUTH	TOWNSHIP:	38 SOUTH
RANGE:	41 EAST	RANGE:	41 EAST
CURRENT LAND USE:	INDUSTRIAL	CURRENT LAND USE:	COMMERCIAL
FUTURE LAND USE:	INDUSTRIAL	FUTURE LAND USE:	INDUSTRIAL
CURRENT ZONING:	M-2	CURRENT ZONING:	CPUD
FUTURE ZONING:	IPUD	FUTURE ZONING:	IPUD
DEVELOPER: THE CROCKER GROUP, LLC 3170 SE SLATER STREET STUART, FL 34997			
LAND USE			
TOTAL AREA:	516.176 S.F.	11.849 AC.	100.00%
IMPERVIOUS AREA:	389,739 S.F.	8.947 AC.	75.51%
EX. BUILDING #1 AREA:	35,250 S.F.	0.809 AC.	6.83%
EX. BUILDING #2 AREA:	49,126 S.F.	1.128 AC.	9.52%
EX. PAVEMENT AREA:	64,617 S.F.	1.483 AC.	12.52%
EX. CONCRETE AREA:	35,514 S.F.	0.815 AC.	6.88%
EX. STAB. GRASS AREA:	3,262 S.F.	0.075 AC.	0.63%
EX. LAKE (BELOW CES):	149,185 S.F.	3.425 AC.	28.80%
PROP. BUILDING #3 AREA:	28,936 S.F.	0.664 AC.	5.61%
PROP. PAVEMENT AREA:	23,849 S.F.	0.547 AC.	4.62%
PERVIOUS AREA:	126,437 S.F.	2.903 AC.	24.49%
PROP. DRY DET. AREA:	33,401 S.F.	0.767 AC.	6.47%
PROP. LANDSCAPED AREA:	93,036 S.F.	2.136 AC.	18.02%
BUILDING DATA			
TOTAL BUILDING COVERAGE:	21.95%		
MAX BUILDING HEIGHT:	45'		
TOTAL SQUARE FOOTAGE:	125,830 S.F.		
EXISTING BUILDING #1:	35,250 S.F.		
EXISTING BUILDING #2:	61,644 S.F. (INCLUDES 2ND FLOOR)		
PROPOSED BUILDING #3:	28,936 S.F.		
BUILDING USE			
MANUFACTURING:	105,412 S.F.		
OFFICE:	20,418 S.F.		
BUILDING SETBACKS			
FRONT:	20' MINIMUM (AS NOTED IN LDC 6.05.02)		
REAR:	25'		
SIDE:	15'		
PARKING CALCULATIONS			
WAREHOUSE			
PARKING REQUIRED = 1 SPACE / 1,000 G.S.F. (1ST 10,000 G.S.F.) + 1 SPACE / 2,000 G.S.F.			
= 10,000 G.S.F. / 1,000 G.S.F. + 105,412 G.S.F. / 2,000 G.S.F.			
= 10 SPACES + 53 SPACES			
= 63 SPACES			
OFFICE			
PARKING REQUIRED = 1 SPACE / 300 S.F.			
= 20,418 S.F. / 300 S.F.			
= 69 SPACES			
PARKING REQUIRED = 132 SPACES (5 HC)			
PARKING PROVIDED = 139 SPACES (8 HC)			
PROVIDER OF UTILITIES			
WATER: MARTIN COUNTY UTILITIES			
WASTEWATER: MARTIN COUNTY UTILITIES			
IRRIGATION: WELL (NOT PROPOSED)			
TRAFFIC STATEMENT			
INSTITUTE OF TRANSPORTATION ENGINEERS TRIP GENERATION, 11th EDITION			
MANUFACTURING (140)			
(AVERAGE RATES UTILIZED)			
	AVERAGE RATE	PROJECT S.F.	TRIPS
WEEKDAY DAILY TRIPS:	1000 SF / 4.75	105,412	= 500
A.M. PEAK HOUR TRIPS:	1000 SF / 0.88	105,412	= 72
P.M. PEAK HOUR TRIPS:	1000 SF / 0.74	105,412	= 78
OFFICE (110)			
(AVERAGE RATES UTILIZED)			
	AVERAGE RATE	PROJECT S.F.	TRIPS
WEEKDAY DAILY TRIPS:	1000 SF / 10.84	20,418	= 221
A.M. PEAK HOUR TRIPS:	1000 SF / 1.52	20,418	= 31
P.M. PEAK HOUR TRIPS:	1000 SF / 1.44	20,418	= 29
DRAINAGE			
THE SURFACE WATER MANAGEMENT SYSTEM FOR THE PROJECT WILL COLLECT SITE RUNOFF IN A SERIES OF INLETS WHICH WILL ROUTE THE RUNOFF TO THE PROPOSED DRY DETENTION AREAS WHICH ARE SIZED TO ACCEPT THE PROPOSED CONNECTION. THE PROPOSED DRAINAGE SYSTEM WILL COMPLY WITH THE EXISTING SFVMD SYSTEM PERMIT AS WELL AS THE CITY OF STUART LDC.			
SOLID WASTE			
BASED ON THE INTENDED USE OF THE BUILDING, THIS PROJECT WILL UTILIZE PROPOSED DUMPSTER AREAS FOR SOLID WASTE AND RECYCLABLE ITEMS.			
HAZARDOUS WASTE			
ALL HAZARDOUS WASTE DISPOSALS SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS.			
FIRE PROTECTION			
ALL FIRE HYDRANTS WITHIN 1000' ARE SHOWN. EXISTING BUILDING UTILIZES A FIRE SPRINKLER SYSTEM AND PROJECT PROPOSES A FIRE SERVICE LINE TO SERVE THE NEW BUILDING.			
LANDSCAPE			
ALL LANDSCAPING BY OTHERS AND SHALL BE IN CONFORMANCE WITH THE CITY OF STUART LAND DEVELOPMENT CODE OF ORDINANCES SEC. 6.04.00.			
ACCESSIBILITY AND ADA COMPLIANCE			
ALL SIDEWALKS AND RAMPS SHALL MEET FDOT AND ADA REQUIREMENTS.			
LIGHTING			
ALL LIGHTING BY OTHERS IS TO INCLUDE POLE HEIGHTS AND SHALL BE IN CONFORMANCE WITH THE CITY OF STUART LAND DEVELOPMENT CODE OF ORDINANCES SEC. 6.07.00.			
WATER, SEWER, AND IRRIGATION			
EXISTING WATER SERVICE AND SEWER SERVICE WILL BE UTILIZED FOR THE EXISTING BUILDING. THE PROPOSED BUILDING WILL HAVE WATER SERVICE CONNECTED EXISTING WATER MAIN AND WILL HAVE SEWER SERVICE CONNECTED TO THE EXISTING GRAVITY SYSTEM.			

PORT SAINT LUCIE OFFICE
10250 SW VILLAGE PARKWAY - SUITE 201
PORT SAINT LUCIE, FL 34987
772-462-2455
www.edc-inc.com

F.B.P.E. CERTIFICATE OF AUTHORIZATION 9935
L.B. CERTIFICATE OF AUTHORIZATION 8098

DESIGNED BY	JDF	DRAWN BY	JDF	FILE NAME	21-487_03-11-2022.dwg	LAYOUT	AS SHOWN	SCALE	DATE
DATE									

7.13.18	REVISED PER 6.118 ROW USE PERMIT COMMENTS
5-9-18	CLARIFY OPEN SPACE SQUARE FOOTAGES PER STAFF COMMENTS
1-31-18	CLARIFY BUILDING SQUARE FOOTAGES PER STAFF COMMENTS
DATE	REVISION COMMENTS

WATERBLASTING

MARKET STREET

FINAL SITE PLAN

PRE-ENGINEERING PLAN

CITY OF STUART

FLORIDA

DAVID C. BAGGETT, P.E. (DATE)
#81375

10250 SW VILLAGE PARKWAY - SUITE 201
PORT SAINT LUCIE, FL 34987
772-462-2455

21-487

1 OF 2

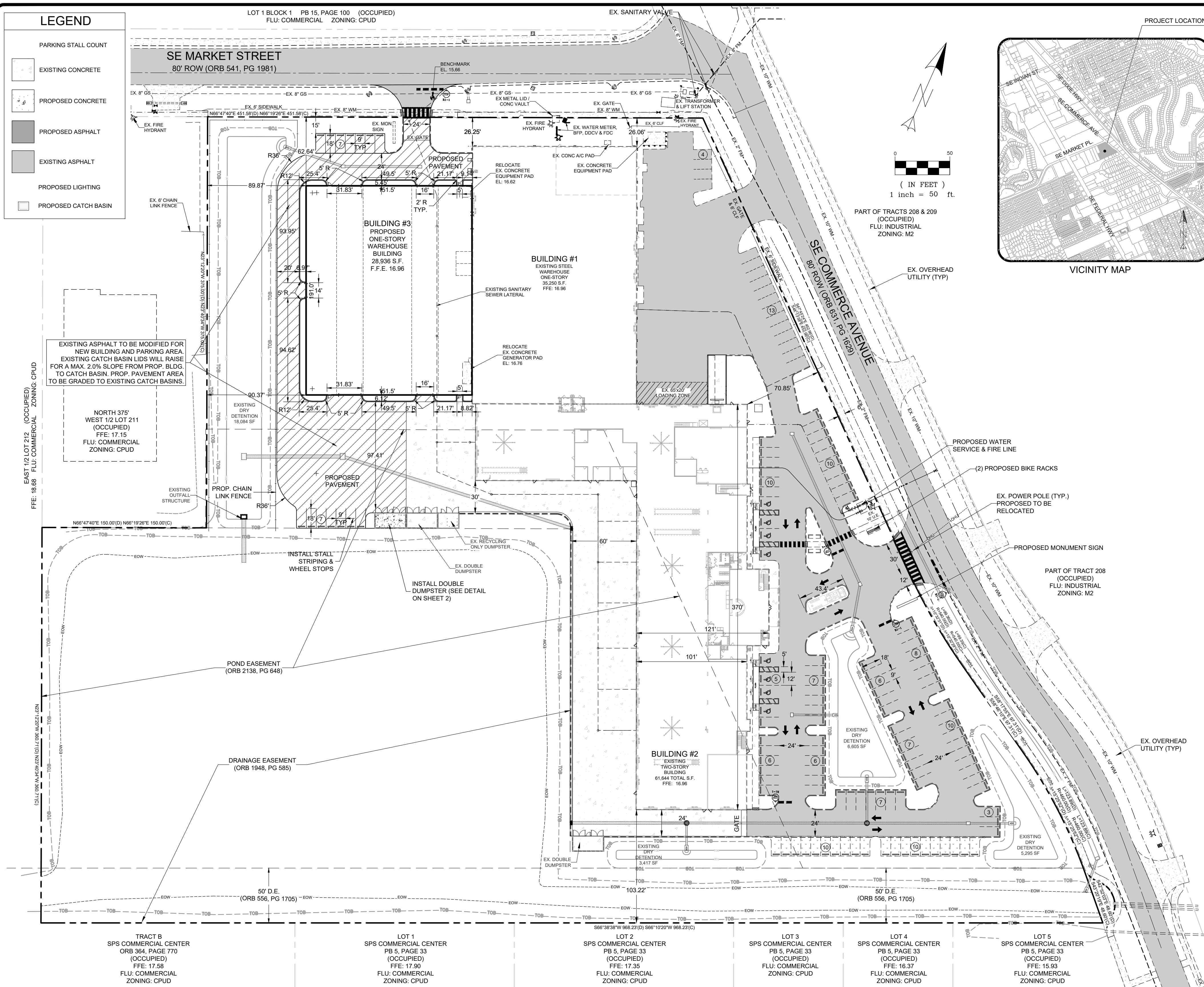
LEGAL DESCRIPTION

PARCEL 9:

A PORTION OF TRACTS 208 THROUGH 211, OF REVISED PLAT OF PORT SEWALL LAND COMPANY, ACCORDING TO THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 3, PAGE 7 OF THE PUBLIC RECORDS OF PALM BEACH (NOW MARTIN) COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: BEGINNING AT THE SOUTHWEST CORNER OF SAID TRACT 211, THENCE NORTH 29 DEGREES 12 MINUTES 20 SECONDS WEST, ALONG THE WEST LINE OF SAID TRACT 211, A DISTANCE OF 360.71 FEET; THENCE NORTH 68 DEGREES 47 MINUTES 40 SECONDS EAST, ALONG A LINE BEING 375.00 FEET SOUTH OF AND PARALLEL WITH THE SOUTH RIGHT-OF-WAY LINE OF S.E. MARKET PLACE, AS RECORDED IN OFFICIAL RECORDS BOOK 402, PAGES 763 THROUGH 768, A DISTANCE OF 150.00 FEET; THENCE NORTH 23 DEGREES 12 MINUTES 20 SECONDS WEST, ALONG A LINE BEING 150.00 FEET EAST OF AND PARALLEL WITH THE SAID WEST LINE OF TRACT 211, A DISTANCE OF 375.00 FEET TO THE SAID SOUTH RIGHT-OF-WAY LINE OF S.E. MARKET PLACE; THENCE NORTH 68 DEGREES 47 MINUTES 40 SECONDS EAST, ALONG SAID SOUTH RIGHT-OF-WAY LINE, A DISTANCE OF 216.58 FEET; THENCE SOUTH 23 DEGREES 12 MINUTES 20 SECONDS EAST, ALONG A LINE BEING 75.58 FEET EAST OF AND PARALLEL WITH THE EAST LINE OF SAID TRACT 211, A DISTANCE OF 285.00 FEET; THENCE NORTH 68 DEGREES 47 MINUTES 40 SECONDS EAST, ALONG A LINE BEING 285.00 FEET SOUTH OF AND PARALLEL WITH THE SAID SOUTH RIGHT-OF-WAY LINE OF S.E. MARKET PLACE, A DISTANCE OF 215.42 FEET TO THE EAST LINE OF SAID TRACT 210; THENCE NORTH 42 DEGREES 14 MINUTES 36 SECONDS EAST, A DISTANCE OF 136.23 FEET TO THE WEST RIGHT-OF-WAY LINE OF S.E. COMMERCE AVENUE AS RECORDED IN OFFICIAL RECORDS BOOK 631, PAGES 1629 THROUGH 1630; THENCE SOUTH 47 DEGREES 45 MINUTES 24 SECONDS EAST ALONG SAID WEST RIGHT-OF-WAY LINE A DISTANCE OF 201.87 FEET TO THE POINT OF CURVATURE OF A CURVE CONCAVE NORTHEASTERLY, AND HAVING A RADIUS 540.00 FEET; THENCE SOUTHEASTERLY ALONG THE ARC OF SAID CURVE AND SAID WEST RIGHT-OF-WAY LINE, THROUGH A CENTRAL ANGLE OF 10 DEGREES 32 MINUTES 31 SECONDS, A DISTANCE OF 99.35 FEET TO THE POINT OF TANGENCY; THENCE SOUTH 58 DEGREES 17 MINUTES 56 SECONDS EAST, ALONG SAID WEST RIGHT-OF-WAY LINE, A DISTANCE OF 97.31 FEET TO THE POINT OF CURVATURE OF A CURVE CONCAVE SOUTHWESTERLY, AND HAVING A RADIUS 460.00 FEET; THENCE SOUTHEASTERLY ALONG THE ARC OF SAID CURVE AND SAID WEST RIGHT-OF-WAY LINE, THROUGH A CENTRAL ANGLE OF 15 DEGREES 25 MINUTES 52 SECONDS, A DISTANCE OF 123.89 FEET TO THE POINT OF TANGENCY; THENCE SOUTH 42 DEGREES 52 MINUTES 03 SECONDS EAST, ALONG SAID WEST RIGHT-OF-WAY LINE OF S.E. COMMERCE AVENUE, A DISTANCE OF 48.60 FEET TO THE SOUTH LINE OF SAID TRACTS 208 THROUGH 211; THENCE SOUTH 68 DEGREES 38 MINUTES 38 SECONDS WEST, ALONG SAID SOUTH LINE, A DISTANCE OF 968.23 FEET TO THE POINT OF BEGINNING, CONTAINING 434.891 SQ FT OR 9.984 ACRES MORE OR LESS, SUBJECT TO EASEMENTS, RESTRICTIONS, RESERVATIONS, AND RIGHTS-OF-WAY OR RECORD.

EXHIBIT A

BEING A PORTION OF LOTS 209 AND 210, ACCORDING TO THE PLAT OF PORT SEWALL REVISED MAP AS RECORDED IN PLAT BOOK 3, PAGE 7, MARTIN COUNTY PUBLIC RECORDS, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTHWEST CORNER OF SAID LOT 210, RUN NORTH 66 DEGREES 38 MINUTES 38 SECONDS EAST ALONG THE SOUTH LINE OF SAID LOT 210, A DISTANCE OF 75.58 FEET TO A POINT; THENCE NORTH 23 DEGREES 12 MINUTES 20 SECONDS WEST ON A LINE PARALLEL WITH THE WEST LINE OF SAID LOT 210, A DISTANCE OF 249.74 FEET TO THE POINT OF BEGINNING; THENCE CONTINUE NORTH 23 DEGREES 12 MINUTES 20 SECONDS WEST A DISTANCE OF 200.00 FEET; THENCE NORTH 66 DEGREES 47 MINUTES 40 SECONDS EAST A DISTANCE OF 215.42 FEET; THENCE SOUTH 42 DEGREES 14 MINUTES 36 SECONDS EAST A DISTANCE OF 136.23 FEET TO THE WESTERLY RIGHT OF WAY LINE OF COMMERCE AVENUE; THENCE SOUTH 47 DEGREES 45 MINUTES 24 SECONDS EAST ALONG SAID RIGHT OF WAY LINE, A DISTANCE OF 19.84 FEET TO A POINT OF CURVATURE OF A CURVE CONCAVE TO THE NORTHEAST, HAVING A CENTRAL ANGLE OF 10 DEGREES 32 MINUTES 30 SECONDS AND A RADIUS OF 540.00 FEET; THENCE ALONG SAID ARC A DISTANCE OF 99.38 FEET TO A POINT OF TANGENCY; THENCE RUN SOUTH 58 DEGREES 17 MINUTES 56 SECONDS EAST A DISTANCE OF 96.92 FEET TO A POINT ON THE EAST LINE OF SAID LOT 209; THENCE RUN SOUTH 23 DEGREES 12 MINUTES 20 SECONDS WEST ON A LINE PARALLEL WITH THE WEST LINE OF SAID LOT 210 A DISTANCE OF 249.74 FEET; THENCE NORTH 66 DEGREES 47 MINUTES 40 SECONDS EAST A DISTANCE OF 215.42 FEET; THENCE SOUTH 42 DEGREES 14 MINUTES 36 SECONDS EAST A DISTANCE OF 136.23 FEET TO THE WESTERLY RIGHT OF WAY LINE OF COMMERCE AVENUE; THENCE SOUTH 47 DEGREES 45 MINUTES 24 SECONDS EAST ALONG SAID RIGHT OF WAY LINE, A DISTANCE OF 19.84 FEET TO A POINT OF CURVATURE OF A CURVE CONCAVE TO THE NORTHEAST, HAVING A CENTRAL ANGLE OF 10 DEGREES 32 MINUTES 30 SECONDS AND A RADIUS OF 540.00 FEET; THENCE ALONG SAID ARC A DISTANCE OF 99.38 FEET TO A POINT OF TANGENCY; THENCE SOUTH 58 DEGREES 17 MINUTES 56 SECONDS EAST A DISTANCE OF 96.92 FEET TO A POINT ON THE EAST LINE OF SAID LOT 209; THENCE RUN SOUTH 23 DEGREES 12 MINUTES 20 SECONDS WEST ON A LINE PARALLEL WITH THE WEST LINE OF SAID LOT 210 A DISTANCE OF 249.74 FEET; 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SITE DATA			
PARCEL SIZE:	38-38-41-002-209-00001-8	PARCEL ID:	38-38-41-002-208-00001-0
PARCEL ID:	1.87 AC	PARCEL SIZE:	9.98 AC
SECTION:	38	SECTION:	38
TOWNSHIP:	38 SOUTH	TOWNSHIP:	38 SOUTH
RANGE:	41 EAST	RANGE:	41 EAST
CURRENT LAND USE:	INDUSTRIAL	CURRENT LAND USE:	COMMERCIAL
FUTURE LAND USE:	INDUSTRIAL	FUTURE LAND USE:	INDUSTRIAL
CURRENT ZONING:	1/2	CURRENT ZONING:	CPUD
FUTURE ZONING:	IPUD	FUTURE ZONING:	IPUD
DEVELOPER: THE CROCKER GROUP, LLC 3170 SE SLATER STREET STUART, FL 34997			
LAND USE			
TOTAL AREA:	516,176 S.F.	11.849 AC.	100.00%
IMPERVIOUS AREA:	389,739 S.F.	8.947 AC.	75.51%
EX. BUILDING #1 AREA:	35,250 S.F.	0.809 AC.	6.83%
EX. BUILDING #2 AREA:	49,126 S.F.	1.128 AC.	9.52%
EX. PAVEMENT AREA:	64,617 S.F.	1.483 AC.	12.52%
EX. CONCRETE AREA:	35,514 S.F.	0.815 AC.	6.88%
EX. STAB. GRASS AREA:	3,262 S.F.	0.075 AC.	0.63%
EX. LAKE (BELOW CE):	149,185 S.F.	3.425 AC.	28.90%
PROP. BUILDING #3 AREA:	28,936 S.F.	0.664 AC.	5.61%
PROP. PAVEMENT AREA:	23,849 S.F.	0.547 AC.	4.62%
PERVIOUS AREA:	126,437 S.F.	2.903 AC.	24.49%
PROP. DRY DET. AREA:	33,401 S.F.	0.767 AC.	6.47%
PROP. LANDSCAPED AREA:	93,036 S.F.	2.136 AC.	18.02%
BUILDING DATA			
TOTAL BUILDING COVERAGE:	21.95%		
MAX BUILDING HEIGHT:	45'		
TOTAL SQUARE FOOTAGE:	125,830 S.F.		
EXISTING BUILDING #1:	35,250 S.F.		
EXISTING BUILDING #2:	61,644 S.F. (INCLUDES 2ND FLOOR)		
PROPOSED BUILDING #3:	28,936 S.F.		
TOTAL BUILDING USE			
MANUFACTURING:	105,412 S.F.		
OFFICE:	20,418 S.F.		
BUILDING SETBACKS			
FRONT:	20' MINIMUM (AS NOTED IN LDC 6.05.02)		
REAR:	25'		
SIDE:	15'		
PARKING CALCULATIONS			
WAREHOUSE			
PARKING REQUIRED = 1 SPACE / 1,000 G.S.F. (1ST 10,000 G.S.F.) + 1 SPACE / 2,000 G.S.F.			
= 10,000 G.S.F. / 1,000 G.S.F. + 105,412 G.S.F. / 2,000 G.S.F.			
= 10 SPACES + 53 SPACES			
= 63 SPACES			
OFFICE			
PARKING REQUIRED = 1 SPACE / 300 S.F.			
= 20,418 S.F. / 300 S.F.			
= 69 SPACES			
PARKING REQUIRED = 132 SPACES (5 HC)			
PARKING PROVIDED = 139 SPACES (8 HC)			
PROVIDER OF UTILITIES			
WATER:	MARTIN COUNTY UTILITIES		
WASTEWATER:	MARTIN COUNTY UTILITIES		
IRRIGATION:	WELL (NOT PROPOSED)		
TRAFFIC STATEMENT			
INSTITUTE OF TRANSPORTATION ENGINEERS TRIP GENERATION, 11th EDITION			
EXISTING TRAFFIC (PER PREVIOUSLY APPROVED SITE PLAN)			
WEEKDAY DAILY TRIPS	=	517	
A.M. PEAK HOUR TRIPS	=	88	
P.M. PEAK HOUR TRIPS	=	86	
PROPOSED TRIPS			
WAREHOUSE (150)(AVERAGE RATES UTILIZED)			
	AVERAGE RATE	PROJECT S.F.	TRIPS
WEEKDAY DAILY TRIPS:	1000 SF / 1.71 *	28,936	= 50
A.M. PEAK HOUR TRIPS:	1000 SF / 0.21 *	28,936	= 6
P.M. PEAK HOUR TRIPS:	1000 SF / 0.23 *	28,936	= 7
DRAINAGE			
THE SURFACE WATER MANAGEMENT SYSTEM FOR THE PROJECT WILL COLLECT SITE RUNOFF IN A SERIES OF INLETS WHICH WILL ROUTE THE RUNOFF TO THE PROPOSED DRY DETENTION AREAS WHICH ARE SIZED TO ACCEPT THE PROPOSED CONNECTION. THE PROPOSED DRAINAGE SYSTEM WILL COMPLY WITH THE EXISTING SPWMD SYSTEM PERMIT AS WELL AS THE CITY OF STUART LDC.			
SOLID WASTE			
BASED ON THE INTENDED USE OF THE BUILDING, THIS PROJECT WILL UTILIZE PROPOSED DUMPSTER AREAS FOR SOLID WASTE AND RECYCLABLE ITEMS.			
HAZARDOUS WASTE			
ALL HAZARDOUS WASTE DISPOSALS SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS.			
FIRE PROTECTION			
ALL FIRE HYDRANTS WITHIN 1000' ARE SHOWN. EXISTING BUILDING UTILIZES A FIRE SPRINKLER SYSTEM AND PROJECT PROPOSES A FIRE SERVICE LINE TO SERVE THE NEW BUILDING.			
LANDSCAPE			
ALL LANDSCAPING BY OTHERS AND SHALL BE IN CONFORMANCE WITH THE CITY OF STUART LAND DEVELOPMENT CODE OF ORDINANCES SEC. 6.04.00.			
ACCESSIBILITY AND ADA COMPLIANCE			
ALL SIDEWALKS AND RAMPS SHALL MEET FDOT AND ADA REQUIREMENTS.			
LIGHTING			
ALL LIGHTING BY OTHERS IS TO INCLUDE POLE HEIGHTS AND SHALL BE IN CONFORMANCE WITH THE CITY OF STUART LAND DEVELOPMENT CODE OF ORDINANCES SEC. 6.07.00.			
WATER, SEWER, AND IRRIGATION			
EXISTING WATER SERVICE AND SEWER SERVICE WILL BE UTILIZED FOR THE EXISTING BUILDING. THE PROPOSED BUILDING WILL HAVE WATER SERVICE CONNECTED EXISTING WATER MAIN AND WILL HAVE SEWER SERVICE CONNECTED TO THE EXISTING GRAVITY SYSTEM.			

DESIGNED BY		JDF
DRAWN BY		JDF
21-487 (04/27/2023).dwg		
ELEVATE		
Site Plan		
LAYOUT		
AS SHOWN		
SCALE		
03 MARCH 2022		
DATE		

REVISION COMMENTS	
2/13/18	REVISED PER 6-14 ROW USE PERMIT COMMENTS
5-9-18	CLAREY OPEN SPACE SQUARE FOOTAGES PER STAFF COMMENTS
1-31-18	CLAREY BUILDING SQUARE FOOTAGES PER STAFF COMMENTS
DATE	REVISION COMMENTS

WATERBLASTING

MARKET STREET

FINAL SITE PLAN

PRE-ENGINEERING PLAN

CITY OF STUART

FLORIDA

DAVID C. BAGGETT, P.E. (DATE)

#81375



10250 SW VILLAGE PARKWAY - SUITE 201

PORT SAINT LUCIE, FL 34987

☎ 772-462-2455

21-487

1 OF 2

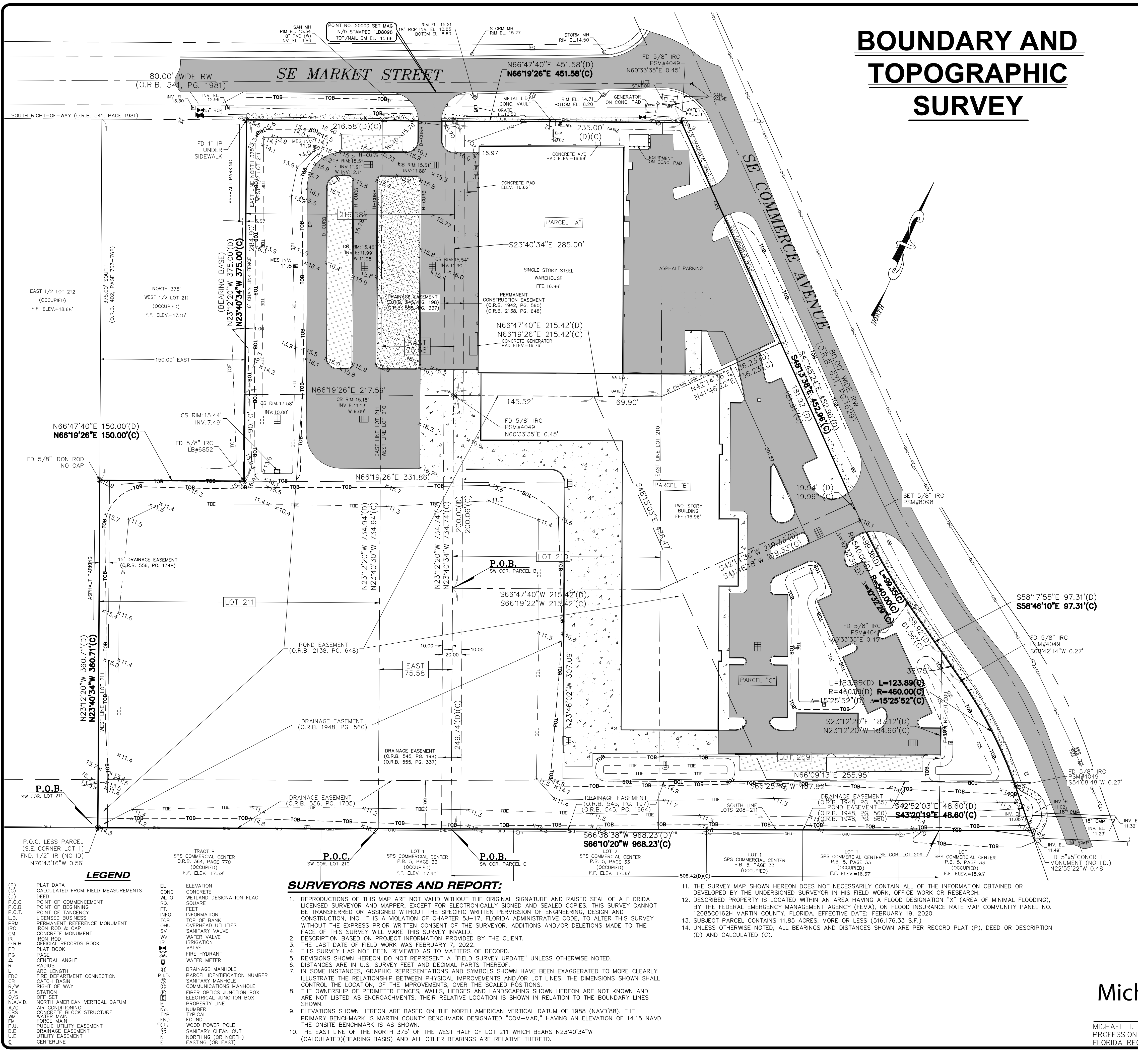
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DESCRIBED IN OFFICIAL RECORDS BOOK 541, PAGE 189N MARTIN COUNTY PUBLIC RECORDS; THENCE RUN NORTH 66 DEGREES 47 MINUTES 40 SECONDS EAST ALONG SAID SOUTHERLY RIGHT-OF-WAY LINE A DISTANCE OF 235.00 FEET TO THE WESTERLY RIGHT-OF-WAY LINE OF COMMERCE AVENUE; THENCE RUN SOUTH 47 DEGREES 45 MINUTES 24 SECONDS EAST ALONG THE WESTERLY RIGHT-OF-WAY LINE OF SAID COMMERCE AVENUE A DISTANCE OF 452.96 FEET TO A POINT OF CURVATURE OF A CIRCULAR ARC CONCAVE TO THE NORTHEAST HAVING A CENTRAL ANGLE OF 10 DEGREES 32 MINUTES 30 SECONDS AND A RADIUS OF 540.00 FEET; THENCE SOUTHEAST ALONG THE WESTERLY RIGHT-OF-WAY LINE OF SAID COMMERCE AVENUE 58 DEGREES 17 MINUTES 56 SECONDS EAST A DISTANCE OF 58.92 FEET TO THE EASTERLY LINE OF LOT 209; THENCE RUN SOUTH 23 DEGREES 12 MINUTES 20 SECONDS EAST A DISTANCE OF 187.12 FEET TO THE SOUTHWEST CORNER OF SAID LOT 209; THENCE SOUTH 66 DEGREES 38 MINUTES 38 SECONDS EAST ALONG SAID SOUTHERLY RIGHT-OF-WAY LINE A DISTANCE OF 506.42 TO THE POINT OF BEGINNING.

EXCEPTING AND EXCLUDING THE FOLLOWING PARCELS:

PARCEL "B"; BEING A PORTION OF LOTS 209 AND 210, ACCORDING TO THE PLAT OF PORT SEAWALL REVISAD MAP AS RECORDED IN PLAT BOOK 3, PAGE 7, MARTIN COUNTY PUBLIC RECORDS; BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT A SOUTHWEST CORNER OF SAID LOT 209; RUN NORTH 66 DEGREES 47 MINUTES 40 SECONDS EAST ALONG SAID SOUTHERLY RIGHT-OF-WAY LINE A DISTANCE OF 75.58 FEET TO A POINT; THENCE NORTH 23 DEGREES 12 MINUTES 20 SECONDS WEST ON A LINE PARALLEL TO THE WEST LINE OF SAID LOT 209, A DISTANCE OF 249.74 FEET TO THE POINT OF BEGINNING; THENCE RUN SOUTH 66 DEGREES 47 MINUTES 40 SECONDS EAST ALONG A DISTANCE OF 215.42 FEET; THENCE NORTH 42 DEGREES 14 MINUTES 38 SECONDS EAST A DISTANCE OF 19.94 FEET TO A POINT OF CURVATURE OF A CURVE CONCAVE TO THE NORTHEAST, HAVING A CENTRAL ANGLE OF 10 DEGREES 32 MINUTES 30 SECONDS AND A RADIUS OF 540.00 FEET; THENCE ALONG SAID ARC 187.12 FEET TO THE SOUTHWEST CORNER OF SAID LOT 209; THENCE SOUTH 66 DEGREES 47 MINUTES 40 SECONDS EAST A DISTANCE OF 58.92 FEET TO A POINT ON THE EAST LINE OF SAID LOT 209; THENCE SOUTH 23 DEGREES 12 MINUTES 20 SECONDS EAST ALONG SAID EAST LINE OF LOT 209 A DISTANCE OF 187.12 FEET TO THE SOUTHWEST CORNER OF SAID LOT 209; THENCE SOUTH 66 DEGREES 47 MINUTES 40 SECONDS EAST ALONG SAID SOUTHERLY RIGHT-OF-WAY LINE A DISTANCE OF 506.42 FEET TO THE POINT OF BEGINNING, CONTAINING 3.12 ACRES, MORE OR LESS.

THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADOPTION BY EDC, INC. SHALL BE WITHOUT LIABILITY TO EDC, INC.



Attn: Tom Reetz
 City of Stuart
 121 SW Flagler Ave
 Stuart, FL 34994
 Submittal Reference : Z22030002

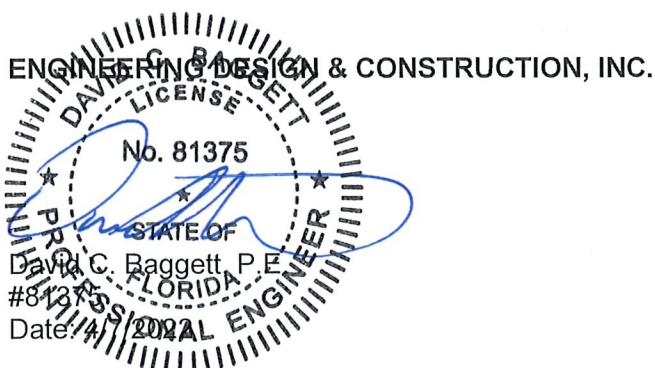
Traffic Statement

The existing Hog Technologies (Waterblasting) Site is located on the corner of Market Place and Commerce Ave in Stuart, FL at 3920 SE Commerce Ave. The proposed warehouse building expansion is 28,936 SF over an existing outdoor storage area.

Per the approved Site plan the existing traffic on the site is a daily 517 trips with an estimated 88 AM Peak Hour trips and 86 PM Peak Hour trips. The proposed expansion would create the following additional trips.

Warehouse (150)	Average Rate		Project S.F.		Trips
Weekday Daily Trips:	1000 SF/1.71	*	28,936 SF	=	50
AM Peak Hour Trips:	1000 SF/0.21	*	28,936 SF	=	6
PM Peak Hour Trips:	1000 SF/0.23	*	28,936 SF	=	7

The proposed expansion generates miniscule trips and will have no negative impacts on the existing site, or surrounding roads.



Z:\EDC-2021\21-487 - Crocker - Market Street\ENGINEERING\Documents\Submittal Documents\Submittal Packages\2022-04-06_SP_Resubmittal\Drainage Statement.docx



Staff Report

A. Application

Project

Applicant	James P. Crocker
Property Owner	The Crocker Group LLC
Agent for Applicant	EDC. Inc. Engineers, Surveyors & Environmental Consultants
Project Manager	Deanna Foriere
Date of Report	July 25, 2022

B. Project Description

The intent of this application to request approval for a proposed expansion of Hog Technologies (Waterblasting) operation located on Commerce Ave/Market Street. The site currently consists of a 35,250 sq.ft. one-story warehouse building and a 61,644 sq.ft. two-story building with associated site improvements. All approved within the original IPUD; Ordinance# 2368-2018.

The petitioner is proposing an additional 28,936 sq.ft. (one-story) warehouse expansion to the site. The application is therefore a major amendment to Ordinance# 2368-2018.

Address	3920 SE Commerce Avenue
Parcel Number(s)	38-38-41-002-209-00001-8
Existing Zoning	IPUD
Future Land Use	Industrial
Site Area (acres)	11.85 acres
Present Use	Warehouse/Office/Manufacturing
Proposed Land Use Designation	No Change
Proposed Zoning District	IPUD
Proposed Use	Warehouse/Office/Manufacturing

C. Location and site information

Aerial Map



The site is located at the South-Western corner of the intersection of Commerce Ave and Market Street.

Existing Zoning



Industrial Planned Unit Development (Ord#2368-2018)

Existing Future Land Use



Industrial Future Land Use

D. Determination of compliance with Comp Plan

The proposal complies with the following Objectives and Policies of the City of Stuart Comprehensive Plan:

Future Land Use

Policy 1.A7.1.E.

Industrial: Land uses, and activities predominantly connected with manufacturing, assembly, processing, packaging, research, or storage of products. Additional permitted uses in such areas include warehousing, wholesale activity, machine repair, and limited indoor retail sales and professional and other offices. Also, public facilities and electric distribution substations are allowed.

Relevant Comprehensive Plan Policies:

ELEMENT 11: ECONOMIC DEVELOPMENT

GOAL STATEMENT - A

The City will develop and maintain an economic environment that will encourage the creation, expansion and retention of business within city limits while maintaining a high quality of life for its residents.

Policy 11.A1.4. The City will encourage the designation and preservation of industrial land for industrial uses.

Policy 11.A2.1. The City will encourage the expansion of existing business and industry and/or development of new business and industry in appropriate locations, as feasible and applicable, in order to maximize the use of existing public services and infrastructure.

E. Review Comments

DOCUMENTS AND PLANS REVIEWED

- a. Site Plan: By EDC, ref 21-487 dated March 3, 2022 (2 sheets).
- b. Landscape Plan: By Conceptual Design Group, ref 17-0802 dated May 23, 2022 (6 sheets).
- c. Architectural Renderings: Ahern Associates Architects, ref 22-2329, dated March 4, 2022 (2 sheets).
- d. Conceptual Engineering Plans: By EDC, ref 21-487, dated March 3, 2022, (2 sheets).

- e. Traffic Statement: By EDC, dated April 7, 2022.
- f. Boundary and Topographic Survey: By EDC 21-487, dated February 7, 2022.
- g. Drainage Report - attached to SFWMD ERP Permit. By EDC.

Items for review by the Local Planning Agency

- a. The existing land use pattern; **The adjacent uses are primarily commercial and consist of warehouse and small manufacturing uses.**
- b. The possible creation of an isolated land use classification unrelated to adjacent and nearby classifications; **The land use is already approved and forms part of a wider Commercial/Industrial area.**
- c. The population density pattern of the area and possible increase or overtaxing of the load on public facilities such as schools, utilities and streets; **Not applicable**
- d. The possible overloading of the city's sewage collection, treatment and disposal facilities; **Adequate facilities exist.**
- e. The possible overloading of the city's drainage system; **The stormwater system is designed to city and SFWMD standards.**
- f. The existing classification boundaries in relation to existing conditions on the subject property; **Expands an appropriate existing use.**
- g. The existence of changed or changing conditions which make the passage of the proposed amendment necessary or appropriate; **The proposal will allow the expansion of an existing business and allow job retention/expansion.**
- h. The impact of the proposed amendment upon living conditions in the adjacent neighborhood; **The site is located within a primarily commercial/industrial area and should not affect living conditions.**
- i. The impact of the amendment upon the flow of light and air to adjacent areas; **Limited impacts.**
- j. The impact of the proposed amendment upon property values in the adjacent area; **Unlikely to have adverse effect upon property values.**
- k. The impact of the proposed amendment upon improvement or development of adjacent property in accordance with existing regulations; **No impact upon the development rights or development opportunities available to adjacent properties.**
- l. The existence of other adequate sites in the city for the proposed land use classifications already permitting such use. **The proposed expansion of an existing business operation implements an efficient use of land and resources.**

SITE DESIGN:

The proposed building is intended for warehouse use, associated with an existing manufacturing/assembly operation. The use is therefore compatible to the existing buildings and uses adjacent to the site. The proposed building is an expansion of existing activities on site and is located within an appropriate industrial future land use.

TRAFFIC:

The applicant has provided a traffic statement.

FIRE:

Conceptually Approved: Fire flow is required at construction plan submittal as per NFPA 1, table 18.4.5.2.1 for 125,830 sq.ft.

POLICE:

Approved: No Comments

PUBLIC WORKS:

Approved subject to the following:

The review does not approve construction. Further review is required.

Separate dumpster enclosure construction permit is required.

All construction pertinent to this Department shall be installed, inspected, and tested in accordance with the City of Stuart Minimum Design and Construction Standards latest edition, and the City of Stuart Specifications and Ordinances where applicable. In case of discrepancies between the construction plans and afore mentioned manuals, the most restrictive shall apply.

BUILDING:

All plans to be reviewed by this Department shall be routed through the Permit Technician in the Development Department. Approval by this department shall not be construed to be a license to proceed with work and shall not be construed as authority to violate, cancel, alter, or set aside any provisions of the City Code. Approval shall not prevent this department from thereafter requiring a correction of errors in plans, construction, or violation of City Code.

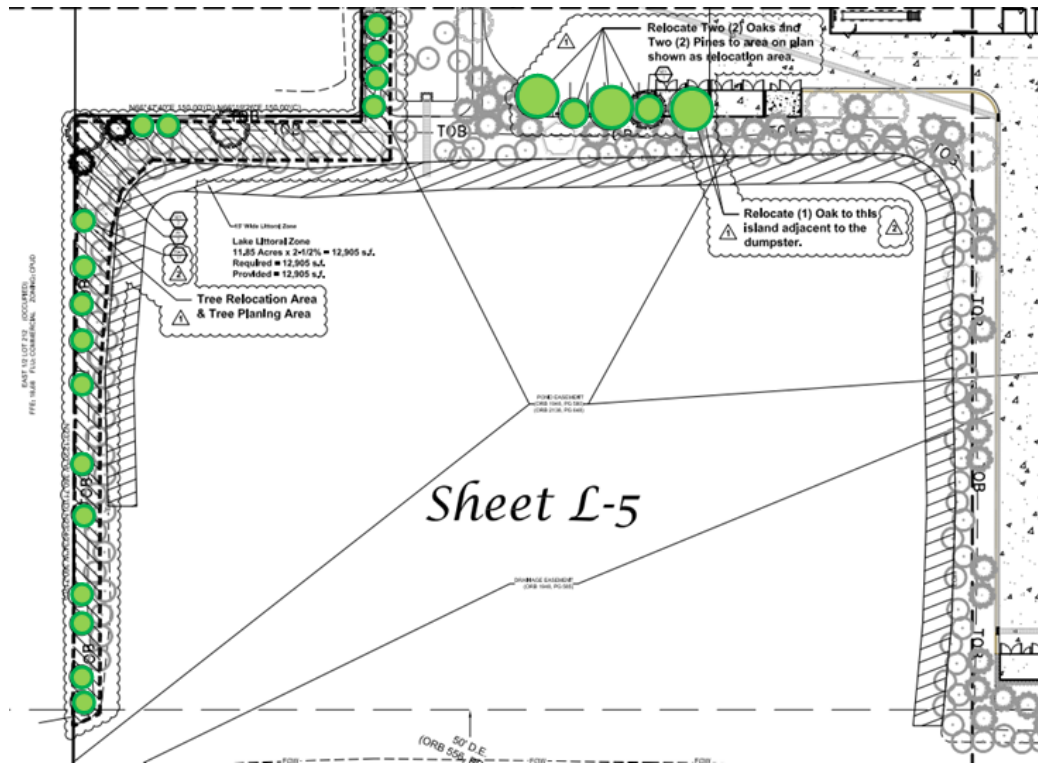
Code compliance rests with the design engineer

PARKING:

Parking provision exceeds code requirement.

LANDSCAPING:

Three Oak trees are to be relocated together with the placement of seventeen trees within the littoral zone of the existing stormwater treatment pond. The additional landscaping is added in order to compensate for the loss of open space due to the removal of parking bay landscaped islands.



K

Kev Freeman | **Development**

City of Stuart | 121 SW Flagler Ave. Stuart Fl. 34994
772-288-5328



City of Stuart
121 SW Flagler Ave.
Stuart, FL 34994
development@ci.stuart.fl.us
(772) 288-5326

Received by: 

Reviewed by: 

Planned Unit Development (PUD) Amendment Application

Project ID# 22030002
(Staff Entry)

Pre-App Conference Date:

Application Date:

RECEIVED
MAR 14 2022

SITE INFORMATION

Project Name: Waterblasting	Parcel ID#: 38-38-41-002-209-00001-8
Site Address: 3820 SE Commerce Avenue	Received By: <u>DEVELOPMENT</u>
Subdivision: Port Sewall	Lot(s): Basic Information Improvement Detail Sales History Value History PRINT PROPERTY CARD PIN 38-38-41-002-209-00001-8 AIN 35188 Situs Address
Site Acreage: 11.75	Flood Zone/Base Flood Elevation: x
Existing Zoning District / CRA Subdistrict (if applicable): CPUD	
Proposed Zoning District / CRA Subdistrict (if applicable): N/A	
Current Comprehensive Plan Future Land Use Designation: Commercial	
Proposed Comprehensive Plan Future Land Use Designation: N/A	
Existing Land Use: Office / Manufacturing	Proposed Land Use: Office / Manufacturing
Proposed Square Footage (if applicable): 35,234 SF addition (Total SF: 132,128 sf)	Proposed Density (if applicable):

PETITIONER INFORMATION

Property Owner: The Crocker Group, LLC	Phone Number / Email Address: 772-233-7393 / james@waterblasting.com
Property Owner's Mailing Address: 3920 SE Commerce Avenue, Stuart, FL 34997	
Applicant (if not Owner):	Phone Number / Email Address:
Applicant's Mailing Address: Same	
Agent/Contact Person: Engineering Design & Construction, Inc. / Brad Currie	Phone Number / Email Address: 772-462-2455 / bradcurrie@edc-inc.com
Agent's Mailing Address: 10250 SW Village Parkway, Suite 201, Port St. Lucie, FL 34987	
Architect:	Engineer: Engineering Design & Construction, Inc.
Planner: Engineering Design & Construction, Inc.	Landscape Architect: Conceptual Design Group, Inc.

Statement of Ownership and Designation of Authorized Agent

(Please Print or Type)

Before me, the undersigned authority, personally appeared James Crocker

Who, being by me first duly sworn, on oath deposed and says:

1. That he/she is the fee simple title owner of the property described in the attached Legal Description.
2. That he/she is requesting approval of a PUD Amendment in the City of Stuart, FL.
3. That he/she has appointed Bradley J. Currie / Engineering Design & Const., Inc. to act as an authorized agent on his/her behalf to accomplish the above project.

Name of Owner: The Crocker Group, LLC

Signature of Owner:

3920 SE Commerce Avenue

Street Address

P.O. Box

772-223-7393

Telephone Number

james@waterblasting.com

Email Address:

James P. Crocker / MGRM

By: Name/Title

Stuart, FL 34997

City, State, Zip Code

City, State, Zip Code

Fax Number

STATE OF FLORIDA, COUNTY OF Martin

Sworn and subscribed before me by means of ☒ physical presence or ☐ online notarization, this

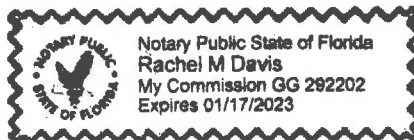
11 day of March, 2022 By James Crocker

Personally Known OR Produced Identification

Type of Identification Produced:

Rachel M. Davis
Notary Public

My Commission expires:



Financial Responsibility Form

(Please Print or Type)

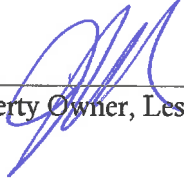
The Undersigned, as the Property Owner, Lessee, Contract Purchaser, or Applicant (circle one), acknowledges responsibility for all City expenses associated with the referenced application (s) including time spent by the City's consultants and further acknowledges that payment of consultant fees will be made prior to the receipt of the consultant comments.

Name: James P. Crocker
Title: MGRM
Company: The Crocker Group, LLC
Company Address: 3920 SE Commerce Avenue, Stuart, FL 34997

City/State/Zip Code: Stuart, FL 34997
Telephone Number: 772-223-7393
Facsimile Number:
Email Address (optional): james@waterblasting.com

I hereby certify that all information contained herein is true and correct.

1. Signed this 11 day of March, 2022.



Signature of Property Owner, Lessee, Contract Purchaser or Applicant (circle one)

Application Requirements

Fees:

- ☒ Major PUD Amendment - \$3,195.00; or
- ☐ Minor PUD Amendment: \$2,130.00; or
- ☐ PUD Agreement Amendment (text change only): \$1,065.00

(This does not include fees that may be charged as a result of application review by the City's consultants or any required recording fees)

A Major Planned Unit Development Amendment is one which shall include any one of the following;

- A change of two (2) percent or more in the area of any land use designations shown on the site plan;
- Any change in the list of proposed uses;
- An increase in residential density of five (5) percent or more;
- An increase in nonresidential Building square footage of ten (10) percent or more;
- A change in the boundary of the PUD district;
- A change in the site plan or approval regarding any area(s) set aside and designated for future development;
- Any other change determined by the City Development Director to have a potentially significant impact on City services or the surrounding neighborhood;
- An amendment of greater than twelve (12) months to an originally approved timetable of development. Such an amendment may only be approved upon good cause shown to the City Commission. Any contributions conditioned as part of the original PUD agreement shall be revisited upon application for timetable extension. A timetable extension greater than twelve (12) months will require a full concurrency review.

(A Minor Planned Unit Development Amendment is any amendment that is not a Major Amendment.)

Submittal Requirements: A completed application form, the payment of fees, a site plan, one (1) copy of all documents on a PDF formatted disc electronically signed and sealed, and any other information as may be required by the City Development Director in order to do a thorough review of the request. (Note: A concept plan may, at the discretion of the applicant, be submitted instead of a site plan if a site plan has not previously been approved. However, in doing so the applicant acknowledges that a site plan will need to be submitted for City Commission approval prior to making application for a development permit.) *(The data requirements for a site plan and a concept plan are available at the Development Department)*

Approving Authority: The Development Director is required to prepare a staff report and recommendation concerning this application. For a Major PUD amendment, the Local Planning Agency (LPA) is required to hold an advertised public hearing and formulate a recommendation to the City Commission. For both types of applications, the City Commission is required to hold an advertised public hearing after which it may approve, approve with conditions, or deny the application.

Justification: Written justification supporting the application and demonstrating how the application remains:

- (a) consistent with the relevant components of the City of Stuart Comprehensive Plan including concurrency with adopted levels-of-service for utilities/facilities and compatibility with existing/planned uses; and
- (b) complies with the relevant development standards of the City of Stuart Land Development Code.

(over)

**LETTER OF JUSTIFICATION
HOG TECHNOLOGIES
PUD Amendment
March 14, 2022**

REQUEST

On behalf of the Petitioner, Engineering, Design, & Construction, Inc. (EDC) is requesting approval for a Major PUD Amendment for a proposed expansion of Hog Technologies located in Stuart, Florida. The site currently consists of a 35,250-sf one-story warehouse building and a 61,644-sf two-story building with associated site improvements. The petitioner is proposing a 28,936 sf (one-story) warehouse expansion to the site. The subject parcel is located at 3920 SE Commerce Avenue in Stuart Florida. The Parcel ID Number is 38-38-41-002-209-00001-8.

SITE CHARACTERISTICS & PROJECT HISTORY

The subject property is located at 3920 SE Commerce Avenue in Stuart, Florida. The property address and parcel information is outlined in the below table:

Parcel ID	Address	Acreage	Current FLU	Current Zoning
38-38-41-002-209-00001-8	3920 SE Commerce Ave	11.75	COM	IPUD

The subject parcel is approximately 11.75 acres and consists of approximately 96,894 sf of office / manufacturing / warehouse buildings with associated site improvements. The applicant would like to expand the existing facility to include a 35,234-sf, one-story warehouse building addition with associated site improvements.

The applicant's name and address

***Crocker Group, LLC
James P. Crocker
3920 SE Commerce Avenue
Stuart, FL 34997***

To the north of the subject parcel lies the Right-of-Way of SE Market Place followed by Walmart at Port Sewall. This parcel has a Future Land Use designation of Commercial (COM) and an underlying Zoning designation of Commercial PUD (CPUD)

South of the subject parcel are developed parcels. These parcels have a Future Land Use designation of Commercial (COM) and an underlying Zoning designation of Commercial PUD (CPUD).

To the east of the subject parcel lies the Right-of-Way of SE Commerce Avenue followed by developed parcels which are located in the jurisdiction of Martin County. These parcels have a Future Land Use designation of Industrial and an underlying Zoning designation of Industrial (M-2).

To the west of the subject are developed parcels. These parcels have a Future Land Use designation of Commercial (COM) and an underlying Zoning designation of Commercial PUD (CPUD)

The applicant is submitting this application to obtain general feedback as to the approval process, fees, and any comments the City Staff has regarding the project.

Based on the above and attached information, the applicant respectfully requests approval for a Major PUD Amendment.

Z:\EDC-2021\21-487 - Crocker - Market Street\ENGINEERING\Documents\Submittal Documents\Justification Statement\2021-10-25_Hog_Technologies_Pre-App_Rqst_Justification_21-487.docx

City of Stuart
Development Department
121 SW Flagler Avenue
Stuart, FL 34994
Ph. 772-288-5300
Fax 772-288-5388

AFFIDAVIT ATTESTING TO NOTIFICATION

The Crocker Group, LLC being first duly sworn, depose(s) and say(s):

That I am the owner(s) or petitioner(s) of the following described property which constitutes the location for which notification is required:

Parcel ID Numbers: 38-38-41-002-209-00001-8 Located on the southwest corner of Market Street and Commerce Avenue.

That a copy of the notice was sent by regular U.S. Mail on July 18, 2022 to the property owners within 300 feet of the subject property.

That a list of the property owners and their addresses is on file with the City of Stuart; and

That a photograph showing the placement of the notification sign is made a part of this Affidavit.

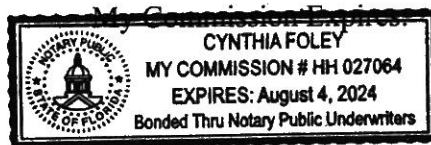


SIGNED (PROPERTY OWNER / AUTHORIZED AGENT)

SWORN TO AND SUBSCRIBED before me this 19th day of July, 2022



NOTARY PUBLIC, STATE OF FLORIDA:



NOTICE OF PUBLIC HEARING
AMENDMENT TO PLANNED UNIT DEVELOPMENT
ONE 2491 0002
REQUEST FOR MAJOR AMENDMENT TO THE
WATERBLASTING TECHNOLOGIES PLANNED UNIT
DEVELOPMENT TO ALLOW FOR A 28,934 SF NEW
BUILDING ADDITION
STUART LPA - August 6, 2022 - 7:00P.M.
STUART CITY COMMISSION - August 6, 2022 - 4:00P.M.
STUART CITY HALL 501 W. PALMER AVE., 77010-0001, STUART, FLORIDA
FOR MORE INFORMATION VISIT WWW.CITYOFSTUARTFL.COM

NOTICE OF PUBLIC HEARING
AMENDMENT TO PLANNED UNIT DEVELOPMENT

ORD. 2497-2022
REQUEST FOR MAJOR AMENDMENT TO THE
WATERBLASTING TECHNOLOGIES PLANNED UNIT
DEVELOPMENT TO ALLOW FOR A 28,936 SF NEW
BUILDING ADDITION

STUART LPA - August 4, 2022 - 5:30P.M.
STUART CITY COMMISSION - August 8, 2022 - 4:00P.M.

STUART CITY HALL, 121 SW FLAGLER AVE. 772-286-5326, 8:30AM-4:00PM
VISIT WWW.CITYOFSTUART.US FOR MORE INFORMATION



NOTICE OF PUBLIC HEARING
AMENDMENT TO PLANNED UNIT DEVELOPMENT
ORD: 2497-2022
REQUEST FOR MAJOR AMENDMENT TO THE
WATERBLASTING TECHNOLOGIES PLANNED UNIT
DEVELOPMENT TO ALLOW FOR A 28,936 SF NEW
BUILDING ADDITION
STUART LPA - August 4, 2022 - 5:30PM
STUART CITY COMMISSION - August 8, 2022 - 4:00PM
STUART CITY HALL 301 SW FLAGLER AVE. FT. STUEBEL BLDG. 8:30AM-4:00PM
VISIT WWW.CITYOFSTUARTFLORIDA.GOV FOR MORE INFORMATION







