THE SUNRISE CITY
FORT PIERCE
PLANNING DEPARTMENT
Florida

TO: Technical Review Committee

FROM: Planning Department

RE: Technical Review Project: #22-41100001
(Major Amendment)

BOARD DATE : May 19, 2022

Major Amendment to Site Plan– Jetson– 4145 S. US Highway 1

The above referenced project is being submitted for your review and comments. The applicant is requesting a site plan, design, and concurrency review for modifications to an existing building. The modifications include the expansion of an existing building from 32,330 sf to 34,065 sf, re-orientation of three (3) proposed loading bays, and the removal of 2,144 sf of existing warehouse. The subject properties are located at 4145 S. US Highway 1.

Please send all comments to planning@cityoffortpierce.com and/or through interoffice mail to the Planning Department.

If you have comments, please respond prior to Tuesday, May 17, 2022.

If you have any questions, please contact the Planning Department at 772-467-3737.

Thank You

THE SUNRISE CITY
FORT PIERCE
PLANNING DEPARTMENT Florida

DEVELOPMENT REVIEW

Property address or Location 4145 S. US Hwy. 1 and 504 Tumblin Kling Road

Parcel ID #(s) 2434-314-0003-000-4, 2434-314-0005-000-8

Project description See attached.

Jetson Investment, Inc.	Ryan McLean, Project Manager - MBV Engineering, Inc.
Property Owner(s)	**Applicant/Representative, Title, Company**
4145 S. US Hwy. 1	1835 20th Street
Street Address	Street Address
Fort Pierce FL 34982	Vero Beach FL 32960
City State Zip	City State Zip
772-464-7050	772-569-0035
Phone Number	Phone Number
trey@shopjetson.com	ryanm@mbveng.com
Email Address	Email Address

Property Owner(s) Acknowledgements: *- This application will not be considered complete without the signature of all property owners of record, which shall serve as an acknowledgement of the submission of this application. The property owner's signature below shall also authorize the Applicant (if other than the property owner) and/or Representative to act in his/her behalf for the purposes of seeking approval for the application described herein. The undersigned consents to inspection and photographing of the subject property by the Planning staff for purposes of consideration of this Application and/or presentation to the Planning Board and City Commission.*

✖ _____

Property Owner(s) Signature(s)

STATE OF FLORIDA -- COUNTY

The foregoing instrument was acknowledged before me this 26 day of April, 2022, by John K Thofner III who is personally known to me or has produced _____ as identification.

Melissa A Hughes

Signature of Notary

(seal)

Notary Public State of Florida
Melissa A Hughes
My Commission HH 150473
Expires 07/08/2025

INTAKE MEETINGS ARE REQUIRED FOR ALL SUBMITTALS. CALL (772) 467-3729

TO BE COMPLETED BY STAFF

Zoning	Future Land Use	Total Acres	Historic District	Historic Designation
				Contributing Individual Non-Contributing None

Pre-Application Meeting Date_____ Fees_____ Control #_____ B. Permit #_____

Intake Planner_____

Planner Assigned_____

Approved By_____ Date _____

Comments_____

Intake Date Stamp

❑ DEVELOPMENT REVIEW

General Information

- ❑ Incomplete application packets cannot be accepted.
- ❑ Site Plan approval is valid for one (1) year following City Commission approval. In order to maintain site plan approval, vertical improvements, permitted by the Building Department must commence prior to the 12-month expiration date, and building permits must be maintained until site plan is completed, per plans, or approval shall lapse.

Choose Application Type:

Application Type		
❑ Site Plan	❑ Conditional Use with New Const.	■ Major Amendment
❑ Conceptual Development Plan		❑ Minor Amendment

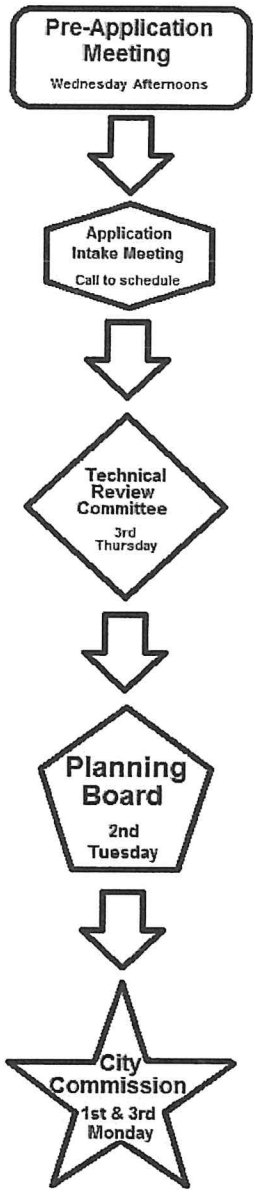
Site Information:

Non-Residential: Proposed Sq. Ft.: 34,065 Residential: Proposed Units:_____

Surrounding Uses: *(i.e. single family home, retail, industrial, etc.)*

North	South	East	West
commercial		commercial	single-family

Application Outlook



Site Plan submittal requirements:

Submit one (1) original & thirteen (13) hard copies and one (1) CD of the following. Additional copies will be required of subsequent submittals.

- ❑ Complete notarized application
- ❑ Warranty Deed
- ❑ SLC Property Record Card
- ❑ Statements of ownership & control of proposed development. Statement describing in detail: character & intended use.
- ❑ General location map (see Section 22-58.d.2)
- ❑ Survey (see Section 22-58.d.3)
- ❑ Site Plan (see Section 22-58.d.4)
- ❑ Landscaping Plan (see Section 22-187)
- ❑ Storm Drainage Plan (see Section 22-58.d.6)
- ❑ Environmental Impact Report
- ❑ Beach/Dune System protection plan, if applicable (see Section 22-58.d.7)
- ❑ Lighting Plan (see Section 22-58.d.8)
- ❑ Design Review submittals (see Design Review application)
- ❑ Traffic Impact Report
- ❑ Concurrency Review submittals (see Concurrency Review application)

Plans

Please provide revised, construction level detailed plans for the system. The plans must be signed and sealed by an appropriate registered professional as required by law. These plans should include all appropriate information including the following:

a. Existing topography extending at least 100 feet off the project area. All topography shall include location and description of benchmarks, reference to NGVD 1929 or NAVD 1988 along with the conversion factor. [Form 62-330.060(1)2.1.b.];
b. Proposed site plan with acreage, including the following, as applicable: [Form 62-330.060(1)2.1.c.] impervious surfaces and water management areas (top and bank areas); wetlands and other surface waters; undisturbed uplands; proposed buffers; proposed impacts to wetlands and other surface waters, and any proposed connections/outfalls to other surface waters or wetlands, (if applicable); and onsite wetland mitigation areas;
c. Stormwater detail information, including but not necessarily limited to, the following: [Form 62-330.060(1)2.1.e.]
    i. Cross section of all existing and proposed stormwater management areas, including elevations, dimensions, side slopes, sump areas and proposed stabilization measures (with location of the cross section(s) shown on the corresponding plan view); and
    ii. Drainage Structures Table for DS-1 through 6.

Design

Please provide revised calculations and documentations demonstrating that the project, as proposed, meets the applicable design criteria as indicated in the District's Applicant's Handbook, Vol. II. Typically, the information would include, at a minimum, but is not necessarily be limited to, the following:

a. For projects requiring pre-development analysis, provide an analysis of the pre- development peak rate of discharge and / or volume of runoff, for all design storm events. Account for all onsite depressional storage and offsite contributing area. Please refer to the Applicant's Handbook, Vol. II for the design storm events that apply to the project. [Form 62-330.060(1)1.3.a.];
b. For the post-development analysis, please revise/address the following: [Form 62-330.060(1)1.3.b.]
    i. Stage storage calculations to exclude any proposed building areas, and accurately reflect the existing and proposed dry detention areas and the remaining pervious area; and
    ii. Adverse impacts to on-and off site existing development due to post-development design storm stages, including but not limited to, the Tumblin Kling right-of way filling depicted on Section D-D.

THE SUNRISE CITY
FORT PIERCE
PLANNING DEPARTMENT Florida

Design Review

Property address or Location 4145 S. US Hwy. 1 and 504 Tumblin Kling Road

Parcel ID #(s) 2434-314-0003-000-4, 2434-314-0005-000-8

Project Description See Attached

Jetson Investment, Inc.	Ryan McLean, Project Manager - MBV Engineering, Inc.
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STATE OF FLORIDA -- COUNTY

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Notary Public State of Florida
Melissa A Hughes
My Commission HH 150473
Expires 07/08/2025

_____

Signature of Notary (seal)

TO BE COMPLETED BY STAFF

Zoning	Future Land Use	Total Acres	Historic Districts	Historic Designation

Pre-Application Meeting Date _____ Fees _____ Control # _____ B. Permit _____

Intake Planner _____

Planner Assigned _____

Approved _____ Date _____

Comments _____

Intake Date Stamp

Design Review Application Checklist
(City Code of Ordinances 22-59)

Submittal for Administrative Approval

a. A survey (1" = 30' minimum scale) of property lines, existing topography and the location of trees meeting the tree protection regulations of section 22-194, location of bordering streets and, if applicable, wetlands and beaches.
b. A site analysis study to include a discussion of specimen trees and other natural vegetation, access, significant topography, wetlands, buffers, setbacks, views, orientation, the surrounding built environment and other site features that may influence design elements.
c. A draft written narrative describing the design intent of the project, its goals and objectives and how it reflects the site analysis study results.
d. Context photographs of neighboring uses and architectural styles.
e. Photographs and/or drawings of architectural buildings or objects that serve as a precedent for the proposed building design. Models should be taken from local exemplary buildings, either existing or demolished. Documentation of such buildings is available in the city's planning department.
f. Photographs of all existing structures located on the property. If existing structures on the property are more than fifty (50) years of age, documentation of these structures with data from the Florida Master Site File form is also required.
g. Conceptual site plan (to scale) showing proposed location of all buildings, structures, parking areas, signs and landscaping.
h. Landscape plan, at the same scale as the site plan. The planning director or designee may request enlarged plans of detailed planting areas. Planting schedule with sizes of proposed plantings must be included.
i. Accurate color rendering of proposed signs showing dimensions, type of lettering, materials and actual color samples that demonstrates cohesiveness with the project design.
j. Exterior elevations showing architectural character, external architectural features and streetscape of the proposed development, including materials, colors, shadow lines and landscaping. The street elevation shall encompass the entire proposed project and generally identify the major elements of the adjacent two (2) properties on either side of the site. If the adjacent properties are vacant or underutilized, a diagram shall be provided that identifies the mass and form that is allowable under current zoning. If the street elevation must be drawn at such a scale as to render architectural details of the building unreadable, drawings of individual buildings at a larger scale should be provided as well.
k. Design review concurrent with conceptual development plan procedure according to subsection 22-58(e) is also available.

Submittal for Board Approval

a. A written narrative describing how the project conforms to administrative approval and design review guidelines of this section.
b. A final site plan meeting the requirements of section 22-58
c. A final site lighting plan that meets the requirements of subsection 22-58(d)(8).
d. A final landscape plan that meets the requirements of Article XII, Landscaping and Trees.
e. Final floor plans and elevation drawings (1/8" = 1'-0" minimum scale), as detailed under administrative approval, showing exterior building materials and colors with architectural sections and details to adequately describe the project.
f. A color board (11"x17" maximum) containing actual color samples of all exterior finishes, keyed to the elevations, and indicating the manufacturer's name and color designation.

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ZONING ADMINISTRATION
DEVELOPMENT REVIEW
COMPREHENSIVE PLANNING
URBAN DESIGN
HISTORIC PRESERVATION
CULTURAL RESOURCES

CITY OF FORT PIERCE

2005 Florida League of Cities "City of Excellence" Award Winner

DEPARTMENT OF PLANNING

"IMPROVING THE WAY WE DO BUSINESS"

CERTIFICATE OF CONCURRENCY APPLICATION

Project Name: Jetson Ft. Pierce Site Improvements

1. Name of owner(s):
Jetson Investment, Inc.
Mailing Address: (street) 4145 S. US Hwy. 1 Tumblin Kling Road
(City) Fort Pierce (State) FL (zip) 34982
Phone # 772-464-7050

2. Name of Applicant:
Same as Owner
Mailing Address: (street) _____
(City) _____ (State) _____ (zip) _____
Phone # _____

3. Name of Representative:
Ryan McLean, Project Manager - MBV Engineering, Inc.
Mailing Address: (street) 1835 20th Street
(City) Vero Beach (State) FL (zip) 32960
Phone # 772-569-0035 Fax # _____
E-mail: ryanm@mbveng.com

4. Is this concurrency application related to a specific project (Please circle one)?
(Yes) No
If yes, list the corresponding site plan or subdivision name and corresponding file number: See Above

To be completed by the City

Date Received _____ By _____

Fee: _____ Receipt# _____

Project Description

PHASING
Is this project (phase) part of a larger project? [ ] Yes [X] No
If yes, enumerate each phase, the number of units or square footage in each phase and beginning/completion date.
Total Project: Residential Units: Single Family: Multifamily:
Non-residential (square footage):
Mixed-use (describe use):
(If this is a single phase project, name it Phase I – Total)

RESIDENTIAL DATA					
Type	**Phase**	**Number of Units**	**Acres**	**Expected beginning date**	**Expected completion date**
Single-family, detached					
Single-family, attached					
Multi-family					
Other (specify)					

NON-RESIDENTIAL DATA					
Type(s) specify	**Phase**	**Square footage**	**Acres**	**Expecting beginning date**	**Expected completion date**
Warehouse	N/A	34,065	0.78	June 2022	May 2023

5. Indicate whether the proposed project will be eliminating any existing recreational facilities. If yes, detail the number and type being eliminated. [ ] Yes [X] No

6. **a.** Does this application involve demolition or re-use of any structure(s)? [X] Yes [ ] No
If yes, what is the size of the structure(s) to be demolished or re-used? 3,500 (residential) 2,144 (commercia

b. What is the current use of the structure to be demolished or re-used? Residential / commercial

c. Are you claiming trip credits for the demolition or re-use of a structure(s) at the site? [X] Yes [ ] No
If yes, provide estimates of credits for each previous use at the site. (Attach sheet with calculations)

Applicant Acknowledgements (Owner's signature must be notarized)

I certify that: (Check One)

_____ I (we) do hereby certify that I (we) own in fee simple the above referenced described property for which a certificate of concurrency is requested, and that the application is true, correct, and complete to the best of my knowledge.

_____ I (we) are not the owner of the above described property; however, the owners signature below authorizes the applicants the authority to act as agent for the owner(s) of record and that the application is true, correct, and complete to the best of my knowledge.

X _____

Applicants Signature Date

4145 S. US Hwy. 1 and 504 Tumblin Kling Road, Fort Pierce FL 34982

Address City State Zip

772-464-7050 trey@jetsononline.com

Phone Fax E-mail Address

Property Owners Acknowledgements: (please print) - This application will not be considered complete without the signature of all property owners of record, which shall serve as an acknowledgement of the submission of this application for a change in future land use. The property owner's signature below shall also authorize the applicant (if other than the property owner) and/or Agent to act in his/her behalf for the purpose of seeking a certificate of concurrency.

John E. Thofner III Phone: 772-464-7050

Property Owner's Name (Please Print)

4145 S. US Hwy. 1 and 504 Tumblin Kling Road, Fort Pierce FL 34982

Address City State Zip

X _____ 4/26/2022

Property Owner's Signature Date

STATE OF FLORIDA, CITY OF FORT PIERCE
The foregoing instrument was acknowledged before me this 26 day of April 2022, by John E Thofner III who is personally known to me or has produced _____ as identification.

Melissa A Hughes Melissa A Hughes

Signature of Notary Type or Print Name of Notary

_____ Title

(seal)

Notary Public State of Florida
Melissa A Hughes
My Commission HH 150473
Expires 07/08/2025

HH150473 Commission Number

Required Information

Provide 7 Copies of the following:

1. Location map which clearly shows where the property is located by providing the exact distance from the nearest intersection.
2. Traffic impact study which includes the following information:

a. An executive summary of no more than one page outlining the land use(s), trip generation, concurrency results, driveway classification, requested special exceptions, and requested variances (if applicable).

b. Each proposed development shall distribute the trips generated to the main arterials and intersection network that is comprised of their traffic impact area. The radius of impact will be determined according to the size of the development accounted for trips generated. (see Table A).

Table A- Radius of Impact for Transportation Concurrency Management System

Minimal Scale	Trips 9-50	1.0 Mile Radius
Small Scale	Trips 51-100	1.5 Mile Radius
Intermediate Scale	Trips 101-500	2.0 Mile Radius
Medium Scale	Trips 501-1000	3.0 Mile Radius
Large Scale	Trips 1000-Up	5.0 Mile Radius

c. The minimum horizon for forecasting traffic shall be 5 years from the project's opening date. However, if the project is built in phases, the horizon will project traffic to build out of the last phase or 5 years from the time of opening, whichever is more restrictive.

d. Analysis of the new site traffic to the satisfaction of the Director of Planning which shall contain as a minimum: tables summarizing existing traffic volumes, committed traffic from proposed developments, growth rates, trip generation rates (including used formulas), levels of services for studied intersections, and any other documentation required to justify numbers used in the analysis. New site traffic analysis shall be prepared for the AM and PM peak period unless otherwise indicated by the Director of Planning.

e. The Applicant may provide traffic counts in accordance with accepted traffic engineering principles. Counts shall be made during any continuous two-hour period on a weekday between 6:00 AM and 9:00 AM for any AM counts and 4:00 PM and 7:00 PM for PM counts. All count data collected by the applicant must be collected between September 1 and May 31 (no summer out of school weeks) and seasonly adjusted to reflect average peak season conditions (100^{th} highest hour) in accordance with most current FDOT planning factors and procedures. There shall be no counts on Fridays and legal holidays, unless otherwise authorized or required by the City's Director of Planning, in accordance with accepted traffic engineering principles. All data are subject to review and acceptance by the Director of Planning based upon accepted traffic engineering principles.

f. Analysis of the total site traffic as it relates to the specific requirements of City Code concerning driveways and access and acceptable engineering access management standards.

g. Trip generation comparison between existing and proposed conditions.

h. Trip generation calculations and driveway assignments (inbound and outbound traffic) for each phase of development. Trip distribution and assignment of traffic along the traffic impact area.

i. Justification of the number and location of site driveways. Location and type of driveways and median openings need to adhere to FDOT access management standards or any other standard accepted by the Director of Planning. The Planning Department will comment and make recommendations on the number of driveways based on the plan review. Excessive driveways may

not be supported by staff. All driveways should be located on a site plan with distancing from upstream and downstream driveways and/or intersections.

j. A capacity analysis of each driveway may be required as determined by the Director of Planning. All evaluations shall include existing and proposed conditions during the AM and PM peak periods. The capacity analysis should be performed using the methodology set forth in the Highway Capacity Manual, latest edition at the time the study is prepared and reviewed by Planning Department for public hearing.

k. In cases where the proposed development requires a signalized intersection, a signal warrant study will be required. Additionally, a capacity analysis of the site intersection and upstream and downstream location may be required by Director of Planning. In cases where traffic re-routing occurs as a result of the proposed development, additional traffic studies may be required.

l. Provide an analysis of u-turn movements at the median openings to the north, south, east and west (as appropriate according to project location) of project driveways, including daily, AM peak hour and PM peak hour. Assess the impact of proposed and existing volumes on available storage.

m. Show the total driveway assignment as the driveway provides joint access with the adjacent property. Joint access among similar or compatible land uses may be required by the Director of Planning.

n. After initial review, the Director of Planning may require additional information if it is deemed necessary to properly evaluate the traffic study.

o. For entryway features the applicant must make sure that traffic turn-arounds are, at a minimum, 15-feet in width, have a 25-foot turnaround radius, and have mountable curves. The applicant must make sure that there is enough stacking for visitors and residents.

p. In cases where driveways abut a County or State road, or a city road classified as an arterial or main collector, the Director of Planning may require deceleration and storage lanes for vehicles turning to and from the proposed development served by the access driveway.

q. Pass-by trips shall not be higher than 25% and internal trip rates shall be approved by the Director of Planning and shall be consistent with the ITE manual.

3. **Capacity for Intersections.**

a. As part of the Traffic Impact Analysis, major intersections should be analyzed. The level of service for roadway segments may be analyzed using a variety of types of arterial analyses based on the principals, guidelines and criteria outlined in the most current version of the Highway Capacity Manual. In determining whether a corridor can be maintained at an the Level of service determined in the Comprehensive Plan for the purpose of monitoring concurrency, it is recognized that some individual links, intersections, or turning movements may be able to operate below the Level of Service while still maintaining an overall Level of Service established for the corridor based on overall average running speed. However, since some of the available software models can report an overall LOS "D" for a corridor while still allowing some components of the corridor to operate at a LOS "E" condition, it is appropriate to define maximum tolerances for individual instances of LOS "E" conditions embedded within the total corridor analysis. The following maximum allowable tolerances are established so that the level of service determination is not unduly biased toward the mainline at the expense of any particular intersection, approach or movement. These tolerances apply to all computerized applications of the Highway Capacity Manual, including the Highway Capacity Software (HCS) and SYCHRO:

1. For any individual turning movement or through movement within any signalized intersection included in the analysis: no individual movement or lane group can be reported to have a volume-to-capacity (v/c) ratio greater than 1.20 or a total delay estimate greater than 1.20 x signal cycle length.

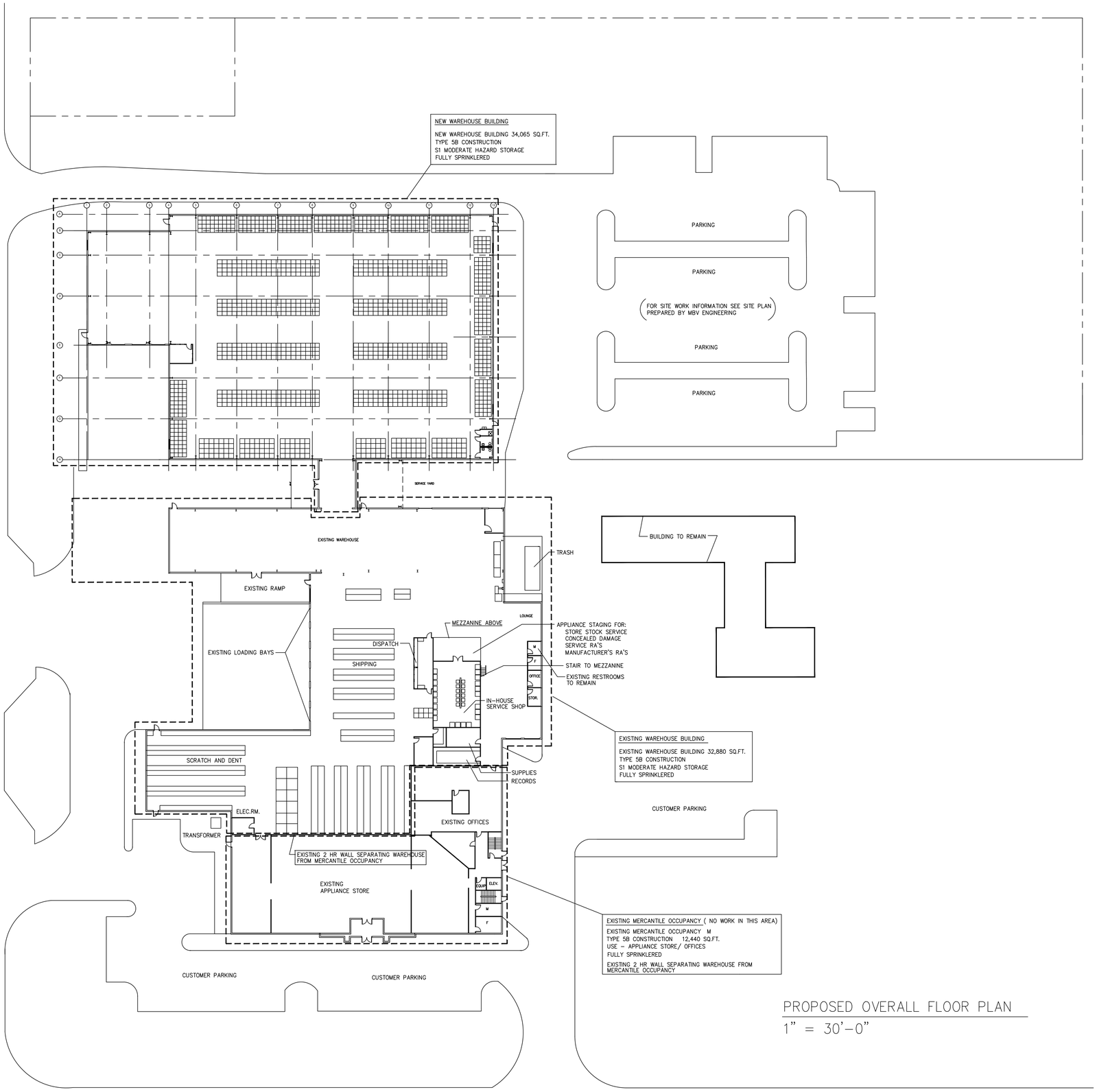
2. For any individual signalized intersection approach for any intersection included in the analysis, no approach can be reported to have a volume-to-capacity (v/c) ratio greater than 1.0 or a total delay estimate greater than the signal cycle length.

3. For any individual signalized intersection included in the analysis, the overall signalized intersection v/c cannot exceed 1.20, NOR can the total intersection delay estimate be greater than the signal cycle length. Also, only one of the mainline approaches can operate below LOS D (regardless of delay).

Level of Service Standards

Public Facility	Fiscal Year	Level of Service
Transportation		**Road Type** / **State, County and City Roads**: Local Road – D; Collector Roadway – D; Minor Arterial – D; Major Arterial – D
Sanitary Sewer		240 gallons per day per equivalent residential connection
Potable Water		300 gallons per day per equivalent residential unit
Solid Waste		330 tons per day of Class I trash
		300 tons per day of Construction and Debris
Stormwater		25-year 3-day storm Pre vs. Post Runoff
		Storm sewers to convey 5 year – 1 day storm event
		Canals to convey 3 year – 1 day storm event
Recreation and Open Space		
Neighborhood Park:	2005	1.36 acre/1,000 population
	2010	1.36 acre/1,000 population
	2015	1.5 acre/1,000 population
	2020	1.75 acre/1,000 population
	2025	2.0 acres/1,000 population
	2030	2.0 acres/1,000 population
Community Park:	2005	2.50 acre/1,000 population
	2010	2.50 acre/1,000 population
	2015	2.75 acre/1,000 population
	2020	2.75 acre/1,000 population
	2025	3.0 acres/1,000 population
	2030	3.0 acres/1,000 population
Baseball/Softball	Ongoing	1 field/2,500 population
Basketball	Ongoing	1 court/5,000 population
Boat ramp	Ongoing	1 ramp/4,500 population
Fishing Pier	Ongoing	1,600 linear feet/25,000 population

Multi-Purpose	Ongoing	1 field/3,000 population
Picnic Area	Ongoing	1 acre/2,500 population
Recreation Trail	Ongoing	1.22 mile/10,000 population
Swimming pool	Ongoing	1 pool/50,000 population
Tennis	Ongoing	1 court/2,000 population



PROPOSED OVERALL FLOOR PLAN

1" = 30'-0"

BUILDING CODE ANALYSIS

APPLICABLE CODES

FLORIDA BUILDING CODE 7TH EDITION
FLORIDA PLUMBING CODE 7TH EDITION
FLORIDA MECHANICAL CODE 7TH EDITION
FLORIDA ACCESSIBILITY CODE - 7TH EDITION

NEW WAREHOUSE BUILDING

CONSTRUCTION TYPE.....TYPE V B
OCCUPANCY.....S-1 MODERATE HAZARD STORAGE
BUILDING USED FOR APPLIANCE STORAGE
ALLOWABLE HEIGHT.....2 FLOORS
ALLOWABLE AREA..... 36,000 SQ.FT.
PER SECTION 506.2.1 WITH SPRINKLERS BUILDING
CAN BE 36,000 + 9000 = 45,000 SQ.FT.

NEW BUILDING 34,065 SQ.FT.
FULLY SPRINKLERED - YES
FIRE ALARM YES

EXISTING WAREHOUSE BUILDING

CONSTRUCTION TYPE.....TYPE V B
OCCUPANCY.....S-1 MODERATE HAZARD STORAGE
BUILDING USED FOR APPLIANCE STORAGE
ALLOWABLE HEIGHT.....2 FLOORS
ALLOWABLE AREA..... 36,000 SQ.FT.
PER SECTION 506.2.1 WITH SPRINKLERS BUILDING
CAN BE 36,000 + 9000 = 45,000 SQ.FT.

EXISTING WAREHOUSE BUILDING 32,880 SQ.FT.
FULLY SPRINKLERED - YES
FIRE ALARM YES

EXISTING MERCANTILE OCCUPANCY (NO WORK IN THIS AREA)

CONSTRUCTION TYPE.....TYPE V B
OCCUPANCY.....M MERCANTILE
ALLOWABLE HEIGHT.....2 FLOORS
ALLOWABLE AREA..... 27,000 SQ.FT.
PER SECTION 506.2.1 WITH SPRINKLERS BUILDING
CAN BE 27,000 + 9000 = 36,000 SQ.FT.

FULLY SPRINKLERED - YES
FIRE ALARM YES

EXISTING MERCANTILE OCCUPANCY 12,440 SQ.FT.
MERCANTILE OCCUPANCY SEPARATED FROM WAREHOUSE
WITH EXISTING 2 HR. CMU WALL

PROJECT SCOPE

NEW WAREHOUSE BUILDING
NEW BUILDING TO BE 34,065 SQ.FT.

INTERIOR RENOVATIONS TO EXISTING WAREHOUSE
ADD INTERIOR MEZZANINE

FIRE SPRINKLER SYSTEM: YES
FIRE ALARM SYSTEM: YES

EXITING

34,065 SQ.FT./500 SQ.FT PER OCCUPANT WAREHOUSE OCCUPANCY = 68.1 OCCUPANTS
68.1 TOTAL OCCUPANTS

68.1 X .2 = 14" OF EXITING REQUIRED
144" OF EXITING PROVIDED IN FOUR EXITS

TRAVEL DISTANCE TO AN EXIT 400 FT. - SPRINKLERED

FIRE CODE ANALYSIS

APPLICABLE FIRE CODES
FLORIDA FIRE PREV. CODE VERSION 7
FLORIDA ADMINISTRATION CODE
FLORIDA STATE STATUTES (FSS)

S-1 STORAGE OCCUPANCY - LOW HAZARD

EXITING
EXITING CALCULATION SAME AS ABOVE

SPRINKLERED BUILDING - YES
FIRE ALARM - YES

CONSTRUCTION TYPE

TYPE V 000

FIRE RESISTANCE RATING REQUIREMENTS FOR BUILDING

TYPE V 000

EXTERIOR WALLS - BEARING 0
INTERIOR BEARING WALLS 0
COLUMNS 0
FLOOR 0
ROOF CONSTRUCTION 0
EXTERIOR NON BEARING WALLS 0

TRAVEL DISTANCE TO AN EXIT 400 FT. - SPRINKLERED

Revisions

Rev# Date	Description

Professional Seal

License No. AR 0016950

Drawing Title
OVERALL LIFE SAFETY PLAN

Project Name & Location
JETSON APPLIANCE
4145 S. FEDERAL HIGHWAY
FORT PIERCE, FL.

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Registered Architect
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Melbourne, FL 32940
Tel. (321) 255-2050

Project No.	
Original Submittal Date	
Drawn By: AJM	Checked By: AJM
Drawing Number	A-1
Sheet	Total of

WAREHOUSE
100
32,136 SQ.FT.

OFFICE
101

LOADING DOCK RAMP

RETAINING WALL
SEE STRUCTURALS

GUARDRAIL – 3'-6"HIGH
ALONG ENTIRE LENGTH
OF LOADING DOCK RAMP
SEE DETAIL 2/A-14

LOUVER

ADA WATER COOLER
SEE 8/ A-4

JAN.
102

M
103

W
104

CONNECTOR
105

ROOF ABOVE

SERVICE YARD

EXISTING OVERHEAD DOOR
TO REMAIN

WORKROOM

CARDBOARD STACKER

REMOVE PART OF EXISTING WAREHOUSE

CONSTRUCT NEW CMU/METAL BLDG EXTERIOR WALL

EXISTING WAREHOUSE

SEE SHEET A-15 FOR LARGE SCALE PLAN
OF THIS AREA

EXISTING WALL TO BE REMOVED

WAREHOUSE PLAN

1" = 10'-0"

Revisions	
Rev# Date	Description

Professional Seal

License No. AR 0016950

Drawing Title
FLOOR PLAN

Project Name & Location
JETSON APPLIANCE WAREHOUSE
4145 S. FEDERAL HIGHWAY
FORT PIERCE, FL.

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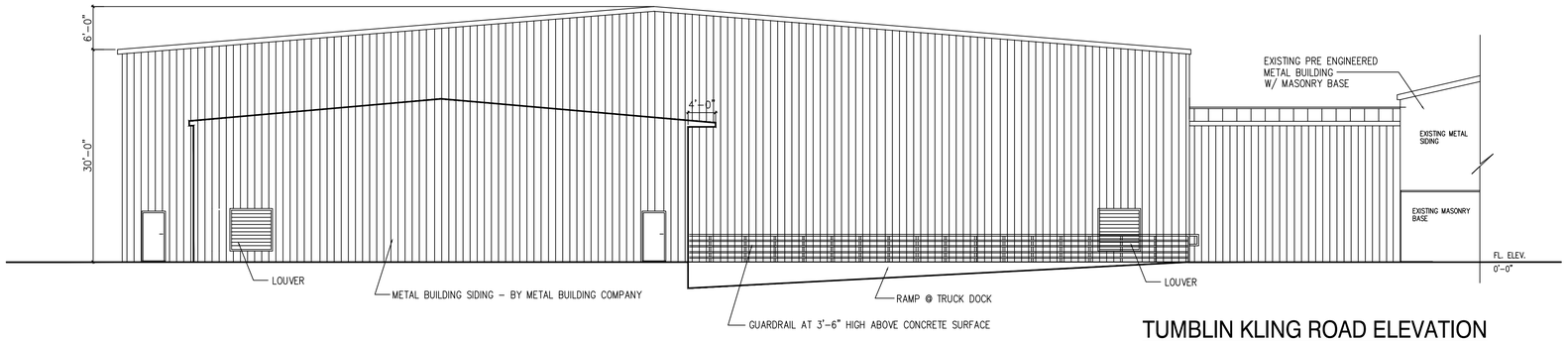
Project No.	
Original Submittal Date	
Drawn By: AJM	Checked By: AJM

Drawing Number
A-2
Sheet of Total



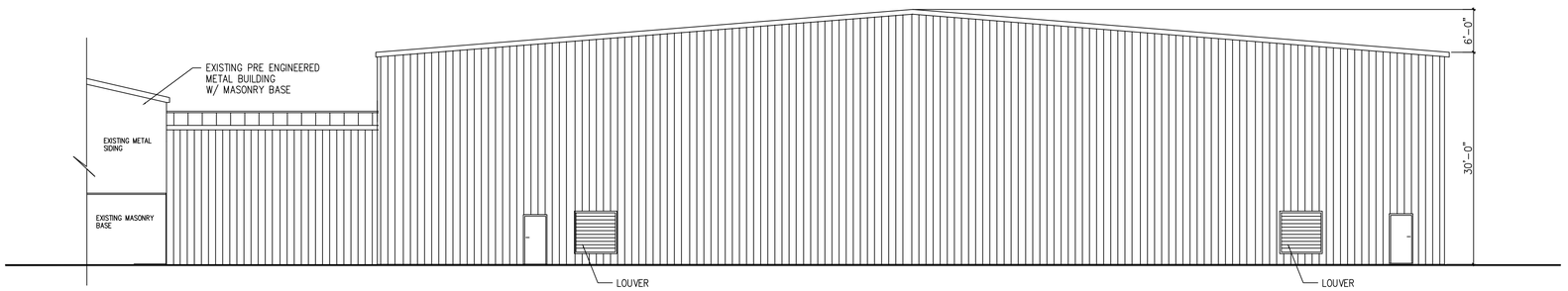
TUMBLIN KLING ROAD ELEVATION

1" = 10'-0"

COLOR LEGEND

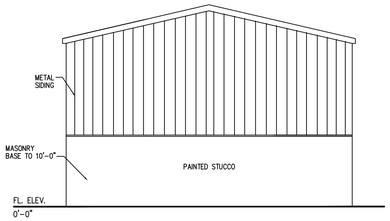
- METAL BUILDING SIDING
  COLOR - REGAL WHITE
- METAL BUILDING TRIM
  COLOR - CHARCOAL
- METAL BUILDING ROOF
  COLOR - GALVALUME

ALL COLORS STANDARD BUILDING COLORS
BY KIRBY BUILDING SYSTEMS



BACK ELEVATION

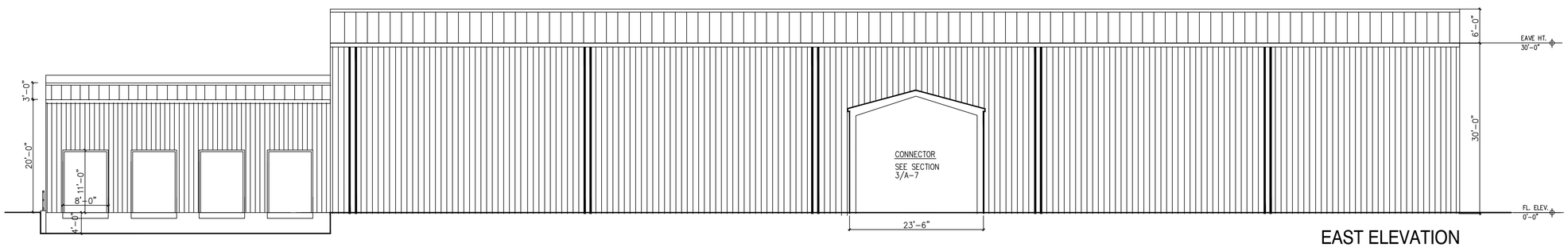
1" = 10'-0"



ELEV @ EXISTING BUILDING

1" = 10'-0"

1 / A-3



EAST ELEVATION

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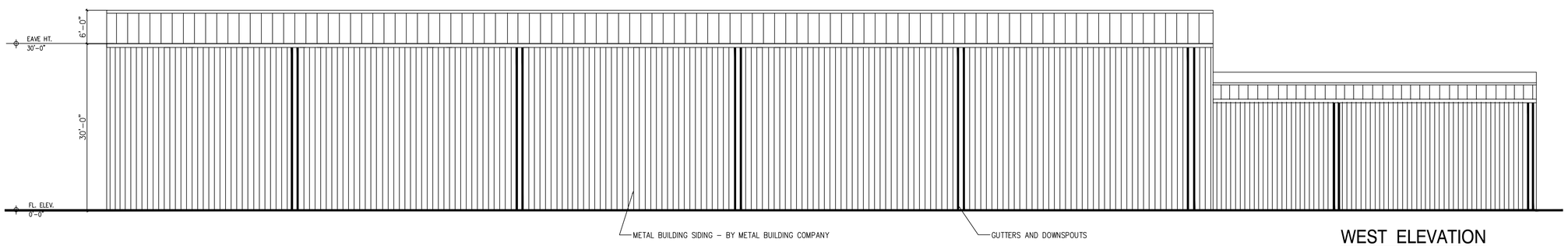

WEST ELEVATION

1" = 10'-0"

Revisions	
Rev# Date	Description

Professional Seal

License No. AR 0016950

Drawing Title

EXTERIOR ELEVATIONS

Project Name & Location

JETSON APPLIANCE WAREHOUSE
4145 S. FEDERAL HIGHWAY
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A-3

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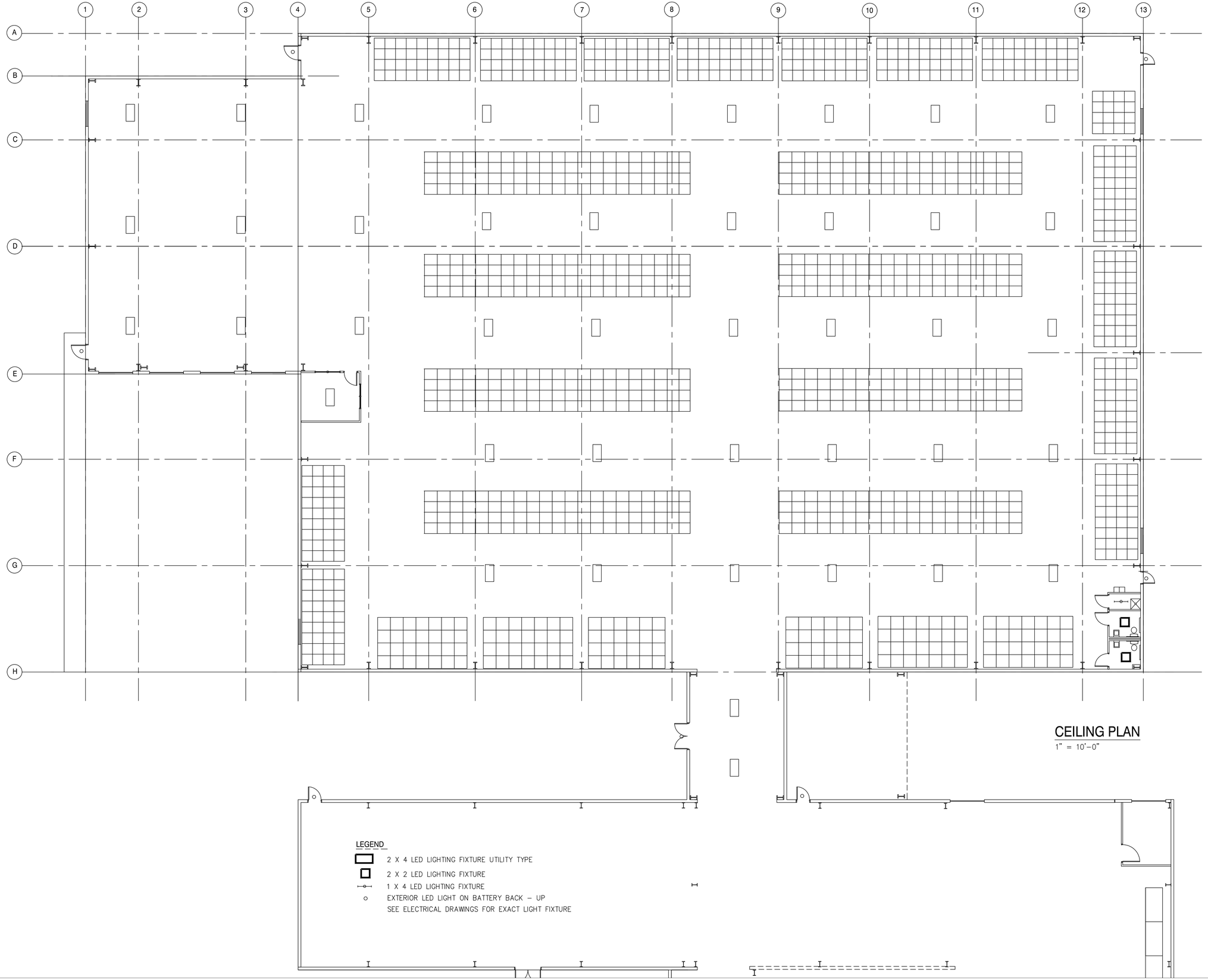

CEILING PLAN
1" = 10'-0"

LEGEND

- 2 X 4 LED LIGHTING FIXTURE UTILITY TYPE
- 2 X 2 LED LIGHTING FIXTURE
- 1 X 4 LED LIGHTING FIXTURE
- EXTERIOR LED LIGHT ON BATTERY BACK – UP

SEE ELECTRICAL DRAWINGS FOR EXACT LIGHT FIXTURE

Revisions

Rev# Date	Description

Professional Seal

License No. AR 0016950

Drawing Title
CEILING PLAN

Project Name & Location
JETSON APPLIANCE WAREHOUSE
4145 S. FEDERAL HIGHWAY
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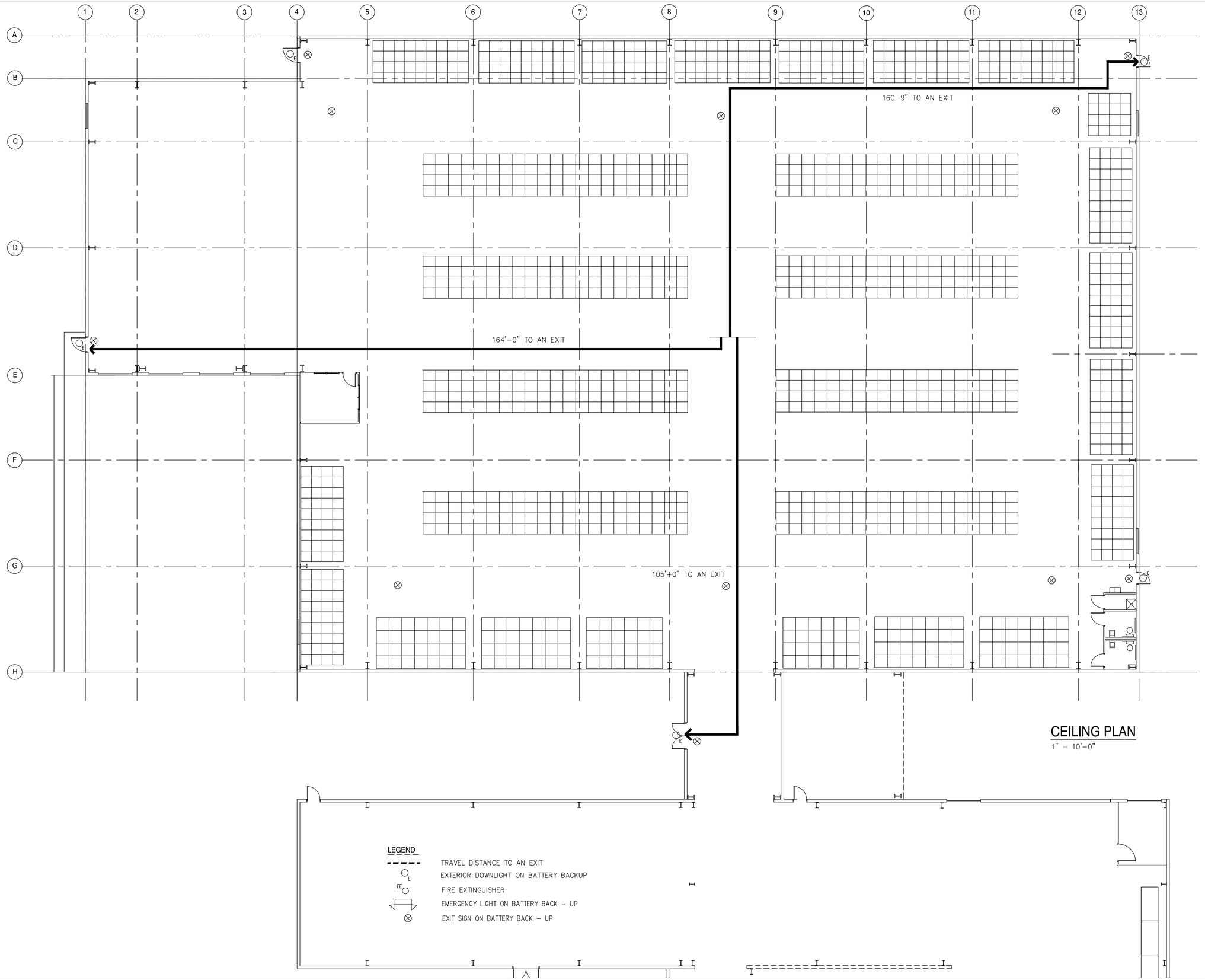
Drawing Number
A-5

Sheet of Total



CEILING PLAN

1" = 10'–0"

Revisions

Rev# Date	Description

Professional Seal

License No. AR 0016950

Drawing Title

LIFE SAFETY PLAN

Project Name & Location

JETSON APPLIANCE WAREHOUSE

4145 S. FEDERAL HIGHWAY
FORT PIERCE, FL.

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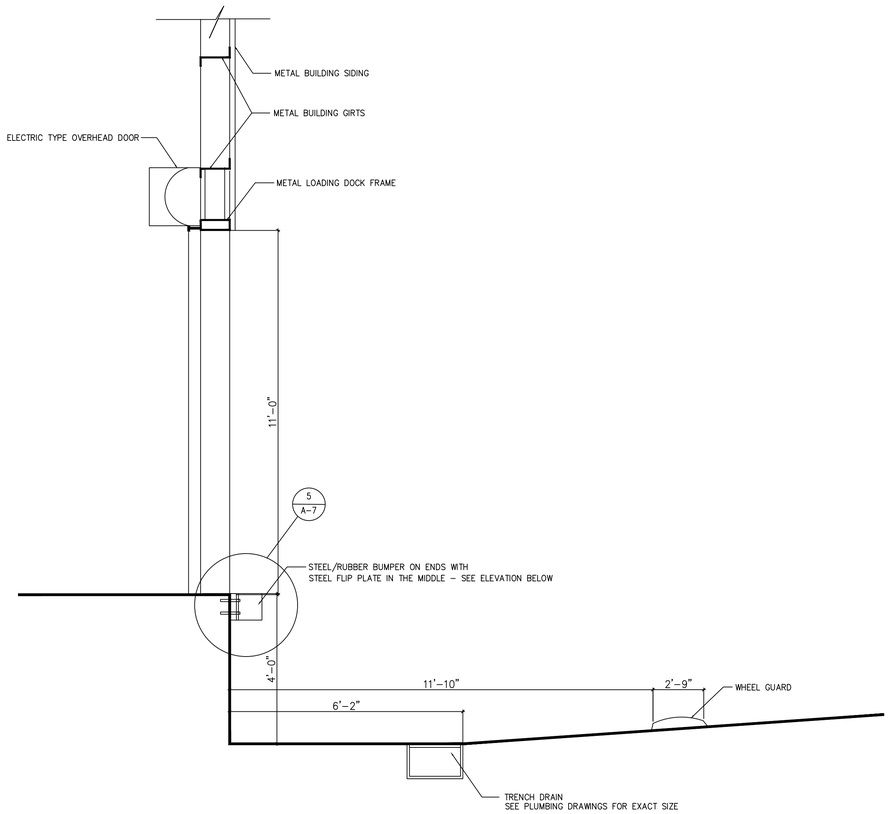
Project No.	
Original Submittal Date	
Drawn By: AJM	Checked By: AJM

Drawing Number

A-6

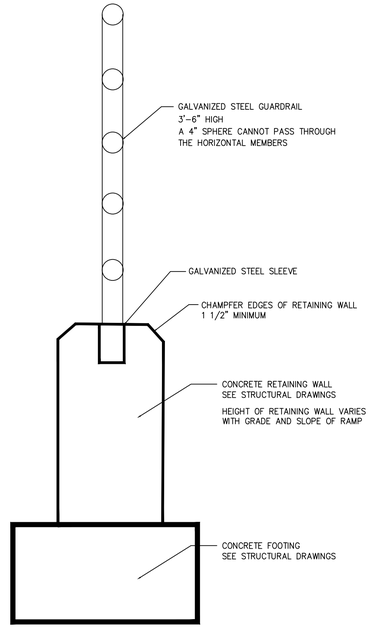
Sheet of Total



SECTION @ LOADING DOCK

NTS

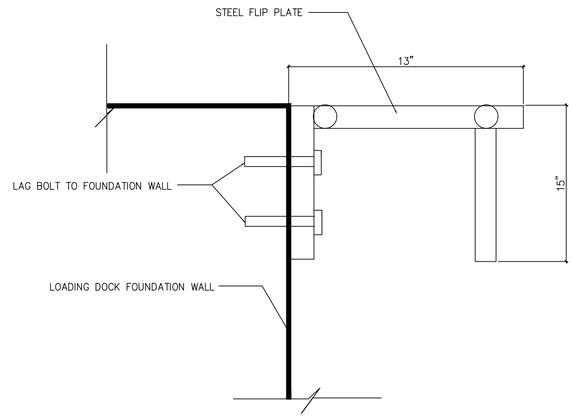
1 A-7



SECTION @ LOADING DOCK GUARD RAIL

NTS

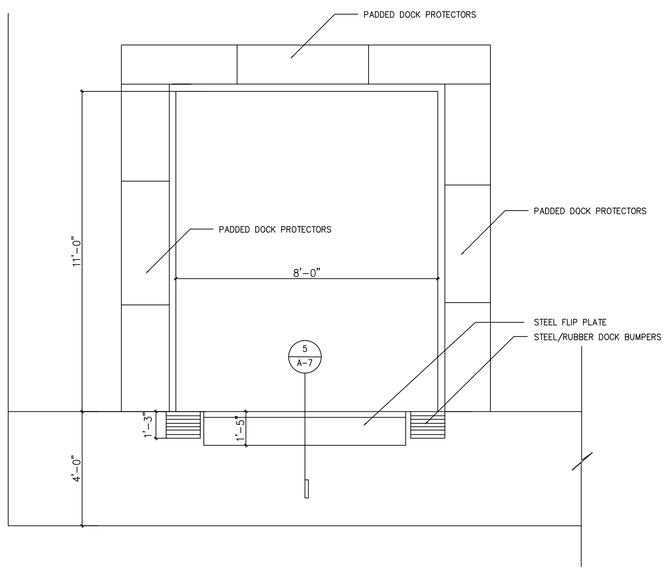
2 A-7



SECTION @ STEEL FLIP PLATE

NTS

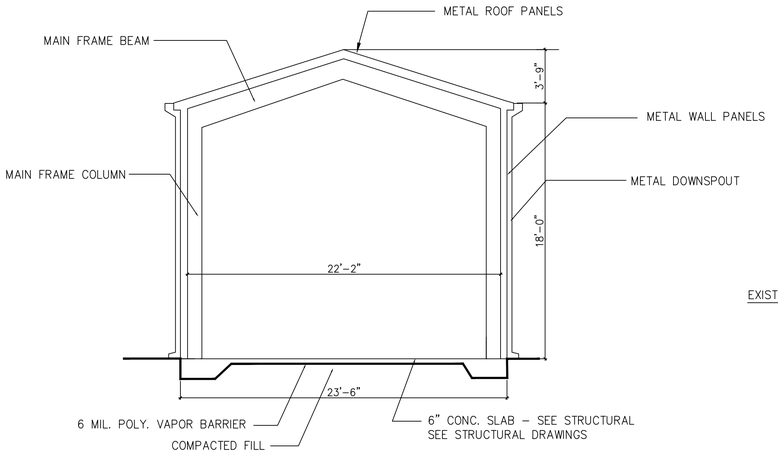
5 A-7



ELEVATION @ LOADING DOCK

NTS

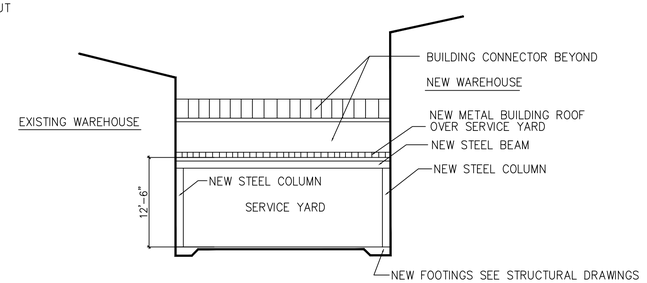
4 A-7



SECTION @ BUILDING LINK

NTS

3 A-7



ELEVATION @ SERVICE YARD

NTS

6 A-7

Revisions

Rev# Date	Description

Professional Seal

License No. AR 0016950

Drawing Title

LOADING DOCK DETAILS AND SECTIONS

Project Name & Location

JETSON APPLIANCE WAREHOUSE

4145 S. FEDERAL HIGHWAY
FORT PIERCE, FL.

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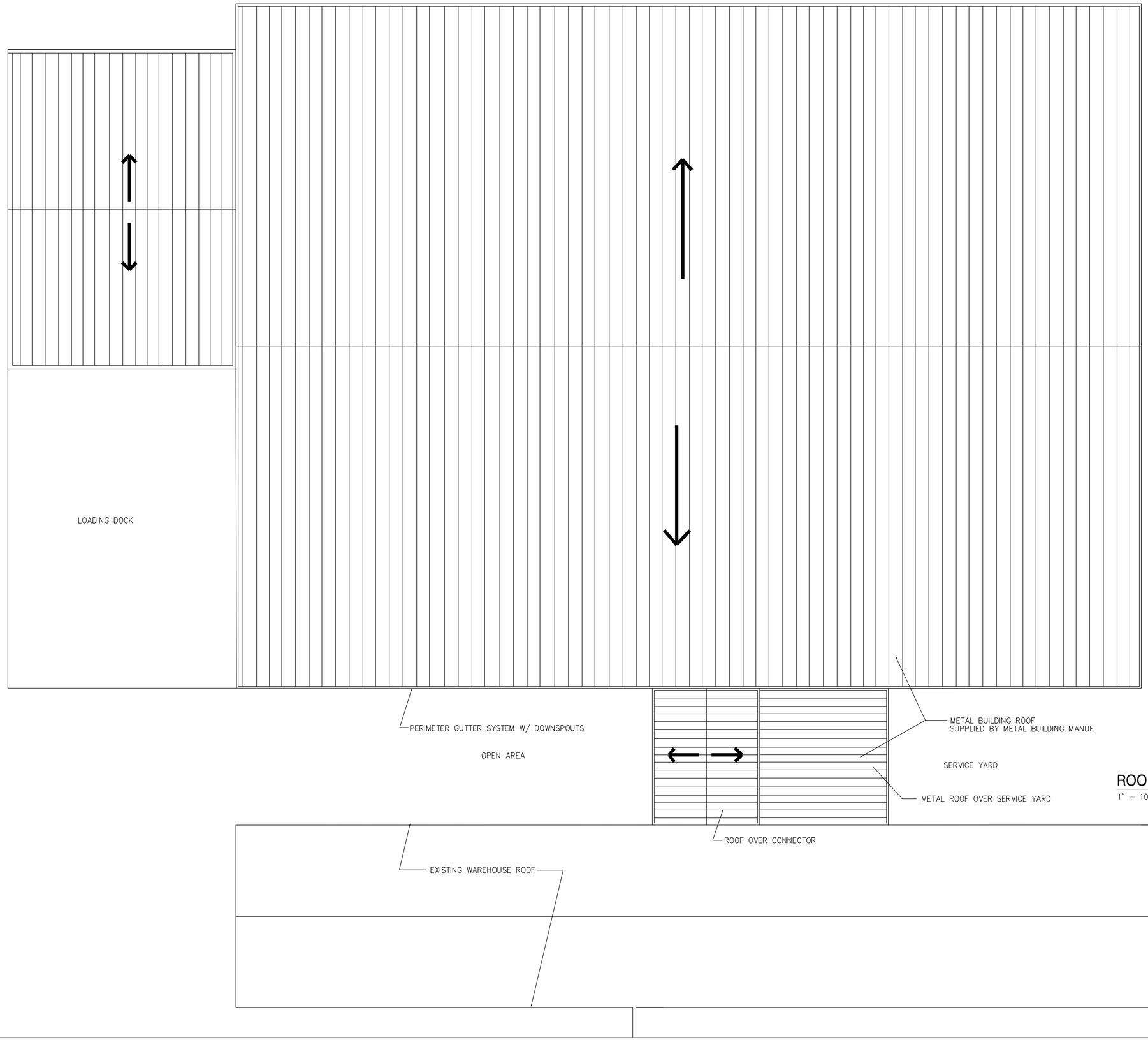
Drawing Number

A-7

Sheet of Total



ROOF PLAN

1" = 10'-0"

Revisions

Rev# Date	Description

Professional Seal

License No. AR 0016950

Drawing Title

ROOF PLAN

Project Name & Location

JETSON APPLIANCE WAREHOUSE

4145 S. FEDERAL HIGHWAY
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Project No.

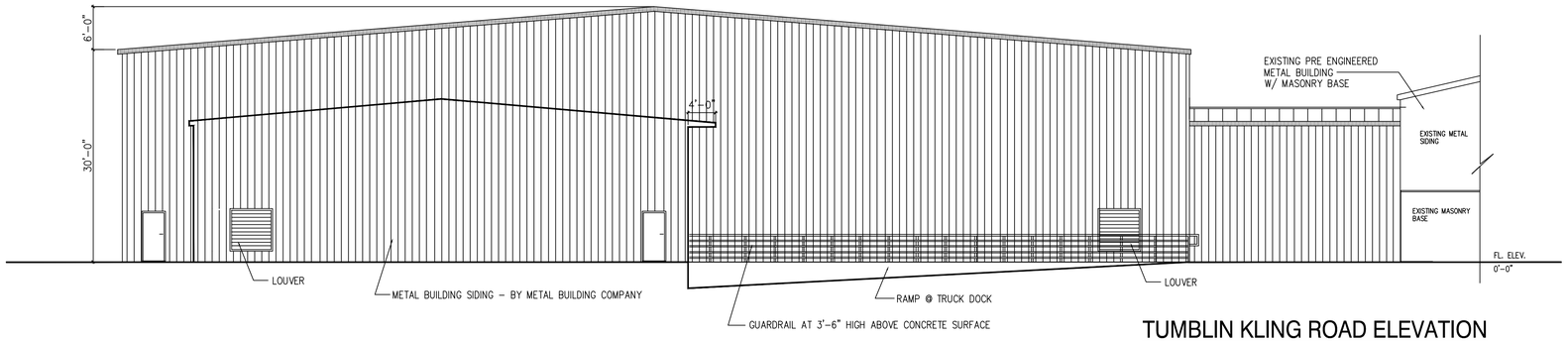
Original Submittal Date

Drawn By: AJM Checked By: AJM

Drawing Number

A-8

Sheet of Total



TUMBLIN KLING ROAD ELEVATION

1" = 10'-0"

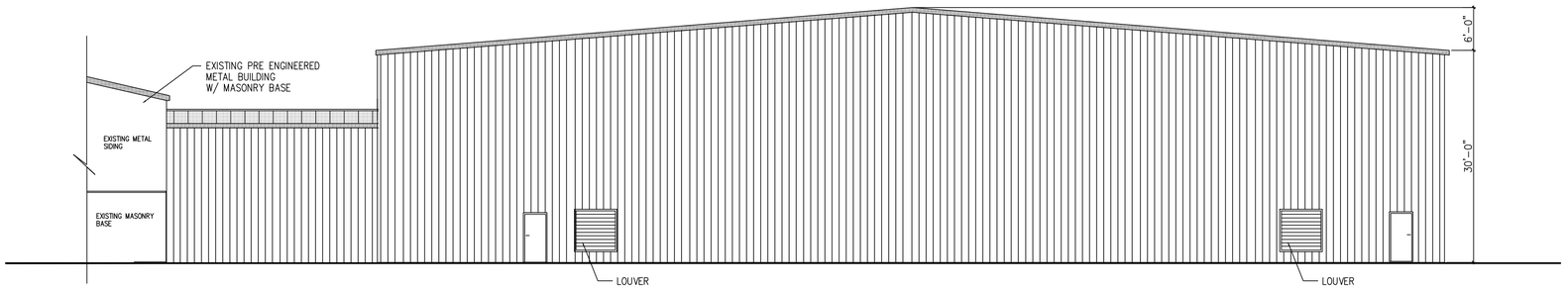
COLOR LEGEND

METAL BUILDING SIDING
COLOR - REGAL WHITE

METAL BUILDING TRIM
COLOR - CHARCOAL

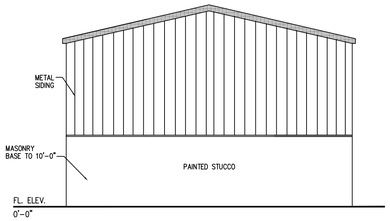
METAL BUILDING ROOF
COLOR - GALVALUME

ALL COLORS STANDARD BUILDING COLORS
BY KIRBY BUILDING SYSTEMS



BACK ELEVATION

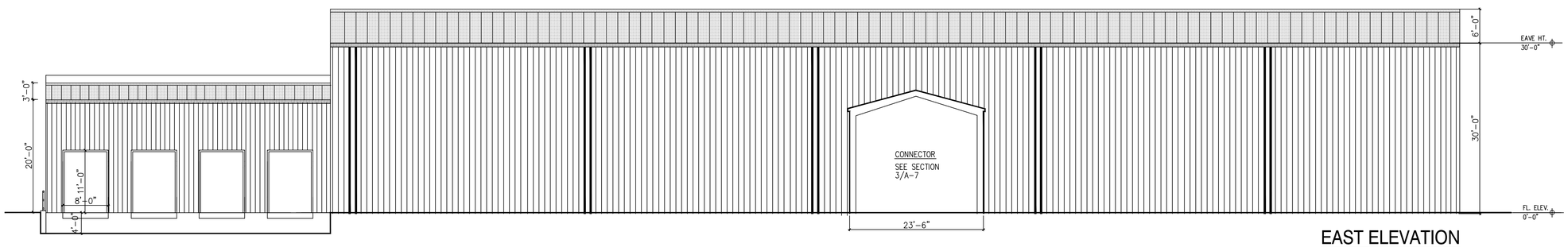
1" = 10'-0"



ELEV @ EXISTING BUILDING

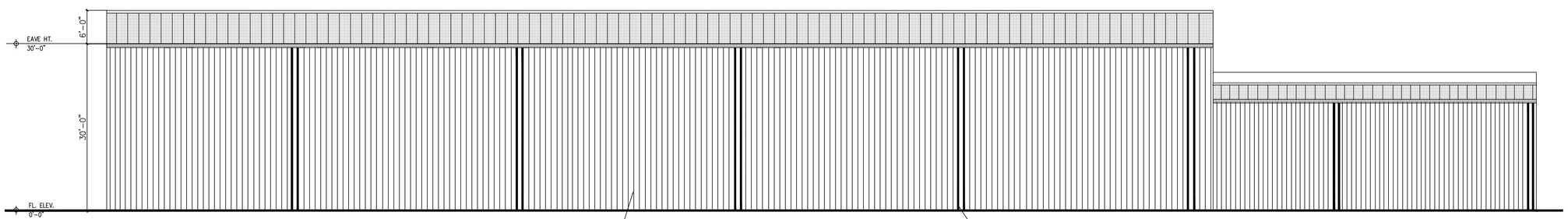
1" = 10'-0"

1 / A-3



EAST ELEVATION

1" = 10'-0"



WEST ELEVATION

1" = 10'-0"

Revisions

Rev# Date	Description

Professional Seal

License No. AR 0016950

Drawing Title

EXTERIOR ELEVATIONS

Project Name & Location

JETSON APPLIANCE WAREHOUSE

4145 S. FEDERAL HIGHWAY
FORT PIERCE, FL.

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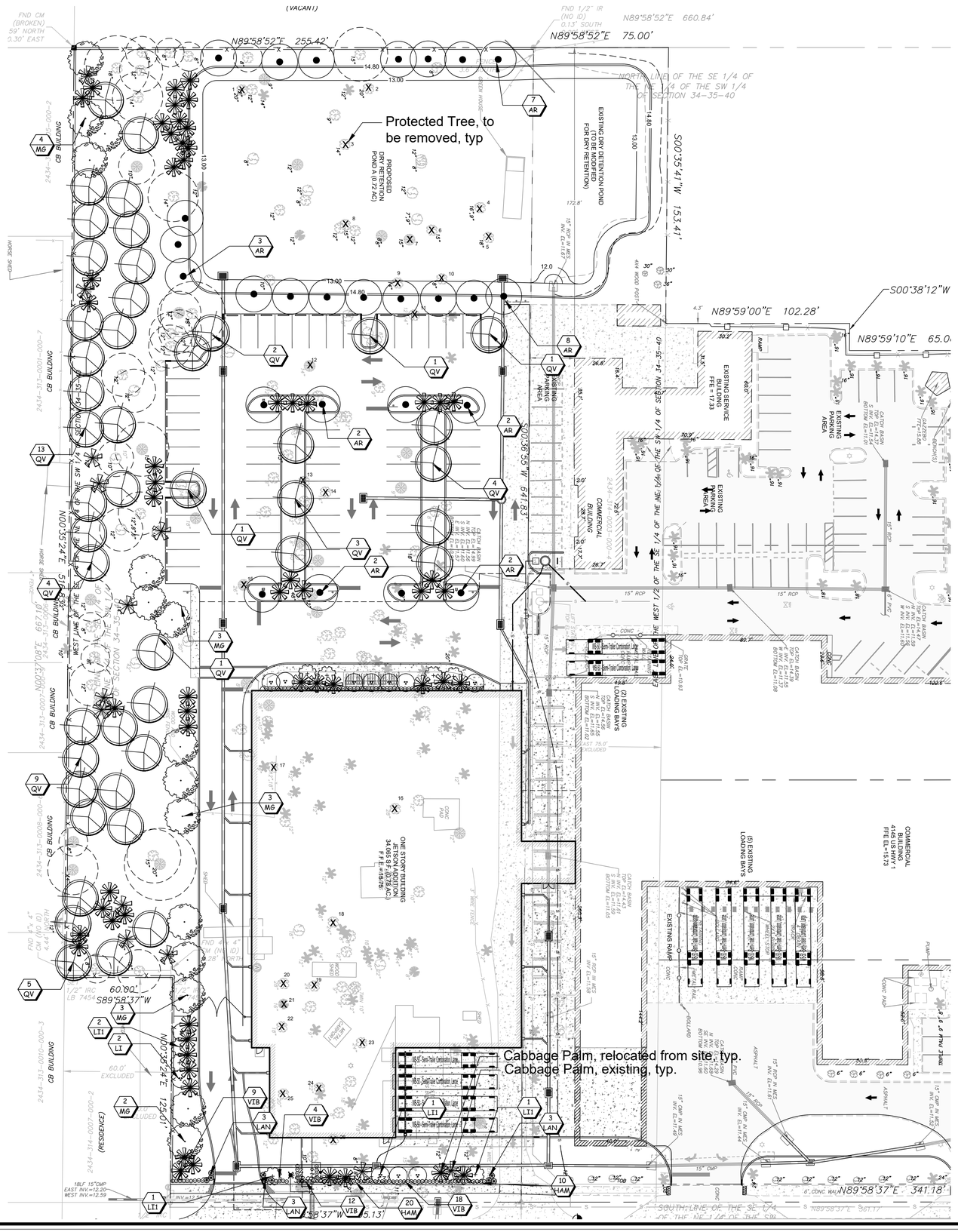
Project No.	
Original Submittal Date	
Drawn By: AJM	Checked By: AJM

Drawing Number

A-3

Sheet of Total



Landscape Legend:

Qty	Symb	Name
26	AR	Red Maple Acer rubrum 'Florida Flame',FG, 14' Ht, 5' spr, 4" cal
15	MG	Southern Magnolia Magnolia grandiflora, FG, 14' Ht, 5' spr, 4" cal
46	QV	Live Oak Quercus virginiana, FG, 14 Ht, 6' spr, 4" cal
12	LI	Crape Myrtle Lagerstromia indica 'Muskogee', FG, 12' Ht, 4' spr, 2.5" cal total,
8	LI1	Crape Myrtle Lagerstromia indica 'Tuscarora', FG, 12' Ht, 4' spr, 2.5" cal total, I
Shrubs:		
30	HAM	Dwarf Firebush Hamelis patens 'Compacta', 3 gal, 24"x18", 24" oc
103	VIB	Dwarf Walters Viburnum Viburnum obovatum 'Select', 3 gal, 24"x18", 24" oc
Groundcover:		
9	LAN	Pineland Lantana Lantana depressa, 1 gal, 12" spr, 36" oc

Landscape Data:

Exterior Landscape:

VUA against other Property Lines:

North: 255'x10' = 2550/200	13 trees
West: 692'x10 = 6920/200	35 trees

VUA against R/W line:

South: 195'-54' driveway = 141x10 = 1410/300	5 trees

Interior Landscape

Total VUA area:	42,602 sf	
Landscape Area required: 1 sf/15 sf VUA		2,840 sf
Landscape area provided:		4,540 sf
Area reduction for preservation of trees:	50%	
Total landscape area required: 1420, 1 tree/100 sf		14 trees
Total trees required:		66 Trees

Tree Mitigation

Native trees, 14" or greater removed:	483 inches
Native trees preserved:	367 inches
Mitigation planting required:	232 inches
Total Planting required (incl req. landscape trees)	398 inches
Total Planting provided:	398 inches

General Notes:

1. *No landscape materials other than sod grasses may be planted within a 5' radius maintenance area of any underground utility such as water meters, backflow devices, fire hydrants, sanitary sewer cleanouts, and manholes, air release valves, etc.*
2. *No landscaping shall be planted in a manner that would adversely affect utility easements.*
3. *All landscape areas to receive automatic irrigation. Water source to be potable or well and will be determined at time of building permit application.*
4. *Sod around buildings to be St. Augustine 'Bitter Blue' sod. Sod to be weed and disease free and laid tight. All areas within in preservation areas to be seeded with Argentine Bahia grass.*
5. *Not trees to be placed within 6' of any hard surface unless root barrier will be installed along the edge of the hard surface. Root barrier to extend at least 5' in either direction from the center of the tree trunk. Refer to Sheet LD-02 for installation details.*

N
W E
S

Graphic Scale
30 15 0 30
Scale: 1" = 30'

Landscape Design Associates
25110 NW 182nd Ave
High Springs, FL 32643
352-210-5765 ph, www.landscapeda.com

Scale: 1" = 30'
Drawn by: SM
Checked by: SM
CADD No.: 21-043 lp.dwg
Date: 5.24.21

Revisions

Date	Comments
4.27.22	revised driveway

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REGISTERED LANDSCAPE ARCHITECT LA0001735 STATE OF FLORIDA

4.27.22

LD-01

Jetson Fort Pierce
City of Fort Pierce
Landcape Plan

PLANTING NOTES:

FERTILIZER

FERTILIZERS SHALL BE SLOW RELEASE, UNIFROM IN COMPOSITION, DRY AND FREE FLOWING. THE FERTILIZER SHALL BE DELIVERED TO THE SITE IN THE ORIGINAL UNOPENED BAGS, EACH BEARING THE MANUFACTURERS STATEMENT OF ANALYSIS,AND SHALL MEET THE FOLLOWING REQUIREMENTS: SIX (6) PERCENT NITROGEN,SIX (6) PERCENT PHOSPHOROUS,AND SIX (6) PERCENT POTASSIUM. FERTILIZER SHALL BE APPLIED TO ALL SHRUBS (1/3 LB PER 3 GAL POT, 1/4 LB PER 1 GAL POT) AND GROUNDCOVER. THE SOD STARTER FERTILIZER MIXTURE SHALL BE A 5-10-10 ANALYSIS. A 14-14-14 FERTILIZER ANALYSIS IS REQUIRED ON ALL TREES AND SHRUBS OVER 5' IN HEIGHT (1/2 LB PER 5' OF SPREAD). AGRIFORM, TABLETS WITH TWENTY (20) PERCENT NITROGEN, TEN (10) PERCENT PHOSPHOROUS,FIVE (5) PERCENT POTASSIUM IN 21 GRAM SIZES SHALL BE APPLIED ALONG WITH THE FERTILIZER PROCESS (1 WITH 1 GAL PLANTS. 2 WITH 3 GAL PLANTS AND 2 TABLETS PER 1" OF TREE TRUNK CALIPER). MAGNESIUM SULFATE SHALL BE APPLIED TO ALL PALMS AT INSTALLATION AT A RATE OF 1/2 LB PER INCH OF TRUNK CALIPER. MANGANESE SHALL BE APPLIED AT THE SAME RATE.

MULCH

MULCH MATERIAL SHALL BE COLORED 'A' GRADE CERTIFIED RE-CYCLED MULCH AND MOISTENED AT THE TIME OF APPLICATION TO PREVENT WIND DISPLACEMENT. MULCH SHALL BE APPLIED TO A MINIMUM OF 3" DEPTH IN PLANTING BEDS. MULCH SHALL NOT BE PLACED WITHIN 6" OF TREE OR PALM TRUNKS.

SOD

THE SOD SHALL BE CERTIFIED TO MEET FLORIDA STATE PLANT BOARD SPECIFICATIONS,ABSOLUTELY TRUE TO VARIETAL TYPE,AND FREE FROM WEEDS,FUNGUS,INSECTS AND DISEASE OF ANY KIND.

SUBSTITUTIONS

NO SUBSTITUTION OF PLANT MATERIAL TYPES OR SIZES WILL BE ALLOWED WITHOUT WRITTEN AUTHORIZATION FROM THE LANDSCAPE ARCHITECT OF RECORD. CONTAINER GROWN MATERIAL WILL NOT BE ACCEPTED AS A SUBSTITUTE FOR B & B MATERIAL UNLESS PREVIOUSLY APPROVED. INTENDED SUBSTITUTIONS SHALL BE SPELLED OUT IN BID.

MEASUREMENTS

SHADE TREES: HEIGHT SHALL BE MEASURED FROM GROUND TO THE AVERAGE BRANCH HEIGHT OF CANOPY. SPREAD SHALL BE MEASURED TO THE END OF BRANCHING EQUALLY AROUND THE CROWN FROM THE CENTER OF THE TRUNK. MEASUREMENTS ARE NOT TO INCLUDE ANY TERMINAL GROWTH. SINGLE TRUNK TREES SHALL BE FREE OF "V" CROTCHES THAT COULD BE POINTS OF WEAK LIMB STRUCTURE OR DISEASE INFESTATION.

SHRUBS: HEIGHT SHALL BE MEASURED FROM THE GROUND TO THE AVERAGE POINT WHERE MATURE PLANT GROWTH STOPS. SPREAD SHALL BE MEASURED TO THE END OF BRANCHING EQUALLY AROUND THE SHRUB MASS. MEASUREMENT AREA NOT TO INCLUDE ANY TERMINAL GROWTH.

PALMS: CLEAR TRUNK SHALL BE MEASURED FROM THE GROUND AT THE TIME OF INSTALLATION TO THE POINT WHERE THE MATURE AGED TRUNK JOINS THE IMMATURE OR GREEN PORTION OF THE TRUNK OR HEAD.

GREY WOOD (G.W.) - SHALL BE MEASURED FROM THE GROUND AT THE TIME OF INSTALLATION TO TOP OF THE HARDENED TRUNK.

OVERALL HEIGHT (O.A.) - SHALL BE MEASURED FROM THE GROUND AT THE TIME OF INSTALLATION TO THE AVERAGE FROND HEIGHT.

PALMS WITH MARRED OR BURNED TRUNKS WILL NOT BE ACCEPTED.

PLANTING SOIL AND BACKFILL

PLANTING SOIL SHALL BE RECYCLED TOPSOIL.
RECYCLED TOPSOIL SHALL CONSIST OF A STABILIZED MIXTURE OF GROUND YARD TRIMMINGS AND POSSIBLY BIOSOLIDS PROCESSED ACCORDING TO STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION GUIDELINES FOR THE PROCESSING AND DISTRIBUTION OF SEWAGE SLUDGE COMPOST. RECYCLED TOPSOIL SHALL ONLY BE OBTAINED FROM A STATE PERMITTED RECYCLING FACILITY WHICH IS ALSO D.O.T. CERTIFIED AND STORES PRODUCT ON A PAD WITH A CURRENT NEMATODE CERTIFICATION FROM FLORIDA DEPARTMENT OF AGRICULTURE. RECYCLED TOPSOIL SHALL HAVE THE FOLLOWING CHARACTERISTICS:
- WEED FREE
- MOISTURE CONTENT 50% BY WEIGHT MAXIMUM
- WATER HOLDING CAPACITY 200% BY WEIGHT MINIMUM
- CARBON TO NITROGEN RATIO LESS THAN 25 TO 1
- ORGANIC MATTER CONTENT 40% BY DRY WEIGHT MINIMUM
- SOLUBLE SALTS LESS THAN 3 MMHOS/CM
- PH RANGE 7.0 - 7.9
- MINIMUM NUTRIENT LEVELS AS FOLLOWS:

MACRO NUTRIENTS: NITROGEN (N) - 1% MINIMUM, WATER INSOLUBLE NITROGEN 90% MINIMUM, PHOSPHORUS (P) - 0.5% MINIMUM, POTASSIUM (K) - 0.2% MINIMUM AND OTHER MACRO AND MICRO NUTRIENTS. THE RECYCLED TOPSOIL SHALL CONTAIN LEVELS OF THOSE MICRO NUTRIENTS NECESSARY FOR PLANT GROWTH. THESE INCLUDE CALCIUM, MAGNESIUM, SULFUR, BORON, COPPER, IRON, MANGANESE AND MOLYBDENUM. RECYCLED TOPSOIL NOT MEETING THESE REQUIREMENTS WILL NOT BE ACCEPTED.

BACKFILL:

ALL NEW AND TRANSPLANTED PLANT MATERIAL (INCLUDING NEW SOD) SHALL BE PLANTED ONLY AFTER PREPARATION OF EXISTING SOIL AS FOLLOWS:
SPREAD A LAYER OF 3" DEPTH OF RECYCLED TOPSOIL (AS DEFINED ABOVE) OVER THE ENTIRE PLANTING AREA. THE TOPSOIL SHALL THEN BE UNIFORMLY DISKED, TILLED OR AERIFIED INTO THE EXISTING SOIL TO A DEPTH OF 12" UNDERNEATH SHRUBS AND GROUNDCOVERS, 6" UNDERNEATH SOD AND TO A DEPTH OF 36" FOR THE TREE PITS, WITH THE FOLLOWING EXCEPTION: NO ROTOTILLING OR DISKING SHALL OCCUR CLOSER TO THE TRUNKS OF ESTABLISHED PLANTS THAN ONE HALF (1/2) THE DISTANCE OF THE CANOPY FURTHER OUT FROM THE DRIP LINE OF THE EXISTING PLANT CANOPY. ALL PLANTS, INCLUDING HEDGES AND GROUND COVER SHALL BE PLANTED IN INDIVIDUALLY DUG HOLES AND THE MATERIAL DUG FROM THE HOLES SHALL THEN BE FURTHER MIXED WITH THE PREPARED SITE SOIL PRIOR TO BACKFILLING OF THE PLANTING HOLES AROUND THE ROOT BALLS. NO ADDITIONAL BACKFILL SOIL SHALL BE USED.

AN EXCEPTION ARE PLANTING PITS FOR CABBAGE PALMS, WHICH SHALL BE BACKFILLED WITH CLEAN NATIVE SAND ONLY.

REMOVE EXCESS MATERIAL TO PROVIDE PROPER FINISHED GRADE.

ALL PLANTING PITS AND PLANTING AREAS SHALL BE AMENDED WITH AGRODIAMONDS @ PER MANUFACTURERS SPECIFICATIONS.

PLANT MATERIALS

TREES, PALMS, SHRUBS,GROUND COVERS:

PLANT SPECIES AND SIZES SHALL CONFORM TO THOSE INDICATED IN THE DRAWINGS. NOMENCLATURE SHALL CONFORM TO STANDARDIZED PLANT NAMES, 1942 EDITION. ALL NURSERY STOCK SHALL BE IN ACCORDANCE WITH GRADES AND STANDARDS FOR NURSERY PLANTS, PARTS I & II, LATEST EDITION PUBLISHED BY THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES, UNLESS SPECIFIED OTHERWISE. ALL PLANTS SHALL BE NORMAL FOR THE VARIETY AND FLORIDA GRADE NUMBER 1 OR BETTER AS DETERMINED BY THE FLORIDA DIVISION OF PLANT INDUSTRY.

SPECIMEN MEANS AN EXCEPTIONALLY HEAVY, SYMMETRICAL, TIGHTLY KNIT PLANT, SO TRAINED OR FAVORED IN ITS DEVELOPMENT THAT FIRST APPEARANCE IS UNQUESTIONABLE AND IT IS OUTSTANDINGLY SUPERIOR IN FORM, NUMBER OF BRANCHES, COMPACTNESS AND SYMMETRY.

ALL PLANTS SHALL BE FRESHLY DUG, SOUND, HEALTHY, VIGOROUS, WELL BRANCHED AND FREE OF DISEASE AND INSECT EGGS AND LARVAE AND SHALL HAVE ADEQUATE ROOT SYSTEMS. TREES FOR PLANTING ROWS SHALL BE UNIFORM IN SIZE AND SHAPE. ALL MATERIALS SHALL BE SUBJECT TO APPROVAL BY THE LANDSCAPE ARCHITECT, WHERE REQUIREMENTS ARE OMITTED FROM THE PLANT LIST. PLANTS SHALL BE PRUNED PRIOR TO DELIVERY ONLY UPON THE APPROVAL OF THE LANDSCAPE ARCHITECT.

ALL CONTAINER GROWN MATERIAL SHALL BE HEALTHY, VIGOROUS, WELL ROOTED PLANTS AND ESTABLISHED IN THE CONTAINER IN WHICH THEY ARE SOLD. THE PLANTS SHALL HAVE TOPS OF GOOD QUALITY AND BE IN HEALTHY GROWING CONDITION. AN ESTABLISHED CONTAINER GROWN PLANT SHALL BE TRANSPLANTED INTO A CONTAINER AND GROWN IN THAT CONTAINER SUFFICIENTLY LONG ENOUGH FOR THE NEW FIBROUS ROOTS TO HAVE DEVELOPED SO THAT THE ROOT MASS WILL RETAIN ITS SHAPE AND HOLD TOGETHER WHEN REMOVED FROM THE CONTAINER.

GENERAL NOTES:

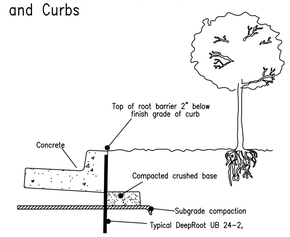
1. THE CONTRACTOR SHALL PERSONALLY ACQUAINT HIM/HER SELF WITH THE EXISTING SITE CONDITIONS AND THE EXTENT AND SCOPE OF WORK REQUIRED.
2. THE PLANT LIST INDICATES THE NAMES, SIZES AND SPACING OF SPECIFIC PLANT MATERIALS. QUANTITIES HAVE BEEN PROVIDED TO THE CONTRACTOR AS A CONVENIENCE, THE CONTRACTOR IS RESPONSIBLE FOR HIS/HER OWN QUANTITY COUNT. IN CASE OF DISCREPANCIES BETWEEN THE DRAWINGS AND PLANT LIST, THE QUANTITIES ON THE DRAWINGS SHALL PREVAIL.
3. NO SUBSTITUTES ON VARIETIES LISTED WILL BE ALLOWED WITHOUT WRITTEN APPROVAL FROM LANDSCAPE ARCHITECT.
4. PLANTS SHALL BE WATERED AS NECESSARY OR WITHIN 24 HOURS AFTER NOTIFICATION BY THE LANDSCAPE ARCHITECT.
5. THE LOCATIONS OF PLANTS, AS SHOWN IN THESE PLANS, ARE APPROXIMATE. THE FINAL LOCATIONS MAY BE ADJUSTED TO ACCOMMODATE UNFORESEEN FIELD CONDITIONS. MAJOR ADJUSTMENTS TO THE LAYOUT ARE TO BE APPROVED BY THE LANDSCAPE ARCHITECT OF RECORD.
6. ALL PLASTIC FABRIC SHALL BE REMOVED FROM PLANT MATERIAL AT TIME OF INSTALLATION.
7. ALL TREES MUST BE STAKED AS SHOWN ON THE LANDSCAPE DETAIL SHEET WITHIN 24 HRS OF PLANTING. STAKES TO REMAIN FOR A MINIMUM OF 12 MONTH BUT NO LONGER THAN 18 MONTH. CONTRACTOR RESPONSIBLE FOR MAINTENANCE AND REMOVAL OF THE STAKES.
8. ALL TREES MUST BE PRUNED AS PER LANDSCAPE ARCHITECT DIRECTION.
9. ALL SOD EDGES SHALL BE TRIMMED AS PER THE LANDSCAPE ARCHITECTS DIRECTION.
10. ALL SHRUBS, TREES, GROUNDCOVERS, SOD AND WILDFLOWER AREAS SHALL HAVE IMPROVED SOIL AS PER PLANTING SOIL NOTES.
11. DO NOT ALLOW AIR POCKETS TO FROM WHEN BACKFILLING.
12. SOAK PLANTS IMMEDIATELY WITH WATER FOLLOWING PLANTING.
13. MAINTAIN THE ORIGINAL GRADE OF THE TREE BASE.
14. DO NOT BREAK ROOTBALL.
15. ALL PLANT SHALL BE HARDY UNDER CLIMATIC CONDITIONS SIMILAR TO THOSE ON LOCALITY OF THE PROJECT.
16. THE LANDSCAPE CONTRACTOR SHALL WATER, MULCH, WEED, PRUNE,, AND OTHERWISE MAINTAIN ALL PLANTS, INCLUDING SOD, UNTIL COMPLETION OF THE CONTRACT OR ACCEPTANCE BY THE LANDSCAPE ARCHITECT. SETTLED PLANTS SHALL BE RESET TO PROPER GRADE, PLANTING SAUCERS RESTORED, AND DEFECTIVE WORK CORRECTED.
17. THE LANDSCAPE CONTRACTOR SHALL AT ALL TIMES KEEP THE PREMISES FREE FROM ACCUMULATION OF WASTE MATERIALS OR DEBRIS CAUSED BY THE CREWS DURING THE PERFORMANCE OF THE WORK. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL PROMPTLY REMOVE ALL WASTE MATERIALS, DEBRIS, UNUSED PLANT MATERIAL, EMPTY PLANT CONTAINERS AND ALL EQUIPMENT FROM THE PROJECT SITE.
18. UPON COMPLETION OF THE WORK, THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT AND REQUEST A FINAL INSPECTION. ANY ITEMS THAT ARE JUDGED INCOMPLETE OR UNACCEPTABLE BY THE LANDSCAPE ARCHITECT OR REPRESENTATIVE SHALL BE PROMPTLY CORRECTED BY THE LANDSCAPE CONTRACTOR.
19. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE IN WRITING FROM THE LANDSCAPE ARCHITECT. AT THE TIME OF FINAL ACCEPTANCE THE ONE (1) YEAR PERIOD SHALL COMMENCE. ANY MATERIALS WHICH HAVE DIED DURING THIS PERIOD SHALL BE PROMPTLY REPLACED WITH SPECIMENS THAT MEET THE MINIMUM REQUIREMENTS CALLED FOR IN THE DRAWINGS. THE LANDSCAPE CONTRACTOR SHALL NOT BE HELD RESPONSIBLE FOR THE DEATH OR DAMAGE RESULTING FROM LIGHTNING, VANDALISM, AUTOMOBILES OR FROM NEGLIGENCE BY THE OWNER. CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING AND OTHERWISE MAINTAINING PLANTS DURING THE GUARANTEE PERIOD UNLESS A WRITTEN AGREEMENT WITH THE LANDSCAPE ARCHITECT PROVIDES FOR A DIFFERENT ARRANGEMENT.
20. ALL LABOR AND MATERIAL FOR SOIL AMENDMENTS AND FERTILIZER THAT IS REQUIRED TO INSURE THE SUCCESSFUL ESTABLISHMENT AND SURVIVAL OF THE PROPOSED VEGETATION AS WELL AS ALL COST FOR THE REMOVAL OF UNSUITABLE OR EXCESS BACKFILL MATERIAL SHALL BE INCLUDED IN THE CONTRACTORS BID TO PERFORM THE WORK PRESENTED IN THIS PLAN SET.
21. NO LANDSCAPING ADDED UNDER THIS PROJECT SHALL BE LOCATED SUCH THAT SAID LANDSCAPING OBSCURES MOTORIST'S VISIBILITY OF ANY EXISTING SIGN(S).

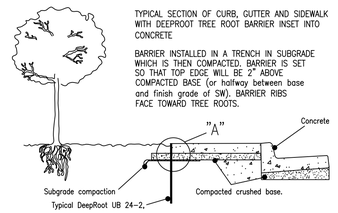
Linear Application of DeepRoot Tree Root Barriers at Time of Installing Concrete Sidewalks and Curbs

TYPICAL SECTION OF CURB AND GUTTER WITH DEEPROOT TREE ROOT BARRIER INSET INTO CONCRETE.
BARRIER INSTALLED IN A TRENCH IN SUBGRADE WHICH IS THEN COMPACTED. BARRIER IS SET SO THAT TOP EDGE WILL BE 2" BELOW FINISH GRADE OF CURB, AND SET FLUSH WITH EDGE OF CURB. BARRIER RIBS FACE TOWARD TREE ROOTS.

INSTALLATION SEQUENCE:

1. Prepare base and subgrade
2. Trench to appropriate depth for installation of root barrier so that top of barrier is 2" below finish grade of top of curb.
3. Place root barrier in trench, vertical ribs must face toward tree roots.
4. Backfill and compact to requirements.
5. Place form material against barrier (It may be nailed from the outside of the form)



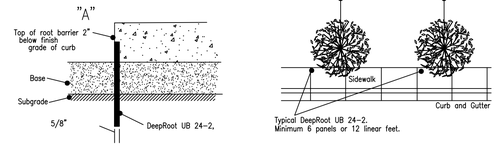


TYPICAL SECTION OF CURB, GUTTER AND SIDEWALK WITH DEEPROOT TREE ROOT BARRIER INSET INTO CONCRETE

BARRIER INSTALLED IN A TRENCH IN SUBGRADE WHICH IS THEN COMPACTED. BARRIER IS SET SO THAT TOP EDGE WILL BE 2" ABOVE COMPACTED BASE (or halfway between base and finish grade of SW). BARRIER RIBS FACE TOWARD TREE ROOTS.

INSTALLATION SEQUENCE:

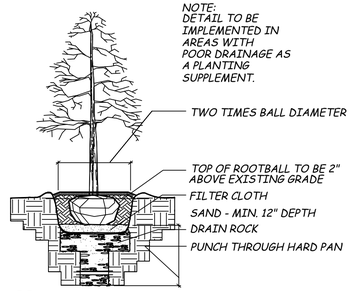
1. Prepare base and subgrade
2. Trench to appropriate depth for installation of root barrier so that top of barrier is 2" (5cm) below finish grade of top of sidewalk (or halfway between top of compacted base and finish grade of SW)
3. Place root barrier in trench, vertical ribs must face toward tree roots.
4. Backfill and compact to requirements.
5. Place form material against barrier (It may be nailed from the outside of the form)



WATERING SCHEDULE

APPLICATION SCHEDULE	
PALM TREES	20 GAL/APPLICATION/PLANT
LARGE TREES	30 GAL/APPLICATION/PLANT
SMALL TREES	20 GAL/APPLICATION/PLANT
LARGE SHRUBS	10 GAL/APPLICATION/PLANT
SMALL SHRUBS	5 GAL/APPLICATION/PLANT
GROUNDCOVER	5 GAL/APPLICATION/PLANT
APPLICATION AMOUNT	
MONTH 1	12 APPLICATIONS
MONTH 2	12 APPLICATIONS
MONTH 3	8 APPLICATIONS
MONTH 4	8 APPLICATIONS
MONTH 5	5 APPLICATIONS
TOTAL:	45 APPLICATIONS

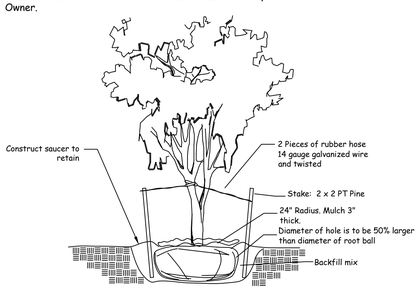
ABBREVIATIONS:
C.T.- CLEAR TRUNK
Ht.- HEIGHT
O.C.- ON CENTER
Spr.- SPREAD



TREE PITS WITH DRAIN
N.T.S.

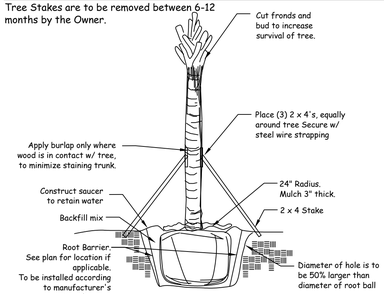
Tree Planting Detail

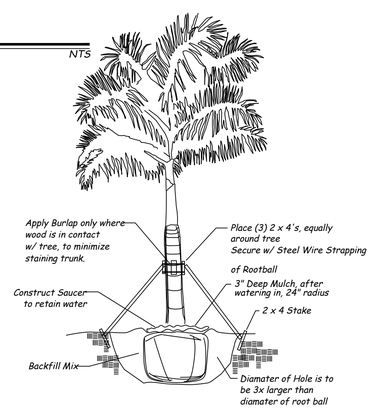
Tree Stakes are to be removed between 6-12 months by the Owner. NTS



Palm Planting Detail

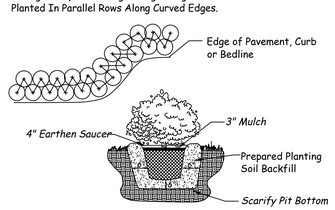
Tree Stakes are to be removed between 6-12 months by the Owner. NTS





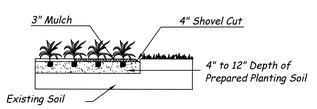
Shrub & Groundcover Planting Detail

Note: All Shrubs And Groundcover Shall Be Triangular Spaced Along Straight Edges And Will Be Planted In Parallel Rows Along Curved Edges. NTS



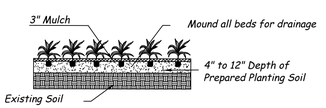
Planting Edge at Sod Detail

NTS



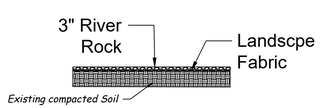
Groundcover & Annual Detail

NTS NOTE: Annuals Are To Be Planted As Per Groundcover Detail Excluding Mulch.



Gravel Strip Detail

NTS



Landscape Design Associates
25110 NW 182nd Ave
High Springs, FL 32643
352-210-5765 ph, www.landscapeda.com

Revisions	
Date	Comments
4.27.22	revised driveway

Scale:	NTS
Drawn by:	SM
Checked by:	SM
CADD No.:	21-043 lp.dwg
Date:	5.24.21

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Jetson Fort Pierce

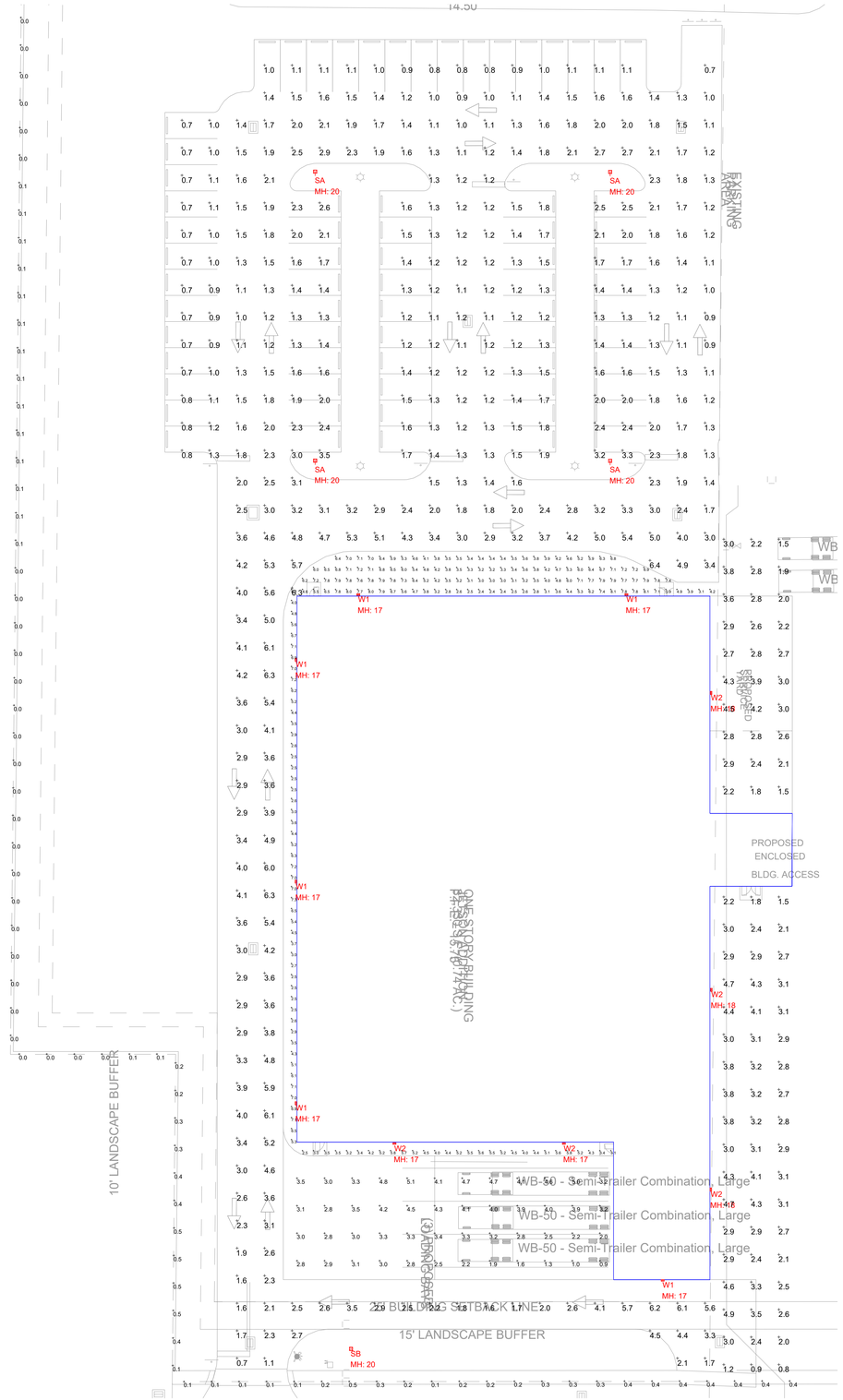
City of Fort Pierce

Landcape Notes and Details

REGISTERED LANDSCAPE ARCHITECT LA0001733 STATE OF FLORIDA

4.27.22

LD-02



Photometrics Calculation Software Generated Luminaire Schedule								
Symbol	Qty	Label	Arrangement	Lum. Lumens	Arr. Lum. Lumens	LLF	Lum. Watts	Arr. Watts
	6	W1	SINGLE	14485	14485	0.900	113	113
	5	W2	SINGLE	14658	14658	0.900	113	113
	4	SA	SINGLE	20332	20332	0.900	151	151
	1	SB	SINGLE	14072	14072	0.900	151	151

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
LOADING AREA BAY	Illuminance	Fc	3.26	5.1	0.9	3.62	5.67
OUTSIDE BUILDING PATHWAY	Illuminance	Fc	5.10	8.1	2.4	2.13	3.38
PARKING LOT	Illuminance	Fc	2.15	6.4	0.7	3.07	9.14
PERIMETER	Illuminance	Fc	0.13	0.5	0.0	N.A.	N.A.
WEST	Illuminance	Fc	2.94	4.9	0.8	3.68	6.13

JETSON'S WAREHOUSE ADDITION

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MFR	CATALOG NUMBER	VOLTS	LAMPS	INPUT WATTS	MOUNTING	DIMMING (If Req)	REMARKS
L1	LED HIGH BAY	METALUX	LHB-24-UNV-L840-CD-U / LHB-PMK	UNV	LED	172.8W	SUSPENDED	0-10V	
L1E	LED HIGH BAY W/ EMERGENCY PACK	METALUX	LHB-24-UNV-L840-CD-EL14W-REM-U / LHB-PMK	UNV	LED	172.8W	SUSPENDED	0-10V	
L2	2' X 2' LED FLAT PANEL	METALUX	22FP3240C	UNV	LED	30.1W	RECESSED	0-10V	
L2E	2' X 2' LED FLAT PANEL W/ EMERGENCY PACK	METALUX	22FP3240C-EL7W	UNV	LED	30.1W	RECESSED	0-10V	
L3	2' LED STRIP	METALUX	2SNLED-LD5-16SL-LW-UNV-L840-CD1-U	UNV	LED	15.9W	SURFACE	0-10V	
L4	4' LED STRIP	METALUX	4SNLED-LD5-44SL-LW-UNV-L840-CD1-U	UNV	LED	38.7W	SURFACE	0-10V	
L4E	4' LED STRIP W/ EMERGENCY PACK	METALUX	4SNLED-LD5-44SL-LW-UNV-EL14W-L840-CD1-U	UNV	LED	38.7W	SURFACE	0-10V	
L5	LED WALL PACK	MCGRAW-EDISON	GWC-SA1C-740-U-T3-FINISH	UNV	LED	59W	WALL	0-10V	NOTE 1
EM	EXIT SIGN / EMERGENCY LIGHT COMBO	SURE-LITES	APC7G	UNV	LED	2.1W	SURFACE	N/A	
EX	LED EXIT SIGN	SURE-LITES	APX7G	UNV	LED	1.8W	SURFACE	N/A	
SITE									
SA	LED SITE LUMINAIRE	LUMARK	PRV-PA2-B-740-U-5WQ-FINISH / MA1017-XX	UNV	LED	151W	20' POLE	N/A	NOTE 1, 2
SB	LED SITE LUMINAIRE	LUMARK	PRV-PA2-B-740-U-T4W-FINISH-HSS / MA1017-XX	UNV	LED	151W	20' POLE	N/A	NOTE 1, 2
W1	LED WALL PACK	MCGRAW-EDISON	GWC-SA2C-740-U-T2-FINISH	UNV	LED	113W	WALL	N/A	NOTE 1
W2	LED WALL PACK	MCGRAW-EDISON	GWC-SA2C-740-U-T4W-FINISH	UNV	LED	113W	WALL	N/A	NOTE 1

FIXTURE SCHEDULE NOTES

NOTE 1: ADVISE FINISH

NOTE 2: FIXTURE MOUNTED ON 20' VALMONT ALUMINUM DIRECT BURIAL POLE #1908-40504TE-P2-FINISH

FOR QUESTIONS PERTAINING TO THIS FIXTURE SCHEDULE PLEASE CONTACT RYAN HUFF @ LIGHTING DYNAMICS (772) 285-7169; RHUFF@LIGHTINGDYNAMICS.COM

LIGHTING DYNAMICS INCORPORATED

Based on the information provided, all dimensions and luminaire locations shown represent recommended positions. The engineer and/or architect must determine applicability of the layout to existing or future field conditions. This lighting pattern represents illumination levels calculated from laboratory data taken under controlled conditions utilizing current industry standard lamp ratings in accordance with Illuminating Engineering Society approved methods. Actual performance of any manufacturer's luminaire may vary due to variation in electrical voltage, tolerance in lamps and other variable field conditions.

NOTES:

No.	Revision/Issue	Date
2	PHOTOMETRIC LAYOUT	06/03/21
1	PHOTOMETRIC LAYOUT	06/01/21

LIGHTING DYNAMICS, INC.
7835 West Commercial Blvd.
Tamarac, FL 33351
(954) 944-0286
www.lightingdynamics.com

Project Name and Address

JETSON'S WAREHOUSE
SITE - Normal mode
Ft. Pierce, FL

FILE J:\PROJECTS\2021\JANUARY
CLIENT MBV ENGINEERING

Project	Sheet
Jetson's Warehouse	L0
Date: 06/03/2021	
Scale: 1/2" = 1'	DRAWN BY: EC / MG

Michelle Franklin, CFA -- Saint Lucie County Property Appraiser -- All rights reserved.

Property Identification

Site Address: 504 TUMBLIN KLING RD B
Sec/Town/Range: 34/35S/40E
Parcel ID: 2434-314-0005-000-8
Jurisdiction: Fort Pierce

Use Type: 0100
Account #: 33279
Map ID: 24/34S
Zoning: General Co

Ownership

Jetson Investments Inc
4145 S US Highway 1
Fort Pierce, FL 34982

Legal Description

34 35 40 W 1/2 OF SE 1/4 OF NE 1/4 OF SW 1/4-LESS E 75 FT AND LESS W 60 FT OF S 150 FT AND LESS S 25 FT RD R/W- (3.64 AC)

Current Values

Just/Market Value:	$327,700
Assessed Value:	$164,871
Exemptions:	$76,000
Taxable Value:	$88,871

Property taxes are subject to change upon change of ownership.

- **Past taxes are not a reliable projection of future taxes.**
- **The sale of a property will prompt the removal of all exemptions, assessment caps, and special classifications.**

Taxes for this parcel: SLC Tax Collector's Office
Download TRIM for this parcel: Download PDF

Total Areas

Finished/Under Air (SF):	1,522
Gross Sketched Area (SF):	2,223
Land Size (acres):	3.64
Land Size (SF):	158,558.4

Building Design Wind Speed

Occupancy Category	I	II	III & IV
Speed	140	160	160

Sources/links:

Sale History

Date	Book/Page	Sale Code	Deed	Grantor	Price
Jun 10, 2020	4431 / 1978	0137	SP	Russell Elizabeth R	$525,000
Jun 10, 2020	4431 / 1978	0137	SP	Russell Michael	$525,000
Jun 10, 2020	4431 / 1978	0137	SP	Richards (LF EST) Marilyn	$525,000
Nov 12, 2012	3453 / 0974	0114	WD	Richards (LF EST) William H	$100
Oct 4, 2012	3440 / 0322	0114	WD	Richards William H	$100
Nov 1, 1979	0321 / 0920	XX01	CV		$0

Building Information (1 of 1)

Finished Area: 1,522 SF

Gross Sketched Area: 2,223 SF

Exterior Data

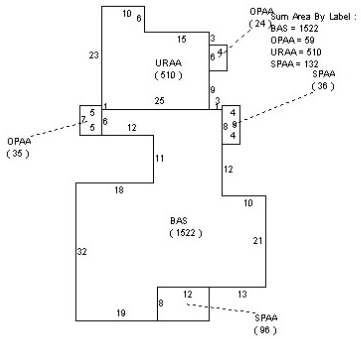
View:
Building Type: HC-
Grade: C-
Story Height: 2 Story

Roof Cover: Fibrglss Shg
Year Built: 1950
Effective Year: 1950
No. Units: 1

Roof Structure: Gable
Frame:
Primary Wall: CB Stucco
Secondary Wall: Abs Shingle

Interior Data

Bedrooms: 3	Electric: MAXIMUM	Primary Int Wall:
Full Baths: 2	Heat Type:	Avg Hgt/Floor: 0
Half Baths: 0	Heat Fuel:	Primary Floors: Vinyl Rolled
A/C %: 0%	Heated %: N/A%	Sprinkled %: 0%



Sketch Area Legend

Sub Area	Description	Area	Fin. Area	Perimeter
BAS	BASE AREA	1522	1522	210
OPAA	Open Porch Attached Average	59	0	44
SPAA	Screen Porch Attached Average	132	0	66
URAA	Utility Room Attached Average	510	0	98

Special Features and Yard Items

Type	Qty	Units	Year Blt
UTILITY LOW	1	396	1950
UTILITY LOW	1	100	1999

Current Year Values

Current Values Breakdown

Building:	$50,500
Land:	$277,200
Just/Market:	$327,700
Ag Credit:	$0
Save Our Homes or 10% Cap:	$162,829
Assessed:	$164,871
Exemption(s):	$76,000
Taxable:	$88,871

Current Year Exemption Value Breakdown

Tax Year	Grant Year	Code	Description	Amount
2020	2008	0550	Homestead Exemption over $ 50,000	$25,000
Tax Year	Grant Year	Code	Description	Amount
2020	1999	0500	Homestead Exemption	$25,000
Tax Year	Grant Year	Code	Description	Amount
2020	2004	0565	Senior Homestead over 65	$25,000
Tax Year	Grant Year	Code	Description	Amount
2020	1999	2300	Total & Permanent Disability	$500
Tax Year	Grant Year	Code	Description	Amount
2020	2016	4000	Widow's Exemption	$500

Current Year Special Assessment Breakdown

Start Year	AssessCode	Units	Description	Amount
2009	2009	12	County Solid Waste	$276.14

This does not necessarily represent the total Special Assessements that could be charged against this property. The total amount charged for special assessments is reflected on the most current tax statement and information is available with the SLC Tax Collector's Office.

Historical Values

Year	Just/Market	Assessed	Exemptions	Taxable
2020	$327,700	$164,871	$76,000	$88,871
2019	$330,400	$161,165	$76,000	$85,165
2018	$328,500	$158,160	$76,000	$82,160

Permits

Number	Issue Date	Description	Amount	Fee
SLC0607-0084	Jul 6, 2006	Roof	$6,500	$0

Notice: This does not necessarily represent all the permits for this property.
Click the following link to check for additional permit data in Fort Pierce

All information is believed to be correct at this time, but is subject to change and is provided without any warranty.
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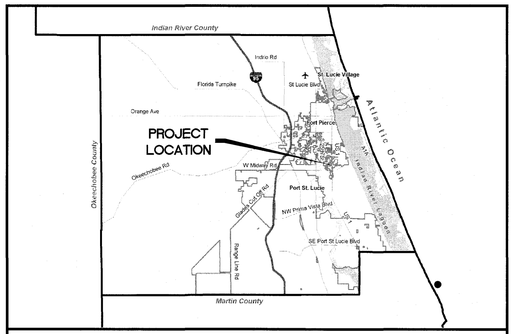
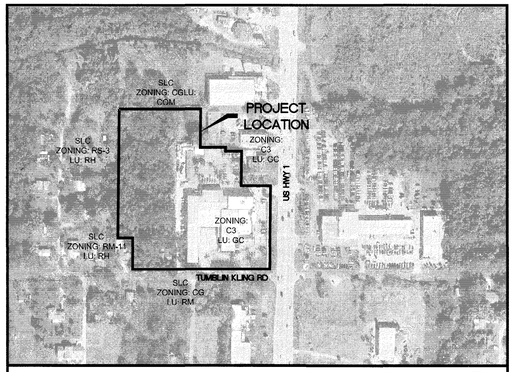
JETSON FORT PIERCE
SITE IMPROVEMENTS

SECTION 34, TOWNSHIP 35S, RANGE 40E
CITY OF FORT PIERCE, FLORIDA

JULY 2021
REVISED: APR. 2022



LOCATION MAP



VICINITY MAP

OWNER / APPLICANT

JETSON INVESTMENT, INC.

4145 S. US HIGHWAY 1
FORT PIERCE, FL 32982
PH: (772) 464-7050

ENGINEER

MBV ENGINEERING, INC.
MOIA BOWLES VILLAMIZAR & ASSOCIATES

CIVIL ▪ STRUCTURAL ▪ SURVEYING ▪ ENVIRONMENTAL

1835 20TH STREET
VERO BEACH, FL 32960
PH: (772) 569-0035
MELBOURNE, FL - PH: (321) 253-1510
FT. PIERCE, FL - PH: (772) 468-9055

SURVEYOR

INDIAN RIVER SURVEY, INC.
Professional Surveying and Mapping
1835 20TH STREET
VERO BEACH, FL 32960
PH: (772) 569-7880

ARCHITECT

ANTHONY J. MAZZA, AIA

8220 COMPTON WAY
MELBOURNE, FL 32940
PH: (321) 255-2050

LANDSCAPE ARCHITECT

LANDSCAPE DESIGN ASSOCIATES

2510 NW 182ND AVENUE
HIGH SPRINGS, FL 32643
PH: (352) 210-5765

INDEX OF DRAWINGS

C1	COVER SHEET
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C9	CROSS SECTIONS
C10	UTILITY PLAN
C11	GENERAL DETAILS
C12	UTILITY DETAILS
C13	LIFT STATION DETAILS

LEGAL DESCRIPTION

(ORB 3453, PG. 974):

THE SOUTH 150 FEET OF THE WEST 1/2 OF THE SOUTHEAST 1/4 OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4, LESS THE EAST 90 FEET THEREOF, AND LESS THE WEST 60 FEET THEREOF, SAID LAND LYING AND BEING IN SECTION 34, TOWNSHIP 35 SOUTH, RANGE 40 EAST, ST. LUCIE COUNTY, FLORIDA.

AND

THE WEST 150 FEET OF THE WEST 1/2 OF THE SOUTHEAST 1/4 OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4 LESS THE SOUTH 150 FEET THEREOF, SAID LAND LYING AND BEING IN SECTION 34, TOWNSHIP 35 SOUTH, RANGE 40 EAST, ST. LUCIE COUNTY, FLORIDA.

AND

THE EAST 180 FEET OF THE WEST 1/2 OF THE SOUTHEAST 1/4 OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4, LESS THE EAST 75 FEET THEREOF, AND LESS THE WEST 90 FEET OF THE SOUTH 150 FEET THEREOF, SAID LAND LYING AND BEING IN SECTION 34, TOWNSHIP 35 SOUTH, RANGE 40 EAST, ST. LUCIE COUNTY, FLORIDA.

ALSO INCLUDING

THE WEST 90 FEET OF THE SOUTH 150 FEET THE EAST 180 FEET OF THE WEST 1/2 OF THE SOUTHEAST 1/4 OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4, SAID LAND LYING AND BEING IN SECTION 34, TOWNSHIP 35 SOUTH, RANGE 40 EAST, ST. LUCIE COUNTY, FLORIDA.

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

AARON J. BOWLES
LICENSE
No. 55313
STATE OF FLORIDA
PROFESSIONAL ENGINEER

AARON J. BOWLES
FL. P.E. #55313

DATE: 4/28/22

PROJECT: 19-0273

SHEET
C1

O:\DRAWINGS\2019\19-0273 Jetson Ft. Pierce\4 - Drawings\19-0273 C1 COVER SHEET.S.dwg 4/28/2022 5:50 PM IRWIN MCLEAN

PRE-CONSTRUCTION REQUIREMENTS:

1. THE CONTRACTOR IS REQUIRED TO PERFORM HIS WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE VARIOUS PERMITS WHICH WILL BE OBTAINED PRIOR TO BEGINNING CONSTRUCTION.
2. THE CONTRACTOR SHALL SUBMIT A CONSTRUCTION SCHEDULE (SEQUENCE OF OPERATIONS) PRIOR TO THE PRE-CONSTRUCTION MEETING.
3. CONTRACTOR WILL ATTEND A PRE-CONSTRUCTION MEETING WITH THE DESIGN ENGINEER, MUNICIPALITY AND/ OR OWNER PRIOR TO LAND DISTURBANCE.
4. SHOP DRAWINGS SHALL BE SUBMITTED BEFORE ORDERING MATERIAL FOR PLANNED PROJECT. CORRESPONDING SHALL BE BETWEEN THE DESIGN ENGINEER AND THE LOCAL GOVERNING AGENCY AND IS THE RESPONSIBILITY OF THE CONTRACTOR.

CONSTRUCTION NOTES:

1. THE CONTRACTOR IS ADVISED TO THOROUGHLY REVIEW THIS PLAN PACKAGE SO AS TO BE TOTALLY PREPARED TO PRESENT HIS BID PRICES IN THE CONTRACT DOCUMENTS. THE PLAN PACKAGE SUFFICIENTLY DELINEATES THE SCOPE AND INTENT OF THE ROADWAY WORK TO BE ACCOMPLISHED, IT WILL, THEREFORE, BE INCUMBENT ON THE CONTRACTOR TO ADJUST HIS FEE DOLLARS TO REFLECT ANY AND ALL ITEMS WHICH MAY NOT BE CLEARLY OUTLINED OR THOSE ITEMS WHICH MAY NOT BE INDICATED BUT WHICH ARE NECESSARY FOR THE SUCCESSFUL COMPLETION OF THIS PROJECT WITHOUT ADDITIONAL COSTS TO THE OWNER.
2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF FORT PIERCE AND FDOT STANDARDS AND SPECIFICATIONS.
3. THE INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND AND OTHER UTILITIES IS BASED ON AVAILABLE RECORDS AND IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND AND OTHER UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO AND IS RESPONSIBLE FOR THE COORDINATION OF UTILITY RELOCATION.
4. CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES IN THE FIELD WITH UTILITY OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION. UTILITY PROVIDERS:
5. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY ALL UTILITY COMPANIES A MINIMUM OF TWO WORKING DAYS PRIOR TO EXCAVATION, AS REQUIRED BY THE UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY ACT, NOTIFY SUNSHINE AT 811.
6. CONTRACTOR SHALL TAKE EXTREME CAUTION WHEN EXCAVATING NEARBY EXISTING UTILITIES.
7. CONTRACTOR SHALL INFORM ENGINEER OF ANY CONFLICT BEFORE ANY FURTHER WORK IS COMPLETED.
8. UTILITIES ARE TO BE ADJUSTED BY UTILITY OWNER OR AS DIRECTED BY THE ENGINEER.
9. SURFACE INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED FOR USE IN ESTABLISHING DESIGN CRITERIA FOR THE PROJECT. THE ACCURACY OF THIS INFORMATION IS NOT GUARANTEED AND IS NOT TO BE CONSTRUED AS PART OF THE PLANS GOVERNING CONSTRUCTION OF THE PROJECT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INQUIRE OF THE ENGINEER IF ADDITIONAL INFORMATION IS AVAILABLE, TO MAKE ARRANGEMENTS TO REVIEW SAME PRIOR TO BIDDING, AND IS TO MAKE HIS OWN DETERMINATION AS TO ALL SUBSURFACE CONDITIONS.
10. CONTRACTOR SHALL NOTIFY THE ENGINEER IF SOIL OR SUBSURFACE CONDITIONS UNSUITABLE FOR CONSTRUCTION ARE ENCOUNTERED.
11. ALL EXCAVATED SOILS DEEMED SUITABLE AS FILL MATERIAL AS DETERMINED BY THE ENGINEER SHALL BE UTILIZED ON SITE BY THE CONTRACTOR AT HIS OWN EXPENSE. THE EXACT LOCATION OF DELIVERY ON SITE SHALL BE DETERMINED BY THE ENGINEER. ALL EXCAVATED SOILS DEEMED UNSUITABLE SHALL BE DISPOSED OF BY THE CONTRACTOR AT HIS OWN EXPENSE.
12. ITEM IN CONFLICT WITH DESIGN SUCH AS EXISTING CURBS AND GUTTERS, SIDEWALKS, DRAINAGE STRUCTURES, PAVEMENT AND EXCESS EXCAVATIONS ARE TO BE REMOVED BY THE CONTRACTOR AND DISPOSED OF IN A LEGAL AND PROPER MANNER AWAY FROM THE JOB SITE AT HIS OWN EXPENSE.
13. CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS FOR CONSTRUCTION.
14. IT SHOULD BE NOTED THAT THE OCCUPATIONAL SAFETY AND HEALTH ACT PROHIBITS THE OPERATING OF EQUIPMENT OR MACHINES CLOSER THAN TEN (10) FEET TO ENERGIZED ELECTRIC LINES RATES AT FIFTY KILOVOLTS OR BELOW, ALSO, NO EXCAVATION IS PERMITTED WITHIN FIVE (5) FEET OF POWER POLE FACILITIES.
15. ALL IRONS AND MONUMENTS (P.R.M.'S) SHOWN ON PLANS, OR FOUND, SHALL BE PRESERVED. THOSE SHOWN IN PROPOSED PAVEMENT SHALL BE PROTECTED WITH A CAST IRON VALVE BOX.
16. ANY PUBLIC LAND CORNERS WITHIN THE LIMITS OF CONSTRUCTION ARE TO BE PROTECTED. IF A CORNER MONUMENT IS IN DANGER OF BEING DESTROYED OR DISTURBED, THE CONTRACTOR WILL NOTIFY THE ENGINEER.
17. ALL EXISTING TREES WITHIN THE RIGHT OF WAY ARE TO BE REMOVED AS CLEARING AND GRUBBING UNLESS OTHERWISE NOTED.
18. WHEN REFERENCED TO FDOT, FDOT REFERS TO FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD PLANS FOR ROAD AND BRIDGE CONSTRUCTION, CURRENT EDITION.
19. THE CONTRACTOR SHALL RESTORE ALL AREAS DISTURBED BY CONSTRUCTION TO A CONDITION EQUAL TO, OR BETTER THAN THAT WHICH IS NOW EXISTING.
20. BACKFILL, GRADE AND SOD AS REQUIRED AROUND ALL NEW CONSTRUCTION AND ALL DEVELOPED LOTS TO PREVENT EROSION. SEED AND MULCH WILL ONLY BE ALLOWED TO RESTORE UNDEVELOPED LOTS AFFECTED BY CONSTRUCTION OR AS DIRECTED BY THE ENGINEER.
21. SODDING TO BE USED AT LOCATIONS AS DIRECTED BY THE ENGINEER. SOD ALL DISTURBED AREAS UPON COMPLETION. ALL IMPACTS TO CITY OF FORT PIERCE RIGHT-OF-WAY NEED TO BE SODDED WITHIN THREE DAYS OF FINAL GRADING.
22. ALL EXCESS CONSTRUCTION MATERIAL AND WASTE TO BE HAULED OFF-SITE AND DISPOSED OF PROPERLY AT CONTRACTOR'S EXPENSE.
23. MAINTENANCE OF TRAFFIC SHALL BE IN ACCORDANCE WITH FDOT STANDARDS FOR TRAFFIC CONTROL THROUGH WORK ZONES AND MUTCD (PART VI).
24. PROPERTY OWNERS AND BUSINESSES WITHIN THE AREA OF CONSTRUCTION SHALL BE GIVEN ACCESS TO THEIR PROPERTY AT ALL TIMES DURING THE PERIOD OF CONSTRUCTION.
25. ALL MAILBOXES SHALL BE RELOCATED BY THE CONTRACTOR AS DIRECTED BY THE U.S. POSTAL MAIL CARRIER.
26. THE CONTRACTOR SHALL REMOVE, COVER OR OBLITERATE EXISTING ROADWAY SIGN AND PAVEMENT MARKINGS THAT CONFLICT WITH THE CONSTRUCTION TRAFFIC CONTROL PLANS PER COUNTY APPROVAL.
27. CONTRACTOR TO PROTECT ALL SPRINKLER HEADS NOT IN CONFLICT WITH DESIGN AND RELOCATE ALL THOSE WHICH ARE IN CONFLICT TO A LOCATION DETERMINED IN FIELD.
28. SOD TWO (2) FEET MINIMUM ALONG SIDE PROPOSED EDGE OF PAVEMENT. ENTIRE DISTURBED AREA WITHIN INDIAN RIVER COUNTY RIGHT-OF-WAY MUST BE SODDED.
29. THE CONTRACTOR SHALL PROVIDE ANY TEMPORARY DRAINAGE MEASURES AS REQUIRED TO ADEQUATELY DRAIN THE PROJECT AND ANY TEMPORARILY TRAVELED ROADWAYS. TEMPORARY DRAINAGE DESIGN, CONSTRUCTION AND MAINTENANCE IS THE CONTRACTOR'S RESPONSIBILITY; HOWEVER, ALL SUCH MEASURES MUST BE APPROVED BY THE ENGINEER.
30. THE EXISTING SIDEWALK SHALL NOT BE DISTURBED UNLESS OTHERWISE NOTED. ALL SIDEWALKS SHALL BE PROTECTED FROM SCRAPING, MARKING, GOUGING AND CRACKING BY EQUIPMENT OR ANY OTHER MEANS. ALL SIDEWALKS THAT HAVE BEEN DISFIGURED, CRACKED OR BROKEN DURING THE CONSTRUCTION OF THIS PROJECT SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. ALL BROKEN SIDEWALKS MUST BE REMOVED FROM THE TWO CLOSEST EXPANSION JOINTS AND WHEN REPLACED WILL RETAIN THE TWO EXPANSION JOINTS AND HAVE NO CONTRACTION JOINTS AND FINISH TO MATCH THE ADJOINING EXISTING SIDEWALKS.
31. GRADES SHOWN ARE FINISHED GRADES.
32. SAWCUT CONCRETE OR ASPHALT DRIVEWAYS AS REQUIRED FOR REPLACEMENT.
33. ALL ABANDONED UTILITIES (INCLUDING PIPES, CABLES AND STRUCTURES) FOUND IN THE RIGHT OF WAY AND NOT SHOWN ON THE PLANS, ARE TO BE REMOVED AND PROPERLY DISPOSED OF AT THE EXPENSE OF THE CONTRACTOR. THIS INCLUDES ALL EXOTIC PIPES LIKE ASBESTOS-CEMENT PIPE. COST TO BE INCLUDED IN CLEARING AND GRUBBING ITEM.
34. DRIVEWAY LOCATIONS AND WIDTHS ARE APPROXIMATE AND ARE TO BE ADJUSTED AS NECESSARY OR AS DIRECTED BY THE ENGINEER. ANY MODIFICATIONS OF DRIVEWAY WIDTHS AND / OR LOCATIONS SHALL REQUIRE CITY OF FORT PIERCE REVIEW.
35. BENCHMARK DATUM IN NAVD 88.
36. BACKFILL AND SOD AS REQUIRED BEYOND RIGHT OF WAY LINES ON INDIVIDUAL LOTS TO MAINTAIN POSITIVE DRAINAGE FLOW INTO CURB AND GUTTER.
37. GRADE AND SOD SWALES TEN (10) FEET FROM PROPOSED DITCH BOTTOM INLETS AND MITERED END SECTIONS ON SIDE STREETS AS REQUIRED.
38. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ℄ (BASELINE) AND ℄ (CENTERLINE) CONSTRUCTION THROUGHOUT THE PROJECT.
39. THE CONTRACTOR SHALL REMOVE DRIVEWAY APRONS AND DRIVEWAY CULVERTS AND SHALL MAINTAIN ROUGH GRADE FOR UTILITY MODIFICATIONS.
40. ALL EXISTING STORMWATER CONVEYANCE SWALES, WITHIN THE AREA OF DEVELOPMENT THAT ARE IDENTIFIED TO REMAIN, SHALL BE PROTECTED BY THE CONTRACTOR. ANY DAMAGE TO THE SWALES IDENTIFIED TO REMAIN SHALL BE CORRECTED BY THE CONTRACTOR AT HIS OWN EXPENSE. EXISTING FARM SWALES ARE NOT TO REMAIN.
41. PAYMENT FOR INCIDENTAL ITEMS NOT SPECIFICALLY COVERED IN THE INDIVIDUAL BID ITEMS SHALL BE INCLUDED IN THE CONTRACT PRICES FOR BID ITEMS.
42. MAINTAIN A MINIMUM OF ONE (1) FOOT CLEARANCE BETWEEN POWER POLE AND EDGE OF SIDEWALK.
43. THE FINAL SURFACE COUSE OF THE PROPOSED ASPHALT PAVEMENT, FOR THE ON-SITE DEVELOPMENT, SHALL BE PLACED UPON COMPLETION OF ALL OTHER PERMANENT ON-SITE CONSTRUCTION. THIS APPLIES TO ON-SITE WORK ONLY.
44. CONSTRUCTION OPERATIONS FOR THE PLACEMENT OF THE FINAL SURFACE COURSE FOR THE ON-SITE ASPHALT PAVEMENT, SHALL BE LIMITED TO A DISTANCE, AS DIRCTED BY THE ENGINEER, THE CONTRACTOR SHALL COMPLETE IN ONE (1) DAY. THIS APPLIES TO ON-SITE WORK ONLY.
45. THE CONTRACTOR SHALL IMPLEMENT TEMPORARY PAVEMENT MARKINGS UNTIL THE FINAL SURFACE COURSE HAS CURED (MINIMUM THIRTY (30) DAYS AFTER FINAL SURFACE COURSE PLACEMENT). ANY TEMPORARY PAINTED MARKINGS PLACED ON THE FINAL SURFACE SHALL BE COMPLETELY REMOVED OR COVERED TO PROVIDE A CLEAN SINGLE LINE FINISH AT ALL PAVEMENT MARKING LOCATIONS
46. ALL APPROVED PERMIT CONDITIONS, INCLUDING BUT NOT LIMITED TO FDOT, FDEP, ST. LUCIE COUNTY AND CITY OF FORT PIERCE, SHALL BE MET BY CONTRACTOR PRIOR TO CERTIFICATION OF COMPLETION BY ENGINEER.
47. ANY IMPACTED SIDEWALKS SHALL HAVE THE ENTIRE SLAB REMOVED / REPLACED BETWEEN EXPANSION JOINTS AND REPLACED WITH NEW SIDEWALK AND APPROPRIATE EXPANSION JOINTS AND CONTRACTION JOINTS.

ROADWAY SPECIFICATIONS

GENERAL

IT IS INTENDED THAT THE FLORIDA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" MOST CURRENT EDITION BE USED WHERE APPLICABLE FOR VARIOUS WORK, AND THAT WHERE SUCH WORDING THEREIN REFERS TO THE STATE OF FLORIDA AND ITS DEPARTMENT OF TRANSPORTATION AND PERSONNEL, SUCH WORDING IS INTENDED TO BE REPLACED WITH THAT WORDING WHICH WOULD PROVIDE PROPER TERMINOLOGY, THEREBY MAKING SUCH "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AS THE "STANDARD SPECIFICATIONS" FOR THIS PROJECT.

IF WITHIN THAT PARTICULAR SECTION ANOTHER SECTION, ARTICLE OR PARAGRAPH IS REFERRED TO, IT SHALL BE A PART OF THE STANDARD SPECIFICATIONS ALSO.

THE CONTRACTOR SHALL GIVE THE ENGINEER 48 HOURS NOTICE PRIOR TO REQUESTING INSPECTIONS AND SHALL SUPPLY ALL EQUIPMENT NECESSARY TO PROPERLY TEST AND INSPECT THE COMPLETED WORK.

THE CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS FOR A PERIOD OF TWO YEARS FROM THE DATE OF PROJECT ACCEPTANCE. DURING WHICH ALL FAULTY CONSTRUCTION AND/OR MATERIALS SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.

GRADING

THE CONTRACTOR SHALL PERFORM ALL GRADING NECESSARY TO ACHIEVE THE PROPOSED PLAN GRADES INCLUDING TYPICAL SECTIONS.

ALL WORK SHALL BE IN ACCORDANCE WITH SECTION 120 OF THE STANDARD SPECIFICATIONS.

STAKING

CONSTRUCTION STAKING WILL BE PERFORMED BY THE CONTRACTOR.

STABILIZING

STABILIZED SUBGRADE SHALL BE CONSTRUCTED TO THE FLORIDA BEARING VALUE AS PER PLAN FOR THE DEPTH AND LIMITS SHOWN ON THE PLAN, AND IN ACCORDANCE WITH SECTION 160 OF THE STANDARD SPECIFICATIONS.

(TYPE C STABILIZATION). ALL STABILIZED AREAS SHALL BE COMPACTED TO AT LEAST 98% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.

BASE COURSE

THE BASE SHALL BE CONSTRUCTED OF EITHER LIMEROCK MATERIAL IN ACCORDANCE WITH SECTION 911 OR CEMENTED COQUINA SHELL MATERIAL IN ACCORDANCE WITH SECTION 915 OF THE STANDARD SPECIFICATIONS.

LIMEROCK BASE AND CEMENTED COQUINA SHELL BASE SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 200 OF THE STANDARD SPECIFICATIONS. THE CONTRACTOR SHALL PROVIDE ROCK PIT CERTIFICATION FOR CEMENTED COQUINA SHELL MATERIAL. BASE SHALL BE COMPACTED BY AT LEAST 98% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180. BASE SHALL BE APPROVED PRIOR TO PRIME COAT.

PRIME AND TACK COAT

PRIME AND TACK COAT FOR THE BASE SHALL BE IN ACCORDANCE WITH SECTION 300 OF THE STANDARD SPECIFICATIONS.

ASPHALTIC CONCRETE SURFACE COURSE (A.C.S.C.)

TYPE SP-9.5 AND TYPE SP-12.5 ACSC SHALL BE CONSTRUCTED FOR THE DEPTH AND LIMITS SHOWN ON THE PLAN, IN ACCORDANCE WITH SECTIONS 320, AND 330 OF THE STANDARD SPECIFICATIONS.

TESTING

THE CONTRACTOR SHALL RETAIN THE SERVICES OF AN APPROVED INDEPENDENT TESTING LABORATORY TO CONDUCT ALL REQUIRED TESTS ON SUBGRADE, BASE AND SURFACE COURSE MATERIALS. TEST RESULTS MUST BE SUBMITTED PRIOR TO ANY REQUEST FOR PAYMENT ON THE ABOVE ITEMS.

THE SCHEDULE FOR TESTING OF THE ROAD CONSTRUCTION SHALL BE AS FOLLOWS:

A. SUBGRADE:
1. FLORIDA BEARING VALUE TESTS SHALL BE TAKEN AT INTERVALS OF NOT MORE THAN 200 FEET, OR CLOSER AS MIGHT BE NECESSARY IN THE EVENT OF VARIATIONS IN SUBSOIL CONDITIONS.
2. DENSITY TESTS SHALL BE TAKEN AT INTERVALS OF NOT MORE THAN 200 FEET OR CLOSER AS MIGHT BE NECESSARY.

B. BASE:
1. DENSITY TESTS SHALL BE TAKEN AT INTERVALS OF NOT MORE THAN 500 FEET OR CLOSER AS MIGHT BE NECESSARY,

ALL TESTING SHALL BE TAKEN IN A STAGGERED SAMPLING PATTERN FROM A POINT 1 1/2 INCHES INSIDE THE LEFT EDGE, TO THE CENTER, TO A POINT 12 INCHES INSIDE THE RIGHT EDGE OF THE ITEM TESTED.

IF ANY TEST INDICATES THAT THE WORK DOES NOT MEET THE SPECIFICATIONS, THE SUBSTANDARD AREA SHALL BE REWORKED OR CORRECTED AND RETESTED, AT THE CONTRACTOR'S EXPENSE, UNTIL THE PROVISIONS OF THESE SPECIFICATIONS ARE MET.

ALL PASSING TESTS SHALL BE PAID FOR BY THE OWNER. ALL FAILING TESTS SHALL BE PAID FOR BY THE CONTRACTOR.

CLEAN-UP

THE CONTRACTOR MUST PROVIDE CLEAN-UP OF EXCESS CONSTRUCTION MATERIAL UPON COMPLETION OF THE PROJECT. THE SITE MUST BE LEFT IN A NEAT, CLEAN, GRADED CONDITION.

CONSTRUCTION IN STREETS AND ROAD RIGHT-OF-WAYS

1. OPEN ROAD CUTS REQUIRES PRIOR APPROVAL OF THE CITY, COUNTY, STATE OR ANY OTHER AGENCY WHICH MAY HAVE JURISDICTION.
2. ALL CONSTRUCTION, MATERIALS AND WORKMANSHIP ARE TO BE IN ACCORDANCE WITH FLORIDA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS AND STANDARDS.
3. ALL AREAS IN EXISTING RIGHT-OF-WAYS DISTURBED BY CONSTRUCTION SHALL RECEIVE SOLID SOD WITHIN 3 DAYS.
4. STREET RESTORATION TO BE DONE AS PER ST LUCIE COUNTY STANDARDS.
5. THE CONTRACTOR SHALL COMPLY WITH ALL RULES AND REGULATIONS OF THE STATE, COUNTY AND CITY AUTHORITIES REGARDING CLOSING OR RESTRICTING THE USE OF PUBLIC STREETS OR HIGHWAYS.
6. TRAFFIC CONTROL ON ALL COUNTY AND STATE HIGHWAY RIGHT-OF-WAYS SHALL MEET THE REQUIREMENTS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (U.S. DOT/FHA) AND THE REQUIREMENTS OF THE STATE AND ANY LOCAL AGENCY HAVING JURISDICTION.
7. CONTRACTOR TO SUBMIT A PEDESTRIAN DETOUR / SIDEWALK CLOSURE PLAN THAT CONFORMS TO F.D.O.T. STANDARDS AND WHICH IS APPROVED BY THE COUNTY TRAFFIC DEPARTMENT. (THIS APPLIES TO THE PROPOSED WATER UTILITY CONNECTION.)

DRAINAGE SPECIFICATIONS

STORM INLETS AND MANHOLES SHALL BE CONSTRUCTED IN GENERAL ACCORDANCE WITH SECTION 425 OF THE STANDARD SPECIFICATIONS OF THE FLORIDA DEPARTMENT OF TRANSPORTATION.

CONCRETE SHALL HAVE A MINIMUM 28-DAY STRENGTH OF 3000 PSI.

ALL REINFORCING STEEL TO BE ASTM A 615-72 GRADE 40, FYP = 40,000 PSI, AND SHALL BE HANDLED AND PLACED IN ACCORDANCE WITH ACI 318-71.

PRECAST CONCRETE MANHOLES AND STORM INLETS MAY BE USED UPON THE ENGINEER'S APPROVAL OF THE MANUFACTURER'S SHOP DRAWINGS.

STORM SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH SECTION 430 AND RELATED SECTIONS OF THE STANDARD SPECIFICATIONS OF THE FLORIDA DEPARTMENT OF TRANSPORTATION.

IMPORTED MATERIALS

ALL IMPORTED FILL SHALL BE IN ACCORDANCE WITH AND MEET THE REQUIREMENTS AS SPECIFIED IN THE PLANS AND GEOTECHNICAL SOILS REPORT FOR THE APPLICATIONS IT IS BEING USED. THE CONTRACTOR SHALL PROVIDE APPROPRIATE TEST REPORTS AS REQUIRED BY INDUSTRY STANDARDS, PERFORMED BY A LAB CERTIFIED IN THE STATE OF FLORIDA, DEMONSTRATING THE MATERIALS MEET OR EXCEED THE REQUIREMENTS AS SPECIFIED, FOR ITS INTENDED APPLICATION. FILL MATERIAL BEING USED FOR DRY POND FILTRATION MATERIAL SHALL PROVIDE 40%-50% VERTICAL POROSITY AND BETWEEN 1%-2% PASSING THE NO. 200 SIEVE.

CONCRETE

UNLESS OTHERWISE SPECIFIED OR INDICATED, ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF 3000 PSI. ALL WORK SHALL COMPLY WITH THE CURRENT EDITION OF THE AMERICAN CONCRETE INSTITUTE (ACI) BUILDING CODE AND THE APPLICABLE BUILDING CODES HAVING JURISDICTION IN THE AREA.

CULVERT PIPES

REINFORCED CONCRETE PIPE (R.C.P.) SHALL BE IN ACCORDANCE WITH SECTION 449 OF THE STANDARD SPECIFICATIONS.

PRECAST CONCRETE DRAINAGE PRODUCTS

ALL PRECAST CONCRETE DRAINAGE PRODUCTS (INCLUDING BUT NOT LIMITED TO ROUND CONC. PIPE, ELLIPTICAL CONC. PIPE, UNDERDRAINS, MANHOLES, INLETS, ENDWALLS, JUNCTION BOXES, THREE SIDED CONC. CULVERTS, AND CONC. BOX CULVERTS) SHALL BE IN ACCORDANCE WITH SECTION 449 OF THE STANDARD SPECIFICATIONS.

GROUNDWATER

GROUNDWATER MAY BE ENCOUNTERED ON THIS SITE. THE CONTRACTOR IS TO PLAN ACCORDINGLY, FOR DEWATERING TO PROVIDE FOR PIPE INSTALLATION, A SYSTEM CAPABLE OF MAINTAINING A GROUNDWATER LEVEL AT LEAST 2' BELOW BOTTOM OF PIPE LEVEL SHALL BE UTILIZED.

RECORD DRAWINGS

CONTRACTOR SHALL KEEP AND MAINTAIN RECORD DRAWINGS ON THE PROJECT SITE AT ALL TIMES WHICH SHALL BE ANNOTATED BY THE CONTRACTOR DEPICTING ANY CHANGES MADE IN THE FIELD WHICH DIFFER FROM THE CONTRACT DRAWINGS. RECORD DRAWINGS SHALL INCLUDE, BUT NOT LIMITED TO, INVERT AND TOP ELEVATIONS OF CULVERTS AND INLET STRUCTURES. CONTRACTOR SHALL SUBMIT COMPLETE AND FINAL RECORD DRAWINGS TO ENGINEER UPON COMPLETION OF PROJECT AND PRIOR TO FINAL INSPECTION AND FINAL PAYMENT.

INSPECTION

MINIMUM CONSTRUCTION INSPECTION CHECKPOINTS

THE ENGINEER SHALL BE NOTIFIED:

1. PRIOR TO ANY MAJOR DEVIATION FROM THE APPROVED PLANS,
2. PRIOR TO BACKFILLING ANY PIPE TRENCHES.
3. UPON COMPLETION OF SUBGRADE GRADING AND COMPACTION.
4. UPON BEGINNING OF SPREADING OF ROCK BASE MATERIAL.
5. UPON COMPLETION OF GRADING AND COMPACTION OF THE BASE MATERIAL AND PRIOR TO PRIMING.
6. IMMEDIATELY PRIOR TO AND UPON APPLICATION OF A.C.S.C.
7. UPON COMPLETION OF CONSTRUCTION.
8. ENGINEER SHALL BE NOTIFIED TO INSPECT IMPORTED BACKFILL FOR PLACEMENT IN AND AROUND THE DRY RETENTION AREAS PRIOR TO USE. AT THE REQUEST OF THE ENGINEER, THE CONTRACTOR SHALL PROVIDE TESTS FROM A LAB CERTIFIED IN THE STATE OF FLORIDA TO CONFIRM THAT THE SPECIFIED HYDRAULIC CONDUCTIVITIES CAN BE ACHIEVED BY THE SOIL THAT WAS DELIVERED.

GENERAL NOTES

1. CONTRACTOR IS RESPONSIBLE FOR CHECKING ACTUAL SITE CONDITIONS BEFORE STARTING CONSTRUCTION.
2. ANY DISCREPANCIES ON THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE COMMENCING WORK.
3. ALL WORK SHALL BE IN WORKMANLIKE MANNER AND SHALL CONFORM WITH ALL APPLICABLE CITY, COUNTY, STATE AND FEDERAL REGULATIONS AND/OR CODES. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND LICENSES REQUIRED TO BEGIN WORK.
4. ALL MATERIALS AND LABOR UNDER THIS PROJECT SHALL BE IN STRICT ACCORDANCE WITH REQUIREMENTS OF THE CITY OF FORT PIERCE, WATER MANAGEMENT DISTRICT, FDEP AND THESE PLANS AND SPECIFICATIONS.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL CONTACT ALL CONCERNED UTILITIES AT LEAST 48 HOURS IN ADVANCE FOR CONSTRUCTION OPERATIONS.
6. NO FIELD CHANGES OR DEVIATIONS FROM DESIGN TO BE MADE WITHOUT PRIOR APPROVAL OF THE ENGINEER.
7. CONTRACTOR SHALL SUPPLY DENSITY TESTS TO ENGINEER ON ALL SUB-GRADE AND BASE. TESTS SHALL BE PREPARED PER AASHTO T-180 METHOD.
8. SLOPE GRADES FROM ELEVATIONS SHOWN TO EXISTING GRADE AT PROPERTY LINE, MAXIMUM SLOPE 4:1.
9. ENGINEER SHALL BE NOTIFIED AT LEAST 48 HOURS IN ADVANCE FOR ANY INSPECTION.
10. ALL TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH M.U.T.C.D. STANDARDS, CITY OF FORT PIERCE AND F.D.O.T.
11. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", LATEST EDITION.
12. THE PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED ON THIS PROJECT, CONTRACTORS BID SHALL INCLUDE CONSIDERATION FOR ADDRESSING THIS ISSUE. WHEN GROUNDWATER IS ENCOUNTERED THE CONTRACTOR SHALL PLAN ACCORDINGLY.
13. ALL INLETS SHALL HAVE A 6" MIN. SUMP BELOW LOWEST INVERT.
14. EROSION CONTROL FENCING MUST BE IN PLACE PRIOR TO GRADING.
15. PIPE LENGTHS AND SLOPES SHOWN ARE APPROXIMATE.
16. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.
17. ALL STORM PIPE ENTERING STRUCTURES SHALL BE GROUTED TO ASSURE CONNECTION AT STRUCTURE IS WATERTIGHT.
18. CONTRACTOR SHALL ADJUST INLET/STRUCTURE OR CONNECTION LOCATION AS REQUIRED TO ENSURE PROPOSED STRUCTURES AND PIPES ARE IN PROPER ALIGNMENT AND MATCH SLOPE OF EXISTING PIPES OR CONNECTIONS.
19. FILL MATERIAL MAY NOT BE STOCKPILED HIGHER THAN SIX (6) VERTICAL FEET ONSITE PER CITY OF FORT PIERCE CODE.
20. DIMENSIONS SHOWN ARE TO EDGE OF GUTTER OR PAVEMENT, RADII SHOWN ARE TO FACE OF CURB.
21. ALL SIGNS SHALL BE PER M.U.T.C.D. STANDARDS.
22. ALL PAVEMENT MARKINGS, EXCEPT PARKING STALL STRIPING, SHALL BE THERMOPLASTIC PER CITY OF FORT PIERCE REQUIREMENTS.
23. THE USES PROPOSED AS PART OF THIS PLAN DO NOT REQUIRE A SUBMITTAL OF A RISK MANAGEMENT PLAN PURSUANT TO U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA) REGULATIONS AND SHALL NOT EXCEED THE EPA'S RMP THRESHOLD QUANTITIES OF LISTED SUBSTANCES.
24. WATER FOR FIRE FIGHTING PURPOSES SHALL BE INDICATED WITH A BLUE ROADWAY REFLECTOR. PLACE ONE FOOT OFF OF THE CENTERLINE OF THE ROAD FACING THE FIRE HYDRANT. THIS INCLUDES NEW AND EXISTING SOURCES.
25. REGARDLESS OF PRIVATE OR PUBLIC DEDICATIONS, THERE SHALL BE NO UTILITY CONNECTIONS, METER BOXES OR VALVE BOXES IN EXISTING OR PROPOSED SIDEWALK OR DRIVEWAY AREAS.
26. CONTRACTOR SHALL ADJUST INLET/STRUCTURE OR CONNECTION LOCATION AS REQUIRED TO ENSURE PROPOSED STRUCTURES AND PIPES ARE IN PROPER ALIGNMENT AND MATCH SLOPE OF EXISTING PIPES OR CONNECTIONS.
27. ANY STATE AND FEDERAL PERMITS THAT MAY BE REQUIRED AS A RESULT OF LAND CLEARING AND LANDSCAPING ACTIVITIES ARE THE RESPONSIBILITY OF THE CONTRACTOR.
28. CONTRACTOR IS RESPONSIBLE TO PROTECT AND/OR REPLACE ALL SURVEY MONUMENTATION BY A LICENSED SURVEYOR IN THE STATE OF FLORIDA.
29. ALL PARKING SPACES WITH EXCEPTION OF THE HANDICAPPED PARKING SPACES SHALL BE STRIPED IN WHITE. TRAFFIC PAINT AND BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) STANDARD SPECIFICATIONS FOR FOR ROAD & BRIDGE CONSTRUCTION, SECTION 710, LATEST EDITION.
30. ALL HANDICAPPED PARKING SPACES SHALL BE PROPERLY SIGNED AND STRIPED IN ACCORDANCE WITH FDOT STANDARD INDEX 711-001, LATEST EDITION.
31. COMMERCIAL/MULTI-FAMILY BUILDINGS SHALL POST A MINIMUM 6 INCH NUMERICAL ADDRESS.
32. THERMOPLASTIC PAVEMENT MARKINGS SHALL BE REQUIRED ON EXISTING / PROPOSED DRIVEWAYS THAT CONNECT TO THE COUNTY RIGHT-OF-WAY (ROW) AND PROPOSED PAVEMENT MARKINGS WITHIN 25' OF THE COUNTY ROW.
33. ALL NUISANCE EXOTIC VEGETATION EXISTING WITHIN DEVELOPMENT PROJECT SITE PROPERTY MUST BE REMOVED IN CONJUNCTION WITH SITE DEVELOPMENT.
34. ALL CONSTRUCTION SHALL BE IN COMPLIANCE WITH CITY OF FORT PIERCE CODE OF ORDINANCES SECTIONS 119 AND 125.

PRIMARY BENCHMARK:

THE ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988. THE BENCHMARK IS CGS MONUMENT G 167, ELEVATION =12.56 ' NAVD'88, ON-SITE BENCHMARK IS AS SHOWN HEREON.

	DATE
8 –	
7 –	
6 –	
5 –	
4 –	
3 REVISED LOADING CONFIG.	04/14/2022
2 REVISIONS PER COFP-PW	12/07/2021
1 REVISIONS PER COFP/SLC	11-1-13-2021
△ REVISIONS	DATE

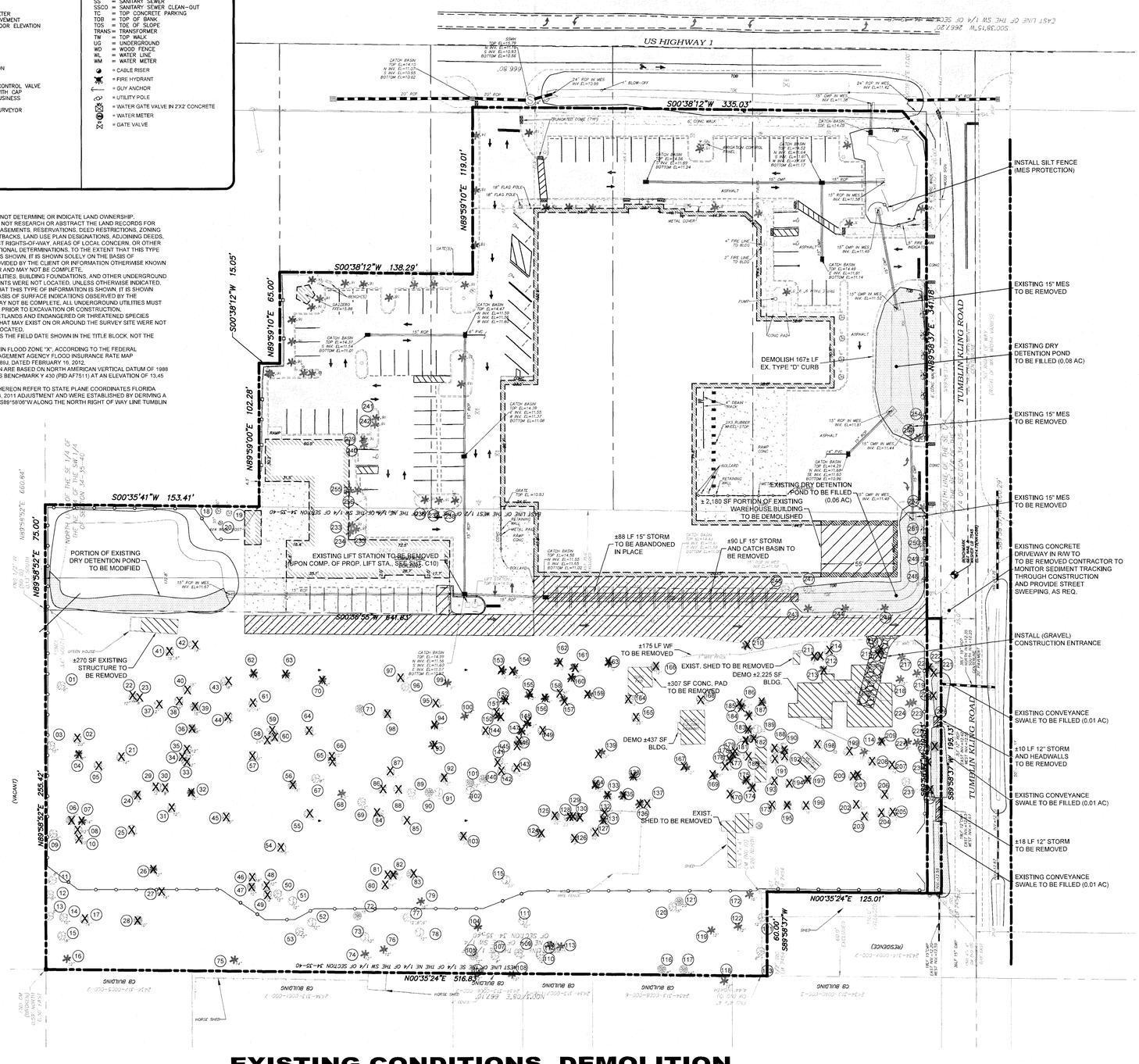
|

LEGEND

BB = BOTTLEBRUSH	OHW = OVERHEAD WIRE
BFP = BACKFLOW PREVENTER	O.R.B. = OFFICIAL RECORDS BOOK
BOC = BACK OF CURB	(P) = PLAT
BWF = BARBED WIRE FENCE	P.B. = PLAT BOOK
CLF = CHAIN LINK FENCE	PERF. = PERFORATED
CLP = CONCRETE LIGHT POLE	PG. = PAGE
CM = CONCRETE MONUMENT	PM = PALM
CMP = CORRUGATED METAL PIPE	PSM = PROFESSIONAL SURVEYOR AND MAPPER
CONC. = CONCRETE	PVC = POLY VINYL CHLORIDE
COVD. = COVERED	RPZ = REVERSE PRESSURE ZONE
C/S = CONCRETE SLAB	RCP = REINFORCED CONCRETE PIPE
(D) = DESCRIPTION	(S) = SURVEYED
DDCV = DOUBLE DETECTOR CHECK VALE	SOFT. = SOFTENER
EL. = ELEVATION	SS = SANITARY SEWER
ELEC. = ELECTRIC	SSCO = SANITARY SEWER CLEAN-OUT
EM = ELECTRIC METER	TC = TOP CONCRETE PARKING
EP = EDGE OF PAVEMENT	TOB = TOP OF BANK
FFE = FINISHED FLOOR ELEVATION	TOS = TOE OF SLOPE
FM = FORCE MAIN	TRANS = TRANSFORMER
FND. = FOUND	TW = TOP WALK
GEN. = GENERATOR	UG = UNDERGROUND
GV = GATE VALVE	WD = WOOD FENCE
H/C = HANDICAP	WL = WATER LINE
HW = HEADWALL	WM = WATER METER
ID = IDENTIFICATION	= CABLE RISER
IP = IRON PIPE	= FIRE HYDRANT
IR = IRON ROD	= GUY ANCHOR
ICV = IRRIGATION CONTROL VALVE	= UTILITY POLE
IRC = IRON ROD WITH CAP	= WATER GATE VALVE IN 2'X2' CONCRETE
LB = LICENSED BUSINESS	= WATER METER
LP = LIGHT POLE	= GATE VALVE
LS = LICENSED SURVEYOR	
MH = MANHOLE	
= PINE TREE	
= PALM TREE	
= OAK TREE	
= HARDWOOD	

SURVEYOR'S NOTES

1.) THIS SURVEY DOES NOT DETERMINE OR INDICATE LAND OWNERSHIP.
2.) THE SURVEYOR DID NOT RESEARCH OR ABSTRACT THE LAND RECORDS FOR RIGHTS-OF-WAY, EASEMENTS, RESERVATIONS, DEED RESTRICTIONS, ZONING REGULATIONS, SETBACKS, LAND USE PLAN DESIGNATIONS, ADJOINING DEEDS, LIENS, MURPHY ACT RIGHTS-OF-WAY, AREAS OF LOCAL CONCERN, OR OTHER SIMILAR JURISDICTIONAL DETERMINATIONS. TO THE EXTENT THAT THIS TYPE OF INFORMATION IS SHOWN, IT IS SHOWN SOLELY ON THE BASIS OF INFORMATION PROVIDED BY THE CLIENT OR INFORMATION OTHERWISE KNOWN TO THE SURVEYOR AND MAY NOT BE COMPLETE.
3.) UNDERGROUND UTILITIES, BUILDING FOUNDATIONS, AND OTHER UNDERGROUND FIXED IMPROVEMENTS WERE NOT LOCATED. UNLESS OTHERWISE INDICATED, TO THE EXTENT THAT THIS TYPE OF INFORMATION IS SHOWN, IT IS SHOWN SOLELY ON THE BASIS OF SURFACE INDICATIONS OBSERVED BY THE SURVEYOR AND MAY NOT BE COMPLETE. ALL UNDERGROUND UTILITIES MUST BE FIELD VERIFIED PRIOR TO EXCAVATION OR CONSTRUCTION.
4.) JURISDICTIONAL WETLANDS AND ENDANGERED OR THREATENED SPECIES HABITAT, IF ANY, THAT MAY EXIST ON OR AROUND THE SURVEY SITE WERE NOT DETERMINED OR LOCATED.
5.) THE SURVEY DATE IS THE FIELD DATE SHOWN IN THE TITLE BLOCK. NOT THE SIGNATURE DATE.
6.) THIS SITE LIES WITHIN FLOOD ZONE "X", ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP NUMBER 12111C0189J, DATED FEBRUARY 16, 2012.
7.) ELEVATIONS SHOWN ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 REFERENCING NGS BENCHMARK Y 430 (PID AF7511) AT AN ELEVATION OF 13.45 FEET(NAVD88).
8.) BEARINGS SHOWN HEREON REFER TO STATE PLANE COORDINATES FLORIDA EAST ZONE, NAD83, 2011 ADJUSTMENT AND WERE ESTABLISHED BY DERIVING A GRID BEARING OF S89°58'06"W ALONG THE NORTH RIGHT OF WAY LINE TUMBLIN KLING ROAD.



EXISTING CONDITIONS, DEMOLITION AND EROSION CONTROL PLAN

SCALE: 1" = 40'

GRAPHIC SCALE
0 40 80
(IN FEET)
1 inch = 40 ft.

Tree Removal Schedule

Tree #	Species	Plant Status	Size	Tree #	Species	Plant Status	Size	Tree #	Species	Plant Status	Size	Tree #	Species	Plant Status	Size
1	Oak Tree		8"	71	Hardwood		9"	141	Oak Tree	Remove	15"	211	Palm Tree	Remove	12"
2	Oak Tree	Remove	20"	72	Hardwood		15"	142	Oak Tree	Remove	12"	212	Palm Tree	Remove	14"
3	Oak Tree		15"	73	Oak Tree		10"	143	Oak Tree	Remove	10"	213	Palm Tree	Remove	12"
4	Palm Tree	Remove	12"	74	Palm Tree		12"	144	Oak Tree	Remove	12"	214	Oak Tree	Remove	12"
5	Oak Tree	Remove	9"	75	Palm Tree		14"	145	Oak Tree	Remove	9"	215	Hardwood	Remove	10"
6	Hardwood	Remove	9"	76	Palm Tree		12"	146	Oak Tree	Remove	10"	216	Hardwood	Remove	18"
7	Palm Tree	Remove	14"	77	Oak Tree		12"	147	Palm Tree	Remove	14"	217	Palm Tree		12"
8	Oak Tree	Remove	12"	78	Oak Tree		12"	148	Palm Tree	Remove	12"	218	Palm Tree		12"
9	Oak Tree	Remove	8"	79	Palm Tree		16"	149	Oak Tree	Remove	8"	219	Palm Tree		12"
10	Oak Tree	Remove	20"	80	Oak Tree	Remove	14"	150	Oak Tree	Remove	9"	220	Palm Tree	Remove	48"
11	Oak Tree		8"	81	Oak Tree	Remove	12"	151	Oak Tree	Remove	12"	221	Oak Tree	Remove	12"
12	Oak Tree		8"	82	Pine Tree	Remove	12"	152	Palm Tree	Remove	14"	222	Oak Tree	Remove	12"
13	Oak Tree		9"	83	Hardwood	Remove	18"	153	Palm Tree	Remove	12"	223	Palm Tree		15"
14	Oak Tree		12"	84	Oak Tree	Remove	8"	154	Palm Tree	Remove	20"	224	Palm Tree		12"
15	Oak Tree		18"	85	Oak Tree	Remove	14"	155	Palm Tree	Remove	14"	225	Oak Tree	Remove	16"
16	Pine Tree		12"	86	Oak Tree	Remove	14"	156	Palm Tree	Remove	14"	226	Oak Tree		11"
17	Oak Tree	Remove	14"	87	Oak Tree	Remove	14"	157	Palm Tree	Remove	12"	227	Palm Tree		8"
18	Oak Tree		30"	88	Oak Tree	Remove	12"	158	Oak Tree	Remove	37"	228	Palm Tree		8"
19	Oak Tree		36"	89	Oak Tree		12"	159	Palm Tree	Remove	10"	229	Hardwood	Remove	9"
20	Oak Tree		30"	90	Hardwood		8"	160	Palm Tree	Remove	10"	230	Palm Tree	Remove	18"
21	Oak Tree	Remove	14"	91	Oak Tree		40"	161	Palm Tree	Remove	12"	231	Oak Tree		10"
22	Oak Tree	Remove	12"	92	Hardwood	Remove	12"	162	Palm Tree	Remove	12"	232	Hardwood		10"
23	Oak Tree	Remove	8"	93	Palm Tree	Remove	14"	163	Palm Tree	Remove	12"	233	Palm Tree		16"
24	Hardwood	Remove	12"	94	Palm Tree	Remove	10"	164	Oak Tree	Remove	14"	234	Palm Tree		16"
25	Oak Tree	Remove	8"	95	Oak Tree	Remove	18"	165	Oak Tree	Remove	28"	235	Palm Tree		16"
26	Pine Tree	Remove	12"	96	Oak Tree		8"	166	Hardwood	Remove	12"	236	Palm Tree		16"
27	Oak Tree	Remove	14"	97	Oak Tree	Remove	8"	167	Palm Tree	Remove	12"	237	Palm Tree		16"
28	Hardwood	Remove	10"	98	Hardwood	Remove	9"	168	Oak Tree	Remove	10"	238	Palm Tree		16"
29	Oak Tree	Remove	12"	99	Palm Tree	Remove	8"	169	Palm Tree	Remove	8"	239	Palm Tree		16"
30	Oak Tree	Remove	8"	100	Palm Tree		12"	170	Oak Tree	Remove	16"	240	Palm Tree		16"
31	Oak Tree	Remove	12"	101	Hardwood		12"	171	Oak Tree		12"	241	Palm Tree		16"
32	Pine Tree	Remove	12"	102	Oak Tree		48"	172	Palm Tree		16"	242	Palm Tree		16"
33	Oak Tree	Remove	12"	103	Hardwood	Remove	28"	173	Oak Tree	Remove	28"	243	Palm Tree		8"
34	Oak Tree	Remove	15"	104	Palm Tree		14"	174	Palm Tree	Remove	12"	244	Palm Tree		8"
35	Oak Tree	Remove	12"	105	Hardwood		12"	175	Palm Tree	Remove	14"	245	Palm Tree		8"
36	Pine Tree	Remove	8"	106	Oak Tree		12"	176	Oak Tree	Remove	24"	246	Oak Tree		6"
37	Oak Tree	Remove	12"	107	Oak Tree		8"	177	Palm Tree	Remove	8"	247	Oak Tree		8"
38	Oak Tree	Remove	9"	108	Palm Tree		10"	178	Palm Tree	Remove	18"	248	Oak Tree		12"
39	Pine Tree	Remove	15"	109	Oak Tree		8"	179	Oak Tree	Remove	18"	249	Oak Tree		12"
40	Oak Tree	Remove	15"	110	Oak Tree		12"	180	Oak Tree	Remove	12"	250	Oak Tree		12"
41	Oak Tree	Remove	16"	111	Oak Tree		42"	181	Palm Tree	Remove	18"	251	Oak Tree		12"
42	Oak Tree	Remove	18"	112	Oak Tree		12"	182	Palm Tree	Remove	8"	252	Palm Tree		20"
43	Oak Tree	Remove	18"	113	Palm Tree		16"	183	Palm Tree	Remove	14"	253	Palm Tree		12"
44	Oak Tree	Remove	14"	114	Palm Tree		14"	184	Palm Tree	Remove	14"	254	Oak Tree		12"
45	Oak Tree	Remove	10"	115	Oak Tree		20"	185	Palm Tree	Remove	12"	255	Palm Tree		16"
46	Oak Tree	Remove	18"	116	Hardwood		8"	186	Palm Tree	Remove	18"	256	Palm Tree		16"
47	Hardwood	Remove	12"	117	Hardwood		14"	187	Pine Tree	Remove	8"				
48	Oak Tree	Remove	12"	118	Palm Tree		12"	188	Oak Tree	Remove	9"				
49	Oak Tree	Remove	12"	119	Palm Tree		12"	189	Oak Tree	Remove	9"				
50	Oak Tree		12"	120	Oak Tree		15"	190	Palm Tree	Remove	12"				
51	Oak Tree		12"	121	Hardwood		20"	191	Oak Tree	Remove	9"				
52	Oak Tree		12"	122	Palm Tree		12"	192	Oak Tree	Remove	8"				
53	Oak Tree		12"	123	Oak Tree		8"	193	Oak Tree	Remove	24"				
54	Oak Tree	Remove	8"	124	Hardwood	Remove	8"	194	Oak Tree	Remove	9"				
55	Oak Tree	Remove	12"	125	Hardwood	Remove	26"	195	Pine Tree	Remove	16"				
56	Pine Tree	Remove	14"	126	Oak Tree	Remove	8"	196	Oak Tree	Remove	18"				
57	Oak Tree	Remove	8"	127	Oak Tree	Remove	60"	197	Palm Tree	Remove	9"				
58	Oak Tree	Remove	24"	128	Oak Tree	Remove	30"	198	Oak Tree	Remove	24"				
59	Oak Tree	Remove	10"	129	Palm Tree	Remove	10"	199	Oak Tree	Remove	10"				
60	Oak Tree	Remove	8"	130	Palm Tree	Remove	8"	200	Oak Tree	Remove	22"				
61	Oak Tree	Remove	12"	131	Palm Tree	Remove	9"	201	Palm Tree	Remove	8"				
62	Palm Tree	Remove	18"	132	Oak Tree	Remove	12"	202	Oak Tree	Remove	22"				
63	Palm Tree	Remove	16"	133	Palm Tree	Remove	12"	203	Oak Tree	Remove	8"				
64	Oak Tree	Remove	9"	134	Palm Tree	Remove	12"	204	Oak Tree	Remove	8"				
65	Oak Tree	Remove	12"	135	Palm Tree	Remove	8"	205	Oak Tree	Remove	12"				
66	Oak Tree	Remove	10"	136	Palm Tree	Remove	12"	206	Oak Tree	Remove	12"				
67	Oak Tree		8"	137	Oak Tree	Remove	12"	207	Oak Tree	Remove	14"				
68	Palm Tree		15"	138	Palm Tree	Remove	10"	208	Oak Tree	Remove	8"				
69	Oak Tree		13"	139	Palm Tree	Remove	12"	209	Palm Tree	Remove	18"				
70	Palm Tree	Remove	14"	140	Hardwood		8"	210	Palm Tree	Remove	12"				

TREE DISPOSITION CHART ABOVE, SHOWN FOR REFERENCE ONLY, SEE LANDSCAPE ARCHITECT DRAWINGS FOR TREE MITIGATION ANALYSIS

DEMOLITION NOTES

1. ALL EXOTIC AND INVASIVE SPECIES TO BE REMOVED CONGRUENT WITH DEVELOPMENT.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE ATTAINMENT OF ALL DEMOLTION PERMITS NECESSARY FOR PROPOSED CONSTRUCTION.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANY / ALL NECESSARY EROSION CONTROL MEASURES AS PRESENTED ON THIS SHEET AND INCLUDED IN THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP).
4. ALL BARRIERS AND PROTECTION MEASURES FOR TREES BEING SAVED SHALL BE PLACED BEFORE ANY DEMOLITION ACTIVITY BEGINS. LARGE TREES ON ADJACENT PROPERTIES, NEAR THE PROPERTY LINE, SHOULD ALSO BE PROTECTED,
5. THE CITY ENGINEERING DEPARTMENT SHALL MAKE INSPECTIONS AS HEREINAFTER REQUIRED AND NOTIFY THE BUILDING OFFICIAL UPON INSPECTION APPROVAL OR IF THE WORK FAILS TO COMPLY WITH THE EROSION AND SEDIMENT CONTROL PLAN AS APPROVED TO REQUEST A STOP-WORK ORDER. PLANS FOR GRADING, STRIPPING, EXCAVATING, AND FILING WORK BEARING THE STAMP OF APPROVAL OF THE CITY ENGINEER SHALL BE MAINTAINED AT THE SITE DURING THE DURATION OF THE WORK. TO OBTAIN INSPECTIONS, THE PERMITTEE SHALL NOTIFY. THE CITY ENGINEERING DEPARTMENT AT LEAST TWO WORKING DAYS BEFORE THE FOLLOWING:(1)START OF CONSTRUCTION;(2)INSTALLATION OF SEDIMENT AND EROSION MEASURES;(3)COMPLETION OF SITE CLEARING,(4)COMPLETION OF ROUGH GRADING,(5)COMPLETION OF FINAL GRADING,(6)CLOSE OF THE CONSTRUCTION SEASON,(7)COMPLETION OF FINAL LANDSCAPING.(B)THE PERMITTEE SHALL BE RESPONSIBLE FOR THE FUNCTIONALITY OF ALL CONTROL MEASURES IN ACCORDANCE WITH THE INSPECTION SCHEDULE OUTLINED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN. THE PURPOSE OF SUCH INSPECTIONS WILL BE TO DETERMINE THE OVERALL EFFECTIVENESS OF THE CONTROL PLAN AND THE POSSIBLE NEED FOR ADDITIONAL CONTROL MEASURES,(C)THE CITY ENGINEER OF HIS DESIGNEE SHALL ENTER THE PROPERTY OF THE APPLICANT AS DEEMED NECESSARY TO MAKE REGULAR INSPECTIONS TO ENSURE THE EFFECTIVENESS OF THE CONTROL PLAN AND THE POSSIBLE NEED FOR ADDITIONAL CONTROL MEASURES.

LEGEND

- SILT FENCE
- TREE PROTECTION FENCE
- EXISTING TREE TO BE REMOVED
- (1) TREE IDENTIFICATION NUMBER
- EXISTING ASPHALT
- EXISTING CONCRETE
- EXISTING CONC. / STRUC TO BE REMOVED
- EXISTING STORMWATER FACILITY TO BE MODIFIED / FILLED
- EXISTING UNDERGROUND UTILITY TO BE MODIFIED / REMOVED

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

NO.	DATE	REVISIONS
8		
7		
6		
5		
4		
3	04/14/2022	REVISED LOADING CONFIG.
2	12/01/2021	REVISIONS PER COF/PW
1	11-11-2021	REVISIONS PER COF/SLC

JOB NO. 19-0273
DESIGNED RTM
DRAWN GR
DATE JULY 2021
CHECKED AJB
DATE ISSUED 4/28/2022

MBV ENGINEERING, INC.
MOIA BOWLES VILLAMIZAR & ASSOCIATES
CONSULTING ENGINEERING CA #3728
1815 S 26TH STREET
FORT PIERCE, FLORIDA 34950
PH. (772) 344-9313
WWW.MBVENG.COM
FREELANCE FL. PH (321) 333-4159
ST. PETERSBURG FL PH (772) 626-2630

EXISTING CONDITIONS, DEMOLITION AND EROSION CONTROL PLAN

JETSON FORT PIERCE SITE IMPROVEMENTS

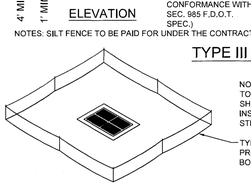
CITY OF FORT PIERCE FLORIDA

AARON J. BOWLES LICENSE No. 55313 STATE OF FLORIDA PROFESSIONAL ENGINEER
AARON J. BOWLES FL. P.E. #55313 4/28/22

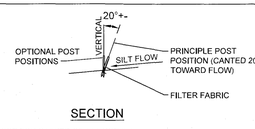
SHEET C3

19-0273

O:\DRAWINGS\2019\19-0273 Jetson Ft. Pierce\4 - Drawings\19-0273 C3 EX COND DEMO EROSION.dwg 4/25/2022 5:01 PM



ELEVATION

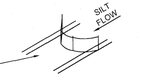


SECTION

NOTES: SILT FENCE TO BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR STAKED SILT FENCE (L.F.)

TYPE III SILT FENCE

NOTE: SPACING FOR TYPE III FENCE TO BE IN ACCORDANCE WITH CHART I, SHEET 1 OF 3 AND DITCH INSTALLATIONS AT DRAINAGE STRUCTURES SHEET 2 OF 3



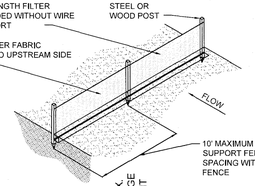
TYPE III SILT FENCE PROTECTION AROUND DITCH BOTTOM INLETS

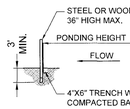
DO NOT DEPLOY IN A MANNER THAT SILT FENCES WILL ACT AS A DAM ACROSS PERMANENT FLOWING WATERCOURSES. SILT FENCES ARE TO BE USED AT UPLAND LOCATIONS AND TURBIDITY BARRIERS USED AT PERMANENT BODIES OF WATER.

SILT FENCE APPLICATIONS

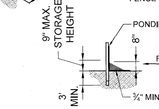
N.T.S.

NOTES:
1. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
2. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY. 9" MAXIMUM RECOMMENDED STORAGE HEIGHT.
3. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.





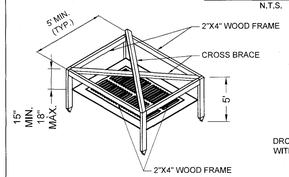
TRENCH DETAIL



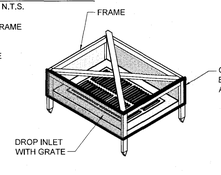
INSTALLATION WITHOUT TRENCHING

TYPE IV SILT FENCE

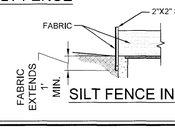
N.T.S.



VIEW OF FRAME WITHOUT SILT FENCE

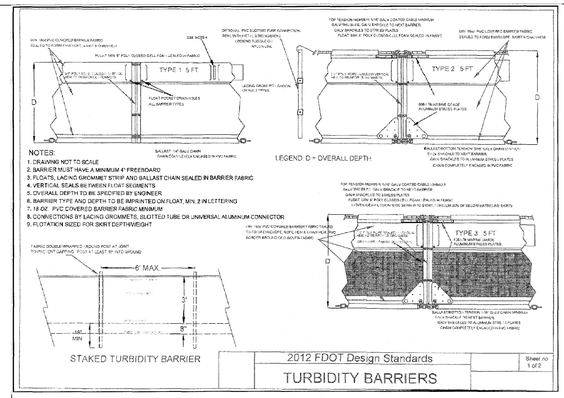


VIEW OF FRAME WITH SILT FENCE



SILT FENCE INLET PROTECTION

N.T.S.

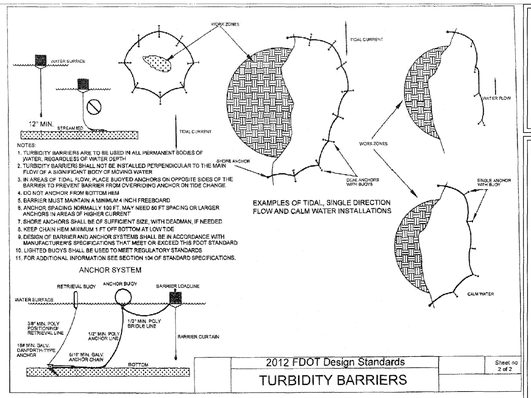


NOTES:
1. DRAWING NOT TO SCALE
2. BARRIER MUST HAVE A MINIMUM 4" FREEBOARD
3. FLOATS, LACING GROMMET STRIP AND BALLAST CHAIN SEALED IN BARRIER FABRIC
4. VERTICAL SEALS BETWEEN FLOAT SEGMENTS
5. OVERALL DEPTH TO BE SPECIFIED BY ENGINEER
6. BARRIER TYPE AND DEPTH TO BE IMPRINTED ON FLOAT, MIN. 2 IN LETTERING
7. 18 OZ. PVC COVERED BARRIER FABRIC MINIMUM
8. CONNECTIONS BY LACING GROMMETS, SLOTTED TUBE OR UNIVERSAL ALUMINUM CONNECTOR
9. FLOTATION SIZED FOR SKIRT DEPTH/WEIGHT

2012 FDOT Design Standards

TURBIDITY BARRIERS

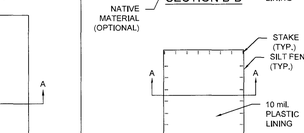
Sheet no 1 of 3



NOTES:
1. TURBIDITY BARRIERS ARE TO BE USED IN ALL PERMANENT BODIES OF WATER, REGARDLESS OF WATER DEPTH.
2. TURBIDITY BARRIERS SHALL NOT BE INSTALLED PERPENDICULAR TO THE MAIN CURRENT OF TIDAL OR STORM RELATED WATER.
3. IN AREAS OF TIDAL FLOW, PLACE BUOYED ANCHORS ON OPPOSITE SIDES OF THE BARRIER TO PREVENT BARRIER FROM OVERRIDING ANCHOR ON TIDE CHANGE.
4. DO NOT ANCHOR FROM BOTTOM HIM
5. BARRIER MUST MAINTAIN A MINIMUM 4" HIGH FREEBOARD
6. ANCHOR SPACING FORMULA = 1000 FT. MAX. NEED 80 FT SPACING OR LARGER ANCHORS IN AREAS OF HIGH CURRENT
7. SHORE ANCHORS SHALL BE OF SUFFICIENT SIZE, WITH DEADMAN, IF NEEDED
8. KEEP CHAIN HEM MINIMUM 1 FT OFF BOTTOM AT LOW TIDE
9. DESIGN OF BARRIER AND ANCHOR SYSTEMS SHALL BE IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS THAT MEET OR EXCEED THIS FDOT STANDARD
10. LIGHTED BUOYS SHALL BE USED TO MEET REGULATORY STANDARDS
11. FOR ADDITIONAL INFORMATION SEE SECTION 104 OF STANDARD SPECIFICATIONS.

TURBIDITY BARRIER APPLICATIONS

N.T.S.

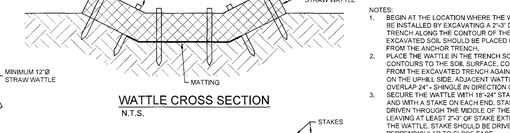


SILT FENCE/ORANGE FENCE PLACEMENT DETAIL AROUND WETLANDS

N.T.S.

LOW TO MODERATE FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS.
GRAB TENSILE ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4833	120 LBS.
MULLEN BURST	ASTM D-3786	800 P.S.I.
TRAPEZOID TEAR	ASTM D-4533	120 LBS.
UV RESISTANCE	ASTM D-4355	80%
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	40 GAL./MIN./S.F.
PERMITTIVITY	ASTM D-4491	0.55 SEC. -1

MODERATE TO HIGH FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS.
GRAB TENSILE ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4833	135 LBS.
MULLEN BURST	ASTM D-3786	420 P.S.I.
TRAPEZOID TEAR	ASTM D-4533	45 LBS.
UV RESISTANCE	ASTM D-4355	90%
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL./MIN./S.F.
PERMITTIVITY	ASTM D-4491	1.5 SEC. -1



POLY WATTLES OR GEOHAY CURB INLET FILTER

N.T.S.

NOTE:
1. SIGN MATERIAL SHALL BE PLASTIC OR METAL, ATTACHED TO 4"x4" TREATED WOOD POST.
2. CONSERVATION EASEMENT SHALL BE 3" HIGH LETTERS.
3. ALL OTHER LINES OF TEXT SHALL BE 1" HIGH WITH 1" SPACING BETWEEN LINES.
4. SIGN SHALL HAVE WHITE BACKGROUND WITH CONTRASTING COLOR FOR THE LETTERING.

CONSERVATION EASEMENT SIGN

N.T.S.

SOCK-PIPE OR ROCK BAG INLET FILTER

N.T.S.

NOTES FOR SYNTHETIC BALES OR BALE TYPE BARRIERS

1. Type I and II Synthetic Barrier should be spaced in accordance with Chart 1, Sheet 1.
2. Bales shall be unbroken with 2x2 or 2"x4" (actual dimensions) wood stakes. Stakes of other material or engineered devices providing equivalent strength may be used if approved by the Engineer. Stakes within that would shatter or split removed upon completion of the project.
3. Rails and posts shall be 2" x 4" wood. Other materials providing equivalent strength may be used if approved by the Engineer.
4. Adjacent bales shall be butted firmly together.
5. Where used in conjunction with silt fence, bales shall be placed on the downhill side of the fence.
6. Bales to be paid for under the contract unit price for Synthetic Bale, LF. The unit price shall include the furnishing of all labor, Type I and II Barrier, stakes, and all incidentals necessary to install and remove the unit price for Sandbagging, LF. Rock bags to be paid for under the contract unit price for Rock Bags, LF.

AT TOE OF SLOPE

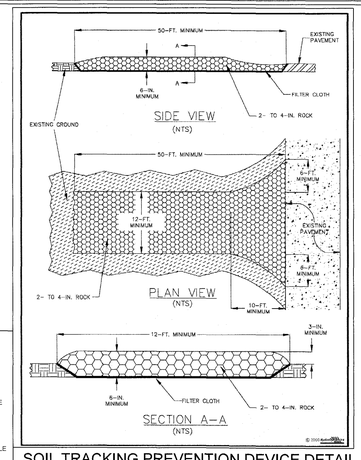
BARRIERS FOR FILL SLOPES

N.T.S.

NOTES:
1. BEGIN AT THE LOCATION WHERE THE WATTLE IS TO BE INSTALLED BY EXCAVATING A 2"-3" DEEP x 9" WIDE TRENCH ALONG THE CONTOUR OF THE SLOPE. EXCAVATED SOIL SHOULD BE PLACED UP-SLOPE FROM THE ANCHOR TRENCH.
2. PLACE THE WATTLE IN THE TRENCH SO THAT IT CONTOURS TO THE SOIL SURFACE. COMPACT SOIL FROM THE EXCAVATED TRENCH AGAINST THE WATTLE ON THE UP-HILL SIDE. ADJACENT WATTLES SHOULD OVERLAP 24" - SHINGLE IN DIRECTION OF FLOW.
3. SECURE THE WATTLE WITH 18"-24" STAKES EVERY 3'-4' AND WITH A STAKE ON EACH END. STAKES SHOULD BE DRIVEN THROUGH THE MIDDLE OF THE WATTLE LEAVING AT LEAST 2"-3" OF STAKE EXTENDING ABOVE THE WATTLE. STAKE SHOULD BE DRIVEN PERPENDICULAR TO SLOPE FACE.
4. USE MINIMUM 12"Ø COIR (COCONUT FIBER)/STRAW WATTLE.
5. USE 2' WOODEN STAKES WITH A 2"x2" NOMINAL CROSS SECTION.
6. ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AS DIRECTED.
7. INSTALL A MINIMUM OF 2 UP SLOPE STAKES AND 4 DOWN SLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.
8. PROVIDE STAPLES MADE OF 0.125"Ø STEEL SIRE FORMED INTO A "U" SHAPE NOT LESS THAN 12" IN LENGTH.
9. INSTALL STAPLES APPROX. EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

WATTLE DETAILS

N.T.S.



SOIL TRACKING PREVENTION DEVICE DETAIL

N.T.S.

INLET INSERT SEDIMENT CONTAINMENT SYSTEM

N.T.S.

NOTE:
ALL STOCKPILES SHALL BE A MAXIMUM OF 25' HIGH.

SECTION A-A

NOTE:
FOR STOCKPILING ERODIBLE MATERIAL FOR EXTENDED PERIODS, THE AREA SHALL BE SEEDED AND MULCHED.

SEDIMENT CONTROL DETAIL FOR STOCKPILING OF ERODIBLE MATERIAL

N.T.S.

CONCRETE WASHOUT SIGN DETAIL (OR EQUIVALENT)

NOTES:
1. ACTUAL LAYOUT DETERMINED IN THE FIELD.
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

TYPE "ABOVE GRADE" WITH SILT FENCE

CONCRETE & STUCCO WASTE MANAGEMENT

N.T.S.

EROSION AND SEDIMENTATION CONTROL NOTES

CONSTRUCTION ACTIVITIES CAN RESULT IN THE GENERATION OF SIGNIFICANT AMOUNTS OF POLLUTANTS WHICH MAY REACH SURFACE OR GROUND WATERS. ONE OF THE PRIMARY POLLUTANTS OF SURFACE WATERS IS SEDIMENT DUE TO EROSION. EXCESSIVE QUANTITIES OF SEDIMENT WHICH REACH WATER BODIES OF FLOOD PLAINS HAVE BEEN SHOWN TO ADVERSELY AFFECT THEIR PHYSICAL, BIOLOGICAL AND CHEMICAL PROPERTIES. TRANSPORTED SEDIMENT CAN OBSTRUCT STREAM CHANNELS, REDUCE HYDRAULIC CAPACITY OF WATER BODIES OF FLOOD PLAINS, REDUCE THE DESIGN CAPACITY OF CULVERTS AND OTHER WORKS, AND ELIMINATE BENTHIC INVERTEBRATES AND FISH SPAWNING SUBSTRATES BY SILTATION. EXCESSIVE SUSPENDED SEDIMENTS REDUCE LIGHT PENETRATION AND THEREFORE, REDUCE PRIMARY PRODUCTIVITY.

MINIMUM STANDARDS

1. SEDIMENT BASIN AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UNSLOPE LAND DISTURBANCE TAKES PLACE.
2. ALL SEDIMENT CONTROL MEASURES ARE TO BE ADJUSTED TO MEET FIELD CONDITIONS AT THE TIME OF CONSTRUCTION AND BE CONSTRUCTED PRIOR TO ANY GRADING OR DISTURBANCE OF EXISTING SURFACE MATERIAL ON BALANCE OF SITE. PERIMETER SEDIMENT BARRIERS SHALL BE CONSTRUCTED TO PREVENT SEDIMENT OR TRASH FROM FLOWING OR FLOATING ON TO ADJACENT PROPERTIES.
3. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN UNDISTURBED FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT UNDISTURBED FOR MORE THAN ONE YEAR.
4. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.
5. A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT, IN THE OPINION OF THE REVIEWER, IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.
6. STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.
7. SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES SHALL BE CONTROLLED BY A SEDIMENT BASIN. THE SEDIMENT BASIN SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE THE ANTICIPATED SEDIMENT LOADING FROM THE LAND-DISTURBING ACTIVITY. THE OUTFALL DEVICE OR SYSTEM DESIGN SHALL TAKE INTO ACCOUNT THE TOTAL DRAINAGE AREA FLOWING THROUGH THE DISTURBED AREA TO BE SERVED BY THE BASIN.
8. AFTER ANY SIGNIFICANT RAINFALL, SEDIMENT CONTROL STRUCTURES WILL BE INSPECTED FOR INTEGRITY. ANY DAMAGED DEVICES SHALL BE CORRECTED IMMEDIATELY.
9. CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.
10. WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.
11. SEDIMENT WILL BE PREVENTED FROM ENTERING ANY STORM DRAIN SYSTEM, DITCH OR CHANNEL. ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.
12. BEFORE TEMPORARY OR NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.
13. WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONEROODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS, EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONEROODIBLE COVER MATERIALS.
14. WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES, A TEMPORARY STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL SHALL BE PROVIDED.
15. THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.
16. PERIODIC INSPECTION AND MAINTENANCE OF ALL SEDIMENT CONTROL STRUCTURES MUST BE PROVIDED TO ENSURE INTENDED PURPOSE IS ACCOMPLISHED. THE DEVELOPER, OWNER AND/OR CONTRACTOR SHALL BE CONTINUALLY RESPONSIBLE FOR ALL SEDIMENT LEAVING THE PROPERTY. SEDIMENT CONTROL MEASURES SHALL BE IN WORKING CONDITION AT THE END OF EACH WORKING DAY.
17. UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:
    A. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.
    B. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
    C. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.
    D. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS.
18. WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PUBLIC ROAD SURFACE WITH CURBS AND GUTTERS, THE ROAD SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL SUBDIVISION LOTS AS WELL AS TO LARGER LAND-DISTURBING ACTIVITIES.
19. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, IN THE OPINION OF THE REVIEWER. DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.
20. PROPERTIES AND WATERWAYS DOWNSTREAM FROM CONSTRUCTION SITE SHALL BE PROTECTED FROM SEDIMENT DISPOSITION AND EROSION.
21. PHASED PROJECTS SHOULD BE CLEARED IN CONJUNCTION WITH CONSTRUCTION OF EACH PHASE.
22. EROSION CONTROL DESIGN AND CONSTRUCTION SHALL FOLLOW THE REQUIREMENTS IN INDEX NOS. 104 AND 105 OF FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS.
23. THE REVIEWER MAY APPROVE MODIFICATIONS OR ALTER PLANS TO THESE EROSION CONTROL CRITERIA DUE TO SITE SPECIFIC CONDITIONS.

NO.	REVISIONS	DATE
8	–	–
7	–	–
6	–	–
5	–	–
4	–	–
3	REVISED LOADING CONFIG.	04/14/2022
2	REVISIONS PER COPR-PW	12/01/2021
1	REVISIONS PER COPR/SLC	11-11-2021

JOB NO.	19-0273
DESIGNED	RTM
DRAWN	GR
DATE	JULY 2021
CHECKED	AJB
DATE ISSUED	4/26/2022

MBV ENGINEERING, INC.
MOIA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • SURVEYING • ENGINEERING
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MELBOURNE, FL - PH (321) 253-1510
FT. PIERCE, FL - PH (772) 462-9502

EROSION CONTROL DETAILS

JETSON FORT PIERCE SITE IMPROVEMENTS

CITY OF FORT PIERCE FLORIDA

AARON J. BOWLES LICENSE No. 55313 STATE OF FLORIDA PROFESSIONAL ENGINEER

AARON J. BOWLES
FL. P.E. #55313 4/28/22

SHEET
C4

19-0273

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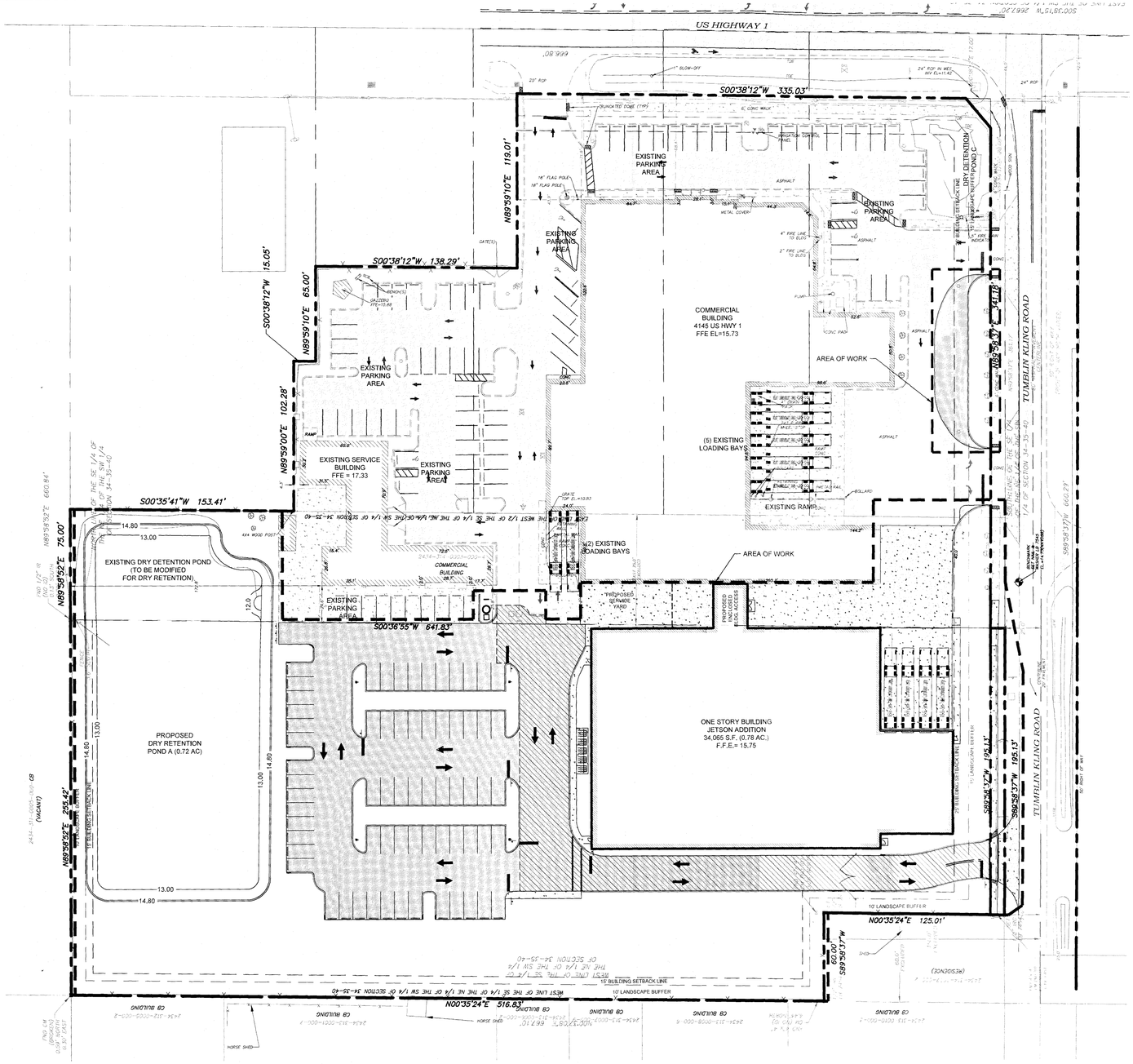
O:\DRAWING\2019\19-0273 Jetson Ft. Pierce\4 - Drawings\19-0273 C1 COVER DETAILS.dwg 4/26/2022 3:01 PM RYAN



OVERALL SITE PLAN

SCALE: 1" = 40'

GRAPHIC SCALE
0 40 80
(IN FEET)
1 inch = 40 ft.

LEGEND

- EXISTING ASPHALT
- PROPOSED (REGULAR DUTY) ASPHALT
- PROPOSED (HEAVY DUTY) ASPHALT
- EXISTING CONCRETE
- PROPOSED CONCRETE
- EXISTING BUILDINGS

PROJECT INFORMATION

SITE ADDRESS
4145 S. US HIGHWAY #1
& 504 TUMBLIN KLING ROAD
FORT PIERCE, FLORIDA 34982

OWNER / APPLICANT
JETSON INVESTMENT, INC.
4145 S US HIGHWAY 1
FORT PIERCE, FLORIDA 34982
PHONE (772) 464-7050

ARCHITECT
ANTHONY J. MAZZA, AIA
8220 COMPTON WAY
MELBOURNE, FLORIDA 32940
PHONE (321) 255-2050

LANDSCAPE ARCHITECT
LANDSCAPE DESIGN ASSOCIATES
2510 NW 182ND AVE.
HIGH SPRINGS, FLORIDA 32643
PHONE (352) 210-5765

TAX PARCEL I.D NUMBER(S)
2434-314-0003-000-4
2434-314-0005-000-8

ZONING	LAND USE
C3	GC

LATITUDE	LONGITUDE
27° 23' 09.82" N	80° 19' 38.88" W

ENGINEER
MBV ENGINEERING, INC.
1835 20TH STREET
VERO BEACH, FLORIDA 32960
PHONE (772) 569-0035

SURVEYOR
INDIAN RIVER SURVEY, INC.
1835 20TH STREET
VERO BEACH, FLORIDA 32960
PHONE (772) 569-7880

PROJECT DESCRIPTION
THIS PROJECT PROPOSES THE UNIFICATION OF (2) PARCELS (4145 US HWY 1 AND 504 TUMBLIN KLING RD.) AND THE CONSTRUCTION OF A +/- 34,065 WAREHOUSE FACILITY WITH REQUIRED SITE IMPROVEMENTS.

SITE DATA

EXISTING SITE DATA

4145 S. US HIGHWAY 1	SF	AC	%
SITE AREA	168,713 SF	3.87 AC	100.0%
IMPERVIOUS AREA	131,302 SF	3.01 AC	77.8%
EXISTING BUILDING	53,220 SF	1.22 AC	31.5%
EXISTING ASPHALT	55,367 SF	1.27 AC	32.8%
EXISTING CONCRETE	22,715 SF	0.52 AC	13.46%
PERVIOUS AREA	37,411 SF	0.86 AC	22.2%

504 TUMBLIN KLING ROAD			
SITE AREA	156,334 SF	3.59 AC	100.0%
IMPERVIOUS AREA	10,813 SF	0.25 AC	6.9%
EXISTING BUILDING	3,528 SF	0.08 AC	2.3%
EXISTING ASPHALT	0 SF	0.00 AC	0.0%
EXISTING CONCRETE	7,285 SF	0.17 AC	4.7%
PERVIOUS AREA	145,521 SF	3.34 AC	93.08%

PROPOSED SITE DATA

4145 S. US HIGHWAY 1			
SITE AREA	168,713 SF	3.87 AC	100.0%
IMPERVIOUS AREA	135,519 SF	3.11 AC	80.3%
TOTAL BUILDING	51,076 SF	1.17 AC	30.3%
TOTAL ASPHALT	58,373 SF	1.34 AC	34.6%
TOTAL CONCRETE	26,070 SF	0.60 AC	15.5%
PERVIOUS AREA	33,194 SF	0.76 AC	19.7%

504 TUMBLIN KLING ROAD			
SITE AREA	156,334 SF	3.59 AC	100.0%
IMPERVIOUS AREA	79,557 SF	1.83 AC	50.9%
TOTAL BUILDING	34,065 SF	0.78 AC	21.8%
TOTAL ASPHALT	40,262 SF	0.92 AC	25.8%
TOTAL CONCRETE	5,230 SF	0.12 AC	3.3%
PERVIOUS AREA	76,777 SF	1.76 AC	49.1%

OVERALL UNIFIED SITE			
SITE AREA	325,047 SF	7.46 AC	100.0%
IMPERVIOUS AREA	215,076 SF	4.94 AC	66.2%
TOTAL BUILDING	85,141 SF	1.95 AC	26.2%
TOTAL ASPHALT	98,635 SF	2.26 AC	30.3%
TOTAL CONCRETE	31,300 SF	0.72 AC	9.6%
PERVIOUS AREA	109,971 SF	2.52 AC	33.8%
NET NEW IMPERVIOUS	+72,961 SF	1.67 AC	

ZONING DATA

CRITERIA	REQUIRED	EXISTING	PROPOSED
LOT SIZE	10,000	156,333 SF	156,333 SF
LOT WIDTH	70'	255.42 '	255.42 '
BUILDING SETBACKS			
FRONT	25'	NA	33
SIDE (EAST)	15'	NA	A (UNITY OF PARCELS)
SIDE (WEST)	15'	NA	45.13'
REAR	15'	NA	358.14'
BUILDING COVERAGE	60% MAX.	NA	26.2%
OPEN SPACE	30% MIN.	100%	44.4%
BUILDING HEIGHT	35' MAX.	----	
FAR	0.35	----	0.26

PARKING DATA
PARKING PROVIDED (MAIN-SITE) = 104 SPACES (6 HC, 98 STD.)
PARKING TO BE REMOVED (MAIN-SITE) = 11 SPACES (11 STD.)

PARKING REQUIRED (EXPANSION) = 1 SP / 600 GSF = 34,065 / 600 = 56.75 (57) SPACES
PARKING REQUIRED (OVERALL) = 161 SPACES (6HC MIN.)

PARKING PROVIDED = (OVERALL)		
	168	SPACES TOTAL
	6	HC SPACES
	162	STANDARD
	20	BICYCLE SPACES

TRAFFIC STATEMENT
PER ITE, 10TH EDITION
(150) WAREHOUSING 34.065 SF BUILDING
=1.74 TRIPS PER 1000 SF = 34.07 X 1.74 = 60 ADT (30 ENTRY, 30 EXIT)

DRAINAGE STATEMENT
STORMWATER ATTENUATION AND TREATMENT REQUIRED FOR THE SITE EXPANSION TO BE PROVIDED ON-SITE WITH AN INTERCONNECTION TO THE EXISTING MASTER STORMWATER MANAGEMENT SYSTEM SERVING THE OVERALL PROPERTY. ULTIMATE OUTFALL IS TO THE FDOT US HWY 1 DRAINAGE SYSTEM.

PERMITS REQUIRED
CITY OF FORT PIERCE PRE-APPLICATION
CITY OF FORT PIERCE SITE PLAN APPLICATION
CITY OF FORT PIERCE STORMWATER
CITY OF FORT PIERCE LAND CLEARING
CITY OF FORT PIERCE SITEWORK
ST. LUCIE COUNTY RIGHT OF WAY PERMIT
SFWMD ENVIRONMENTAL RESOURCE PERMIT MODIFICATION

FLOOD ZONE
THE SUBJECT PROPERTY IS LOCATED IN FLOOD ZONE AE (EL 6 FEET) PER FLOOD INSURANCE RATE MAP #12061C0242 H, DATED DEC. 4, 2012.

LEGAL DESCRIPTION
PER (ORB 3453, PG. 974):
THE SOUTH 150 FEET OF THE WEST 1/2 OF THE SOUTHEAST 1/4 OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4, LESS THE EAST 30 FEET THEREOF, AND LESS THE WEST 60 FEET THEREOF, SAID LAND LYING AND BEING IN SECTION 34, TOWNSHIP 35 SOUTH, RANGE 40 EAST, ST. LUCIE COUNTY, FLORIDA.
AND
THE WEST 150 FEET OF THE WEST 1/2 OF THE SOUTHEAST 1/4 OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4 LESS THE SOUTH 150 FEET THEREOF, SAID LAND LYING AND BEING IN SECTION 34, TOWNSHIP 35 SOUTH, RANGE 40 EAST, ST. LUCIE COUNTY, FLORIDA.
AND
THE EAST 180 FEET OF THE WEST 1/2 OF THE SOUTHEAST 1/4 OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4, LESS THE EAST 75 FEET THEREOF, AND LESS THE WEST 90 FEET OF THE SOUTH 150 FEET THEREOF, SAID LAND LYING AND BEING IN SECTION 34, TOWNSHIP 35 SOUTH, RANGE 40 EAST, ST. LUCIE COUNTY, FLORIDA.

WASTEWATER SOURCE
FPUA

POTABLE WATER SOURCE
FPUA

CONSTRUCTON SCHEDULE
START: MAY 2022
FINISH: MAY 2023

DATE	REVISIONS
04/14/2022	3 REVISED LOADING CONFIG.
12/01/2021	2 REVISIONS PER COPP-PW
11-11-2021	1 REVISIONS PER COPP/SLC

JOB NO.	19-0273
DESIGNED	RTM
DRAWN	GR
DATE	JULY 2021
CHECKED	AJB
DATE ISSUED	4/26/2022

MBV ENGINEERING, INC.
MOIA BOWLES VILLAMIZAR & ASSOCIATES CONSULTING ENGINEERING CA #3728
PREBORNE PL, FL • PH (772) 234-5116
1835 20TH STREET, VERO BEACH, FL 32960
FX: (772) 778-3417

OVERALL SITE PLAN

JETSON FORT PIERCE
SITE IMPROVEMENTS

CITY OF FORT PIERCE FLORIDA

AARON J. BOWLES
L CENSE
No. 55313
STATE OF
FLOR DA
PROFESSIONAL ENGINEER

AARON J. BOWLES
FL. P.E. #55313 4/28/22

SHEET
C5

19-0273

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

O:\BMA\WORK\2019\19-0273 Jetson Ft. Pierce\4 - Drawings\19x273 C5 SITE PLAN_ALT.dwg 4/26/2022 5:01 PM RYAN

SITE PLAN

SCALE: 1" = 30'

GRAPHIC SCALE
0 30 60
(IN FEET)
1 inch = 30 ft.

LEGEND

- EXISTING ASPHALT
- PROPOSED (REGULAR DUTY) ASPHALT
- PROPOSED (HEAVY DUTY) ASPHALT
- EXISTING CONCRETE
- PROPOSED CONCRETE
- EXISTING BUILDINGS

SIGN & PAVEMENT MARKING SCHEDULE		
SIGN ID NUMBER	SIZE	DESIGNATION / NOTES
1	30"	(R1-1) STOP SIGN AND 24" SOLID WHITE STOP BAR
2	12"	6' WIDE CROSSWALK, 12" SOLID WHITE STRIPING
3	6"	25 LF DOUBLE YELLOW (PAINTED)
4		DO NOT ENTER SIGN
5		PAVEMENT MARKINGS PER MUTCD
6		(3) TYPE 4 OBJECT MARKERS (OM4-1) 5' O.C.
7		24" ADA DETECTABLE WARNING MAT (BRICK RED & CAST IN PLACE)

72 HOURS BEFORE DIGGING
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	DATE
8 –	
7 –	
6 –	
5 –	
4 –	
3 REVISED LOADING CONFIG.	04/14/2022
2 REVISIONS PER COFP-PW	12/01/2021
1 REVISIONS PER COFP/SLC	11-11-2021
△ REVISIONS	DATE

JOB NO.	19-0273
DESIGNED	RTM
DRAWN	GR
DATE	JULY 2021
CHECKED	AJB
DATE ISSUED	4/26/2022

HMBV ENGINEERING, INC.
MOIA BOWLES VILLAMIZAR & ASSOCIATES
CONSULTING ENGINEERING CA #3728
HEADQUARTERS
1800 SE 17th Street, Suite 404
Fort Lauderdale, FL 33316
PH: (772) 398-3411
FX: (772) 398-3471

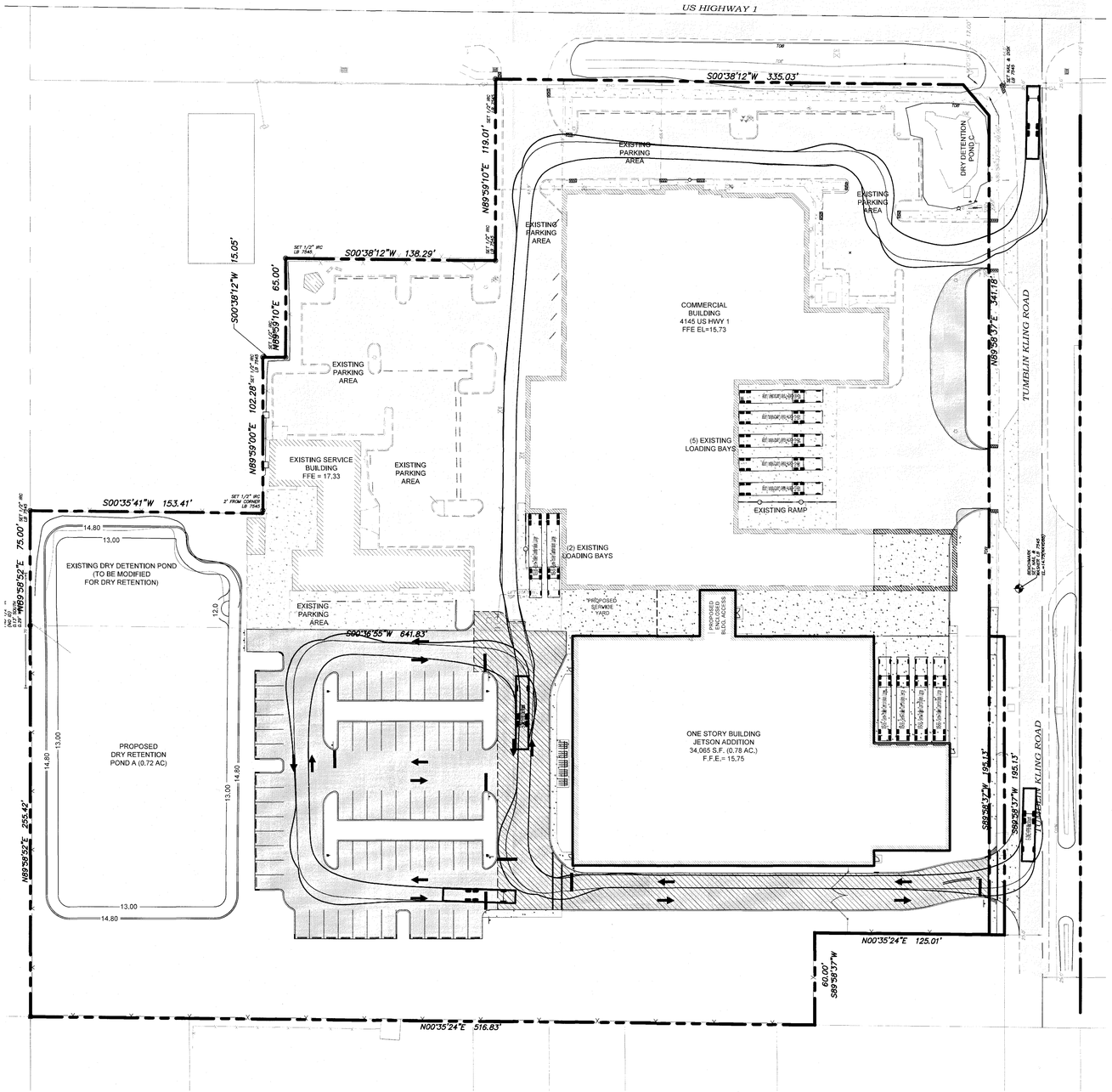
JETSON FORT PIERCE
SITE IMPROVEMENTS
CITY OF FORT PIERCE FLORIDA

SITE PLAN

AARON J. BOWLES
LICENSE
No. 55313
STATE OF FLORIDA
PROFESSIONAL ENGINEER
AARON J. BOWLES
FL. P.E. #55313 4/28/22

SHEET
C6

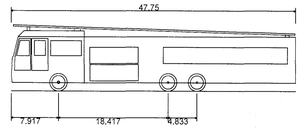
19-0273



EMERGENCY SERVICES ACCESS PLAN

SCALE: 1" = 40'

GRAPHIC SCALE
0 40 80
(IN FEET)
1 inch = 40 ft.



E-ONE HP95 Mid Mount	
Overall Length	47.750ft
Overall Width	8.333ft
Overall Body Height	11.000ft
Min Body Ground Clearance	1.393ft
Track Width	8.333ft
Lock-to-lock time	6.00s
Max Wheel Angle	45.00°

FIRE TRUCK PROFILE

SCALE: N.T.S.

LEGEND

- EXISTING ASPHALT
- PROPOSED ASPHALT
- EXISTING CONCRETE
- PROPOSED CONCRETE
- EXISTING BUILDINGS

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

8	--	--
7	--	--
6	--	--
5	--	--
4	--	--
3	REVISED LOADING CONFIG.	04/14/2022
2	REVISIONS PER COFP-PW	12/01/2021
1	REVISIONS PER COFP/SLC	11-11-2021
△	**REVISIONS**	**DATE**

JOB NO.	19-0273	
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MOIA BOWLES VILLAMIZAR & ASSOCIATES
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1855 - 20TH STREET
VERO BEACH, FL 32960
PH. (772) 345-0311
FAX (772) 794-4847
MELBOURNE, FL - PH (321) 253-1510
FT. PIERCE, FL - PH (772) 460-0621

EMERGENCY SERVICES ACCESS PLAN

JETSON FORT PIERCE SITE IMPROVEMENTS

CITY OF FORT PIERCE FLORIDA

AARON J. BOWLES LICENSE No. 55313 STATE OF FLORIDA PROFESSIONAL ENGINEER

AARON J. BOWLES FL. P.E. #55313 4/28/22

SHEET C7

19-0273

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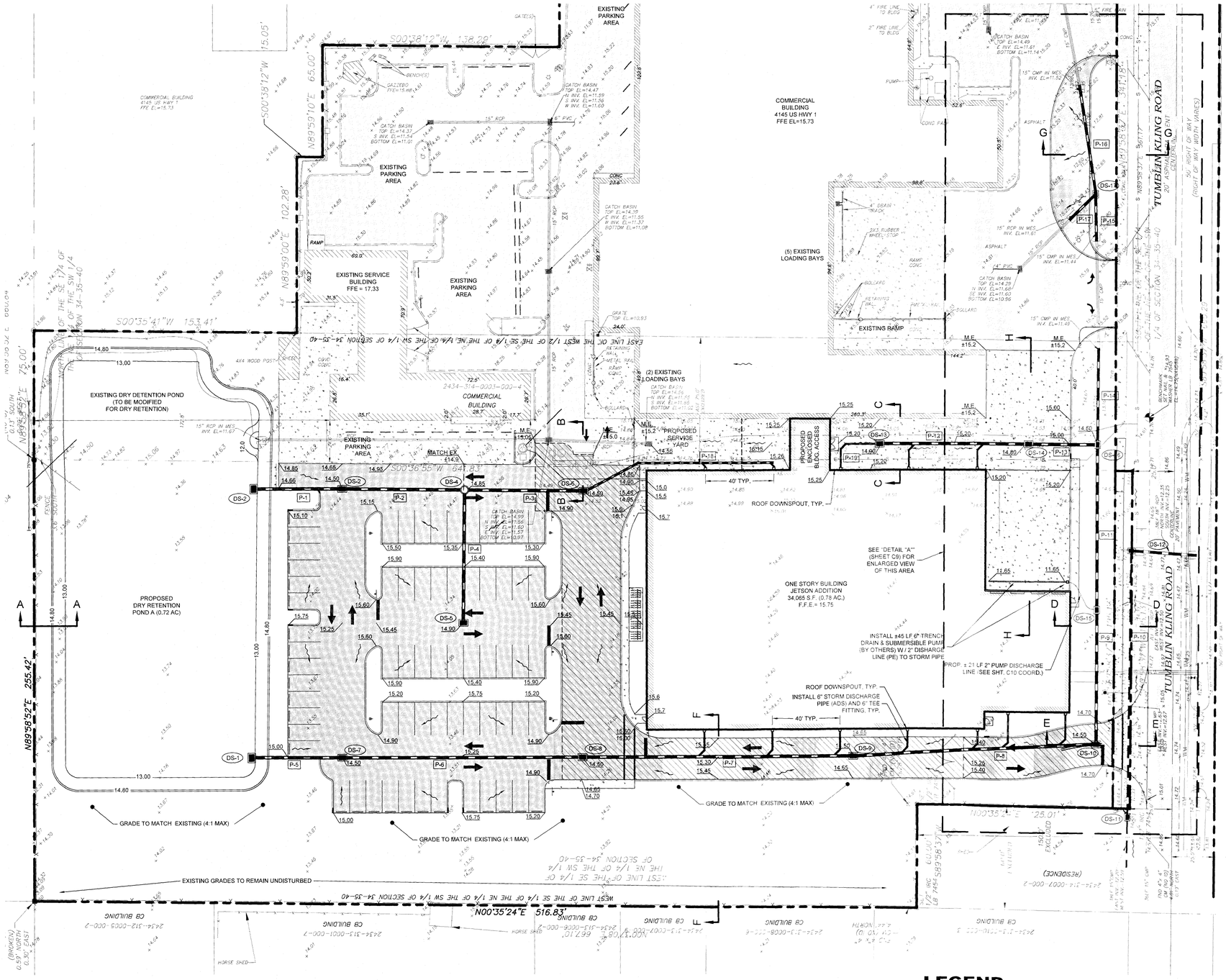

PAVING, GRADING AND DRAINAGE PLAN

SCALE: 1" = 30'

GRAPHIC SCALE

0 30 60

(IN FEET)

1 inch = 30 ft.

LEGEND

- EXISTING ASPHALT
- PROPOSED (REGULAR DUTY) ASPHALT
- PROPOSED (HEAVY DUTY) ASPHALT
- EXISTING CONCRETE
- PROPOSED CONCRETE
- EXISTING BUILDINGS
- (DS-1) PROPOSED DRAINAGE STRUCTURE
- P-1 PROPOSED STORMWATER PIPE DESIGNATION

DRAINAGE STRUCTURE SCHEDULE

STRUCTURE NUMBER		DS-1	DS-2	DS-3	DS-4	DS-5	DS-6
FDOT INDEX #		# 425-052	# 425-052	# 425-052	# 425-052	# 425-052	# 425-052
DESCRIPTION		TYPE "E" DITCH BOTTOM INLET	TYPE "E" DITCH BOTTOM INLET	TYPE "F" DITCH BOTTOM INLET	TYPE P MANHOLE (4' DIA.)	TYPE "F" DITCH BOTTOM INLET	TYPE "F" DITCH BOTTOM INLET
RIM ELEV.		13.25	13.25	14.50	14.85	14.90	14.50
PIPE DIA. (IN.)		18.00	18.00	18.00	18.00	18.00	18.00
COVER		2.75	3.00	4.05	3.25	3.00	2.00
INVERT ELEVATION	N	-	-	8.95 N	9.20 N	-	9.45 N
	S	9.00 S	8.75 S	8.95 S	9.20 S	-	11.00 S
	E	-	-	-	-	10.40 E	-
	W	-	-	-	10.10 W	-	-
BOTTOM ELEV.		8.50	8.25	8.45	8.70	9.90	8.95

DRAINAGE STRUCTURE SCHEDULE

STRUCTURE NUMBER		DS-7	DS-8	DS-9	DS-10	DS-11	DS-12
FDOT INDEX #		# 425-052	# 425-052	# 425-052	# 425-052	# 425-052	# 425-052
DESCRIPTION		TYPE "F" DITCH BOTTOM INLET	TYPE "F" DITCH BOTTOM INLET	TYPE "F" DITCH BOTTOM INLET	TYPE "F" DITCH BOTTOM INLET	TYPE "C" DITCH BOTTOM INLET	TYPE "C" DITCH BOTTOM INLET
RIM ELEV.		14.50	14.50	14.60	13.00	13.75	14.25
PIPE DIA. (IN.)		18.00	18.00	18.00	18.00	15.00	15.00
COVER		4.15	4.50	5.00	3.80	0.30	0.65
INVERT ELEVATION	N	8.85 N	8.50 N	8.10 N	7.70 N	-	-
	S	8.85 S	8.50 S	8.10 S	-	-	12.35 S
	E	-	-	-	7.70 E	12.00 E	-
	W	-	-	-	-	12.20 W	12.00 W
BOTTOM ELEV.		8.35	8.00	7.60	7.20	11.50	11.50

DRAINAGE STRUCTURE SCHEDULE

STRUCTURE NUMBER		DS-13	DS-14	DS-15	DS-16	DS-17
FDOT INDEX #		# 425-052	# 425-052	# 425-052	# 425-052	# 425-052
DESCRIPTION		TYPE "F" DITCH BOTTOM INLET	TYPE "F" DITCH BOTTOM INLET	TYPE "C" DITCH BOTTOM INLET	TYPE "C" DITCH BOTTOM INLET	TYPE "C" DITCH BOTTOM INLET
RIM ELEV.		14.90	14.90	14.60	14.50	14.90
PIPE DIA. (In.)		15.00	15.00	18.00	15.00	15.00
COVER		2.00	2.30	5.70	1.75	2.15
INVERT ELEVATION	N	11.65 N	11.35 N	-	11.2 N	11.50 N
	S	11.65 S	11.35 S	-	-	-
	E	-	-	7.40 E	11.50 E	11.50 E
	W	-	-	7.40 W	7.00 W	11.50 W
BOTTOM ELEV.		11.15	10.85	6.90	6.50	11.00

STORM PIPE SCHEDULE

PIPE ID	TYP.	SIZE (IN)	LENGTH (FT)	SLOPE (%)
P-1	ADS HP STORM (PP)	18	48	0.52%
P-2	ADS HP STORM (PP)	18	67	0.37%
P-3	ADS HP STORM (PP)	18	65	0.38%
P-4	ADS HP STORM (PP)	18	72	0.42%
P-5	ADS HP STORM (PP)	18	50	0.30%
P-6	ADS HP STORM (PP)	18	135	0.26%
P-7	ADS HP STORM (PP)	18	155	0.26%
P-8	ADS HP STORM (PP)	18	140	0.29%
P-9	ADS HP STORM (PP)	18	73	0.41%
P-10	ERCP	12"x18"	150	0.00%
P-11	ADS HP STORM (PP)	15	90	0.44%
P-12	ADS HP STORM (PP)	15	81	0.37%
P-13	ADS HP STORM (PP)	15	35	0.43%
P-14	ADS HP STORM (PP)	15	53	0.00%
P-15	ADS HP STORM (PP)	15	26	0.00%
P-16	ADS HP STORM (PP)	15	62	0.00%
P-17	ADS HP STORM (PP)	15	20	0.50%
P-18	ADS HP STORM (PP)	8	113	0.88%
P-19	ADS HP STORM (PP)	8	32	1.09%

* NOTE: ALL PROPOSED ADS HP STORM (PP) SHALL BE DUAL WALL

		DATE
8	–	
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4	–	
3	REVISED LOADING CONFIG.	04/14/2022
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1	REVISIONS PER CCPP-SLC	11-11-2021
△	**REVISIONS**	**DATE**

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DATE ISSUED	4/28/2022

MBV ENGINEERING, INC.
MOIA BOWLES VILLAMIZAR & ASSOCIATES
CONSULTING ENGINEERING CA #3728
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FT. PIERCE, FL - PH (772) 242-5101
1180 E. ATKINS STREET
VERO BEACH, FL 32960
PH: (772) 794-2815
FAX: (772) 794-2816

PAVING, GRADING AND DRAINAGE PLAN

JETSON FORT PIERCE SITE IMPROVEMENTS

CITY OF FORT PIERCE FLORIDA

AARON J. BOWLES LICENSE No. 55313 STATE OF FLORIDA PROFESSIONAL ENGINEER

AARON J. BOWLES FL. P.E. #55313 4/28/22

SHEET C8

19-0273

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

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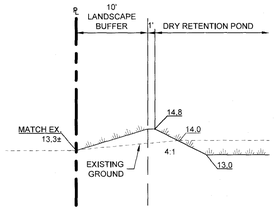

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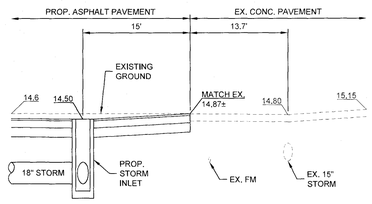

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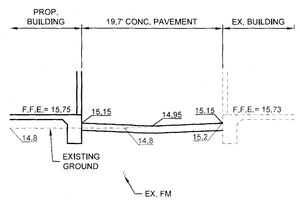

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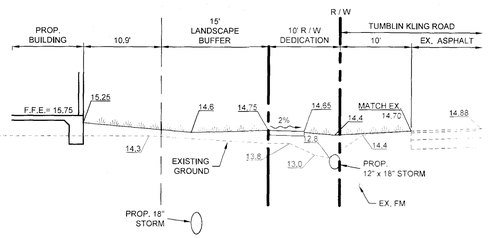

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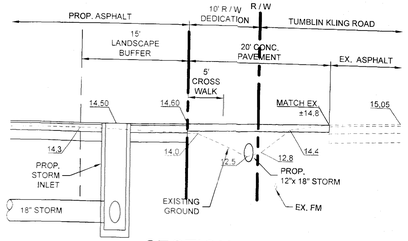

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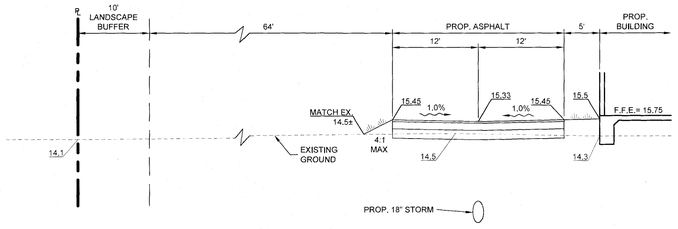

SECTION F-F
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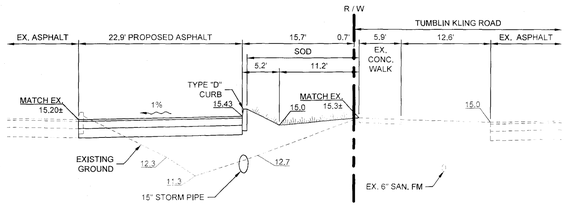

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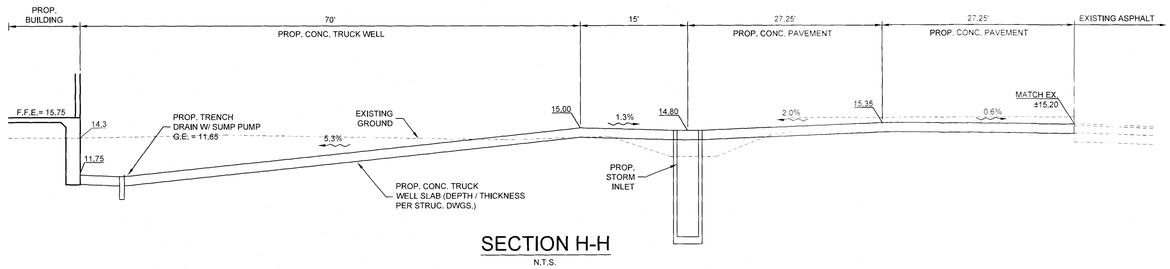

SECTION H-H
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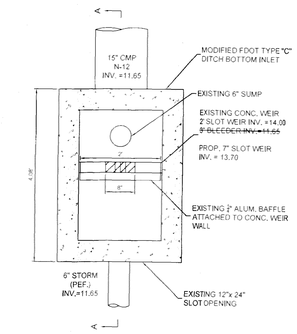
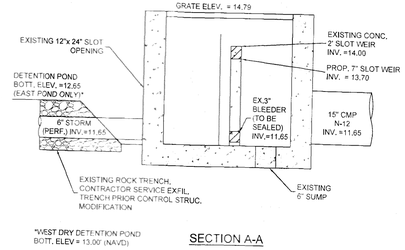
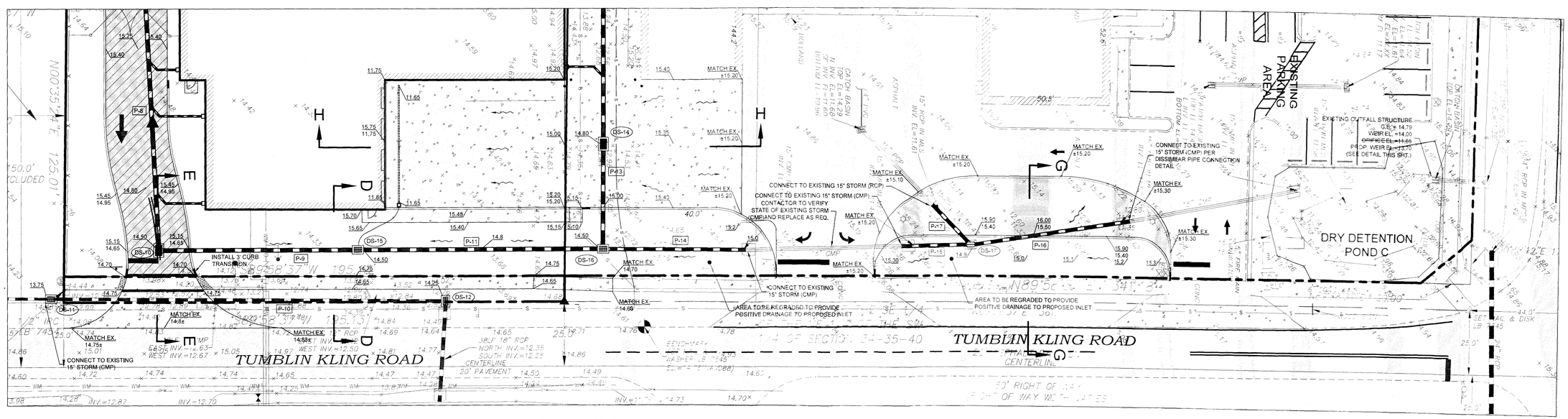




(CS-1) MOD. TYPE "C" CONTROL STRUCTURE
N.T.S.



DETAIL "A"
SCALE: 1" = 20'

GRAPHIC SCALE
0 20 40
(IN FEET)
1 inch = 20 ft.

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MOIA BOWLES VILLAMIZAR & ASSOCIATES CONSULTING ENGINEERING CA #3728
MELBOURNE, FL - PH (321) 253-5155
VERO BEACH, FL 32960 FX (772) 778-3837

CROSS SECTIONS

JETSON FORT PIERCE SITE IMPROVEMENTS

CITY OF FORT PIERCE FLORIDA

AARON J. BOWLES LICENSE No. 55313 STATE OF FLORIDA PROFESSIONAL ENGINEER

AARON J. BOWLES FL. P.E. #55313 4/28/22

SHEET
C9

19-0273

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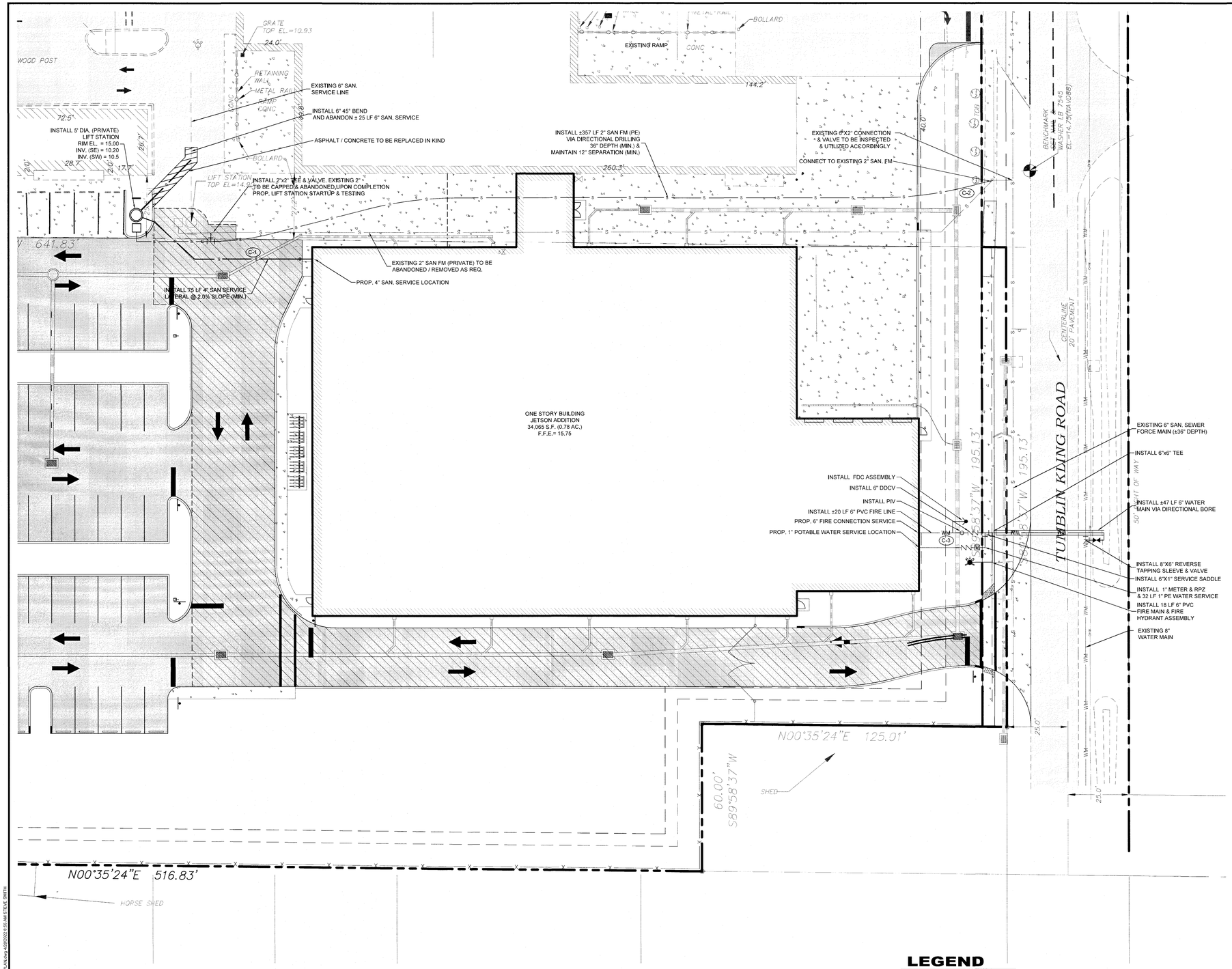


UTILITY PLAN

SCALE: 1" =20'

GRAPHIC SCALE
0 20 40
(IN FEET)
1 inch = 20 ft.

LEGEND

- EXISTING ASPHALT
- PROPOSED (REGULAR DUTY) ASPHALT
- PROPOSED (HEAVY DUTY) ASPHALT
- EXISTING CONCRETE
- PROPOSED CONCRETE
- EXISTING BUILDINGS
- C-1 CONFLICT LOCATION

FDEP SEPARATION CRITERIA:

(1) HORIZONTAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORM WATER FORCE MAINS, RECLAIMED WATER PIPELINES, AND ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS.

(A) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED STORM SEWER, STORM WATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610,F.A.C.

(B) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER.

(C) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST SIX FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY OR PREASSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610.F.A.C. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY TYPE SANITARY SEWERS SHALL BE REDUCED TO THREE FEET WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER.

(D) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST TEN FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND ALL PARTS OF ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM" AS DEFINED IN SECTION 381.0065(2),F.S. AND RULE 64E-6.002, F.A.C.

(2) VERTICAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORM WATER FORCE MAINS, AND RECLAIMED WATER PIPELINES.

(A) NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY OR VACUUM-TYPE SANITARY SEWER OR STORM SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES, AND PREFERABLY 12 INCHES, ABOVE OR AT LEAST 12 INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE, HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.

(B) NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORM WATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST 12 INCHES ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.

(C) AT THE UTILITY CROSSINGS DESCRIBED IN PARAGRAPHS (A) AND (B) ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. ALTERNATIVELY, AT SUCH CROSSINGS, THE PIPES SHALL BE ARRANGED SO THAT ALL THE WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, STORM SEWERS, STORM WATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C., AND AT LEAST SIX FEET FROM ALL JOINTS IN GRAVITY OR SURE-TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

(3) SEPARATION BETWEEN WATER MAINS AND SANITARY OR STORM SEWER MANHOLES

(A) NO WATER MAIN SHALL PASS THROUGH, OR COME INTO CONTACT WITH, ANY PART OF A SANITARY SEWER MANHOLE.

(B) EFFECTIVE AUGUST 28, 2003, WATER MAINS SHALL NOT BE CONSTRUCTED OR ALTERED TO PASS THROUGH, OR COME INTO CONTACT WITH, ANY PART OF A STORM SEWER MANHOLE OR INLET STRUCTURE.

(4) SEPARATION BETWEEN FIRE HYDRANT DRAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORM WATER FORCE MAINS, RECLAIMED WATER PIPELINES, AND ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS.

NEW OR RELOCATED FIRE HYDRANTS WITH UNDERGROUND DRAINS SHALL BE LOCATED SO THAT THE DRAINS ARE AT LEAST THREE FEET FROM ANY EXISTING OR PROPOSED STORM SEWER, STORM WATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C; AT LEAST THREE FEET, AND PREFERABLY TEN FEET, FROM ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER; AT LEAST SIX FEET, AND PREFERABLY TEN FEET, FROM ANY EXISTING OR PROPOSED GRAVITY-OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.; AND AT LEAST TEN FEET FROM ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM" AS DEFINED IN SECTION 381.0065(2), F.S., AND RULE 64E-6.002, F.A.C.

CONFLICT TABLE

CONFLICT NUMBER		1		2		3	
GROUND ELEVATION		14.9'		15.0'		14.8'	
COVER (UPPER)		1.9'		1.8'		2.3'	
Upper Pipe	PIPE SIZE	4"	3.3'	18"	4.7'	6"	5.4'
	MATERIAL	SS(PVC)		ST (ADS)		WTR(DIP)	
	INV. ELEV	12.60'		11.50'		12.00'	
	WALL THICKNESS	0.24"		2.00"		0.34"	
	BOTT. OF PIPE	12.6'	1.0'	11.3'	1.0'	12.0'	2.6'
	TOP OF PIPE	11.6'		10.3'		9.4'	
Lower Pipe	OBV. ELEV.	11.5'		10.3'		9.2'	
	PIPE SIZE	12"		2"		18"	
	MATERIAL	ST (ADS)		FM(HDPE)		ST (ADS)	
	INV. ELEV	10.50'		10.10'		7.70'	
	WALL THICKNESS	1.25"		0.22"		2.00"	

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

O:\DRAWING\2021\19-0273 Jetson Ft. Pierce\4 - Drawings\19-0273 C10 UTILITY PLAN.dwg 4/28/2022 8:50 AM STEVE SMITH

NO.	REVISIONS	DATE
8	--	--
7	--	--
6	--	--
5	--	--
4	--	--
3	REVISED LOADING CONFIG.	04/14/2022
2	REVISIONS PER COPP-PW	12/01/2021
1	REVISIONS PER COPP/SLC	11-11-2021

JOB NO. 19-0273
DESIGNED RTM
DRAWN GR
DATE JULY 2021
CHECKED AJB
DATE ISSUED 4/29/2022

MBV ENGINEERING, INC.
MOIA BOWLES VILLAMIZAR & ASSOCIATES
CONSULTING ENGINEERING CA #3728
1855 J 25TH STREET
VERO BEACH, FL 32960
PH: (772) 514-2033
FX: (772) 514-2037
MELBOURNE, FL - PH: (321) 253-4310
FT. PIERCE, FL - PH: (772) 464-3555

UTILITY PLAN & DETAILS

JETSON FORT PIERCE
SITE IMPROVEMENTS

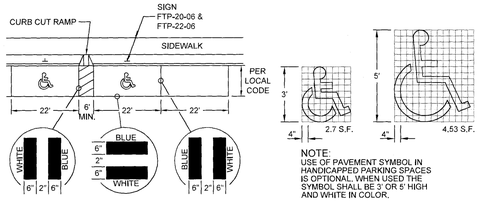
CITY OF FORT PIERCE, FLORIDA

AARON J. BOWLES
LICENSE
No. 55313
STATE OF FLORIDA
PROFESSIONAL ENGINEER

AARON J. BOWLES
FL. P.E. #55313 4/28/22

SHEET
C10

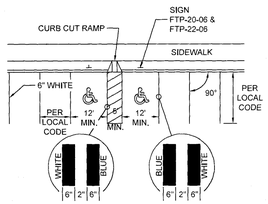
19-0273



PARALLEL SPACE PAVEMENT MARKING

HANDICAPPED PAVEMENT SYMBOL

NOTE:
USE OF PAVEMENT SYMBOL IN HANDICAPPED PARKING SPACES IS OPTIONAL. WHEN USED THE SYMBOL SHALL BE 3' OR 5' HIGH AND WHITE IN COLOR.



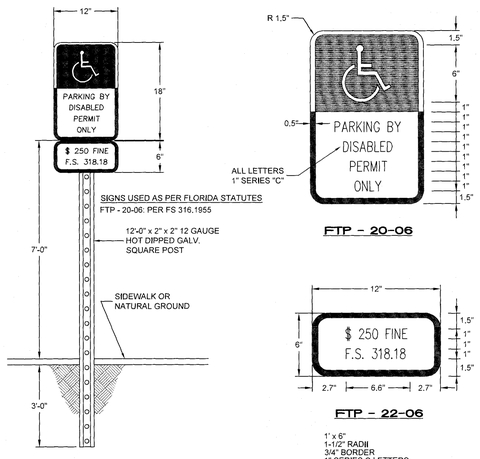
STANDARD SPACE PAVEMENT MARKING

GENERAL NOTES

1. CRITERIA FOR PAVEMENT MARKING ONLY, NOT CURB CUT RAMP LOCATIONS, FOR RAMP CRITERIA REFER TO FDOT STANDARD DESIGN INDEX #304, LATEST EDITION.
2. BLUE PAVEMENT MARKINGS SHALL BE TINTED TO MATCH SHADE 15180 OF FEDERAL STANDARD 595a.
3. CURB AND WHEELSTOP LOCATIONS SHALL BE AS PER DEPICTED ON THE PLANS.
4. FOR ANGLED PARKING APPLICATIONS, REFER TO FDOT STANDARD DESIGN INDEX #17346, LATEST EDITION.
5. PARKING STALL WIDTHS SHALL BE DIMENSIONED FROM CENTERLINE TO CENTERLINE OF THE WHITE STRIPES.

HANDICAPPED RAMP AND PAVEMENT MARKING DETAIL

N.T.S.



FTP - 20-06

FTP - 22-06

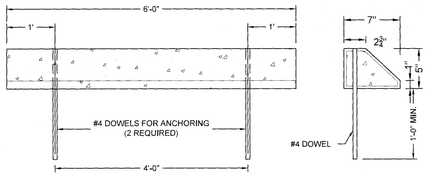
1' x 6"
1-1/2" RADII
3/4" BORDER
1" SERIES C LETTERS
WHITE BACKGROUND
BLACK LEGEND & BORDER

GENERAL NOTES

1. TOP PORTION OF FTP-20-06 SHALL HAVE A REFLECTIVE BLUE BACKGROUND WITH WHITE REFLECTIVE SYMBOL AND BORDER.
2. BOTTOM PORTION OF FTP-20-06 SHALL HAVE A REFLECTIVE WHITE BACKGROUND WITH BLACK OPAQUE LEGEND AND BORDER.
3. THE SIGN SHALL BE PLACED A MINIMUM OF 3' FROM THE WHEEL STOP OR THE BACK OF CURB (WHERE APPLICABLE).

HANDICAPPED SIGN DETAIL

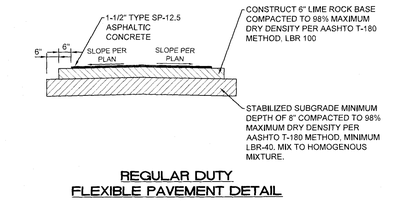
N.T.S.



FRONT ELEVATION SECTION

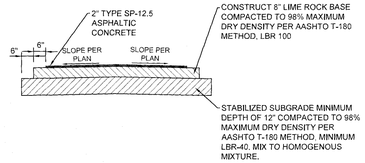
PRE-CAST CONCRETE WHEEL STOP DETAIL

N.T.S.



REGULAR DUTY FLEXIBLE PAVEMENT DETAIL

N.T.S.



HEAVY DUTY FLEXIBLE PAVEMENT DETAIL

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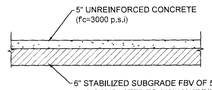
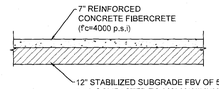


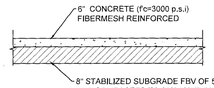
REGULAR DUTY CONCRETE DETAIL (ALTERNATIVE)

N.T.S.



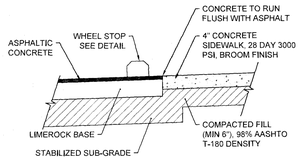
HEAVY DUTY CONCRETE DETAIL (ALTERNATIVE)

N.T.S.



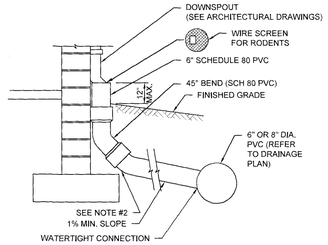
ST. LUCIE COUNTY R/W CONCRETE DETAIL

N.T.S.



CONCRETE SIDEWALK ADJACENT TO ASPHALT PARKING DETAIL

N.T.S.

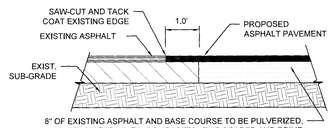


NOTES:

1. PIPE MUST BE SCHEDULE 80 PVC.
2. THE DOWNSPOUT COLLECTOR DRAIN SHALL BE INSTALLED BEFORE THE DOWNSPOUTS ARE INSTALLED ON THE BUILDING. SITEWORK CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK TO AND INCLUDING THE RODENT SCREEN. BUILDING CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONNECTION AT THE POINT OF THE RODENT SCREEN.

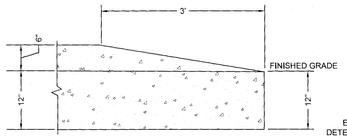
DOWNSPOUT COLLECTOR DETAIL

N.T.S.



PAVEMENT SAW-CUT AND BUTT JOINT

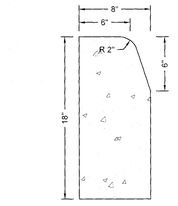
N.T.S.



ELEVATION VIEW

CURB TRANSITION DETAIL

N.T.S.

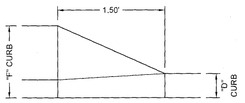


FDOT TYPE 'D' CURB DETAIL

N.T.S.

FDOT TYPE 'F' CURB DETAIL

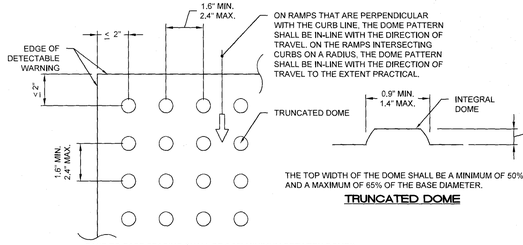
N.T.S.



PLAN VIEW

"F" TO "D" CURB TRANSITION DETAIL

N.T.S.



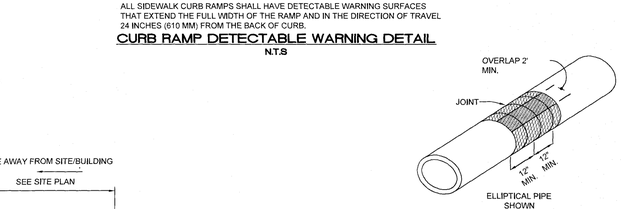
PLAN VIEW

TRUNCATED DOME

ALL SIDEWALK CURB RAMPS SHALL HAVE DETECTABLE WARNING SURFACES THAT EXTEND THE FULL WIDTH OF THE RAMP AND IN THE DIRECTION OF TRAVEL 24 INCHES (610 MM) FROM THE BACK OF CURB.

CURB RAMP DETECTABLE WARNING DETAIL

N.T.S



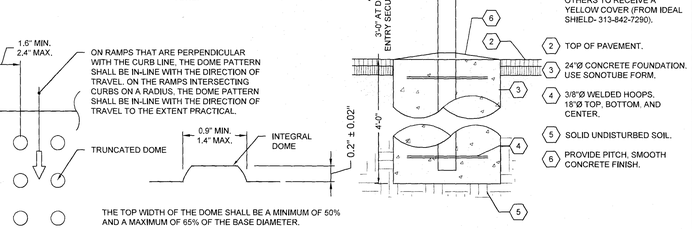
BOTTOM OF TRENCH TO BE CLASS 'C' BEDDING
- HAND SHAPED TO PROVIDE FIRM BEDDING OF THE UNDISTURBED EXISTING SOIL FOR THE PIPE. IN THE JUDGEMENT OF THE ENGINEER, IF THE SOILS ENCOUNTERED ARE UNSUITABLE TO ACT AS A FOUNDATION FOR THE PIPE, THEN THE CONTRACTOR SHALL EXCAVATE AND BACKFILL WITH CLASS 'B' BEDDING MATERIAL, WHICH SHALL CONSIST OF EITHER:
- TYPE 1 BACKFILL: WELL GRADED CRUSHED STONE OR CRUSHED GRAVEL (ASTM C33-71A, GRADATION 67) - ¾" TO NO. 4 SIEVE.
- TYPE 3 BACKFILL: SELECT GRANULAR SAND MATERIAL, FREE OF ORGANICS WITH LESS THAN 3% FINES PASSING THE NO. 200 SIEVE.

NOTES:

1. WHERE SOIL CONDITIONS CANNOT BE MAINTAINED AS SHOWN ABOVE, PROVIDE APPROVED METHOD OF CONSTRUCTION.
2. SHEETING WILL BE REQUIRED AS DETERMINED IN THE FIELD.
3. NEW SURFACING MATERIALS SHALL BE CONSISTENT WITH EXISTING AND SHALL HAVE LAPPED AND FEATHERED JOINTS. (1-1/2" MIN. THK.)
4. COMPACTION PERCENTAGES SHOWN REFER TO A.A.S.H.T.O. T-180.
5. ALL ROADWAY RESTORATION SHALL COMPLY WITH LOCAL PUBLIC WORKS / F.D.O.T. STANDARDS.
6. TRENCH WIDTH 'W' = PIPE O.D. PLUS 2'-0".

(PAVED AREAS) TRENCH DETAILS

N.T.S.



BOTTOM OF TRENCH TO BE CLASS 'C' BEDDING
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NOTES:

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6. TRENCH WIDTH 'W' = PIPE O.D. PLUS 2'-0".

(PAVED AREAS) TRENCH DETAILS

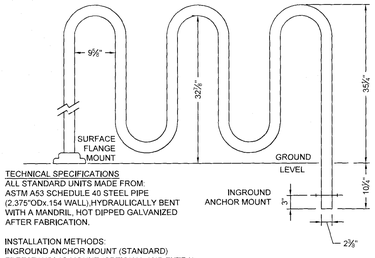
N.T.S.

KEYED NOTES:

1. HSS 6"Ø x .28" THICK PIPE, CONCRETE FILLED, PROVIDE 1/4" WELDED CLOSURE PLATE AT BOTTOM, ALL STEEL TO BE RUST FREE AND PRIME COATED, BOLLARDS ON WALK TO RECEIVE GRAY POLYETHYLENE COVER, ALL OTHERS TO RECEIVE A YELLOW COVER (FROM IDEAL SHIELD- 313-842-7290).
2. TOP OF PAVEMENT.
3. 24"Ø CONCRETE FOUNDATION. USE SONOTUBE FORM.
4. 3/8"Ø WELDED HOOPS, 18"Ø TOP, BOTTOM, AND CENTER.
5. SOLID UNDISTURBED SOIL.
6. PROVIDE PITCH. SMOOTH CONCRETE FINISH.

TYPICAL PIPE BOLLARD DETAIL

N.T.S



TECHNICAL SPECIFICATIONS
ALL STANDARD UNITS MADE FROM:
ASTM A53 SCHEDULE 40 STEEL PIPE (2.375"ODx.154 WALL),HYDRAULICALLY BENT WITH A MANDREL, HOT DIPPED GALVANIZED AFTER FABRICATION.

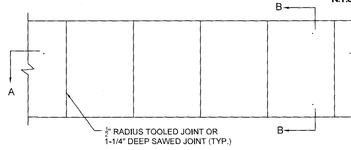
INSTALLATION METHODS:
INGROUND ANCHOR MOUNT (STANDARD)
FREESTANDING MOUNT (OPTIONAL AND EXTRA)
SURFACE FLANGE MOUNT (OPTIONAL AND EXTRA)

MODEL NUMBER	# OF BICYCLES	RACK LENGTH
RB 05	5	38.375"

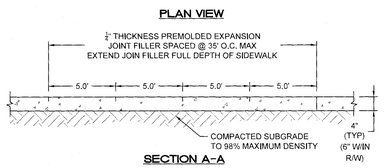
RACK SHALL BE
AAA RIBBON RACK Co.
DIVISION OF
BRANDIR INTERNATIONAL, INC.
521 FIFTH AVENUE, 17TH FLOOR
NEW YORK, NY 10175 USA
212-505-6500 FAX 212-505-6813

RIBBON TYPE BICYCLE RACK DETAIL

N.T.S

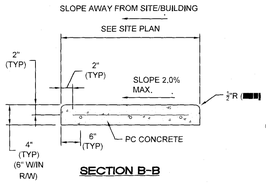


PLAN VIEW



SECTION A-A

NOTE:
WHERE REQUIRED REINFORCEMENT WILL BE No. 3 BARS 24" O.C., EACH WAY MAX. SPACING, OR 6 x 6 - W1.4 X W1.4 WWF

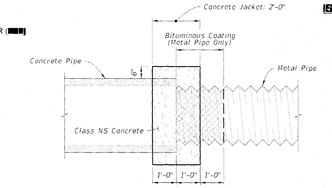


SECTION B-B

NOTE:
SLOPE SIDEWALK AS INDICATED AWAY FROM SITE/BUILDING

(ON-SITE / OFF-SITE) CONCRETE SIDEWALK DETAIL

N.T.S.

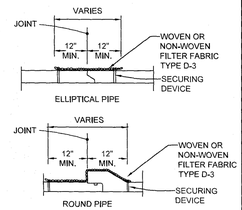


CONCRETE AND METAL PIPE SHOWN
(Others Similar)

DISSIMLAR PIPE COUPLING DETAIL

FDOT INDEX 430-001
SCALE: NTS

ISOMETRIC VIEW



PIPE SECTIONS

COST OF FILTER FABRIC JACKET TO BE INCLUDED IN COST OF PIPE CULVERTS. FOR ALL PIPE TYPES - CONCRETE PIPE SHOWN

FILTER FABRIC JACKET DETAIL

PER FDOT INDEX NO. 280
N.T.S.

NO.	DATE	REVISIONS
8	-	-
7	-	-
6	-	-
5	-	-
4	04/14/2022	REVISED LOADING CONFIG.
3	12/01/2021	REVISIONS PER COF-PW
2	11-1-2021	REVISIONS PER COF/SLC
1		

JOB NO.	19-0273		
DESIGNED	RTM		
DRAWN	GR		
DATE	JULY 2021	CHECKED	AJB
DATE ISSUED	4/28/2022		

MBV ENGINEERING, INC.
MOIA BOWLES VILLAMIZAR & ASSOCIATES
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FT. PIERCE, FL - PH (772) 766-5055

GENERAL DETAILS

JETSON FORT PIERCE
SITE IMPROVEMENTS

CITY OF FORT PIERCE FLORIDA

AARON J. BOWLES
LICENSE
No. 55313
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
AARON J. BOWLES
FL. P.E. #55313 4/28/22

SHEET
C11

19-0273

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FORT PIERCE UTILITIES AUTHORITY
WATER DISTRIBUTION NOTES

1. ALL CONSTRUCTION MATERIAL, INSTALLATION AND TESTING SHALL CONFORM TO THE STANDARD SPECIFICATIONS OF THE FORT PIERCE UTILITIES AUTHORITY.
2. WATER MAINS WHERE SPECIFIED AS POLYVINYL CHLORIDE (PVC) SHALL CONFORM TO AWWA C-900 OR C-905, PRESSURE CLASS 150, DR (18). WATER MAINS WHERE SPECIFIED AS POLYETHYLENE (PE) SHALL CONFORM TO AWWA C-901 OR C-906, STANDARD CODE DESIGNATION PE3408, PIPE CLASS 200, DIMENSION RATIO (DR) 17 FOR DIRECT BURY, (DR) 11 FOR DIRECTIONAL BORING, AND (DR) 9 FOR 2 INCH AND SMALLER PIPELINES.
3. WATER MAIN, WHERE SPECIFIED AS DUCTILE IRON PIPE , SHALL CONFORM TO ANSI/AWWA C151/A21.51 AND SHALL BE PRESSURE CLASS 250 (MINIMUM).
4. POLYVINYL CHLORIDE WATER MAIN SHALL BE BLUE IN COLOR OR WHITE IN COLOR WITH BLUE STRIPES. THE USE OF IDENTIFICATION TAPE ATTACHED TO THE TOP OF THE PIPE MAY BE USED IN LIEU OF MARKING ON THE PIPE. ALSO DIP PIPE SHALL REQUIRE THE USE OF IDENTIFICATION TAPE AND THHN WIRE.
5. FITTINGS SHALL BE DUCTILE IRON CONFORMING TO ANSI/AWWA C-110/A21.10, CLASS 250 MIN., CEMENT LINED AND FACTORY COATED
6. GATE VALVES SHALL BE MUELLER RESILIENT SEAT, KENNDY KEN-SEAL, AMERICAN OR APPROVED EQUAL. VALVES SHALL CONFORM TO AWWA C-509.
7. WATER LINES SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH FPUA DESIGN AND CONSTRUCTION STANDARDS. THE CONTRACTOR SHALL SUBMIT CERTIFIED DENSITY TESTS AS REQUIRED BY FPUA ENGINEERING AND THE CITY, COUNTY, FDOT, IN CASES WHERE PAVED AREAS FALL WITHIN THE JURISDICTION OF LOCAL OR STATE AGENCIES, THE COMPACTION REQUIREMENTS SHALL NOT BE LESS THAN THE MINIMUM REQUIRED BY THE APPROPRIATE RESPONSIBLE AGENCY.
8. NO FIELD CHANGES OR DEVIATIONS FROM THE DESIGN SHALL BE MADE WITHOUT PRIOR APPROVAL OF THE FPUA ENGINEER AND CITY/COUNTY/FDOT ENGINEER.
9. THE CONTRACTOR SHALL NOTIFY FPUA ENGINEERING AND CITY/COUNTY/FDOT ENGINEERING 48 HOURS PRIOR TO COMMENCING CONSTRUCTION.
10. A PRE-CONSTRUCTION CONFERENCE BETWEEN THE ENGINEER, THE CONTRACTOR, FPUA, AND CITY/ COUNTY/FDOT ENGINEER SHALL BE MANDATORY PRIOR TO COMMENCEMENT OF CONSTRUCTION.
11. TRAFFIC CONTROL, BARRICADES, ETC., SHALL BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF OF TRANSPORTATION STANDARDS AND APPROVED BY THE CITY ENGINEER.
12. MINIMUM COVER SHALL BE 36 INCHES EXCEPT AS APPROVED BY THE UTILITIES ENGINEER AND, CITY/ COUNTY/FDOT ENGINEER. PIPES WITH COVER LESS THAN 30 INCHES SHALL BE CONSTRUCTED OF DUCTILE IRON OR IN PVC CASING.
13. DISTURBED AREAS SHALL BE RESTORED IN CONFORMANCE WITH THE APPLICABLE GOVERNING AGENCY REQUIREMENTS.
14. EXISTING UTILITIES AND DRAINAGE SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION AND PROTECTED BY THE CONTRACTOR.
15. WATER MAINS SHALL BE TESTED AND DISINFECTED IN ACCORDANCE WITH THE APPLICABLE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION AND AWWA C-651 FOR DISINFECTION.

WATER DISTRIBUTION	G-1
02-08 CONCRETE SLAB — DESIGN: JAL, JAC	NOTES
DESIGNED: — COMPUTER FILE #	WATER/WASTEWATER ENGINEERING
DRAWN BY: — SPEC. NOTES 2006ED.DWG	FT. PIERCE UTILITIES AUTHORITY
CHECKED: — N.T.S.	
APPROVED: JAC — DATE: 2015	SHEET 1 OF 3

FORT PIERCE UTILITIES AUTHORITY
WATER DISTRIBUTION NOTES CONTINUED

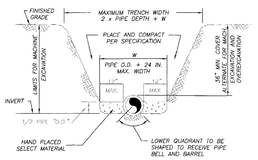
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING EXISTING UTILITIES AND DRAINAGE.
17. THE CONTRACTOR SHALL FURNISH RECORD DRAWING INFORMATION TO THE ENGINEER INCLUDING LOCATIONS OF VALVES, FITTINGS, SERVICE CONNECTIONS, BLOWOFFS, AIR RELEASE VALVES, AND ANY OTHER PERTINENT INFORMATION NECESSARY TO LOCATE ITEMS CONSTRUCTED UNDER THIS PROJECT, AS REQUIRED BY THE UTILITIES ENGINEER.
18. THE CONTRACTOR SHALL TAP EXISTING LINES UNDER THE SUPERVISION OF THE FORT PIERCE UTILITIES AUTHORITY ONLY AFTER TESTING AND DISINFECTION HAS BEEN COMPLETED AND APPROVED ON THE TAPPING VALVE AND SLEEVE.
19. .15 "WATR_MAN_%M-%F_MPROT_%Y_THE_UTC_%Y_CONTINUOUS 10 GAUGE THHN MULTI STRANDED WIRE (BLUE IN COLOR) AND IDENTIFICATION TAPE WITH "WATER" MARKED ON TAPE, PERMANENTLY ATTACHED TO THE TOP OF THE WATER MAIN IN ACCORDANCE WITH THE FORT PIERCE UTILITIES AUTHORITY SPECIFICATIONS.
20. SERVICE TAPS SHALL BE PLACED APPROXIMATELY TEN FEET AWAY FROM GATE VALVES, AS SHOWN, FOR TESTING. FOLLOWING TESTING AND DISINFECTION OF WATER LINES, CONTRACTOR SHALL PLACE A BRASS PLUG IN CORPORATION STOPS AND CURB STOPS SHALL BE REMOVED FROM TESTING LOCATIONS.
21. MECHANICAL RESTRAINTS TO BE USED ON ALL FITTINGS AND PLACED IN ACCORDANCE WITH MANUFACTURER'S OR ENGINEER'S RECOMMENDATIONS (WHICHEVER IS MORE STRINGENT) AND FPUA REQUIREMENTS.
22. ALL MAINS SHALL BE TESTED AT A MINIMUM OF 150 PSI. TESTING METHODS SHALL CONFORM TO AWWA C-600, – 2 HR MINIMUM TEST

$$L = \frac{SD\sqrt{P}}{148{,}000}$$

L= LEAKAGE IN GPH
S= LENGTH OF PIPE IN FEET
D= PIPE DIAMETER IN INCHES
P= TESTING PRESSURE IN PSI

23. PRIOR TO ANY TESTING, ALL MAINS 6" IN DIA. AND LARGER SHALL HAVE A SWAB PASSED THRU THE ENTIRE LENGTH OF THE LINE. NOTE: SWAB SHOULD BE PLACED IN 1st. JOINT OF NEW LINE. END OF MAIN SHOULD BE "TURNED UP" AT 45% AND EXTENDED SO THAT SWABBING AND A FULL BORE FLUSH CAN BE ACCOMPLISHED. BLOW-OFF ASSY CAN THEN BE INSTALLED. WHERE LINES BRANCH, SWABS WILL BE PLACED IN BRANCH LINES AND SEQUENTIALLY SWABBED AND FLUSHED.
24. A MINIMUM SIX FEET AND PREFERABLY TEN FEET HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN THE WATER MAIN AND ANY WASTEWATER LINES. 6 INCHES MINIMUM VERTICAL SEPARATION IF WATER MAIN IS OVER WASTEWATER AND 12 INCHES IF WATER MAIN IS UNDER SHALL BE MAINTAINED BETWEEN THE WATER MAIN AND ANY WASTWATER LINES. THE DISTANCE SHALL BE MEASURED FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE OR STRUCTURE. WHERE THIS MINIMUM SEPARATION CANNOT BE MAINTAINED, THE CROSSING SHALL BE ARRANGED SO THAT THE WASTEWATER PIPE JOINTS AND THE WATER MAIN PIPE JOINTS ARE EQUIDISTANT FROM THE POINT OF CROSSING, AND THE WATER MAIN SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE (DIP) AT THE CROSSING. SUFFICIENT LENGTHS OF DIP MUST BE USED TO PROVIDE A MINIMUM SEPARATION OF 10 FEET BETWEEN ANY TWO JOINTS. ALL JOINTS ON THE WATER MAIN WITHIN 20 FEET OF THE CROSSING MUST BE MECHANICALLY RESTRAINED. A MINIMUM VERTICAL CLEARANCE OF 6 INCHES MUST BE MAINTAINED AT ALL CROSSINGS.
25. WHERE A WATER MAIN IS TO BE INSTALLED BELOW A STORM DRAIN PIPE, A MINIMUM OF 6 INCHES OF VERTICAL CLEARANCE BETWEEN PIPES SHALL BE CONSTRUCTED OF DIP AT THE CROSSING, AND SHALL BE MECHANICALLY RESTRAINED WITHIN 20 FEET OF THE CROSSING.
26. CONTRACTOR SHALL COMPLY WITH FLORIDA TRENCH SAFETY ACT REQUIREMENTS.

WATER DISTRIBUTION	G-1
02-08 CONCRETE SLAB — DESIGN: JAL, JAC	NOTES
DESIGNED: — COMPUTER FILE #	WATER/WASTEWATER ENGINEERING
DRAWN BY: — SPEC. NOTES 2006ED.DWG	FT. PIERCE UTILITIES AUTHORITY
CHECKED: — N.T.S.	
APPROVED: JAC — DATE: 2015	SHEET 2 OF 3

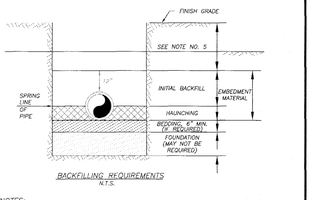


TYPICAL TRENCH DETAIL
N.T.S.

NOTES:

1) THE CONTRACTOR SHALL COMPLY WITH REQUIREMENTS OF THE FLORIDA TRENCH SAFETY ACT.
2) INITIAL BACKFILL SHALL BE HAND PLACED TO 12" ABOVE THE PIPE. BACKFILL SHALL BE MECHANICALLY TAMPED TO A MINIMUM OF 100% OF MAX. DENSITY AS DETERMINED BY AASHTO METHOD T-99.

TYPICAL TRENCH DETAIL	M-1
02-09 CONCRETE SLAB — DESIGN: JAL, JAC	WATER/WASTEWATER ENGINEERING
DESIGNED: — COMPUTER FILE #	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: — SPEC. NOTES 2006ED.DWG	
CHECKED: — N.T.S.	
APPROVED: JAC — DATE: 2015	SHEET 1 OF 1

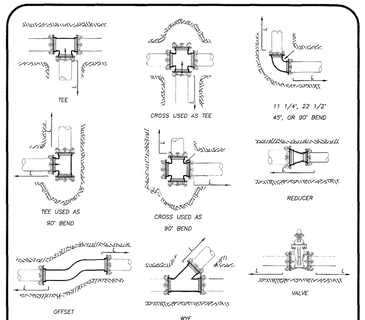


BACKFILLING REQUIREMENTS
N.T.S.

NOTES:

1) IN CERTAIN SOIL CONDITIONS A FOUNDATION MAY BE REQUIRED.
2) BEDDING IS REQUIRED PRIMARILY TO BRING THE TRENCH BOTTOM UP TO GRADE. BEDDING MATERIALS SHALL PROVIDE A UNIFORM AND ADEQUATE LONGITUDINAL SUPPORT UNDER THE PIPE.
3) HAUNCHING MATERIAL SHALL BE HAND PLACED TO THE SPRINGLINE OF THE PIPE. MATERIAL SHALL BE CONSOLIDATED UNDER THE PIPE AND HAND TAMPED TO PROVIDE ADEQUATE SIDE SUPPORT.
4) INITIAL BACKFILL MATERIAL SHALL BE HAND PLACED TO 12" ABOVE THE TOP OF PIPE. THE SOIL SHALL BE COMPACTED TO 100% MAX. DENSITY(AASHTO T-99)
5) BACKFILL SHALL BE COMPACTED TO 100% OF MAX. DENSITY AS PER AASHTO T-99, TO A POINT 30" BELOW PROPOSED PROFILE GRADE OR EXISTING GRADE. THE FINAL 30" OF BACKFILL SHALL BE COMPACTED TO 98% OF MAX. DENSITY AS PER AASHTO T-180.
6) DENSITY TEST SHALL BE PERFORMED AT AREAS DETERMINED BY THE UTILITIES ENGINEER OR PERMIT AGENCY HAVING JURISDICTION, AT THE CONTRACTORS EXPENSE.
7) CONTRACTOR TO COMPLY WITH ALL FEDERAL, STATE AND LOCAL TRENCH SAFETY REGULATIONS.

BACKFILLING REQUIREMENTS	M-2
02-09 CONCRETE SLAB — DESIGN: JAL, JAC	HYDRANT/METER ELEVATIONS
DESIGNED: — COMPUTER FILE #	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: — SPEC. NOTES 2006ED.DWG	
CHECKED: — N.T.S.	
APPROVED: JAC — DATE: 2015	SHEET 1 OF 1



MECHANICAL JOINT ANCHORING REQUIREMENTS
N.T.S.

MECHANICAL JOINT ANCHORING REQUIREMENTS	M-3
02-09 CONCRETE SLAB — DESIGN: JAL, JAC	REQUIREMENTS/DETAILS/NOTES
DESIGNED: — COMPUTER FILE #	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: — SPEC. NOTES 2006ED.DWG	
CHECKED: — N.T.S.	
APPROVED: JAC — DATE: 2015	SHEET 1 OF 1

MECHANICAL JOINT RESTRAINT NOTES

NOTES:

1) THE ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING THE REQUIRED LENGTH TO BE RESTRAINED BASED UPON THE PROJECT AREA SOIL TYPE, PROPOSED TRENCH CONDITIONS AND DEPTH, PRESSURE OF 150 PSI, AND A SAFETY FACTOR OF TWO (2). A DRAWING OF EVERY TYPICAL FITTING ASSEMBLY WITHIN THE PROJECT SHALL BE SUBMITTED WHICH REFLECTS THE RESTRAINT DETAIL PROPOSED FOR USE, INCLUDING LENGTH OF PIPE RESTRAINT.
2) REQUIRED RESTRAINED LENGTH CALCULATIONS SHALL ALSO CONSIDER THE CONDITIONS OF OTHER BENDS OR FITTINGS THAT WILL BE LOCATED WITHIN THE CALCULATED RESTRAINED LENGTH (L) OF THE BEND OR FITTING IN QUESTION.
3) EVERY JOINT OR FITTING MUST BE RESTRAINED ON BOTH SIDES OF THE BEND AND FOR TEES ALONG THE BEND ALSO.

MECHANICAL JOINT RESTRAINT NOTES	M-4
02-09 CONCRETE SLAB — DESIGN: JAL, JAC	WATER/WASTEWATER ENGINEERING
DESIGNED: — COMPUTER FILE #	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: — SPEC. NOTES 2006ED.DWG	
CHECKED: — N.T.S.	
APPROVED: JAC — DATE: 2015	SHEET 1 OF 1

DRYCON DIRECT BURY LUG BY KING INNOVATIONS

NOTES:

1) TRACE WIRE IS REQUIRED ON ALL PIPE AS NOTED BY UTILITIES ENGINEER AND SHOWN IN STANDARD DETAILS.
2) INCLUDE ALL COST OF MATERIAL & LABOR IN PRICE OF PIPE.
3) CONTRACTOR IS RESPONSIBLE FOR CONTINUITY OF ALL TRACE WIRE.

TRACE WIRE
(N.T.S.)

TRACE WIRE DETAIL	M-11
02-09 CONCRETE SLAB — DESIGN: JAL, JAC	WATER/WASTEWATER ENGINEERING
DESIGNED: — COMPUTER FILE #	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: — SPEC. NOTES 2006ED.DWG	
CHECKED: — N.T.S.	
APPROVED: JAC — DATE: 2015	SHEET 1 OF 1

NOTES:

1. WHERE DIRECTIONAL DRILLING LENGTHS EXCEED 750 LINEAR FEET AND/OR HDPE PIPE DIAMETER EXCEED 12 INCHES, A SECOND LENGTH OF TRACE WIRE SHALL BE INSTALLED.
2. TRACE WIRE SHALL CONFORM TO THE FOLLOWING SPECIFICATION: MANUFACTURER – COPPERHEAD INDUSTRIES, LLC PART NUMBER – 12458-EHS-500 / 12458-EHS-1000 / 12458-EHS-2500 PART NUMBER DESCRIPTION – 12 (AWG), 45 (JACKET MIL), B (JACKET COLOR: B=BLUE, G=GREEN, ETC.) – EHS (EXTRA HIGH STRENGTH-HARD DRAWN / 1150# BREAKING LOAD STRENGTH) – 500 (WIRE LENGTH IN FEET)

DIRECTIONAL BORE
WIRE ATTACHMENT

DIRECTIONAL BORE WIRE ATTACHMENT	M-16
02-09 CONCRETE SLAB — DESIGN: JAL, JAC	FT. PIERCE UTILITIES AUTHORITY
DESIGNED: — COMPUTER FILE #	
DRAWN BY: — SPEC. NOTES 2006ED.DWG	
CHECKED: — N.T.S.	
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NOTES:

1. BLUE 10 GAUGE THHN WIRE SHALL BE ATTACHED TO THE SERVICE LINE.
2. WHERE SERVICES UNDER PAVEMENT ARE REQUIRED, THE POLYETHYLENE TUBING SHALL BE INSTALLED WITHIN SCHEDULE 40 PVC CASING PIPE.
3. 1" & 3/4" METER SIZES SHALL REQUIRE A LOCKABLE METER VALVE. (CURB STOP)
4. MINIMUM COVER IN UNPAVED AREAS SHALL BE 30", IN PAVED AREAS OR PLANNED ROADWAYS OR SWALES MIN. COVER SHALL BE 36".
5. FOR 2" COMMERCIAL SERVICE INSTALLATIONS, FPUA WILL INSTALL ABOVE GROUND METER PER DETAIL W-8.

TYPICAL SINGLE WATER SERVICE CONNECTION
(N.T.S.)

TYPICAL SINGLE WATER SERVICE CONNECTION	W-2
02-09 DESIGN: JAL, JAC — REVISION: BY: APPD:	WATER/WASTEWATER ENGINEERING
DESIGNED: — COMPUTER FILE #	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: JAL — WATER DETAILS 2006ED.DWG	
CHECKED: N.T.S. —	
APPROVED: JAC — DATE: 2015	SHEET 1 OF 1

NOTES:

1. HYDRANT SHALL BE INSTALLED PLUMB & TRUE.
2. HYDRANT SHALL BE PAINTED CARNIVAL RED FROM FACTORY.
3. 5 INCH TO REST IN UNDISTURBED SOIL.
4. 4. THE ONLY HYDRANTS ACCEPTABLE ARE: MUELLER SUPER CENTURION 250 OR AMERICAN DARLING B-84-B-S.
5. 5. HYDRANT ASSEMBLY MUST BE RESTRAINED TO TEE.
6. 6. ALL FITTINGS SHALL BE MECHANICAL JOINT.
7. ENTIRE ASSEMBLY TO BE MECHANICALLY RESTRAINED.
8. BLUE LOCATOR SHALL BE PLACED IN CENTER OF TRAVEL LANE CLOSEST TO HYDRANT.
9. ALL HYDRANT VALVE BOX COVERS SHALL BE PAINTED CARNIVAL RED.
10. LOCATE WIRE SHALL TERMINATE AT HYDRANT ISOLATION VALVE.
11. HYDRANTS SHALL BE NO MORE THAN FIFTEEN FEET (15 FT.) FROM THE CURB OF ROADWAYS OR FROM THE EDGE OF PAVEMENT. CLEARANCES OF SEVEN AND ONE HALF FEET (7FT-6IN.) IN FRONT OF AND TO THE SIDES OF THE FIRE HYDRANTS, WITH FOUR FOOT (4 FT.) CLEARANCE TO THE REAR OF HYDRANTS SHALL BE MAINTAINED.

TYPICAL FIRE HYDRANT ASSEMBLY
(N.T.S.)

TYPICAL FIRE HYDRANT ASSEMBLY	W-5
02-09 DESIGN: JAL, JAC — REVISION: BY: APPD:	WATER/WASTEWATER ENGINEERING
DESIGNED: — COMPUTER FILE #	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: JAL — WATER DETAILS 2006ED.DWG	
CHECKED: N.T.S. —	
APPROVED: JAC — DATE: 2015	SHEET 1 OF 1

NOTES:

1. LANDSCAPING IS REQUIRED PER CITY OF FORT PIERCE OR ST. LUCIE COUNTY ORDINANCE.
2. ASSEMBLY TO BE 29" FROM FINISH GRADE TO CENTERLINE OF THE FLANGED 90° BEND.
3. PRIOR TO POURING THE CONCRETE PAD, VERIFY THAT THE STANDPIPES ARE PLUMB, TRUE AND INSTALLED AT THE SAME ELEVATIONSIN THE PRESENCE OF AN FPUA INSPECTOR.
4. ALL CONCRETE SHALL HAVE FIBERGLASS MESH REINFORCEMENT WITH #4 REBAR 3" FROM THE OUTER PERIMETER.

SIZE	SERVICE	LENGTH
4	DOUBLE DETECTOR	53 INCHES
6	DOUBLE DETECTOR	62 INCHES
8	DOUBLE DETECTOR	69 INCHES
10	DOUBLE DETECTOR	76 INCHES

BACKFLOW PREVENTER ASSEMBLY-4"-10" FIRE SERVICE
(N.T.S.)

BACKFLOW PREVENTER ASSEMBLY 4"-10" FIRE SERVICE	W-10
02-09 CONCRETE PAD — DESIGN: JAL, JAC — REVISION: BY: APPD:	WATER/WASTEWATER ENGINEERING
DESIGNED: — COMPUTER FILE #	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: JAL — WATER DETAILS 2006ED.DWG	
CHECKED: N.T.S. —	
APPROVED: JAC — DATE: 2015	SHEET 1 OF 1

TERMINAL CLEANOUT DETAIL (COMMERCIAL)
(N.T.S.)

TERMINAL CLEANOUT DETAIL WASTEWATER	S-4B
02-09 CONCRETE SLAB — DESIGN: JAL, JAC — REVISION: BY: APPD:	WATER/WASTEWATER ENGINEERING
DESIGNED: — COMPUTER FILE #	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: JAL — SEWER DETAIL 2006ED.DWG	
CHECKED: N.T.S. —	
APPROVED: JAC — DATE: 2015	SHEET 3 OF 3

NO.	REVISIONS	DATE
8	–	–
7	–	–
6	–	–
5	–	–
4	–	–
3	REVISED LOADING CONFIG.	04/14/2022
2	REVISIONS PER COFP-PW	12/01/2021
1	REVISIONS PER COFP/SLC	11-1-2021

JOB NO.	19-0273
DESIGNED	RTM
DRAWN	GR
DATE	JULY 2021
CHECKED	AJB
DATE ISSUED	4/28/2022

MBV ENGINEERING, INC.
MOIA BOWLES VILLAMIZAR & ASSOCIATES
CONSULTING ENGINEERING CA #3728
MELBOURNE, FL • (321) 253-1701
VERO BEACH, FL 32960
PORT ST. LUCIE, FL
FX: (772) 778-1417

UTILITY DETAILS

JETSON FORT PIERCE
SITE IMPROVEMENTS

FLORIDA
CITY OF FORT PIERCE

AARON J. BOWLES
LICENSE
No. 55313
STATE OF FLORIDA
PROFESSIONAL ENGINEER

AARON J. BOWLES
FL. P.E. #55313 4/28/22

SHEET
C12

19-0273

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SPECIFICATIONS FOR SUBMERSIBLE GRINDER LIFT STATION

PART 1 GENERAL
1.01
TWO GRINDER PUMPS ARE TO BE INSTALLED AT THE SITE. REFER TO THE PUMP STATION DATA TABLE IN THIS SHEET FOR PUMP DETAILS.

1.02 QUALITY ASSURANCE
1. UNIT INTEGRITY: THE PUMPS, MOTORS, CONTROL PANEL, ACCESS COVER, AND GUIDE RAIL ASSEMBLIES SHALL BE SUPPLIED BY THE PUMP SUPPLIER TO INSURE UNIT INTEGRITY.
2. PUMP TESTS: THE PUMP SUPPLIER SHALL PERFORM THE FOLLOWING TESTS ON EACH PUMP BEFORE SHIPMENT FROM THE SUPPLIER
   A. MEGGER THE PUMP FOR INSULATION BREAKS OR MOISTURE.
   B. INTERNALLY PRESSURIZE THE MOTOR HOUSING TO 5 PSI WITH A HALOGEN GAS. CHECK ALL O-RING MATING SURFACES FOR GAS LEAKS WITH A HALOGEN GAS DETECTOR.
   C. VERIFY VOLTAGE SETTING MATCHES ORDER REQUIREMENTS.
   D. PUMP SHALL BE RUN DRY TO VERIFY ROTATION, PHASE BALANCE, AND DYNAMIC BALANCE.
   E. A WRITTEN CERTIFIED TEST REPORT GIVING THE ABOVE INFORMATION SHALL BE SUPPLIED WITH EACH PUMP AT THE TIME OF SHIPMENT.
   F. EACH PUMP CABLE END SHALL BE FITTED WITH A RUBBER SHRINK FIT BOOT TO PROTECT CABLE ENDS.
3. GUARANTEED PARTS STOCKING PROGRAM: THE PUMP SUPPLIER SHALL HAVE A GUARANTEED PARTS STOCKING PROGRAM IN THE STATE OF FLORIDA. THESE PARTS SHALL INCLUDE AT LEAST ONE SET OF SPARE PARTS AS LISTED BELOW FOR EACH PUMP SUPPLIED ON THIS CONTRACT. IF THE PUMP SUPPLIER DOES NOT MEET THIS REQUIREMENT FOR A GUARANTEED STOCK PROGRAM, THE CONTRACTOR SHALL FURNISH THE FOLLOWING SPARE PARTS FOR EACH PUMP.

UPPER LIP SEAL	INSPECTION PLUG WASHERS
LOWER MECHANICAL SEAL	IMPELLER BOLT IMPELLER
CUTTERS	KEY UPPER BEARING LOWER
MOTOR CABLE	BEARING COMPLETE SET OF O-RINGS
CABLE ENTRY WASHER/GROMMET	
COMPLETE SET OF O-RINGS	

4. THE PUMP SUPPLIER SHALL HAVE A FACTORY AUTHORIZED SERVICE FACILITY WITHIN A 200 MILE RADIUS OF INDIAN RIVER COUNTY CAPABLE OF IN SHOP MOTOR REWINDS. NO PART OF A PUMP BEING REPAIRED SHALL LEAVE THE STATE OF FLORIDA FOR REPAIR.

1.03 SUBMITTALS
1. COPIES OF ALL MATERIALS REQUIRED TO ESTABLISH COMPLIANCE WITH THE SPECIFICATIONS SET FORTH HERE SHALL BE SUBMITTED TO THE ENGINEER. SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:
   A. EQUIPMENT DIMENSION DRAWINGS, ANCHOR BOLT LAYOUTS, AND WEIGHTS
   B. TECHNICAL DATA ON THE PUMP AND MOTOR MATERIALS OF CONSTRUCTION
   C. MOTOR ELECTRICAL DATA
   D. HYDRAULIC PERFORMANCE CURVES
   E. COMPLETE BILLS OF MATERIALS
   F. CONTROL PANEL LAYOUT DRAWINGS, SCHEMATICS, AND BILLS OF MATERIALS
2. ANY EQUIPMENT THAT DOES NOT CONFORM WITH ALL OF THE DETAILED REQUIREMENTS OF THE SPECIFICATIONS, SHALL BE ACCOMPANIED BY COMPLETE DESCRIPTIONS OF DEVIATIONS AND ALL NONCONFORMING ASPECTS. FAILURE TO DESCRIBE ANY AND ALL DEVIATIONS FROM THE SPECIFICATIONS WILL BE CAUSE FOR REJECTION.
3. OPERATING AND MAINTENANCE MANUALS SHALL BE FURNISHED IN QUANTITIES AS REQUIRED BY THE COUNTY/COUNTY. MANUALS SHALL INCLUDE ALL NECESSARY INFORMATION TO INSTRUCT OPERATING AND MAINTENANCE PERSONNEL UNFAMILIAR WITH SUCH EQUIPMENT.

1.04 WARRANTY
WARRANTY: THE PUMP MANUFACTURER SHALL WARRANT THE PUMPS BEING SUPPLIED AGAINST DEFECTS IN WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE (1) YEAR UNDER NORMAL USE, OPERATION AND SERVICE. THE MANUFACTURER SHALL REPLACE ANY PARTS, WHICH FAIL UNDER NORMAL USE AS A RESULT OF FACTORY MANUFACTURING DEFECTS FOR A PERIOD OF ONE YEAR, THE WARRANTY SHALL BE IN PUBLISHED FORM AND APPLY TO ALL SIMILAR UNITS.

PART 2. PRODUCTS
2.01 MATERIALS
ALL METAL COMPONENTS IN THE LIFT STATION, WITH THE EXCEPTION OF THE PUMPS, MOTORS, GUIDE RAIL BASES, AND STATION PIPING, SHALL BE TYPE 304 STAINLESS STEEL.

GRINDER PUMP STATION EQUIPMENT
2.02 PUMPS
1. THE CONTRACTOR SHALL FURNISH AND INSTALL ELECTRIC MOTOR DRIVEN TOTALLY SUBMERSIBLE GRINDER PUMPS AS MANUFACTURED BY ABS PUMPS INC., ORANGE COUNTY, FL OR PRE-APPROVED EQUAL.
2. PUMP DESIGN:
   A. PUMPS SHALL BE CAPABLE OF HANDLING RAW, UNSCREENED SEWAGE. THE GRINDER UNIT SHALL BE CAPABLE OF SHREDDING AND REDUCING TO A FINE SLURRY ALL MATERIAL NORMALLY FOUND IN DOMESTIC AND COMMERCIAL SEWAGE SUCH AS SANITARY NAPKINS, DISPOSABLE DIAPERS, CLOTH DIAPERS, WASH RAGS, WOOD, PLASTIC, ETC. THE SLURRY SHALL BE CAPABLE OF FREELY PASSING THROUGH A 2" PIPING SYSTEM INCLUDING CHECK AND GATE VALVES.
   B. THE DESIGN SHALL BE SUCH THAT THE PUMPS WILL BE AUTOMATICALLY CONNECTED TO THE DISCHARGE PIPING WHEN LOWERED ONTO THE DISCHARGE CONNECTION SUPPLIED BY ONE 2" DIA. SCH 40 304 STAINLESS STEEL GUIDE RAIL. PUMPS SHALL BE EASILY REMOVABLE FOR INSPECTION OR SERVICE, REQUIRING NO BOLTS, NUTS OR OTHER FASTENINGS TO BE REMOVED FOR THIS PURPOSE AND NO NEED FOR PERSONNEL TO ENTER THE WET WELL. EACH PUMP SHALL BE FITTED WITH A 300 STAINLESS STEEL LIFTING BAIL WITH AN OPENING OF AT LEAST EIGHT INCHES IN DIAMETER AND A SERIES 300 STAINLESS STEEL LIFTING CABLE OF ADEQUATE STRENGTH AND LENGTH TO PERMIT RAISING THE PUMP FOR INSPECTION AND REMOVAL.
3. GRINDER PUMP CONSTRUCTION:
   A. THE STATOR CASING, OIL CASING AND IMPELLER SHALL BE OF GRAY IRON CONSTRUCTION. WITH ALL PARTS COMING INTO CONTACT WITH SEWAGE PROTECTED BY PVC EPOXY PRIMER WITH A COMPATIBLE EPOXY FINISH COAT. ALL EXTERNAL BOLTS AND NUTS SHALL BE OF 300 STAINLESS STEEL.
   B. THE PUMP SHALL BE OF THE CENTRIFUGAL TYPE WITH THE ROTATING CUTTER MOUNTED ON THE PUMP SHAFT DIRECTLY AGAINST THE IMPELLER, THE STATIONARY CUTTER SHALL BE MOUNTED IN AN ADJUSTABLE BOTTOM PLATE. THE BOTTOM PLATE SHALL BE CAST WITH GROOVES SPIRALING OUTWARD FROM THE CENTER OPENING OF THE PLATE TO THE OUTER DIAMETER. THE IMPELLER SHALL BE A MULTIPLE VANE CENTRIFUGAL TYPE, THE CUTTER MATERIAL SHALL BE SIMILAR TO AN AISI 440C STAINLESS STEEL WITH THE ADDITION OF COBALT, VANADIUM, AND MOLYBDENUM FOR SUPERIOR ABRASION RESISTANCE AND A HARDNESS OF 58-62 ROCKWELL C.
   C. THE COMMON PUMP AND MOTOR SHAFT SHALL BE 420 STAINLESS STEEL SUPPORTED BY A HEAVY DUTY LOWER SINGLE ROW BALL BEARING IN 2 AND 2.5 HORSEPOWER MODELS ONLY WHILE 3 HORSEPOWER AND ABOVE SHALL HAVE A MAXI-DUTY DOUBLE ROW LOWER BALL BEARING. THE UPPER BEARING SHALL BE A SEALED SINGLE ROW BALL BEARING. ALL MODELS. THE CUTTING ELEMENTS AND IMPELLER SHALL BE DESIGNED TO KEEP THE OVERHUNG LOAD DISTANCE TO A MINIMUM. ALL FASTENERS SHALL BE 304 STAINLESS STEEL.
   D. EACH PUMP SHALL BE EQUIPPED WITH TWO SEALS. THE LOWER SEAL (PUMP SIDE) SHALL BE OF THE MECHANICAL TYPE WITH SILICON CARBIDE FACES. THE UPPER SEAL SHALL BE A LIP TYPE SEAL MOUNTED AT A SLIGHT ANGLE TO THE SHAFT. THE SEALS SHALL BE SEPARATED BY AN OIL CHAMBER.
   E. THE PUMP SHALL BE FITTED WITH AN OIL CHAMBER IN WHICH THE SHAFT MECHANICAL SEALS OPERATE, THE CHAMBER SHALL BE FITTED WITH A DRAIN AND INSPECTION PLUG EASILY ACCESSIBLE FROM THE OUTSIDE OF THE PUMP. THE CHAMBER SHALL ALSO BE FITTED WITH A PROBE EXTENDING FROM THE BOTTOM OF THE MOTOR HOUSING INTO THE OIL CHAMBER. THE PROBE SHALL DETECT THE PRESENCE OF WATER IN THE OIL WHEN CONNECTED TO A RESISTIVE THRESHOLD RELAY INSTALLED IN THE CONTROL PANEL.THE RELAY SHALL TURN ON A SEAL FAILURE WARNING LIGHT ON THE INNER DOOR OF THE CONTROL PANEL WHEN WATER IS DETECTED IN THE OIL CHAMBER AS WELL AS IN THE MOTOR HOUSING. THIS SYSTEM WILL PROVIDE ADVANCE WARNING TO AN OPERATOR OF POTENTIAL SEAL FAILURE BEFORE MAJOR DAMAGE OCCURS TO THE PUMP MOTOR.
   F. THE PUMP DISCHARGE SHALL BE FITTED WITH A GUIDE BRACKET THAT SHALL BE A SEPARATE CASTING FITTED WITH A RENEWABLE BUNA-N SEAT AND BOLTED TO THE PUMP DISCHARGE, MACHINED GUIDE RAIL MATING FACES INTEGRAL TO THE PUMP DISCHARGE WILL NOT BE CONSIDERED EQUAL TO THE BOLT ON BRACKET WITH RENEWABLE SEAT SPECIFIED. SEALING OF THE GUIDE BRACKET TO THE DISCHARGE BASE SHALL NOT REQUIRE MOVEMENT OF THE PUMP, HYDRAULIC PRESSURE, OR MACHINED FACES. THE CAST IRON DISCHARGE CONNECTION SHALL BE BOLTED TO THE FLOOR OF THE WET WELL AND DESIGNED SO AS TO RECEIVE THE PUMP CONNECTING FLANGE WITHOUT THE NEED OF ANY BOLTS OR FASTENERS.

4. PUMP MOTOR:
   A. PUMP MOTORS RATED FOR 2 AND 2.5 HORSEPOWER SHALL BE NEMA DESIGN B HOUSED IN AN OIL FILLED CASING. PUMP MOTORS 3 HORSEPOWER AND LARGER SHALL BE NEMA DESIGN B HOUSED IN AN AIR FILLED CASING. ALL MOTORS SHALL HAVE CLASS F INSULATED MOISTURE RESISTANT WINDINGS. THE TEMPERATURE AT ANY POINT IN THE WINDINGS SHALL NOT EXCEED 155 C AT ANY LOAD ON THE OPERATING CURVE OF THE PUMP. BIMETALLIC THERMAL SWITCHES SHALL BE IMBEDDED IN EACH PHASE OF THE WINDING TO SENSE HIGH TEMPERATURE. THE RATING OF THE SWITCH SHALL BE 120OC ± 5OC. THE CONTROL CURRENT SHALL BE CONNECTED THROUGH THE BIMETALLIC SWITCHES SO THE MOTOR IS SHUT DOWN SHOULD A HIGH TEMPERATURE CONDITION EXIST. THE SWITCHES SHALL BE SELF-RESETTING WHEN THE MOTOR COOLS.
   B. SINGLE PHASE MOTORS SHALL BE OF THE EXTERNAL CAPACITOR START CAPACITOR RUN TYPE FOR HIGH STARTING TORQUE. MOTORS THAT HAVE INTEGRAL START CAPACITORS INSIDE THE MOTOR HOUSING SHALL NOT BE ACCEPTABLE.
   C. OIL FILLED MOTORS OF 2 & 2.5 HORSEPOWER SHALL BE ENCLOSED IN A TYPE 316 STAINLESS STEEL OUTER HOUSING. AIR FILLED MOTORS 3 HORSEPOWER AND ABOVE SHALL HAVE CAST IRON HOUSINGS EQUIPPED WITH EXTERNAL COOLING FINS.
   D. THE PUMP/MOTOR SHAFT SHALL BE CONSTRUCTED OF 420 STAINLESS STEEL AND SHALL BE KEYED TO ACCEPT THE IMPELLER. THE IMPELLER SHALL BE SECURED TO THE SHAFT BY A STAINLESS STEEL LOCKING BOLT OR NUT. SHAFTS THAT HAVE TAPERED OR THREADED ENDS FOR SECURING THE IMPELLER WILL NOT BE ACCEPTABLE.
   E. SEALING OF THE POWER CABLE ENTRANCE INTO THE TERMINAL CHAMBER SHALL BE PROVIDED BY A BUNA-N GROMMET IN A COMPRESSION FITTING. EPOXY OR OTHER COMPOUNDS USED IN THE SEALING OF THE POWER CABLE ENTRY IS UNACCEPTABLE. THE TERMINAL CHAMBER SHALL BE ISOLATED FROM THE MOTOR CHAMBER BY A WATERTIGHT BARRIER.

5. CABLE:
PUMP MOTOR CABLE SHALL BE OF THE SO/SOW TYPE SUITABLE FOR SUBMERSIBLE PUMP APPLICATIONS WITH THE RATING PERMANENTLY EMBOSSED ON THE CABLE. CABLE LENGTH SHALL BE SUFFICIENT TO REACH THE CONTROL PANEL WITHOUT THE NEED FOR JUNCTION BOXES OR SPLICES. CABLE SIZING SHALL CONFORM TO NEC REQUIREMENTS FOR THE FULL LOAD CURRENT OF THE PUMP MOTOR. THE POWER CABLE FROM EACH PUMP SHALL BE PULLED TO THE CONTROL PANEL THROUGH A MINIMUM OF A 2" DIAMETER CONDUIT. ALL FLOAT SWITCHES SHALL BE PULLED THROUGH A SEPARATE 2" DIAMETER CONDUIT.

2.03 ACCESSORIES
1. ACCESS HATCHES:
   THE WET WELL AND VALVE VAULT SHALL BE EQUIPPED WITH ACCESS HATCHES OF THE SINGLE OR DOUBLE LEAF CONSTRUCTION IN THE MINIMUM SIZES SHOWN ON THE DRAWINGS. THE PUMP MANUFACTURER SHALL COORDINATE THE WET WELL HATCH SIZE WITH THE PUMPS BEING FURNISHED WHILE THE VALVE VAULT COVER SHALL BE SINGLE LEAF WITH A MINIMUM OF A 36" X 36" CLEAR OPENING. THE HATCHES SHALL BE FABRICATED OF ALUMINUM DIAMOND PLATE REINFORCED FOR A 300# LOAD RATING. THE COVER(S) SHALL BE EQUIPPED WITH STAINLESS STEEL HINGES, STAINLESS STEEL AUTOMATIC HOLD OPEN ARMS, AND PADLOCK HASPS. HATCHES SHALL BE AS MANUFACTURED BY HALLIDAY PRODUCTS OR ELECTRIC SPECIALTY.
2. FLOAT / CABLE HANGER
   A 300 SERIES STAINLESS STEEL CABLE HOLDER WITH A MINIMUM OF SIX HOOKS OF SUFFICIENT LENGTH AND STRENGTH TO PROVIDE SUPPORT FOR EACH SEPARATE CABLE SHALL BE FURNISHED. THE FLOAT/CABLE HANGER SHALL BE EASILY ACCESSED FROM THE HATCH OPENING.
3. FLOAT SWITCHES
   FLOAT SWITCHES SHALL BE U.L. LISTED NON FLOATING DISPLACEMENT TYPE WITH SEALED MERCURY SWITCHES IN A CHEMICAL RESISTANT POLYPROPYLENE CASING. SUFFICIENT CABLE SHALL BE PROVIDED TO REACH THE CONTROL PANEL WITHOUT THE NEED FOR SPLICES OR JUNCTION BOXES IN ADDITION TO PROVIDING AMPLE CABLE FOR HEIGHT ADJUSTMENTS. FLOAT SWITCHES SHALL BE ROTO-FLOATS AS MANUFACTURED BY ANCHOR SCIENTIFIC.
4. FIBERGLASS BASIN:
   THE FIBERGLASS BASIN SHALL BE MANUFACTURED FROM COMMERCIAL GRADE POLYESTER RESIN. THE COMPLETE WET WELL SHALL HAVE A DYNAMIC LOADING OF 16,000FT-LBS AND SHALL NOT DEFLECT VERTICALLY DOWNWARD MORE THAN A 1/4" AT THE POINT OF LOAD APPLICATION WHEN LOADED TO 24,000LBS. THE FIBERGLASS VALVE VAULT SHALL BE 24"X36"X30" DEEP AND MEET THE REQUIREMENTS FOR INCIDENTAL TRAFFIC H-10 LOADING AS ESTABLISHED BY ASSHTO, THE COMPRESSION STRENGTH SHALL BE AT LEAST 11,000PSI. FLOAT SWITCHES SHALL BE UL LISTED TYPE "S-ROTOFLOAT" MANUFACTURED BY ANCHOR SCIENTIFIC, INC. WITH 30 FEET OF STO PVC CABLE.

2.04 CONTROL PANEL:
A PUMP STATION CONTROL PANEL SHALL BE PROVIDED FOR EACH PUMPING STATION. THE CONTROL PANEL SHALL RESPOND TO LIQUID LEVEL FLOAT SWITCHES TO AUTOMATICALLY START AND STOP THE PUMP TO COMPENSATE FOR VARIATIONS IN PUMP STATION INFLUENT FLOWS AS WELL AS PROVIDING VISUAL AND AUDIBLE ALARMS AT HIGH WET WELL LEVELS AND VISUAL ALARMS UPON DETECTION OF MOISTURE IN THE PUMP. PANEL SHALL BE AS MANUFACTURED BY ELECTRIC SPECIALTY OR STACON. THE PUMP CONTROL PANEL SHALL BE THE STANDARD SYSTEM OF THE MANUFACTURER AS MODIFIED FOR THIS APPLICATION. THE WET WELL LEVELS TO BE MAINTAINED IN OPERATION ARE AS SHOWN ON THE DRAWINGS.
1. OPERATION REQUIREMENTS:
   A. THE CONTROL PANEL SHALL INCLUDE A MAIN CIRCUIT BREAKER, A MOTOR CIRCUIT PROTECTOR, AND MAGNETIC STARTER, FOR EACH PUMP MOTOR, AND 15 AMPERE, 120 VOLT CIRCUIT BREAKERS AS REQUIRED FOR CONTROL CIRCUITS AND DUPLEX RECEPTACLE.
   B. ALL PUMP CONTROL OPERATIONS SHALL BE ACCOMPLISHED BY A FLOAT TYPE LIQUID LEVEL CONTROL SYSTEM OPERATING ON A 110 VOLT CIRCUIT. ALL CONTROL COMPONENTS SHALL BE MOUNTED IN ONE COMMON ENCLOSURE.
   C. CONTROL SWITCHES OF THE H-O-A TYPE SHALL PROVIDE MEANS TO OPERATE EACH PUMP MANUALLY OR AUTOMATICALLY, WHEN OPERATED IN THE AUTOMATIC MODE. THE CONTROL LOGIC SHALL PROVIDE MEANS TO MANUALLY SELECT OR AUTOMATICALLY ALTERNATE THE POSITION OF THE "LEAD" AND "LAG" PUMPS AFTER EACH PUMPING CYCLE.
   D. PROVISIONS FOR THE CONNECTION OF EACH PUMP'S THERMAL OVERLOADS INTO A SERIES CONFIGURATION WITH THE HOLDING COIL OF THE APPROPRIATE PUMP STARTER SHALL BE MADE. THIS CIRCUIT SHALL SHUT THE PUMP DOWN IN THE EVENT OF MOTOR OVER-TEMPERATURE. THE CIRCUIT SHALL BE AUTOMATICALLY RESETTING, APPROPRIATELY MARKED TERMINALS SHALL BE PROVIDED FOR THE CONNECTION OF THE PUMP THERMAL OVERLOAD LEADS.
2. CONSTRUCTION:
   A. THE ELECTRICAL CONTROL EQUIPMENT SHALL BE MOUNTED WITHIN A NEMA TYPE 3R DEAD FRONT ENCLOSURE, CONSTRUCTED OF NOT LESS THAN 14 GAUGE TYPE 304 STAINLESS STEEL.
   B. THE ENCLOSURE SHALL BE EQUIPPED WITH A RAIN DRIP SHIELD ON TOP AND A DEAD FRONT OUTER DOOR FITTED WITH A PIANO TYPE HINGE AND A LOCKING HASP.
   C. AN ALUMINUM INNER DOOR SHALL HAVE CUTOUTS TO EXPOSE THE OPERATING HANDLES OF ALL BREAKERS AND SHALL INCORPORATE THE COMPONENTS NECESSARY FOR AN OPERATOR TO CHECK THE STATUS OF A PUMP.
   D. CONTROL COMPONENTS SHALL BE MOUNTED ON A REMOVABLE BACK PLATE THAT IS SECURED TO THE ENCLOSURE WITH COLLAR STUDS.
   E. ALL CONTROL COMPONENTS SHALL BE MARKED WITH LEGENDS FOR EASY IDENTIFICATION.
   F. CONTROL WIRE SHALL BE MINIMUM 18 GA. AWG. U.L. #1015. ALL CONTROL WIRE SHALL BE ROUTED THROUGH PLASTIC WIREWAYS WITH SNAP ON COVERS AND BE NEATLY BUNDLED AND TIE WRAPPED TO FORM A NEAT ASSEMBLY. EACH WIRE SHALL BE NUMBERED BOTH ENDS WITH BRADY TYPE WIRE MARKERS.
   G. EACH CONDUIT ENTERING THE CONTROL PANEL FROM THE WET WELL SHALL BE FITTED WITH A SEAL OFF CONNECTION AS SHOWN ON THE DRAWINGS. EACH SEAL OFF SHALL BE AMPLY FILLED WITH A REUSABLE AND PLIABLE ELECTRICAL SEALING COMPOUND TO PREVENT THE INTRUSION OF SEWER GAS INTO THE CONTROL PANEL. CHICO OR EPOXY COMPOUNDS WILL NOT BE ALLOWED.
   H. LAMINATED WEATHERPROOF WIRING SCHEMATICS OF THE PANEL CIRCUITS ALONG WITH A COMPONENT IDENTIFICATION LEGEND SHALL BE FIXED TO THE INSIDE OF THE OUTER DOOR.
3. COMPONENTS:
   A. ALL MOTOR BRANCH CIRCUIT BREAKERS AND MOTOR STARTERS SHALL BE OF HIGHEST INDUSTRIAL QUALITY, AND SECURELY FASTENED TO THE REMOVABLE BACK PANELS WITH SCREWS AND WASHERS. BACK PANEL SHALL BE TAPPED TO ACCEPT ALL MOUNTING SCREWS.SELF-TAPPING SCREWS SHALL NOT BE USED TO MOUNT ANY COMPONENT.
   B. AN OPEN FRAME ,ACROSS-THE-LINE, NEMA RATED, MAGNETIC MOTOR STARTER, AS MANUFACTURED BY SQUARE D, SHALL BE FURNISHED FOR EACH PUMP MOTOR. ALL MOTOR STARTERS SHALL BE EQUIPPED TO PROVIDE OVERLOAD PROTECTION ON ALL PHASES. MOTOR STARTER CONTACTS SHALL BE EASILY REPLACEABLE WITHOUT REMOVING THE MAGNETIC COIL FROM ITS MOUNTED POSITION.
   C. A DUPLEX 15 AMP GFI UTILITY RECEPTACLE PROVIDING 120 VOLT 60 HERTZ, SINGLE PHASE POWER SHALL BE MOUNTED INSIDE OF THE ENCLOSURE ON THE INNER DOOR.
   D. A RECEPTACLE TO MATCH COUNTY STANDARDS SHALL BE PROVIDED FOR CONNECTION OF THE PANEL TO EMERGENCY POWER. A SEPARATE MAIN CIRCUIT BREAKER PROTECTING THE EMERGENCY POWER CIRCUIT SHALL BE PROVIDED AND SHALL BE MECHANICALLY INTERLOCKED WITH THE UTILITY POWER MAIN BREAKER TO PREVENT BOTH BREAKERS TO BE IN THE "ON" POSITION AT THE SAME TIME.
   E. FOR ALARM INDICATION, A TOP MOUNTED FLASHING LIGHT AND HORN SHALL BE PROVIDED, AN NEMA 4 SILENCONBUTTON SHALL BE PROVIDED ON THE OUTSIDE OF THE ENCLOSURE TO SILENCE THE ALARM HORN ONLY. IN AN ALARM CONDITION, THE LIGHT WILL CONTINUE TO FLASH INDEPENDENT OF THE HORN. THE ALARM CIRCUIT SHALL AUTOMATICALLY RESET.
   F. A SECONDARY LIGHTNING ARRESTOR SHALL BE PROVIDED.
   G. A PLUG-IN TYPE 0 - 30 SECOND ADJUSTABLE TIMER SHALL BE PROVIDED ON THE LAG PUMP TO PREVENT BOTH PUMPS FROM COMING ON SIMULTANEOUSLY AFTER A POWER FAILURE OR CONNECTION TO EMERGENCY POWER (OPTIONAL).
4. OPERATING CONTROLS AND INSTRUMENTS
   A. ALL OPERATING CONTROLS AND INSTRUMENTS SHALL BE SECURELY MOUNTED ON THE INNER DOOR. ALL CONTROLS AND INSTRUMENTS SHALL BE CLEARLY LABELED TO INDICATE FUNCTION.
   B. PUMP MODE SELECTOR SWITCHES SHALL BE HAND-OFF-AUTO TYPE TO PERMIT MANUAL OVERRIDE OF AUTOMATIC LEVEL CONTROL AND MANUAL ACTUATION OR SHUTDOWN OF EITHER PUMP MOTOR. OPERATION OF PUMPS IN MANUAL MODE SHALL NOT BYPASS ANY SAFETY SHUTDOWN. SWITCHES SHALL BE MANUFACTURED BY SQUARE D COMPANY, NEMA 4X, PROVIDING THREE SWITCH POSITIONS, EACH OF WHICH SHALL BE CLEARLY LABELED ACCORDING TO FUNCTION.
   C. PUMP RUN INDICATOR LIGHTS SHALL BE PROVIDED AND EQUIPPED TO OPERATE AT 120 VOLT INPUT. BULBS SHALL BE EASILY REPLACEABLE FROM THE FRONT OF THE INNER DOOR WITHOUT THE NEED TO REMOVE LAMP SOCKET BASE FROM ITS MOUNTED POSITION.
   D. A SIX DIGIT, NON-RESETABLE ELAPSED TIME METER SHALL BE CONNECTED TO EACH MOTOR STARTER TO INDICATE THE TOTAL RUNNING TIME OF EACH PUMP IN "HOURS" AND "TENTH OF HOURS".
   E. CONTROL TERMINAL BLOCKS SHALL BE OF THE SCREW CLAMP TYPE, RATED 600 VOLTS AND SHALL BE CLEARLY MARKED AS TO FUNCTION.
   F. PHASE MONITORS. 230 VOLT, 3 PHASE STATIONS SHALL BE EQUIPPED WITH AN EIGHT PIN BASE COMBINATION VOLTAGE AND PHASE MONITOR AS MANUFACTURED BY DIVERSIFIED ELECTRONICS. 480 VOLT 1 PHASE STATIONS SHALL BE EQUIPPED WITH A SURFACE MOUNT UNIT AS MANUFACTURED BY DIVERSIFIED ELECTRONICS.
   G. ONE "SEAL FAIL" INDICATING LIGHT PER PUMP OF THE "PUSH TO TEST" TYPE. SHALL BE INSTALLED ON THE INNER DOOR TO PROVIDE INDICATION OF THE PRESENCE OF WATER IN THE PUMP, A PLUG-IN THRESHOLD RELAY AS MANUFACTURED BY POTRELEC MODEL PNR110 SHALL BE PROVIDED FOR EACH PUMP TO MONITOR THE SEAL PROBE IN THE PUMP.

PART 3 EXECUTION
3.01 INSTALLATION
1. INSTALLATION SHALL BE BY OTHERS IN STRICT ACCORDANCE WITH THE CONTRACTOR'S INSTRUCTIONS AND RECOMMENDATIONS IN THE LOCATIONS SHOWN ON THE DRAWINGS. ANCHOR BOLTS SHALL BE SET BY OTHERS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
2. UPON COMPLETION OF EACH STATION, THE PUMP MANUFACTURER SHALL INSPECT THE INSTALLATION AND SUBMIT A CERTIFICATE STATING THAT THE INSTALLATION OF THE EQUIPMENT IS SATISFACTORY, AND THAT THE EQUIPMENT IS READY FOR OPERATION.

3.03 TESTING
1. AFTER ALL PUMPS HAVE BEEN COMPLETELY INSTALLED, THE CONTRACTOR ALONG WITH THE PUMP SUPPLIER SHALL CONDUCT IN THE PRESENCE OF THE OWNER AND THE ENGINEER SUCH TESTS AS ARE NECESSARY TO INSURE THAT THE PUMP THE FLOW OF THE WET WELL AND DESIGNED SO AS INSTALLATION CONFORMS TO THE SPECIFICATIONS. FIELD TESTS SHALL INCLUDE ALL PUMPS INCLUDED UNDER THIS SECTION. THE CONTRACTOR SHALL SUPPLY ALL ELECTRIC POWER, WATER OR WASTEWATER, LABOR, EQUIPMENT AND INCIDENTALS REQUIRED TO COMPLETE THE FIELD TESTS.
2. PRIOR TO THE FINAL TEST, THE CONTRACTOR SHALL FLUSH ALL INFLUENT LINES TO THE STATION AND THEN SHALL REMOVE ALL DEBRIS AND SEDIMENT THAT HAS ACCUMULATED IN THE STATION BOTTOM.
3. THE FINAL ACCEPTANCE TEST SHALL DEMONSTRATE THAT ALL ITEMS OF THESE SPECIFICATIONS HAVE BEEN MET BY THE EQUIPMENT AS INSTALLED AND SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING TESTS:
   A. THAT THE QUICK RELEASE LIFT OUT FEATURE FUNCTIONS PROPERLY AND ALLOWS THE PUMP TO BE RAISED AND LOWERED PROPERLY.
   B. THAT ALL UNITS HAVE BEEN PROPERLY INSTALLED AND ARE IN CORRECT ALIGNMENT.
   C. THAT THE UNITS OPERATE WITHOUT OVERHEATING OR OVERLOADING ANY PARTS AND WITHOUT OBJECTIONABLE VIBRATION.
   D. THAT THERE ARE NO MECHANICAL DEFECTS IN ANY OF THE PARTS.
   E. THAT THE PUMPS CAN DELIVER THE SPECIFIED PRESSURE AND QUANTITY OF RAW, UNSCREENED SEWAGE.
   F. THAT THE PUMP SENSORS AND CONTROLS PERFORM SATISFACTORILY AS TO CONTROL SEQUENCE, I.E.,CORRECT START AND STOP ELEVATIONS, AND PROPER ALARM LEVEL FUNCTIONS.
4. IF THE PUMP PERFORMANCE DOES NOT MEET THE SPECIFICATIONS, CORRECTIVE MEASURES SHALL BE TAKEN OR THE PUMPS SHALL BE REMOVED AND REPLACED WITH PUMPS WHICH SATISFY THE CONDITIONS SPECIFIED. A 24-HOUR OPERATING PERIOD OF THE PUMPS WILL BE REQUIRED BEFORE ACCEPTANCE. IF A PUMPING STATION CAN NOT BE PUT INTO REGULAR SERVICE BECAUSE OF THE LACK OF WASTEWATER OR DISCHARGE FORCE MAINS, THE STATION SHALL BE "EXERCISED" AT A MINIMUM OF TWO TIMES A MONTH BY THE CONTRACTOR.

GENERAL UTILITY NOTES
- ALL UTILITY CONSTRUCTION TO BE IN ACCORDANCE WITH "INDIAN RIVER COUNTY WATER AND WASTEWATER UTILITY STANDARDS, MARCH,2014."
- UTILITY CONSTRUCTION IS SUBJECT TO INDIAN RIVER COUNTY UTILITY PERMIT AND F.D.E.P. PERMIT CONDITIONS.
- SHOP DRAWINGS SHALL BE SUBMITTED FOR APPROVAL TO THE ENGINEER AND I.R.C. UTILITY DEPT. PRIOR TO CONSTRUCTION.
- THE FOLLOWING SPECIFICATIONS ARE AN ABBREVIATED VERSION OF THE "INDIAN RIVER COUNTY WATER AND WASTEWATER UTILITY STANDARDS, MARCH 2014." WHERE MATERIAL OR INSTALLATION SPECIFICATIONS ARE NOT INCLUDED BELOW, OR ARE NOT CLEARLY UNDERSTOOD, THEN THE AFOREMENTIONED PUBLICATION SHALL BE REFERENCED.
- THE CONTRACTOR SHALL NOTIFY BELLSOUTH, C.T.V., FLORIDA POWER AND LIGHT, INDIAN RIVER COUNTY UTILITIES, U.N.C.,L.E, AND ANY OTHER UTILITY PROVIDERS 48 HOURS PRIOR TO CONSTRUCTION AND SHALL HAVE ALL EXISTING UTILITIES LOCATED IN THE FIELD.
- ALL REQUIRED TESTING (PRESSURE TESTS, DISINFECTION/ BACTERIOLOGICAL,EXFILTRATION/ INFILTRATION, LAMPING, T.V. INSPECTION AND OTHER TESTS OR INSPECTIONS REQUIRED IN THE ADOPTED SPECIFICATIONS) SHALL BE PROVIDED AND PAID FOR BY THE CONTRACTOR. THE ENGINEER SHALL BE PRESENT FOR ALL TESTING/INSPECTIONS, AND GIVEN 24 HOUR PRIOR NOTICE. THE ENGINEER SHALL BE GIVEN COPIES OF ALL TEST/INSPECTION RESULTS PRIOR TO ANY REQUEST FOR PAYMENT.

SEWER AND FORCE MAIN NOTES:
GENERAL
- POLYVINYL CHLORIDE (P.V.C.) GRAVITY SEWER PIPE CAN BE USED TO A DEPTH OF SIXTEEN FEET.

GRAVITY SEWER PIPE AND FITTINGS
- GRAVITY SEWER LINES AND LATERALS SHALL BE EXTRA STRENGTH POLYVINYL CHLORIDE PIPE AND SHALL CONFORM TO THE LATEST ASTM DESIGNATION D 3034,SDR 35.
- FITTINGS INSTALLED IN POLYVINYL CHLORIDE PIPE SHALL CONFORM TO THE SAME SPECIFICATIONS AS THE PIPE IN WHICH THEY ARE INSTALLED.
- POLYVINYL CHLORIDE PIPE SHALL BE A MAXIMUM OF 20 FEET IN LENGTH AND FURNISHED BY JM. OR INDIAN RIVER COUNTY UTILITIES DEPARTMENT APPROVED EQUAL.
- MATERIAL SHALL MEET OR EXCEED THE REQUIREMENTS OF ASTM DESIGNATION 1784, TYPE 1, GRADE 1 (12454-B).
- ALL WYES, FITTINGS, LATERALS AND MANHOLE COUPLINGS SHALL BE MANUFACTURED BY JM. OR APPROVED EQUAL.
- THE PIPE SHALL BE GREEN IN COLOR.
- JOINT SEALS IN POLYVINYL CHLORIDE PIPE AND FITTINGS SHALL COMPLY WITH ASTM DESIGNATION D3212 TESTING
- EXFILTRATION OR INFILTRATION TESTS WILL BE REQUIRED ON ALL PIPE, AS DETERMINED BY UTILITY DEPARTMENT OR BUILDING DEPARTMENT PERSONNEL.

INSTALLATION
- PIPE MUST BE LAID IN A TRENCH FREE OF STONES

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PROJECT NARRATIVE

This project proposes a major modification to the Site Development and Design Review Approvals issued at the Feb. 22nd City Commission Meeting under agenda item 12.e. for the Jetson TV & Appliances project.

a) The proposed building modifications include the following:
b) Expansion of the proposed structure from 32,330 sf to 34,065 while maintain the same design profile and architectural character.
c) Modification to the southern property boundary frontage to include the removal of an existing driveway connection and proposed access road
d) Reorientation of the proposed (3) loading bays from a western exposure to now interconnect the facility with the existing operation and propose an additional loading bay, (4) loading bays total for the expansion.
e) Removal of 2,144 sf of existing warehouse located on the adjacent property at 4145 S. US Hwy 1 to facilitate the proposed interconnection.

The intent of the proposed project is to provide an expansion of the existing warehousing operation to support a growth in the market.

A large parking area shall be constructed to the north of the proposed structure and accessible from both 4145 US Hwy 1 as well as the southern entrance off of the proposed connection to Tumblin Kling. This parking facility has been calculated to the serve both the existing and proposed expansion's parking requirements.

Stormwater is proposed on-site and shall serve as a master stormwater system for the both and existing and proposed Jetson operation. The stormwater system includes a dry retention pond designed to meet the local and federal requirements for water quality and quantity prior to discharge to the FDOT US1 Drainage system via an outfall located at the SE corner of the property.

Utilities have been coordinated with FPUA. The existing facility is currently served by FPUA and a new master lift station is proposed to both improve operation of the existing facility as well as provide service for the proposed expansion.

MBV
ENGINEERING, INC.
MOIA BOWLES VILLAMIZAR & ASSOCIATES
www.mbveng.com CA #3728

STORMWATER MANAGEMENT CALCULATIONS

for

JETSONS FORT PIERCE SITE EXPANSION

FORT PIERCE, FLORIDA

AUGUST 2021
REVISED: APRIL 2022

Prepared by: MBV Engineering, Inc.
1835 20th Street
Vero Beach, Florida 32960
772-569-0035
Certificate of Authorization #: 3728

Engineers Project #: 19-0273
Designed By: RTM

AARON J. BOWLES LICENSE No. 55313 STATE OF FLORIDA PROFESSIONAL ENGINEER

4/28/22

Mr. Aaron J. Bowles, P.E. #55313

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I. PURPOSE

The purpose of this report is to provide City of Ft. Pierce, St. Lucie County, SFWMD, and FDOT with calculations and documentation which demonstrates the proposed surface water management system complies with state and local criteria.

II. PROPOSED SYSTEM

The proposed stormwater management system is comprised of an expansion / retrofit of the existing dry detention basin to support the expanded site area and additional impervious coverage associated with the proposed construction. To provide for the required nutrient reduction analysis for the new proposed site improvements and water quality for the overall basin, the system shall be utilized as a dry retention facility with the inclusion of a modification to the current Control Structure (CS-1). The control structure is located SE corner of the project and provides for water quality & attenuation prior to discharge into the FDOT US Drainage system.

The retention basin is designed to retain the required treatment volume and attenuation per the following SFWMD Water Quality / Quantity Criteria:

1. Minimum pavement elevations shall exceed the 10yr- 24hr storm event. (6.0" Rainfall)
2. The site shall provide storage to sustain the 25yr-72hr storm event. (7.0" Rainfall)
3. Finished Floor Elevations shall exceed the 100yr-72hr storm event (9.0" Rainfall)

III. SITE DATA

Existing Parcel Area (East)	168,713 s.f.	3.87 ac
Proposed Expansion Area (West)	156,334 s.f.	3.59 ac
Drainage Basin Area (Post-Dev.)	325,047 s.f.	7.46 ac

Site Location (East): 4145 S. US Hwy. 1
Fort Pierce, FL

Site Location (West): 504 Tumblin Kling
Fort Pierce, FL

Flood Zone: THE SUBJECT PROPERTY IS LOCATED IN FLOOD ZONE AE (EL 6 FEET) PER FLOOD INSURANCE RATE MAP #12061C0242 H, DATED DEC. 4, 2012.

Site Soils: The soil survey mapped the area as (2), Anokona and Farmton sands and (47) Urban Land (0 to 2 % Slopes), HSG C/D & B/D & C/D, respectively

Pre-Development: HSG C/D, See Appendix D

Post-Development: HSG C, See Appendix D

Soil Boring #		DEPTH (INCHES BELOW GRADE)	HORIZONTAL FLOW RATE (ft/day)	VERTICAL FLOW RATE (ft/day)
Soil Boring P-1:				
Existing Grade at Soil Boring	12.6 ft. (NAVD)		2.8	1.73
Measured Water Table Elev.	11.7 ft. (NAVD)	11		
Seasonal High Water Elev.	11.4 ft. (NAVD)	15		
Soil Boring P-2:				
Existing Grade at Soil Boring	13.5 ft. (NAVD)		12.9	5.95
Measured Water Table Elev.	10.0 ft. (NAVD)	42		
Seasonal High Water Elev.	12.2 ft. (NAVD)	16		
Soil Boring P-3:				
Existing Grade at Soil Boring	13.5 ft. (NAVD)		12.2	5.6
Measured Water Table Elev.	9.8 ft. (NAVD)	44		
Seasonal High Water Elev.	12.1 ft. (NAVD)	17		
Average SHWT Elev. =	11.9 ft. (NAVD)		**k_h = 9.3***	**k_v =4.4***

* Flow rates shown are the averages of the flows at differing strata.

IV. PRE-DEVELOPMENT CONDITIONS

The previously permitted east parcel, permitted under SFMWD 56-02898-P, is served by a dry detention water management facility with discharge to the US Hwy. 1 R/W via a control structure located in the SE corner of the property. An excerpt of the SFMWD permit documents are included in appendix C for reference.

4145 S. US Hwy 1 (East Parcel)

Site Area	168,713 s.f.	3.87	100.0%
Exist. Building Area	53,220 s.f.	1.22	31.5%
Exist. Pavement Area	55,367 s.f.	1.27	32.8%
Exist. Pavement Area	22,715 s.f.	0.52	13.5%
Total Impervious	131,302 s.f.	3.01	77.8%
Total Pervious	37,411 s.f.	0.86	22.2%

Weighted Curve Number for Drainage Basin

% Impervious	77.8%	Soil Group C	CN1 = 98
% Semi-Impervious	0.0%	Soil Group C	CN2 = 98
% Pervious	22.2%	Soil Group C	CN3 = 79 *

*Non DCIA CN Value Based on Woods (Fair Condition) - HSG C

CN = [(% Impervious)(CN1) + (% Semi-Impervious)(CN2) + (% Pervious)(CN3)]
CN = 93.8

Time of Concentration (Previously Permitted): 15.0 min.

The existing, marginally developed West parcel is heavily wooded and is comprised of (2) pre-development basins (A & B). See appendix D for Basin Exhibit. Basin A drains from the center of the parcel southerly towards the Tumblin Kling R/W conveyance system and ultimately the US 1 drainage system. Basin B drains toward the NW corner of the parcel with an overland flow into the Platts Branch Tributary creek. The creek drains west from US Hwy1 to the North Fork of the St. Lucie River. For design purposes, only basin A was included in the pre-development model as it maintains the same downstream receiving system as the propsoed post-development expansion.

504 Tumblin Kling (West Parcel) **Basin A**

Site Area	87,536 s.f.	2.01	100.0%
Exist. Building Area	3,528 s.f.	0.08	4.0%
Exist. Asphalt Pavement Area	s.f.	0.00	0.0%
Exist. Conc. Pavement Area	7,285 s.f.	0.17	8.3%
Total Impervious	10,813 s.f.	0.25	12.4%
Total Pervious	76,723 s.f.	1.76	87.6%

Weighted Curve Number for Drainage Basin

% Impervious	12.4%	Soil Group C	CN1 = 98
% Semi-Impervious	0.0%	Soil Group C	CN2 = 98
% Pervious	87.6%	Soil Group C	CN3 = 73 *

*Non DCIA CN Value Based on Woods (Fair Condition) - HSG D

CN = [(% Impervious)(CN1) + (% Semi-Impervious)(CN2) + (% Pervious)(CN3)]

CN = 76.1

Time of Concentration

T_1: Over wooded area

Tc = [0.007 (N x L)^0.8] / [P^0.5 x S^0.4] Kinematic Wave Eq.

Where :

N = Mannings Roughness Coeff. =	0.250
L = Length of Flow (ft) =	325
Change in elevation (ft)=	1.15
P = Rainfall Intensity (in/hr)=	5.5
S = slope (ft/ft) =	0.0035
T_1=	57.7 min.

Total Time of Concentration (Tc) 57.7 min.

504 Tumblin Kling (West Parcel) **Basin B**

Site Area	68,798 s.f.	1.58	100.0%
Exist. Building Area	s.f.	0.00	0.0%
Exist. Asphalt Pavement Area	s.f.	0.00	0.0%
Exist. Conc. Pavement Area	s.f.	0.00	0.0%
Total Impervious	0 s.f.	0.00	0.0%
Total Pervious	68,798 s.f.	1.58	100.0%

Weighted Curve Number for Drainage Basin

% Impervious	0.0%	Soil Group C	CN1 = 98
% Semi-Impervious	0.0%	Soil Group C	CN2 = 98
% Pervious	100.0%	Soil Group C	CN3 = 73

*Non DCIA CN Value Based on Woods (Fair Condition) - HSG C

CN = [(% Impervious)(CN1) + (% Semi-Impervious)(CN2) + (% Pervious)(CN3)]
CN = 73.0

Time of Concentration

T_1: Over wooded area

Tc = [0.007 (N x L)^0.8] / [P^0.5 x S^0.4] Kinematic Wave Eq.

Where :

N = Mannings Roughness Coeff. =	0.250
L = Length of Flow (ft) =	300
Change in elevation (ft)=	0.95
P = Rainfall Intensity (in/hr)=	5.5
S = slope (ft/ft) =	0.0032
T_1=	56.6 min.

Total Time of Concentration (Tc) 56.6 min.

V. POST-DEVELOPMENT CONDITIONS

Drainage Basin Area (Post-Dev.)	325,047 s.f.	7.46	100.0%
Total Building Area	85,141 s.f.	1.95	26.2%
Asphalt Asphalt Area	98,635 s.f.	2.26	30.3%
Total Concrete Area	31,300 s.f.	0.72	9.6%
Total Impervious Area	215,076 s.f.	4.94	66.2%
Total Pervious Area	109,971 s.f.	2.52	33.8%
Net Impervious Area	72,961 s.f.	1.67	100.0%

Weighted Curve Number for Drainage Basin

% Impervious	66.2%	Soil Group C	CN1 = 98
% Semi-Impervious	0.0%	Soil Group C	CN2 = 98
% Pervious	33.8%	Soil Group C	CN3 = 74

*Non DCIA CN Value Based on Open Space (Good Condition) - HSG C

CN = [(% Impervious)(CN1) + (% Semi-Impervious)(CN2) + (% Pervious)(CN3)]
CN = 89.9

Time of Concentration

T_1: Roof to Ground (Building Discharge) T_1= 2.0 min.

T_2: Over Asphalt Drive

Tc = [0.007 (N x L)^0.8] / [P^0.5 x S^0.4] Kinematic Wave Eq.

Where :

N = Mannings Roughness Coeff. =	0.015
L = Length of Flow (ft) =	20
Change in elevation (ft)=	0.5
P = Rainfall Intensity (in/hr)=	5.5
S = slope (ft/ft) =	0.0250

T_2= .3 min.

T3 = time in pipe = L/ Vel =475' / 1 fps = T3= 7.9 min.

Time of Concentration (Tc)	Calculated Tc =	8.2 min.
	Min. Tc =	10.0 min.

VI. REQUIRED TREATMENT VOLUME

A. Treatment Volume Tabulations Based on Contributing Area

Total Contributing Area (ac) =		7.462	100.0%
Total Impervious Area (ac)* =		2.983	40.0%
*Excluding Roof Area			
Required Treatment over site (in) =	1.0	0.622 ac-ft	= 27,087 cf
Required Treatment over impervious area (in) =	2.50	0.621 ac-ft	= 27,070 cf
Required Treatment Volume from above Wet Detention (ac-ft) =		0.622 ac-ft	= 27,087 cf
Required Treatment Volume from above Dry Detention (ac-ft) (75% WD REQ.) =		0.466 ac-ft	= 20,315 cf
Required Treatment Volume from above Dry Retention (ac-ft) (50% WD REQ.) =		0.311 ac-ft	= 13,544 cf
Total Required Treatment Volume (ac-ft) from above =		0.311 ac-ft	= 13,544 cf
Per SFWMD Section 4.2.1			
Additional 50% Treatment Volume (ac-ft) =		0.155 ac-ft	= 6,772 cf
Total Required Treatment Volume for Basin (ac-ft) = Max. of ` above =		***0.466 ac-ft***	***= 20,315 cf***

VII. PROPOSED TREATMENT VOLUME

A. Dry Retention Stage-Storage Calculations

Stage (ft)	Area (ac)	Incremental volume (ac-ft)	Incremental volume (c.f.)	Cumulative volume (ac-ft)	Cumulative volume (c.f.)
bot. of pond = 13.00	0.671 29,235.s.f.	0.34	14,618	0.000	0
13.50	0.671 29,235.s.f.	0.14	6,075	0.336	14,618
rqd. treat. vol. = 13.70	0.724 31,519.s.f.	0.00	0	0.475	20,693
weir elev. = 13.70	0.724 31,519.s.f.	0.41	17,829	0.475	20,693
14.25	0.765 33,313.s.f.	0.43	18,816	0.884	38,522
top of bank = 14.80	0.806 35,108.s.f.			1.316	57,338

VIII. STAGE-STORAGE COMPUTATION

	Building	Pavement	Open	Dry Detention	Dry Detention	
	Linear	Linear	Linear	Bottom	Bank	Total
Area (ac)	1.95	2.98	1.72	0.671	0.135	7.46
	V	L	L	V	L	
Starting Elev (ft)	15.75	14.50	13.20	13.00	13.00	
Ending Elev (ft)	15.75	15.70	16.00	14.80	14.80	

	Vertical	Linear	Linear	Vertical	Linear	Total
Stage	Storage	Storage	Storage	Storage	Storage	Storage
NAVD	ac-ft	ac-ft	ac-ft	ac-ft	ac-ft	ac-ft
12.50	0.000	0.000	0.000	0.000	0.000	0.00
13.00	0.000	0.000	0.000	0.000	0.000	0.00
13.50	0.000	0.000	0.028	0.336	0.009	0.37
14.00	0.000	0.000	0.196	0.671	0.037	0.91
14.50	0.000	0.000	0.519	1.007	0.084	1.61
15.00	0.000	0.311	0.994	1.342	0.152	2.80
15.50	0.000	1.243	1.623	1.678	0.219	4.76
16.00	0.489	2.734	2.406	2.013	0.287	7.44
16.50	1.466	4.226	3.265	2.349	0.354	10.19

IX. SUMMARY

Following are summaries of pre-developed and post-developed discharges for the storms that have been analyzed.
ROUTING SUMMARY

ROUTING SUMMARY

Discharge Rate Summary

Design Storm Event	Pre-Developed Peak Discharge (CFS)*	Post-Developed Peak Discharge (CFS)	Post-Developed Peak Stage (NAVD)	Design Threshold	
				(NAVD)	Notes
10 YR- 24 HR	***3.60***	***2.45***	***14.41***	14.50	ROAD CROWN
25 YR - 72 HR	***5.18***	***6.33***	***14.76***	15.73	FFE / DISCHARGE
100 YR - 72 HR	-		***14.33***	15.73	FFE

Pre Development Discharge Analysis*

Storm Event	*10yr-24hr*	*25yr-72hr*
East Basin (Permitted)	*2.97*	*3.23*
West Basin (Model)	*0.63*	*1.95*
Total	***3.60***	***5.18***

Water Quality Recovery (Drawdown) Time

Treatment Vol. Elev. (NAVD)	Bott. Of Pond Elev. (NAVD)	Hr at which water bottom
13.70	*13.00*	*34.00*

As demonstrated by the above calculations and the flood routing computations contained in the appendices of this report, the proposed stormwater management system meets the requirements of the South Florida Water Management District, St. Lucie County, FDOT, and the City of Fort Pierce. The system provides adequate treatment volume and attenuation for the 10yr-24 hr. and 25yr-72 hr. storm events as well finished floor evaluation for the 100 year – 72 hr. storm event.

Appendix A

ICPR Modeling Data:

10YR-24HR, 25YR-72 HR, 100YR-72HR

Node Max Conditions [Scenario1]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
PRE-WEST STAGE-STORAGE	A. 10YR-24HR	14.50	13.66	0.0003	0.64	0.63	12145
PROP. STAGE STORAGE	A. 10YR-24HR	14.80	14.41	0.0010	4.14	2.45	68731
TAILWATER	A. 10YR-24HR	15.00	12.25	0.0003	2.88	0.00	0
PRE-WEST STAGE-STORAGE	B. 25YR-72HR	14.50	14.05	0.0005	2.02	1.95	31282
PROP. STAGE STORAGE	B. 25YR-72HR	14.80	14.76	0.0010	22.09	5.16	103355
TAILWATER	B. 25YR-72HR	15.00	14.05	0.0003	6.93	0.21	0
PRE-WEST STAGE-STORAGE	C. 100YR-72HR	14.50	14.05	0.0003	0.45	0.45	31273
PROP. STAGE STORAGE	C. 100YR-72HR	14.80	14.33	0.0010	1.96	1.91	63777
TAILWATER	C. 100YR-72HR	15.00	14.05	0.0003	2.27	0.61	0

Simple Basin: POST-DEVELOPMENT

Scenario:	RECOVERY
Node:	PROP. STAGE STORAGE
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	7.4600 ac
Curve Number:	89.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: POST-DEVELOPMENT

Scenario:	Scenario1
Node:	PROP. STAGE STORAGE
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	7.4600 ac
Curve Number:	89.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: WEST- PRE-DEV

Scenario:	Scenario1
Node:	PRE-WEST STAGE-STORAGE
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	57.7000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.0000 ac
Curve Number:	76.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Node: GROUNDWATER

Scenario:	RECOVERY
Type:	Time/Stage
Base Flow:	0.00 cfs
Initial Stage:	11.90 ft
Warning Stage:	0.00 ft
Boundary Stage:	

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	11.90
0	0	0	999.0000	11.90

Comment:

Node: PROP. STAGE STORAGE

Scenario:	RECOVERY
Type:	Stage/Area
Base Flow:	0.00 cfs
Initial Stage:	13.70 ft
Warning Stage:	14.80 ft

Stage [ft]	Area [ac]	Area [ft2]
13.00	0.0000	0
13.50	0.3800	16553
14.00	0.9500	41382
14.50	1.7200	74923
15.00	2.9700	129373
15.50	4.9500	215622
16.00	7.6000	331056
16.50	10.3500	450846

Comment:

Node: GROUNDWATER

Scenario: Scenario1
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 11.90 ft
Warning Stage: 0.00 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	11.90
0	0	0	999.0000	11.90

Comment:

Node: PRE-WEST STAGE-STORAGE

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 13.50 ft
Warning Stage: 14.50 ft

Stage [ft]	Area [ac]	Area [ft2]
13.50	0.1000	4356
14.30	1.0000	43560

Comment:

Node: PROP. STAGE STORAGE

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 13.00 ft
Warning Stage: 14.80 ft

Stage [ft]	Area [ac]	Area [ft2]
13.00	0.0000	0
13.50	0.3800	16553
14.00	0.9500	41382
14.50	1.7200	74923
15.00	2.9700	129373
15.50	4.9500	215622
16.00	7.6000	331056
16.50	10.3500	450846

Comment:

Node: TAILWATER

Scenario: Scenario1
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 11.35 ft
Warning Stage: 15.00 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	11.35
0	0	0	72.0000	14.05
0	0	0	360.0000	11.35

Comment: Tailwater Elevetions per SFWMD Permit 56-02898-P

Percolation Link: PERC

Scenario: RECOVERY
From Node: PROP. STAGE STORAGE
To Node: GROUNDWATER
Link Count: 1
Flow Direction: Both
Aquifer Base Elevation: 0.00 ft
Water Table Elevation: 11.90 ft
Annual Recharge Rate: 0 ipy
Horizontal Conductivity: 9.300 fpd
Vertical Conductivity: 4.400 fpd
Fillable Porosity: 0.300
Layer Thickness: 0.00 ft

Surface Area Option: Vary Based on Stage/Area Table
Vertical Flow Termination: Horizontal Flow Algorithm
Perimeter 1: 728.00 ft
Perimeter 2: 1038.00 ft
Perimeter 3: 1980.00 ft
Distance P1 to P2: 50.00 ft
Distance P2 to P3: 150.00 ft
# of Cells P1 to P2: 5
# of Cells P2 to P3: 15

Comment:

Drop Structure Link: CS-1

Scenario: Scenario1
From Node: PROP. STAGE STORAGE
To Node: TAILWATER
Link Count: 1
Flow Direction: Both
Solution: Combine
Increments: 0
Pipe Count: 1
Damping: 0.0000 ft
Length: 20.00 ft
FHWA Code: 0
Entr Loss Coef: 0.00
Exit Loss Coef: 1.00

Upstream Pipe		Downstream Pipe	
Invert:	11.65 ft	Invert:	11.38 ft
Manning's N:	0.0130	Manning's N:	0.0130
Geometry: Circular		Geometry: Circular	
Max Depth:	1.25 ft	Max Depth:	1.25 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Bend Loss Coef: 0.00
Bend Location: 0.00 dec
Energy Switch: Energy

Pipe Comment:

Weir Component		Bottom Clip	
Weir:	1	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	**Top Clip**	
Weir Type:	Sharp Crested Vertical	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	13.70 ft	Ref Node:	
Control Elevation:	13.70 ft	**Discharge Coefficients**	
Max Depth:	0.30 ft	Weir Default:	3.200
Max Width:	0.58 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Weir Component		Bottom Clip	
Weir:	2	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	None	Ref Node:	
Damping:	0.0000 ft	**Top Clip**	
Weir Type:	Sharp Crested Vertical	Default:	0.00 ft
Geometry Type:	Circular	Op Table:	
Invert:	11.65 ft	Ref Node:	
Control Elevation:	11.65 ft	**Discharge Coefficients**	
Max Depth:	0.25 ft	Weir Default:	3.200
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Weir Component		Bottom Clip	
Weir:	3	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	**Top Clip**	
Weir Type:	Horizontal	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	14.79 ft	Ref Node:	
Control Elevation:	14.79 ft	**Discharge Coefficients**	
Max Depth:	2.25 ft	Weir Default:	3.200
Max Width:	2.83 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default:	0.600

Orifice Table:	

Weir Comment:

Weir Component

Weir:	4
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Rectangular
Invert:	14.00 ft
Control Elevation:	14.00 ft
Max Depth:	999.00 ft
Max Width:	2.00 ft
Fillet:	0.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Drop Structure Comment:

Percolation Link: PERC

Scenario:	Scenario1
From Node:	PROP. STAGE STORAGE
To Node:	GROUNDWATER
Link Count:	1
Flow Direction:	Both
Aquifer Base Elevation:	0.00 ft
Water Table Elevation:	11.90 ft
Annual Recharge Rate:	0 ipy
Horizontal Conductivity:	9.300 fpd
Vertical Conductivity:	4.400 fpd
Fillable Porosity:	0.300
Layer Thickness:	1.10 ft

Surface Area Option:	Vary Based on Stage/Area Table
Vertical Flow Termination:	Horizontal Flow Algorithm
Perimeter 1:	728.00 ft
Perimeter 2:	1038.00 ft
Perimeter 3:	1980.00 ft
Distance P1 to P2:	50.00 ft
Distance P2 to P3:	150.00 ft
# of Cells P1 to P2:	5
# of Cells P2 to P3:	15

Comment:

Weir Link: PRE-DEV DISCHARGE

Scenario:	Scenario1
From Node:	PRE-WEST STAGE-STORAGE
To Node:	TAILWATER
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Gravel Road Vertical

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	

Geometry Type:	Irregular		
Invert:	13.52 ft	Ref Node:	
Control Elevation:	13.52 ft	Discharge Coefficients	
Cross Section:	SOUTH BASIN BOUNDARY	Weir Default:	2.800
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Simulation: DRAWDOWN (25YR-72HR)

Scenario: RECOVERY
Run Date/Time: 4/26/2022 11:13:06 AM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	72.0000

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

Output Time Increments

Hydrology

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

Surface Hydraulics

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

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft

IA Recovery Time: 24.0000 hr
Smp/Man Basin Rain: No Rainfall

Opt:

Max dZ: 1.0000 ft
Link Optimizer Tol: 0.0001 ft

Edge Length Option: Automatic

Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 100 ft2
Energy Switch (1D): Energy

Comment:

Simulation: A. 10YR-24HR

Scenario: Scenario1
Run Date/Time: 4/26/2022 11:07:27 AM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

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

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

Output Time Increments

Hydrology

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

Surface Hydraulics

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

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft

IA Recovery Time: 24.0000 hr
Smp/Man Basin Rain: Global

		Opt:	
Max dZ:	1.0000 ft		
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FDOT-24
		Rainfall Amount:	6.00 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Simulation: B. 25YR-72HR

Scenario: Scenario1
Run Date/Time: 4/26/2022 11:07:29 AM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	72.0000

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

Output Time Increments

Hydrology

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

Surface Hydraulics

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

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft

IA Recovery Time: 24.0000 hr
Smp/Man Basin Rain: Global

		Opt:	
Max dZ:	1.0000 ft		
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~SFWMD-72
		Rainfall Amount:	7.00 in
Edge Length Option:	Automatic	Storm Duration:	72.0000 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Simulation: C. 100YR-72HR

Scenario: Scenario1
Run Date/Time: 4/26/2022 11:07:33 AM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	72.0000

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

Output Time Increments

Hydrology

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

Surface Hydraulics

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

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:

Tolerances & Options

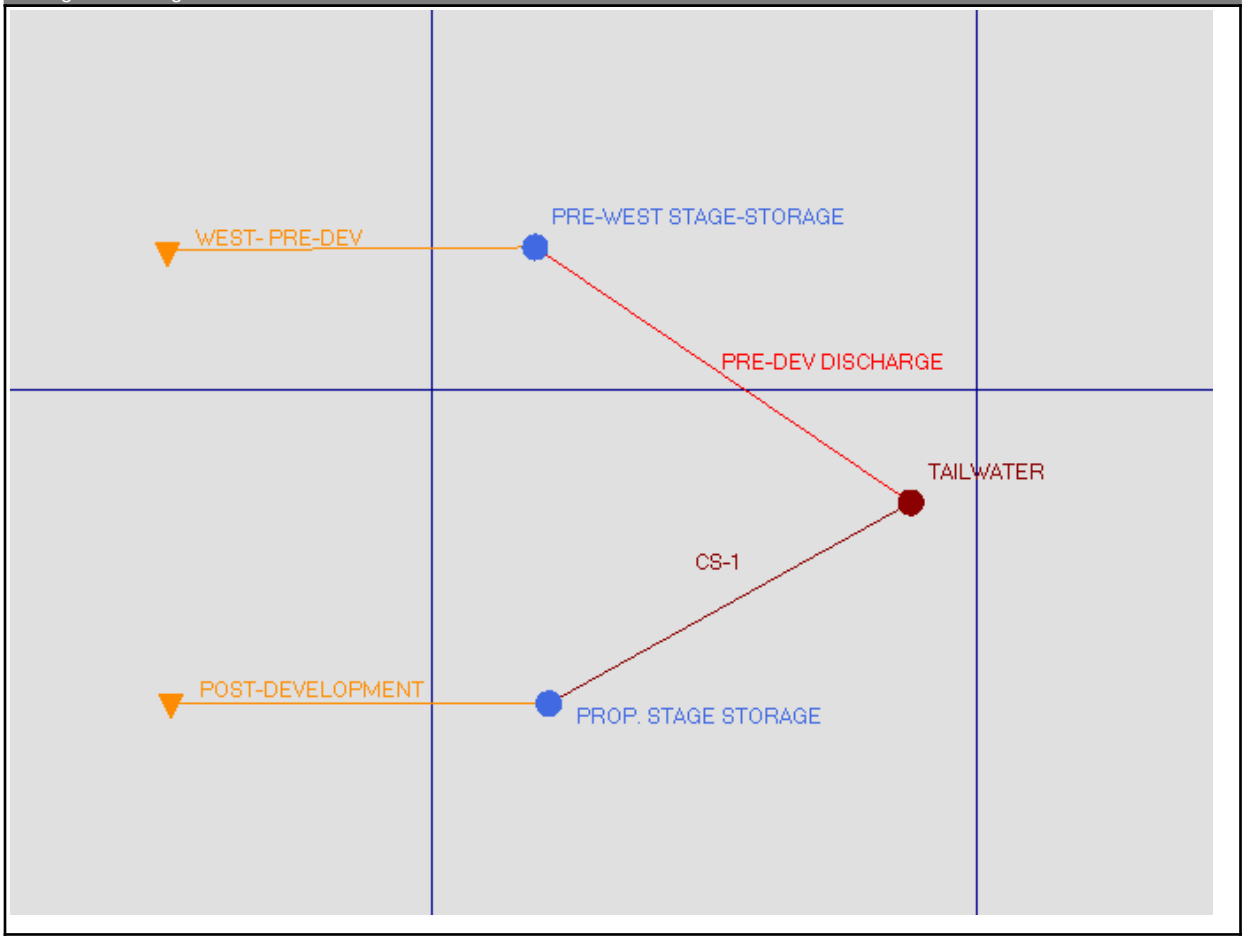
Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft

IA Recovery Time: 24.0000 hr
Smp/Man Basin Rain: Global

		Opt:	
Max dZ:	1.0000 ft		
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FDOT-1
		Rainfall Amount:	9.00 in
Edge Length Option:	Automatic	Storm Duration:	72.0000 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Background Image: NODAL MAP-4-22



Appendix B

Geotechnical Investigation by KSM Engineering

(KSM Internation, Dated 3/3/2021)

Headquarters
11345 U.S. Highway 1
Sebastian, FL. 32958
Orlando
723 Progress Way
Sanford, FL. 32771

KSM ENGINEERING AND TESTING

Mailing
P.O. Box 78-1377
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C.A. # 5693
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March 3, 2021

Anthony Della Porta
Della Porta Construction Inc.
1165 22nd Street
Vero Beach, FL 32960

Re: Jetson's Fort Pierce
4145 S. US 1
Fort Pierce, Florida
KSM Project #: 211328-b&p

Dear Mr. Della Porta:

As requested, KSM Engineering & Testing has performed a subsurface investigation at the referenced site. Presentation of the data gathered during the investigation, together with our geotechnical related opinions, are included in this report.

Site Description:

At the time of drilling, the site was somewhat hilly with moderate to heavy surface vegetation and many trees.

Project Description:

A 39,825 square foot addition to the existing Jetson's building is planned to be constructed on the site. Loads from the structure will be transferred to the ground by conventional shallow footings. We estimate the maximum loads will be less than 3,500 pounds per linear foot along the wall foundation and less than 60 kips for any individual column load. Some additional site fill may be required to reach the desired grades.

The parking lot and the stormwater retention area will also be expanded.

The scope of our study consisted of the following:

1. Performed Standard Penetration Test borings (SPT), percolation borings (PB), and Hand Auger borings (HA) in the proposed construction area to estimate the subsoil relative density and evaluate the permeability of the soils.

2. Measured the observed groundwater level at each boring.

3. Evaluated the existing soil conditions with respect to the proposed construction and provided recommendations for site preparation and foundation design.

4. Obtain Shelby tube soil samples per each soil type encountered in order to perform both a constant head horizontal and vertical permeability tests in our laboratory.

5. Perform engineering calculations to determine the permeability coefficient "K" values along with estimates for the elevation of wet-season and dry-season water tables for the percolation test locations.

6. Prepared this report to document our findings

Site Investigation:

The site investigation program consisted of performing five (5) Standard Penetration Test borings in the area of the proposed addition, three (3) percolation borings in the proposed dry retention area and three (3) hand augers in the proposed pavement areas. The borings were terminated at depths ranging from 10 to 30 feet below grade. The locations of the borings are indicated on the attached location plan.

The SPT borings were completed in accordance with procedures described in ASTM D-1586. A standard 1.5 inch I.D., 2 inch O.D. split-spoon sampler is driven into the soil by successive blows of a 140 pound hammer freely falling 30 inches. The number of blows required to drive the sampler 1 foot, after seating 6 in., is designated the Penetration Resistance, or "N" value. At regular intervals the sampler is extracted from the ground and opened to allow visual examination and classification of the retained soil sample. Also, the groundwater table was allowed to stabilize and the depth of the groundwater elevation recorded from existing grade.

The hand-auger borings were performed with a 3 inch diameter bucket auger with a cutting head. It is rotated by hand and at regular intervals is extracted from the ground and the sample visually inspected. During the hand augers, a shaft with a conical point is pushed through the soil and the thrust required to push the cone tip is measured on an attached calibrated gauge. The value of the bearing pressure exerted by the cone point allows the operator to estimate the existing soil density. After the thrust was measured, the hole was advanced with a hand-auger in 1-foot increments to permit a continuation of measurement of relative density versus depth.

The relationship of the static cone penetrometer reading to the relative density is listed below:

Penetrometer Table	
Relative Density	**Static Penetrometer Reading**
Very Loose or Soft	<15
Loose	15-40
Medium Dense	40-70
Dense	>70

The records of the soils encountered, the penetration resistances and groundwater level are shown on the attached logs.

Engineering Evaluation and Conclusions:

Based on the information obtained from this site investigation, we are pleased to offer the following evaluation:

The boring logs indicate the subsurface soils consist generally of fine-grained sand, slightly silty/slightly clayed fine-grained sand and some clayed sand. Hardpan was also found in some of the borings, typically between 2 and 7 feet below grade and in varying layer thicknesses. "N" values recorded during the boring operation indicate the soil density is generally loose at the surface and becomes medium dense below a depth of 2 to 3 feet below existing grade. The loose soils encountered near the surface will not affect the proposed construction provided that our recommendations for site preparation are followed. Please refer to the soil boring logs for specific information relative to the soil description.

Based on the existing soil conditions, the proposed structure can be supported on a shallow foundation system provided that the site is properly prepared.

The following sections provide recommendations for the site preparation and foundation design.

Site Preparation:

The proposed building area and areas to be paved, plus a minimum margin of five feet beyond the proposed construction shall be stripped and grubbed of surface debris, including vegetation, roots and organic matter. Stumps shall be removed entirely. The building area should be graded level and proofrolled. Any soft yielding areas shall be excavated and replaced with clean compacted fill. Sufficient passes should be made during compaction operations to produce a density no less than 95 percent of its modified dry Proctor value (ASTM D 1557) to a depth of two feet. We do not recommend using heavy vibratory equipment on this site due to the proximity to the existing structures.

After the exposed surface has been proofrolled, the building and pavement areas may be filled to the desired grades. The fill material shall consist of clean granular sand containing less than 10% material passing the U.S. Standard No. 200 mesh sieve. Place structural fill in loose layers of 12 inches in thickness and compact each lift to at least 95 percent of its modified dry Proctor value.

After excavating for the footings, the disturbed footing subgrade should be recompacted to 95 percent (minimum) of its modified dry Proctor value. This can be best achieved by making several passes with a relatively light-weight walk-behind vibratory sled or roller. Tests in the excavated footings should be conducted prior to placement of any steel or concrete and conducted at every column footing and once for every 100 linear feet of footing trench.

In-place density of the compacted soil can be verified using a nuclear density gauge. The subgrade and each lift of fill should be tested for compaction at a frequency no less than one test per 2,500 sf of building area, per lift and one test per 10,000 sf of roadway area, per lift with a minimum of 4 tests in each area prepared.

Foundation:

Provided that our recommendations for site preparation are followed, the proposed structure may be supported on conventional concrete, steel reinforced footings designed for an allowable soil bearing pressure of 2,500 pounds per square foot, or less.

With the foundation properly designed and the site properly prepared, we anticipate total settlements less than ¾ of an inch and differential settlement of less than ¼ of an inch. The majority of the settlement should occur during construction. This estimate is based on a minimum strip footing width of 24 inches and 5 foot square isolated column pad footings with a minimum embedment of 16 inches. If the loading exceeds the amount listed on the front page of this report or the footer dimensions vary, please contact our office for additional settlement calculations.

Floor Slabs:

A conventional slab-on-grade can be used in the "at grade" portion of the building. We recommend the disturbed subgrade below the floor slab be re-compacted to 95 percent of the modified Proctor maximum dry density (ASTM D 1557) prior to placement of the concrete. An estimated modulus of subgrade reaction of 150 pounds per cubic inch (pci) can be used for design of the slab-on-grade. We recommend that expansion or control joints be incorporated between the slab and the column or wall footings. Control Joints should also be incorporated in the slab at frequent intervals to control shrinkage cracks.

A moisture barrier is recommended beneath the floor slab to prevent moisture migration from the underlying soil resulting in dampness of the slab.

Drives and Parking Areas:

We performed three (3) hand-augers in the proposed roadway to evaluate the soils in relation to the proposed pavement. We did not find any "muck" or other unsuitable material in the test borings. Penetrometer readings recorded during the investigation indicates the existing soil density is firm to medium dense.

Although a comprehensive pavement evaluation was not within the scope of this study the site may be prepared to support a flexible pavement or rigid concrete pavement. The pavement should be designed for the anticipated loads and frequencies. Refer to Table 1 for the minimum pavement section. The minimum pavement design for standard duty asphalt should include the following:

Clear the roadway area of any surface debris, including vegetation, roots, organic matter and existing pavement. Stumps shall be removed entirely. The cleared areas should be graded level and proof rolled. Any soft yielding areas shall be excavated and replaced with clean compacted fill. Sufficient passes should be made during compaction operations to produce a density no less than 95 percent of its modified dry Proctor value (AASHTO T180) to a depth of two feet. Additional fill shall consist of clean granular sand containing less than 10% material passing the U.S. Standard No. 200 mesh sieve and placed in loose layers of 12 inches and compacted to the above densities. A minimum of 16 inches separation should be maintained between the bottom of the base and the high seasonal groundwater table.

Where a concrete pavement section is used, concrete reinforcement should be designed to withstand the design traffic loads and saw cuts constructed for crack control. The concrete should have a minimum compressive strength of 4,000 psi.

Light duty pavement areas are considered car and pickup truck loading conditions and a few medium trucks such as box trucks. Heavy duty pavement areas are considered dumpster pad & apron area and semi-tractor trailer truck loading conditions.

Table 1
Minimum Pavement Section

Pavement Type	Material	Layer Thickness (in)	
		Standard Duty	Heavy Duty
Flexible	Florida DOT Asphalt Type 3	1.5	2
	Cemented Coquina Rock (LBR of 100)*-or-Limerock* Base Course	6	8
	Clayed soil (LBR of 40)* Stabilized Subgrade	8	12
Rigid	Portland Cement (4,000 psi)	5	7
	Clayed Soil (LBR of 40)* Stabilized Subgrade	6	10

* Compacted to minimum 98 percent of its modified dry Proctor value (AASHTO T180)

Soil Percolation and Water Tables:

Three (3) Hydraulic Conductivity Tests were performed in the field by the 'Usual Open-Hole Test' method.

The horizontal and vertical permeability flow rates were determined by excavating a test pit adjacent to the soil profiles and obtaining undisturbed shelby tube samples. We then performed a permeability test on the field samples in our laboratory.

All these tests were performed to evaluate the drainage characteristics of the soils for this particular test location. Please note that P-1 was conducted in the bottom of the existing retention pond. If the existing retention area is to be utilized for new retention, we recommend removing the top 12" and replace with clean fine grained sand.

The following table indicates the usual Open Hole Hydraulic Conductivity test results:

Usual Open-Hole Test Results	
Test Location (See Location Plan)	**Hydraulic Conductivity (CFS/SF- Ft Head)**
P-1	3.4×10^{-5}
P-2	2.1×10^{-4}
P-3	1.8×10^{-4}

NOTES:

1) The above hydraulic conductivity values are for a French drain installed to the same depth as the borehole tests. The designer should apply the appropriate factor of safety.
2) A hole diameter of 3" was used in the computation of the Hydraulic Conductivity values presented in the above table.

The following table indicates the horizontal and vertical flow rates for the test location:

Constant Head Permeability Results			
Test Location (See Location Plan)	**Horizontal Flow Rate (in/hr)**	**Vertical Flow Rate (in/hr)**	**Layer Depth (in)**
P-1	1.4	1.0	0-40
P-1	--	0.5	40-50
P-1	--	1.1	50-60
P-2	5.4	4.6	0-10
P-2	7.5	6.3	10-30
P-2	--	0.3	30-38
P-2	--	0.7	38-60
P-3	5.0	4.2	0-14
P-3	7.2	5.8	14-24
P-3	--	0.5	24-36
P-3	--	0.7	36-60

The following table indicates the measured water table along with our estimated normal wet season water table and normal dry season water table for the test location:

Water Table Observations			
Test Location (See Location Plan)	**Observed Water Table**	**Estimated Wet Season Water Table**	**Estimated Dry Season Water Table**
P-1, PB-1	11" Below Grade	15" Above Existing Grade	21" Below Existing Grade
P-2, PB-2	42" Below Grade	16" Below Grade	52" Below Grade
P-3, PB-3	44" Below Grade	17" Below Grade	53" Below Grade

This estimate is based upon our interpretation of existing site conditions and a review of the USDA Soil Survey for St. Lucie County, Florida. The majority of the site soils are mapped as (2) Ankona and Farmton sands, and (47) Urban land, 0 to 2 percent slopes, according to the Soil Survey Map of St. Lucie County, Florida.

Hydrologic Soil Group Classification for the Pre Devleopment:

The soils in the test locations can be classified in accordance with Chapter 7, Part 630 of the USDA National Engineering Handbook as follows:

Test Location (See Location Plan)	Hydrologic Soil Group
P-1	C/D
P-2	B/D
P-3	B/D

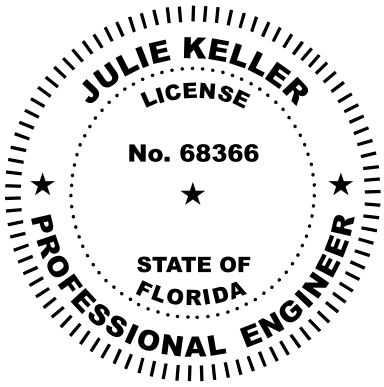
The soils in test location P-1 are part of the dual hydrologic soil group "C/D" due to the moderate fines content in the soil, the relatively low hydraulic conductivity rates of the soils and the depth to high season water table which is above existing grade.

The soils in test locations P-2 and P-3 are part of the dual hydrologic soil group "B/D" due to the moderate fines content in the soil, the high hydraulic conductivity rate of the soils in the depth range, the depth to a water impermeable layer between 20 and 40 inches below grade and the high season water table which is less than 24 inches from the surface.

Note that the Hydrologic Soil Group is a dynamic classification which changes with the conditions of the site at any given moment. Changes in water table elevation as well as changes in the ground elevations of the site can affect the hydrologic soil group for any particular location.

If you have any questions, please feel free to contact the office.

Respectfully,



Julie E. Keller, P.E.
President
P.E. # 68366

JEK/cv

Email to: tonydp@dellaportaconstruction.com

KSM Engineering & Testing
P.O. Box 78-1377
Sebastian, FL 32978
Tel: (772)-589-0712
Fax: (772)-589-6469

BORING NUMBER B-1

CLIENT Della Porta Construction Inc.
PROJECT NAME Jetson's Fort Pierce, 4145 S. US 1
PROJECT NUMBER 211328-b&p
PROJECT LOCATION Fort Pierce, Florida
DATE STARTED 2/25/21 **COMPLETED** 2/25/21
GROUND ELEVATION _____ **HOLE SIZE** inches
DRILLING CONTRACTOR _____
GROUND WATER LEVELS:
DRILLING METHOD Split Spoon Sample
▽ **AT TIME OF DRILLING** 5.00 ft
LOGGED BY SR/SF **CHECKED BY** JEK
AT END OF DRILLING ---
NOTES See Attached Location Plan
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)
0		Gray Sand with Traces of Roots					
		Light Gray Sand	SS		1-1-1 (2)		
		Dark Brown Sand with Traces of Hardpan	SS		4-7-11 (18)		
5		Brown Clayed Sand ▽					
		Dark Gray Sand with Traces of Hardpan	SS		5-6-8 (14)		
		Brown Sand with Some Clay	SS		8-10-8 (18)		
		Brown Sand					
10			SS		4-4-4 (8)		
			SS		4-6-8 (14)		
			SS		3-4-5 (9)		

Bottom of borehole at 14.0 feet.

▲ SPT N VALUE ▲
20 40 60 80
PL MC LL
20 40 60 80
☐ FINES CONTENT (%) ☐
20 40 60 80

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KSM Engineering & Testing
P.O. Box 78-1377
Sebastian, FL 32978
Tel: (772)-589-0712
Fax: (772)-589-6469

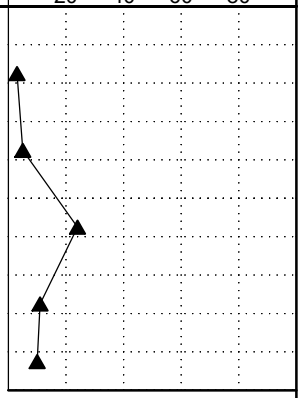
BORING NUMBER B-2

CLIENT Della Porta Construction Inc.
PROJECT NAME Jetson's Fort Pierce, 4145 S. US 1
PROJECT NUMBER 211328-b&p
PROJECT LOCATION Fort Pierce, Florida
DATE STARTED 2/25/21 **COMPLETED** 2/25/21
GROUND ELEVATION _____ **HOLE SIZE** inches
DRILLING CONTRACTOR _____
GROUND WATER LEVELS:
DRILLING METHOD Split Spoon Sample
▽ **AT TIME OF DRILLING** 5.25 ft
LOGGED BY SR/SF **CHECKED BY** JEK
AT END OF DRILLING ---
NOTES See Attached Location Plan
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)
0		Gray Sand with Traces of Roots					
		Light Gray Sand	SS		1-1-2 (3)		
			SS		2-3-2 (5)		
5		Dark Gray Sand with Traces of Hardpan					
		Brown Clayed Sand	SS		9-13-11 (24)		
			SS		4-5-6 (11)		
		Brown Sand					
10			SS		4-4-6 (10)		

Bottom of borehole at 10.0 feet.

▲ SPT N VALUE ▲
20 40 60 80
PL MC LL
20 40 60 80
☐ FINES CONTENT (%) ☐
20 40 60 80



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KSM Engineering & Testing
P.O. Box 78-1377
Sebastian, FL 32978
Tel: (772)-589-0712
Fax: (772)-589-6469

BORING NUMBER B-3

CLIENT Della Porta Construction Inc.
PROJECT NAME Jetson's Fort Pierce, 4145 S. US 1
PROJECT NUMBER 211328-b&p
PROJECT LOCATION Fort Pierce, Florida
DATE STARTED 2/25/21 **COMPLETED** 2/25/21
GROUND ELEVATION _____ **HOLE SIZE** inches
DRILLING CONTRACTOR _____
GROUND WATER LEVELS:
DRILLING METHOD Split Spoon Sample
▽ **AT TIME OF DRILLING** 3.42 ft
LOGGED BY SR/SF **CHECKED BY** JEK
AT END OF DRILLING ---
NOTES See Attached Location Plan
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)
0		Light Brown Sand					
			SS		1-1-1 (2)		
		Brown Clayed Sand with Traces of Roots					
		▽	SS		3-3-4 (7)		
5		Brown Sand with Traces of Clay					
			SS		4-6-5 (11)		
		Dark Brown Sand					
			SS		4-5-6 (11)		
10			SS		3-2-3 (5)		
		Dark Reddish Brown Sand					
			SS		5-7-7 (14)		
15							
			SS		5-6-6 (12)		
20		Reddish Brown Sand					
			SS		2-2-3 (5)		
25		Brown Sand					
			SS		2-4-4 (8)		
30		Bottom of borehole at 30.0 feet.					

▲ SPT N VALUE ▲
20 40 60 80
PL MC LL
20 40 60 80
☐ FINES CONTENT (%) ☐
20 40 60 80

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KSM Engineering & Testing
P.O. Box 78-1377
Sebastian, FL 32978
Tel: (772)-589-0712
Fax: (772)-589-6469

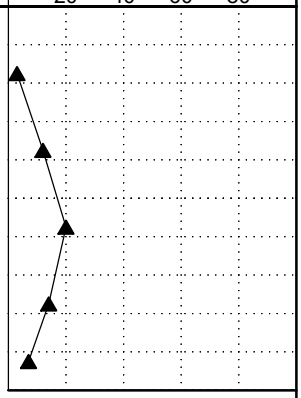
BORING NUMBER B-4

CLIENT Della Porta Construction Inc.
PROJECT NAME Jetson's Fort Pierce, 4145 S. US 1
PROJECT NUMBER 211328-b&p
PROJECT LOCATION Fort Pierce, Florida
DATE STARTED 2/25/21 **COMPLETED** 2/25/21
GROUND ELEVATION _____ **HOLE SIZE** inches
DRILLING CONTRACTOR _____
GROUND WATER LEVELS:
DRILLING METHOD Split Spoon Sample
▽ **AT TIME OF DRILLING** 4.50 ft
LOGGED BY SR/SF **CHECKED BY** JEK
AT END OF DRILLING ---
NOTES See Attached Location Plan
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)
0		Gray Sand with Traces of Roots					
		Light Gray Sand	SS		1-1-2 (3)		
		Dark Gray Sand with Traces of Hardpan	SS		3-5-7 (12)		
5		▽ Brown Clayed Sand	SS		13-11-9 (20)		
		Brown Sand	SS		6-7-7 (14)		
10			SS		4-3-4 (7)		

Bottom of borehole at 10.0 feet.

▲ SPT N VALUE ▲
20 40 60 80
PL MC LL
20 40 60 80
☐ FINES CONTENT (%) ☐
20 40 60 80



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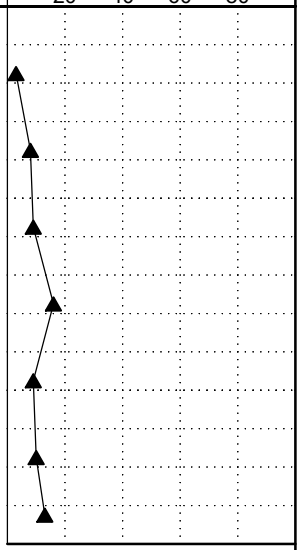
KSM Engineering & Testing
P.O. Box 78-1377
Sebastian, FL 32978
Tel: (772)-589-0712
Fax: (772)-589-6469

BORING NUMBER B-5

CLIENT Della Porta Construction Inc.
PROJECT NAME Jetson's Fort Pierce, 4145 S. US 1
PROJECT NUMBER 211328-b&p
PROJECT LOCATION Fort Pierce, Florida
DATE STARTED 2/25/21 **COMPLETED** 2/25/21
GROUND ELEVATION _____ **HOLE SIZE** inches
DRILLING CONTRACTOR _____
GROUND WATER LEVELS:
DRILLING METHOD Split Spoon Sample
▽ **AT TIME OF DRILLING** 4.92 ft
LOGGED BY SR/SF **CHECKED BY** JEK
AT END OF DRILLING ---
NOTES See Attached Location Plan
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)
0		Gray Sand with Traces of Roots					
		Light Gray Sand	SS		1-2-1 (3)		
			SS		3-4-4 (8)		
5		Brown Clayed Sand ▽					
			SS		4-4-5 (9)		
		Brown Sand, Slightly Clayed					
			SS		4-7-9 (16)		
		Gray Clayed Sand					
10		Light Gray Sand, Slightly Silty	SS		3-5-4 (9)		
		Dark Reddish Brown Sand	SS		3-5-5 (10)		
			SS		4-6-7 (13)		

Bottom of borehole at 14.0 feet.



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Sebastian, FL 32978
Tel: (772)-589-0712
Fax: (772)-589-6469

BORING NUMBER HA-1

CLIENT Della Porta Construction Inc.
PROJECT NAME Jetson's Fort Pierce, 4145 S. US 1
PROJECT NUMBER 211328-b&p
PROJECT LOCATION Fort Pierce, Florida
DATE STARTED 2/24/21 **COMPLETED** 2/24/21
GROUND ELEVATION _____ **HOLE SIZE** inches
DRILLING CONTRACTOR _____
GROUND WATER LEVELS:
DRILLING METHOD _____
▽ **AT TIME OF DRILLING** 3.67 ft
LOGGED BY DP **CHECKED BY** JEK
AT END OF DRILLING ---
NOTES See Attached Location Plan
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲ 20 40 60 80 / PL MC LL 20 40 60 80 / ☐ FINES CONTENT (%) ☐ 20 40 60 80
0		Gray Sand with Traces of Roots				44		
		Light Gray Sand				44		
		Dark Gray Sand with Traces of Hardpan				56		
		▽				55		
5		Brown Clayed Sand				52		
						55		

Bottom of borehole at 6.0 feet.

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KSM Engineering & Testing
P.O. Box 78-1377
Sebastian, FL 32978
Tel: (772)-589-0712
Fax: (772)-589-6469

BORING NUMBER HA-2

CLIENT Della Porta Construction Inc.
PROJECT NAME Jetson's Fort Pierce, 4145 S. US 1
PROJECT NUMBER 211328-b&p
PROJECT LOCATION Fort Pierce, Florida
DATE STARTED 2/24/21 **COMPLETED** 2/24/21
GROUND ELEVATION _____ **HOLE SIZE** inches
DRILLING CONTRACTOR _____
GROUND WATER LEVELS:
DRILLING METHOD _____
▽ **AT TIME OF DRILLING** 3.50 ft
LOGGED BY DP **CHECKED BY** JEK
AT END OF DRILLING ---
NOTES See Attached Location Plan
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲ 20 40 60 80 / PL MC LL 20 40 60 80 / ☐ FINES CONTENT (%) ☐ 20 40 60 80
0		Gray Sand with Traces of Roots				34		
		Light Gray Sand				37		
		Dark Gray Sand with Traces of Hardpan				53		
		▽ Brown Clayed Sand				52		
						54		
5						50		

Bottom of borehole at 6.0 feet.

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Sebastian, FL 32978
Tel: (772)-589-0712
Fax: (772)-589-6469

BORING NUMBER HA-3

CLIENT Della Porta Construction Inc.
PROJECT NAME Jetson's Fort Pierce, 4145 S. US 1
PROJECT NUMBER 211328-b&p
PROJECT LOCATION Fort Pierce, Florida
DATE STARTED 2/24/21 **COMPLETED** 2/24/21
GROUND ELEVATION _____ **HOLE SIZE** inches
DRILLING CONTRACTOR _____
GROUND WATER LEVELS:
DRILLING METHOD _____
▽ **AT TIME OF DRILLING** 3.75 ft
LOGGED BY DP **CHECKED BY** JEK
AT END OF DRILLING ---
NOTES See Attached Location Plan
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲ 20 40 60 80 / PL MC LL 20 40 60 80 / ☐ FINES CONTENT (%) ☐ 20 40 60 80
0		Gray Sand with Traces of Roots				31		
		Light Gray Sand				38		
		Dark Gray Sand with Traces of Hardpan				50		
		▽ Brown Clayed Sand				47		
5						49		
		Light Gray Clayed Sand				51		

Bottom of borehole at 6.0 feet.

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Tel: (772)-589-0712
Fax: (772)-589-6469

BORING NUMBER PB-1

CLIENT Della Porta Construction Inc.
PROJECT NAME Jetson's Fort Pierce, 4145 S. US 1
PROJECT NUMBER 211328-b&p
PROJECT LOCATION Fort Pierce, Florida
DATE STARTED 2/24/21 **COMPLETED** 2/24/21
GROUND ELEVATION _____ **HOLE SIZE** inches
DRILLING CONTRACTOR _____
GROUND WATER LEVELS:
DRILLING METHOD Split Spoon Sample
▽ **AT TIME OF DRILLING** 0.92 ft
LOGGED BY SR/SF **CHECKED BY** JEK
AT END OF DRILLING ---
NOTES See Attached Location Plan
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)
0		▽ Gray Sand with Traces of Clay and Shell	SS		1-2-2 (4)		
		Light Gray Clayed Sand	SS		3-4-5 (9)		
5		Light Gray Sand, Slightly Clayed	SS		4-4-6 (10)		
			SS		5-6-5 (11)		
		Light Gray Sand, Slightly Silty	SS		4-5-5 (10)		
10			SS		3-5-4 (9)		
		Reddish Brown Sand	SS		4-4-6 (10)		
15							

Bottom of borehole at 15.0 feet.

▲ SPT N VALUE ▲
20 40 60 80
PL MC LL
20 40 60 80
☐ FINES CONTENT (%) ☐
20 40 60 80

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Sebastian, FL 32978
Tel: (772)-589-0712
Fax: (772)-589-6469

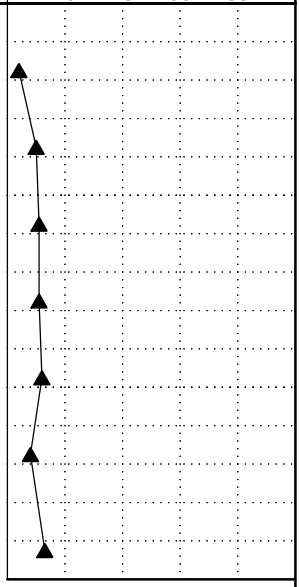
BORING NUMBER PB-2

CLIENT Della Porta Construction Inc.
PROJECT NAME Jetson's Fort Pierce, 4145 S. US 1
PROJECT NUMBER 211328-b&p
PROJECT LOCATION Fort Pierce, Florida
DATE STARTED 2/24/21 **COMPLETED** 2/24/21
GROUND ELEVATION _____ **HOLE SIZE** inches
DRILLING CONTRACTOR _____
GROUND WATER LEVELS:
DRILLING METHOD Split Spoon Sample
▽ **AT TIME OF DRILLING** 3.50 ft
LOGGED BY SR/SF **CHECKED BY** JEK
AT END OF DRILLING ---
NOTES See Attached Location Plan
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)
0		Gray Sand with Traces of Roots					
		Light Gray Sand	SS		1-2-2 (4)		
		Dark Gray Sand with Traces of Hardpan					
		Brown Clayed Sand	SS		2-3-7 (10)		
5		Brown Sand with Traces of Clay	SS		9-6-5 (11)		
			SS		5-5-6 (11)		
		Light Gray Sand, Slightly Clayed	SS		4-6-6 (12)		
10							
		Light Gray Sand, Slightly Silty	SS		3-4-4 (8)		
		Reddish Brown Sand	SS		4-6-7 (13)		
15							

Bottom of borehole at 15.0 feet.

▲ SPT N VALUE ▲
20 40 60 80
PL MC LL
20 40 60 80
☐ FINES CONTENT (%) ☐
20 40 60 80



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Tel: (772)-589-0712
Fax: (772)-589-6469

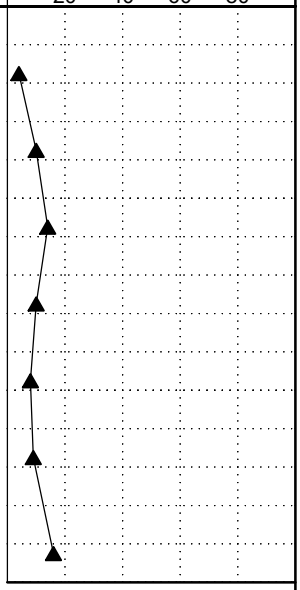
BORING NUMBER PB-3

CLIENT Della Porta Construction Inc.
PROJECT NAME Jetson's Fort Pierce, 4145 S. US 1
PROJECT NUMBER 211328-b&p
PROJECT LOCATION Fort Pierce, Florida
DATE STARTED 2/24/21 **COMPLETED** 2/24/21
GROUND ELEVATION _____ **HOLE SIZE** inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD Split Spoon Sample
▽ **AT TIME OF DRILLING** 3.67 ft
LOGGED BY SR/SF **CHECKED BY** JEK
AT END OF DRILLING ---
NOTES See Attached Location Plan
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)
0		Gray Sand with Traces of Roots					
		Light Gray Sand	SS		1-2-2 (4)		
		Dark Gray Sand with Traces of Hardpan					
		▽ Brown Clayed Sand	SS		2-3-7 (10)		
5		Light Gray Clayed Sand	SS		11-8-6 (14)		
		Light Gray Sand, Slightly Clayed	SS		6-5-5 (10)		
10		Light Gray Sand, Slightly Silty	SS		4-4-4 (8)		
		Reddish Brown Sand	SS		5-4-5 (9)		
15			SS		6-8-8 (16)		

Bottom of borehole at 15.0 feet.

▲ SPT N VALUE ▲
20 40 60 80
PL MC LL
20 40 60 80
☐ FINES CONTENT (%) ☐
20 40 60 80



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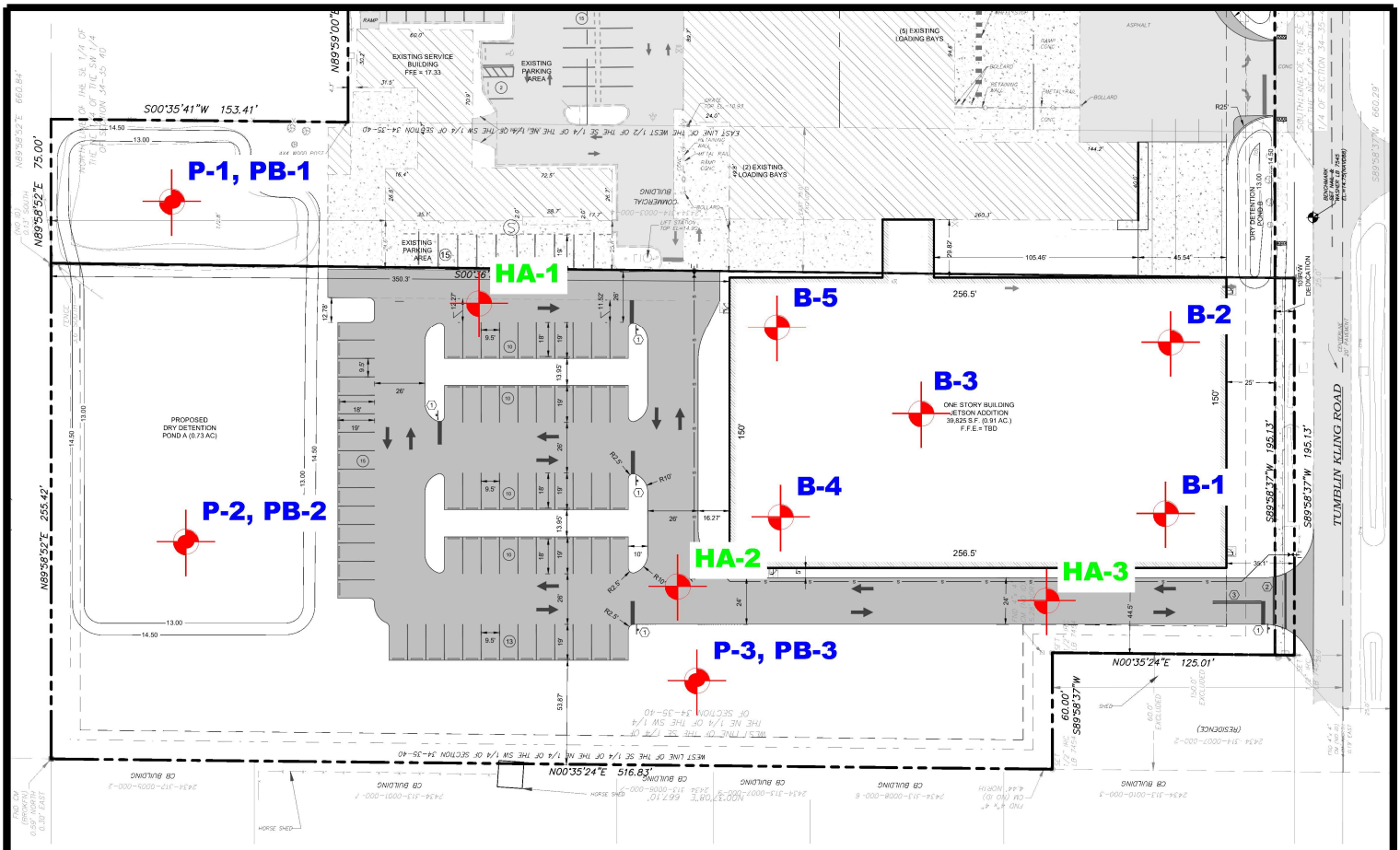


SITE PLAN

SCALE: 1" = 30'

GRAPHIC SCALE
30 0 15 30
(IN FEET)
1 inch = 30 ft.

LEGEND

- EXISTING ASPHALT
- PROPOSED ASPHALT
- EXISTING CONCRETE
- PROPOSED CONCRETE
- EXISTING BUILDINGS

SIGN & PAVEMENT MARKING SCHEDULE

SIGN ID NUMBER	SIZE	DESIGNATION / NOTES
①	30"	(R1-1) STOP SIGN AND 24" SOLID WHITE STOP BAR
②	12"	6' WIDE CROSSWALK, 12" SOLID WHITE STRIPING
③	6"	25 LF DOUBLE YELLOW (PAINTED)
④		DO NOT ENTER SIGN
⑤		PAVEMENT MARKINGS PER MUTCD

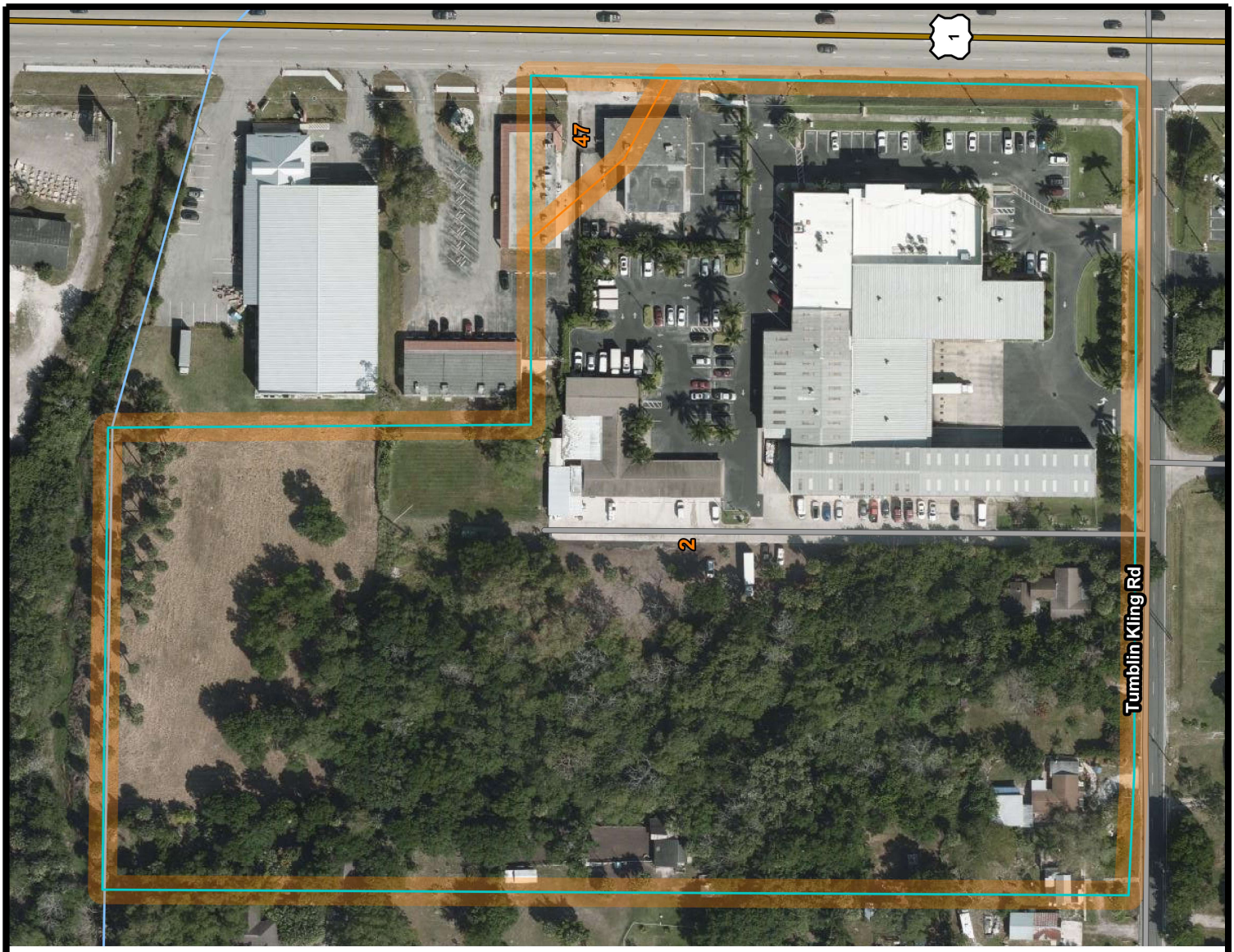
LOCATION OF TESTS

PROJECT: Jetson's Fort Pierce, 4145 S. US 1, Fort Pierce, Florida

SHEET 1 OF 2
PERMIT #:
PROJECT #: 211328-b&p

KSM ENGINEERING AND TESTING

DRAWN BY: C.V.
DESIGNED BY: J.K.
DATE: 20210303
SCALE: NONE



USDA SOILS SURVEY

2-Ankona and Farmton Sands

47-Urban Land, 0 to 2 Percent Slopes

PROJECT: Jetson's Fort Pierce, 4145 S. US 1, Fort Pierce, Florida

SHEET 2 OF 2
PERMIT #:
PROJECT #: 211328-soils

KSM ENGINEERING AND TESTING

DRAWN BY: C.V.
DESIGNED BY: J.K.
DATE: 20210303
SCALE: NONE

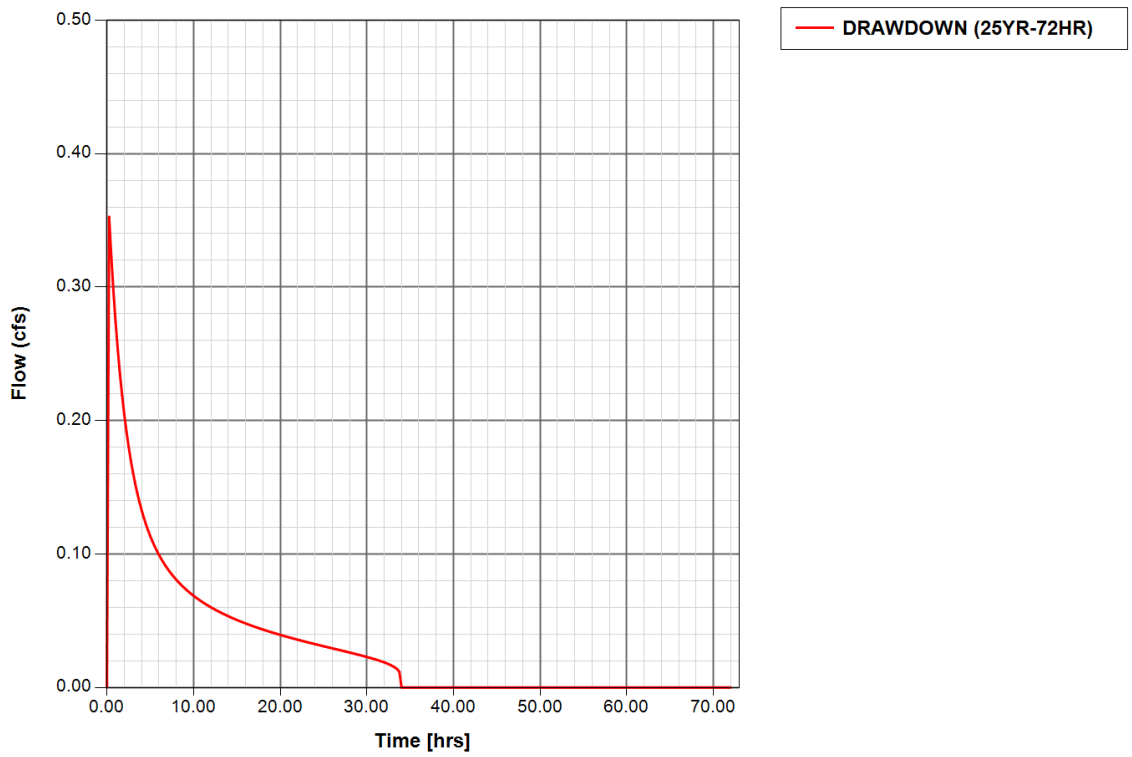
Appendix C
Dry Retention Recovery Analysis

Percolation Link: PERC

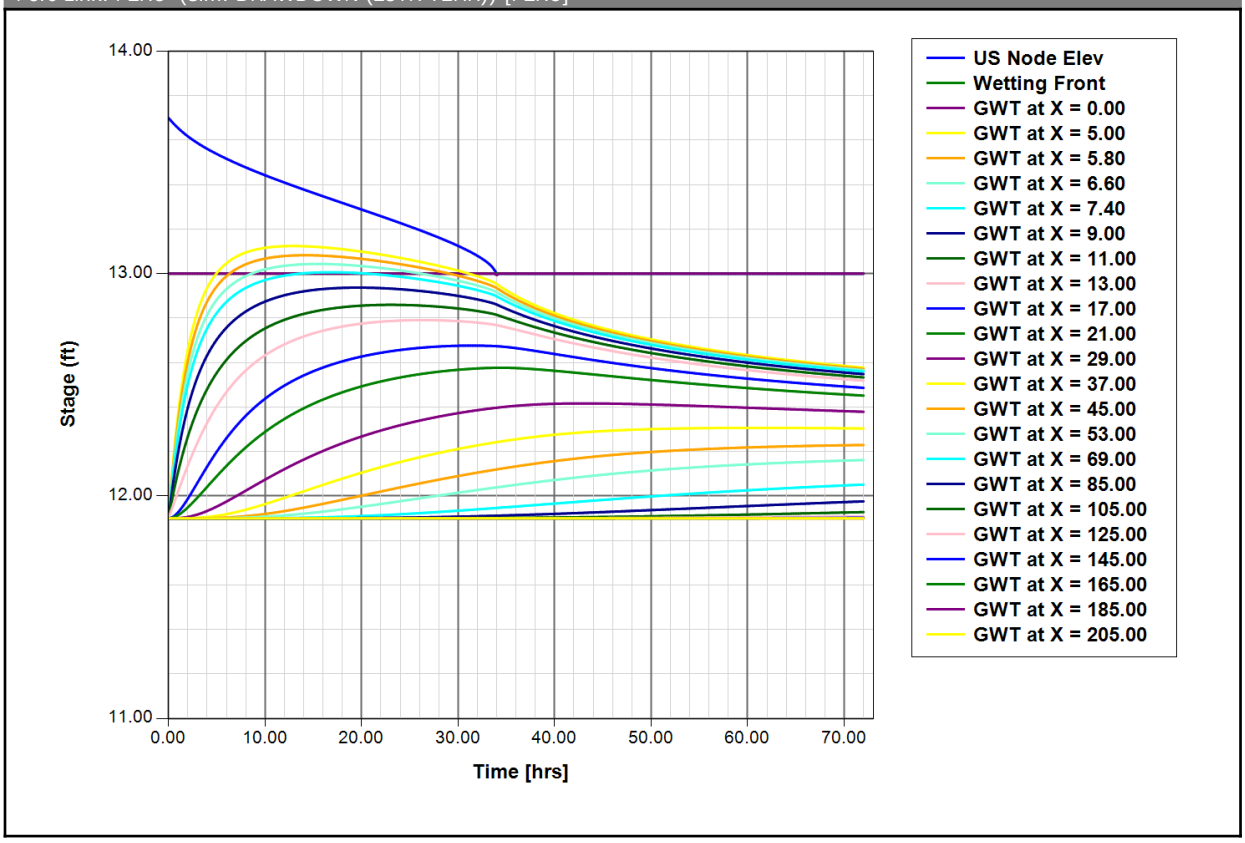
Scenario:	RECOVERY	Surface Area Option:	Vary Based on Stage/Area Table
From Node:	PROP. STAGE STORAGE		
To Node:	GROUNDWATER	Vertical Flow Termination:	Horizontal Flow Algorithm
Link Count:	1	Perimeter 1:	728.00 ft
Flow Direction:	Both	Perimeter 2:	1038.00 ft
Aquifer Base Elevation:	0.00 ft	Perimeter 3:	1980.00 ft
Water Table Elevation:	11.90 ft	Distance P1 to P2:	50.00 ft
Annual Recharge Rate:	0 ipy	Distance P2 to P3:	150.00 ft
Horizontal Conductivity:	9.300 fpd	# of Cells P1 to P2:	5
Vertical Conductivity:	4.400 fpd	# of Cells P2 to P3:	15
Fillable Porosity:	0.300		
Layer Thickness:	0.00 ft		

Comment:

Link Flow: PERC [RECOVERY]



Perc Link: PERC (Sim: DRAWDOWN (25YR-72HR)) [PERC]



Appendix D
SFWMD Permit 56-02898-P Excerpt

Last Date For Agency Action: 17-JUN-2008

GENERAL ENVIRONMENTAL RESOURCE PERMIT STAFF REPORT

Project Name: Jetson Tv And Appliance

Permit No.: 56-02898-P

Application No.: 080124-20 **Associated File:** 080317-11 WU

Application Type: Environmental Resource (New General Permit)

Location: St Lucie County, S34/T35S/R40E

Permittee : Jetson Investment Inc

Operating Entity : Jetson Investment Inc

Project Area: 3.87 acres

Project Land Use: Commercial

Drainage Basin: NORTH ST LUCIE

Receiving Body: US Highway 1 system **Class:** N/A

Special Drainage District: NA

Conservation Easement To District : No

Sovereign Submerged Lands: No

PROJECT PURPOSE:

This application is a request for an Environmental Resource Permit to authorize construction and operation of a surface water management system to serve 3.87 acres of commercial development.

PROJECT EVALUATION:

PROJECT SITE DESCRIPTION:

The site is located on the northwest corner of the intersection of U.S.Highway 1 and Tumblin Kling Road in St. Lucie County. Please refer to Exhibit 1.

There are no permitted surface water management facilities within the project area. The site contains 2.28 acres of existing development, including three buildings and associated pavement.

There are no wetlands located within or affected by the proposed project.

PROPOSED PROJECT:

The proposed project involves the construction and operation a surface water management system to serve 3.87 acres of commercial development. Specifically, the existing warehouse/retail buildings will be enlarged, along with added access drives and parking areas.

The proposed surface water management system consists of catch basins interconnected by conveyance piping, which will direct the surface water to interconnected dry detention areas to be located at the northwest and south boundaries of the property. The dry detention areas will discharge to the existing catch basin within the U.S. Highway 1 right-of-way along the east project boundary. Please refer to Exhibit # 2.1 (three pages).

LAND USE:

Construction:

Basin : Site

	Total Basin	
Building Coverage	1.20	acres
Concrete	.20	acres
Dry Detention Bottom	.41	acres
Dry Detention Sides	.16	acres
Pavement	1.40	acres
Pervious	.50	acres
Total:	**3.87**	

WATER QUANTITY:

Discharge Rate :

As shown in the table below, the proposed project discharge is within the allowable limit for the area.

Basin	**Allow Disch (cfs)**	**Method Of Determination**	**Peak Disch (cfs)**	**Peak Stage (ft, NGVD 29)**
Site	3.78	Pre Vs Post	3.78	16.18

Finished Floors :

Basin	Peak Stage (ft, NGVD 29)	Proposed Min. Finished Floors (ft, NGVD 29)	FEMA Elevation (ft, NGVD 29)
Site	17.14	17.17	N/A

Parking Lot Design :

Basin	Peak Stage (ft, NGVD 29)	Proposed Min.Parking Elev. (ft, NGVD 29)
Site	15.82	16

Control Elevation :

Basin	Area (Acres)	Ctrl Elev (ft, NGVD 29)	WSWT Ctrl Elev (ft, NGVD 29)	Method Of Determination
Site	3.87	13.15	13.15	Wet Season Soil Borings

Receiving Body :

Basin	Str.#	Receiving Body
Site	CS	US Highway 1 system

Discharge Structures: Note: The units for all the elevation values of structures are (ft, NGVD 29)

Bleeders:

Basin	Str#	Count	Type	Width	Height	Length	Dia.	Invert Angle	Invert Elev.
Site	CS	1	Circular Orifice				3"		13.15

Culverts:

Basin	Str#	Count	Type	Width	Length	Dia.
Site	CS	1	Reinforced Concrete Pipe		17'	15"

Inlets:

Basin	Str#	Count	Type	Width	Length	Dia.	Crest Elev.
Site	CS	1	Inlet	27"	34"		16.5

Weirs:

Basin	Str#	Count	Type	Width	Height	Length	Dia.	Elev.
Site	CS	1	Sharp Crested	2'				15.5 (crest)

WATER QUALITY :

Water quality volume provided is equivalent to 2.5 inches times the percent impervious project area, adjusted for dry detention. No adverse water quality impacts are anticipated as a result of the proposed project. The applicant has provided reasonable assurance that water quality standards will not be violated during construction of the proposed work. Best Management Practices (BMPs) will be implemented and silt screens will be placed so as to contain turbidity during construction of the proposed project. All erosion and turbidity control measures shall remain in place until the completion of onsite construction. Please refer to Exhibit No. 2.1 and Special Conditions.

Basin		Treatment Method	Vol Req.d (ac-ft)	Vol Prov'd
Site	Treatment	Dry Detention	.44	.44

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 groundwater well will be used as a source for irrigation water for the project. Water Use application number 080317-11 has been submitted and is being processed concurrently for this project.

The applicant has indicated that dewatering is not required for construction of this project.

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, unless the work qualifies for a No-Notice Short-Term Dewatering permit pursuant to Chapter 40E-20.302(3) or is exempt pursuant to Section 40E-2.051, FAC.

CERP:

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

Potable Water Supplier:

Fort Pierce Utilities Authority

Waste Water System/Supplier:

Fort Pierce Utilities Authority

Right-Of-Way Permit Status:

A 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 the agency has no objections to the issuance of this permit.

DCA/CZM Consistency Review:

The District has not received a finding of inconsistency from the Florida Department of Environmental Protection or other commenting agencies regarding the provisions of the federal Coastal Zone Management Plan.

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 REVIEW:

DIVISION APPROVAL:

NATURAL RESOURCE MANAGEMENT:

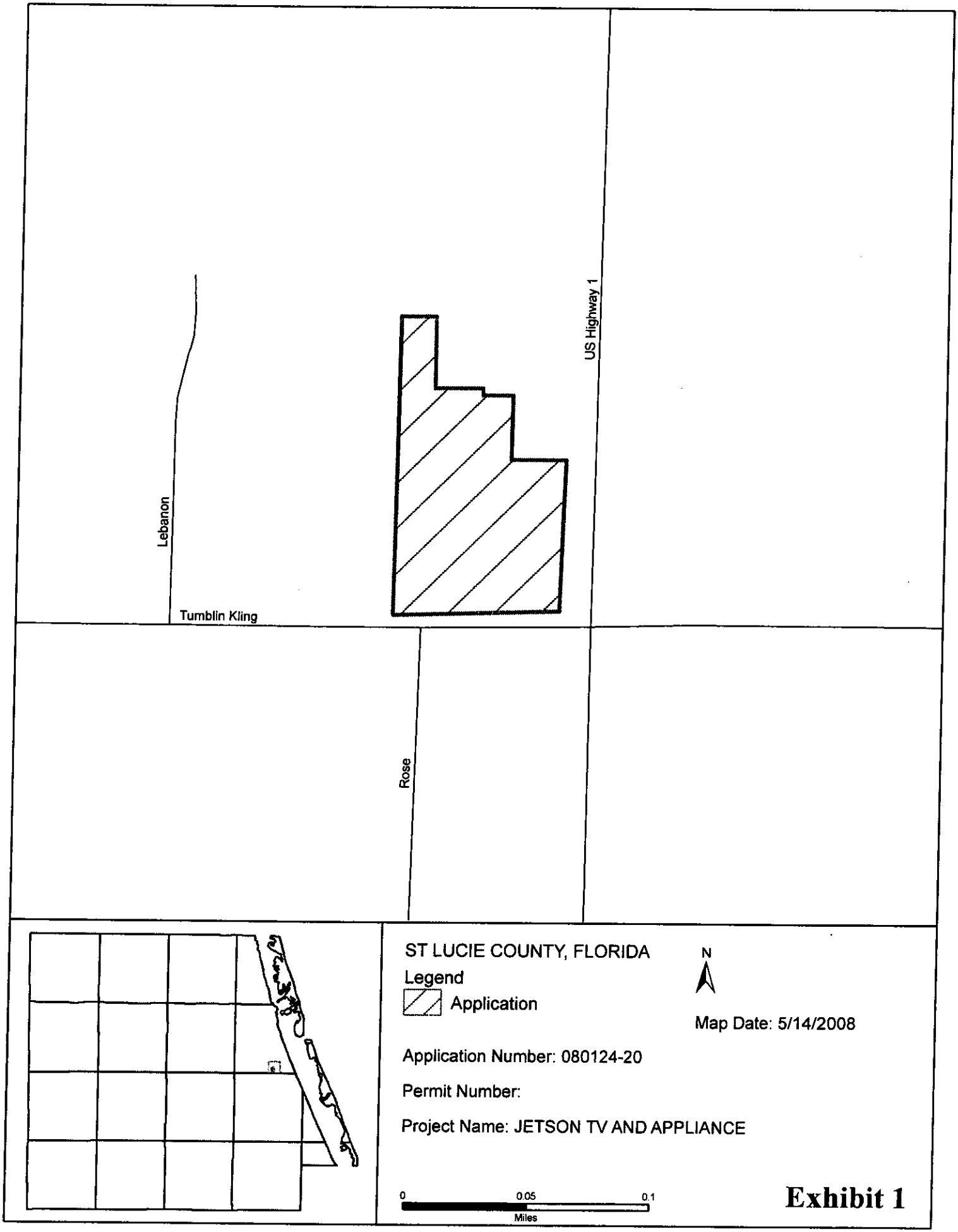
Melinda Parrott

DATE: 28 May 08

SURFACE WATER MANAGEMENT:

Hugo A. Carter, P.E.

DATE: 27 May 08



ST LUCIE COUNTY, FLORIDA

Legend

Application

N

Map Date: 5/14/2008

Application Number: 080124-20

Permit Number:

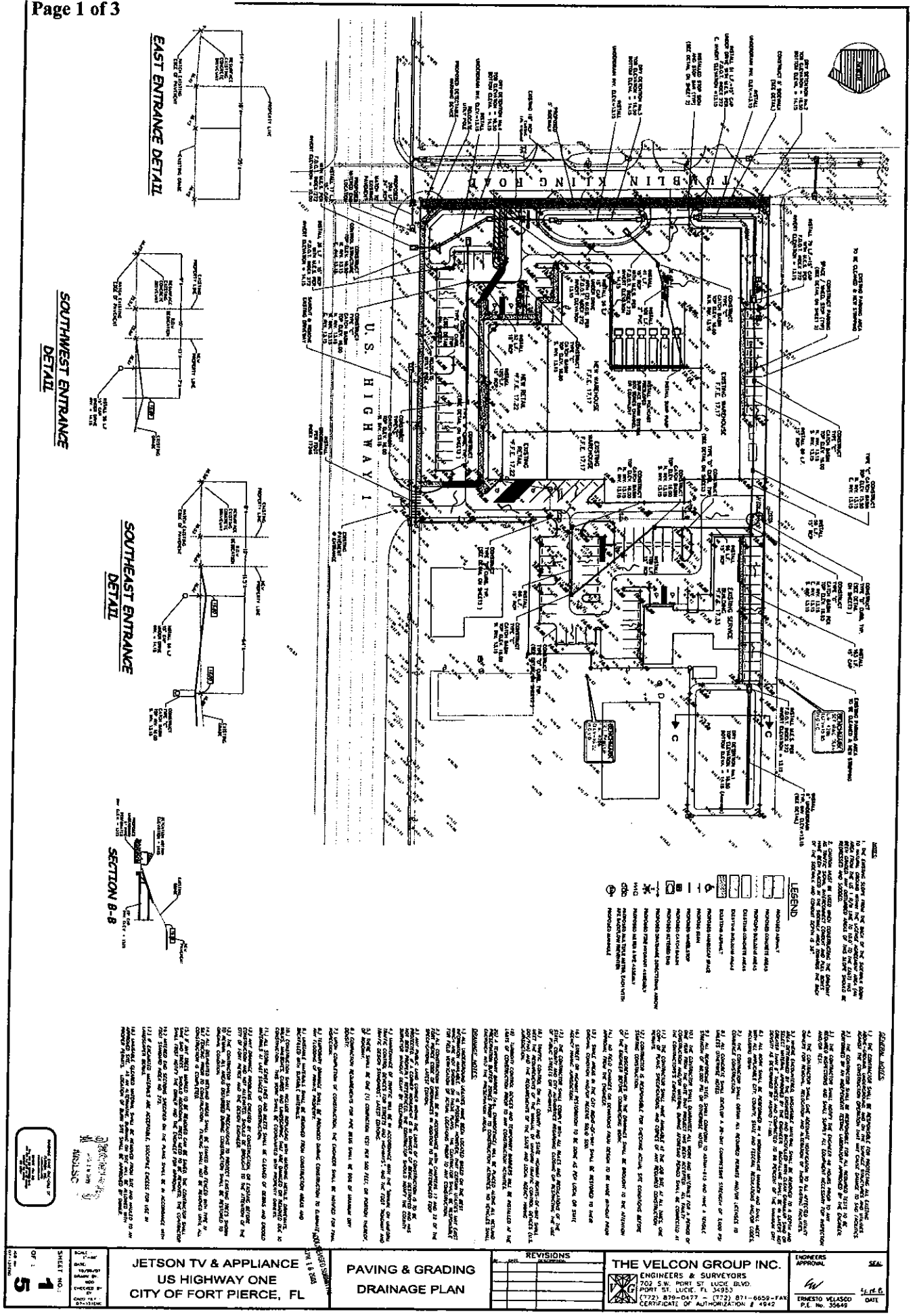
Project Name: JETSON TV AND APPLIANCE

0 0.05 0.1

Miles

Exhibit 1

EXHIBIT #2.1
Application #080124-20
Page 1 of 3



JETSON TV & APPLIANCE
US HIGHWAY ONE
CITY OF FORT PIERCE, FL

PAVING & GRADING
DRAINAGE PLAN

REVISIONS

THE VELCON GROUP INC.
ENGINEERS & SURVEYORS
702 S.W. PORT ST. LUCIE BLVD.
PORT ST. LUCIE, FL 34953
(772) 879-0477 - (772) 871-6658-FAX
CERTIFICATE OF AUTHORIZATION # 4942

ENGINEERS APPROVAL

SEAL

ERNESTO VELASCO
P.E. No. 35649

DATE

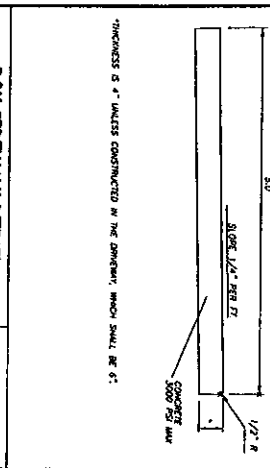
SHEET NO: 1
OF: 5

TYPICAL PAVEMENT SECTION

NOT TO SCALE

R/W SIDEWALK DETAIL

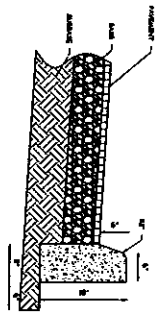
NOT TO SCALE



*THICKNESS IS 4" UNLESS CONSTRUCTED IN THE DRIVEWAY, WHICH SHALL BE 6".

TYPE "D" CURB

NOT TO SCALE



SIDEWALK DETAIL

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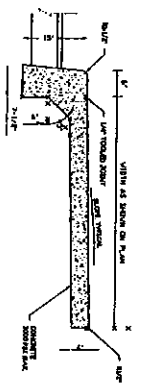

6" UNDERDRAIN

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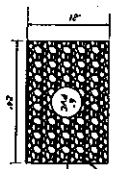

SECTION C-C

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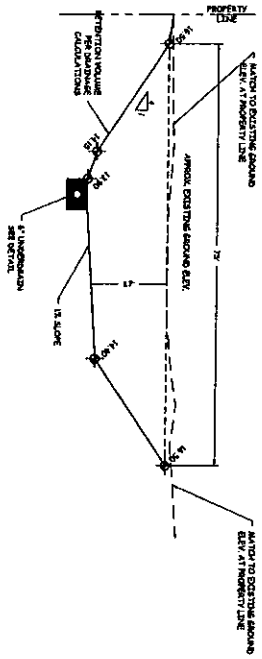

"C" INLET DETAIL

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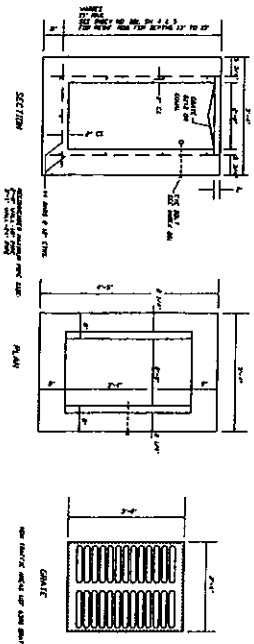

CROSS DRAIN MITERED END SECTION

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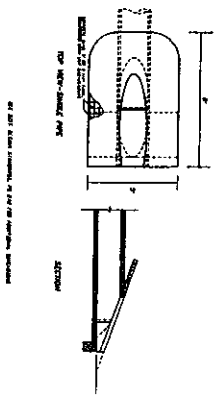
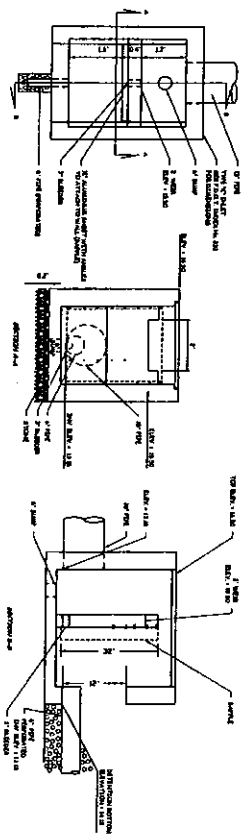
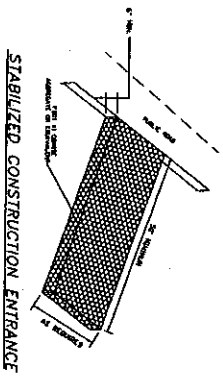


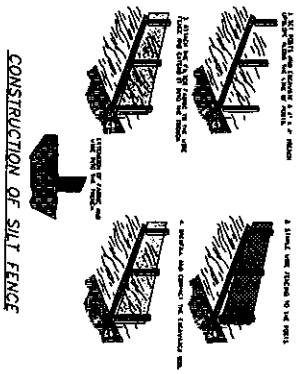
CONTROL STRUCTURE BASIN

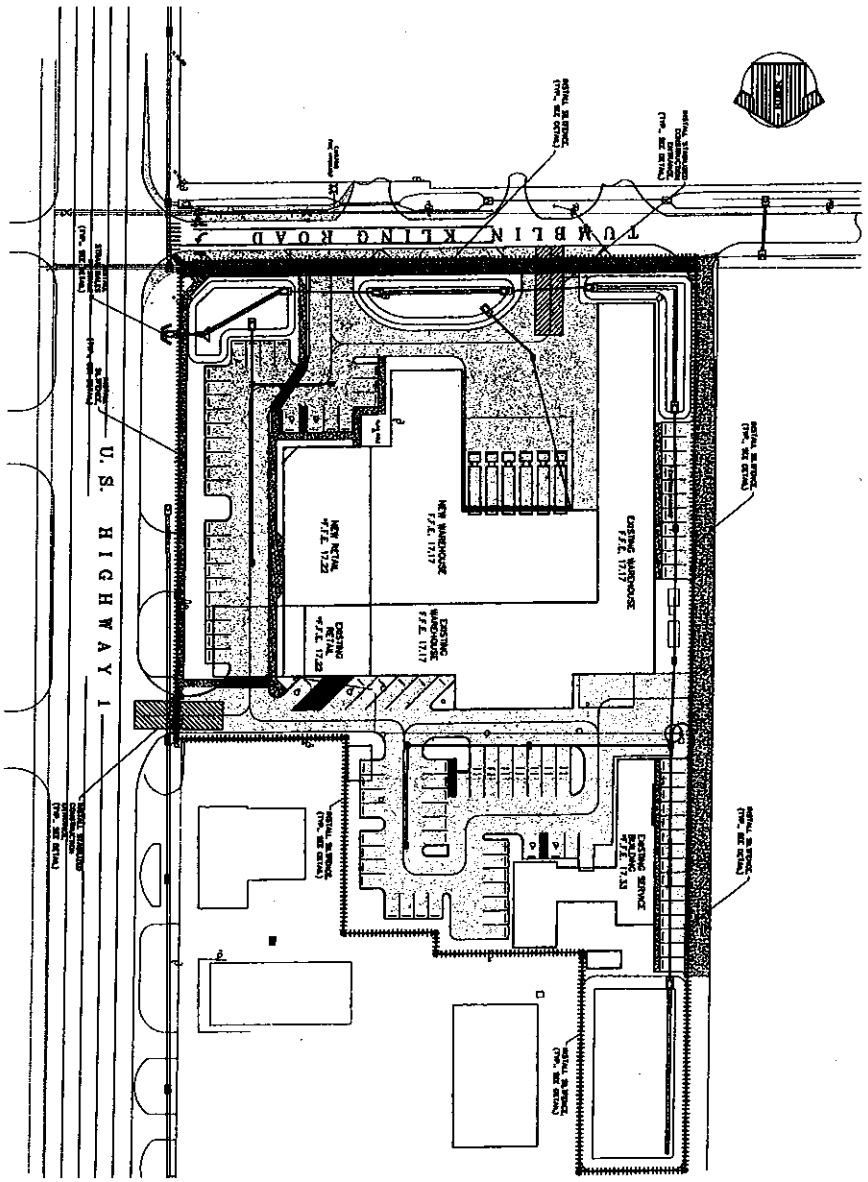
NOT TO SCALE

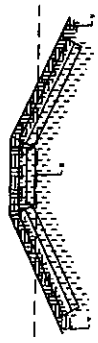


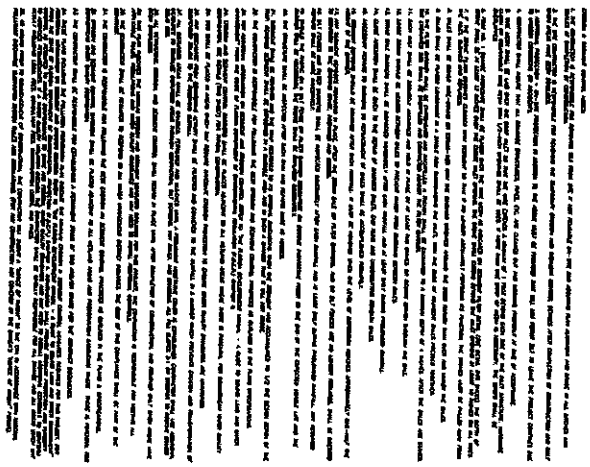
SHEET NO. 3 OF 5	JETSON TV & APPLIANCE US HIGHWAY ONE CITY OF FORT PIERCE, FL	PAVING & GRADING DRAINAGE DETAILS	REVISIONS	THE VELCON GROUP INC. ENGINEERS & SURVEYORS 702 S.W. PORT ST. LUCIE BLVD PORT ST. LUCIE, FL 34953 (772) 879-0477 - (772) 871-6659-FAX CERTIFICATE OF AUTHORIZATION # 4942	ENGINEERS APPROVAL ERNESTO VELASCO P.E. No. 35649 DATE











SHEET NO.: 5 OF 5	JETSON TV & APPLIANCE AT US HIGHWAY ONE CITY OF FORT PIERCE, FL	SOIL & EROSION NOTES AND DETAILS	REVISIONS	THE VELCON GROUP INC. ENGINEERS & SURVEYORS 702 S.W. PORT ST. LUCIE BLVD. PORT ST. LUCIE, FL 34953 (772) 878-0477 - (772) 871-6659-FAX CERTIFICATE OF AUTHORIZATION # 4942	ENGINEERS APPROVAL SEAL ERNESTO VELASCO P.E. No. 35449 DATE 3-08

Appendix E

Other Miscellaneous Backup

(Mannings Table, Curve Number Sheet, Pre-Tc / Basin Exhibit)

Sheet flow

Sheet flow is flow over plane surfaces. It usually occurs in the headwater of streams. With sheet flow, the friction value (Manning's n) is an effective roughness coefficient that includes the effect of raindrop impact; drag over the plane surface; obstacles such as litter, crop ridges, and rocks; and erosion and transportation of sediment. These n values are for very shallow flow depths of about 0.1 foot or so. Table 3-1 gives Manning's n values for sheet flow for various surface conditions.

Table 3-1 Roughness coefficients (Manning's n) for sheet flow

Surface description	n [1/]
Smooth surfaces (concrete, asphalt, gravel, or bare soil)	0.011
Fallow (no residue)	0.05
Cultivated soils:	
Residue cover ≤20%	0.06
Residue cover >20%	0.17
Grass:	
Short grass prairie	0.15
Dense grasses [2/]	0.24
Bermudagrass .	0.41
Range (natural)	0.13
Woods:[3/]	
Light underbrush	0.40
Dense underbrush	0.80

1 The n values are a composite of information compiled by Engman (1986).

2 Includes species such as weeping lovegrass, bluegrass, buffalo grass, blue grama grass, and native grass mixtures.

3 When selecting n , consider cover to a height of about 0.1 ft. This is the only part of the plant cover that will obstruct sheet flow.

For sheet flow of less than 300 feet, use Manning's kinematic solution (Overtop and Meadows 1976) to compute T_t:

$$T_t = \frac{0.007(nL)^{0.8}}{(P_2)^{0.5} s^{0.4}} \qquad \text{[eq. 3-3]}$$

where:

T_t = travel time (hr),
n = Manning's roughness coefficient (table 3-1)
L = flow length (ft)
P_2 = 2-year, 24-hour rainfall (in)
s = slope of hydraulic grade line (land slope, ft/ft)

This simplified form of the Manning's kinematic solution is based on the following: (1) shallow steady uniform flow, (2) constant intensity of rainfall excess (that part of a rain available for runoff), (3) rainfall duration of 24 hours, and (4) minor effect of infiltration on travel time. Rainfall depth can be obtained from appendix B.

Shallow concentrated flow

After a maximum of 300 feet, sheet flow usually becomes shallow concentrated flow. The average velocity for this flow can be determined from figure 3-1, in which average velocity is a function of watercourse slope and type of channel. For slopes less than 0.005 ft/ft, use equations given in appendix F for figure 3-1. Tillage can affect the direction of shallow concentrated flow. Flow may not always be directly down the watershed slope if tillage runs across the slope.

After determining average velocity in figure 3-1, use equation 3-1 to estimate travel time for the shallow concentrated flow segment.

Open channels

Open channels are assumed to begin where surveyed cross section information has been obtained, where channels are visible on aerial photographs, or where blue lines (indicating streams) appear on United States Geological Survey (USGS) quadrangle sheets. Manning's equation or water surface profile information can be used to estimate average flow velocity. Average flow velocity is usually determined for bankfull elevation.

Table 2-2a Runoff curve numbers for urban areas [1/]

Cover description: Cover type and hydrologic condition	Average percent impervious area [2/]	Curve numbers for hydrologic soil group: A	B	C	D
Fully developed urban areas (vegetation established)					
Open space (lawns, parks, golf courses, cemeteries, etc.) [3/]:					
Poor condition (grass cover < 50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover > 75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way)		98	98	98	98
Paved; open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only) [4/]		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82
Developing urban areas					
Newly graded areas (pervious areas only, no vegetation) [5/]		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c).					

POST-DEVELOPMENT

[1] Average runoff condition, and $I_a = 0.2S$.

[2] The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.

[3] CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.

[4] Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.

[5] Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4 based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.

Table 2-2b Runoff curve numbers for cultivated agricultural lands [1/]

Cover description			Curve numbers for hydrologic soil group			
Cover type	Treatment [2/]	Hydrologic condition [3/]	A	B	C	D
Fallow	Bare soil	—	77	86	91	94
	Crop residue cover (CR)	Poor	76	85	90	93
		Good	74	83	88	90
Row crops	Straight row (SR)	Poor	72	81	88	91
		Good	67	78	85	89
	SR + CR	Poor	71	80	87	90
		Good	64	75	82	85
	Contoured (C)	Poor	70	79	84	88
		Good	65	75	82	86
	C + CR	Poor	69	78	83	87
		Good	64	74	81	85
	Contoured & terraced (C&T)	Poor	66	74	80	82
		Good	62	71	78	81
	C&T+ CR	Poor	65	73	79	81
		Good	61	70	77	80
Small grain	SR	Poor	65	76	84	88
		Good	63	75	83	87
	SR + CR	Poor	64	75	83	86
		Good	60	72	80	84
	C	Poor	63	74	82	85
		Good	61	73	81	84
	C + CR	Poor	62	73	81	84
		Good	60	72	80	83
	C&T	Poor	61	72	79	82
		Good	59	70	78	81
	C&T+ CR	Poor	60	71	78	81
		Good	58	69	77	80
Close-seeded or broadcast legumes or rotation meadow	SR	Poor	66	77	85	89
		Good	58	72	81	85
	C	Poor	64	75	83	85
		Good	55	69	78	83
	C&T	Poor	63	73	80	83
		Good	51	67	76	80

[1] Average runoff condition, and I_a=0.2S

[2] Crop residue cover applies only if residue is on at least 5% of the surface throughout the year.

[3] Hydraulic condition is based on combination factors that affect infiltration and runoff, including (a) density and canopy of vegetative areas, (b) amount of year-round cover, (c) amount of grass or close-seeded legumes, (d) percent of residue cover on the land surface (good ≥ 20%), and (e) degree of surface roughness.

Poor: Factors impair infiltration and tend to increase runoff.

Good: Factors encourage average and better than average infiltration and tend to decrease runoff.

Table 2-2c Runoff curve numbers for other agricultural lands [1/]

Cover description		Curve numbers for hydrologic soil group			
Cover type	Hydrologic condition	A	B	C	D
Pasture, grassland, or range—continuous forage for grazing. [2/]	Poor	68	79	86	89
	Fair	49	69	79	84
	Good	39	61	74	80
Meadow—continuous grass, protected from grazing and generally mowed for hay.	—	30	58	71	78
Brush—brush-weed-grass mixture with brush the major element. [3/]	Poor	48	67	77	83
	Fair	35	56	70	77
	Good	30 [4/]	48	65	73
Woods—grass combination (orchard or tree farm). [5/]	Poor	57	73	82	86
	Fair	43	65	76	82
	Good	32	58	72	79
Woods. [6/] PRE-DEVELOPMENT	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	30 [4/]	55	70	77
Farmsteads—buildings, lanes, driveways, and surrounding lots.	—	59	74	82	86

1 Average runoff condition, and $I_a = 0.2S$.

2 *Poor:* <50%) ground cover or heavily grazed with no mulch.
Fair: 50 to 75% ground cover and not heavily grazed.
Good: > 75% ground cover and lightly or only occasionally grazed.

3 *Poor:* <50% ground cover.
Fair: 50 to 75% ground cover.
Good: >75% ground cover.

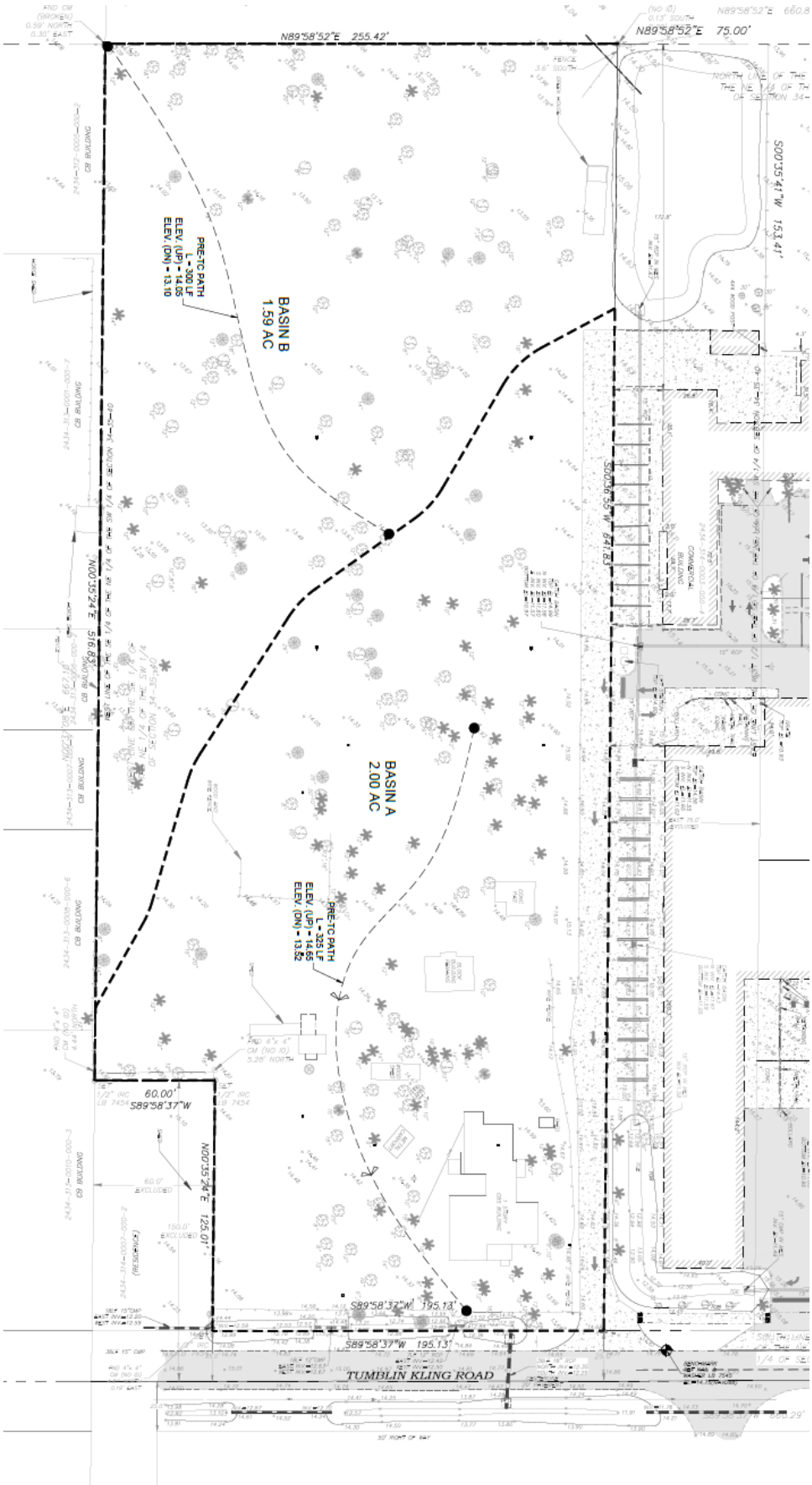
4 Actual curve number is less than 30; use CN = 30 for runoff computations.

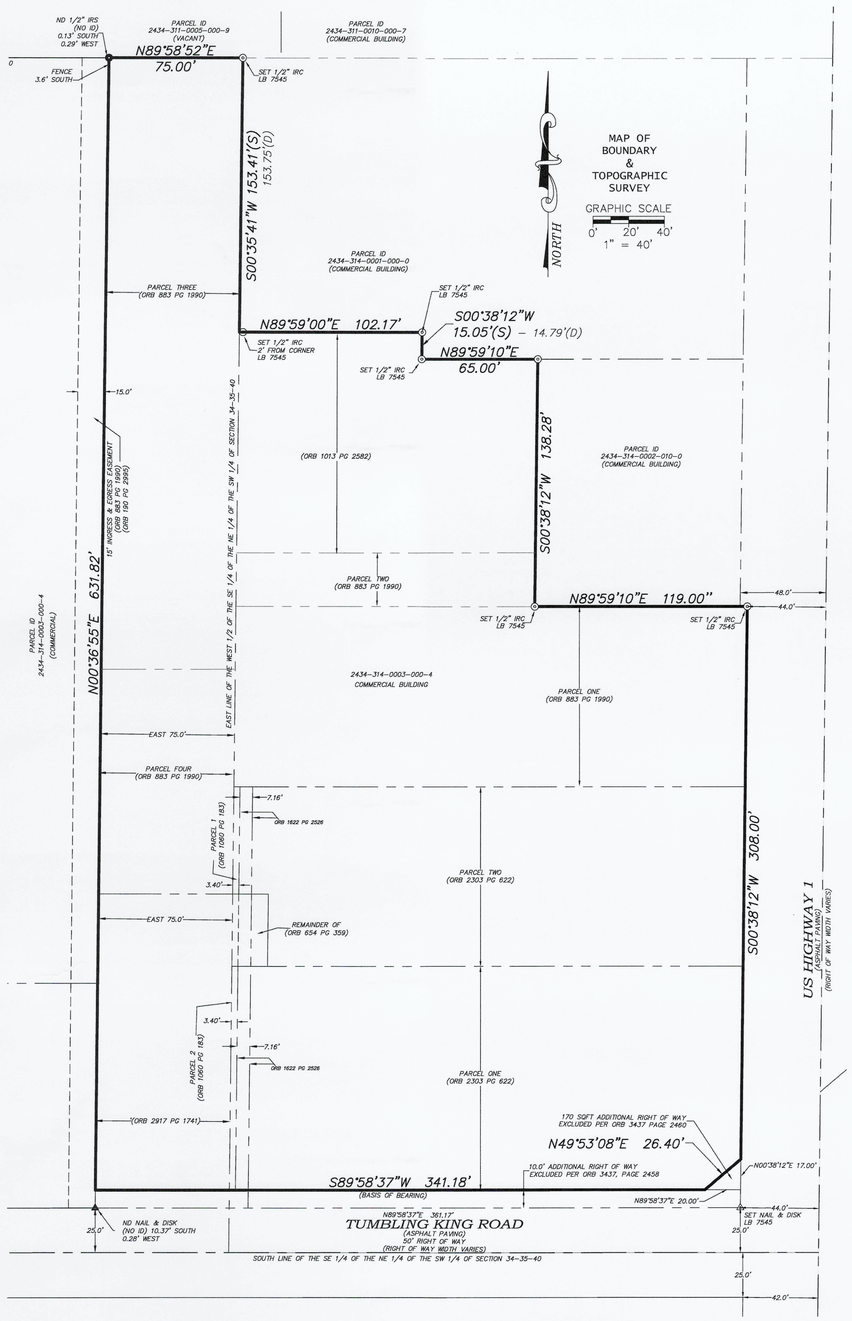
5 CN's shown were computed for areas with 50% woods and 50% grass (pasture) cover. Other combinations of conditions may be computed from the CN's for woods and pasture.

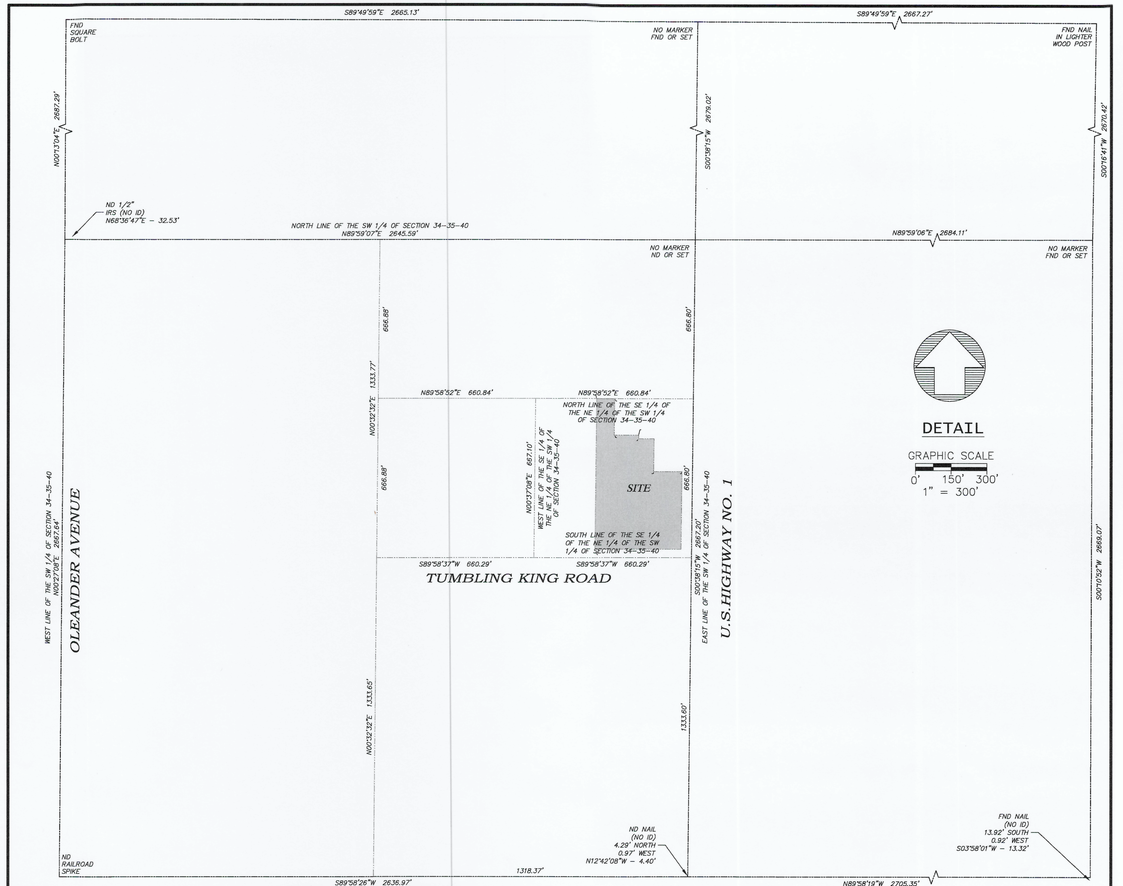
6 *Poor:* Forest litter, small trees, and brush are destroyed by heavy grazing or regular burning.
Fair: Woods are grazed but not burned, and some forest litter covers the soil.
Good: Woods are protected from grazing, and litter and brush adequately cover the soil.

JETSON FT. PIERCE SITE IMPROVEMENTS

PRE-TC / BASIN EXHIBIT







LEGEND

CONC	=	CONCRETE
(D)	=	DESCRIPTION
ID	=	IDENTIFICATION
FND	=	FOUND
IP	=	IRON PIPE
IR	=	IRON ROD
IRC	=	IRON ROD WITH CAP
LB	=	LICENSED BUSINESS
LS	=	LICENSED SURVEYOR
O.R.B	=	OFFICIAL RECORDS BOOK
(P)	=	PLAT
P.B.	=	PLAT BOOK
PG.	=	PAGE
PSM	=	PROFESSIONAL SURVEYOR AND MAPPER
RCP	=	REINFORCED CONCRETE PIPE
(S)	=	SURVEYED

SURVEYOR'S NOTES

1.) THIS SURVEY DOES NOT DETERMINE OR INDICATE LAND OWNERSHIP.
2.) THE SURVEYOR DID NOT RESEARCH OR ABSTRACT THE LAND RECORDS FOR RIGHTS-OF-WAY, EASEMENTS, RESERVATIONS, DEED RESTRICTIONS, ZONING REGULATIONS, SETBACKS, LAND USE PLAN DESIGNATIONS, ADJOINING DEEDS, LIENS, MURPHY ACT RIGHTS-OF-WAY, AREAS OF LOCAL CONCERN, OR OTHER SIMILAR JURISDICTIONAL DETERMINATIONS. TO THE EXTENT THAT THIS TYPE OF INFORMATION IS SHOWN, IT IS SHOWN SOLELY ON THE BASIS OF INFORMATION PROVIDED BY THE CLIENT OR INFORMATION OTHERWISE KNOWN TO THE SURVEYOR AND MAY NOT BE COMPLETE.
3.) UNDERGROUND UTILITIES, BUILDING FOUNDATIONS, AND OTHER UNDERGROUND FIXED IMPROVEMENTS WERE NOT LOCATED, UNLESS OTHERWISE INDICATED. TO THE EXTENT THAT THIS TYPE OF INFORMATION IS SHOWN, IT IS SHOWN SOLELY ON THE BASIS OF SURFACE INDICATIONS OBSERVED BY THE SURVEYOR AND MAY NOT BE COMPLETE. ALL UNDERGROUND UTILITIES MUST BE FIELD VERIFIED PRIOR TO EXCAVATION OR CONSTRUCTION.
4.) JURISDICTIONAL WETLANDS AND ENDANGERED OR THREATENED SPECIES HABITAT, IF ANY, THAT MAY EXIST ON OR AROUND THE SURVEY SITE WERE NOT DETERMINED OR LOCATED.
5.) THE SURVEY DATE IS THE FIELD DATE SHOWN IN THE TITLE BLOCK, NOT THE SIGNATURE DATE
6.) THIS SITE LIES WITHIN FLOOD ZONE "X", ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP NUMBER 12111C0189K, DATED FEBRUARY 19, 2020.
7.) ELEVATIONS SHOWN ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 REFERENCING NGS BENCHMARK Y 430 (PID AF7511) AT AN ELEVATION OF 13.45 FEET(NAVD88).
8.) BEARINGS SHOWN HEREON REFER TO STATE PLANE COORDINATES FLORIDA EAST ZONE, NAD83, 2011 ADJUSTMENT AND WERE ESTABLISHED BY DERIVING A GRID BEARING OF S89°58'37"W ALONG THE NORTH RIGHT OF WAY LINE TUMBLIN KLING ROAD.

LEGAL DESCRIPTIONS

ORB 2303 PG 622

PARCEL 1

THE SOUTH 160 FEET OF THE EAST 1/2 OF THE SOUTHEAST 1/4 OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4, LESS THE SOUTH 25 FEET AND LESS THE EAST 44 FEET FOR ROAD RIGHT OF WAY AND LESS THE WEST 3.40 FEET THEREOF. ALL LYING AND BEING IN SECTION 34, TOWNSHIP 35 SOUTH, RANGE 40 EAST, ST LUCIE COUNTY, FLORIDA

PARCEL 2

THE NORTH 100 FEET OF THE SOUTH 260 FEET OF THE EAST 1/2 OF THE SOUTHEAST 1/4 OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4, SECTION 34, TOWNSHIP 35 SOUTH, RANGE 40 EAST, ST LUCIE COUNTY, FLORIDA, LESS THE EAST 44 FEET FOR U.S. HIGHWAY No 1 AND LESS THE WEST 3.40 FEET THEREOF AND ALSO LESS AND EXCEPTING THE FOLLOWING DESCRIBED PROPERTY:

BEGINNING AT THE SOUTHWEST CORNER OF THE ABOVE DESCRIBED PROPERTY FOR POINT OF BEGINNING, RUN THENCE 20 FEET EAST ALONG THE SOUTH LINE OF THE ABOVE DESCRIBED PROPERTY, THENCE TURN AND RUN 40 FEET NORTH PARALLEL TO THE WEST LINE OF THE ABOVE DESCRIBED PROPERTY, THENCE TURN AND RUN 20 FEET WEST PARALLEL TO THE SOUTH LINE OF THE ABOVE DESCRIBED TO POINT OF INTERSECTION WITH THE WEST LINE OF THE ABOVE DESCRIBED PROPERTY, THENCE TURN AND RUN SOUTH ALONG THE WEST LINE OF THE ABOVE DESCRIBED PROPERTY TO POINT OF BEGINNING.

ALSO LESS AND EXCEPT FROM THE ABOVE PROPERTY TO BE INSURED THAT PORTION AS DESCRIBED IN WARRANTY DEED RECORDED IN O.R. BOOK 1622 PAGE 2526, PUBLIC RECORDS OF ST. LUCIE COUNTY, FLORIDA

ORB 1060 PG 183

PARCEL 1

BEING THE WEST 3.40 FEET OF THE FOLLOWING DESCRIBED PROPERTY: THE NORTH 100 FEET OF THE SOUTH 260 FEET OF THE EAST 1/2 THE SOUTHEAST 1/4 OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 34, TOWNSHIP 35 SOUTH, RANGE 40 EAST, ST LUCIE COUNTY, FLORIDA, LESS THE EAST 44 FEET FOR U.S. HIGHWAY No 1 RIGHT-OF-WAY AND ANY OTHER RIGHT-OF-WAY OF RECORD, ALSO LESS AND EXCEPTING THE FOLLOWING DESCRIBED PROPERTY:

BEGINNING AT THE SOUTHWEST CORNER OF THE ABOVE DESCRIBED PROPERTY FOR THE POINT OF BEGINNING, RUN THENCE 20 FEET EAST ALONG THE SOUTH LINE OF THE ABOVE DESCRIBED PROPERTY; THENCE TURN AND RUN 40 FEET NORTH PARALLEL TO THE WEST LINE OF THE ABOVE DESCRIBED PROPERTY; THENCE TURN AND RUN 20 FEET WEST PARALLEL TO THE SOUTH LINE OF THE ABOVE DESCRIBED PROPERTY TO POINT OF INTERSECTION WITH THE WEST LINE OF THE ABOVE DESCRIBED PROPERTY; THENCE TURN AND RUN SOUTH ALONG THE WEST LINE OF THE ABOVE DESCRIBED PROPERTY TO THE POINT OF BEGINNING. CONTAINING 203.957 SQUARE FEET MORE LESS.

PARCEL 2

BEING THE WEST 3.40 FEET OF THE DESCRIBED PROPERTY: THE SOUTH 160 FEET OF THE EAST 1/2 THE SOUTHEAST 1/4 OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 34, LESS THE SOUTH 25 FEET AND THE EAST 44 FEET FOR THE ROAD RIGHTS-OF-WAY, ALL LYING AND BEING IN SECTION 34, TOWNSHIP 35 SOUTH, RANGE 40 EAST, ST. LUCIE COUNTY, FLORIDA.

CONTAINING 459.090 SQUARE FEET, MORE OR LESS

ORB 3437 PG 2458

A 10 FOOT STRIP OF LAND FOR RIGHT-OF-WAY DEDICATION PURPOSES LYING IN A PORTION OF SECTION 34, TOWNSHIP 35 SOUTH, RANGE 40 EAST, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE SOUTHEAST CORNER OF THE SOUTHWEST ONE-QUARTER OF SECTION 34, THENCE RUN NORTH 00°38'28" EAST ALONG THE EAST LINE OF THE SOUTHWEST ONE-QUARTER OF SAID SECTION 34, A DISTANCE OF 1334.28 FEET TO THE NORTH LINE OF THE SOUTHEAST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF SAID SECTION 34; THENCE RUN SOUTH 89°59'21" WEST ALONG SAID NORTH LINE A DISTANCE OF 44.00 FEET TO A POINT ON THE WEST RIGHT-OF-WAY LINE EXTENDED OF U.S. HIGHWAY 1; THENCE NORTH 00°38'28" EAST ALONG SAID WEST RIGHT-OF-WAY LINE EXTENDED, A DISTANCE OF 25.00 FEET TO THE INTERSECTION OF SAID WEST RIGHT-OF-WAY OF U.S. HIGHWAY 1 AND THE NORTH RIGHT-OF-WAY LINE OF TUMBLIN KING ROAD, SAID INTERSECTION ALSO BEING THE POINT OF BEGINNING; THENCE RUN SOUTH 89°59'21" WEST ALONG SAID NORTH RIGHT-OF -WAY, A DISTANCE OF 361.11 FEET TO THE EAST LINE OF A 15' INGRESS AND EGRESS EASEMENT AS RECORDED IN OFFICIAL RECORDS BOOK 190, PAGE 2995, PUBLIC RECORDS OF ST. LUCIE COUNTY, FLORIDA; THENCE NORTH 00°36'56" EAST ALONG SAID EAST LINE , A DISTANCE OF 10.00 FEET TO A POINT; THENCE NORTH 89°59'21" EAST ALONG A LINE BEING 10.00 FEET NORTHERLY OF AND PARALLEL WITH THE NORTH RIGHT-OF-WAY LINE OF SAID TUMBLIN KLING ROAD, A DISTANCE OF 361.12 FEET TO A POINT ON THE WEST RIGHT-OF-WAY LINE OF SAID U.S. HIGHWAY 1; THENCE SOUTH 00°38'23" WEST ALONG SAID WEST RIGHT-OF-WAY LINE, A DISTANCE OF 10.00 FEET TO THE NORTH RIGHT-OF-WAY LINE OF SAID TUMBLIN KING ROAD AND THE POINT OF BEGINNING; CONTAINING SAID BOUNDS 3,611 SQUARE FEET, OR 0.08 ACRES, MORE OR LESS

ORB 3437 PG 2460

A CORNER CLIP LYING IN A PORTION OF SECTION 34, TOWNSHIP 35 SOUTH, RANGE 40 EAST, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE SOUTHEAST CORNER OF THE SOUTHWEST ONE-QUARTER OF SECTION 34, THENCE RUN NORTH 00°38'23" EAST ALONG THE EASTERLY LINE OF THE SOUTHWEST ONE-QUARTER OF SAID SECTION 34, A DISTANCE OF 1334.28 FEET TO THE NORTHERLY LINE OF THE SOUTHEAST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF SAID SECTION 34; THENCE RUN SOUTH 89°59'21" WEST ALONG SAID NORTHERLY LINE A DISTANCE OF 44.00 FEET TO A POINT ON THE WESTERLY RIGHT-OF-WAY LINE EXTENDED OF U.S. HIGHWAY 1; THENCE NORTH 00°38'23" EAST ALONG SAID WESTERLY RIGHT-OF-WAY LINE EXTENDED, A DISTANCE OF 25.00 FEET TO THE INTERSECTION OF SAID WESTERLY RIGHT-OF-WAY OF U.S. HIGHWAY 1 AND THE NORTHERLY RIGHT-OF-WAY LINE OF TUMBLIN KING ROAD, THENCE CONTINUE NORTH 00°38'23" EAST, ALONG WESTERLY RIGHT-OF-WAY LINE OF U.S. HIGHWAY 1, A DISTANCE OF 10.00 FEET TO THE POINT OF BEGINNING; THENCE RUN SOUTH 89°59'21" WEST, DEPARTING SAID WESTERLY RIGHT-OF-WAY LINE OF U.S. HIGHWAY 1, A DISTANCE OF 20.00 FEET; THENCE RUN NORTH 49°53'52" EAST, A DISTANCE OF 26.40 FEET TO A POINT ON THE WESTERLY RIGHT-OF-WAY OF U.S. HIGHWAY 1; THENCE RUN SOUTH 00°38'23" WEST, ALONG SAID WESTERLY RIGHT-OF-WAY OF U.S. HIGHWAY 1, A DISTANCE OF 17.00 FEET TO THE POINT OF BEGINNING; CONTAINING WITHIN SAID BOUNDS 170 SQUARE FEET, MORE OR LESS.

ORB 654 PG 359

BEGIN AT THE SE CORNER OF THE WEST 1/2 OF THE SE 1/4 OF THE NE 1/4 OF THE SW 1/4 OF SECTION 34, TOWNSHIP 35 SOUTH, RANGE 40 EAST, RUN WEST 75 FEET THENCE NORTH 200 FEET , THENCE EAST 95 FEET, THENCE SOUTH 40 FEET, THENCE WEST 20 FEET, THENCE SOUTH 160 FEET, TO A POINT OF BEGINNING. LESS THE SOUTH 25 FEET FOR THE TUMBLIN KLING ROAD RIGHT OF WAY

ORB 2917 PG 1741

BEGIN AT THE SE CORNER OF THE WEST 1/2 OF THE SE 1/4 OF THE NE 1/4 OF THE SW 1/4 OF SECTION 34, TOWNSHIP 35 SOUTH, RANGE 40 EAST, RUN WEST 75 FEET THENCE NORTH 200 FEET, THENCE EAST 95 FEET, THENCE SOUTH 40 FEET, THENCE WEST 20 FEET, THENCE SOUTH 160 FEET, TO A POINT OF BEGINNING. LESS THE SOUTH 25 FEET FOR THE TUMBLIN KING ROAD RIGHT OF WAY.

AND ALSO LESS THE FOLLOWING DESCRIBED PROPERTY; COMMENCE AT THE SOUTHEAST CORNER OF WEST 1/2 OF THE SE 1/4 OF THE NE 1/4 OF THE SW 1/4 OF SECTION 34, TOWNSHIP 35 SOUTH, RANGE 40 EAST ST. LUCIE COUNTY, FLORIDA; RUN THENCE WEST 75 FEET; RUN THENCE NORTH 200 FEET; THENCE RUN EAST 78.40 FEET TO THE POINT OF BEGINNING; THENCE CONTINUE EAST 16.60 FEET; THENCE RUN SOUTH 40 FEET; THENCE RUN WEST 16.60 FEET; THENCE RUN NORTH 40 FEET TO THE POINT OF BEGINNING,

ORB 1622 PG 2526

BEING THE EAST 7.16 FEET OF THE WEST 10.56 FEET OF THE SOUTH 260.00 FEET OF THE EAST 1/2 OF THE SOUTHEAST 1/4 OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 34, TOWNSHIP 35 SOUTH, RANGE 40 EAST, ST LUCIE COUNTY, FLORIDA, LESS THE SOUTH 25.00 FEET THEREOF, ALL LYING AND BEING IN SECTION 34, TOWNSHIP35 SOUTH, RANGE 40 EAST, ST LUCIE COUNTY, FLORIDA.

ORB 883, PG. 1990

PARCEL ONE:
THE NORTH 100 FEET OF THE SOUTH 360 FEET OF THE EAST ONE-HALF OF THE SOUTHEAST ONE-QUARTER OF THE NORTHEAST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF SECTION 34, TOWNSHIP 35 SOUTH, RANGE 40 EAST, ST. LUCIE COUNTY, FLORIDA, LESS AND EXCEPT THEREFROM THE EAST 42 FEET THEREOF FOR THE RIGHT OF WAY OF U.S. #1.

PARCEL TWO:
THE NORTH 30 FEET OF THE SOUTH 390 FEET OF THE EAST ONE-HALF OF THE SOUTHEAST ONE-QUARTER OF THE NORTHEAST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF SECTION 34, TOWNSHIP 35 SOUTH, RANGE 40 EAST, ST. LUCIE COUNTY, FLORIDA, LESS THE EAST 163 FEET.

PARCEL THREE:
THE EAST 75 FEET OF THE WEST ONE-HALF OF THE SOUTHEAST ONE-QUARTER OF THE NORTHEAST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF SECTION 34, TOWNSHIP 35 SOUTH, RANGE 40 EAST, ST. LUCIE COUNTY, FLORIDA, LESS AND EXCEPT THE SOUTH 325 FEET THEREOF.

TOGETHER WITH AN EASEMENT FOR INGRESS AND EGRESS OVER THE EAST 15 FEET OF THE WEST 255 FEET OF THE WEST ONE-HALF OF THE SOUTHEAST ONE-QUARTER OF THE NORTHEAST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF SECTION 34, TOWNSHIP 35 SOUTH, RANGE 40 EAST, ST. LUCIE COUNTY, FLORIDA. SAID EASEMENT BEING THE SAME AS CONVEYED IN OFFICIAL RECORDS BOOK 190, PAGE 2995, PUBLIC RECORDS OF ST. LUCIE COUNTY, FLORIDA.

PARCEL FOUR:
FROM THE SOUTHEAST CORNER OF THE WEST 1/2 OF THE SOUTHEAST 1/4 OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 34, TOWNSHIP 35 SOUTH, RANGE 40 EAST, RUN THENCE NORTH ALONG THE EAST LINE OF SAID 1/4 SECTION 200 FEET TO THE POINT OF BEGINNING; THENCE CONTINUE NORTH 125 FEET TO A POINT; THENCE WEST 75 FEET TO A POINT; THENCE SOUTH 125 FEET TO A POINT; THENCE EAST 75 FEET TO POINT OF BEGINNING, ACCORDING TO THE PUBLIC RECORDS OF ST. LUCIE COUNTY, FLORIDA.

ORB 1013 PG 2582

THE EAST 1/2 OF THE SE 1/4 OF THE NE 1/4 OF THE SW 1/4 OF SECTION 34, TOWNSHIP 35 SOUTH, RANGE 40 EAST, ST LUCIE COUNTY , FLORIDA, LESS THE NORTH 153.75 FEET, AND LESS THE SOUTH 360.00 FEET, AND LESS THE EAST 48.00 FEET FOR U.S. HIGHWAY No 1 RIGHT OF WAY, AND LESS THE NORTH 138.28 FEET OF THE SOUTH 498.28 FEET OF THE WEST 115.00 FEET OF THE EAST 163.00 FEET OF THE EAST 1/2 OF THE SE 1/4 OF THE NE 1/4 OF SECTION 34, ALSO LESS AND EXCEPTING THE FOLLOWING DESCRIBED PARCEL, TO WIT: THE NORTH 30.00 FEET OF THE SOUTH 390.00 FEET OF THE EAST 1/2 OF THE SE 1/4 OF THE NE 1/4 OF THE SW 1/4 OF SECTION 34, TOWNSHIP 35 SOUTH, RANGE 40 EAST, ST LUCIE COUNTY,FLORIDA, LESS THE EAST 163.00 FEET.

AND ALSO LESS THE EAST 228.00 FEET OF THE EAST 1/2 OF THE SE 1/4 OF THE NE 1/4 OF THE SW 1/4 OF SECTION 34, TOWNSHIP 35 SOUTH, RANGE 40 EAST, ST LUCIE COUNTY, FLORIDA, LEST THE NORTH 153.75 FEET AND LESS THE SOUTH 498.28 FEET

NOT VALID WITHOUT BOTH SHEETS 1 AND 2

INDIAN RIVER SURVEY, INC.
PROFESSIONAL SURVEYING AND MAPPING
CERTIFICATE OF AUTHORIZATION No. LB 7545
1835 20TH STREET, VERO BEACH, FLORIDA 32960
PHONE (772) 569-7880 FAX (772) 778-3617

REVISIONS	DATE

504 TUMBLIN KLING ROAD

FIELD BOOK 78	DRAWN RJS/MLO
PAGE(S) 61-75	SCALE (AS NOTED)
FIELD DATE 09/16/2020	JOB # IRS-19-408

SHEET 1 OF 2

NOT VALID WITHOUT THE ORIGINAL SIGNATURE AND THE SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER

STATE OF FLORIDA LICENSE NO. 4895 STEVEN CARTECHINE

STEVE CARTECHINE, LS4895
FLORIDA REGISTERED LAND SURVEYOR

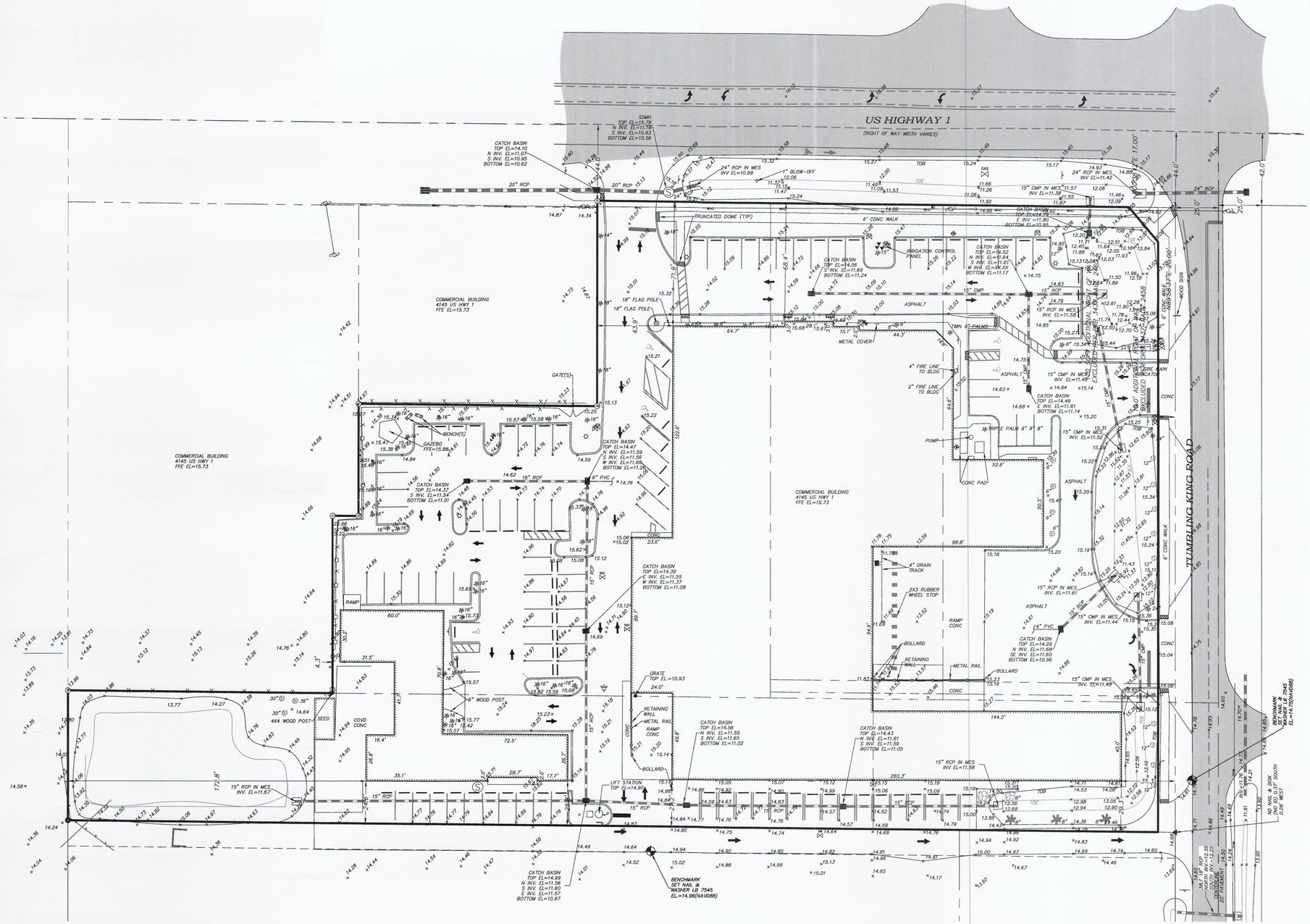
05/19/2021
DATE

G:\DRAWINGS\SURVEY PROJECTS\2020-2021\20-19\20-19-408_ALTA.dwg(layout: 19-408_ALTA) saved by: 15, 2021 - 9:15am User: COURTESY

MAP OF BOUNDARY & TOPOGRAPHIC SURVEY

NORTH

GRAPHIC SCALE
0' 15' 30'
1" = 30'



LEGEND

CM = CONCRETE MONUMENT	= CABLE RISER
CMP = CORRUGATED METAL PIPE	= FIRE HYDRANT
CONC. = CONCRETE	= GUY ANCHOR
COVD. = COVERED	= UTILITY POLE
(D) = DESCRIPTION	= WATER GATE VALVE IN 2'X2' CONCRETE
DDCV = DOUBLE DETECTOR CHECK VALE	= WATER METER
EL. = ELEVATION	= WATER VALVE
EP = EDGE OF PAVEMENT	= IRRIGATION CONTROL VALVE
FFE = FINISHED FLOOR ELEVATION	= ELECTRIC BOX
FM = FORCE MAIN	= TELEPHONE PULL BOX
FND. = FOUND	= GAS VALVE
GV = GATE VALVE	= SANITARY GATE VALVE
ID = IDENTIFICATION	= SIGN
IP = IRON PIPE	= GROUND LIGHTING
IR = IRON ROD	= LIGHT POLE
ICV = IRRIGATION CONTROL VALVE	
IRC = IRON ROD WITH CAP	= SANITARY STORM SEWER MANHOLE
INV = INVERT	
LB = LICENSED BUSINESS	= SANITARY CLEAN OUT
LP = LIGHT POLE	
LS = LICENSED SURVEYOR	= FIRE DEPARTMENT CONNECTION (FDC)
MES = MITERED END SECTION	= REDUCES PRESSURE ZONE (RPZ)
MH = MANHOLE	= DOUBLE DETECTOR CHECK VALVE (DDCV)
OHW = OVERHEAD WIRE	= GATE VALVE
O.R.B = OFFICIAL RECORDS BOOK	
(P) = PLAT	= PINE TREE
P.B. = PLAT BOOK	= PALM TREE
PG. = PAGE	= OAK TREE
PSM = PROFESSIONAL SURVEYOR AND MAPPER	= MAGNOLIA
PVC = POLY VINYL CHLORIDE	
RPZ = REVERSE PRESSURE ZONE	
RCP = REINFORCED CONCRETE PIPE	
(S) = SURVEYED	
SS = SANITARY SEWER	
SSCO = SANITARY SEWER CLEAN-OUT	
TOB = TOP OF BANK	
TOE = TOE OF SLOPE	
WD = WOOD FENCE	
WL = WATER LINE	
WM = WATER METER	
= CHAIN LINE FENCE	
= WOOD FENCE	
= METAL RAIL	

INDIAN RIVER SURVEY, INC.
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PHONE (772) 569-7880 FAX (772) 778-3617

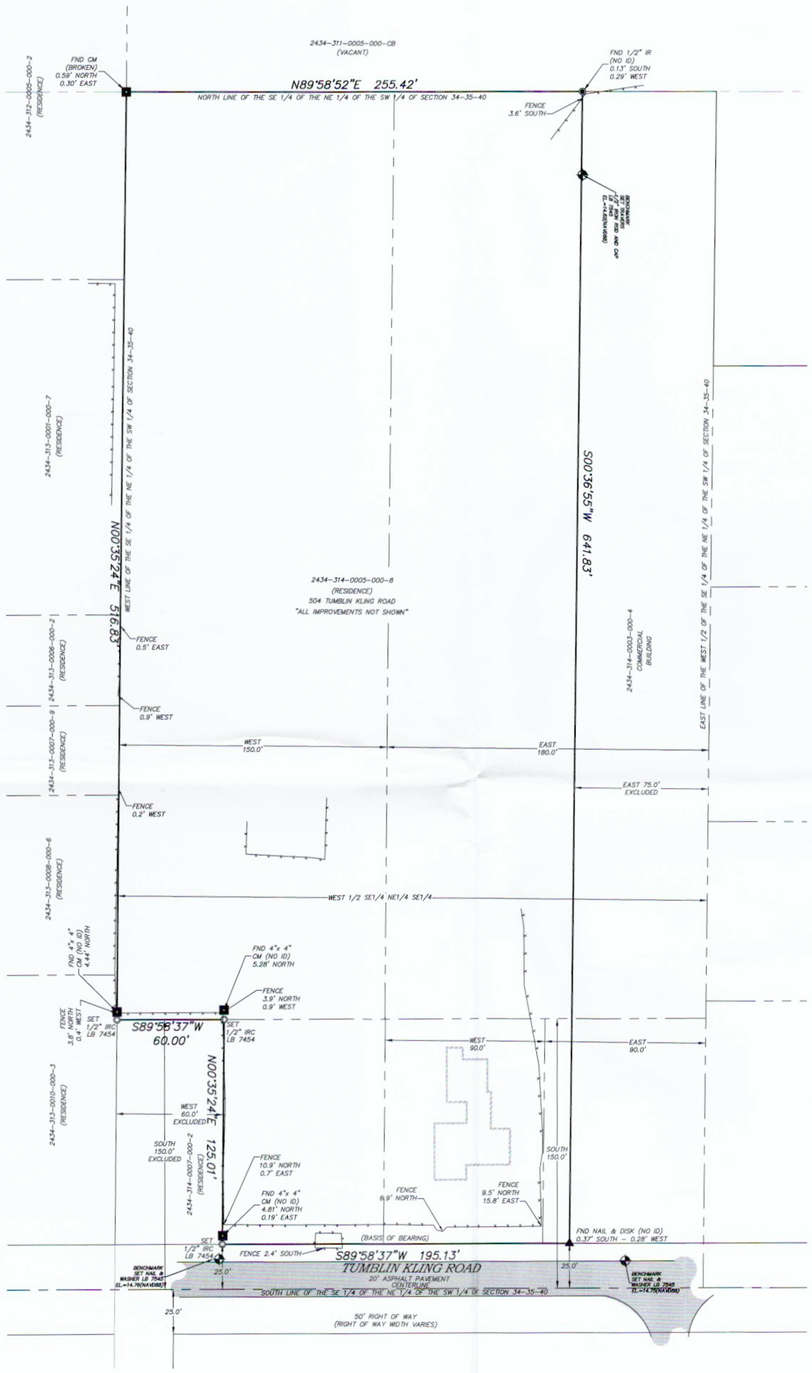
REVISIONS	DATE

504 TUMBLIN KLING ROAD

FIELD BOOK 78	DRAWN RJS	SHEET 2	2 OF 2
PAGE(S) 61-75	SCALE 1"=30'		
FIELD DATE 09/16/2020	JOB # IRS-19-408		

NOT VALID WITHOUT BOTH SHEETS 1 AND 2

© SURVEYED DRAWING BY INDIAN RIVER SURVEY, INC. - 504 TUMBLIN KLING ROAD - JENSEN FL PALM - 504 TUMBLIN KLING ROAD (P) DWG (P) IRS-19-408_Map Boundary Topo 2021 - 3/10/2021 3:41:2



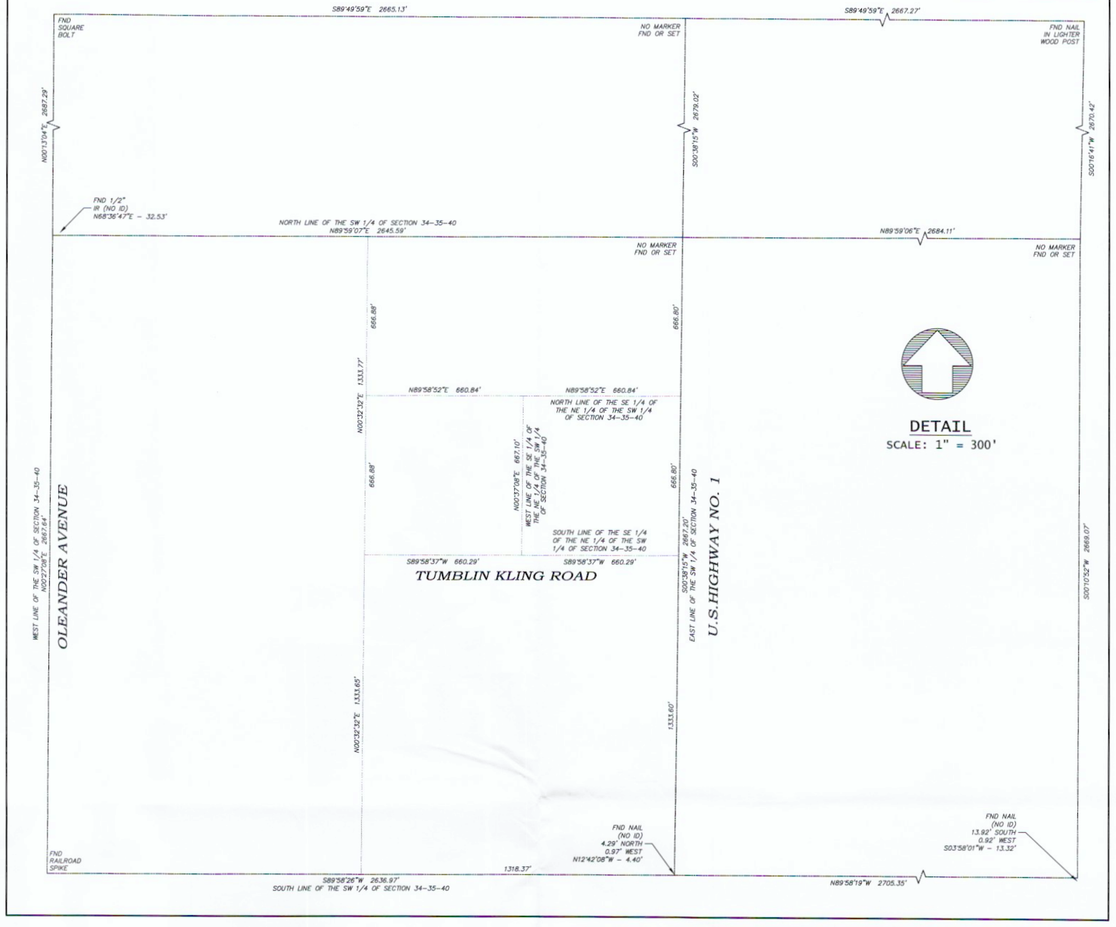
NORTH

MAP OF BOUNDARY

GRAPHIC SCALE

0' 20' 40' 80'

1" = 80'



LEGAL DESCRIPTION (ORB 3453, PG. 974):

THE SOUTH 150 FEET OF THE WEST 1/2 OF THE SOUTHEAST 1/4 OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4, LESS THE EAST 90 FEET THEREOF, AND LESS THE WEST 60 FEET THEREOF,
SAID LAND LYING AND BEING IN SECTION 34, TOWNSHIP 35 SOUTH, RANGE 40 EAST, ST. LUCIE COUNTY, FLORIDA.

AND

THE WEST 150 FEET OF THE WEST 1/2 OF THE SOUTHEAST 1/4 OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4 LESS THE SOUTH 150 FEET THEREOF, SAID LAND LYING AND BEING IN SECTION 34, TOWNSHIP 35 SOUTH, RANGE 40 EAST, ST. LUCIE COUNTY, FLORIDA.

AND

THE EAST 180 FEET OF THE WEST 1/2 OF THE SOUTHEAST 1/4 OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4, LESS THE EAST 75 FEET THEREOF, AND LESS THE WEST 90 FEET OF THE SOUTH 150 FEET THEREOF, SAID LAND LYING AND BEING IN SECTION 34, TOWNSHIP 35 SOUTH, RANGE 40 EAST, ST. LUCIE COUNTY, FLORIDA.

ALSO INCLUDING

THE WEST 90 FEET OF THE SOUTH 150 FEET THE EAST 180 FEET OF THE WEST 1/2 OF THE SOUTHEAST 1/4 OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4, SAID LAND LYING AND BEING IN SECTION 34, TOWNSHIP 35 SOUTH, RANGE 40 EAST, ST. LUCIE COUNTY, FLORIDA.

(OVERALL PARCEL ALSO DESCRIBED AS):
THE WEST 1/2 OF THE SOUTHEAST 1/4 OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4, LESS THE EAST 75 FEET THEREOF, AND LESS THE WEST 60 FEET OF THE SOUTH 150 FEET THEREOF AND LESS THE SOUTH 25 FEET THEREOF FOR ROAD RIGHT OF WAY. SAID LAND LYING AND BEING IN SECTION 34, TOWNSHIP 35 SOUTH, RANGE 40 EAST, ST. LUCIE COUNTY, FLORIDA.

SURVEYOR'S NOTES

1.) THIS SURVEY DOES NOT DETERMINE OR INDICATE LAND OWNERSHIP.
2.) THE SURVEYOR DID NOT RESEARCH OR ABSTRACT THE LAND RECORDS FOR RIGHTS-OF-WAY, EASEMENTS, RESERVATIONS, DEED RESTRICTIONS, ZONING REGULATIONS, SETBACKS, LAND USE PLAN DESIGNATIONS, ADJOINING DEEDS, LIENS, MURPHY ACT RIGHTS-OF-WAY, AREAS OF LOCAL CONCERN, OR OTHER SIMILAR JURISDICTIONAL DETERMINATIONS. TO THE EXTENT THAT THIS TYPE OF INFORMATION IS SHOWN, IT IS SHOWN SOLELY ON THE BASIS OF INFORMATION PROVIDED BY THE CLIENT OR INFORMATION OTHERWISE KNOWN TO THE SURVEYOR AND MAY NOT BE COMPLETE.
3.) UNDERGROUND UTILITIES, BUILDING FOUNDATIONS, AND OTHER UNDERGROUND FIXED IMPROVEMENTS WERE NOT LOCATED, UNLESS OTHERWISE INDICATED. TO THE EXTENT THAT THIS TYPE OF INFORMATION IS SHOWN, IT IS SHOWN SOLELY ON THE BASIS OF SURFACE INDICATIONS OBSERVED BY THE SURVEYOR AND MAY NOT BE COMPLETE. ALL UNDERGROUND UTILITIES MUST BE FIELD VERIFIED PRIOR TO EXCAVATION OR CONSTRUCTION.
4.) JURISDICTIONAL WETLANDS AND ENDANGERED OR THREATENED SPECIES HABITAT, IF ANY, THAT MAY EXIST ON OR AROUND THE SURVEY SITE WERE NOT DETERMINED OR LOCATED.
5.) THE SURVEY DATE IS THE FIELD DATE SHOWN IN THE TITLE BLOCK, NOT THE SIGNATURE DATE.
6.) THIS SITE LIES WITHIN FLOOD ZONE "X", ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP NUMBER 12111C0189J, DATED FEBRUARY 16, 2012.
7.) ELEVATIONS SHOWN ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 REFERENCING NGS BENCHMARK Y 430 (PID AF7511) AT AN ELEVATION OF 13.45 FEET(NAVD88).
8.) BEARINGS SHOWN HEREON REFER TO STATE PLANE COORDINATES FLORIDA EAST ZONE, NAD83, 2011 ADJUSTMENT AND WERE ESTABLISHED BY DERIVING A GRID BEARING OF S89°58'06"W ALONG THE NORTH RIGHT OF WAY LINE TUMBLIN KLING ROAD.
9.) COMMONWEALTH LAND TITLE COMMITMENT ORDER NUMBER: 8461771, DATED 05/28/2020 WAS PROVIDED AND REVIEWED BY SURVEYOR.

LEGEND

BB = BOTTLEBRUSH	OHW = OVERHEAD WIRE
BFP = BACKFLOW PREVENTER	O.R.B. = OFFICIAL RECORDS BOOK
BOC = BACK OF CURB	(P) = PLAT
BWF = BARBED WIRE FENCE	P.B. = PLAT BOOK
CLF = CHAIN LINK FENCE	PERF. = PERFORATED
CLP = CONCRETE LIGHT POLE	PG. = PAGE
CM = CONCRETE MONUMENT	PM = PALM
CMP = CORRUGATED METAL PIPE	PSM = PROFESSIONAL SURVEYOR AND MAPPER
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COVD. = COVERED	RPZ = REVERSE PRESSURE ZONE
C/S = CONCRETE SLAB	RCP = REINFORCED CONCRETE PIPE
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DDCV = DOUBLE DETECTOR CHECK VALE	SOFT. = SOFTENER
EL. = ELEVATION	SS = SANITARY SEWER
ELEC. = ELECTRIC	SSCO = SANITARY SEWER CLEAN-OUT
EM = ELECTRIC METER	TC = TOP CONCRETE PARKING
EP = EDGE OF PAVEMENT	TOB = TOP OF BANK
FFE = FINISHED FLOOR ELEVATION	TOS = TOE OF SLOPE
FM = FORCE MAIN	TRANS = TRANSFORMER
FND. = FOUND	TW = TOP WALK
GEN. = GENERATOR	UG = UNDERGROUND
GV = GATE VALVE	WD = WOOD FENCE
H/C = HANDICAP	WL = WATER LINE
HW = HEADWALL	WM = WATER METER
ID = IDENTIFICATION	= CABLE RISER
IP = IRON PIPE	= FIRE HYDRANT
IR = IRON ROD	= GUY ANCHOR
ICV = IRRIGATION CONTROL VALVE	= UTILITY POLE
IRC = IRON ROD WITH CAP	= WATER GATE VALVE IN 2"X2" CONCRETE
LB = LICENSED BUSINESS	= WATER METER
LP = LIGHT POLE	= GATE VALVE
LS = LICENSED SURVEYOR	
MH = MANHOLE	
= PINE TREE	
= PALM TREE	
= OAK TREE	
= HARDWOOD	

NOT COMPLETE WITHOUT BOTH SHEETS 1 AND 2

INDIAN RIVER SURVEY, INC.
PROFESSIONAL SURVEYING AND MAPPING
CERTIFICATE OF AUTHORIZATION No. LB 7545
1835 20TH STREET, VERO BEACH, FLORIDA 32960
PHONE (772) 569-7880 FAX (772) 778-3617

REVISIONS	DATE
RECERTIFIED	6/16/2020

504 TUMBLIN KLING ROAD

CERTIFIED TO:
COMMONWEALTH LAND TITLE INSURANCE COMPANY
LAW OFFICES OF GONANO & HARRELL
MARILYN L. RICHARDS
JETSON INVESTMENTS, INC., A FLORIDA CORPORATION
EDWARD W. BECHT, P.A.

FIELD BOOK 72	DRAWN RAF
PAGE(S) 31-48	SCALE (AS NOTED)
FIELD DATE 01/20/20	JOB # IRS-19-408

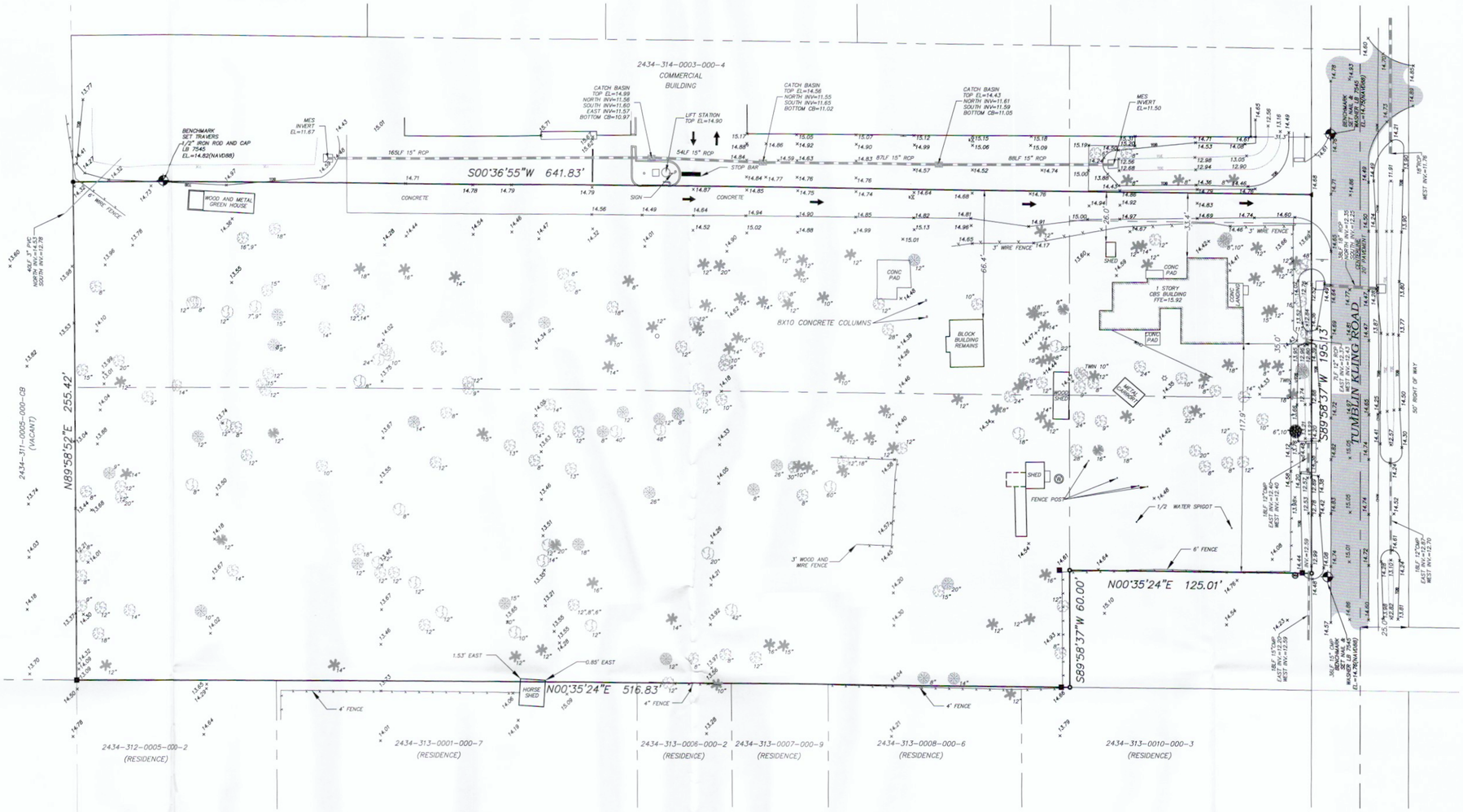
SHEET 1 OF 2

NOT VALID WITHOUT THE ORIGINAL SIGNATURE AND THE SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER

STATE OF FLORIDA LICENSED No. 4895

STEVE CARTECHINE, LS4895
FLORIDA REGISTERED LAND SURVEYOR

07/06/2020
DATE



MAP OF
BOUNDARY
&
TOPOGRAPHIC
SURVEY

NORTH

GRAPHIC SCALE
0' 15' 30' 60'
1" = 30'

LEGEND

BB = BOTTLEBRUSH	OHW = OVERHEAD WIRE
BFP = BACKFLOW PREVENTER	O.R.B. = OFFICIAL RECORDS BOOK
BOC = BACK OF CURB	(P) = PLAT
BWF = BARBED WIRE FENCE	P.B. = PLAT BOOK
CLF = CHAIN LINK FENCE	PERF. = PERFORATED
CLP = CONCRETE LIGHT POLE	PG. = PAGE
CM = CONCRETE MONUMENT	PM = PALM
CMP = CORRUGATED METAL PIPE	PSM = PROFESSIONAL SURVEYOR AND MAPPER
CONC. = CONCRETE	PVC = POLY VINYL CHLORIDE
COVD. = COVERED	RPZ = REVERSE PRESSURE ZONE
C/S = CONCRETE SLAB	RCP = REINFORCED CONCRETE PIPE
(D) = DESCRIPTION	(S) = SURVEYED
DDCV = DOUBLE DETECTOR CHECK VALE	SOFT. = SOFTENER
EL. = ELEVATION	SS = SANITARY SEWER
ELEC. = ELECTRIC	SSCO = SANITARY SEWER CLEAN-OUT
EM = ELECTRIC METER	TC = TOP CONCRETE PARKING
EP = EDGE OF PAVEMENT	TOB = TOP OF BANK
FFE = FINISHED FLOOR ELEVATION	TOS = TOE OF SLOPE
FM = FORCE MAIN	TRANS = TRANSFORMER
FND. = FOUND	TW = TOP WALK
GEN. = GENERATOR	UG = UNDERGROUND
GV = GATE VALVE	WD = WOOD FENCE
H/C = HANDICAP	WL = WATER LINE
HW = HEADWALL	WM = WATER METER
ID = IDENTIFICATION	= CABLE RISER
IP = IRON PIPE	= FIRE HYDRANT
IR = IRON ROD	= GUY ANCHOR
ICV = IRRIGATION CONTROL VALVE	= UTILITY POLE
IRC = IRON ROD WITH CAP	= WATER GATE VALVE IN 2'X2' CONCRETE
LB = LICENSED BUSINESS	= WATER METER
LP = LIGHT POLE	= GATE VALVE
LS = LICENSED SURVEYOR	
MH = MANHOLE	
= PINE TREE	
= PALM TREE	
= OAK TREE	
= HARDWOOD	

INDIAN RIVER SURVEY, INC.
PROFESSIONAL SURVEYING AND MAPPING
CERTIFICATE OF AUTHORIZATION No. LB 7545
1835 20TH STREET, VERO BEACH, FLORIDA 32960
PHONE (772) 569-7880 FAX (772) 778-3617

REVISIONS	DATE
RECERTIFIED	6/16/2020

504 TUMBLIN KLING ROAD

CERTIFIED TO:
COMMONWEALTH LAND TITLE INSURANCE COMPANY
LAW OFFICES OF GONANO & HARRELL
MARILYN L. RICHARDS
JETSON INVESTMENTS, INC., A FLORIDA CORPORATION
EDWARD W. BECHT, P.A.

FIELD BOOK 72	DRAWN RAF
PAGE(S) 31-48	SCALE 1"=30'
FIELD DATE 01/20/20	JOB # IRS-19-408

SHEET 2 OF 2

NOT VALID WITHOUT
BOTH SHEETS 1 AND 2

© SURVEYS\DWG\PROJECTS\2020-IRS-19-408 - Jetson Fit Fence - 504 Tumblin Kling Road B.DWG\IRS-19-408 - Jetson Fit Fence - 504 Tumblin Kling Road B.DWG, Jul 06, 2020 - 1:18pm\Sheet 2

JOSEPH E. SMITH, CLERK OF THE CIRCUIT COURT - SAINT LUCIE COUNTY
FILE # 4717731 OR BOOK 4431 PAGE 1978, Recorded 06/12/2020 09:19:35 AM Doc Tax: $3675.00

This Instrument Prepared by and Return to:
Gonano & Harrell
1600 SOUTH FEDERAL HIGHWAY, SUITE 200
FORT PIERCE, FLORIDA 34950
Our File No. 1565.035
Florida Documentary Stamps have been paid hereon.

_____ Space above this line for Recording Data _____

SPECIAL WARRANTY DEED

THIS SPECIAL WARRANTY DEED, made the 10th day of **June, 2020 by Marilyn L. Richards, an un-remarried widow** hereinafter called the Grantor, to **Jetson Investments, Inc., a Florida corporation** whose post office address is **4145 U.S. 1, Fort Pierce, FL 34982**, hereinafter called the Grantee:

(Wherever used herein the terms "Grantor" and "Grantee" include all the parties to this instrument and the heirs, legal representatives and assigns of individuals, and the successors and assigns of a corporation)

W I T N E S S E T H: That the Grantors, for and in consideration of the sum of **FIVE HUNDRED TWENTY FIVE THOUSAND AND 00/100 (525,000.00)** and other valuable considerations, receipt whereof is hereby acknowledged, hereby grants, bargains, sells, aliens, remises, releases, conveys and confirms unto the Grantee all that certain land situate in ST. LUCIE County, State of Florida, viz.:

SEE EXHIBIT "A"

SUBJECT TO: all restrictions, reservations, covenants, conditions, easements, mortgages and liens of record; all governmental zoning regulations, resolutions, and ordinances; and taxes accruing subsequent to December 31, 2019.

TOGETHER with all the tenements, hereditaments, and appurtenances thereto belonging or in any wise appertaining.

TO HAVE AND TO HOLD, the same in fee simple forever.

AND the Grantor hereby covenants that the premises are free from all encumbrances made by Grantor and Grantor does hereby bind Grantor and Grantor's heirs, successors, and assigns to warrant and forever defend the title to the property to the Grantee above named and Grantee's heirs, successors, and assigns, against every person lawfully claiming the property, or any part thereof, by, through, or under the Grantor, but not otherwise.

This property is the homestead of Grantor.

IN WITNESS WHEREOF, the said Grantors have signed and sealed these presents the day and year first above written.

Signed, sealed and delivered in the presence of:

Witness #1 Signature

Witness #1 Printed Name

Witness #2 Signature

Witness #2 Printed Name

By: _____
Marilyn L. Richards by Elizabeth R. Russell, her attorney-in-fact

State of _____
County of _____

The foregoing instrument was acknowledged by means of [ ] physical presence or [ ] online notarization this ____ day of June, 2020, by Marilyn L. Richards by Elizabeth R. Russell, her attorney-in-fact who is/are personally known to me or has/have produced _____ as identification.

SEAL

EDWARD W. BECHT
Commission # GG 206856
Expires May 12, 2022
Bonded Thru Budget Notary Services

_____
Notary Public

_____
Printed Notary Name

My Commission Expires:

EXHIBIT A

Parcel 1 (Deed Legal)

The South 150 feet of the W 1/2 of the SE 1/4 of the NE 1/4 of the SW 1/4, LESS the East 90 feet thereof, and LESS the West 60 feet thereof, and LESS the South 25 Feet for Road Right of Way, said land lying and being in Section 34, Township 35 South, Range 40 East, St. Lucie County, Florida,

AND

The West 150 feet of the W 1/2 of the SE 1/4 of the NE 1/4 of the SW 1/4, LESS the South 150 feet thereof, said land lying and being in Section 34, Township 35 South, Range 40 East, St. Lucie County, Florida

AND

The East 180 feet of the W 1/2 of the SE 1/4 of the NE 1/4 of the SW 1/4, LESS the East 75 feet thereof, and LESS the West 90 feet of the South 150 feet thereof, and LESS the South 25 feet for Road Right of Way said land lying and being in Section 34, Township 35 South, Range 40 East, St. Lucie County, Florida

Parcel 2 (Overall Parcel per property appraiser)

W 1/2 of the SE 1/4 of the NE 1/4 of the SW 1/4, LESS the East 75 feet thereof, and LESS the West 60 feet of the South 150 feet thereof and LESS the South 25 feet for Road Right of Way said land lying and being in Section 34, Township 35 South, Range 40 East, St. Lucie County, Florida,

6-10-20