Kimley»Horn

May 27, 2021

Jennifer Hofmeister, AICP
City of Fort Pierce
Planning Director
100 N. U.S. Highway 1
Fort Pierce, FL 34950
(772) 567-8000

Re: Ft. Pierce RV Storage- 2192 Copenhaver Road - Design and Development Review Project Narrative

Dear Ms. Hofmeister:

We are proposing a RV Storage lot containing 503 spaces on approximately 17.45 acres of land on Copenhaver Road (Peters Road) (Parcel ID # 2433-342-0000-000-4). Currently the site is a vacant cow pasture with a cluster of trees on the north side of the property. We are proposing a wet detention pond on the south portion of our site that will include a fountain feature. The pond will act as a buffer between the storage lot and the parcel to our south. We are proposing a 3.03-acre tree preservation area on the northern portion of the site that will act as a buffer while also preserving the vast majority of existing trees.

We are requesting the removal of the requirement of interior landscape islands due to the use of the site being for the storage of RVs. The majority of the spaces will be covered which makes interior landscaping difficult to maintain. Also, due to the size of the RVs the landscaping will not be visible to pedestrians. We are proposing to take the required trees for the interior landscape areas and place them in the perimeter landscape buffer. As shown on L-100 this takes the required 276 trees and places them along the perimeter. We have concentrated a large portion of the trees on the eastern property line to increase the buffer between the site and I-95.

The site will be completely fenced with security gates at the two driveways. The southern driveway will be the only entrance with the northern driveway being used for exiting the site. At the southern driveway there will be temporary sales office with parking provided. After the lot hits a certain level of occupancy the sales office will be removed, and the site will be completely automated.

There will be a sanitary dumping station that will connect to a private lift station. At this same station will be a washdown area which will also be collected into the private lift station.

We performed a Traffic Impact Study to look at the potential impact of the project on the surrounding roadways. The project will produce 91 daily trips with 10 PM peak hour trips. Based off the AM and PM peak trips neither a southbound left-turn lane or northbound right-turn lane are warranted for the project. We are working with St. Lucie County on the improvements of Peter's Road and the work will be permitted through the County.

Very truly yours,

KIMLEY-HORN AND ASSOCIATES, INC.
Very truly yours,



Blaine Bergstresser, P.E.

kimley-horn.com | 445 24th Street, Suite 200, Vero Beach, FL 32960 | 772 794 4100

THE SUNRISE CITY
FORT PIERCE
PLANNING DEPARTMENT Florida

DEVELOPMENT REVIEW

Property address or Location 2192 Copenhaver Rd (SE Corner of Graham Rd. and Copenhaver Rd.)

Parcel ID #(s) 2313-432-0000-000-4

Project description RV Storage Facility

R V Development, LLC	Macritchie Storage Ventures, LLC
Property Owner(s)	**Applicant/Representative, Title, Company**
547 Wash Roberts Lane	715 5th Avenue., SW, Suite 1700
Street Address	Street Address
MC Minnville TN 37110	Calgary AB T2P 2X6
City State Zip	City State Zip
954-214-4553	403-973-4882
Phone Number	Phone Number
	blokhorst@macritchie.biz
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.*

James A Wynne IV

Property Owner(s) Signature(s)

STATE OF ~~FLORIDA~~ Warren COUNTY

The foregoing instrument was acknowledged before me this 20th day of April 20 21 by

_____ who is personally known to me or has produced

_____ as identification.

Sheila Butcher

Signature of Notary

SHEILA BUTCHER STATE OF TENNESSEE NOTARY PUBLIC (seal) WARREN COUNTY

expires 7-27-21

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

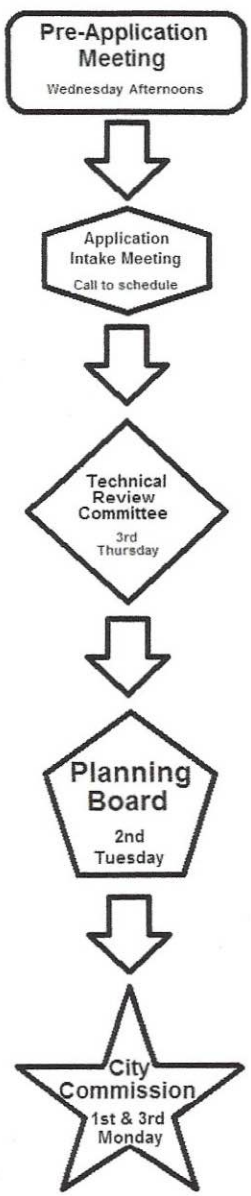
Site Information:

Non-Residential: Proposed Sq. Ft.: 776,675 Residential: Proposed Units:_____

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

North	South	East	West
Single Family	Pasture Land	I-95	Pasture Land

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)

THE SUNRISE CITY
FORT PIERCE
PLANNING DEPARTMENT
Florida

Design Review

Property address or Location 2192 Copenhaver Road (SE Corner of Graham Road and Copenhaver Road)

Parcel ID #(s) 2313-432-0000-000-4

Project Description RV Storage Facility

R V Development, LLC	Macritchie Storage Ventures, LLC
Property Owner(s)	Applicant/Representative, Title, Company
547 Wash Roberts Lane	715 5th Avenue, SW, Suite 1700
Street Address	Street Address
MC Minnville TN 37110	Calgary AB T2P 2X6
City State Zip	City State Zip
954-214-4553	403-973-4882
Phone Number	Phone Number
	blokhorst@macritchie.biz
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 Application (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.*

JAMES A WINNE JR

Property Owner(s) Signature(s)

STATE OF ~~FLORIDA~~ Warren COUNTY

The foregoing instrument was acknowledged before me this 20th day of April, 2021, by

_____ who is personally known to me or has produced

_____ as identification.

SHEILA BUTCHER STATE OF TENNESSEE NOTARY PUBLIC WARREN COUNTY

Sheila Butcher
Signature of Notary

expires 7-27-21

(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.

Stanaro & Hurrell
Box 34

JOANNE HOLMAN, CLERK OF THE CIRCUIT COURT - SAINT LUCIE COUNTY
File Number: 2294957 OR BOOK 1828 PAGE 2810
Recorded:10/24/03 16:00

* Doc Assump: $ 0.00
* Doc Tax : $ 12,250.70
* Int Tax : $ 0.00

Prepared by and return to:
Chester B. Griffin, Esquire
Neill Griffin Fowler Tierney Neill & Marquis - Chartered
Post Office Box 1270
Fort Pierce, Florida 34954
Courthouse Box #50
Parcel ID Number: 2324-122-0001-0003 ; 2313-432-0000-000/4
2324-121-0000-000/3 [Space Above for Recording]

WARRANTY DEED

This Warranty Deed made this 24th day of ~~October~~ Sept, 2003, by **CHESTER B. GRIFFIN and RICHARD V. NEILL**, hereinafter called the grantor, to **R. V. DEVELOPMENT, LLC, a Florida limited liability corporation**, hereinafter called the grantee, whose address is: **2560 SE 12th Street, Pompano Beach, Florida 33062.**

Wherever used herein, the terms "grantor" and "grantee" shall include singular and plural, heirs, legal representatives, and assigns of individuals, and the successors and assigns of corporations, wherever the context so admits or requires.

WITNESSETH: That the said grantor, for and in consideration of the sum of $10.00, in hand paid by the said grantee, the receipt whereof is hereby acknowledged, does hereby grant, bargain, sell, alien, remise, release, convey and confirm unto the said grantee, and the grantee's heirs and assigns forever, the following described land, situated, lying, and being in St. Lucie County, Florida, to wit:

SEE EXHIBIT "A" ATTACHED HERETO

THE PROPERTY BEING CONVEYED HEREIN DOES NOT CONSTITUTE THE HOMESTEAD PROPERTY OF ANY OF THE GRANTORS.

Subject to restrictions, reservations and easements of record, if any, and taxes subsequent to 2002.

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

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

AND the Grantor hereby covenants with said Grantee that the Grantor is lawfully seized of said land in fee simple; that the Grantor has good right and lawful authority to sell and convey said land; that the Grantor hereby fully warrants the title to said land and will defend the same against the lawful claims of all persons whomsoever; and that said land is free of all encumbrances, except taxes accruing subsequent to December 31, 2002; zoning ordinances and rights of way for public roads.

In Witness Whereof, the Grantor has signed and sealed these presents the day and year first above written.

Signed, sealed and delivered
in our presence:

Susan G. Spee
Print Name of Witness: Susan G. Spee
Witness as to Both

Marcia L Heffelfinger
Print Name of Witness: MARCIA L. HEFFELFINGER
Witness as to Both

CHESTER B. GRIFFIN

RICHARD V. NEILL

STATE OF FLORIDA
COUNTY OF ST. LUCIE

The foregoing was acknowledged before me this 24th day of ~~October~~ Sept, 2003, by **CHESTER B. GRIFFIN and RICHARD V. NEILL,** [✓] who are personally known to me or [ ] who produced their drivers license as identification.

MARCIA L. HEFFELFINGER
MY COMMISSION # CC 905632
EXPIRES: April 15, 2004
Bonded Thru Notary Public Underwriters

Marcia L. Heffelfinger
Print Name of Notary: MARCIA L. HEFFELFINGER
NOTARY PUBLIC - STATE OF FLORIDA
MY COMMISSION EXPIRES:

Exhibit "A"

That portion of theWest 1/2 of the SW 1/4 of the SE 1/4, lying West of the Westerly right of way line of I-95, of Section 13, Township 35 South, Range 39 East,lying and being in St. Lucie County, Florida, less and except road rights of way for I-95; Graham Road; Copenhaver Road and less canal rights of way for NSLRDD Canal No. 37 on South line.

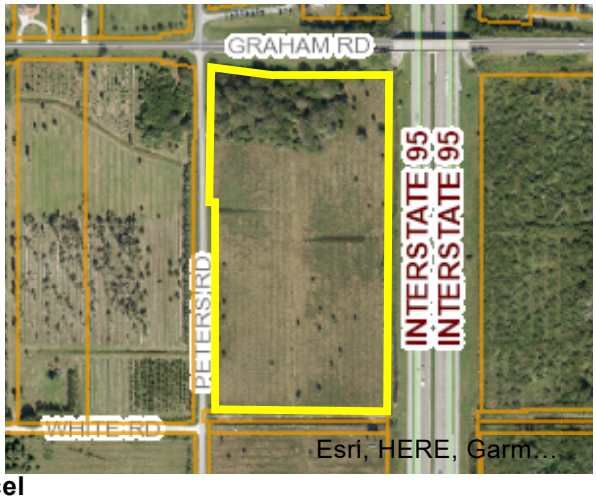
AND

The West 3/4 of the North Half of the Northwest Quarter of the Northeast Quarter, Less road and canal rights of way for I-95; White Road, AND ALSO, the Southwest Quarter of the Northwest Quarter of the Northeast Quarter, Less road rights of way for I-95 and Less the South 125 feet of the West 375 feet thereof, all lying and being in Section 24, Township 35 South, Range 39 East, St. Lucie County, Florida.

Saint Lucie County Property Appraiser
Michelle Franklin CFA

Report generated: Tuesday, April 6, 2021

Parcel Report



Parcel

PARCELNO:	2313-432-0000-000-4
Property ID:	13775
Owner1:	R V Development Llc
SiteAddress:	2192 COPENHAVER RD

Owner

Owner1:	R V Development Llc
Owner2:	
Owner3:	
MailingAddress:	%Bud Wynne 547 Wash Roberts Ln McMinnville, TN 37110-4971

Overview

PrimaryLandUse:	6000 - GRZNG SLD CP
DistrictGroup:	0002 - Saint Lucie County
Subdivision:	Metes and Bounds
Just/Market Value:	$308,400
FinishedArea:	
Acres:	16.81
TotalArea:	732,243.6

Legal Description

LegalDescription: 13 35 39 W 1/2 OF SW 1/4 OF SE 1/4 LYG SLY AND WLY OF I-95 R/W (16.81 AC) (OR 1828-2810)

Value History

Year	Just/Market Value	Building Value	Land Value	SFYI Value	Assessed Value	Exemption Amount	County Taxable	Save Our Home OR 10% Cap Differential	Ag Credit
2020	$308,400	$0	$308,400	$0	$15,149	$0	$15,149	$17,651	$275,600
2019	$315,600	$7,200	$308,400	$0	$23,712	$0	$23,712	$16,288	$275,600
2018	$287,900	$7,500	$280,400	$0	$22,911	$0	$22,911	$17,389	$247,600

Tax Links

SLC Tax Collector's Office taxes for this parcel

Download TRIM notice for this parcel

Special Assessments

Description	Start Year	Units	Amount
North St. Lucie Water Management District	2013	16.81	$310.99
County Solid Waste	2009	12	$276.14

Land Lines

Line Number	Units	Unit Type
1	16	MACR
2	16	CACR
3	0.81	Acre

Sales History

Sale Date	Sale Price	Sale Code	Deed Type	Grantor	Book Page	View Document
09/24/2003	$1,750,100	XX02	WD	Griffin Chester B	1828-2810	Clerk of Courts
12/31/1899	$0				-	Clerk of Courts

Photos



ALTA/NSPS LAND TITLE SURVEY

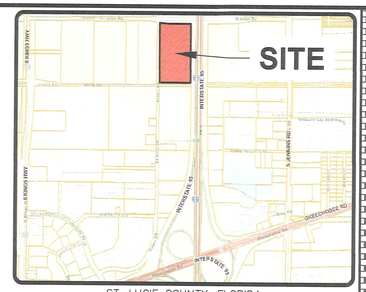
FOR: R.V. DEVELOPMENT, LLC

SURVEYORS NOTES AND REPORT:

1. REPRODUCTIONS OF THIS MAP ARE NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER. THIS SURVEY CANNOT BE TRANSFERRED OR ASSIGNED WITHOUT THE SPECIFIC WRITTEN PERMISSION OF ENGINEERING, DESIGN AND CONSTRUCTION, INC. IT IS A VIOLATION OF CHAPTER 5J-17, FLORIDA ADMINISTRATIVE CODE, TO ALTER THIS SURVEY WITHOUT THE EXPRESS PRIOR WRITTEN CONSENT OF THE SURVEYOR. ADDITIONS AND/OR DELETIONS MADE TO THE FACE OF THIS SURVEY WILL MAKE THIS SURVEY INVALID.
2. THE LAST DATE OF FIELD WORK WAS JANUARY 5, 2021.
3. SITE ADDRESS: 2192 COPENHAVER ROAD, FORT PIERCE, FLORIDA.
4. CURRENT DESCRIPTION(S) SHOWN HEREON PROVIDED BY: THE CLIENT. ALL MATTERS OF RECORD SHOWN HEREON ARE SHOWN IN REFERENCE TO TITLE COMMITMENT PREPARED BY FIRST AMERICAN TITLE INSURANCE COMPANY, COMMITMENT NUMBER 2140–2672737, DATED DECEMBER 4, 2020.
5. PARCELS CONTAIN A TOTAL OF 17.45 ACRES ACRES, MORE OR LESS.
6. THE EXPECTED USE OF THE LAND, AS CLASSIFIED IN THE MINIMUM TECHNICAL STANDARDS (61G17–6 F.A.C.), IS "RESIDENTIAL." THE MINIMUM RELATIVE DISTANCE ACCURACY FOR THIS TYPE OF BOUNDARY SURVEY IS 1 FOOT IN 10,000 FEET. THIS SURVEY EXCEEDS THE REQUIRED DISTANCE ACCURACY.
7. ELEVATIONS SHOWN HEREON ARE RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AND ARE BASED ON NGS CONTROL MONUMENT DESIGNATED 195 F 14, HAVING A PUBLISHED ELEVATION OF 46.99 FEET.
8. THIS BOUNDARY SURVEY HAS BEEN REFERENCED TO THE FLORIDA STATE PLANE BOUNDARY SYSTEM–EAST ZONE, NAD 83 (1990).
9. SUB–SURFACE IMPROVEMENTS INCLUDING UNDERGROUND UTILITIES, UTILITY SERVICES, WERE NOT LOCATED AS PART OF THIS SURVEY.
10. REVISIONS SHOWN HEREON DO NOT REPRESENT A "FIELD SURVEY UPDATE" UNLESS OTHERWISE NOTED.
11. BEARINGS SHOWN HERON ARE BASED UPON THE WEST LINE OF THE NORTHEAST 1/4 OF SECTION 24, ST. LUCIE COUNTY, FLORIDA PER THE LINE LABELED HEREON AS (BEARING BASIS) AND ALL OTHER BEARINGS ARE RELATIVE THERETO. DISTANCES ARE IN U.S. SURVEY FEET AND DECIMAL PARTS THEREOF.
12. IN SOME INSTANCES, GRAPHIC REPRESENTATIONS AND SYMBOLS SHOWN HAVE BEEN EXAGGERATED TO MORE CLEARLY ILLUSTRATE THE RELATIONSHIP BETWEEN PHYSICAL IMPROVEMENTS AND/OR LOT LINES. THE DIMENSIONS SHOWN SHALL CONTROL THE LOCATION OF THE IMPROVEMENTS, OVER THE SCALED POSITIONS.
13. THE OWNERSHIP OF PERIMETER FENCES, WALLS, HEDGES AND LANDSCAPING, IF ANY, SHOWN HEREON ARE NOT KNOWN AND ARE NOT LISTED AS ENCROACHMENTS. THEIR RELATIVE LOCATION IS SHOWN IN RELATION TO THE BOUNDARY LINES SHOWN.
14. THE SURVEY MAP SHOWN HEREON DOES NOT NECESSARILY CONTAIN ALL OF THE INFORMATION OBTAINED OR DEVELOPED BY THE UNDERSIGNED SURVEYOR IN HIS FIELD WORK, OFFICE WORK OR RESEARCH.
15. THE PROPERTY WHICH IS THE SUBJECT OF THIS SURVEY APPEARS TO BE SITUATE IN AN AREA OF MINIMAL FLOOD HAZARD AT THIS TIME PURSUANT TO F.E.M.A. FIRM NUMBER 12111C0167J, HAVING AN EFFECTIVE DATE OF FEBRUARY 16, 2012. FOR APPROXIMATE DELINEATION OF THE FLOOD ZONE LIMITS, REFER TO AFOREMENTIONED FIRM PANELS.
16. AT THE LOCATION SHOWN AS THE NORTHWEST CORNER OF THE NORTHWEST 1/4 OF THE SECTION HAS EVIDENCE OF PREVIOUS CONTROL/OCCUPATION. A #5 IRON ROD HAS BEEN RESET IN IT'S PLACE.

SYMBOL & ABBREVIATION LEGEND:

Ⓐ	AIR RELEASE VALVE		CONCRETE SIGNAL LIGHT POLE	FIBER RISER	FIBER OPTIC RISER	IP	IRON PIPE	No.	NUMBER	RWV	RECLAIMED WATER VALVE	TOB	TOP OF BANK/BERM
AL	ARC LENGTH	CMP	CORRUGATED METAL PIPE	(M)	FIELD MEASURED	IR	IRON ROD	O.R.B.	OFFICIAL RECORDS BOOK	RLS	REGISTERED LAND SURVEYOR	T.O.N.	TOP OF NUT
ASPH	ASPHALT		CURB INLET	F.F.E.	FINISHED FLOOR ELEVATION	IR/C	IRON ROD AND CAP	OHW	OVER HEAD WIRES		REINFORCED CONCRETE PIPE	X 0.0	TOPOGRAPHIC DATA (SOFT SURFACE)
BFP	BACK FLOW PREVENTER		DECORATIVE LIGHT POST	FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION		IRRIGATION CONTROL VALVE	PG	PAGE	RCP	RIGHT–OF–WAY	X 0.00	TOPOGRAPHIC DATA (HARD SURFACE)
	BENCHMARK (BM)	(D)	DEED	FPL	FLORIDA POWER AND LIGHT	L	LENGTH	PCN	PARCEL CONTROL NUMBER	R/W	ROD AND CAP	TWNSHP	TOWNSHIP
	BIKE RACK	D.B.	DEED BOOK	FT	FOOT		LIGHT POST	PK NAIL	PARKER–KALON NAIL	R/C	SANITARY MANHOLE	T	TRAFFIC HANDHOLD
CATV	CABLE RISER	ø	DIAMETER (DIA.)	FM	FORCE MAIN	MAG/D	MAG NAIL MAG BRAND NAIL	PK/D	PARKER–KALON NAIL & DISK	S	SANITARY VALVE	TSCB	TRAFFIC SIGNAL CONTROL BOX
(C)	CALCULATED	D	DRAINAGE MANHOLE	FND	FOUND	M	MAILBOX	PCP	PERMANENT CONTROL POINT	SV	SECTION	TYP	TYPICAL
	CATCH BASIN	DIP	DUCTILE IRON PIPE	F	FPL MANHOLE	M.C.	MARTIN COUNTY	PRM	PERMANENT REFERENCE MONUMENT	SEC	PROPERTY CORNER	UNK	UNKNOWN
℄	CENTERLINE	E	EAST/EASTING	SQ. FT.	SQUARE FEET	MHWL	MEAN HIGH WATER LINE	P.B.	PLAT BOOK		RIGHT–OF–WAY CONTROL	RISER	UNKNOWN HANDHOLD
CCR	CERTIFIED CORNER RECORD	EOW	EDGE OF WATER	GAS	GAS VALVE	MLWL	MEAN LOWER WATER LINE	PLAT	PLAT DATA		SIGN	BOX	UNKNOWN RISER BOX
CLF	CHAIN LINK FENCE	EB	ELECTRIC BOX	GIS	GEOGRAPHIC INFORMATION SYSTEMS		METAL LIGHT POST	P.O.B.	POINT OF BEGINNING	S	SOUTH	U	UNKNOWN TYPE MANHOLE
CHD.	CHORD	EHH	ELECTRIC HAND HOLE (EHH)	GND	GROUND	MP	METAL PIPE	P.O.C.	POINT OF COMMENCEMENT		SPIGOT	VCP	VITRIFIED CLAY PIPE
CO	CLEAN OUT	EM	ELECTRIC METER		GROUND LIGHT	MON	MONITORING WELL	P.C.C.	POINT OF COMPOUND CURVE		SPRINKLER VALVE	WM	WATER METER
COMM RISER	COMMUNICATION RISER	ELEC PANEL	ELECTRICAL PANEL		GUY WIRE ANCHOR	NGVD29	NATIONAL GEODETIC VERTICAL DATUM OF 1929	P.C.	POINT OF CURVATURE	S.L.C.	ST. LUCIE COUNTY	W	WATER METER SERVICE METER (WM)
CONC	CONCRETE	EL./ELEV.	ELEVATION		HANDICAP			P.T.	POINT OF TANGENCY	STA	STATION	WV	WATER VALVE (WV)
	CONCRETE LIGHT POST	FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY	HDPE	HIGH DENSITY POLYETHYLENE PIPE	N/D	NON DESCRIPT NAIL AND DISK	P.O.T.	POINT OF TERMINUS		STORMWATER DRAINAGE MANHOLE		
CM	CONCRETE MONUMENT	F.O.	FIBER OPTIC	HWF	HOG WIRE FENCE	N.R.	NON RADIAL	PVC	POLYVINYL CHLORIDE		STREET SIGN	W	WEST
CPP	CONCRETE POWER POLE (CPP)	FOHH	FIBER OPTIC HAND HOLE		HYDRANT	NAVD88	NORTH AMERICAN VERTICAL DATUM OF 1988	PSL	PORT SAINT LUCIE, FLORIDA			WF	WOOD FENCE
	CONCRETE POWER POLE W/STREET LIGHT		FIBER OPTIC MARKER	IN	INCH	N	NORTH OR NORTHING	PLS	PROFESSIONAL LAND SURVEYOR	R	RADIUS		WOOD POLE STREET LIGHT
				INV	INVERT			R	RADIUS	RGE	RANGE		WOOD POWER POLE
								RTK	REAL TIME KINEMATIC	TELE RISER	TELEPHONE RISER BOX		
										TOE	TOE OF SLOPE		



ST. LUCIE COUNTY, FLORIDA

VICINITY MAP

NO SCALE

Zoning District		Maximum Gross Density (Du/Ac)	Minimum Lot Size (sf)	Minimum Lot Width	Minimum Road Frontage	Minimum Yard				Max. Hht.	Max. Lot Coverage by Buildings
						Front	Rear	Side	Side @ corner		
RS–2	RESIDENTIAL, SINGLE–FAMILY – 2	2.00	15,000	100.00	30.00	25(I)	15(g)(I)	10(I)	20(I)	35.00	20%

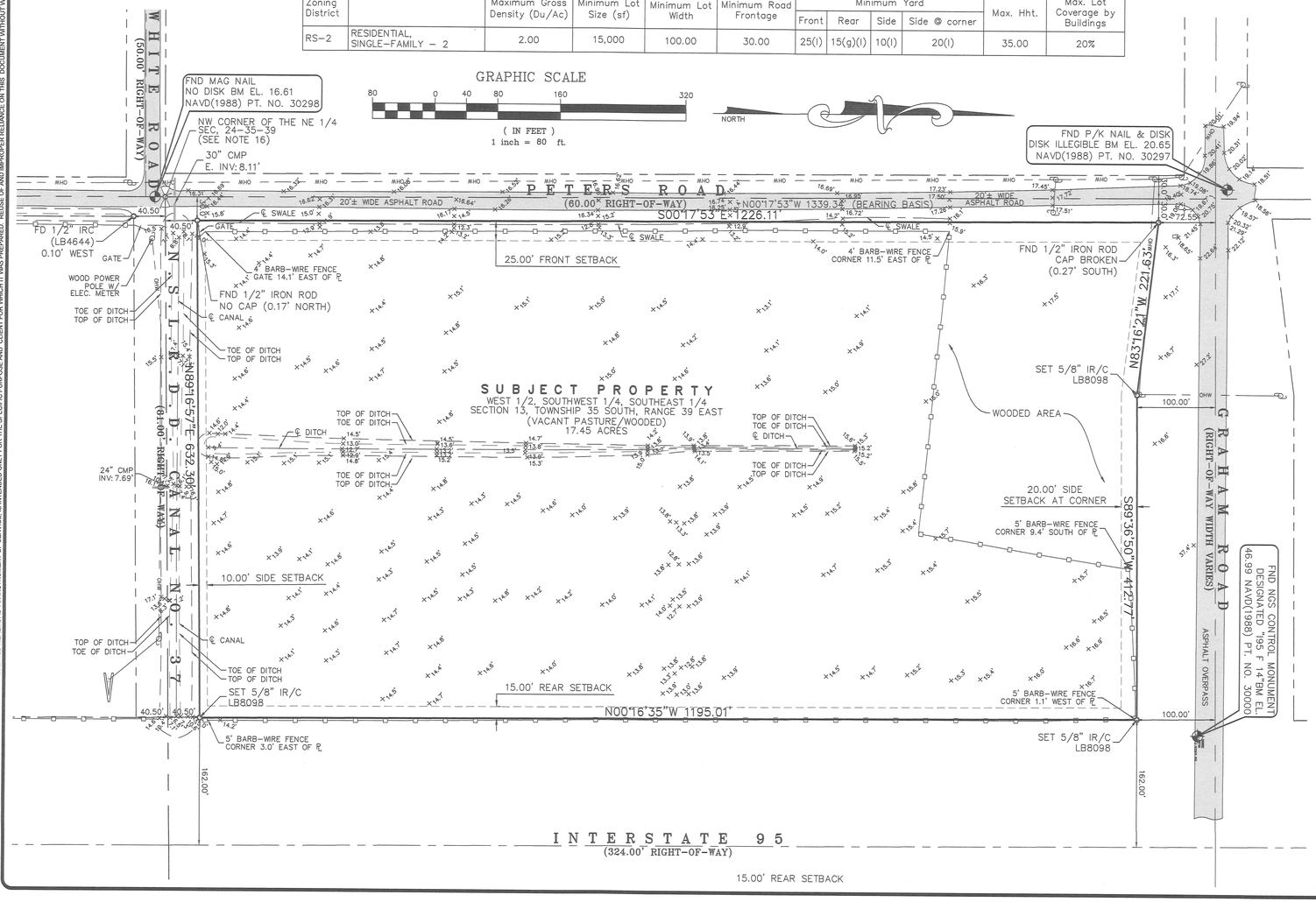
GRAPHIC SCALE

80 0 40 80 160 320

(IN FEET)

1 inch = 80 ft.

NORTH



LEGAL DESCRIPTION:

THAT PORTION OF THE WEST 1/2 OF THE SW 1/4 OF THE SE 1/4, LYING WEST OF THE WESTERLY RIGHT OF WAY LINE OF I–95, OF SECTION 13, TOWNSHIP 35 SOUTH, RANGE 39 EAST, LYING AND BEING IN ST. LUCIE COUNTY, FLORIDA, LESS AND EXCEPT ROAD RIGHTS OF WAY FOR I–95; GRAHAM ROAD; COPENHAVER ROAD AND LESS CANAL RIGHTS OF WAY FOR NSLRDD CANAL NO. 37 ON SOUTH LINE.

CONTAINING 17.45 ACRES ACRES, MORE OR LESS.

SCHEDULE B–II ITEMS

TITLE COMMITMENT PREPARED BY
FIRST AMERICAN TITLE INSURANCE COMPANY
COMMITMENT # 2140–2672737
COMMITMENT DATE: DECEMBER 4, 2020, AT 8:00 AM

1. DEFECTS, LIENS, ENCUMBRANCES, ADVERSE CLAIMS OR OTHER MATTERS, IF ANY, CREATED, FIRST APPEARING IN THE PUBLIC RECORDS OR ATTACHING SUBSEQUENT TO THE EFFECTIVE DATE BUT PRIOR TO THE DATE THE PROPOSED INSURED ACQUIRES FOR VALUE OF RECORD THE ESTATE OR INTEREST OR MORTGAGE THEREON COVERED BY THIS COMMITMENT.
   AFFECTS SUBJECT PROPERTY; NOT A SURVEY MATTER.
2. ANY RIGHTS, INTERESTS, OR CLAIMS OF PARTIES IN POSSESSION OF THE LAND NOT SHOWN BY THE PUBLIC RECORDS.
   AFFECTS SUBJECT PROPERTY; NOT A SURVEY MATTER.
3. ANY ENCROACHMENT, ENCUMBRANCE, VIOLATION, VARIATION OR ADVERSE CIRCUMSTANCE AFFECTING THE TITLE THAT WOULD BE DISCLOSED BY AN ACCURATE AND COMPLETE LAND SURVEY OF THE LAND.
   SHOWN HEREON.
4. ANY LIEN, FOR SERVICES, LABOR, OR MATERIALS IN CONNECTION WITH IMPROVEMENTS, REPAIRS OR RENOVATIONS PROVIDED BEFORE, ON, OR AFTER DATE OF POLICY, NOT SHOWN BY THE PUBLIC RECORDS.
   AFFECTS SUBJECT PROPERTY; NOT A SURVEY MATTER.
5. ANY DISPUTE AS TO THE BOUNDARIES CAUSED BY A CHANGE IN THE LOCATION OF ANY WATER BODY WITHIN OR ADJACENT TO THE LAND PRIOR TO DATE OF POLICY, AND ANY ADVERSE CLAIM TO ALL OR PART OF THE LAND THAT IS, AT DATE OF POLICY, OR WAS PREVIOUSLY UNDER WATER.
   AFFECTS SUBJECT PROPERTY; NOT A SURVEY MATTER.
6. TAXES OR SPECIAL ASSESSMENTS NOT SHOWN AS LIENS IN THE PUBLIC RECORDS OR IN THE RECORDS OF THE LOCAL TAX COLLECTING AUTHORITY, AT DATE OF POLICY.
   AFFECTS SUBJECT PROPERTY; NOT A SURVEY MATTER.
7. ANY MINERALS OR MINERAL RIGHTS LEASED, GRANTED OR RETAINED BY CURRENT OR PRIOR OWNERS.
   AFFECTS SUBJECT PROPERTY; NOT A SURVEY MATTER.
8. TAXES AND ASSESSMENTS FOR THE YEAR 2021 AND SUBSEQUENT YEARS, WHICH ARE NOT YET DUE AND PAYABLE.
   AFFECTS SUBJECT PROPERTY; NOT A SURVEY MATTER.
9. EASEMENT GRANTED TO FLORIDA POWER & LIGHT COMPANY RECORDED IN BOOK 452, PAGE 1600 AND IN BOOK 680, PAGE 1696.
   EASEMENTS DO NOT AFFECT SUBJECT PROPERTY.
10. NOTICE OF CONSENT ORDER RECORDED IN BOOK 3738, PAGE 2484.
    AFFECTS SUBJECT PROPERTY; NOT A SURVEY MATTER.
11. TERMS AND CONDITIONS OF ANY EXISTING UNRECORDED LEASE(S), AND ALL RIGHTS OF LESSEE(S) AND ANY PARTIES CLAIMING THROUGH THE LESSEE(S) UNDER THE LEASE(S).
    AFFECTS SUBJECT PROPERTY; NOT A SURVEY MATTER.
12. ANY MAP OR DIAGRAM NOW OR PREVIOUSLY PROVIDED IS FOR REFERENCE AND INFORMATIONAL PURPOSES ONLY. THE COMPANY AND ITS AGENTS EXPRESSLY DISCLAIM ANY LIABILITY FOR ALLEGED LOSS OR DAMAGE WHICH MAY RESULT FROM RELIANCE UPON SUCH MAP(S) OR DIAGRAM(S). THE FOREGOING DOES NOT LIMIT ANY EXPRESS COVERAGES PROVIDED BY THE TERMS AND PROVISIONS OF ANY TITLE INSURANCE POLICY FOR MATTERS WHICH MIGHT BE REVEALED BY A SURVEY PREPARED AND CERTIFIED IN ACCORD WITH FLORIDA STATUTES SECTION 472.027.
    NOT A SURVEY MATTER.

ALTA CERTIFICATION:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 3, 4, 8, 11, 13, 14, 15, 16, & 19 OF TABLE A THEREOF. THE FIELDWORK WAS COMPLETED ON JANUARY 5, 2021.

MICHAEL T. OWEN License Number 5556 STATE OF FLORIDA Professional Surveyor and Mapper

MICHAEL T. OWEN PROFESSIONAL SURVEYOR AND MAPPER
FLORIDA REGISTRATION #5556

SIGNATURE DATE: 8-27-21

ENGINEERS ⊘ SURVEYORS ENVIRONMENTAL
10250 VILLAGE PARKWAY
UNIT 201
PORT ST. LUCIE, FL 34987
☎ 772-462-2455
www.edc-inc.com
F.B.P.E. CERTIFICATE OF AUTHORIZATION 9935
L.B. CERTIFICATE OF AUTHORIZATION 8098

DATE	REVISION COMMENTS

SPT DRAWN BY
MTO CHECKED BY
RH FIELD CREW
20-426 ALTA.dwg FILENAME
LAYOUT1 LAYOUT
AS SHOWN SCALE
December 23, 2020 DATE

ALTA/NSPS LAND TITLE SURVEY

FOR: R.V. DEVELOPMENT

THE W. 1/2 OF THE S.E. 1/4 OF THE S.W. 1/4 OF SEC. 13, TWNSHP. 35 SOUTH, RGE. 39 EAST
ST. LUCIE COUNTY, FLORIDA

10250 VILLAGE PARKWAY
UNIT 201
PORT ST. LUCIE, FL 34987
☎ 772-462-2455

20-426

1 OF 1

Z:\EDC\2020\20-426 - MacRitchie - 2192 Copenhaver Rd FT&S\RVDWG\Dwg - PDP\Survey\20-426 ALTA.dwg, 1/8/2021 9:25 AM
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FORT PIERCE RV SITE PLAN

SCALE: 1"=40'-0"
0 5' 20' 40' 80'

Kimley»Horn

2021-12-17

CONSTRUCTION PLANS

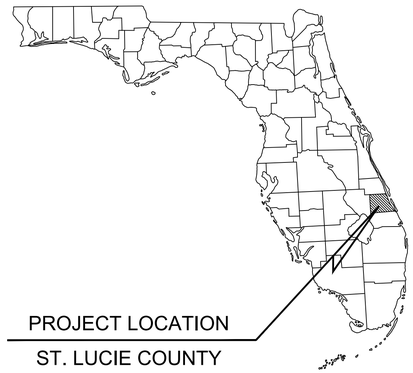
FOR

FORT PIERCE RV STORAGE

LOCATED AT

PETERS ROAD, FORT PIERCE, FLORIDA

SECTION 13, TOWNSHIP 35S, RANGE 39E



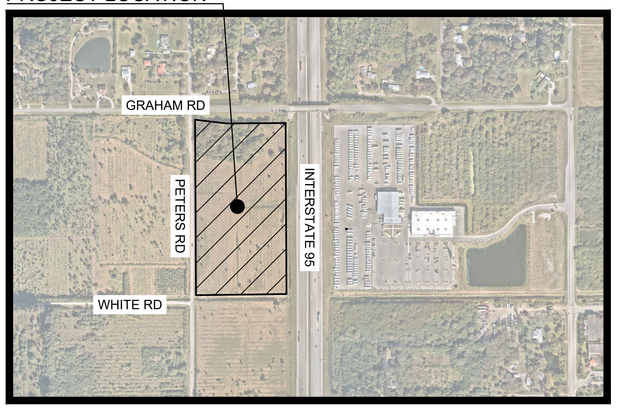
LEGAL DESCRIPTION

PER OFFICIAL RECORDS BOOK 4050, PAGE 2327

THAT PORTION OF THE WEST 1/2 OF THE SW 1/4 OF THE SE 1/4, LYING WEST OF THE WESTERLY RIGHT OF WAY LINE OF I-95, OF SECTION 13, TOWNSHIP 35 SOUTH, RANGE 39 EAST, LYING AND BEING IN ST. LUCIE COUNTY, FLORIDA, LESS AND EXCEPT ROAD RIGHTS OF WAY FOR I-95; GRAHAM ROAD; COPENHAVER ROAD AND LESS CANAL RIGHTS OF WAY FOR NSLRDD CANAL NO. 37 ON SOUTH LINE.

CONTAINING 17.45 ACRES ACRES, MORE OR LESS.

PROJECT LOCATION



LOCATION MAP

1"=500'

SHEET INDEX	
C-000	COVER SHEET
C-001	GENERAL NOTES
C-004	DEMOLITION AND EROSION CONTROL PLAN PHASE 1
C-005	DEMOLITION AND EROSION CONTROL PHASE 2
C-006	EROSION CONTROL DETAILS
C-100	SITE PLAN
C-101	SITE DETAILS
C-102	SITE DETAILS
C-103	SITE DETAILS
C-200	PAVING GRADING AND DRAINAGE PLAN
C-201	PAVING GRADING AND DRAINAGE DETAILS
C-202	PAVING GRADING AND DRAINAGE DETAILS
C-300	UTILITY PLAN
C-400	FPUA DETAILS
C-401	FPUA DETAILS
C-402	FPUA DETAILS
C-403	FPUA DETAILS
C-404	FPUA DETAILS
E-100	PHOTOMETRIC SITE PLAN
E-100	PHOTOMETRIC DETAILS

PROJECT TEAM

OWNER
R V DEVELOPMENT, LLC
547 WASH ROBERTS LANE
MC MINNVILLE, TN 37110
954-214-4553

CIVIL ENGINEER
BLAINE BERGSTRESSER, P.E.
KIMLEY-HORN AND ASSOCIATES, INC.
445 24TH STREET, SUITE 200
VERO BEACH, FLORIDA 32960
(772) 794-4100
BLAINE.BERGSTRESSER@KIMLEY-HORN.COM

SURVEYOR
EDC ENGINEERS & SURVEYORS INC.
1934 TUCKER COURT
FORT PIERCE, FL 34950
772-462-2455
SAMTROTTER@EDC-INC.COM

DEVELOPER
BEN LOKHORST
MACRITCHIE STORAGE VENTURES, LLC
715 5TH AVE SW, SUITE 1700
CALGARY AB T2P 2X6
403-973-4882
BLOKHORST@MACRITCHIE.BIZ

LANDSCAPE ARCHITECT
KEVIN BARRETT, FCLD
KIMLEY-HORN & ASSOCIATES INC.
445 24TH STREET, SUITE 200
VERO BEACH, FL 32960
(772) 794-4095
KEVIN.BARRETT@KIMLEY-HORN.COM

THE PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED ON THIS PROJECT. CONTRACTOR'S BID SHALL INCLUDE CONSIDERATION FOR ADDRESSING THIS ISSUE.

CALL 48 HOURS BEFORE YOU DIG

IT'S THE LAW! DIAL 811

811 Know what's **below.** **Call** before you dig.

SUNSHINE STATE ONE CALL OF FLORIDA, INC.

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY BLAINE BERGSTRESSER, P.E. ON THE DATE ADJACENT TO THE SEAL.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

No.	REVISIONS	DATE	BY

Kimley»Horn

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445 24TH STREET, SUITE 200, VERO BEACH, FL 32960
PHONE: 772-794-4100
WWW.KIMLEY-HORN.COM CA 00000696

ROBERT BERGSTRESSER LICENSE No. 84598 STATE OF FLORIDA PROFESSIONAL ENGINEER
BLAINE BERGSTRESSER
DATE: 07/07/2021

KHA PROJECT	147814000
DATE	04/06/2021
SCALE	AS SHOWN
DESIGNED BY	BRB
DRAWN BY	TJE
CHECKED BY	BRB

COVER SHEET

FORT PIERCE RV STORAGE

FORT PIERCE FL

SHEET NUMBER

C-000

Plotted By:Nolan Kennedy Sheet Set:FT PIERCE RV STORAGE Layout:C-000 COVER SHEET July 07, 2021 12:00:39pm K:\VRB_LDEV\147814000 - Ft Pierce RV Storage\CAD\PlanSheets\C-000 COVER SHEET.dwg
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Posted By:Nolan, Kennedy Sheet Set:FT PIERCE RV STORAGE Layout:C-001 GENERAL NOTES July 07, 2021 12:00:46pm K:\VRB_DIE\V\147814000 - FT Pierce RV Storage\CAD\PlanSheets\C-001 GENERAL NOTES.dwg
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GENERAL

1. THE CONTRACTOR AND SUBCONTRACTORS SHALL OBTAIN A COPY OF THE FLORIDA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" (LATEST EDITION) AND BECOME FAMILIAR WITH THE CONTENTS PRIOR TO COMMENCING WORK, AND, UNLESS OTHERWISE NOTED, ALL WORK SHALL CONFORM AS APPLICABLE TO THESE STANDARDS AND SPECIFICATIONS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL MATERIAL AND LABOR TO CONSTRUCT THE FACILITY AS SHOWN AND DESCRIBED IN THE CONSTRUCTION DOCUMENTS IN ACCORDANCE WITH THE APPROPRIATE APPROVING AUTHORITIES, SPECIFICATIONS AND REQUIREMENTS. CONTRACTOR SHALL CLEAR AND GRUB ALL AREAS UNLESS OTHERWISE INDICATED, REMOVING TREES, STUMPS, ROOTS, MUCK, EXISTING PAVEMENT AND ALL OTHER DELETERIOUS MATERIAL.
3. EXISTING UTILITIES SHOWN ARE LOCATED ACCORDING TO THE INFORMATION AVAILABLE TO THE ENGINEER AT THE TIME OF THE TOPOGRAPHIC SURVEY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR THE ENGINEER. GUARANTEE IS NOT MADE THAT ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN OR THAT THE LOCATION OF THOSE SHOWN ARE ENTIRELY ACCURATE. FINDING THE ACTUAL LOCATION OF ANY EXISTING UTILITIES IS THE CONTRACTOR'S RESPONSIBILITY AND SHALL BE DONE BEFORE HE COMMENCES ANY WORK IN THE VICINITY. FURTHERMORE, THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES DUE TO THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. THE OWNER OR ENGINEER WILL ASSUME NO LIABILITY FOR ANY DAMAGES SUSTAINED OR COST INCURRED BECAUSE OF THE OPERATIONS IN THE VICINITY OF EXISTING UTILITIES OR STRUCTURES, NOR FOR TEMPORARY BRACING AND SHORING OF SAME. IF IT IS NECESSARY TO SHORE, BRACE, SWING OR RELOCATE A UTILITY, THE UTILITY COMPANY OR DEPARTMENT AFFECTED SHALL BE CONTACTED AND THEIR PERMISSION OBTAINED REGARDING THE METHOD TO USE FOR SUCH WORK.
4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE VARIOUS UTILITY COMPANIES WHICH MAY HAVE BURIED OR AERIAL UTILITIES WITHIN OR NEAR THE CONSTRUCTION AREA BEFORE COMMENCING WORK. THE CONTRACTOR SHALL PROVIDE 48 HOURS MINIMUM NOTICE TO ALL UTILITY COMPANIES PRIOR TO BEGINNING CONSTRUCTION. A LIST OF THE UTILITY COMPANIES WHICH THE CONTRACTOR MUST CALL BEFORE COMMENCING WORK IS PROVIDED ON THE COVER SHEET OF THESE CONSTRUCTION PLANS. THIS LIST SERVES AS A GUIDE ONLY AND IS NOT INTENDED TO LIMIT THE UTILITY COMPANIES WHICH THE CONTRACTOR MAY WISH TO NOTIFY.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED CONSTRUCTION PERMITS AND BONDS IF REQUIRED PRIOR TO CONSTRUCTION.
6. THE CONTRACTOR SHALL HAVE AVAILABLE AT THE JOB SITE AT ALL TIMES ONE COPY OF THE CONSTRUCTION DOCUMENTS INCLUDING PLANS, SPECIFICATIONS, AND SPECIAL CONDITIONS AND COPIES OF ANY REQUIRED CONSTRUCTION PERMITS.
7. ANY DISCREPANCIES ON THE DRAWINGS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER BEFORE COMMENCING WORK. NO FIELD CHANGES OR DEVIATIONS FROM DESIGN ARE TO BE MADE WITHOUT PRIOR APPROVAL OF THE OWNER AND NOTIFICATION TO THE ENGINEER.
8. ALL COPIES OF COMPACTION, CONCRETE AND OTHER REQUIRED TEST RESULTS ARE TO BE SENT TO THE OWNER AND DESIGN ENGINEER OF RECORD DIRECTLY FROM THE TESTING AGENCY.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING TO THE ENGINEER A CERTIFIED RECORD SURVEY SIGNED AND SEALED BY A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF FLORIDA DEPICTING THE ACTUAL FIELD LOCATION OF ALL CONSTRUCTED IMPROVEMENTS THAT ARE REQUIRED BY THE JURISDICTIONAL AGENCIES FOR THE CERTIFICATION PROCESS. ALL SURVEY COSTS WILL BE THE CONTRACTORS RESPONSIBILITY.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DOCUMENTING AND MAINTAINING AS-BUILT INFORMATION WHICH SHALL BE RECORDED AS CONSTRUCTION PROGRESSES OR AT THE COMPLETION OF APPROPRIATE CONSTRUCTION INTERVALS AND SHALL BE RESPONSIBLE FOR PROVIDING AS-BUILT DRAWINGS TO THE OWNER FOR THE PURPOSE OF CERTIFICATION TO JURISDICTIONAL AGENCIES AS REQUIRED. ALL AS-BUILT DATA SHALL BE COLLECTED BY A STATE OF FLORIDA PROFESSIONAL LAND SURVEYOR WHOSE SERVICES ARE ENGAGED BY THE CONTRACTOR.
11. ANY WELLS DISCOVERED ON SITE THAT WILL HAVE NO USE MUST BE PLUGGED BY A LICENSED WELL DRILLING CONTRACTOR IN A MANNER APPROVED BY ALL JURISDICTIONAL AGENCIES. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY WELL ABANDONMENT PERMITS REQUIRED.
12. ANY WELL DISCOVERED DURING EARTH MOVING OR EXCAVATION SHALL BE REPORTED TO THE APPROPRIATE JURISDICTIONAL AGENCIES WITHIN 24 HOURS AFTER DISCOVERY IS MADE.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THAT THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS DO NOT CONFLICT WITH ANY KNOWN EXISTING OR OTHER PROPOSED IMPROVEMENTS. IF ANY CONFLICTS ARE DISCOVERED, THE CONTRACTOR SHALL NOTIFY THE OWNER PRIOR TO INSTALLATION OF ANY PORTION OF THE SITE WORK THAT WOULD BE AFFECTED. FAILURE TO NOTIFY OWNER OF AN IDENTIFIABLE CONFLICT PRIOR TO PROCEEDING WITH INSTALLATION RELIEVES OWNER OF ANY OBLIGATION TO PAY FOR A RELATED CHANGE ORDER.

EROSION CONTROL

1. THE STORM WATER POLLUTION PREVENTION PLAN ("SWPPP") IS COMPRISED OF THE EROSION CONTROL PLAN, THE STANDARD DETAILS, THE PLAN NARRATIVE, ATTACHMENTS INCLUDED IN SPECIFICATIONS OF THE SWPPP, PLUS THE PERMIT AND ALL SUBSEQUENT REPORTS AND RELATED DOCUMENTS.
2. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH STORM WATER POLLUTION PREVENTION SHALL OBTAIN A COPY OF THE STORM WATER POLLUTION PREVENTION PLAN AND THE STATE OF FLORIDA NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM GENERAL PERMIT (NPDES PERMIT) AND BECOME FAMILIAR WITH THEIR CONTENTS.
3. THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES AS REQUIRED BY THE SWPPP. ADDITIONAL BEST MANAGEMENT PRACTICES SHALL BE IMPLEMENTED AS DICTATED BY CONDITIONS AT NO ADDITIONAL COST TO THE OWNER THROUGHOUT ALL PHASES OF CONSTRUCTION.
4. BEST MANAGEMENT PRACTICES (BMP'S) AND CONTROLS SHALL CONFORM TO FEDERAL, STATE, OR LOCAL REQUIREMENTS OR MANUAL OF PRACTICE, AS APPLICABLE. THE CONTRACTOR SHALL IMPLEMENT ADDITIONAL CONTROLS AS DIRECTED BY THE PERMITTING AGENCY OR OWNER.
5. EROSION CONTROL PLAN MUST CLEARLY DELINEATE ALL STATE WATERS. PERMITS FOR ANY CONSTRUCTION ACTIVITY IMPACTING STATE WATERS OR REGULATED WETLANDS MUST BE MAINTAINED ON SITE AT ALL TIMES.
6. THE CONTRACTOR SHALL MINIMIZE CLEARING TO THE MAXIMUM EXTENT PRACTICAL OR AS REQUIRED BY THE GENERAL PERMIT.
7. CONTRACTOR SHALL DENOTE ON PLAN THE TEMPORARY PARKING AND STORAGE AREA WHICH SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AND CLEANING AREA, EMPLOYEE PARKING AREA, AND AREA FOR LOCATING PORTABLE FACILITIES, OFFICE TRAILERS, AND TOILET FACILITIES.
8. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, EQUIPMENT CLEANING, ETC.) SHALL BE DETAINED AND PROPERLY TREATED OR DISPOSED.
9. SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOTATION BOOMS SHALL BE MAINTAINED ON SITE OR READILY AVAILABLE TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DUST CONTROL ON SITE. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS PROHIBITED.
11. RUBBISH, TRASH, GARBAGE, LITTER, OR OTHER SUCH MATERIALS SHALL BE DEPOSITED INTO SEALED CONTAINERS. MATERIALS SHALL BE PREVENTED FROM LEAVING THE PREMISES THROUGH THE ACTION OF WIND OR STORM WATER DISCHARGE INTO DRAINAGE DITCHES OR WATERS OF THE STATE.
12. ALL STORM WATER POLLUTION PREVENTION MEASURES PRESENTED ON THE PLAN, SHALL BE INITIATED AS SOON AS PRACTICABLE.
13. STABILIZATION PRACTICES SHOULD BE INITIATED AS SOON AS PRACTICAL, BUT IN NO CASE MORE THAN 7 DAYS WHERE CONSTRUCTION HAS TEMPORARILY CEASED.
14. DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS PERMANENTLY STOPPED SHALL BE PERMANENTLY SEEDED. THESE AREAS SHALL BE SEEDED NO LATER THAN 7 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY OCCURRED IN THESE AREAS. REFER TO SECTION 981 OF THE STANDARD SPECIFICATIONS FOR SEEDING AND MAINTENANCE REQUIREMENTS.
15. IF THE ACTION OF VEHICLES TRAVELING OVER THE GRAVEL CONSTRUCTION ENTRANCES IS NOT SUFFICIENT TO REMOVE THE MAJORITY OF DIRT OR MUD, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLES ENTER A PUBLIC ROAD. IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP THE SEDIMENT BEFORE IT IS CARRIED OFF THE SITE.
16. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED AS SOON AS POSSIBLE.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING SEDIMENT IN THE DETENTION POND AND ANY SEDIMENT THAT MAY HAVE COLLECTED IN THE STORM SEWER DRAINAGE SYSTEMS IN CONJUNCTION WITH THE STABILIZATION OF THE SITE.
18. ON-SITE & OFF SITE SOIL STOCKPILE AND BORROW AREAS SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION THROUGH IMPLEMENTATION OF BEST MANAGEMENT PRACTICES. STOCKPILE AND BORROW AREA LOCATIONS SHALL BE NOTED ON THE EROSION CONTROL PLAN AND PERMITTED IN ACCORDANCE WITH GENERAL PERMIT REQUIREMENTS.
19. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.
20. DUE TO GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES, ETC.) TO PREVENT EROSION.
21. ALL CONSTRUCTION SHALL BE STABILIZED AT THE END OF EACH WORKING DAY, THIS INCLUDES BACK FILLING OF TRENCHES FOR UTILITY CONSTRUCTION AND PLACEMENT OF GRAVEL OR BITUMINOUS PAVING FOR ROAD CONSTRUCTION.

POTABLE WATER AND SANITARY SEWER SYSTEM

1. THE CONTRACTOR SHALL CONSTRUCT GRAVITY SEWER LATERALS, MANHOLES GRAVITY SEWER LINES AND DOMESTIC WATER AND FIRE PROTECTION SYSTEM AS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL FURNISH ALL NECESSARY MATERIALS, EQUIPMENT, MACHINERY, TOOLS, MEANS OF TRANSPORTATION AND LABOR NECESSARY TO COMPLETE THE WORK IN FULL AND COMPLETE ACCORDANCE WITH THE SHOWN, DESCRIBED AND REASONABLY INTENDED REQUIREMENTS OF THE CONTRACT DOCUMENTS AND JURISDICTIONAL AGENCY REQUIREMENTS. IN THE EVENT THAT THE CONTRACT DOCUMENTS AND THE JURISDICTIONAL AGENCY REQUIREMENTS ARE NOT IN AGREEMENT, THE MOST STRINGENT SHALL GOVERN.
2. ALL EXISTING UNDERGROUND UTILITY LOCATIONS SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS FOR UTILITY LOCATION AND COORDINATION IN ACCORDANCE WITH THE NOTES CONTAINED IN THE GENERAL CONSTRUCTION SECTION OF THIS SHEET.
3. THE CONTRACTOR SHALL RESTORE ALL DISTURBED VEGETATION IN KIND, UNLESS SHOWN OTHERWISE.
4. DEFLECTION OF PIPE JOINTS AND CURVATURE OF PIPE SHALL NOT EXCEED THE MANUFACTURER'S SPECIFICATIONS. SECURELY CLOSE ALL OPEN ENDS OF PIPE AND FITTINGS WITH A WATERTIGHT PLUG WHEN WORK IS NOT IN PROGRESS. THE INTERIOR OF ALL PIPES SHALL BE CLEAN AND JOINT SURFACES WIPED CLEAN AND DRY AFTER THE PIPE HAS BEEN LOWERED INTO THE TRENCH. VALVES SHALL BE PLUMB AND LOCATED ACCORDING TO THE PLANS.
5. ALL PHASES OF INSTALLATION, INCLUDING UNLOADING, TRENCHING, LAYING AND BACK FILLING, SHALL BE DONE IN A FIRST CLASS WORKMANLIKE MANNER. ALL PIPE AND FITTINGS SHALL BE CAREFULLY STORED FOLLOWING MANUFACTURER'S RECOMMENDATIONS. CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE COATING OR LINING IN ANY D.I. PIPE FITTINGS. ANY PIPE OR FITTING WHICH IS DAMAGED OR WHICH HAS FLAWS OR IMPERFECTIONS WHICH, IN THE OPINION OF THE ENGINEER OR OWNER, RENDERS IT UNFIT FOR USE, SHALL NOT BE USED. ANY PIPE NOT SATISFACTORY FOR USE SHALL BE CLEARLY MARKED AND IMMEDIATELY REMOVED FROM THE JOB SITE, AND SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
6. WATER FOR FIRE FIGHTING SHALL BE AVAILABLE FOR USE PRIOR TO COMBUSTIBLES BEING BROUGHT ON SITE.
7. ALL UTILITY AND STORM DRAIN TRENCHES LOCATED UNDER AREAS TO RECEIVE PAVING SHALL BE COMPLETELY BACK FILLED IN ACCORDANCE WITH THE GOVERNING JURISDICTIONAL AGENCY'S SPECIFICATIONS. IN THE EVENT THAT THE CONTRACT DOCUMENTS AND THE JURISDICTIONAL AGENCY REQUIREMENTS ARE NOT IN AGREEMENT, THE MOST STRINGENT SHALL GOVERN.
8. UNDERGROUND LINES SHALL BE SURVEYED BY A STATE OF FLORIDA PROFESSIONAL LAND SURVEYOR PRIOR TO BACK FILLING.
9. CONTRACTOR SHALL PERFORM, AT HIS OWN EXPENSE, ANY AND ALL TESTS REQUIRED BY THE SPECIFICATIONS AND/OR ANY AGENCY HAVING JURISDICTION. THESE TESTS MAY INCLUDE, BUT MAY NOT BE LIMITED TO, INFILTRATION AND EXFILTRATION, TELEVISION INSPECTION AND A MANDREL TEST ON GRAVITY SEWER. A COPY OF THE TEST RESULTS SHALL BE PROVIDED TO THE UTILITY PROVIDER, OWNER AND JURISDICTIONAL AGENCY AS REQUIRED.

MAINTENANCE

ALL MEASURES STATED ON THE EROSION AND SEDIMENT CONTROL PLAN, AND IN THE STORM WATER POLLUTION PREVENTION PLAN, SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL NO LONGER REQUIRED FOR A COMPLETED PHASE OF WORK OR FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A 0.5" RAINFALL EVENT, AND CLEANED AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:

1. INLET PROTECTION DEVICES AND BARRIERS SHALL BE REPAIRED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING, OR DETERIORATION.
2. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, WATERED AND RESEEDED AS NEEDED. FOR MAINTENANCE REQUIREMENTS REFER TO SECTION 981 OF THE OF THE FLORIDA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" (LATEST EDITION).
3. SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE-HALF THE HEIGHT OF THE SILT FENCE.
4. THE CONSTRUCTION ENTRANCES SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION ENTRANCES AS CONDITIONS DEMAND.
5. THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AS CONDITIONS DEMAND.
6. OUTLET STRUCTURES IN THE SEDIMENTATION BASINS SHALL BE MAINTAINED IN OPERATIONAL CONDITIONS AT ALL TIMES. SEDIMENT SHALL BE REMOVED FROM SEDIMENT BASINS OR TRAPS WHEN THE DESIGN CAPACITY HAS BEEN REDUCED TO 55 CUBIC YARDS / ACRE.
7. ALL MAINTENANCE OPERATIONS SHALL BE DONE IN A TIMELY MANNER BUT IN NO CASE LATER THAN 2 CALENDAR DAYS FOLLOWING THE INSPECTION.

STORM DRAINAGE SYSTEM

1. STANDARD INDEXES REFER TO THE 2021/2022 EDITION OF F.D.O.T. "STANDARD PLANS FOR ROADWAY CONSTRUCTION"
2. ALL STORM SEWER PIPE SHALL BE REINFORCED CONCRETE CLASS III (ASTM C-76) UNLESS OTHERWISE NOTED ON PLANS. ALL DRAINAGE STRUCTURES SHALL BE IN ACCORDANCE WITH F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS UNLESS OTHERWISE NOTED ON PLANS.
3. PIPE LENGTHS SHOWN ARE APPROXIMATE AND TO CENTER OF DRAINAGE STRUCTURES, WITH THE EXCEPTION OF MITERED END AND FLARED END SECTIONS, WHICH ARE NOT INCLUDED IN LENGTHS.
4. ALL DRAINAGE STRUCTURE GRATES AND COVERS, EITHER EXISTING OR PROPOSED SHALL BE TRAFFIC RATED FOR H-20 LOADINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY NECESSARY UPGRADES TO EXISTING DRAINAGE STRUCTURES.
5. CONSTRUCTION OF THE ENTIRE STORMWATER MANAGEMENT SYSTEM SHOWN ON THE PLANS MUST BE COMPLETE AND ALL DISTURBED AREAS STABILIZED IN ACCORDANCE WITH THE PERMITTED PLANS AND CONDITIONS PRIOR TO ANY OF THE FOLLOWING: ISSUANCE OF THE FIRST CERTIFICATE OF OCCUPANCY FOR ANY LOT; INITIATION OF INTENDED USE OF THE INFRASTRUCTURE; OR TRANSFER OF RESPONSIBILITY FOR MAINTENANCE OF THE SYSTEM TO A LOCAL GOVERNMENT OR OTHER RESPONSIBLE ENTITY.
6. THE CONTRACTOR SHALL INSTALL ALL UNDERGROUND STORM WATER PIPING PER JURISDICTION REGULATIONS (MANUFACTURER'S RECOMMENDATIONS SHALL BE UTILITIZED IF MORE STRINGENT).
7. STORM WATER PIPES, STRUCTURES, MINIMUM COVER AND INSTALLATION PROCEDURES TO BE IN ACCORDANCE WITH SOUTH FLORIDA WATER MANAGEMENT DISTRICT STANDARDS.

PAVING/GRADING TESTING AND INSPECTION

1. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING APPLICABLE TESTING WITH THE SOILS ENGINEER. TESTS WILL BE REQUIRED PURSUANT WITH THE SOILS REPORT. UPON COMPLETION OF WORK THE SOILS ENGINEER WILL SUBMIT CERTIFICATIONS TO THE OWNER AND OWNER'S ENGINEER STATING THAT ALL REQUIREMENTS HAVE BEEN MET.
2. A QUALIFIED TESTING LABORATORY SHALL PERFORM ALL TESTING NECESSARY TO ASSURE COMPLIANCE OF THE IN-PLACE MATERIALS AS REQUIRED BY THESE PLANS AND GEOTECHNICAL REPORT, THE VARIOUS AGENCIES AND PERMIT CONDITIONS. SHOULD ANY RETESTING BE REQUIRED DUE TO THE FAILURE OF ANY TESTS TO MEET THESE REQUIREMENTS, THE CONTRACTOR WILL BEAR ALL COSTS OF SAID RETESTING.

DRAINAGE SYSTEM TESTING AND INSPECTION

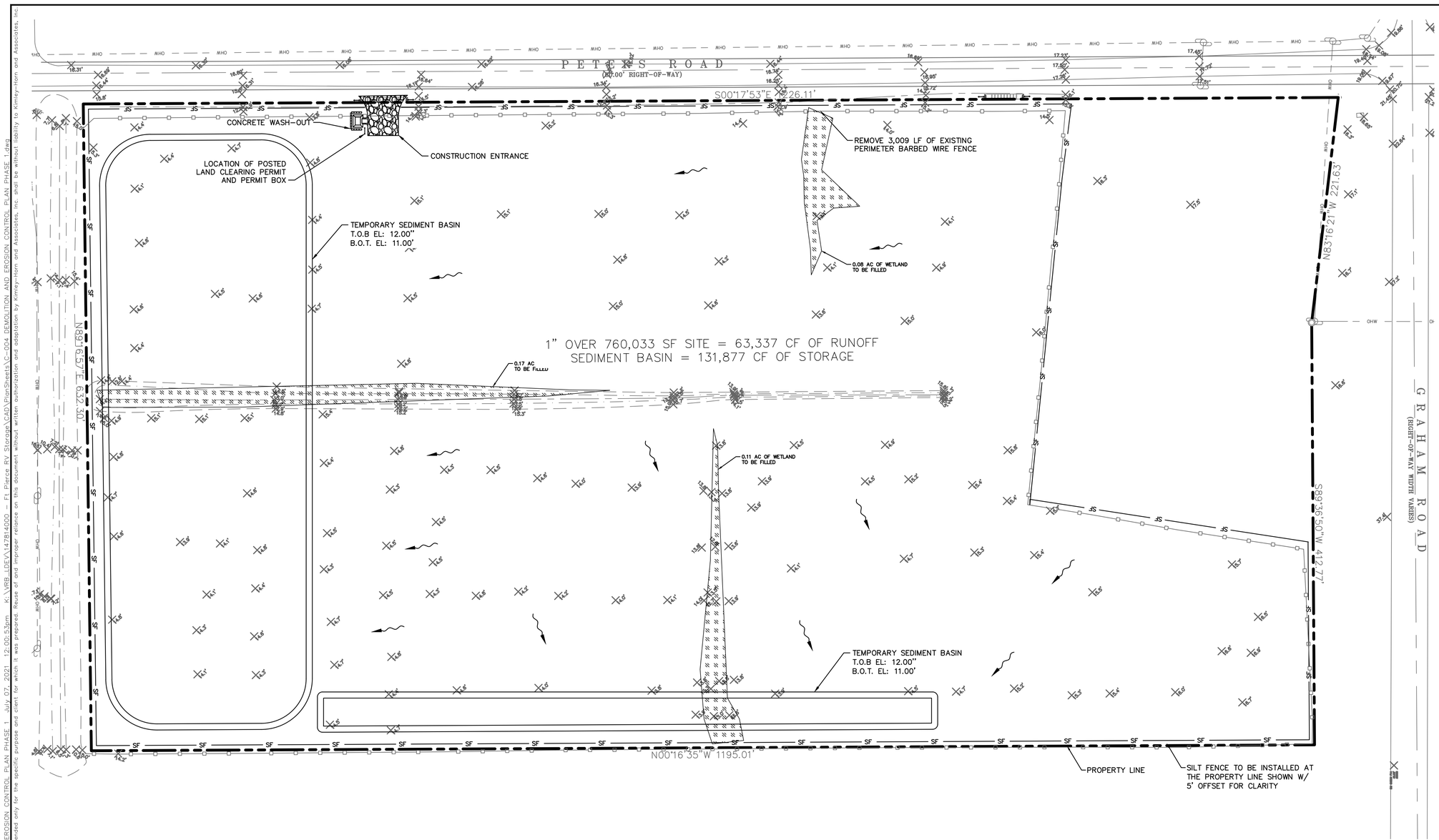
1. THE STORM DRAINAGE PIPING SYSTEM SHALL BE SUBJECT TO A VISUAL INSPECTION BY THE OWNER'S ENGINEER PRIOR TO THE PLACEMENT OF BACKFILL. CONTRACTOR TO NOTIFY THE ENGINEER 2 FULL BUSINESS DAYS IN ADVANCE TO SCHEDULE INSPECTION.
2. THE CONTRACTOR SHALL MAINTAIN AND PROTECT FROM MUD, DIRT, DEBRIS, ETC. THE STORM DRAINAGE SYSTEM UNTIL FINAL ACCEPTANCE OF THE PROJECT. THE STORM SYSTEM WILL BE REINSPECTED BY THE OWNER'S ENGINEER PRIOR TO APPROVAL FOR CERTIFICATE OF OCCUPANCY PURPOSES. THE CONTRACTOR MAY BE REQUIRED TO RECLEAN PIPES AND INLETS AT THE CONTRACTORS EXPENSE AND PRIOR TO FINAL ACCEPTANCE.

PAVING, GRADING AND DRAINAGE

1. ALL PAVING, CONSTRUCTION, MATERIALS, AND WORKMANSHIP WITHIN COUNTY'S RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH LOCAL OR COUNTY SPECIFICATIONS AND STANDARDS (LATEST EDITION) OR FDOT SPECIFICATIONS AND STANDARDS (LATEST EDITION) IF NOT COVERED BY LOCAL OR COUNTY REGULATIONS.
2. ALL UNPAVED AREAS IN EXISTING RIGHTS-OF-WAY DISTURBED BY CONSTRUCTION SHALL BE REGRADED AND SODDED.
3. TRAFFIC CONTROL ON ALL FDOT, LOCAL AND COUNTY RIGHTS-OF-WAY 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. IN THE EVENT THAT THE CONTRACT DOCUMENTS AND THE JURISDICTIONAL AGENCY REQUIREMENTS ARE NOT IN AGREEMENT, THE MOST STRINGENT SHALL GOVERN.
4. THE CONTRACTOR SHALL GRADE THE SITE TO THE ELEVATIONS INDICATED AND SHALL REGRADE WASHOUTS WHERE THEY OCCUR AFTER EVERY RAINFALL UNTIL A GRASS STAND IS WELL ESTABLISHED OR ADEQUATE STABILIZATION OCCURS.
5. ALL OPEN AREAS WITHIN THE PROJECT SITE SHALL BE SODDED UNLESS INDICATED OTHERWISE ON THE LANDSCAPE PLAN.
6. ALL AREAS INDICATED AS PAVEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE TYPICAL PAVEMENT SECTIONS AS INDICATED ON THE DRAWINGS.
7. WHERE EXISTING PAVEMENT IS INDICATED TO BE REMOVED AND REPLACED, THE CONTRACTOR SHALL SAW CUT A MINIMUM 2" DEEP FOR A SMOOTH AND STRAIGHT JOINT AND REPLACE THE PAVEMENT WITH THE SAME TYPE AND DEPTH OF MATERIAL AS EXISTING OR AS INDICATED.
8. WHERE NEW PAVEMENT MEETS THE EXISTING PAVEMENT, THE CONTRACTOR SHALL SAW CUT THE EXISTING PAVEMENT A MINIMUM 2" DEEP FOR A SMOOTH AND STRAIGHT JOINT AND MATCH THE EXISTING PAVEMENT ELEVATION WITH THE PROPOSED PAVEMENT UNLESS OTHERWISE INDICATED.
9. THE CONTRACTOR SHALL INSTALL FILTER FABRIC OVER ALL DRAINAGE STRUCTURES FOR THE DURATION OF CONSTRUCTION AND UNTIL ACCEPTANCE OF THE PROJECT BY THE OWNER. ALL DRAINAGE STRUCTURES SHALL BE CLEANED OF DEBRIS AS REQUIRED DURING AND AT THE END OF CONSTRUCTION TO PROVIDE POSITIVE DRAINAGE FLOWS.
10. IF DEWATERING IS REQUIRED, THE CONTRACTOR SHALL OBTAIN ANY APPLICABLE REQUIRED PERMITS. THE CONTRACTOR IS TO COORDINATE WITH THE OWNER AND THE DESIGN ENGINEER PRIOR TO ANY EXCAVATION.
11. STRIP TOPSOIL AND ORGANIC MATTER FROM ALL AREAS OF THE SITE AS REQUIRED. IN SOME CASES TOPSOIL MAY BE STOCKPILED ON SITE FOR PLACEMENT WITHIN LANDSCAPED AREAS BUT ONLY AS DIRECTED BY THE OWNER.
12. FIELD DENSITY TESTS SHALL BE TAKEN AT INTERVALS IN ACCORDANCE WITH THE LOCAL JURISDICTIONAL AGENCY OR TO FDOT STANDARDS. IN THE EVENT THAT THE CONTRACT DOCUMENTS AND THE JURISDICTIONAL AGENCY REQUIREMENTS ARE NOT IN AGREEMENT, THE MOST STRINGENT SHALL GOVERN.
13. ALL SLOPES AND AREAS DISTURBED BY CONSTRUCTION SHALL BE GRADED AS PER PLANS. THE AREAS SHALL THEN BE SODDED OR SEEDED AS SPECIFIED IN THE PLANS, FERTILIZED, MULCHED, WATERED AND MAINTAINED UNTIL HARDY GRASS GROWTH IS ESTABLISHED IN ALL AREAS. ANY AREAS DISTURBED FOR ANY REASON PRIOR TO FINAL ACCEPTANCE OF THE JOB SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. ALL EARTHEN AREAS WILL BE SODDED OR SEEDED AND MULCHED AS SHOWN ON THE LANDSCAPING PLAN.
14. ALL CUT OR FILL SLOPES SHALL BE 4 (HORIZONTAL) :1 (VERTICAL) OR FLATTER UNLESS OTHERWISE SHOWN.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF DUST AND DIRT RISING AND SCATTERING IN THE AIR DURING CONSTRUCTION AND SHALL PROVIDE WATER SPRINKLING OR OTHER SUITABLE METHODS OF CONTROL. THE CONTRACTOR SHALL COMPLY WITH ALL GOVERNING REGULATIONS PERTAINING TO ENVIRONMENTAL PROTECTION.
16. THE CONTRACTOR SHALL TAKE ALL REQUIRED MEASURES TO CONTROL TURBIDITY, INCLUDING BUT NOT LIMITED TO THE INSTALLATION OF TURBIDITY BARRIERS AT ALL LOCATIONS WHERE THE POSSIBILITY OF TRANSFERRING SUSPENDED SOLIDS INTO THE RECEIVING WATER BODY EXISTS DUE TO THE PROPOSED WORK. TURBIDITY BARRIERS MUST BE MAINTAINED IN EFFECTIVE CONDITION AT ALL LOCATIONS UNTIL CONSTRUCTION IS COMPLETED AND DISTURBED SOIL AREAS ARE STABILIZED. THEREAFTER, THE CONTRACTOR MUST REMOVE THE BARRIERS. AT NO TIME SHALL THERE BE ANY OFF-SITE DISCHARGE WHICH VIOLATES THE WATER QUALITY STANDARDS IN CHAPTER 17-302, FLORIDA ADMINISTRATIVE CODE.
17. SOD, WHERE CALLED FOR, MUST BE INSTALLED AND MAINTAINED ON EXPOSED SLOPES WITHIN 48 HOURS OF COMPLETING FINAL GRADING, AND AT ANY OTHER TIME AS NECESSARY, TO PREVENT EROSION, SEDIMENTATION OR TURBID DISCHARGES.
18. THE CONTRACTOR MUST REVIEW AND MAINTAIN A COPY OF THE ENVIRONMENTAL RESOURCE PERMIT COMPLETE WITH ALL CONDITIONS, ATTACHMENTS, EXHIBITS, AND PERMIT MODIFICATIONS IN GOOD CONDITION AT THE CONSTRUCTION SITE. THE COMPLETE PERMIT MUST BE AVAILABLE FOR REVIEW UPON REQUEST BY WATER MANAGEMENT DISTRICT REPRESENTATIVES.
19. THE CONTRACTOR SHALL ENSURE THAT ISLAND PLANTING AREAS AND OTHER PLANTING AREAS ARE NOT COMPACTED AND DO NOT CONTAIN ROAD BASE MATERIALS. THE CONTRACTOR SHALL ALSO EXCAVATE AND REMOVE ALL UNDESIRABLE MATERIAL FROM ALL AREAS ON THE SITE TO BE PLANTED AND PROPERLY DISPOSED OF IN A LEGAL MANNER.
20. THE CONTRACTOR SHALL INSTALL ALL UNDERGROUND STORM WATER PIPING PER MANUFACTURER'S RECOMMENDATIONS.

DEMOLITION

1. CONTRACTOR SHALL SUBMIT DEMOLITION SCHEDULE TO OWNER PRIOR TO PROCEEDING WITH DEMOLITION ACTIVITIES.
2. EXTENT OF SITE CLEARING IS SHOWN ON DRAWINGS.
3. CONTRACTOR SHALL CONDUCT SITE DEMOLITION OPERATIONS TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKS, AND OTHER ADJACENT OCCUPIED OR USED FACILITIES. DO NOT CLOSE OR OBSTRUCT STREETS, WALKS OR OTHER OCCUPIED OR USED FACILITIES WITHOUT PERMISSION FROM AUTHORITIES HAVING JURISDICTION.
4. CONTRACTOR SHALL PROVIDE PROTECTION NECESSARY TO PREVENT DAMAGE TO EXISTING IMPROVEMENTS INDICATED ON PLAN "EXISTING TO REMAIN".
5. CONTRACTOR SHALL RESTORE DAMAGED IMPROVEMENTS TO THEIR ORIGINAL CONDITION, AS ACCEPTABLE TO PARTIES HAVING JURISDICTION.
6. CONTRACTOR SHALL REMOVE WASTE MATERIALS AND UNSUITABLE AND EXCESS TOPSOIL FROM PROPERTY AND DISPOSE OF OFF-SITE IN A LEGAL MANNER.
7. CONTRACTOR SHALL DEMOLISH AND COMPLETELY REMOVE FROM SITE MATERIAL INDICATED ON PLAN OR NOTES "TO BE REMOVED".
8. CONTRACTOR SHALL PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES FROM DAMAGE CAUSED BY SETTLEMENT, LATERAL MOVEMENT, UNDERMINING, WASHOUT AND OTHER HAZARDS CREATED BY THE DEMOLITION OPERATION
9. ALL MATERIAL REMOVED FROM THIS SITE BY THE CONTRACTOR SHALL BE DISPOSED OF BY THE CONTRACTOR IN A LEGAL MANNER.
10. REFER TO THE TOPOGRAPHIC SURVEY FOR ADDITIONAL DETAILS OF EXISTING STRUCTURES, ETC., LOCATED WITHIN THE PROJECT SITE. UNLESS OTHERWISE NOTED, ALL EXISTING BUILDINGS, STRUCTURES, SLABS, CONCRETE, ASPHALT, DEBRIS PILES, SIGNS, AND ALL APPURTENANCES ARE TO BE REMOVED FROM THE



SEQUENCE OF CONSTRUCTION

UPON IMPLEMENTATION AND INSTALLATION OF THE FOLLOWING AREAS: TRAILER, PARKING, LAYDOWN, PORTA-POTTY, WHEEL WASH, CONCRETE WASHOUT, FUEL AND MATERIAL STORAGE CONTAINERS, SOLID WASTE CONTAINERS, ETC., IMMEDIATELY DENOTE THEM ON THE SITE MAPS AND NOTE ANY CHANGES IN LOCATION AS THEY OCCUR THROUGHOUT THE CONSTRUCTION PROCESS.

PHASE 1:

1. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE (1) AND INSTALL SILT FENCE.
2. DEMOLISH EXISTING STRUCTURES, IF APPLICABLE
3. CONSTRUCT AND STABILIZE SEDIMENT BASIN AND DRAINAGE SWALES WITH APPROPRIATE OUTFALL STRUCTURES (CLEAR ONLY THOSE AREAS NECESSARY TO INSTALL CONTROL DEVICES LISTED ABOVE)
4. INSTALL INLET PROTECTION AT EXISTING INLET(S).
5. INSTALL AND STABILIZE ANY NECESSARY HYDRAULIC CONTROL STRUCTURES (DIKES, CHECK DAMS, OUTLET TRAPS, RISER PIPE DISCHARGE POINT, ETC.)
6. PREPARE CLEARING AND GRUBBING OF THE SITE, IF APPLICABLE.

PHASE 2:

7. PERFORM MASS GRADING. ROUGH GRADE TO ESTABLISH PROPOSED DRAINAGE PATTERNS.
8. START CONSTRUCTION OF THE BUILDING PAD AND STRUCTURES.
9. TEMPORARILY SEED WITH PURE LIVE SEED, THROUGHOUT CONSTRUCTION, DISTURBED AREAS THAT WILL BE INACTIVE FOR 7 DAYS OR MORE OR AS REQUIRED BY GENERIC PERMIT.
10. INSTALL UTILITIES, UNDERDRAINS, STORM SEWERS, AND CURBS.
11. INSTALL INLET PROTECTION AT ALL STORM DRAIN INLETS AS EACH INLET IS INSTALLED. PERMANENTLY STABILIZE AREAS TO BE VEGETATED AS THEY ARE BROUGHT TO FINAL GRADE.
12. PREPARE SITE FOR PAVING AND PAVE SITE.
13. CONTACT CIVIL ENGINEER ONCE THE SITE APPEARS TO BE FULLY STABILIZED.
14. REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES AFTER INSPECTION AND APPROVAL OF THE ENGINEER AND STABILIZE ANY AREA DISTURBED BY THE REMOVAL OF BMPS.
15. CONTINUE DAILY INSPECTION REPORTS UNTIL THE FINAL DAILY INSPECTION IS SIGNED OFF BY THE CONSTRUCTION MANAGER THAT THE SITE IS FULLY STABILIZED AND THE PERMIT MAY BE TERMINATED.

HALT ALL ACTIVITIES AND CONTACT THE CONSULTANT TO PERFORM INSPECTION AND CERTIFICATION OF BMPS. GENERAL CONTRACTOR SHALL SCHEDULE AND CONDUCT STORM WATER PRE-CONSTRUCTION MEETING WITH CONSULTANT AND ALL GROUND-DISTURBING CONTRACTORS BEFORE PROCEEDING WITH CONSTRUCTION.

CONTRACTOR TO BE RESPONSIBLE FOR OBTAINING
ALL DEWATERING PERMITS NECESSARY FOR
CONSTRUCTION

EROSION & SEDIMENTATION CONTROL

1. THE LAND DISTURBING ACTIVITY SHALL CONFORM TO EXISTING TOPOGRAPHY AND SOIL TYPE SO AS TO CREATE THE LOWEST PRACTICAL EROSION POTENTIAL
2. LAND-DISTURBING ACTIVITIES SHALL BE CONDUCTED IN A MANNER MINIMIZING EROSION
3. THE DISTURBED AREA AND THE DURATION OF EXPOSURE TO EROSIVE ELEMENTS SHALL BE KEPT TO A PRACTICABLE MINIMUM
4. EROSION CONTROL MUST BE STRICTLY MAINTAINED DURING CUT AND FILL OPERATIONS
5. DISTURBED SOIL SHALL BE STABILIZED AS QUICKLY AS PRACTICABLE
6. WHENEVER FEASIBLE, NATURAL VEGETATION SHALL BE RETAINED, PROTECTED AND SUPPLEMENTED
7. TEMPORARY VEGETATION OR MULCHING SHALL BE EMPLOYED TO PROTECT EXPOSED CRITICAL AREAS DURING DEVELOPMENT
8. PERMANENT VEGETATION AND STRUCTURAL EROSION CONTROL MEASURES SHALL BE INSTALLED AS SOON AS PRACTICABLE
9. ADEQUATE PROVISIONS MUST BE PROVIDED TO MINIMIZE DAMAGE FROM SURFACE WATER TO THE CUT FACE OF EXCAVATIONS OR THE SLOPING SURFACE FILLS
10. TO THE EXTENT NECESSARY, SEDIMENT IN RUNOFF WATER MUST BE TRAPPED BY THE USE OF DEBRIS BASINS, SEDIMENT BASINS, SILT TRAPS OR SIMILAR MEASURES UNTIL THE DISTURBED AREA IS STABILIZED
11. CUTS AND FILLS MUST BE CONSTRUCTED IN SUCH A MANNER THAT EROSION AND RUNOFF FROM THE SITES DOES NOT ENDANGER ADJOINING PROPERTY
12. FILLS MAY NOT ENCROACH UPON NATURAL WATERCOURSES OR CONSTRUCTED CHANNELS IN A MANNER SO AS TO ADVERSELY AFFECT OTHER PROPERTY OWNERS WITHOUT ADEQUATE PROVISIONS FOR AN EQUIVALENT ALTERNATE SYSTEM WITH A POSITIVE OUTFALL
13. ALL R.O.W'S WATERWAYS, STREETS AND SIDEWALKS SHALL BE BUFFERED BY A TWENTY FOOT WIDE STRIP OF GRASS OR OTHER SUITABLE MEANS
14. GRADING EQUIPMENT MUST CROSS FLOWING STREAMS BY MEANS OF BRIDGES OR CULVERTS EXCEPT WHEN SUCH METHODS ARE NOT FEASIBLE AND PROVIDED IN ANY CASE, THAT SUCH CROSSINGS ARE KEPT TO A MINIMUM AND SEDIMENTATION CONTROL DEVICES ARE PROVIDED

MAINTENANCE

ALL MEASURES STATED ON THIS SITE MAP, AND IN THE STORM WATER POLLUTION PREVENTION PLAN, SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL NO LONGER REQUIRED FOR A COMPLETED PHASE OF WORK OR FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON IN ACCORDANCE WITH THE CONTRACT DOCUMENTS OR THE APPLICABLE PERMIT, WHICHEVER IS MORE STRINGENT, AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:

1. INLET PROTECTION DEVICES AND BARRIERS SHALL BE REPAIRED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING OR DETERIORATION.
2. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, WATERED, AND RESEEDED AS NEEDED.
3. SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE-HALF THE HEIGHT OF THE SILT FENCE.
4. THE CONSTRUCTION EXITS SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION EXITS AS CONDITIONS DEMAND.
5. THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AREA AS CONDITIONS DEMAND.
6. OUTLET STRUCTURES IN THE SEDIMENTATION BASINS SHALL BE MAINTAINED IN OPERATIONAL CONDITIONS AT ALL TIMES. SEDIMENT SHALL BE REMOVED FROM SEDIMENT BASINS OR TRAPS WHEN THE DESIGN CAPACITY HAS BEEN REDUCED BY 50%.

SOIL EROSION/SEDIMENTATION CONTROL OPERATION TIME SCHEDULE

NOTE: GENERAL CONTRACTOR TO COMPLETE TABLE WITH THEIR SPECIFIC PROJECT SCHEDULE

CONSTRUCTION SEQUENCE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
TEMPORARY CONSTRUCTION EXITS																								
TEMPORARY CONTROL MEASURES																								
SEDIMENT CONTROL BASINS																								
STRIP & STOCKPILE TOPSOIL																								
ROUGH GRADE																								
STORM FACILITIES																								
SITE CONSTRUCTION																								
PERMANENT CONTROL STRUCTURES																								
FOUNDATION / BUILDING CONSTRUCTION																								
FINISH GRADING																								
LANDSCAPING/SEED/FINAL STABILIZATION																								

THE PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED ON THIS PROJECT. CONTRACTOR'S BID SHALL INCLUDE CONSIDERATION FOR ADDRESSING THIS ISSUE.

CALL 48 HOURS BEFORE YOU DIG
IT'S THE LAW! DIAL 811
Know what's below. Call before you dig.
SUNSHINE STATE ONE CALL OF FLORIDA, INC.

No.	REVISIONS	DATE	BY

Kimley»Horn

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445 24TH STREET, SUITE 200, VERO BEACH, FL 32960
PHONE: 772-794-4100
WWW.KIMLEY-HORN.COM CA 00000696

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DATE: 07/07/2021

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DATE 04/06/2021
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DRAWN BY TJE
CHECKED BY BRB

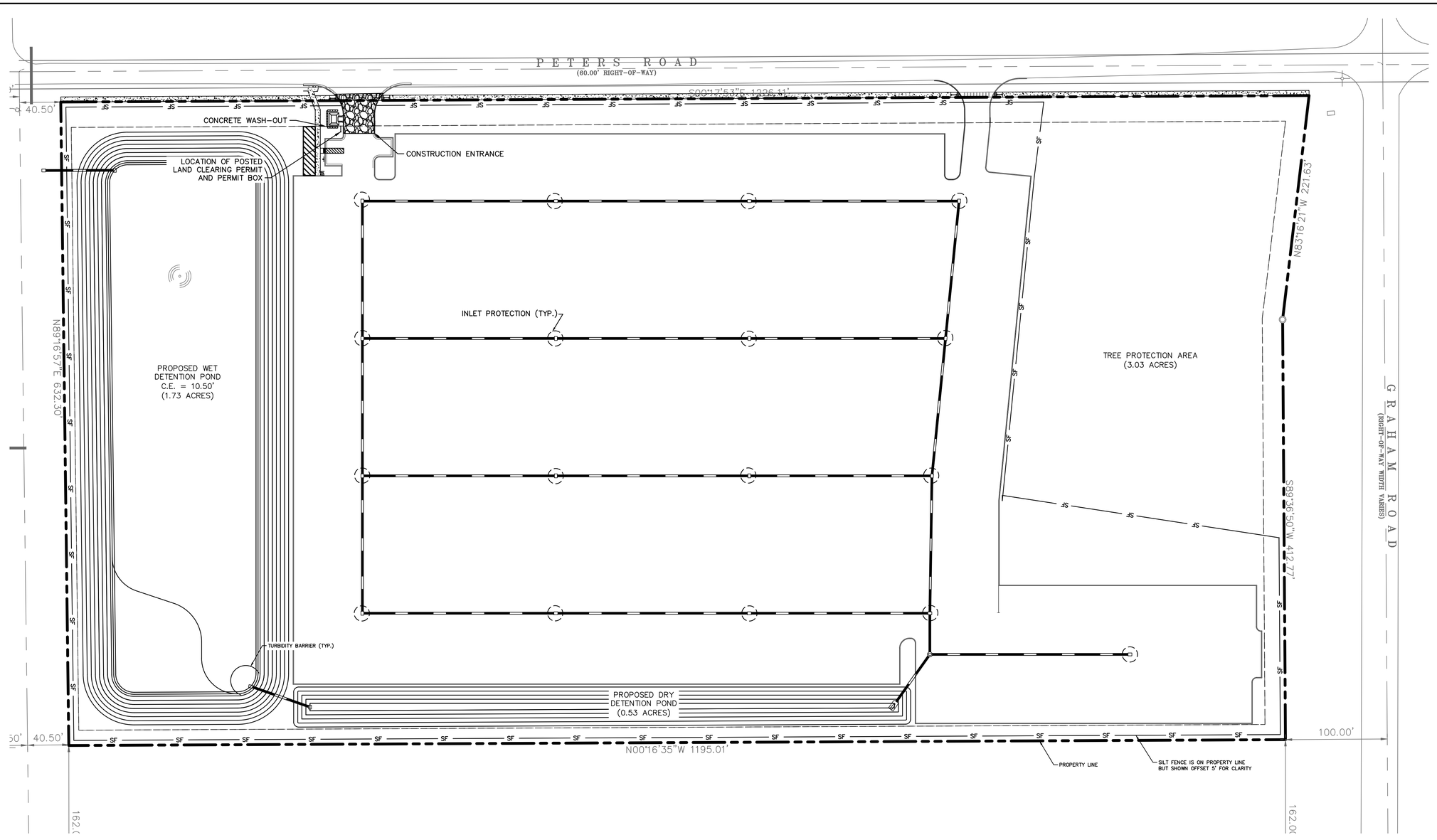
DEMOLITION AND EROSION CONTROL PLAN PHASE 1

FORT PIERCE RV STORAGE

FL
FORT PIERCE

SHEET NUMBER
C-004

Plotted By:Noah Kennedy Sheet Set:FT PIERCE RV STORAGE Layout:C-004 DEMOLITION AND EROSION CONTROL PLAN PHASE 1 July 07, 2021 12:00:53pm K:\VRB_LDE\V147814000 - Ft Pierce RV Storage\CAD\PlanSheets\C-004 DEMOLITION AND EROSION CONTROL PLAN PHASE 1.dwg
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SOIL EROSION/SEDIMENTATION CONTROL OPERATION TIME SCHEDULE

NOTE: GENERAL CONTRACTOR TO COMPLETE TABLE WITH THEIR SPECIFIC PROJECT SCHEDULE

CONSTRUCTION SEQUENCE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
TEMPORARY CONSTRUCTION EXITS																								
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FOUNDATION / BUILDING CONSTRUCTION																								
FINISH GRADING																								
LANDSCAPING/SEED/FINAL STABILIZATION																								

SEQUENCE OF CONSTRUCTION

UPON IMPLEMENTATION AND INSTALLATION OF THE FOLLOWING AREAS: TRAILER, PARKING, LAYDOWN, PORTA-POTTY, WHEEL WASH, CONCRETE WASHOUT, FUEL AND MATERIAL STORAGE CONTAINERS, SOLID WASTE CONTAINERS, ETC., IMMEDIATELY DENOTE THEM ON THE SITE MAPS AND NOTE ANY CHANGES IN LOCATION AS THEY OCCUR THROUGHOUT THE CONSTRUCTION PROCESS.

PHASE 1:
1. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE (1) AND INSTALL SILT FENCE.
2. DEMOLISH EXISTING STRUCTURES, IF APPLICABLE
3. CONSTRUCT AND STABILIZE SEDIMENT BASIN AND DRAINAGE SWALES WITH APPROPRIATE OUTFALL STRUCTURES (CLEAR ONLY THOSE AREAS NECESSARY TO INSTALL CONTROL DEVICES LISTED ABOVE)
4. INSTALL INLET PROTECTION AT EXISTING INLET(S).
5. INSTALL AND STABILIZE ANY NECESSARY HYDRAULIC CONTROL STRUCTURES (DIKES, CHECK DAMS, OUTLET TRAPS, RISER PIPE DISCHARGE POINT, ETC.)
6. PREPARE CLEARING AND GRUBBING OF THE SITE, IF APPLICABLE.

PHASE 2:
7. PERFORM MASS GRADING. ROUGH GRADE TO ESTABLISH PROPOSED DRAINAGE PATTERNS.
8. START CONSTRUCTION OF THE BUILDING PAD AND STRUCTURES.
9. TEMPORARILY SEED WITH PURE LIVE SEED, THROUGHOUT CONSTRUCTION, DISTURBED AREAS THAT WILL BE INACTIVE FOR 7 DAYS OR MORE OR AS REQUIRED BY GENERIC PERMIT.
10. INSTALL UTILITIES, UNDERDRAINS, STORM SEWERS, AND CURBS.
11. INSTALL INLET PROTECTION AT ALL STORM DRAIN INLETS AS EACH INLET IS INSTALLED. PERMANENTLY STABILIZE AREAS TO BE VEGETATED AS THEY ARE BROUGHT TO FINAL GRADE.
12. PREPARE SITE FOR PAVING AND PAVE SITE.
13. CONTACT CIVIL ENGINEER ONCE THE SITE APPEARS TO BE FULLY STABILIZED.
14. REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES AFTER INSPECTION AND APPROVAL OF THE ENGINEER AND STABILIZE ANY AREA DISTURBED BY THE REMOVAL OF BMPS.
15. CONTINUE DAILY INSPECTION REPORTS UNTIL THE FINAL DAILY INSPECTION IS SIGNED OFF BY THE CONSTRUCTION MANAGER THAT THE SITE IS FULLY STABILIZED AND THE PERMIT MAY BE TERMINATED.

HALT ALL ACTIVITIES AND CONTACT THE CONSULTANT TO PERFORM INSPECTION AND CERTIFICATION OF BMPS. GENERAL CONTRACTOR SHALL SCHEDULE AND CONDUCT STORM WATER PRE-CONSTRUCTION MEETING WITH CONSULTANT AND ALL GROUND-DISTURBING CONTRACTORS BEFORE PROCEEDING WITH CONSTRUCTION.

CONTRACTOR TO BE RESPONSIBLE FOR OBTAINING ALL DEWATERING PERMITS NECESSARY FOR CONSTRUCTION

EROSION & SEDIMENTATION CONTROL

1. THE LAND DISTURBING ACTIVITY SHALL CONFORM TO EXISTING TOPOGRAPHY AND SOIL TYPE SO AS TO CREATE THE LOWEST PRACTICAL EROSION POTENTIAL
2. LAND-DISTURBING ACTIVITIES SHALL BE CONDUCTED IN A MANNER MINIMIZING EROSION
3. THE DISTURBED AREA AND THE DURATION OF EXPOSURE TO EROSIVE ELEMENTS SHALL BE KEPT TO A PRACTICABLE MINIMUM
4. EROSION CONTROL MUST BE STRICTLY MAINTAINED DURING CUT AND FILL OPERATIONS
5. DISTURBED SOIL SHALL BE STABILIZED AS QUICKLY AS PRACTICABLE
6. WHENEVER FEASIBLE, NATURAL VEGETATION SHALL BE RETAINED, PROTECTED AND SUPPLEMENTED
7. TEMPORARY VEGETATION OR MULCHING SHALL BE EMPLOYED TO PROTECT EXPOSED CRITICAL AREAS DURING DEVELOPMENT
8. PERMANENT VEGETATION AND STRUCTURAL EROSION CONTROL MEASURES SHALL BE INSTALLED AS SOON AS PRACTICABLE
9. ADEQUATE PROVISIONS MUST BE PROVIDED TO MINIMIZE DAMAGE FROM SURFACE WATER TO THE CUT FACE OF EXCAVATIONS OR THE SLOPING SURFACE FILLS
10. TO THE EXTENT NECESSARY, SEDIMENT IN RUNOFF WATER MUST BE TRAPPED BY THE USE OF DEBRIS BASINS, SEDIMENT BASINS, SILT TRAPS OR SIMILAR MEASURES UNTIL THE DISTURBED AREA IS STABILIZED
11. CUTS AND FILLS MUST BE CONSTRUCTED IN SUCH A MANNER THAT EROSION AND RUNOFF FROM THE SITES DOES NOT ENDANGER ADJOINING PROPERTY
12. FILLS MAY NOT ENCROACH UPON NATURAL WATERCOURSES OR CONSTRUCTED CHANNELS IN A MANNER SO AS TO ADVERSELY AFFECT OTHER PROPERTY OWNERS WITHOUT ADEQUATE PROVISIONS FOR AN EQUIVALENT ALTERNATE SYSTEM WITH A POSITIVE OUTFALL
13. ALL R.O.W'S WATERWAYS, STREETS AND SIDEWALKS SHALL BE BUFFERED BY A TWENTY FOOT WIDE STRIP OF GRASS OR OTHER SUITABLE MEANS
14. GRADING EQUIPMENT MUST CROSS FLOWING STREAMS BY MEANS OF BRIDGES OR CULVERTS EXCEPT WHEN SUCH METHODS ARE NOT FEASIBLE AND PROVIDED IN ANY CASE, THAT SUCH CROSSINGS ARE KEPT TO A MINIMUM AND SEDIMENTATION CONTROL DEVICES ARE PROVIDED

MAINTENANCE

ALL MEASURES STATED ON THIS SITE MAP, AND IN THE STORM WATER POLLUTION PREVENTION PLAN, SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL NO LONGER REQUIRED FOR A COMPLETED PHASE OF WORK OR FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON IN ACCORDANCE WITH THE CONTRACT DOCUMENTS OR THE APPLICABLE PERMIT, WHICHEVER IS MORE STRINGENT, AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:

1. INLET PROTECTION DEVICES AND BARRIERS SHALL BE REPAIRED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING OR DETERIORATION.
2. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, WATERED, AND RESEEDED AS NEEDED.
3. SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE-HALF THE HEIGHT OF THE SILT FENCE.
4. THE CONSTRUCTION EXITS SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION EXITS AS CONDITIONS DEMAND.
5. THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AREA AS CONDITIONS DEMAND.
6. OUTLET STRUCTURES IN THE SEDIMENTATION BASINS SHALL BE MAINTAINED IN OPERATIONAL CONDITIONS AT ALL TIMES. SEDIMENT SHALL BE REMOVED FROM SEDIMENT BASINS OR TRAPS WHEN THE DESIGN CAPACITY HAS BEEN REDUCED BY 50%.

THE PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED ON THIS PROJECT. CONTRACTOR'S BID SHALL INCLUDE CONSIDERATION FOR ADDRESSING THIS ISSUE.

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BLAINE BERGSTRESSER ☆ LICENSE No. 84988 ☆ STATE OF FLORIDA ☆ PROFESSIONAL ENGINEER
DATE: 07/07/2021

No.	REVISIONS	DATE	BY

Kimley»Horn
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445 24TH STREET, SUITE 200, VERO BEACH, FL 32960
PHONE: 772-794-4100
WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT 147814000
DATE 04/06/2021
SCALE AS SHOWN
DESIGNED BY BRB
DRAWN BY TJE
CHECKED BY BRB

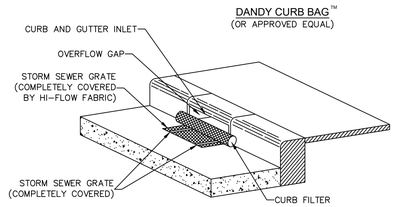
DEMOLITION AND EROSION CONTROL PHASE 2

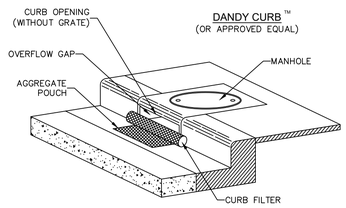
FORT PIERCE RV STORAGE

FORT PIERCE FL

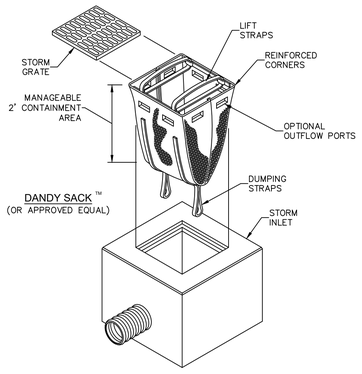
SHEET NUMBER C-005

Plotted By: Nolon, Kennedy Sheet Set: FT PIERCE RV STORAGE Layout: C-005 DEMOLITION AND EROSION CONTROL PHASE 2 July 07, 2021 12:01:03pm K:\VRB_LOE\V\147814000 - Ft Pierce RV Storage\CAD\PlanSheets\C-005 DEMOLITION AND EROSION CONTROL PHASE 2.dwg
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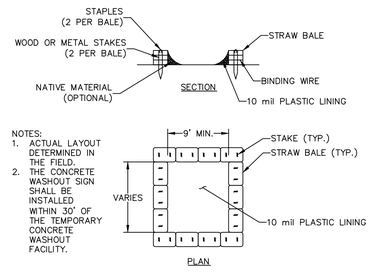




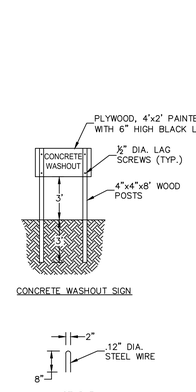
CURB INLET SEDIMENT CONTROL
N.T.S

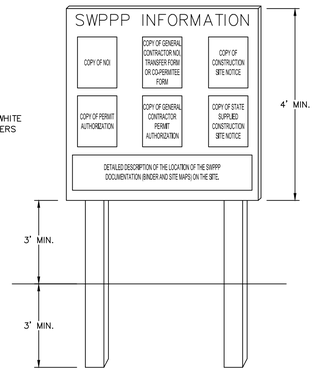


INLET INSERT
N.T.S



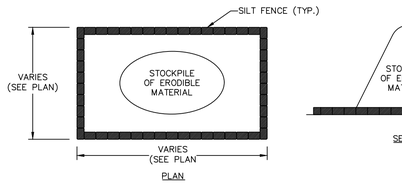
CONCRETE & STUCCO WASTE MANAGEMENT
N.T.S





NOTES:
1. "SWPPP INFORMATION" MUST BE DISPLAYED PROMINENTLY ACROSS THE TOP OF THE SIGN, AS SHOWN IN THE DETAIL.
2. SIGN TO BE CONSTRUCTED OF A RIGID MATERIAL, SUCH AS PLYWOOD OR OUTDOOR SIGN BOARD. SIGN MUST BE CONSTRUCTED IN A MANNER TO PROTECT DOCUMENTS FROM DAMAGE DUE TO WEATHER (WIND, SUN, MOISTURE, ETC.).
3. THE SWPPP INFORMATION SIGN MUST BE LOCATED NEAR THE ENTRANCE/EXIT OF THE SITE, SUCH THAT IT IS ACCESSIBLE/VIEWABLE BY THE GENERAL PUBLIC, BUT NOT OBSTRUCTING VIEWS AS TO CAUSE A SAFETY HAZARD.
4. ALL POSTED DOCUMENTS MUST BE MAINTAINED IN A CLEARLY READABLE CONDITION AT ALL TIMES THROUGHOUT CONSTRUCTION AND UNTIL THE NOTICE-OF-TERMINATION (NOT) IS FILED FOR THE PERMIT.
5. CONTRACTOR SHALL POST OTHER STORM WATER AND/OR EROSION AND SEDIMENT CONTROL RELATED PERMITS ON THE SIGN AS REQUIRED BY THE LOCAL AGENCY.
6. SIGN SHALL BE LOCATED OUTSIDE OF PUBLIC RIGHT-OF-WAY AND EASEMENTS UNLESS APPROVED BY THE GOVERNING AGENCY.
7. CONTRACTOR IS RESPONSIBLE FOR ENSURING STABILITY OF THIS SWPPP INFORMATION SIGN.

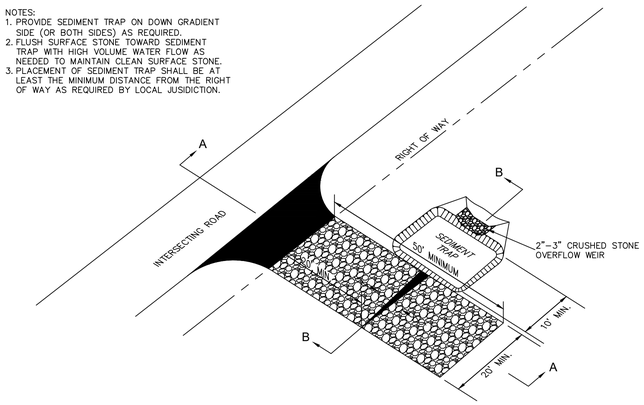
SWPPP INFORMATION SIGN
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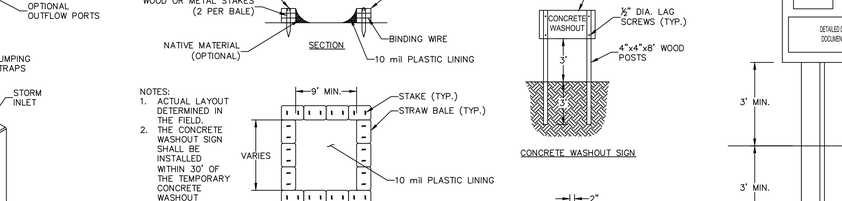


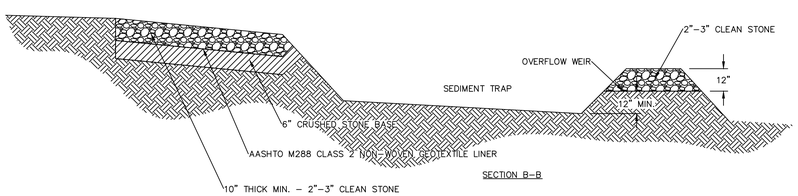
SEDIMENT CONTROL FOR STOCKPILING OF ERODIBLE MATERIAL
N.T.S

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

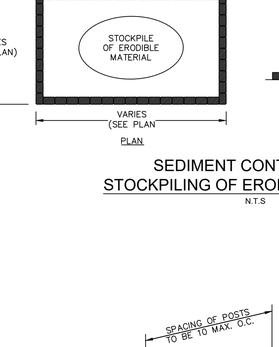
NOTES:
1. PROVIDE SEDIMENT TRAP ON DOWN GRADIENT SIDE (OR BOTH SIDES) AS REQUIRED.
2. FLUSH SURFACE STONE TOWARD SEDIMENT TRAP WITH HIGH VOLUME WATER FLOW AS NEEDED TO MAINTAIN CLEAN SURFACE STONE.
3. PLACEMENT OF SEDIMENT TRAP SHALL BE AT LEAST THE MINIMUM DISTANCE FROM THE RIGHT OF WAY AS REQUIRED BY LOCAL JUSIDICTION.

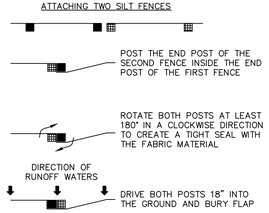






CONSTRUCTION EXIT
N.T.S





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

SILT FENCE INSTALLATION
N.T.S

TYPICAL SWALE SECTION
N.T.S

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No.	REVISIONS	DATE	BY

Kimley»Horn

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PHONE: 772-794-4100
WWW.KIMLEY-HORN.COM CA 00000696

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BLAINE ROBERT BERGSTRESSER
LICENSE: No. 84998
STATE OF FLORIDA
DATE: 07/07/2021
PROFESSIONAL ENGINEER

KHA PROJECT	147814000
DATE	04/06/2021
SCALE	AS SHOWN
DESIGNED BY	BRB
DRAWN BY	TJE
CHECKED BY	BRB

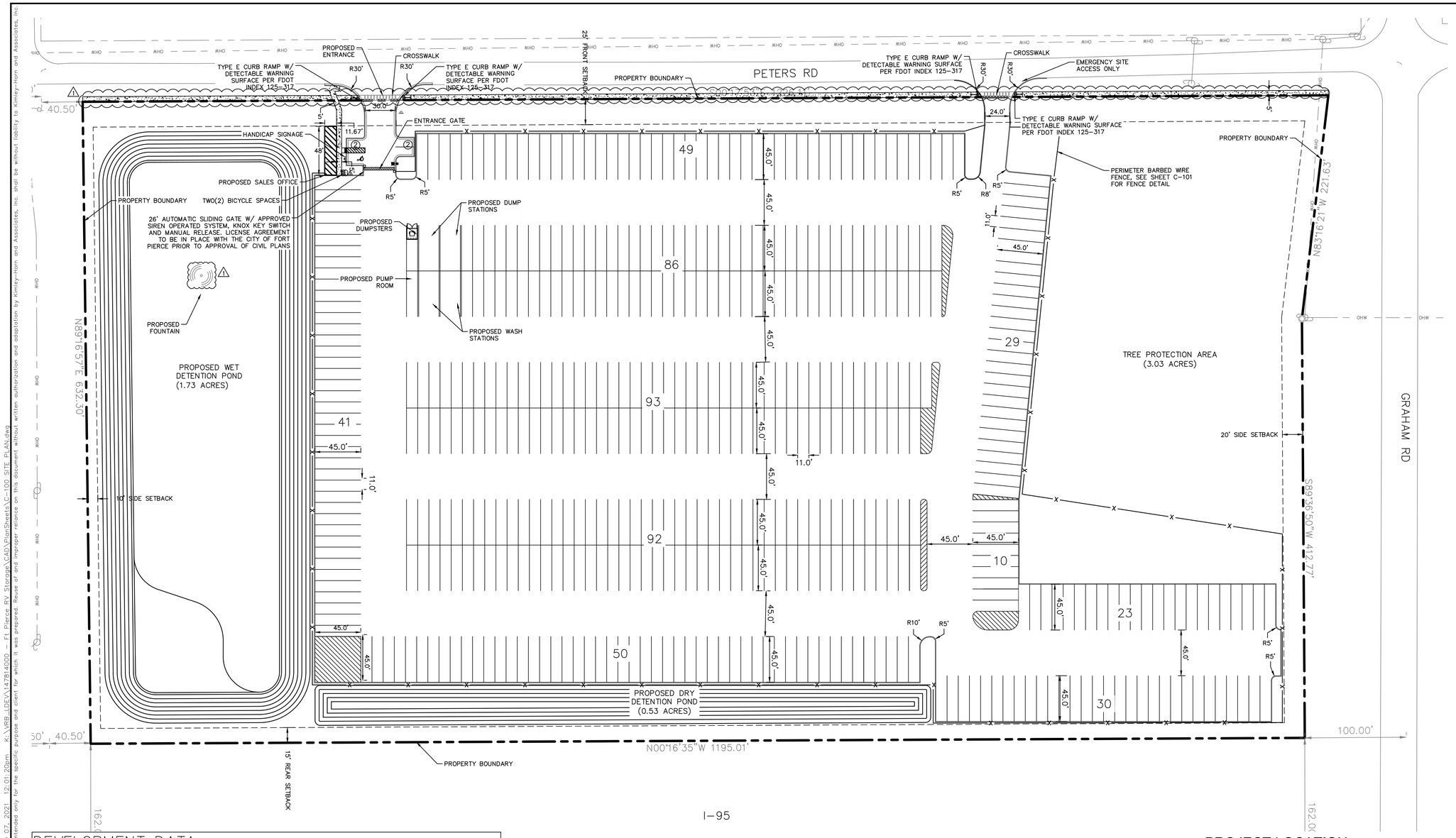
EROSION CONTROL DETAILS

FORT PIERCE RV STORAGE

FORT PIERCE FL

SHEET NUMBER
C-006

Plotted By:Kolon Kennedy Sheet Set:Ft PIERCE RV STORAGE Layout:C-006 EROSION CONTROL DETAILS July 07, 2021 12:01:10pm K:\VRB_LDEV\147814000 - Ft Pierce RV Storage\CAD\PlanSheets\C-006 EROSION CONTROL DETAILS.dwg
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DEVELOPMENT DATA

TAX PARCEL ID NO.	2313-432-0000-000-4		
ADDRESS	2192 COPENHAVER ROAD, FORT PIERCE, FL		
PROJECT USE	RV STORAGE FACILITY		
CURRENT ZONING	ST LUCIE COUNTY - RS-2		
CURRENT FUTURE LAND USE	ST LUCIE COUNTY - RU		
PROPOSED ZONING	CITY OF FORT PIERCE - C-3		
PROPOSED FUTURE LAND USE	CITY OF FORT PIERCE - GC		
REQUIRED PARKING (1/300 SF OF BUILDING AREA)	2 SPACES		
RV SPACES PROPOSED	503 SPACES		
STANDARD SPACES PROPOSED	3 SPACES		
ACCESSIBLE SPACES PROPOSED	1 SPACE		
TOTAL AREA OF TRACT	760,033 SF	17.45 AC	100%
AREA OF PROPOSED BUILDINGS	880 SF	0.02 AC	0.12%
AREA OF PROPOSED PAVEMENT	414,267 SF	9.51 AC	54.51%
TOTAL PROPOSED IMPERVIOUS AREA	572,597 SF	12.34 AC	70.72%
AREA OF PROPOSED OPEN SPACE	222,374 SF	5.11 AC	29.26%
AREA OF PROPOSED POND	122,404 SF	2.81 AC	16.11%
OPEN SPACE REQUIRED	145,133 SF	3.33 AC	15%

OWNER
R V DEVELOPMENT, LLC
547 WASH ROBERTS LANE
MC MINNVILLE, TN, 37110

DEVELOPER
BEN LOKHORST
MACRITCHIE STORAGE VENTURES, LLC
715 5TH AVENUE, SW, SUITE 1700
CALGARY AB T2P 2X6
PHONE: 403-973-4882

UTILITY PROVIDERS

WATER/WASTEWATER: FORT PIERCE UTILITY AUTHORITY
IRRIGATION: WELL

FLOOD ZONE
PROPERTY LIES WITHIN FLOOD ZONE "X", ACCORDING TO THE F.I.R.M. MAP NO. 12111C0167J, DATE 02/16/2012.

LEGAL DESCRIPTION
THAT PORTION OF THE WEST 1/2 OF THE SW 1/4 OF THE SE 1/4 , LYING WEST OF THE WESTERLY RIGHT OF WAY LINE OF I-95, OF SECTION 13, TOWNSHIP 35 SOUTH, RANGE 39 EAST, LYING AND BEING IN ST. LUCIE COUNTY, FLORIDA, LESS AND EXCEPT ROAD RIGHTS OF WAY FOR I-95; GRAHAM ROAD; COPENHAVER ROAD AND LESS CANAL RIGHTS OF WAY FOR NSLRDD CANAL NO. 37 ON SOUTH LINE

CONTAINING 17.45 ACRES ACRES, MORE OR LESS.

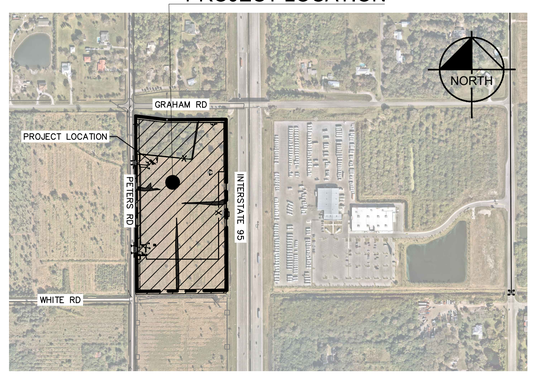
VERTICAL DATUM
THE ELEVATIONS SHOWN HERON ARE BASED ON THE NORTH AMERICAN DATUM OF 1988.

NOTES
1. ALL RV PARKING SPACES WILL BE COVERED. ⚠

BUILDING SETBACKS

	SETBACK
NORTH	20 FT
SOUTH	10 FT
EAST	15 FT
WEST	25 FT

PROJECT LOCATION



LOCATION MAP
SCALE: 1"=1000'

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ROBERT BLAINE BERGSTRESSER LICENSE No. 84598 STATE OF FLORIDA PROFESSIONAL ENGINEER
DATE: 07/07/2021

No.	REVISIONS	DATE	BY

Kimley»Horn
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445 24TH STREET, SUITE 200, VERO BEACH, FL 32960
PHONE: 772-794-4100
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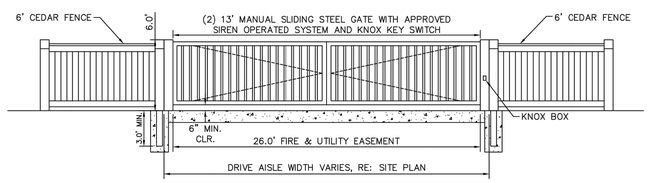
KHA PROJECT 147814000
DATE 04/06/2021
SCALE AS SHOWN
DESIGNED BY BRB
DRAWN BY TJE
CHECKED BY BRB

SITE PLAN

FORT PIERCE RV STORAGE
FL
FORT PIERCE

SHEET NUMBER
C-100

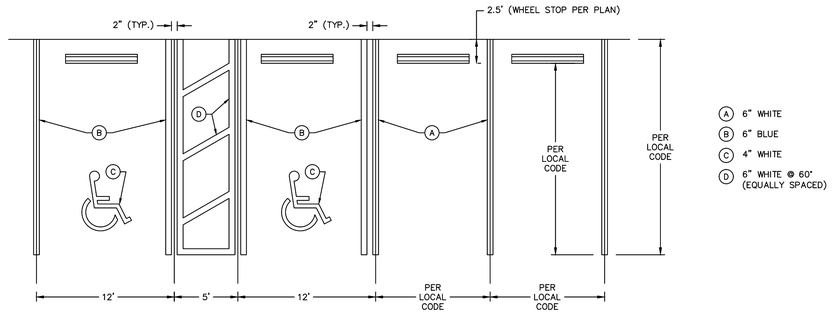
Posted By:Nolan Kennedy Sheet Set:FT PIERCE RV STORAGE Layout:C-100 SITE PLAN July 07, 2021 12:01:20pm K:\VRB_LOE\147814000 - Ft Pierce RV Storage\CAD\PlanSheets\C-100 SITE PLAN.dwg
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BLACK METAL MANUAL SLIDING GATE

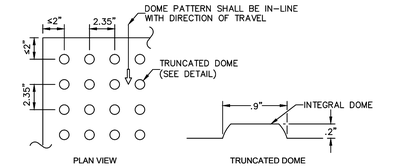
SCALE: NTS

NOTES:
1. (2) 13' ELECTRICAL SLIDING GATE WITH APPROVED SIREN OPERATED SYSTEM, KNOX KEY SWITCH AND MANUAL RELEASE.
2. GATE SHALL BE LOCATED 35' MINIMUM BACK FROM ADJACENT STREET FLOW LINE. RE: SITE PLAN.
3. THE MINIMUM CLEAR OPENING WIDTH OF THE GATING SYSTEM SHALL NOT BE LESS THAN THIRTEEN FEET (13') FOR TWO WAY TRAFFIC. THERE MUCH BE A 6" MINIMUM CLEARANCE ACROSS THE FULL GATING SYSTEM TO THE ROAD SURFACE.
4. POSTS OR COLUMNS CANNOT ENCROACH INTO THE 26' FIRE LANE AND UTILITY EASEMENT.
5. PROVIDE SIGN OUTSIDE OF EACH GATED ENTRYWAY "ENTERING THROUGH ACCESS FIRE LANE".
6. REFER TO SITE PLAN FOR ADDITIONAL INFORMATION, GATE SLIDE DIRECTIONS, ETC.
7. THE INSTALLATION OF ANY GATING SYSTEM WILL REQUIRE A CITY OF AURORA LICENSED CONTRACTOR TO OBTAIN A BUILDING PERMIT THROUGH THE AURORA BUILDING DIVISION PRIOR TO THE START OF ANY WORK. THIS WOULD BE CONSIDERED A STRUCTURAL, LIFE SAFETY AND ELECTRICAL REVIEW WITHIN THE BUILDING DIVISION THAT IS CONDUCTED ON BEHALF OF THE FIRE CHIEF. FOR ASSISTANCE PLEASE CALL 303-739-7420 AND ASK FOR THE LIFE SAFETY PLANS EXAMINER.



PARKING STALL STRIPING

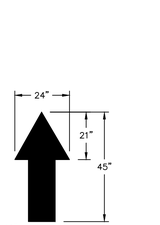
N.T.S



NOTES
1. DETECTABLE WARNINGS SHALL CONSIST OF RAISED TRUNCATED DOMES WITH A DIAMETER OF NOMINAL 0.9 IN. (23 MM), A HEIGHT OF NOMINAL 0.2 IN (5MM) AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 IN. (60 MM)
2. DETECTABLE WARNINGS SHALL EXTEND THE FULL WIDTH OF THE CURB RAMP (EXCLUSIVE OF FLARED SIDES) AND SHALL EXTEND EITHER THE FULL DEPTH OF THE CURB RAMP OR 24" DEEP MINIMUM MEASURED FROM THE BACK OF THE CURB ON THE RAMP SURFACE.
3. TRANSITION SLOPES ARE NOT TO HAVE DETECTABLE WARNINGS.
4. DETECTABLE WARNINGS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT. THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTREGAL PART OF THE WALKING SURFACE.

DETECTABLE WARNING

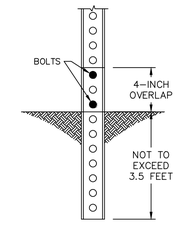
N.T.S



NOTE: ALL TRAFFIC FLOW ARROWS TO BE REFLECTIVE WHITE PAINT

ON-SITE TRAFFIC FLOW ARROW

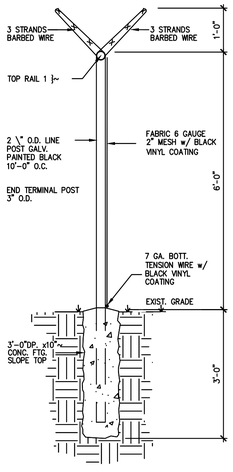
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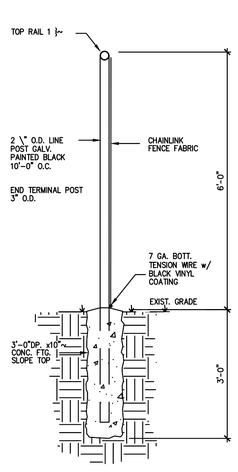
NOTE:
1. THE U-CHANNEL, ROLLED, MILD, CARBON STEEL POST WILL BEND, BREAK, OR PULL OUT OF THE GROUND WHEN IT IS HIT.
2. THE POST SHOULD BE DRIVEN INTO THE GROUND AND NOT ENCASED IN CONCRETE. DRIVE POSTS INTO THE GROUND NO MORE THAN 3.5 FEET TO MAKE IT EASIER TO PULL OUT DAMAGED POSTS.
3. SPLICES CAN BE PURCHASED COMMERCIALLY OR INSTALL AT GROUND LEVEL. THEY ALLOW THE POST TO BREAK OFF ON IMPACT. THESE DEVICES IMPROVE SAFETY WHEN THE POST IS HIT AND WILL MAKE REPAIR EASIER.

SIGN POST

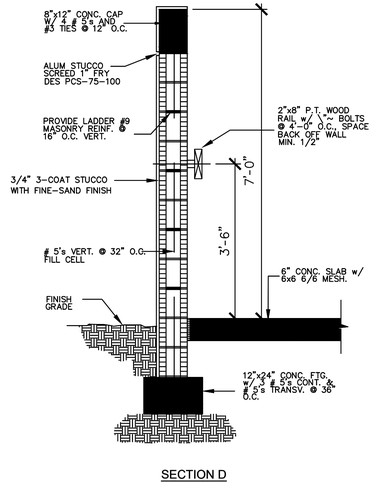
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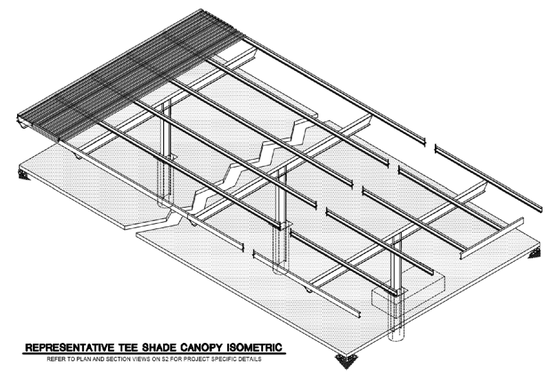
FENCE DETAIL C
N.T.S.



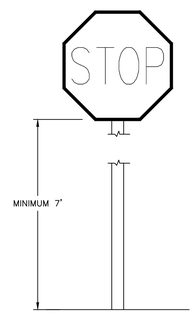
FENCE DETAIL B
N.T.S.



SECTION D
N.T.S.

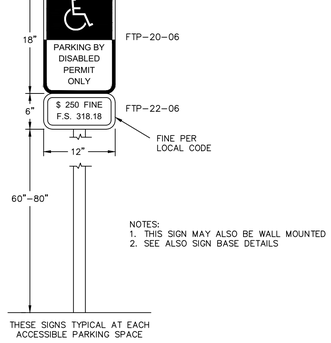


REPRESENTATIVE TEE SHADE CANOPY ISOMETRIC
REFER TO PLAN AND SECTION VIEWS ON S2 FOR PROJECT SPECIFIC DETAILS



REQUIRED SIGN HEIGHT

N.T.S



NOTES:
1. THIS SIGN MAY ALSO BE WALL MOUNTED
2. SEE ALSO SIGN BASE DETAILS

THESE SIGNS TYPICAL AT EACH ACCESSIBLE PARKING SPACE

ACCESSIBLE PARKING SIGN

N.T.S

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ROBERT BLAINE BERGSTRESSER LICENSE No. 84698 STATE OF FLORIDA PROFESSIONAL ENGINEER

No.	REVISIONS	DATE	BY

Kimley»Horn
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445 24TH STREET, SUITE 200, VERO BEACH, FL 32960
PHONE: 772-794-4100
WWW.KIMLEY-HORN.COM CA 00000696

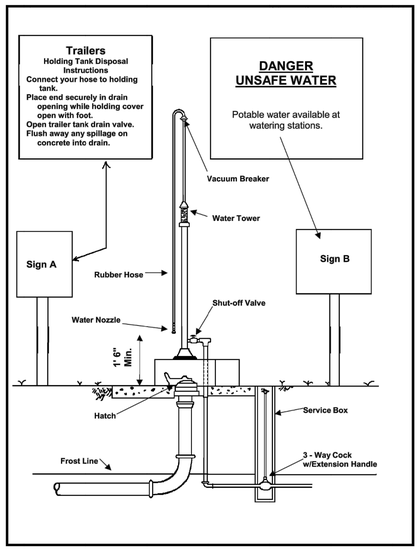
KHA PROJECT	147814000
DATE	04/06/2021
SCALE	AS SHOWN
DESIGNED BY	BRB
DRAWN BY	TJE
CHECKED BY	BRB

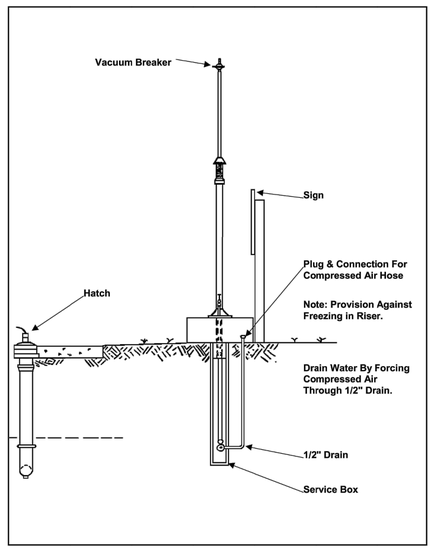
SITE DETAILS

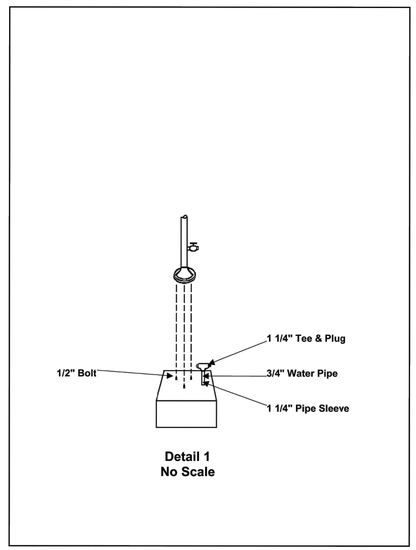
FORT PIERCE RV STORAGE
FORT PIERCE FL

SHEET NUMBER
C-101

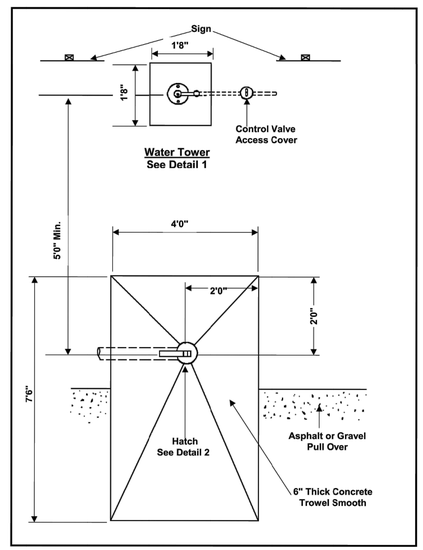
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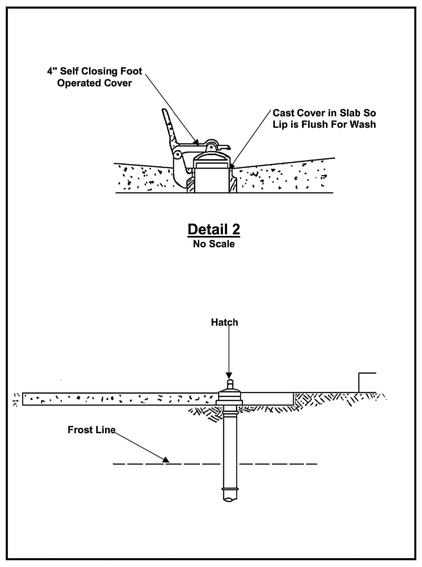




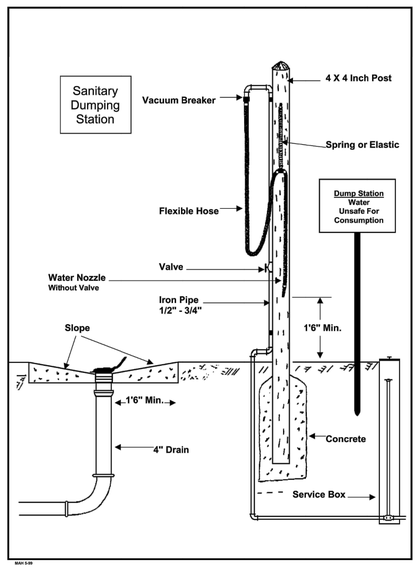


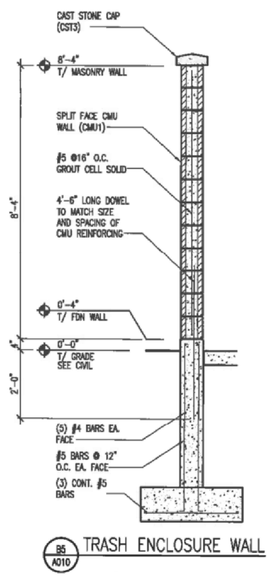
Detail 1
No Scale



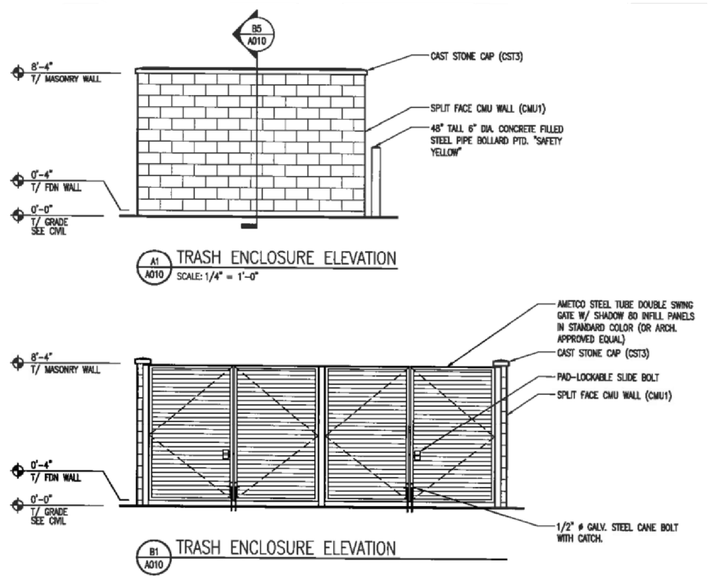


Detail 2
No Scale





B5 / A010 TRASH ENCLOSURE WALL



A1 / A010 TRASH ENCLOSURE ELEVATION
SCALE: 1/4" = 1'-0"

B1 / A010 TRASH ENCLOSURE ELEVATION

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ROBERT BLAINE BERGSTRESSER LICENSE No. 84998 STATE OF FLORIDA PROFESSIONAL ENGINEER
BLAINE BERGSTRESSER DATE: 07/07/2021

No.	REVISIONS	DATE	BY

Kimley»Horn

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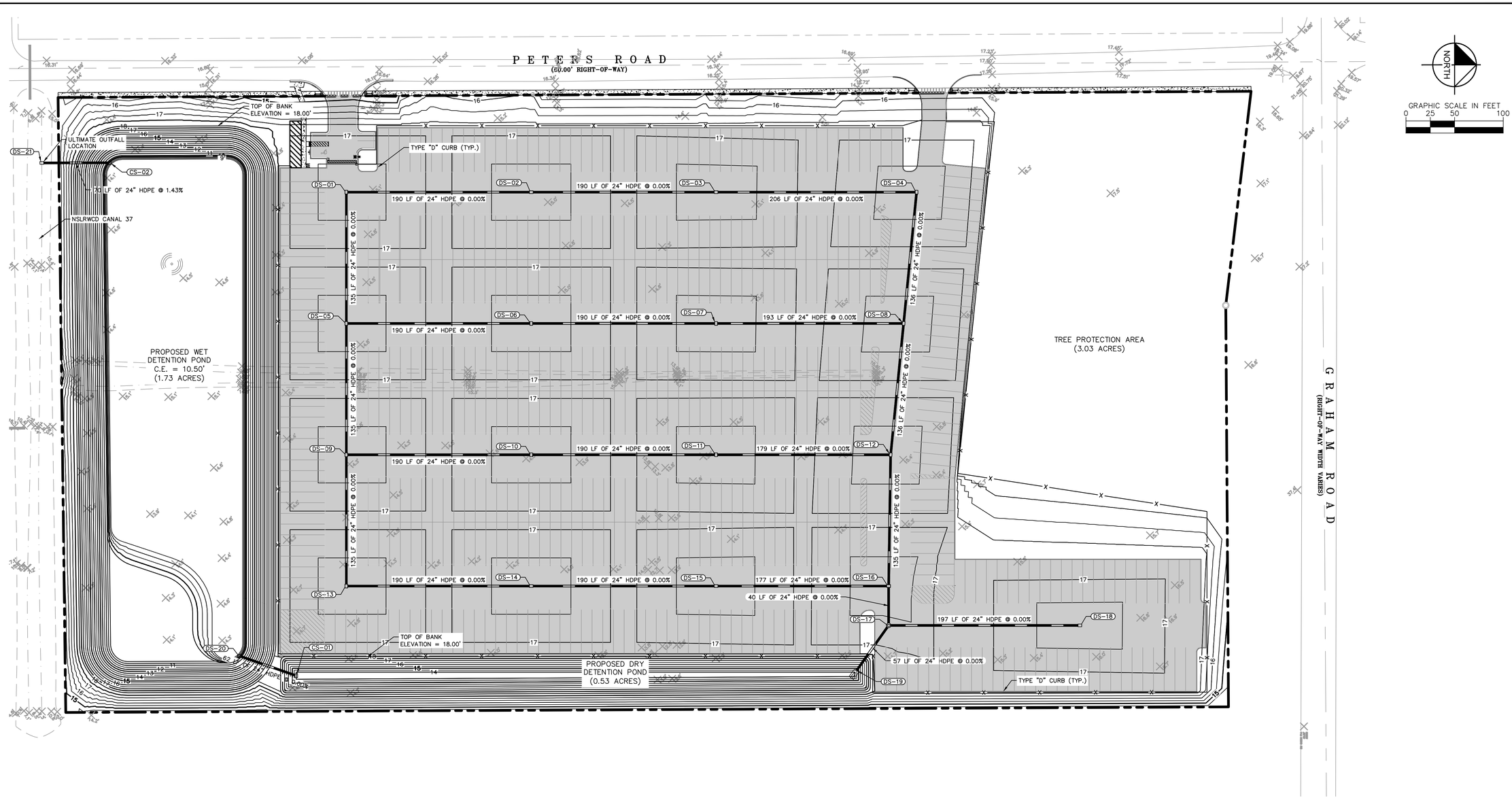
KHA PROJECT 147814000
DATE 04/06/2021
SCALE AS SHOWN
DESIGNED BY BRB
DRAWN BY TJE
CHECKED BY BRB

SITE DETAILS

FORT PIERCE RV STORAGE
FORT PIERCE FL

SHEET NUMBER C-102

Plotted By: Nolan, Kennedy Sheet Set: FT PIERCE RV STORAGE Layout: C-102 SITE DETAILS July 07, 2021 12:01:27pm K:\VRB_LDE\147814000 - Ft Pierce RV Storage\CAD\PlanSheets\C-100 SITE PLAN.dwg
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DRAINAGE NOTES

1. ELEVATIONS SHOWN HERON ARE REFERENCED TO NAVD 1988.
2. SURVEY INFORMATION SHOWN HEREON WAS PROVIDED BY HSQ GROUP, INC.
3. CONTRACTOR TO CONSTRUCT DRAINAGE STRUCTURES WITH USF GRATES, RIMS AND COVERS AS CALLED OUT OR APPROVED EQUAL. SHOP DRAWINGS ARE TO BE PROVIDED TO ENGINEER FOR APPROVAL PRIOR TO ANY CONSTRUCTION.
4. CONTRACTOR TO REFER TO FDOT DESIGN STANDARD (AND NOT LIMITED TO) INDEX'S 200, 201, 210, 211, 214, 232 & 233 FOR MANHOLE, INLET AND GRATE SPECIFICATIONS.
5. ALL DRAINAGE STRUCTURES SHALL BE CONSTRUCTED WITH (4) SIDED BEARING HEAVY DUTY H-20 RATED TRAFFIC RIMS AND GRATES.
6. CONTRACTOR TO VERIFY ALL EXISTING UTILITY RINGS AND COVERS ON SITE ARE HEAVY DUTY TRAFFIC RATED. CONTRACTOR TO REPLACE DEFICIENT RINGS AND COVERS WITH HEAVY DUTY TRAFFIC RATED RINGS AND COVERS. CONTRACTOR TO ADJUST RIM ELEVATIONS OF ANY UTILITIES THAT CHANGE IN ELEVATION DURING CONSTRUCTION.
7. ALL CLEAN-OUT COVERS SHOULD BE RATED FOR HEAVY DUTY TRAFFIC.
8. SIDEWALKS AND CROSSWALKS SHALL NOT EXCEED 2% CROSS SLOPE NOR 5% LONGITUDINALLY. GRADES IN ACCESSIBLE PARKING SPACES SHALL NOT EXCEED 2% IN ANY DIRECTION. IN CASES OF SIDEWALK LANDINGS AT BUILDING ENTRANCES, GRADES SHALL NOT EXCEED 2% IN ANY DIRECTION. ACCESSIBLE CURB RAMPS SHALL NOT EXCEED 6' IN LENGTH AND 1:12 SLOPE. LANDINGS AT CHANGES IN DIRECTION SHALL BE MINIMUM 60"x60" AND SHALL NOT EXCEED 2% SLOPE IN ANY DIRECTION.
9. ROOF DRAIN CONNECTIONS TO DRAINAGE PIPE SHALL BE AS FOLLOWS:
   A. FOR ADS N-12 CORRUGATED POLYETHYLENE DRAINAGE PIPE USE ADS DUAL WALL FABRICATED REDUCING SADDLE TEE 4"-24" DIAMETER.
   B. FOR RCP DRAINAGE PIPE MAKE CONNECTION PER FDOT INDEX 280,CONCRETE COLLAR FOR JOINING MAINLINE PIPE AND STUB PIPE DETAIL.
   C. NOTIFY CONSULTANT FOR CONNECTION METHOD TO STEEL PIPE.
10. ALL DRAINAGE PIPE JOINTS SHALL BE FILTER FABRIC WRAPPED PER FDOT INDEX #280. ALL DRAINAGE PIPE JOINTS NEED TO BE FILTER FABRIC WRAPPED REGARDLESS OF MATERIAL.
11. 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.
12. CONTRACTOR IS RESPONSIBLE FOR DEMOLITION OF EXISTING STRUCTURES INCLUDING REMOVAL OF ANY EXISTING UTILITIES SERVING THE STRUCTURE.
13. EXISTING PIPES TO BE CLEANED OUT TO REMOVE ALL SILT AND DEBRIS.
14. PRECAST STRUCTURES MAY BE USED AT CONTRACTORS OPTION.
15. ALL STORM PIPE ENTERING STRUCTURES SHALL BE GROUTED TO ASSURE CONNECTION AT STRUCTURE IS WATERTIGHT.
16. ALL STORM SEWER MANHOLES IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT, AND SHALL HAVE TRAFFIC BEARING RING & COVERS. MANHOLES IN UNPAVED AREAS SHALL BE 6" ABOVE FINISH GRADE. LIDS SHALL BE LABELED "STORM SEWER".
17. ALL CATCH BASINS WITHIN PROPOSED TRAFFIC AREAS SHALL HAVE BICYCLE PROOF GRATES.
18. CONTRACTOR TO FLUSH AND VACUUM ENTIRE ON-SITE STORM WATER SYSTEM UPON COMPLETION OF PROPOSED WORK.
19. MINIMUM DRAINAGE PIPE SHALL BE 15 INCHES PER CITY OF FORT PIERCE LAND DEVELOPMENT ORDINANCE SEC 119-3 DESIGN STANDARDS; STORMWATER MANAGEMENT; APPROVALS.

STRUCTURE TABLE

NAME:	DETAILS:	RIM ELEV:	INVERT ELEV:
CS-01	DRY POND CONTROL STRUCTURE	14.00	5.00 (S)
CS-02	WET POND CONTROL STRUCTURE	12.58	9.00 (S)
DS-01	TYPE C INLET W/ USF 6606	16.00	10.00 (E) 10.00 (N)
DS-02	TYPE C INLET W/ USF 6606	16.00	10.00 (N) 10.00 (S)
DS-03	TYPE C INLET W/ USF 6606	16.00	10.00 (N) 10.00 (S)
DS-04	TYPE C INLET W/ USF 6606	16.00	10.00 (S) 10.00 (E)
DS-05	TYPE C INLET W/ USF 6606	16.00	10.00 (W) 10.00 (E) 10.00 (N)
DS-06	TYPE C INLET W/ USF 6606	16.00	10.00 (S) 10.00 (N)
DS-07	TYPE C INLET W/ USF 6606	16.00	10.00 (N) 10.00 (S)
DS-08	TYPE C INLET W/ USF 6606	16.00	10.00 (W) 10.00 (E) 10.00 (S)
DS-09	TYPE C INLET W/ USF 6606	16.00	10.00 (W) 10.00 (E) 10.00 (N)
DS-10	TYPE C INLET W/ USF 6606	16.00	10.00 (S) 10.00 (N)

STRUCTURE TABLE

NAME:	DETAILS:	RIM ELEV:	INVERT ELEV:
DS-11	TYPE C INLET W/ USF 6606	16.00	10.00 (N) 10.00 (S)
DS-12	TYPE C INLET W/ USF 6606	16.00	10.00 (W) 10.00 (E) 10.00 (S)
DS-13	TYPE C INLET W/ USF 6606	16.00	10.00 (W) 10.00 (N)
DS-14	TYPE C INLET W/ USF 6606	16.00	10.00 (S) 10.00 (N)
DS-15	TYPE C INLET W/ USF 6606	16.00	10.00 (S) 10.00 (N)
DS-16	TYPE C INLET W/ USF 6606	16.00	10.00 (S) 10.00 (E) 10.00 (W)
DS-17	MANHOLE W/ USF 420-C	16.64	10.00 (SE) 10.00 (W) 10.00 (N)
DS-18	TYPE C INLET W/ USF 6606	16.00	10.00 (S)
DS-19	MITERED END SECTION	12.18	10.00 (NW)
DS-20	WET POND OUTFALL	9.53	5.00 (N)
DS-21	CANAL OUTFALL	11.74	8.00 (N)

LEGEND

- TYPE "F" CURB AND GUTTER
- TYPE "D CURB
- 6' OPAQUE SCREENING WALL
- HEAVY DUTY ASPHALT PAVEMENT
- STANDARD DUTY ASPHALT PAVEMENT
- HEAVY DUTY CONCRETE PAVEMENT
- STANDARD DUTY CONCRETE PAVEMENT

DRAINAGE LEGEND

- PROPOSED STORM INLET
- PROPOSED MITERED END SECTION
- PROPOSED DRAINAGE PIPE
- PROPOSED DIRECTION OF SURFACE WATER RUNOFF
- XXX PROPOSED SURFACE ELEVATION
- 72 EXISTING CONTOUR

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No.	REVISIONS	DATE	BY

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DATE: 07/07/2021

KHA PROJECT 147814000
DATE 04/06/2021
SCALE AS SHOWN
DESIGNED BY BRB
DRAWN BY TJE
CHECKED BY BRB

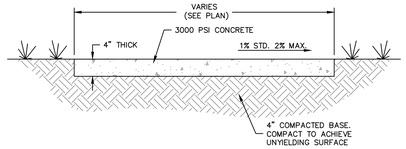
PAVING GRADING AND DRAINAGE PLAN

FORT PIERCE RV STORAGE

FORT PIERCE FL

SHEET NUMBER C-200

Plotted By: Nolan, Kennedy Sheet Set: FT PIERCE RV STORAGE Layout: C-200 PAVING GRADING AND DRAINAGE PLAN July 07, 2021 12:01:47pm K:\VRB_LDEV\147814000 — Ft Pierce RV Storage\CAD\PlanSheets\C-200 PAVING GRADING AND DRAINAGE PLAN.dwg
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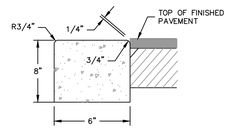


NOTE
SEE SITE PLAN FOR SPECIFIC SIDEWALK LOCATIONS.

SIDEWALK CONSTRUCTION SHALL BE PER FDOT DESIGN STANDARDS INDEX 522-001. DETECTABLE WARNINGS AND CURB RAMPS SHALL BE PER INDEX 522-002.

TYPICAL 4" SIDEWALK SECTION

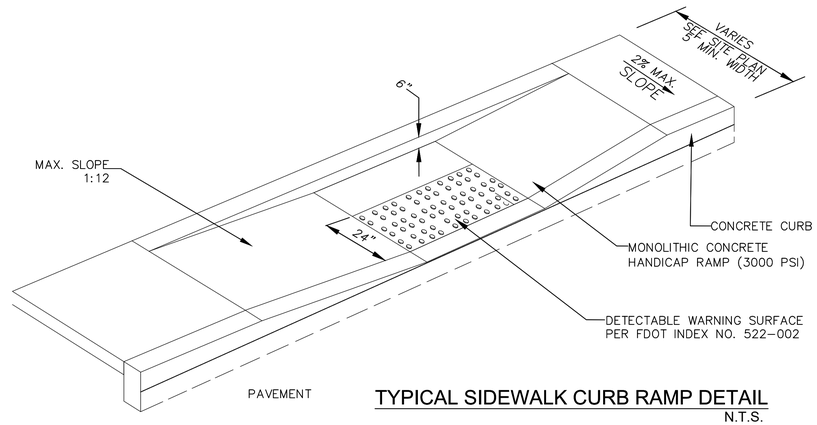
N.T.S.



ALL CONCRETE SHALL BE 3,000 PSI

6" EDGE CURB

PGKH24A.DWG N.T.S.



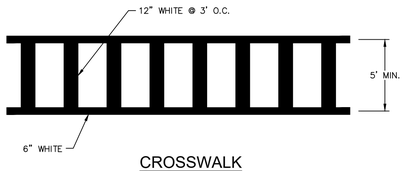
TYPICAL SIDEWALK CURB RAMP DETAIL

N.T.S.

TABLE OF SIDEWALK THICKNESS - 'T'	
LOCATION	'T'
RESIDENTIAL AREAS	4"
AT DRIVEWAYS AND OTHER AREAS	6"

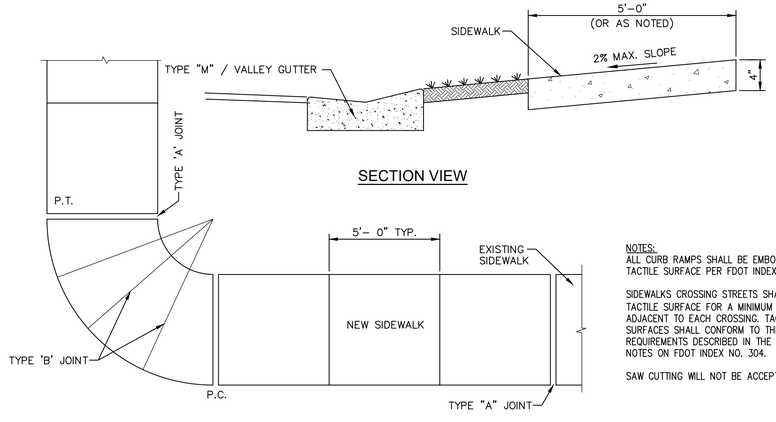
NOTE: CONCRETE TO BE 3,000 P.S.I. AT 28 DAYS

TABLE OF SIDEWALK JOINTS	
TYPE	LOCATION
'A'	P.C. AND P.T. OF CURVES.
'B'	5'- 0" CENTER TO CENTER ON SIDEWALKS. (NOT LESS THAN 4' AND NOT GREATER THAN 10')
'C'	WHERE SIDEWALK ABUTS CONCRETE CURBS, DRIVEWAYS AND SIMILAR STRUCTURES. JUNCTION OF EXISTING AND NEW SIDEWALKS AT INTERVALS NOT GREATER THAN 100'.



CROSSWALK

N.T.S



NOTES:
ALL CURB RAMPS SHALL BE EMBOSSED WITH A TACTILE SURFACE PER FDOT INDEX NO. 304.

SIDEWALKS CROSSING STREETS SHALL HAVE A TACTILE SURFACE FOR A MINIMUM OF 2' ADJACENT TO EACH CROSSING. TACTILE SURFACES SHALL CONFORM TO THE REQUIREMENTS DESCRIBED IN THE GENERAL NOTES ON FDOT INDEX NO. 304.

SAW CUTTING WILL NOT BE ACCEPTED.

SIDEWALK CONSTRUCTION

N.T.S.

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No.	REVISIONS	DATE	BY

Kimley»Horn

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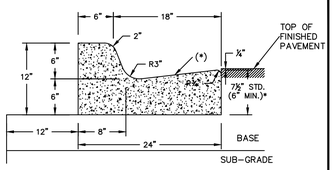
PAVING GRADING AND DRAINAGE DETAILS

FORT PIERCE RV STORAGE

FORT PIERCE FL

SHEET NUMBER C-201

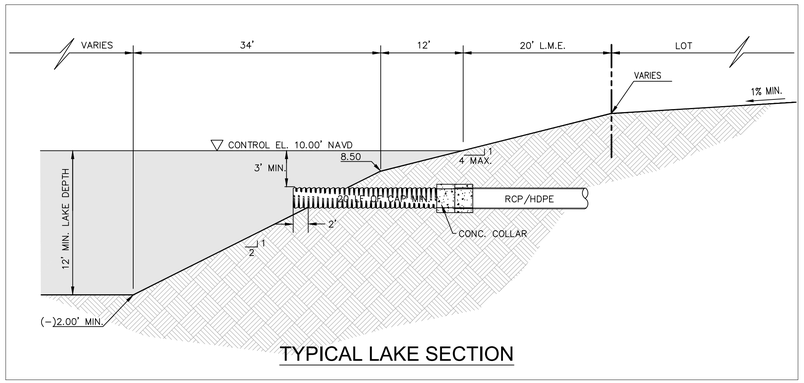
Plotted By:Nolan, Kennedy Street Set:FT PIERCE RV STORAGE Layout:C-201 PAVING GRADING AND DRAINAGE DETAILS July 07, 2021 12:01:52pm K:\VRB_LDE\147814000 - Ft Pierce RV Storage\CAD\PlanSheets\C-201 PAVING GRADING AND DRAINAGE DETAILS.dwg
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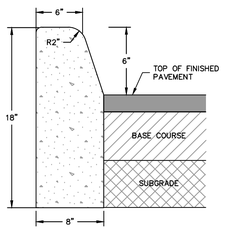
* WHEN USED ON HIGH SIDE OF ROADWAYS, THE CROSS SLOPE OF THE GUTTER SHALL MATCH THE CROSS SLOPE OF THE ADJACENT PAVEMENT AND THE THICKNESS OF THE LIP SHALL BE 6" UNLESS OTHERWISE SHOWN ON THE PLANS. ASPHALT SURFACE ON HIGH SIDE TO BE FLUSH WITH LIP OF CURB OR CURB & GUTTER.

TYPE "F" CURB AND GUTTER

N.T.S



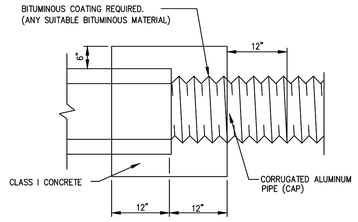
TYPICAL LAKE SECTION



ALL CONCRETE SHALL BE 3,000 PSI

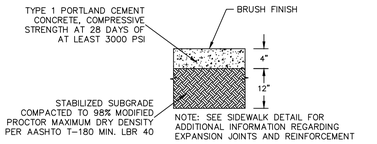
TYPE "D" CURB

PGKH22A.DWG N.T.S.



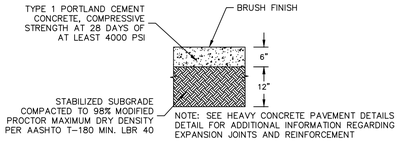
CONCRETE COLLAR DETAIL

N.T.S.



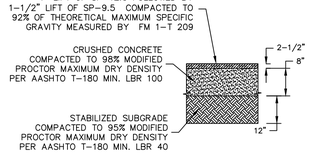
STANDARD DUTY CONCRETE

N.T.S



HEAVY DUTY CONCRETE

N.T.S



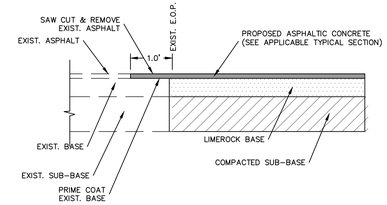
HEAVY DUTY ASPHALT

N.T.S

NOTE:
CONTRACTOR TO REFER TO THE GEOTECHNICAL REPORT FOR SITE WORK SPECIFICATIONS.

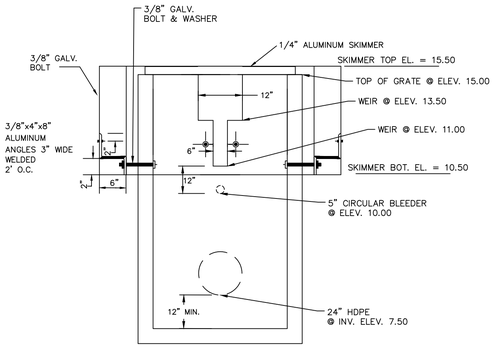
CRUSHED CONCRETE SHALL BE FROM AN FDOT APPROVED PLANT.

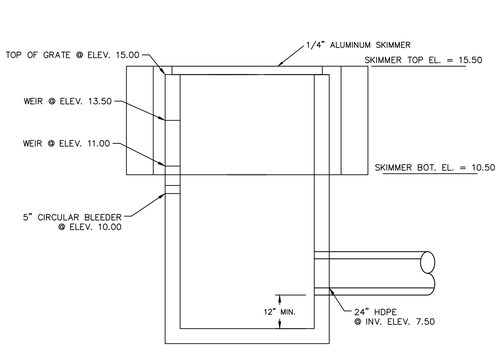
CRUSHED CONCRETE GRADATION SHALL BE AVAILABLE ON SITE AND SUBMITTED FOR THE AS-BUILT.



NEW ASPHALT PAVEMENT TIE-IN TYPICAL SECTION

PGKH43A.DWG N.T.S.

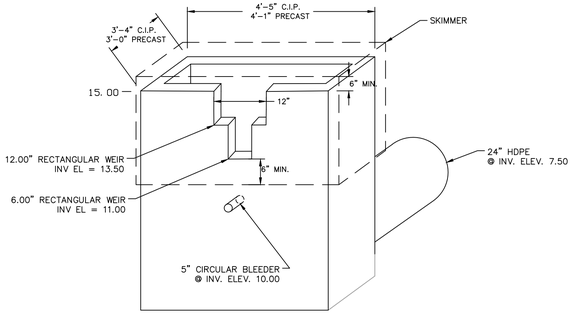




CONTROL STRUCTURE NOTES:
1. CONTRACTOR TO REFER TO FDOT FY 2021-22 STANDARD PLANS INDEX 425-052 FOR REBAR SPACING AND SIZING.

CONTROL STRUCTURE (CS-02)
FDOT TYPE 'C' STRUCTURE

NTS



THE PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED ON THIS PROJECT. CONTRACTOR'S BID SHALL INCLUDE CONSIDERATION FOR ADDRESSING THIS ISSUE.

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BLAINE BERGSTRESSER ☆ No. 84988 ☆ STATE OF FLORIDA ☆ PROFESSIONAL ENGINEER
DATE: 07/07/2021

No.	REVISIONS	DATE	BY

Kimley»Horn

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445 24TH STREET, SUITE 200, VERO BEACH, FL 32960
PHONE: 772-794-4100
WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT	147814000
DATE	04/06/2021
SCALE	AS SHOWN
DESIGNED BY	BRB
DRAWN BY	TJE
CHECKED BY	BRB

PAVING GRADING AND DRAINAGE DETAILS

FORT PIERCE RV STORAGE

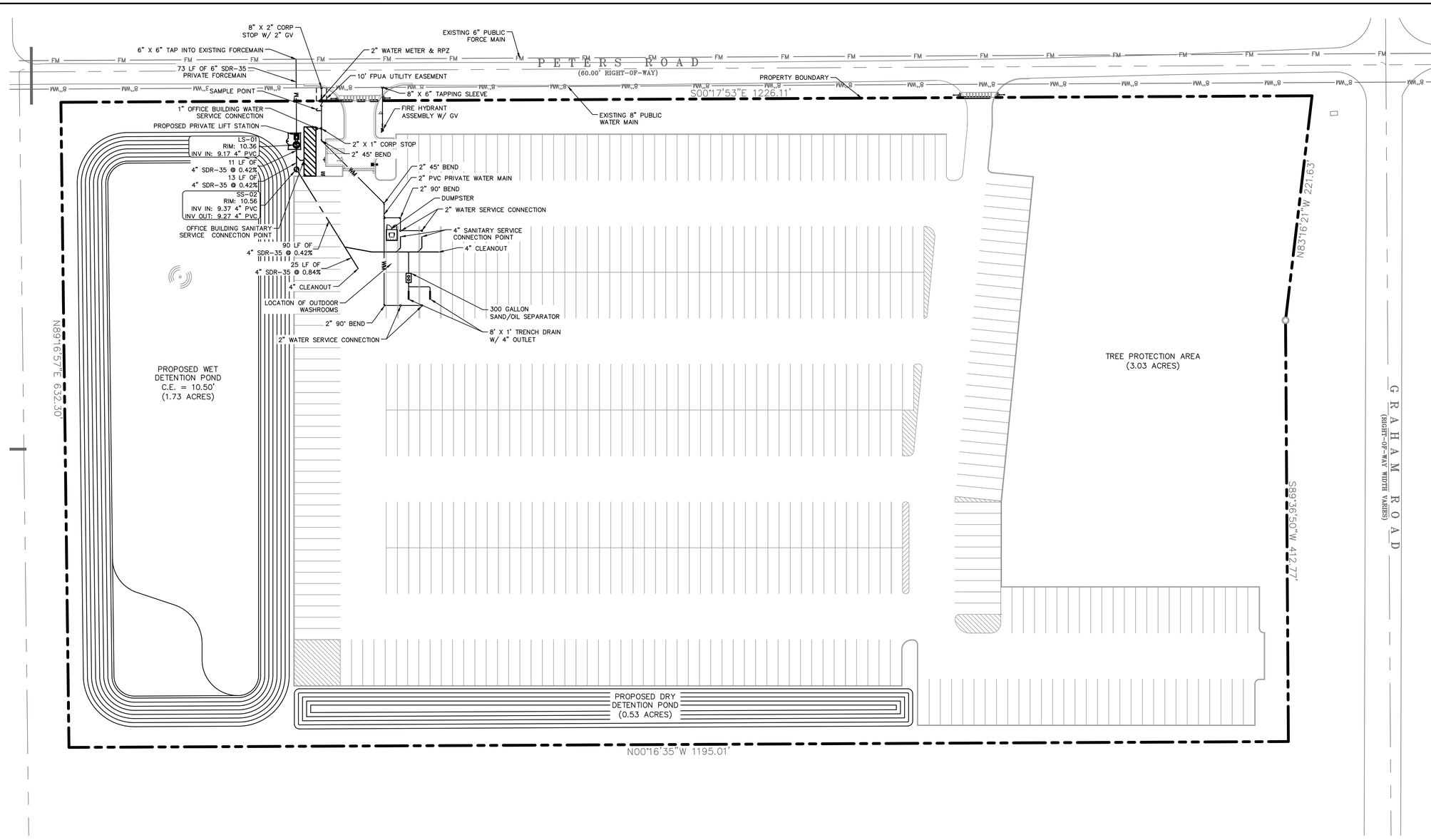
FL

FORT PIERCE

SHEET NUMBER

C-202

Plotted By:Nolan, Kennedy Sheet Set:FT PIERCE RV STORAGE Layout:C-202 PAVING GRADING AND DRAINAGE DETAILS July 07, 2021 12:01:57pm K:\VRB_LDEV\147814000 - Ft Pierce RV Storage\CAD\PlanSheets\C-202 PAVING GRADING AND DRAINAGE DETAILS.dwg
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UTILITY NOTES:

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD, THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPREITE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
2. ALL FILL MATERIAL IS TO BE IN PLACE, AND COMPACTED BEFORE INSTALLATION OF PROPOSED UTILITIES.
3. CONTRACTOR SHALL NOTIFY THE UTILITY AUTHORITIES INSPECTORS 72 HOURS BEFORE CONNECTING TO ANY EXISTING LINE.
4. SANITARY SEWER PIPE SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED ON THE PLANS:
   8" PVC SDR26 PER ASTM D 3034 DEPTHS LESS THAN 15'
   8" PVC C900 FOR DEPTHS GREATER THAN 15'
5. WATER LINES SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED ON PLANS:
   6" AND LARGER, PVC C-900 PER ASTM D 2241
   CLASS 200 UNDER ROADS, OTHERWISE CLASS 150
6. MINIMUM TRENCH WIDTH SHALL BE 2 FEET.
7. CONTRACTOR SHALL MAINTAIN A MINIMUM OF 36" COVER ON ALL WATERLINES AND FORCEMAINS.
8. LINES UNDERGROUND SHALL BE INSTALLED, INSPECTED AND APPROVED BEFORE BACKFILLING.
9. ALL CONCRETE FOR ENCASEMENTS SHALL HAVE A MINIMUM 28 COMPRESSION STRENGTH AT 3000 P.S.I.
10. CONTRACTOR IS RESPONSIBLE FOR COMPLYING TO THE SPECIFICATIONS OF THE LOCAL AUTHORITIES WITH REGARDS TO MATERIALS AND INSTALLATION OF THE WATER AND SEWER LINES.
11. VALVES ARE NOT TO BE PLACED IN CURBS, SIDEWALKS, OR DRIVEWAYS.
12. ALL MANHOLES SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO BEGINNING PAVING.

UTILITY LEGEND

- WM — PROPOSED WATER MAIN
- SS — PROPOSED SEWER GRAVITY MAIN
- FM — PROPOSED SEWER FORCE MAIN
- PROPOSED FIRE HYDRANT
- PROPOSED WATER METER AND RPZ
- PROPOSED SEWER MANHOLE

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BLAINE BERGSTRESSER ☆ LICENSE No. 84988 ☆ STATE OF FLORIDA ☆ PROFESSIONAL ENGINEER
DATE: 07/07/2021

KHA PROJECT 147814000
DATE 04/06/2021
SCALE AS SHOWN
DESIGNED BY BRB
DRAWN BY TJE
CHECKED BY BRB

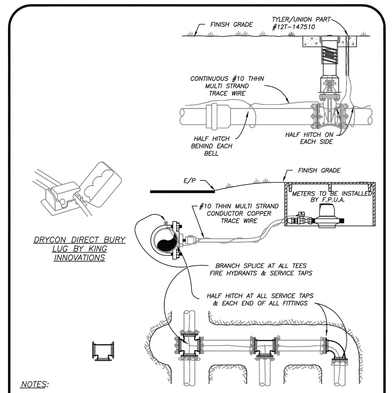
UTILITY PLAN

FORT PIERCE RV STORAGE

FORT PIERCE FL

SHEET NUMBER C-300

Plotted By:Nolan Kennedy Sheet Set:FT PIERCE RV STORAGE Layout:C-300 UTILITY PLAN July 07, 2021 12:02:07pm K:\VRB_LDEV\147814000 - Ft Pierce RV Storage\CAD\PlanSheets\C-300 UTILITY PLAN.dwg
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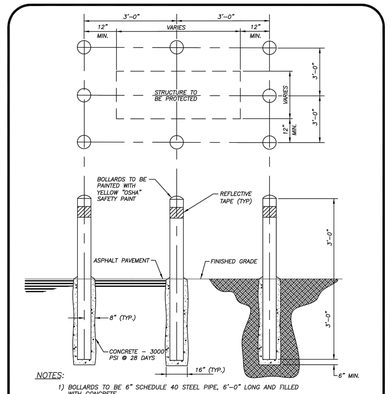


NOTES:

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
12-08 CONCRETE SLAB — DATE: REVISION: BY: APPD.	WATER/WASTEWATER ENGINEERING
DESIGNED: — COMPUTER FILE #	
JJC — DRAWN BY: — MISC. DETAILS 2000G12.DWG	FT. PIERCE UTILITIES AUTHORITY
JJC — CHECKED: — SCALE: N.T.S.	
JJC — APPROVED: — DATE: 2015	SHEET 1 OF 1



NOTES:

1) BOLLARDS TO BE 6" SCHEDULE 40 STEEL PIPE, 6'-0" LONG AND FILLED WITH CONCRETE.
2) BOLLARDS ON SIDE NOT ACCESSIBLE TO VEHICLES MAY BE OMITTED BY THE APPROVING AGENCY.
3) PLACE 6" WIDE YELLOW CLASS 4 REFLECTIVE TAPE 4" DOWN FROM TOP FOR FULL DIAMETER ON ALL BOLLARDS.
4) CONTRACTOR TO ASSURE THAT BOLLARDS ARE PLACED TO ALLOW FULL ACCESS TO THE PROTECTED FACILITY.

BOLLARD DETAIL	M-12
12-09 CONCRETE SLAB — DATE: REVISION: BY: APPD.	WATER/WASTEWATER ENGINEERING
DESIGNED: — COMPUTER FILE #	
JJC — DRAWN BY: — MISC. DETAILS 2000G12.DWG	FT. PIERCE UTILITIES AUTHORITY
JJC — CHECKED: — SCALE: N.T.S.	
JJC — APPROVED: — DATE: 2015	SHEET 1 OF 1

MATERIAL UPGRADE NOTES

MATERIAL UPGRADES ARE REQUIRED FOR UTILITY INSTALLATIONS THAT ARE IN CLOSE PROXIMITY TO SALT WATER (FOR EXAMPLE, HUTCHINSON ISLAND, INDIAN RIVER FLOOD PLAIN AND AREAS EAST OF U.S. HIGHWAY 1) AND AS DIRECTED BY FPUA WATER/WASTEWATER ENGINEERING DEPARTMENT.

1) PIPE – ALL DUCTILE IRON PIPE SHALL BE EPOXY COATED (EXTERIOR)

2) FITTINGS – ALL DUCTILE IRON FITTINGS SHALL BE EPOXY COATED (EXTERIOR). PVC FITTINGS CAN ALSO BE USED. HOWEVER, PVC FITTINGS MUST BE EXTRUDED OR FORMED FITTINGS MEETING ALL AWWA REQUIREMENTS. NO FABRICATED FITTINGS WILL BE ALLOWED. ALL NUTS AND BOLTS SHALL BE 316SS ONLY.

3) RESTRAINTS – ALL MECHANICAL JOINT RESTRAINTS SHALL BE EPOXY COATED. ALL HARDWARE (RODS, NUTS, BOLTS, WASHERS) SHALL BE 316SS ONLY.

4) FIRE HYDRANTS – ALL NUTS AND BOLTS SHALL BE 316SS ONLY.

5) VALVES – ALL VALVES SHALL BE EPOXY COATED. ALL NUTS AND BOLTS SHALL BE 316SS. VALVE STEM AND 2-INCH OPERATING NUT SHALL BE CAST BRONZE.

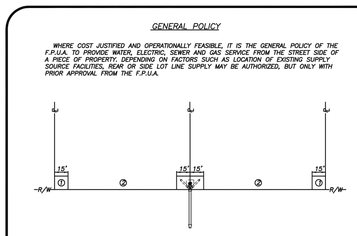
6) HARDWARE – 316 SS, A4-70 AND A4-80 ARE ACCEPTABLE NOMENCLATURES SEEN ON FASTENERS

7) ALL OTHER MATERIALS SHALL BE PROVIDED WITH MANUFACTURER'S STANDARD UPGRADES FOR USE IN CORROSIVE ENVIRONMENTS.

MATERIAL UPGRADE NOTES	M-13
12-08 CONCRETE SLAB — DATE: REVISION: BY: APPD.	WATER/WASTEWATER ENGINEERING
DESIGNED: — COMPUTER FILE #	
JJC — DRAWN BY: — MISC. DETAILS 2000G12.DWG	FT. PIERCE UTILITIES AUTHORITY
JJC — CHECKED: — SCALE: N.T.S.	
JJC — APPROVED: — DATE: 2015	SHEET 1 OF 1

GENERAL POLICY

WHERE COST JUSTIFIED AND OPERATIONALLY FEASIBLE, IT IS THE GENERAL POLICY OF THE F.P.U.A. TO PROVIDE WATER, ELECTRIC, SEWER AND GAS SERVICE FROM THE STREET SIDE OF A PIECE OF PROPERTY. DEPENDING ON FACTORS SUCH AS LOCATION OF EXISTING SUPPLY SOURCE FACILITIES, REAR OR SIDE LOT LINE SUPPLY MAY BE AUTHORIZED, BUT ONLY WITH PRIOR APPROVAL FROM THE F.P.U.A.

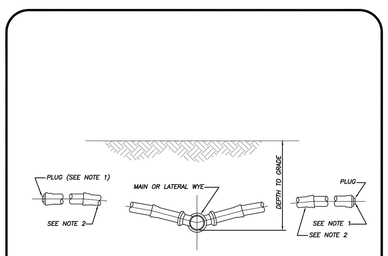


NOTES:

1. THE PREFERRED POINT OF CONNECTION TO THE F.P.U.A. SEWER LATERAL, AREA ① , SHALL BE LOCATED IN THE CORNER OF THE PROPERTY SELECTED BY THE F.P.U.A. AS THE BEST LOCATION FOR THE LATERAL. EVERY EFFORT WILL BE MADE TO SELECT THE CORNER WHERE TWO LATERALS CAN BE CONNECTED IN A "Y" CONFIGURATION AS SHOWN.
2. IF PHYSICAL BARRIERS OR OTHER OBSTACLES PREVENT THE CONNECTION OF THE BUILDING SERVICE LINE TO THE F.P.U.A. SEWER LATERAL, WITHIN AREA ① , THE F.P.U.A. ENGINEERING DEPARTMENT MAY AUTHORIZE THE CONNECTION ALONG THE PORTION OF THE R/W LINE MARKED AREA ② .
3. HORIZONTAL SEPARATION OF WATER AND WASTEWATER SERVICES SHOULD BE A MINIMUM OF SIX FEET AND PREFERABLY 10 FEET.
4. THE WASTEWATER LATERAL SHALL BE LOCATED WITHIN RIGHT-OF-WAY AND TERMINATE AT THE PROPERTY LINE.
5. THE F.P.U.A. SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND REPAIR OF THE WASTEWATER LATERAL WITHIN THE EASEMENT OR RIGHT-OF-WAY, UP TO THE POINT OF CONNECTION.

WASTEWATER SERVICE PLACEMENT
(N.T.S.)

WASTEWATER SERVICE PLACEMENT POLICY	S-1
02-08 12-13 — DATE: REVISION: BY: APPD.	WATER/WASTEWATER ENGINEERING
DESIGNED: — COMPUTER FILE #	
JJC — DRAWN BY: — SEWER DETAIL 2000S12.DWG	FT. PIERCE UTILITIES AUTHORITY
JJC — CHECKED: — SCALE: N.T.S.	
AJC — APPROVED: — DATE: 2010	SHEET 1 OF 1

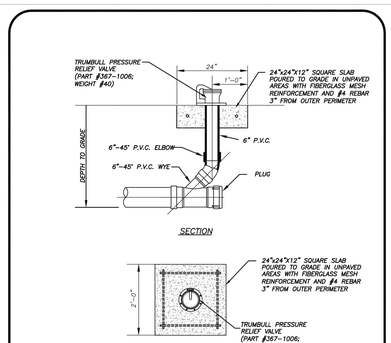


NOTES:

1) BALL TYPE WASTEWATER LOCATOR BY 3M CORP. OR APPROVED EQUAL.
2) MINIMUM SLOPE OF 1/8" PER FOOT, USE GREATER SLOPE WHERE POSSIBLE.
3) SERVICE LATERAL SHALL TERMINATE WITH A CLEANOUT.
4) INSTALL CLEANOUT AT THE PROPERTY LINE. REFER TO DETAIL S-1 FOR SPECIFIC PROPERTY LAYOUT.

SERVICE CONNECTION
(N.T.S.)

SERVICE CONNECTION WASTEWATER	S-2
02-08 — DATE: REVISION: BY: APPD.	WATER/WASTEWATER ENGINEERING
DESIGNED: — COMPUTER FILE #	
JJC — DRAWN BY: — SEWER DETAIL 2000S12.DWG	FT. PIERCE UTILITIES AUTHORITY
JJC — CHECKED: — SCALE: N.T.S.	
AJC — APPROVED: — DATE: 2010	SHEET 1 OF 1



SECTION

PLAN

RECREATIONAL VEHICLE PARK SANITARY CLEANOUT
(N.T.S.)

RECREATIONAL VEHICLE PARK SANITARY CLEANOUT WASTEWATER	S-4C
12-08 — DATE: REVISION: BY: APPD.	WATER/WASTEWATER ENGINEERING
DESIGNED: — COMPUTER FILE #	
JJC — DRAWN BY: — SEWER DETAIL 2000S12.DWG	FT. PIERCE UTILITIES AUTHORITY
JJC — CHECKED: — SCALE: N.T.S.	
AJC — APPROVED: — DATE: 2010	SHEET 2 OF 2

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BLAINE BERGSTRESSER — LICENSE: No. 64988 — DATE: 07/07/2021 — STATE OF FLORIDA — PROFESSIONAL ENGINEER

No.	REVISIONS	DATE	BY

Kimley»Horn

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KHA PROJECT 147814000
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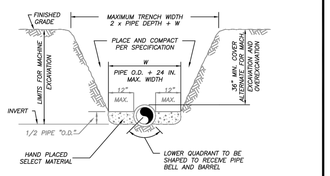
FPUA DETAILS

FORT PIERCE RV STORAGE

FORT PIERCE FL

SHEET NUMBER C-400

Plotted By: Nolan, Kennedy Sheet Set: FT PIERCE RV STORAGE Layout: C-400 FPUA DETAILS July 07, 2021 12:02:07pm K:\VRB_LDE\147814000 - Ft Pierce RV Storage\CAD\PlanSheets\C-400 CITY OF FORT PIERCE DETAILS.dwg
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NOTES:

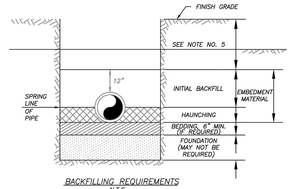
1) THE CONTRACTOR SHALL COMPLY WITH REQUIREMENTS OF THE FLORIDA TRENCH SAFETY ACT.

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

N.T.S.

TYPICAL TRENCH DETAIL		M-1
12-09 CONCRETE SLAB	SLL AJC	WATER/WASTEWATER ENGINEERING
DATE REVISION	BY APPD.	
DESIGNED: AJC	COMPUTER FILE #: MISC. DETAILS 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: SLL	SCALE:	
APPROVED: AJC	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.

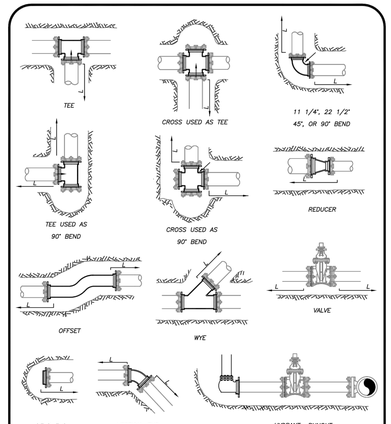
4) INITIAL BACKFILL MATERIAL SHALL BE HAND PLACED TO 12" ABOVE THE TOP OF PIPE. THE SOIL SHALL BE COMPACTED TO 100% MAX. DENSITY.(AASHTO T-99)

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
12-09 CONCRETE SLAB	SLL AJC	WATER/WASTEWATER ENGINEERING
DATE REVISION	BY APPD.	
DESIGNED: AJC	COMPUTER FILE #: MISC. DETAILS 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: SLL	SCALE:	
APPROVED: AJC	DATE: 2015	SHEET 1 OF 1



MECHANICAL JOINT ANCHORING REQUIREMENTS

N.T.S.

MECHANICAL JOINT ANCHORING REQUIREMENTS		M-3
12-09 CONCRETE SLAB	SLL AJC	WATER/WASTEWATER ENGINEERING
DATE REVISION	BY APPD.	
DESIGNED: AJC	COMPUTER FILE #: MISC. DETAILS 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: SLL	SCALE:	
APPROVED: AJC	DATE: 2015	SHEET 1 OF 1

MECHANICAL JOINT RESTRAINT NOTES

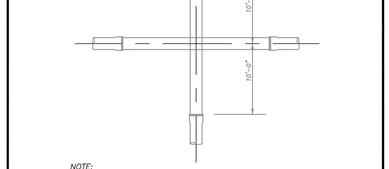
NOTES:

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
12-09 CONCRETE SLAB	SLL AJC	WATER/WASTEWATER ENGINEERING
DATE REVISION	BY APPD.	
DESIGNED: AJC	COMPUTER FILE #: MISC. DETAILS 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: SLL	SCALE:	
APPROVED: AJC	DATE: 2015	SHEET 1 OF 1



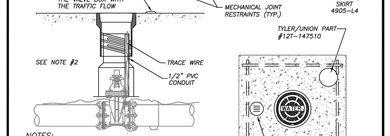
NOTE:

PLEASE REFER TO FORT PIERCE UTILITIES STANDARD SEPARATION STATEMENT FOR WATER / SEWER CONFLICTS.

UTILITY CROSSING DETAIL

N.T.S.

UTILITY CROSSING DETAIL		M-5
12-09 CONCRETE SLAB	SLL AJC	WATER/WASTEWATER ENGINEERING
DATE REVISION	BY APPD.	
DESIGNED:	COMPUTER FILE #:	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: SLL	SCALE:	
APPROVED: AJC	DATE: 2015	SHEET 1 OF 1



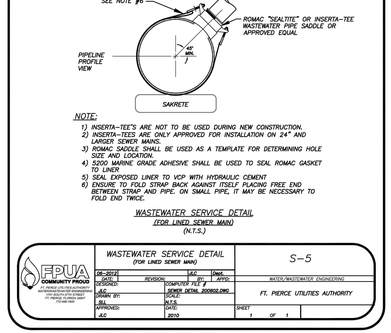
NOTES:

1. BLUE REFLECTIVE PAVEMENT MARKER (RPM) FOR WATER VALVES AND GREEN RPM FOR WASTEWATER VALVES PAVEMENT EDGE.
2. FOR WATER AND WASTEWATER VALVES INSTALLED IN PAVED AREAS, ELIMINATE CONCRETE PAD AND ENCASE THE MAGNETIC WIRE IN 1/2" PVC INSIDE THE VALVE BOX SEVEN INCHES BELOW GRADE.
3. DIP MAY BE USED AS RISERS ONLY IF A VALVE BOX IS NOT MANUFACTURED FOR THAT DEPTH. NO PVC RISERS SHALL BE USED IN ANY CIRCUMSTANCES.

TYPICAL GATE VALVE & VALVE BOX DETAIL

N.T.S.

TYPICAL GATE VALVE & VALVE BOX DETAIL		M-6
12-09 CONCRETE SLAB	SLL AJC	WATER/WASTEWATER ENGINEERING
DATE REVISION	BY APPD.	
DESIGNED: AJC	COMPUTER FILE #: MISC. DETAILS 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: SLL	SCALE:	
APPROVED: AJC	DATE: 2015	SHEET 1 OF 1



NOTE:

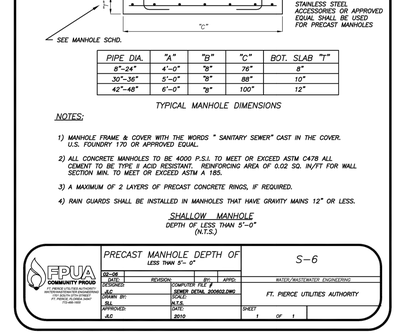
1) INSERTA-TEE'S ARE NOT TO BE USED DURING NEW CONSTRUCTION.
2) INSERTA-TEES ARE ONLY APPROVED FOR INSTALLATION ON 24" AND LARGER SEWER MAINS.
3) ROMAC SADDLE SHALL BE USED AS A TEMPLATE FOR DETERMINING HOLE SIZE AND LOCATION.
4) 5200 MARINE GRADE ADHESIVE SHALL BE USED TO SEAL ROMAC GASKET TO LINER
5) SEAL EXPOSED LINER TO VCP WITH HYDRAULIC CEMENT
6) ENSURE TO FOLD STRAP BACK AGAINST ITSELF PLACING FREE END BETWEEN STRAP AND PIPE. ON SMALL PIPE, IT MAY BE NECESSARY TO FOLD END TWICE.

WASTEWATER SERVICE DETAIL

(FOR LINED SEWER MAIN)

(N.T.S.)

WASTEWATER SERVICE DETAIL (FOR LINED SEWER MAIN)		S-5
06-2012 DATE	AJC Dwd. BY APPD.	WATER/WASTEWATER ENGINEERING
DESIGNED:	COMPUTER FILE #: SEWER DETAIL 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: AJC	SCALE: N.T.S.	
APPROVED: AJC	DATE: 2010	SHEET 1 OF 1



PIPE DIA.	"A"	"B"	"C"	BOT. SLAB "T"
8"-24"	4'-0"	"B"	76"	8"
30"-36"	5'-0"	"B"	88"	10"
42"-48"	6'-0"	"B"	100"	12"

TYPICAL MANHOLE DIMENSIONS

NOTES:

1) MANHOLE FRAME & COVER WITH THE WORDS " SANITARY SEWER" CAST IN THE COVER. U.S. FOUNDRY 170 OR APPROVED EQUAL.

2) ALL CONCRETE MANHOLES TO BE 4000 P.S.I. TO MEET OR EXCEED ASTM C478 ALL CEMENT TO BE TYPE II ACID RESISTANT. REINFORCING AREA OF 0.02 SQ. IN/FT FOR WALL SECTION MIN. TO MEET OR EXCEED ASTM A 185.

3) A MAXIMUM OF 2 LAYERS OF PRECAST CONCRETE RINGS, IF REQUIRED.

4) RAIN GUARDS SHALL BE INSTALLED IN MANHOLES THAT HAVE GRAVITY MAINS 12" OR LESS.

SHALLOW MANHOLE

DEPTH OF LESS THAN 5'-0"

(N.T.S.)

PRECAST MANHOLE DEPTH OF LESS THAN 5'- 0"		S-6
06-06 DATE	AJC BY	WATER/WASTEWATER ENGINEERING
DESIGNED:	COMPUTER FILE #: SEWER DETAIL 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: AJC	SCALE: N.T.S.	
APPROVED: AJC	DATE: 2010	SHEET 1 OF 1

THE PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED ON THIS PROJECT. CONTRACTOR'S BID SHALL INCLUDE CONSIDERATION FOR ADDRESSING THIS ISSUE.

CALL 48 HOURS BEFORE YOU DIG

IT'S THE LAW! DIAL 811

811 Know what's below. Call before you dig.

SUNSHINE STATE ONE CALL OF FLORIDA, INC.

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY BLAINE BERGSTRESSER, P.E. ON THE DATE ADJACENT TO THE SEAL.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

BLAINE BERGSTRESSER — LICENSE: No. 64698 — STATE OF FLORIDA — PROFESSIONAL ENGINEER — DATE: 07/07/2021

Kimley»Horn

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445 24TH STREET, SUITE 200, VERO BEACH, FL 32960
PHONE: 772-794-4100
WWW.KIMLEY-HORN.COM CA 00000696

No.	REVISIONS	DATE	BY

KHA PROJECT 147814000
DATE 04/06/2021
SCALE AS SHOWN
DESIGNED BY BRB
DRAWN BY TJE
CHECKED BY BRB

FPUA DETAILS

FORT PIERCE RV STORAGE

FORT PIERCE FL

SHEET NUMBER C-401

Plotted By: Nolan, Kennedy Sheet Set: FT PIERCE RV STORAGE Layout: C-401 FPUA DETAILS July 07, 2021 12:02:12pm K:\VRB_LDEV\147814000 — Ft Pierce RV Storage\CAD\PlanSheets\C-400 CITY OF FORT PIERCE DETAILS.dwg
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GENERAL POLICY

WHERE COST JUSTIFIED AND OPERATIONALLY FEASIBLE, IT IS THE GENERAL POLICY OF THE F.P.U.A. TO PROVIDE WATER, ELECTRIC, SEWER AND GAS SERVICE FROM THE STREET SIDE OF A PIECE OF PROPERTY. DEPENDING ON FACTORS SUCH AS LOCATION OF EXISTING SUPPLY SOURCE FACILITIES, REAR OR SIDE LOT LINE SUPPLY MAY BE AUTHORIZED, BUT ONLY WITH PRIOR APPROVAL FROM THE F.P.U.A.

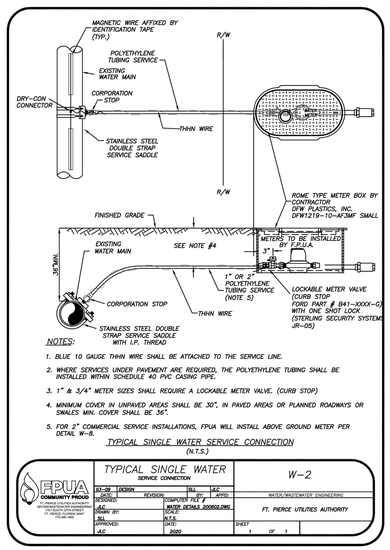


NOTES:

1. THE PREFERRED POINT OF CONNECTION TO THE F.P.U.A. WATER METER, AREA ① SHALL BE LOCATED IN THE CORNER OF THE PROPERTY SELECTED BY THE F.P.U.A. AS THE BEST LOCATION FOR THE WATER METER. EVERY EFFORT WILL BE MADE TO SELECT THE CORNER WHERE TWO WATER SERVICES AND METERS CAN BE CONNECTED.
2. IF PHYSICAL BARRIERS OR OTHER OBSTACLES PREVENT THE CONNECTION OF THE BUILDING SERVICE LINE TO THE F.P.U.A. WATER SERVICE, WITHIN AREA ① , THE F.P.U.A. ENGINEERING DEPARTMENT MAY AUTHORIZE THE CONNECTION ALONG THE PORTION OF THE R/W LINE MARKED AREA ② , OR ALONG THE PROPERTY LINES MARKED AREA ③.
3. HORIZONTAL SEPARATION OF WATER AND WASTEWATER SERVICES SHOULD BE A MINIMUM OF 6 FEET AND PREFERABLY 10 FEET.
4. ALL METERS SHALL BE INSTALLED IN AN UNRESTRICTED AREA FOLLOWING EASE OF ACCESS AND PROVIDING ADEQUATE PROTECTION.
5. THE F.P.U.A. SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND REPAIR OF THE WATER LATERAL WITHIN THE EASEMENT OR RIGHT-OF-WAY, UP TO THE POINT OF CONNECTION.

WATER METER PLACEMENT
(N.T.S.)

FPUA COMMUNITY PROUD	WATER METER PLACEMENT POLICY	W-1
03-08 DESIGN: JLL; A.K.C.	REVISIONS: BY: APPD:	WATER/WASTEWATER ENGINEERING
DRAWN BY: JLM	COMPUTER FILE # WATER DETAILS 2020022.DWG	FT. PIERCE UTILITIES AUTHORITY
APPROVED: A.K.C.	SCALE: N.T.S. DATE: 2010	SHEET 1 OF 1

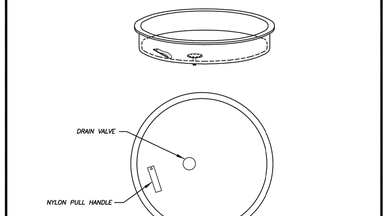


NOTES:

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.)

FPUA COMMUNITY PROUD	TYPICAL SINGLE WATER SERVICE CONNECTION	W-2
03-08 DESIGN: JLL; A.K.C.	REVISIONS: BY: APPD:	WATER/WASTEWATER ENGINEERING
DRAWN BY: JLM	COMPUTER FILE # WATER DETAILS 2020022.DWG	FT. PIERCE UTILITIES AUTHORITY
APPROVED: A.K.C.	SCALE: N.T.S. DATE: 2020	SHEET 1 OF 1



DRAIN VALVE

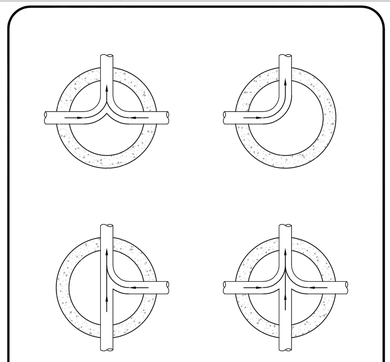
NYLON PULL HANDLE

NOTES:

1) SEWER RAIN GUARDS SHALL BE INSTALLED ON ALL MANHOLES WHERE GRAVITY MAINS ARE 12" OR LESS AND IN AREAS DESIGNATED BY ENGINEER TO BE IN A FLOOD AREA.
2) SEWER RAIN GUARDS SHALL BE MANUFACTURED BY PARSON ENVIRONMENTAL PRODUCTS, INC., PART # PMI-23S (PARSON MANHOLE INSERTS) WITH DOUBLE VALVING, OR APPROVED EQUAL.
3) RAINGUARDS MUST BE "SNUG" FIT.

RAINGUARD DETAIL
(N.T.S.)

FPUA COMMUNITY PROUD	RAINGUARD DETAIL	S-11
03-08 DESIGN: JLL; A.K.C.	REVISIONS: BY: APPD:	WATER/WASTEWATER ENGINEERING
DRAWN BY:	COMPUTER FILE # SEWER DETAIL 2020022.DWG	FT. PIERCE UTILITIES AUTHORITY
APPROVED: A.K.C.	SCALE: N.T.S. DATE: 2010	SHEET 1 OF 1

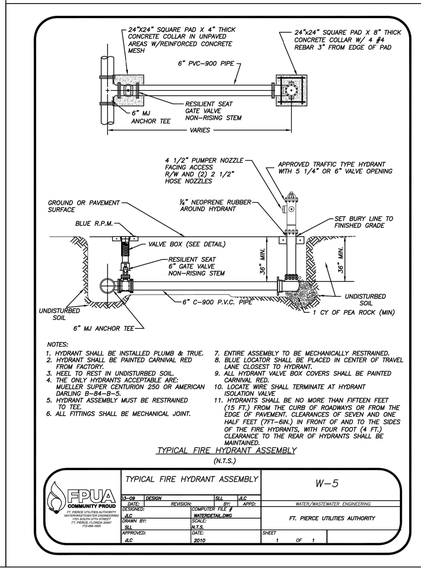


NOTES:

1) INVERT CHANNELS TO BE CONSTRUCTED FOR SMOOTH FLOW WITH NO OBSTRUCTIONS.
2) SPILLWAYS SHALL BE CONSTRUCTED BETWEEN PIPES WITH DIFFERENT INVERT ELEVATIONS PROVIDING FOR SMOOTH FLOWS.

FLOW PATTERNS
FOR INVERT CHANNELS

FPUA COMMUNITY PROUD	FLOW PATTERNS FOR INVERT CHANNELS	S-12
03-08 DESIGN: JLL; A.K.C.	REVISIONS: BY: APPD:	WATER/WASTEWATER ENGINEERING
DRAWN BY: JLM	COMPUTER FILE # SEWER DETAIL 2020022.DWG	FT. PIERCE UTILITIES AUTHORITY
APPROVED: A.K.C.	SCALE: N.T.S. DATE: 2010	SHEET 1 OF 1

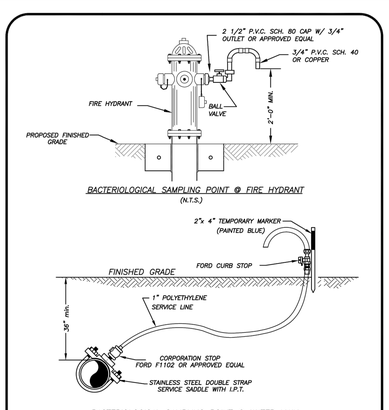


NOTES:

1. HYDRANT SHALL BE INSTALLED PLUMB & TRUE.
2. HYDRANT SHALL BE PAINTED CARNIVAL RED FROM FACTORY.
3. HEEL TO REST IN UNDISTURBED SOIL.
4. THE ONLY HYDRANTS ACCEPTABLE ARE: MUELLER SUPER CENTURION 250 OR AMERICAN DARLING B-84-B-5.
5. HYDRANT ASSEMBLY MUST BE RESTRAINED TO TEE.
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.)

FPUA COMMUNITY PROUD	TYPICAL FIRE HYDRANT ASSEMBLY	W-5
03-08 DESIGN: JLL; A.K.C.	REVISIONS: BY: APPD:	WATER/WASTEWATER ENGINEERING
DRAWN BY: A.K.C.	COMPUTER FILE # WATER DETAILS 2020022.DWG	FT. PIERCE UTILITIES AUTHORITY
APPROVED: A.K.C.	SCALE: N.T.S. DATE: 2010	SHEET 1 OF 1



BACTERIOLOGICAL SAMPLING POINT @ FIRE HYDRANT
(N.T.S.)

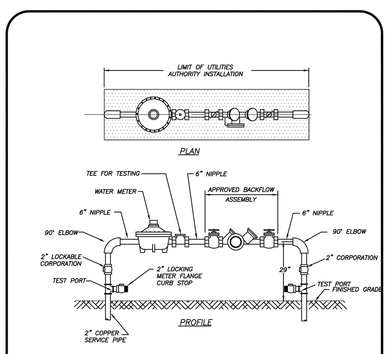
BACTERIOLOGICAL SAMPLING POINT @ WATER MAIN
(N.T.S.)

NOTE:

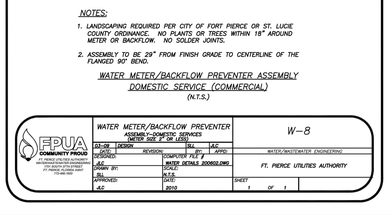
AFTER TESTING REMOVE 1" P.E. LINE AND CAP WITH BRASS PLUG AT CORPORATION STOP.

BACTERIOLOGICAL SAMPLING POINT DETAIL

FPUA COMMUNITY PROUD	BACTERIOLOGICAL SAMPLING POINT DETAIL	W-6
03-08 02-15 DESIGN: JLL; A.K.C.	REVISIONS: BY: APPD:	WATER/WASTEWATER ENGINEERING
DRAWN BY: A.K.C.	COMPUTER FILE # WATERDETAILS.DWG	FT. PIERCE UTILITIES AUTHORITY
APPROVED: A.K.C.	SCALE: N.T.S. DATE: 2010	SHEET 1 OF 1



PLAN



PROFILE

NOTES:

1. LANDSCAPING REQUIRED PER CITY OF FORT PIERCE OR ST. LUCIE COUNTY ORDINANCE. NO PLANTS OR TREES WITHIN 18" AROUND METER OR BACKFLOW. NO SOLDER JOINTS.
2. ASSEMBLY TO BE 29" FROM FINISH GRADE TO CENTERLINE OF THE FLANGED 90° BEND.

WATER METER/BACKFLOW PREVENTER ASSEMBLY
DOMESTIC SERVICE (COMMERCIAL)
(N.T.S.)

FPUA COMMUNITY PROUD	WATER METER/BACKFLOW PREVENTER ASSEMBLY-DOMESTIC SERVICES METER SIZE 2" OR LESS	W-8
03-08 DESIGN: JLL; A.K.C.	REVISIONS: BY: APPD:	WATER/WASTEWATER ENGINEERING
DRAWN BY: A.K.C.	COMPUTER FILE # WATER DETAILS 2020022.DWG	FT. PIERCE UTILITIES AUTHORITY
APPROVED: A.K.C.	SCALE: N.T.S. DATE: 2010	SHEET 1 OF 1

THE PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED ON THIS PROJECT. CONTRACTOR'S BID SHALL INCLUDE CONSIDERATION FOR ADDRESSING THIS ISSUE.

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811 Know what's below. Call before you dig.

SUNSHINE STATE ONE CALL OF FLORIDA, INC.

No.	REVISIONS	DATE	BY

Kimley»Horn

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445 24TH STREET, SUITE 200, VERO BEACH, FL 32960
PHONE: 772-794-4100
WWW.KIMLEY-HORN.COM CA 00000696

ROBERT BERGSTRESSER ☆ BLAINE LICENSE No. 84988 ☆ STATE OF FLORIDA PROFESSIONAL ENGINEER
DATE: 07/07/2021

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KHA PROJECT 147814000
DATE 04/06/2021
SCALE AS SHOWN
DESIGNED BY BRB
DRAWN BY TJE
CHECKED BY BRB

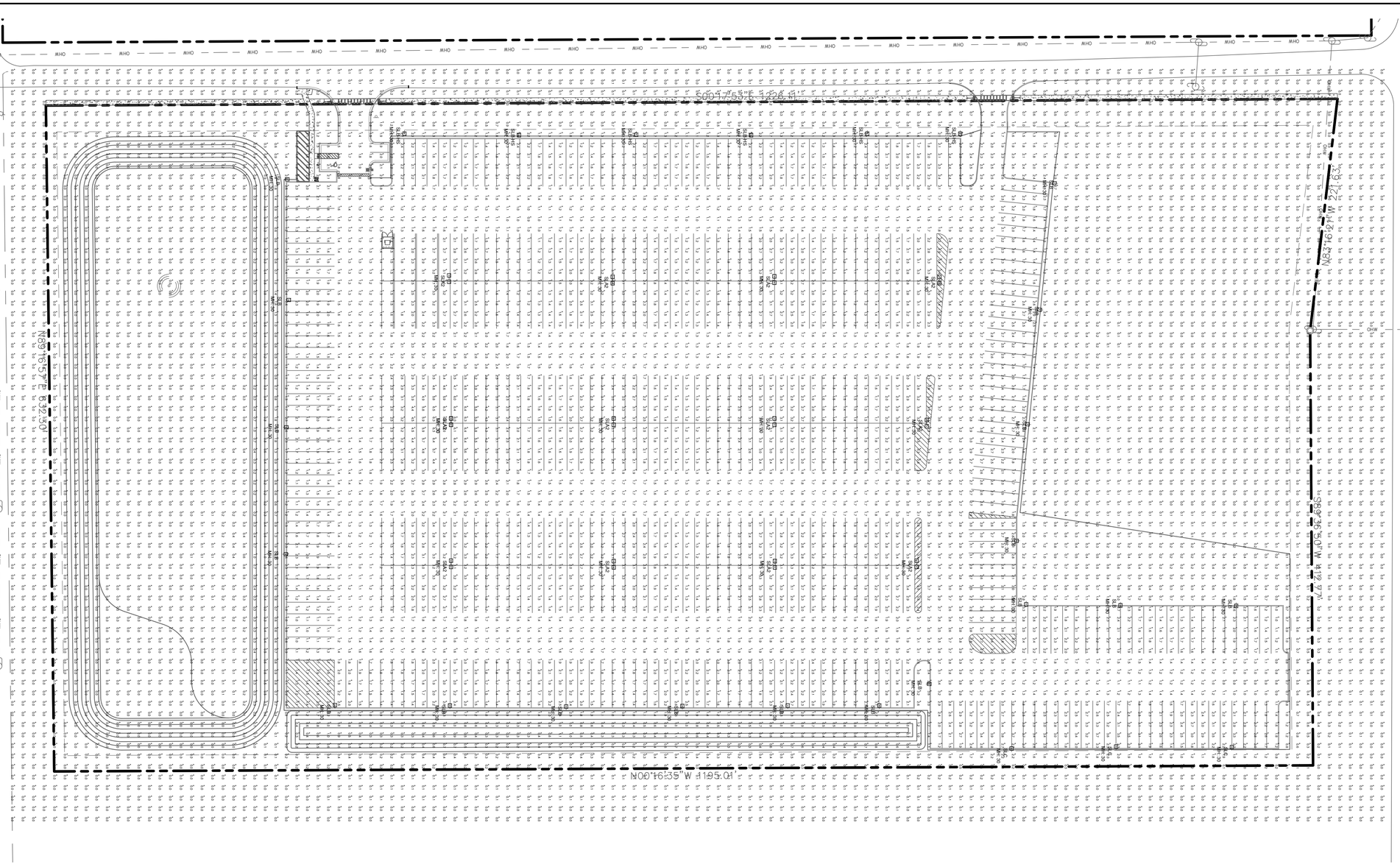
FPUA DETAILS

FORT PIERCE RV STORAGE

FORT PIERCE FL

SHEET NUMBER C-402

Plotted By:Nolan, Kennedy Sheet Set:FT PIERCE RV STORAGE Layout:C-402 FPUA DETAILS July 07, 2021 12:02:17pm K:\VRB_LDEV\147814000 - Ft Pierce RV Storage\CAD\PlanSheets\C-400 CITY OF FORT PIERCE DETAILS.dwg
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Landreth Lighting Luminaire Schedule									
Symbol	[MANUFAC]	Qty	Label	Arrangement	Description	LLF	Lum. Watts	Lum. Lumens	BUG Rating
	Lithonia Lighting	13	SLA2	BACK-BACK	DSX0 LED P7 40K T5M MVOLT NLTAIR2 PIRHN RPA FINISH TBD; MOUNTED @ 30' AFG ON A DIRECT BURY CONCRETE POLE	1.000	166	19056	B4-U0-G2
	Lithonia Lighting	18	SLB	SINGLE	DSX0 LED P7 40K TFTM MVOLT NLTAIR2 PIRHN RPA FINISH TBD; MOUNTED @ 30' AFG ON A DIRECT BURY CONCRETE POLE	1.000	166	18355	B3-U0-G4
	Lithonia Lighting	6	SLB-HS	SINGLE	DSX0 LED P7 40K TFTM MVOLT HS NLTAIR2 PIRHN RPA FINISH TBD; MOUNTED @ 30' AFG ON A DIRECT BURY CONCRETE POLE	1.000	166	14332	B2-U0-G3
	Lithonia Lighting	3	SLC	SINGLE	DSX0 LED P7 40K BLC MVOLT NLTAIR2 PIRHN RPA FINISH TBD; MOUNTED @ 30' AFG ON A DIRECT BURY CONCRETE POLE	1.000	166	15049	B2-U0-G2

Landreth Lighting Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Property Boundary	Illuminance	Fc	0.05	0.5	0.0	N.A.	N.A.
RV Parking Area	Illuminance	Fc	2.00	6.5	0.8	2.50	8.13

THE PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED ON THIS PROJECT. CONTRACTOR'S BID SHALL INCLUDE CONSIDERATION FOR ADDRESSING THIS ISSUE.

CALL 48 HOURS BEFORE YOU DIG

IT'S THE LAW! DIAL 811

Know what's **below.** **Call** before you dig.

SUNSHINE STATE ONE CALL OF FLORIDA, INC.

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY BLAINE BERGSTRESSER, P.E. ON THE DATE ADJACENT TO THE SEAL.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

ROBERT BERGSTRESSER ☆ BLAINE LICENSE: No. 84988 ☆ STATE OF FLORIDA ☆ PROFESSIONAL ENGINEER ☆ DATE: 07/07/2021

Kimley»Horn

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445 24TH STREET, SUITE 200, VERO BEACH, FL 32960
PHONE: 772-794-4100
WWW.KIMLEY-HORN.COM CA 00000696

No.	REVISIONS	DATE	BY

KHA PROJECT 147814000
DATE 04/06/2021
SCALE AS SHOWN
DESIGNED BY BRB
DRAWN BY TJE
CHECKED BY BRB

PHOTOMETRIC SITE PLAN

FORT PIERCE RV STORAGE

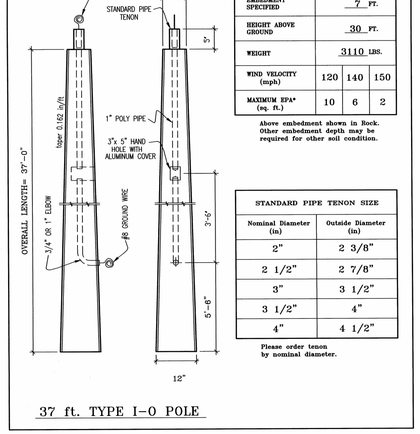
FORT PIERCE FL

SHEET NUMBER E-100

Plotted By:Nolan Kennedy Sheet Set:FT PIERCE RV STORAGE Layout:E-100 PHOTOMETRIC SITE PLAN July 07, 2021 12:02:36pm K:\VRB_LDE\147814000 - Ft Pierce RV Storage\CAD\PlanSheets\E-100 PHOTOMETRIC SITE PLAN.dwg
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

Plotted By: Nolan, Kennedy Street Set: FT PIERCE RV STORAGE Layout: E-100 PHOTOMETRIC DETAILS July 07, 2021 12:02:36pm K:\VRB_LDEV\147814000 — FT PIERCE RV STORAGE\CAD\PlanSheets\E-100 PHOTOMETRIC SITE PLAN.dwg
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JOB NO: _____ PROJECT: _____ CUSTOMER: _____



37 ft. TYPE I–O POLE

LENGTH OF POLE	37 FT.
EMBEDMENT SPECIFIED	7 FT.
HEIGHT ABOVE GROUND	30 FT.
WEIGHT	3110 LBS.
WIND VELOCITY (mph)	120 / 140 / 150
MAXIMUM EPA* (sq. ft.)	10 / 6 / 2

Above embedment shown in Rock. Other embedment depth may be required for other soil condition.

STANDARD PIPE TENON SIZE	
Nominal Diameter (in.)	Outside Diameter (in.)
2"	2 3/8"
2 1/2"	2 7/8"
3"	3 1/2"
3 1/2"	4"
4"	4 1/2"

Please order tenon by nominal diameter.

1380 N.E. 48th Street
Pompano Beach, Fl 33064
PHONE: (954) 781–4040
(800) 749–4041
FAX: (954) 781–3539 SALES & ADMINISTRATIVE

Pre–Cast Specialties, Inc.
Precast and Prestressed Concrete



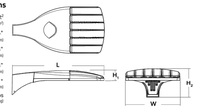
D-Series Size 0
LED Area Luminaire

d-series

Catalog Number
Notes
Type

Specifications

EPA: 0.95 ft² (.09m²)
Length: 26" (660.4mm)
Width: 13" (330.2mm)
Height$_1$: 3" (7.62 mm)
Height$_2$: 7" (177.8mm)
Weight (max): 16 lbs (7.3 kg)



Introduction

The modern styling of the D-Series is striking yet unobtrusive - making a bold, progressive statement even as it blends seamlessly with its environment. The D-Series distills the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.

The outstanding photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. It is ideal for replacing up to 400W metal halide with typical energy savings of 70% and expected service life of over 100,000 hours.

Ordering Information

EXAMPLE: DSX0 LED P6 40K T3M MVOLT SPA NLTAIR2 PIRHN DDBXD

DSX0 LED

Series	LEDs	Color temperature	Distribution	Voltage	Mounting
DSX0 LED	**Forward optics** P1 P5 P2 P6 P3 P7[1] P4 **Rotated optics** P10[1] P12[1] P11[1] P13[1]	30K 3000 K 40K 4000 K 50K 5000 K	T1S Type I short (Automotive) T2S Type II short T2M Type II medium T3S Type III short T3M Type III medium T4M Type IV medium TFTM Forward throw medium TSYFS Type V very short	T5S Type V short[1] T5M Type V medium[1] T5W Type V wide[1] BLC Backlight control[2] LCCO Left corner cutoff[2] RCCO Right corner cutoff[2]	MVOLT (120V–277V)[3,4] XVOLT (277V–480V)[3,4] 120[5] 208[5] 240[5] 277[5] 347[5] 480[5]	**Shipped included** SPA Square pole mounting RPA Round pole mounting[6] WBA Wall bracket[7] SPUMBA Square pole universal mounting adaptor[8] RPUMBA Round pole universal mounting adaptor[8] **Shipped separately** KMA8 DDBXD U Mast arm mounting bracket adaptor (specify finish)[9]

Control options		Other options		Finish (required)	
Shipped installed		**Shipped installed**		DDBXD Dark bronze	
NLTAIR2 nLight AIR generation 2 enabled[10,11]	PIR High/low, motion/ambient sensor, 8–15' mounting height, ambient sensor enabled at 3fc[10,12]	HS House-side shield[13]		DBLXD Black	
PIRHN Network, high/low motion/ambient sensor[10]	PIR1FC3V High/low, motion/ambient sensor, 15–30' mounting height, ambient sensor enabled at 3fc[10,12]	SF Single fuse (120, 277, 347V)[5]		DNAXD Natural aluminum	
PER NEMA twist-lock receptacle only (control ordered separately)[14]		DF Double fuse (208, 240, 480V)[5]		DWHXD White	
PERS Five-pin receptacle only (control ordered separately)[14,15]	PIRHN1FC3V High/low, motion/ambient sensor, 15–30' mounting height, ambient sensor enabled at 3fc[10,12]	L90 Left rotated optics[16]		DSSTXD Textured dark bronze	
PERT Seven-pin receptacle only (leads exit fixture) (control ordered separately)[14,15]		R90 Right rotated optics[16]		DBLBXD Textured black	
DMG 0–10V dimming extend out back of housing for external control (control ordered separately)[15]	FAO Field adjustable output[17]	DDL Diffused drop lens[18]		DNAXD Textured natural aluminum	
		HA 50°C ambient operations[19]		DWHGXD Textured white	
		Shipped separately			
		BS Bird spikes[20]			
		EGS External glare shield			

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Ordering Information

Accessories

Ordered and shipped separately.

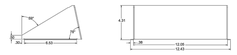
DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V)[21]
DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V)[21]
DLL480F 1.5 CUL JU	Photocell - SSL twist-lock (480V)[21]
DSHS01 SBK U	Shorting cap[14]
DSHS01 SCC U	House-side shield for P1,P2,P3 and P4[13]
DSHS01 SVF U	House-side shield for P5 and P6 (2 required)[13]
DSHS01 SVC U	House-side shield for P7,P8 and P11[13]
DSSS05 U	Diffused drop lens (polycarbonate)[18]
PUMA5 DDBXD U*	Square and round pole universal mounting bracket adapter (specify finish)[8]
KMA8 DDBXD U	Mast arm mounting bracket adapter (specify finish)[9]
DSBS02 DWDXD U	External glare shield

*For round tapered poles, add RTA and SPUMA5 additive. Link to nLight Air. ↗

NOTES
1 Not not available with P6, P7, and P13.
2 Any Type V distribution and backlight control (BLC) or RCCO, only available with SPA.
3 Not available with HS or DDL.
4 Single fuse (SF) requires 120V, 277V, or 347V voltage from 120–277V (50/60 Hz).
5 Single fuse (SF) requires 120V, 277V or 347V. Double fuse (DF) requires 208V, 240V or 480V. XVOLT not available with fusing (SF or DF).
6 Round pole universal mounting adaptor included.
7 XVOLT not available with fusing (SF or DF) and not available with P8, P8H, P81P2CN, P8H1P2CN.
8 Suitable for mounting to round poles between 3.5" and 12" diameter.
9 Universal mast arm mounting bracket adaptor (specify finish) included. Top, bottom, and side tenon plates. See accessories. Shorting Cap included.
10 If NLTAIR2 node required, it must be ordered and shipped as a separate line item from Acuity Brands Controls. Shorting Cap included.
11 If PIRHN node required, it must be ordered and shipped as a separate line item from Acuity Brands Controls. Shorting Cap included.
12 Must order fixture with SPA mounting. Must be ordered as a separate accessory see Accessories information. For use with 2-3/8" diameter mast arm (not included).
13 Not available with P1, P10 or P11.
14 Sensor cover available only in dark bronze, black, white and natural aluminum colors.
15 Must be ordered with NLTAIR2. For more information on nLight Air II visit this link.
16 Must be ordered with fixture for factory pre-drilling. Not available with P1, P2, P3, P4, P10 or P12.
17 If DDL is not required, it must be ordered and shipped as a separate line item from Acuity Brands Controls. Shorting Cap included.
18 DMG not available with PIRHN, PER5, PER7, PIR, PIRH, PIR1FC3V or PIRHN1FC3V (NLTAIR2 PIRHN functionality).
19 Reference Ambient Temperature (AT) table on page 4 for more information.
20 Not available with other dimming controls options.
21 Not available with P5, P6, P7, P8, P8H, P81P2CN or P8H1P2CN.
22 Must be ordered with fixture for factory pre-drilling.
23 Must be ordered with fixture for factory pre-drilling. Not available with P1, P2, P3, P4, P10 or P12.
24 For retrofit use only. Only usable when pole's drill pattern is NOT Lithonia template #8.
25 For retrofit use only. Only usable when pole's drill pattern is NOT Lithonia template #8.

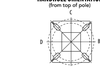
EGS – External Glare Shield





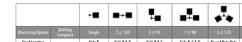
Drilling

HANDHOLE ORIENTATION
(from top of pole)



Tenon Mounting Slipfitter

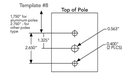
Tenon O.D.	Mounting Code	2 @ 180	2 @ 90	3 @ 90	3 @ 120	4 @ 90
2-3/8"	RTA	AST3-190	AST3-280	AST3-290	AST3-300	AST3-400
2-7/8"	RTA	AST25-190	AST25-280	AST25-290	AST25-300	AST25-400
4"	RTA	AST35-190	AST35-280	AST35-290	AST35-300	AST35-400



Mounting Option	Drilling Template	Single	2 @ 180	2 @ 90	3 @ 90	3 @ 120	4 @ 90
Head Location		Side B	Side B & D	Side B & C	Side B, C & D	Round Pole Only	Side A, B, C & D
Drill Nomenclature	#8	DM19AS	DM28AS	DM29AS	DM39AS	DM28AS	DM49AS

Shaded boxes indicate Factory Pre-Drilling

SPA	#8	2-7/8"	2-7/8"	3.5"	3.5"	3.5"	3.5"
RPA	#8	2-7/8"	2-7/8"	3.5"	3.5"	3"	3.5"
SPUMBA	#5	2-7/8"	5"	4"	4"	4"	4"
RPUMBA	#5	2-7/8"	5"	5"	5"	3.5"	5"



DSX0 Area Luminaire - EPA

Includes luminaire and integral mounting arm. Other tenons, arms, brackets or other accessories are not included in this EPA data.

Fixture Quantity & Mounting Configuration	1 Single	2 @ 180	2 @ 90	3 @ 90	3 @ 120	4 @ 90
Mounting Type	SPA	RPA	SPUMBA	RPUMBA		
DSX0 LED	0.950	1.900	1.838	2.850	2.850	3.544

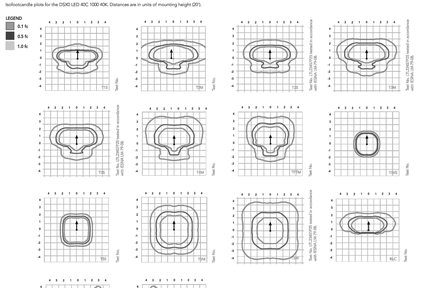
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Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's D-Series Area Size 0 homepage.

Isofootcandle plots for the DSX0 LED 40C 1000 40K. Distances are in units of mounting height (20').

LEGEND
0.5 fc
0.5 fc
1.0 fc



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Performance Data

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0–40°C (32–104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.04
5°C	41°F	1.04
10°C	50°F	1.03
15°C	59°F	1.02
20°C	68°F	1.01
25°C	**77°F**	**1.00**
30°C	86°F	0.99
35°C	95°F	0.98
40°C	104°F	0.97

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a **25°C** ambient, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate L77, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	Lumen Maintenance Factor
25,000	0.96
50,000	0.92
100,000	0.85

Motion Sensor Default Settings						
Option	Dimmed State	High Level (when triggered)	Photocell Operation	Dwell Time	Ramp-up Time	Ramp-down Time
PIR or PIRH	3V (37%) Output	10V (100%) Output	Enabled at 5FC	5 min	3 sec	5 min
*PIR1FC3V or PIRH1FC3V	3V (37%) Output	10V (100%) Output	Enabled at 3FC	5 min	3 sec	5 min

*For use where motion sensor is used as dusk to dawn control.

Controls Options

Nomenclature	Description	Functionality	Primary control device	Notes
FAO	Field adjustable output device installed inside the luminaire; wired to the driver dimming leads.	Allows the luminaire to be manually dimmed, effectively trimming the light output.	FAO device	Cannot be used with other controls options that need the 0–10V leads
DS	Drivers wired independently for 50/50 luminaire operation	The luminaire is wired to two separate circuits, allowing for 50/50 operation.	Independently wired drivers	Requires two separately switched circuits. Consider nLight AIR as a more cost effective alternative.
PERS or PERT	Twist-lock photocell receptacle	Compatible with standard twist-lock photocells for dusk to dawn operation, or advanced control nodes that provide 0–10V dimming signals.	Twist-lock photocells such as DLL Elite or advanced control nodes such as NEMA.	Plus 4 & 5 to dimming leads on driver. Pins 6 & 7 are capped inside luminaire
PIR or PIRH	Motion sensor, with integral photocell, PIR for 8–15' mounting; PIRH for 15–30' mounting	Luminaires dim when no occupancy is detected.	Acuity Controls SBGR	Also available with PIRHV1C3V when the sensor photocell is used for dusk to dawn operation.
NLTAIR2 PIRHN	nLight AIR enabled luminaire for motion sensing, photocell and wireless communication.	Motion and ambient light sensing with group response. Scheduled dimming with motion sensor over-ride when wirelessly connected to the nLight Enclave.	nLight Air rSGCR	nLight AIR sensors can be programmed and commissioned from the ground using the CLAIRity Pro app.

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Performance Data

Electrical Load

	Performance Package	LCE Count	Drive Current (mA)	Starting (A)	Current (A) 120	208	240	277	347	480
Forward Optics (Non-Rotated)	P1	20	530	38	0.52	0.18	0.15	0.15	0.10	0.08
	P2	20	700	49	0.65	0.23	0.20	0.19	0.14	0.11
	P3	20	1050	71	0.88	0.27	0.32	0.27	0.21	0.15
	P4	20	1400	92	0.77	0.45	0.39	0.35	0.28	0.20
	P5	40	700	89	0.74	0.43	0.38	0.34	0.26	0.20
	P6	40	1050	134	1.13	0.65	0.55	0.48	0.39	0.29
	P7	40	1300	166	1.38	0.80	0.69	0.60	0.50	0.37
Rotated Optics (Requires LCE or P8H)	P10	30	530	53	0.45	0.26	0.23	0.21	0.16	0.12
	P11	30	700	72	0.60	0.35	0.30	0.27	0.20	0.16
	P12	30	1050	104	0.86	0.50	0.44	0.39	0.31	0.23
	P13	30	1300	128	1.08	0.62	0.54	0.48	0.37	0.27

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

Forward Optics

Performance Package	LCE Count	Drive Current	System Watts	Dist. Type	30K (3000 K, 70 CRI) Lumens	B	U	G	LPW	40K (4000 K, 70 CRI) Lumens	B	U	G	LPW	50K (5000 K, 70 CRI) Lumens	B	U	G	LPW
P1	20	530	38W	T1S	4,369	1	0	1	115	4,706	1	0	1	124	4,766	1	0	1	125
				T2S	4,567	1	0	1	120	4,793	1	0	1	126	4,855	1	0	1	128
				T2M	4,548	1	0	1	120	4,773	1	0	1	126	4,834	1	0	1	127
				T3S	4,598	1	0	1	121	4,826	1	0	1	127	4,889	1	0	1	129
				T3M	4,576	1	0	1	120	4,802	1	0	1	126	4,864	1	0	1	128
				T4M	4,281	1	0	1	113	4,612	1	0	2	121	4,670	1	0	2	123
				TFTM	4,373	2	0	1	115	4,591	2	0	2	121	4,649	2	0	2	122
				TSYFS	4,548	2	0	1	120	4,900	2	0	2	129	4,962	2	0	1	131
				T5S	4,352	2	0	1	115	4,564	2	0	2	120	4,622	2	0	1	122
				T5M	4,541	3	0	1	120	4,891	3	0	1	129	4,953	3	0	1	130
				T5W	4,376	2	0	1	115	4,929	3	0	1	130	4,991	3	0	1	131
				BLC	3,586	1	0	1	94	3,863	1	0	1	102	3,912	1	0	1	103
				LCCO	2,668	1	0	1	70	2,874	1	0	2	76	2,911	1	0	2	77
				RCCO	2,668	1	0	1	70	2,874	1	0	2	76	2,911	1	0	2	77
P2	20	700	49W	T1S	5,579	1	0	1	114	6,093	1	0	2	122	6,077	2	0	2	124
				T2S	5,564	1	0	2	114	5,996	1	0	2	122	6,078	2	0	2	124
				T2M	5,545	1	0	2	113	5,975	1	0	2	122	6,057	2	0	2	124
				T3S	5,417	1	0	2	111	5,835	1	0	2	119	5,889	2	0	2	121
				T3M	5,580	1	0	2	114	6,011	1	0	2	123	6,087	2	0	2	124
				T4M	5,458	1	0	2	111	5,880	1	0	2	120	5,955	1	0	2	122
				TFTM	5,576	1	0	2	114	6,007	1	0	2	123	6,083	1	0	2	124
				TSYFS	5,799	2	0	0	118	6,247	2	0	0	127	6,327	2	0	0	129
				T5S	5,804	2	0	0	118	6,252	2	0	0	128	6,332	2	0	1	129
				T5M	5,799	3	0	1	118	6,247	3	0	1	127	6,378	3	0	1	129
				T5W	5,834	3	0	2	119	6,285	3	0	2	128	6,364	3	0	2	130
				BLC	4,572	1	0	1	93	4,925	1	0	1	101	4,987	1	0	1	102
				LCCO	3,402	1	0	1	69	3,665	1	0	2	75	3,711	1	0	2	76
				RCCO	3,402	1	0	1	69	3,665	1	0	2	75	3,711	1	0	2	76
P3	20	1050	71W	T1S	7,853	2	0	2	110	8,458	2	0	2	119	8,565	2	0	2	120
				T2S	7,825	2	0	2	110	8,429	2	0	2	119	8,536	2	0	2	120
				T2M	7,865	2	0	2	111	8,473	2	0	2	120	8,580	2	0	2	121
				T3S	7,617	2	0	2	107	8,205	2	0	2	116	8,309	2	0	2	117
				T3M	7,846	2	0	2	111	8,452	2	0	2	119	8,559	2	0	2	121
				T4M	7,675	2	0	2	108	8,269	2	0	2	116	8,373	2	0	2	118
				TFTM	7,841	2	0	2	110	8,447	2	0	2	119	8,554	2	0	2	120
				TSYFS	8,155	3	0	0	115	8,785	3	0	0	124	8,896	3	0	0	125
				T5S	8,201	3	0	0	116	8,835	3	0	0	125	8,947	3	0	1	126
				T5M	8,141	3	0	1	115	8,770	3	0	1	124	8,881	3	0	1	125
				T5W	8,204	3	0	2	116	8,838	4	0	2	124	8,950	4	0	2	126
				BLC	6,429	2	0	1	91	6,926	2	0	2	98	7,013	2	0	2	99
				LCCO	4,784	1	0	2	67	5,153	1	0	2	73	5,218	1	0	2	73
				RCCO	4,784	1	0	2	67	5,153	1	0	2	73	5,218	1	0	2	73
P4	20	1400	92W	T1S	9,791	2	0	2	106	10,547	2	0	2	115	10,681	2	0	2	116
				T2S	9,760	2	0	2	106	10,516	2	0	2	115	10,649	2	0	2	116
				T2M	9,831	2	0	2	107	10,590	2	0	2	115	10,724	2	0	2	117
				T3S	9,521	2	0	2	103	10,256	2	0	2	111	10,386	2	0	2	113
				T3M	9,807	2	0	2	107	10,565	2	0	2	115	10,698	2	0	2	116
				T4M	9,587	2	0	2	104	10,328	2	0	2	112	10,457	2	0	2	114
				TFTM	9,801	2	0	2	107	10,558	2	0	2	115	10,692	2	0	2	116
				TSYFS	10,193	3	0	1	111	10,981	3	0	1	119	11,120	3	0	1	121
				T5S	10,251	3	0	1	111	10,980	3	0	1	119	11,129	3	0	1	121
				T5M	10,176	4	0	2	111	10,962	4	0	2	119	11,101	4	0	2	121
				T5W	10,254	4	0	3	111	11,043	4	0	3	120	11,186	4	0	3	122
				BLC	8,036	1	0	2	87	8,658	1	0	2	94	8,766	1	0	2	95
				LCCO	5,979	1	0	2	65	6,441	1	0	2	70	6,523	1	0	3	71
				RCCO	5,979	1	0	2	65	6,441	1	0	2	70	6,523	1	0	3	71

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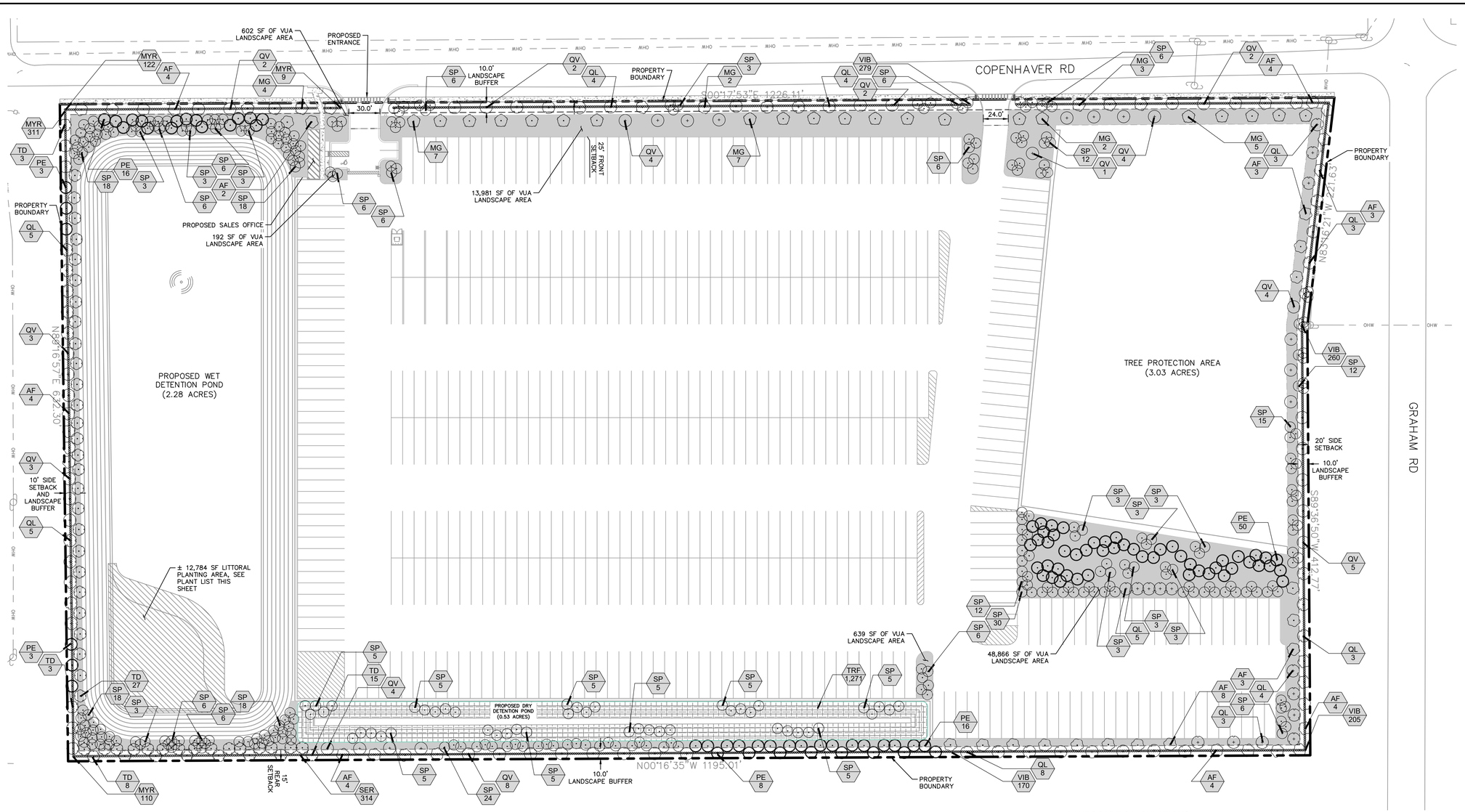
Performance Data

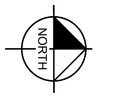
Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

Forward Optics

Performance Package	LCE Count	Drive Current	System Watts	Dist. Type	30K (3000 K, 70 CRI) Lumens	B	U	G	LPW	40K (4000 K, 70 CRI) Lumens	B	U	G	LPW	50K (5000 K, 70 CRI) Lumens	B	U	G	LPW
P5	40	700	89W	T1S	10,031	2	0	2	122	11,668	2	0	2	131	11,916	2	0	2	133
				T2S	10,026	2	0	2	122	11,956	2	0	2	131	11,882	2	0	2	133
				T2M	10,153	2	0	2	123	11,798	2	0	2	132	11,727	2	0	2	131
				T3S	9,809	2	0	2	119	11,408	2	0	2	127	11,646	2	0	2	130
				T3M	10,049	2	0	2	122	11,687	2	0	2	131	11,615	2	0	2	130
				T4M	10,613	2	0	3	119	11,434	2	0	3	128	11,578	2	0	3	130
				TFTM	10,042	2	0	2	122	11,680	2	0	2	131	11,828	2	0	2	133
				TSYFS	11,276	3	0	2	127	12,148	3	0	2	136	12,302	3	0	1	138
				T5S	11,256	3	0	2	127	12,128	3	0	2	136	12,272	3	0	1	138
				T5M	11,257	4	0	2	126	12,127	4	0	2	136	12,280	4	0	2	138
				T5W	11,344	4	0	3	127	12,221	4	0	3	137	12,375	4	0	3	139
				BLC	8,890	1	0	2	100	9,576	1	0	2	108	9,698	1	0	2	109
				LCCO	6,615	1	0	2	74	7,126	1	0	3	80	7,216	1	0	3	81
				RCCO	6,615	1	0	3	74	7,126	1	0	3	80	7,216	1	0	3	81
P6	40	1050	134W	T1S	14,805	3	0	3	110	15,960	3	0	3	119	16,151	3	0	3	121
				T2S	14,789	3	0	3	110	15,952	3	0	3	119	16,134	3	0	3	120
				T2M	14,980	3	0	3	111	16,014	3	0	3	119	16,197	3	0	3	121
				T3S	14,596	3	0	3	107	15,589	3	0	3	116	15,780	3	0	3	117
				T3M	14,829	2	0	3	111	15,975	3	0	3	119	16,177	3	0	3	121
				T4M	14,507	2	0	3	108	15,628	3	0	3	117	15,826	3	0	3	118
				TFTM	14,820	2	0	3	111	15,965	3	0	3	119	16,167	3	0	3	121
				TSYFS	15,413	4	0	1	115	16,604	4	0	1	124	16,813	4	0	1	125
				T5S	15,426	3	0	1	115	16,618	4	0	1	124	16,828	4	0	1	126
				T5M	15,397	4	0	2	115	16,576	4	0	2	124	16,790	4	0	2	125
				T5W	15,506	4	0	3	116	16,704	4	0	3	125	16,915	4	0	3	126
				BLC	12,157	2	0	2	91	13,095	2	0	2	98	13,262	2	0	2	99
				LCCO	9,045	1	0	2	68	9,740	1	0	2	73	9,865	1	0	2	74
				RCCO	9,045	1	0	3	68	9,740	1	0	3	73	9,865	1	0	3	74
P7	40	1300	166W	T1S	17,023	3	0	3	103	18,338	3	0	3	110	18,570	3	0	3	112
				T2S	17,005	3	0	3	102	18,319	3	0	3	110	18,551





GRAPHIC SCALE IN FEET
0 25 50 100

SITE DATA

TAX PARCEL ID	2313-432-000-000-4
ADDRESS:	2192 COPENHAVER ROAD, FORT PIERCE, FL 34947
ZONING:	C3, GENERAL COMMERCIAL
LAND USE:	COMMERCIAL
SITE AREA:	760,033 SF (17.45 AC)

PLANT SCHEDULE

TREES	CODE	QTY	BOTANICAL / COMMON NAME	SPECIFICATIONS	REMARKS
	AF	43	Acer rubrum `Florida Flame` / Florida Flame Red Maple	3" cal., 12` ht., 4` spr.	FG, Straight, Single leader, Full, FL #1
	MG	30	Magnolia grandiflora / Southern Magnolia	3" cal., 12` ht., 4` spr.	FG, Straight, Single leader, Full, FL #1
	PE	96	Pinus elliotti / Slash Pine	3" cal., 12` ht., 4` spr.	FG, Straight, Single leader, Full, FL #1
	QL	47	Quercus laurifolia / Laurel Oak	3" cal., 12` ht., 4` spr.	FG, Straight, Single leader, Full, FL #1
	QV	44	Quercus virginiana / Southern Live Oak	3" cal, 12` ht, 4` spr	FG, Straight, Single Leader, Full, FL #1
	TD	56	Taxodium distichum / Bald Cypress	3" cal., 12` ht., 4` spr.	FG, Straight, Single Leader, Full, FL#1
PALM TREES	**CODE**	**QTY**	**BOTANICAL / COMMON NAME**	**SPECIFICATIONS**	**REMARKS**
	SP	327	Sabal palmetto / Palmetto	10-12` ct	FG, Straight, Slick, Full, FL #1
SHRUBS	**CODE**	**QTY**	**BOTANICAL / COMMON NAME**	**SPECIFICATIONS**	**REMARKS**
	MYR	552	Myrica cerifera / Wax Myrtle	24" x 24", 24" o.c.	Full to Ground
	SER	314	Serenoa repens / Saw Palmetto	24" x 24", 24" O.C.	Full heads, min. 3 per pot
	VIB	914	Viburnum odoratissimum / Walter`s Viburnum	24" x 24", 24" o.c.	Full to Ground
SHRUB AREAS	**CODE**	**QTY**	**BOTANICAL / COMMON NAME**	**SPECIFICATIONS**	**REMARKS**
	TRF	1,271	Tripsacum floridana / Dwarf Fakahatchee	24" ht, 24" spr, 48" oc	Full to ground
	MULCH	TBD	"FLORIMULCH" shredded grade B		

I–95

GENERAL PLANTING NOTES

1. ALL PLANT MATERIAL SHALL BE INSTALLED ACCORDING TO SOUND NURSERY PRACTICES AND SHALL MEET ALL STANDARDS AS STATED IN THE LATEST EDITION OF "AMERICAN STANDARD FOR NURSERY STOCK" BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
2. ALL LANDSCAPING SHALL BE INSTALLED ACCORDING TO SOUND NURSERY PRACTICES, AND SHALL BE FLORIDA NO. 1 OR BETTER AS GIVEN IN "GRADES AND STANDARDS FOR NURSERY PLANTS, PARTS I AND II," STATE OF FLORIDA, DEPARTMENT OF AGRICULTURE.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ADVISE THE OWNER'S REPRESENTATIVE OF ANY CONDITION FOUND ON SITE WHICH PROHIBITS INSTALLATION AS SHOWN ON THESE PLANS.
4. NO SUBSTITUTIONS IN PLANT MATERIALS SHALL BE MADE WITHOUT WRITTEN AUTHORIZATION FROM OWNER OR LANDSCAPE DESIGNER. IN THE EVENT OF DISCREPANCIES BETWEEN THE DRAWING AND THE PLANT LIST, THE DRAWING SHALL PREVAIL.
6. ALL PLANT MATERIAL IN SHOCK HAS TO BE REPLACED PRIOR TO A CO
7. LOCATE ALL UTILITIES PRIOR TO ANY DIGGING OPERATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES TO EXISTING UTILITIES INCURRED BY HIS WORK.
8. ALL LANDSCAPED AREAS SHALL BE FULLY IRRIGATED WITH AN AUTOMATIC IRRIGATION SYSTEM.
9. STAKING AND GUYING ALTERNATIVES: METHODS INDICATED IN DRAWING DETAILS ARE PREFERRED. CONTRACTOR MAY SUGGEST ALTERNATE METHODS, ASSUMING FULL RESPONSIBILITY FOR THEIR IMPLEMENTATION. CONTRACTOR SHALL REPLACE, PLANT, OR UPRIGHT ANY TREES BLOWN OVER OR DAMAGED DUE TO INADEQUATE STAKING AT NO ADDITIONAL COST TO THE OWNER.
10. PLANTS MASSED IN BEDS SHALL BE ARRANGED USING TRIANGULAR SPACING.
11. PROVIDE A METAL EDGE BETWEEN ALL PLANTING BEDS AND LAWN AREAS.
12. EXISTING SOIL SHALL BE REASONABLY FREE OF STONE, LUMPS OF CLAY, ROOTS AND OTHER FOREIGN MATTER. ACIDITY TO BE BETWEEN 5.0 AND 7.0 pH. CONTRACTOR TO VERIFY SOIL ACIDITY AND AMEND AS NECESSARY TO BRING SOIL WITHIN RANGE.
13. TREE PLANTING PITS SHALL BE BACKFILLED WITH TOP SOIL, AND CLEARED OF ALL ROCKS, LUMPS OF CLAY AND OTHER FOREIGN MATERIAL. PLACE 1" OF COMPOST AND 3" OF MULCH ON TOP OF ROOT BALL.
14. PROVIDE GRASS SEEDING OR LAY SOD FOR PROPOSED LAWN AREAS TO ALL EDGES OF PAVEMENT AND/ OR LIMITS OF DISTURBANCE OUTSIDE R.O.W. OR PROPOSED LANDSCAPE EASEMENT.
15. THE CONTRACTOR, SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL LANDSCAPING FOR 90 DAYS AFTER FINAL ACCEPTANCE. ALL REQUIRED LANDSCAPING SHALL BE MAINTAINED IN A NEAT AND ORDERLY MANNER AT ALL TIMES. THE WORK SHALL INCLUDE, BUT NOT TO BE LIMITED TO, MOWING, EDGING, PRUNING, FERTILIZING, WATERING, WEEDING, AND OTHER SUCH ACTIVITIES COMMON TO THE MAINTENANCE OF LANDSCAPING. ALL PLANT MATERIALS SHALL BE MAINTAINED IN A HEALTHY AND GROWING CONDITION AS IS APPROPRIATE FOR THE SEASON OF THE YEAR. PLANT MATERIAL THAT DIES SHALL BE REPLACED WITH THE PLANT MATERIAL OF SIMILAR SIZE AND VARIETY.
16. TREES OVERHANGING WALKS AND PARKING AREAS SHALL HAVE A CLEAR TRUNK HEIGHT OF 7 FEET FROM FINISH SURFACE GRADE.
17. TREES PLANTED ON SLOPES SHALL BE PLACED IN PLANTING PITS OF ADEQUATE DEPTH SUCH THAT THE SOIL STAIN AT THE BASE OF THE TRUNK MATCHES THAT OF THE AVERAGE GRADE OR SLOPE.
18. CONTRACTOR SHALL WARRANTY PLANT MATERIAL TO REMAIN ALIVE AND HEALTHY FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE. WARRANTY SHALL NOT INCLUDE DAMAGE FOR LOSS OF PLANT MATERIAL DUE TO NATURAL CAUSES, ACTS OF VANDALISM OR NEGLIGENCE ON THE PART OF THE OWNER.
19. EXISTING LANDSCAPE THAT IS DAMAGED, NOT SCHEDULED FOR REMOVAL, SHALL BE REPLACED TO EXISTING CONDITION.
20. ALL EXISTING TREES TO BE PRUNED/ CLEANED-UP BY A CERTIFIED ARBORIST.
21. ALL INVASIVE / EXOTIC SPECIES ONSITE TO BE REMOVED.
22. QUANTITIES ARE APPROXIMATE AND ARE PROVIDED ONLY FOR THE CONVENIENCE OF THE CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR VERIFYING QUANTITIES AND PROVIDING SUFFICIENT QUANTITIES OF MATERIAL FOR COVERAGE BASED ON THE AREAS TO BE COVERED AND PLANT SPACING CALLED FOR.
23. ALL DISTURBED AREAS ON SITE NOT CALLED TO BE SODDED, SHALL BE REESTABLISHED WITH SEED OR HYDROMULCH.
24. ALL LANDSCAPE BED AREAS TO BE PREPARED USING LANDSCAPER'S BLEND BY SOIL BUILDING SOLUTIONS OR APPROVED EQUAL. CONTRACTOR TO MIX 4" LAYER OF SBS LANDSCAPER'S BLEND WITH NATIVE SOIL AND TILL TO A DEPTH OF 8". FINISHED GRADES OF PLANTING BEDS TO BE 2" BELOW FINISHED GRADE OF ADJACENT PAVING OR AS SHOWN ON GRADING PLAN.
25. AN AUTOMATIC IRRIGATION SYSTEM SHALL BE PROVIDED TO MAINTAIN ALL LANDSCAPE AREAS. OVER SPRAY ON STREETS AND WALKS IS PROHIBITED.
26. ALL BED AREAS TO BE MULCHED WITH SHREDDED HARDWOOD MULCH AT 3" MIN.. DEPTH. (FLORA MULCH OR APPROVED EQUAL.)
27. NOTIFY LANDSCAPE DESIGNER 772-794-4100 SHOULD AVAILABILITY ISSUE(S) ARISE.
28. MINIMUM 5 FOOT TREE SETBACK FROM ALL UTILITIES & 7.5' CLEARANCE AROUND FIRE HYDRANTS & FDC'S FROM LANDSCAPING.
29. PROVIDE ROOT BARRIER WHERE PROPOSED LANDSCAPING IS WITHIN 7' OF UNDERGROUND UTILITIES.

NOTE: NO SUBSTITUTIONS ON PLANT SIZE OR SPECIES WITHOUT THE APPROVAL OF THE LANDSCAPE DESIGNER/ CITY OFFICIAL.

NOTE: PLANT QUANTITIES ARE PROVIDED FOR CONVENIENCE ONLY. IN THE CASE OF A DISCREPANCY, THE DRAWING SHALL TAKE PRECEDENCE.

NOTE: PLANTS ARE SPECIFIED BY HEIGHT AND SPREAD, NOT CONTAINER SIZE. ALL PLANTINGS ARE EXPECTED TO MEET ALL SPECIFICATIONS PROVIDED.

LANDSCAPE CALCULATIONS

LANDSCAPE STRIPS SEC 123-37 (4) & (6)
BETWEEN VEHICLE USE AREA AND RIGHT OF WAY (WEST, NORTH AND EAST PROPERTY LINES)
REQUIRED:
MINIMUM 10' WIDE STRIP WITH 1 TREE PER 300 SF OF REQUIRED AREA AND
36" HIGH CONTINUOUS UNBROKEN SOLID SCREEN

BETWEEN VEHICLE USE AREA AND PROPERTY LINE (SOUTH PROPERTY LINE)
REQUIRED:
MINIMUM 10' WIDE STRIP WITH 1 TREE PER 200 SF OF REQUIRED AREA AND
36" HIGH CONTINUOUS UNBROKEN SOLID SCREEN

WEST PROPERTY LINE (COPENHAVER ROAD) ±1,226 LF - 30 LF DRIVEWAY - 24 LF DRIVEWAY = ± 1,172 LF
REQUIRED
11,720 SF AREA REQUIRED, 40 TREES AND 36" H. CONTINUOUS SCREEN

PROVIDED
11,720 SF AREA
40 TREES PROVIDED (8 MAPLES, 9 MAGNOLIAS, 8 LAUREL OAKS, 8 LIVE OAKS AND 21 PALMS AT 3:1)
CONTINUOUS SCREEN

NORTH PROPERTY LINE (GRAHAM ROAD) ±635 LF
REQUIRED
6,350 SF AREA REQUIRED, 22 TREES AND 36" H. CONTINUOUS SCREEN

PROVIDED
6,350 SF AREA
22 TREES PROVIDED (7 MAPLES, 6 LAUREL OAKS, 5 LIVE OAKS AND 12 PALMS AT 3:1)
CONTINUOUS SCREEN

EAST PROPERTY LINE (INTERSTATE 95) ±1,195 LF
REQUIRED
11,950 SF AREA REQUIRED, 40 TREES AND 36" H. CONTINUOUS SCREEN

PROVIDED
11,950 SF AREA
40 TREES PROVIDED (8 MAPLES, 8 PINES, 8 LAUREL OAKS, 8 LIVE OAKS AND 8 BALD CYPRESS)
CONTINUOUS SCREEN

SOUTH PROPERTY LINE ±633 LF
REQUIRED
6,330 SF AREA REQUIRED, 32 TREES AND 36" H. CONTINUOUS SCREEN

PROVIDED
6,330 SF AREA
32 TREES PROVIDED (4 MAPLES, 6 PINES, 10 LAUREL OAKS, 6 LIVE OAKS AND 6 BALD CYPRESS)
CONTINUOUS SCREEN

INTERIOR VEHICULAR USE AREAS SEC 123-37 (7)
1 SF OF LANDSCAPE AREA FOR EVERY 15 SF OF VEHICULAR USE AREA WITH
1 TREE PER 100 SF OF REQUIRED LANDSCAPE AREA
VUA = 413,908 SF

REQUIRED
27,594 SF AREA REQUIRED, 276 TREES

PROVIDED
64,280 SF AREA
276 TREES PROVIDED (16 MAPLES, 21 MAGNOLIAS, 82 PINES, 15 LAUREL OAKS, 17 LIVE OAKS AND 42 BALD CYPRESS AND 249 PALMS AT 3:1 RATIO)

LITTORAL PLANTINGS

	Eleocharis geniculata / Short Spike Rush	Liner, 24" O.C.	25% @ 24" O.C.
	Iris virginica/ Blue Flag Iris	Cont., 36" O.C.	25% @ 36" O.C.
	Juncus effusus / Soft Rush	Liner, 36" O.C.	25% @ 36" O.C.
	Spartina bakeri / Sand Cordgrass	Cont., 36" O.C.	25% @ 36" O.C.

THE PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED ON THIS PROJECT. CONTRACTOR'S BID SHALL INCLUDE CONSIDERATION FOR ADDRESSING THIS ISSUE.

CALL 48 HOURS BEFORE YOU DIG
IT'S THE LAW! DIAL 811
Know what's below. Call before you dig.
SUNSHINE STATE ONE CALL OF FLORIDA, INC.

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY KEVIN BARRETT, FCLD. ON THE DATE ADJACENT TO THE SEAL.
PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

No.	REVISIONS	DATE	BY

Kimley»Horn
© 2021 KIMLEY-HORN AND ASSOCIATES, INC.
445 24TH STREET, SUITE 200, VERO BEACH, FL 32960
PHONE: 772-794-4100
WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT 147814000
DATE 04/06/2021
SCALE AS SHOWN
DESIGNED BY KPB
DRAWN BY KPB
CHECKED BY KPB

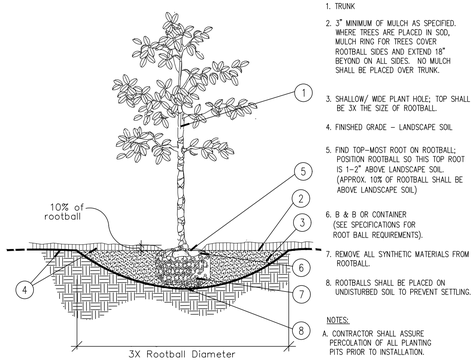
LANDSCAPE PLAN

FORT PIERCE RV STORAGE

FORT PIERCE FL

SHEET NUMBER L-100

Plotted By:Nolan, Kennedy Sheet Set:FT PIERCE RV STORAGE Layout:L-100 LANDSCAPE PLAN July 07, 2021 12:02:59pm K:\VRB_LDEV\147814000 - Ft Pierce RV Storage\CAD\PlanSheets\L-100 LANDSCAPE PLAN.dwg
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



1. TRUNK
2. 3" MINIMUM OF MULCH AS SPECIFIED. WHERE TREES ARE PLACED IN SOD, MULCH RING FOR TREES COVER ROOTBALL SIDES AND EXTEND 18" BEYOND ON ALL SIDES. NO MULCH SHALL BE PLACED OVER TRUNK.
3. SHALLOW/ WIDE PLANT HOLE; TOP SHALL BE 3X THE SIZE OF ROOTBALL.
4. FINISHED GRADE – LANDSCAPE SOIL
5. FIND TOP-MOST ROOT ON ROOTBALL; POSITION ROOTBALL SO THIS TOP ROOT IS 1-2" ABOVE LANDSCAPE SOIL. (APPROX. 10% OF ROOTBALL SHALL BE ABOVE LANDSCAPE SOIL)
6. B & B OR CONTAINER (SEE SPECIFICATIONS FOR ROOT BALL REQUIREMENTS).
7. REMOVE ALL SYNTHETIC MATERIALS FROM ROOTBALL.
8. ROOTBALLS SHALL BE PLACED ON UNDISTURBED SOIL TO PREVENT SETTLING.

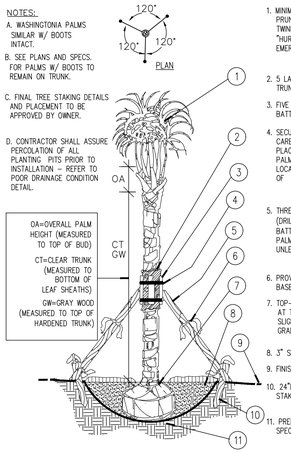
NOTES:
A. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.
B. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.
C. SEE PRE-APPROVED STAKING METHODS, THIS SHEET

* ALL TREES SHALL BE PLUMB VERTICALLY WITHIN A TOLERANCE OF THREE DEGREES, UNLESS OTHERWISE DIRECTED BY OWNER'S REPRESENTATIVE.

A Tree Planting
SECTION NTS

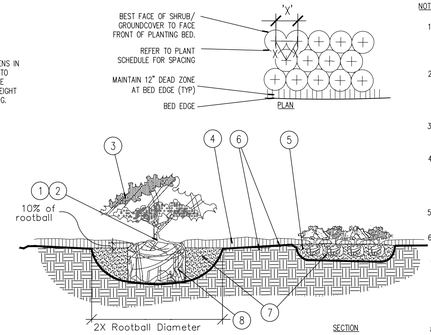
NOTES:
A. WASHINGTONIA PALMS SIMILAR W/ BOOTS INTACT.
B. SEE PLANS AND SPECS. FOR PALMS W/ BOOTS TO REMAIN ON TRUNK.
C. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.
D. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION – REFER TO POOR DRAINAGE CONDITION DETAIL.

OA=OVERALL PALM HEIGHT (MEASURED TO TOP OF BUD)
CT=CLEAR TRUNK (MEASURED TO BOTTOM OF LEAF SHEATHS)
GW=GRAY WOOD (MEASURED TO TOP OF HARDENED TRUNK)



1. MINIMUM OF NINE (9) GOOD PALM FRONDS; PRUNE AND TIE FRONDS WITH HEMP TWINE. SABAL PALMS TO BE SELECTIVELY "HURRICANE CUT", LEAVING ONLY NEWLY-EMERGING GROWTH.
2. 5 LAYERS OF BURLAP TO PROTECT TRUNK.
3. FIVE (5) 18"L, 2X4 WOOD BATTENS. UNTREATED, #2
4. SECURE BATTENS WITH TWO (2) 3/4" CARBON STEEL BANDS TO HOLD BATTENS IN PLACE. NO NAILS SHALL BE DRIVEN INTO PALM. HEIGHT OF BATTENS SHALL BE LOCATED PROPORTIONATELY TO THE HEIGHT OF THE PALM FOR ADEQUATE BRACING.
5. THREE (3) 8'L 2X4 SUPPORTS. NAIL (DRILL AND NAIL IF NECESSARY) TO BATTENS AND 2" X 4" STAKES. PALMS SHALL BE PLUMB VERTICALLY UNLESS OTHERWISE NOTED.
6. PROVIDE FLAGGING AT MIDPOINT AND BASE OF SUPPORTS.
7. TOP-MOST ROOT SHALL BE VISIBLE AT THE SURFACE OF THE ROOTBALL, SLIGHTLY ABOVE SURROUNDING GRADE.
8. 3" SPECIFIED MULCH
9. FINISH GRADE
10. 24"L (MIN.) 2X4 P.T. WOOD STAKES, NAIL TO SUPPORT POLES
11. PREPARED PLANTING SOIL AS SPECIFIED

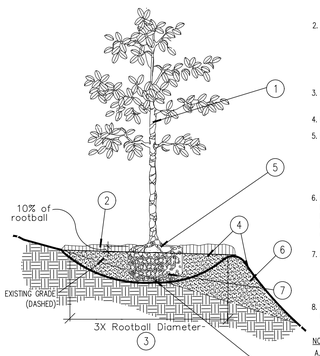
B Palm Planting and Staking
SECTION NTS



NOTES:
1. FIND POINT WHERE TOPMOST ROOT EMERGES FROM TRUNK WITHIN 2" OF SURFACE. CLEAR EXCESS SOIL IF NECESSARY.
2. TOP 10% OF SHRUB AND GROUNDCOVER ROOTBALLS TO BE PLANTED ABOVE THE LANDSCAPE GRADE. DO NOT COVER EXPOSED 10% ON SIDES WITH SOIL.
3. PRUNE ALL LIKE SHRUBS WITHIN A PLANTED MASS TO ACHIEVE A UNIFORM MASS/HEIGHT.
4. 3" MINIMUM MULCH AS SPECIFIED – DO NOT COVER ENTIRE SHRUB ROOTBALL OR CREATE 'WATER RINGS' ONLY COVER SIDES OF ROOTBALL WITH MULCH
5. EXCAVATE ENTIRE BED SPECIFIED FOR GROUNDCOVER BED.
6. FINISHED GRADE (SEE GRADING PLAN).
7. PREPARED PLANTING SOIL AS SPECIFIED. NOTE: WHEN GROUND- COVERS AND SHRUBS USED IN MASSES, ENTIRE BED TO BE AMENDED WITH PLANTING SOIL MIX AS SPECIFIED.
8. SCARIFY ROOTBALL SIDES AND BOTTOM.

* ALL SHRUBS AND GROUNDCOVERS SHALL BE PLUMB VERTICALLY, UNLESS OTHERWISE DIRECTED BY OWNER'S REPRESENTATIVE.

C Shrub / Groundcover Planting
PLAN/SECTION NTS



1. TREES, PALMS, AND LARGE SHRUBS (15 GAL OR GREATER) SHALL BE PLANTED IN SIMILAR MANNER
2. 3" MINIMUM OF MULCH AS SPECIFIED. WHERE TREES ARE PLACED IN SOD, MULCH RING FOR TREES COVER ROOTBALL SIDES AND EXTEND 18" BEYOND ON ALL SIDES. NO MULCH SHALL BE PLACED OVER TRUNK.
3. SHALLOW/ WIDE PLANT HOLE; TOP SHALL BE 3X THE SIZE OF ROOTBALL.
4. FINISHED GRADE – LANDSCAPE SOIL
5. FIND TOP-MOST ROOT ON ROOTBALL; POSITION ROOTBALL SO THIS TOP ROOT IS 1-2" ABOVE LANDSCAPE SOIL. (APPROX. 10% OF ROOTBALL SHALL BE ABOVE LANDSCAPE SOIL)
6. BERM SOIL SO THAT TOP OF BERM IS JUST BELOW THE TOP 10% OF THE TOP OF THE ROOTBALL. SLOPE DOWNHILL PORTION OF BERM AS REQUIRED TO MEET EXISTING GRADE.
7. B & B OR CONTAINER REMOVE ALL SYNTHETIC MATERIALS FROM ROOTBALL (SEE SPECIFICATIONS FOR OTHER ROOT BALL REQUIREMENTS)
8. ROOTBALLS SHALL BE PLACED ON UNDISTURBED SOIL TO PREVENT SETTLING.

NOTES:
A. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.
B. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.
C. SEE PRE-APPROVED STAKING METHODS, THIS SHEET

* ALL TREES SHALL BE PLUMB VERTICALLY WITHIN A TOLERANCE OF THREE DEGREES, UNLESS OTHERWISE DIRECTED BY OWNER'S REPRESENTATIVE.

D Planting on a Slope
SECTION NTS

1. FINISH GRADE
2. HORIZONTAL 2X2 SCREWED TO 2X2 STAKE. ALL WOOD SHALL BE #2 UNTREATED.
3. 3-1/2" DRYWALL SCREW, THREAD SIZE 12, SHARP POINT, FULL THREAD, BLACK PHOSPHATE FINISH
4. VERTICAL STAKES SHALL ABUT SIDE OF ROOTBALL
5. STAKES TO EXTEND INTO NATIVE SOIL BY 1-1/2 X THE ROOTBALL DEPTH MIN.

NOTE:
IF SPATIAL REQUIREMENTS PRECLUDE STAKING WITH THIS METHOD, SUBMIT ALTERNATE FOR LANDSCAPE ARCHITECT'S APPROVAL PRIOR TO INSTALLING PLANT.

* Refer to details B and D for planting

E Staking – up to 65 gal. or B&B to 3-1/2" Cal.
PLAN/SECTION NTS

1. FIVE (5) LAYERS OF BURLAP TO PROTECT TRUNK
2. TWO STEEL BANDS TO SECURE BATTENS
3. FIVE 2 X 4 X 18"L WOOD BATTENS
4. THREE (3) 2" X 8' LODGE POLES. DRILL, USING GALVANIZED SCREWS, TO BATTENS AND 2" X 4" STAKES. NO SCREWS SHALL PENETRATE TREE. FLAG AT MIDPOINT AND AT BASE.
10. 2" x 4" x 3' (MIN), P.T. WOOD STAKES BURIED 3" BELOW FINISHED GRADE.
7. FINISHED GRADE (SEE GRADING PLAN)

NOTES:
A. ALL TREES SHALL BE PLUMB VERTICALLY WITHIN A TOLERANCE OF THREE DEGREES, UNLESS OTHERWISE DIRECTED BY OWNER'S REPRESENTATIVE.
B. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.
C. ALTERNATE TREE ANCHORING SYSTEMS MAY BE SUBSTITUTED FOR WOOD STAKING SYSTEM UPON APPROVAL BY OWNER OR OWNER'S REPRESENTATIVE.

PRE-APPROVED SYSTEMS:
*BROOKS TREE BRACE SYSTEM
*ARBOR TIE TREE BRACING

D. RUBBER HOSE/WIRE SYSTEMS ARE NOT ALLOWED.

* Refer to details B and D for planting

F Large Tree Staking – 100 Gal + or B&B 4" +
SECTION NTS

1. FINISH GRADE
2. BACKFILL WITH PREPARED PLANTING SOIL MIX AS SPECIFIED.
3. FILTER CLOTH, MIRAFI 500X OR BETTER
4. 12" CLEAN SAND, COMPACTED. ADJUST LAYER THICKNESS SO TOP OF ROOTBALL IS AT LEAST 1" ABOVE FINISHED GRADE.
5. SLOPE BOTTOM TO DRAIN
6. ±18"ø AUGURED HOLE PENETRATE THROUGH OCCLUDING LAYER TO WATER TABLE OR TO A DEPTH OF 7' TO ASSURE PROPER PERCOLATION.
7. BACKFILL WITH 1/2" – 3/4" GRAVEL.
8. WATER TABLE. (DEPTH VARIES)

NOTE:
FOR A PARKING ISLAND PLANTING SITUATION, CONTRACTOR TO BACKFILL ENTIRE LENGTH OF PLANTING AREA TO WITHIN 6" OF BACK OF CURB OR EDGE OF PAVEMENT.

REFER TO NOTE 0.3 OF WRITTEN SPECIFICATIONS FOR ADDITIONAL INFORMATION.

G Poor Drainage Condition
PLAN/SECTION NTS

1. 6'H "PERIMETER PLUS" CONSTRUCTION FENCE BY CONWED PLASTICS OR OWNER'S REPRESENTATIVE APPROVED EQUAL. SUBMIT PRODUCT INFORMATION FOR APPROVAL PRIOR TO INSTALLATION.
2. 8' TALL METAL "T" POSTS OR 2" x 2" X 8' PRESSURE TREATED WOOD POSTS WITH 24" BURIAL BELOW GRADE.

INSTALLATION NOTES:
A. POST SELECTION SHOULD BE BASED ON EXPECTED STRENGTH NEEDS AND THE LENGTH OF TIME FENCE WILL BE IN PLACE. FLEXIBLE FIBERGLASS ROD POSTS ARE RECOMMENDED FOR PARKS, ATHLETIC EVENTS AND CROWD CONTROL INSTALLATIONS. METAL "T" POSTS OR TREATED WOOD POSTS ARE TYPICALLY USED FOR CONSTRUCTION AND OTHER APPLICATIONS.
B. POSTS SHOULD BE DRIVEN INTO THE GROUND TO A DEPTH OF 1/4 OF THE HEIGHT OF THE POST. FOR EXAMPLE, A 8' POST SHOULD BE SET AT LEAST 2' INTO THE GROUND.
C. SPACE POSTS EVERY 6' (MIN.) TO 8' (MAX.).
D. SECURE FENCING TO POST WITH NYLON CABLE TIES (AVAILABLE FROM CONWED PLASTICS). WOOD STRIPS MAY BE ALSO BE USED TO PROVIDE ADDITIONAL SUPPORT AND PROTECTION BETWEEN TIES AND POSTS.

NOTE: IF WIRE TIES ARE USED, AVOID DIRECT CONTACT WITH FENCE. WIRE MAY DAMAGE FENCE OVER TIME.

H Tree/Shrub Protector
Barrier Detail NTS

THE PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED ON THIS PROJECT. CONTRACTOR'S BID SHALL INCLUDE CONSIDERATION FOR ADDRESSING THIS ISSUE.

CALL 48 HOURS BEFORE YOU DIG
IT'S THE LAW! DIAL 811
Know what's below. Call before you dig.
SUNSHINE STATE ONE CALL OF FLORIDA, INC.

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No.	REVISIONS	DATE	BY

Kimley»Horn
© 2021 KIMLEY-HORN AND ASSOCIATES, INC.
445 24TH STREET, SUITE 200, VERO BEACH, FL 32960
PHONE: 772-794-4100
WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT 147814000
DATE 04/06/2021
SCALE AS SHOWN
DESIGNED BY KPB
DRAWN BY KPB
CHECKED BY KPB

LANDSCAPE DETAILS

FORT PIERCE RV STORAGE
FL
FORT PIERCE

SHEET NUMBER
L-101

Plotted By:Nolan, Kennedy Sheet Set:FT PIERCE RV STORAGE Layout:L-101 LANDSCAPE DETAILS July 07, 2021 12:02:59pm K:\VRB_DIE\V\147814000 – Ft Pierce RV Storage\CAD\PlanSheets\L-100 LANDSCAPE PLAN.dwg
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GENERAL LANDSCAPE SPECIFICATIONS AND NOTES

A. SCOPE OF WORK

1. THE WORK CONSISTS OF FURNISHING ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, TRANSPORTATION, AND ANY OTHER APPURTENANCES NECESSARY FOR THE COMPLETION OF THIS PROJECT AS SHOWN ON THE DRAWINGS, AS INCLUDED IN THE PLANT LIST, AND AS HEREIN SPECIFIED.

2. WORK SHALL INCLUDE MAINTENANCE AND WATERING OF ALL PLANTING AREAS OF THIS CONTRACT UNTIL CERTIFICATION OF ACCEPTABILITY BY THE OWNER.

B. PROTECTION OF EXISTING STRUCTURES

ALL EXISTING BUILDINGS, WALKS, WALLS, PAVING, PIPING, AND OTHER ITEMS OF CONSTRUCTION AND PLANTING ALREADY COMPLETED OR ESTABLISHED SHALL BE PROTECTED FROM DAMAGE BY THIS CONTRACTOR UNLESS OTHERWISE SPECIFIED. ALL DAMAGE RESULTING FROM NEGLIGENCE SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER.

C. PROTECTION OF EXISTING PLANT MATERIALS OUTSIDE LIMIT OF WORK

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL UNAUTHORIZED CUTTING OR DAMAGE TO TREES AND SHRUBS EXISTING OR OTHERWISE, CAUSED BY CARELESS OPERATION OF EQUIPMENT, STOCKPILING OF MATERIALS, ETC. THIS SHALL INCLUDE COMPACTION BY DRIVING OR PARKING INSIDE THE DRIP-LINE OR THE SPILLING OF OIL, GASOLINE, OR OTHER DELETERIOUS MATERIALS WITHIN THE DRIP-LINE. NO MATERIALS SHALL BE BURNED WHERE THE HEAT WILL DAMAGE ANY PLANT. TREES KILLED OR DAMAGED SO THAT THEY ARE MISSHAPEN AND/ OR UNSIGHTLY SHALL BE REPLACED AT THE COST TO THE CONTRACTOR OF ONE HUNDRED DOLLARS ($100) PER CALIPER INCH ON AN ESCALATING SCALE WHICH ADDS AN ADDITIONAL TWENTY (20) PER CENT PER INCH OVER FOUR (4) INCHES CALIPER AS FIXED AND AGREED LIQUIDATED DAMAGES. CALIPER SHALL BE MEASURED SIX (6) INCHES ABOVE GROUND LEVEL FOR TREES UP TO AND INCLUDING FOUR (4) INCHES IN CALIPER AND TWELVE (12) INCHES ABOVE GROUND LEVEL FOR TREES OVER FOUR (4) INCHES IN CALIPER.

D. MATERIALS

1. GENERAL

SAMPLES OF MATERIALS AS LISTED BELOW SHALL BE SUBMITTED FOR APPROVAL, ON THE SITE OR AS OTHERWISE DETERMINED BY THE OWNER. UPON APPROVAL OF SAMPLES, DELIVERY OF MATERIALS MAY BEGIN.

MATERIALS	SAMPLES
MULCH	ONE (1) CUBIC FOOT
TOPSOIL	ONE (1) CUBIC YARD
PLANTS	ONE (1) OF EACH VARIETY

2. PLANT MATERIALS

A. PLANT SPECIES AND SIZE SHALL CONFORM TO THOSE INDICATED ON 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 AND II, LATEST EDITION PUBLISHED BY THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES. ALL PLANTS SHALL BE FLORIDA GRADE NO. 1 OR BETTER AS DETERMINED BY THE FLORIDA DIVISION OF PLANT INDUSTRY. ALL PLANTS SHALL BE FRESHLY DUG, SOUND, HEALTHY, VIGOROUS, WELL-BRANCHED AND FREE OF DISEASE AND INSECTS, INSECT EGGS AND LARVAE AND SHALL HAVE ADEQUATE ROOT SYSTEMS. TREES FOR PLANTING IN ROWS SHALL BE UNIFORM IN SIZE AND SHAPE. ALL MATERIALS SHALL BE SUBJECT TO APPROVAL BY THE OWNER. WHERE ANY REQUIREMENTS ARE OMITTED FROM THE PLANT LIST, THE PLANTS FURNISHED SHALL BE NORMAL FOR THE VARIETY. PLANTS SHALL BE PRUNED PRIOR TO DELIVERY ONLY UPON THE APPROVAL OF THE OWNER.
B. MEASUREMENTS: THE HEIGHT AND/OR WIDTH OF TREES SHALL BE MEASURED FROM THE GROUND OR ACROSS THE NORMAL SPREAD OF BRANCHES WITH THE PLANTS IN THEIR NORMAL POSITION. THIS MEASUREMENT SHALL NOT INCLUDE THE IMMEDIATE TERMINAL GROWTH. PLANTS LARGER IN SIZE THAN THOSE SPECIFIED IN THE PLANT LIST MAY BE USED IF APPROVED BY THE OWNER. IF THE USE OF LARGER PLANTS IS APPROVED, THE BALL OF EARTH OR SPREAD OF ROOTS SHALL BE INCREASED IN PROPORTION TO THE SIZE OF THE PLANT.

C. INSPECTION: PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL AT THE PLACE OF GROWTH, OR UPON DELIVERY TO THE SITE, AS DETERMINED BY THE OWNER, FOR QUALITY, SIZE, AND VARIETY; SUCH APPROVAL SHALL NOT IMPAIR THE RIGHT OF INSPECTION AND REJECTION AT THE SITE DURING PROGRESS OF THE WORK OR AFTER COMPLETION FOR SIZE AND CONDITION OF BALLS OR ROOTS, LATENT DEFECTS OR INJURIES. REJECTED PLANTS SHALL BE REMOVED IMMEDIATELY FROM THE SITE. NOTICE REQUESTING INSPECTION SHALL BE SUBMITTED IN WRITING BY THE CONTRACTOR AT LEAST ONE (1) WEEK PRIOR TO ANTICIPATED DATE.

E. TOPSOIL AND SAND

TOPSOIL FOR USE IN PREPARING SOIL FOR BACKFILLING PLANT PITS SHALL BE THIRTY PERCENT (30%) MUCK AND SEVENTY PERCENT (70%) SAND AND BE FERTILE, FRIABLE, AND OF A LOAMY CHARACTER, WITHOUT MIXTURE OF SUBSOIL MATERIALS, AND OBTAINED FROM A WELL-DRAINED, ARABLE SITE. IT SHALL CONTAIN THREE (3) TO FIVE (5) PERCENT DECOMPOSED ORGANIC MATTER AND SHALL BE FREE FROM HEAVY CLAY, COARSE SAND, STONES, LIME, LUMPS, PLANTS, ROOTS OR OTHER FOREIGN MATERIALS, OR NOXIOUS WEEDS. IT SHALL NOT CONTAIN TOXIC SUBSTANCES WHICH MAY BE HARMFUL TO PLANT GROWTH. PH RANGE SHALL BE 5.0 TO 7.0 INCLUSIVE. FOUR (4) INCHES OF TOPSOIL TO BE PROVIDED FOR ALL TURF AREAS. TWENTY FOUR (24) INCHES OF TOPSOIL TO BE PROVIDED FOR ALL PLANTING BEDS.

SAND SHALL BE COARSE, CLEAN, WELL DRAINING NATIVE SAND. CONTRACTOR SHALL SUBMIT RESULTS OF SOIL TESTS FOR TOPSOIL AND SAND PROPOSED FOR USE UNDER THIS CONTRACT FOR APPROVAL BY THE OWNER.

TREES SHALL BE PLANTED IN THE EXISTING NATIVE SOIL ONSITE UNLESS DETERMINED TO BE UNSUITABLE AT WHICH POINT THE CONTRACTOR SHALL CONTACT LANDSCAPE ARCHITECT TO DISCUSS ALTERNATE RECOMMENDATION PRIOR TO PLANTING.

F. WATER

WATER NECESSARY FOR PLANTING AND MAINTENANCE SHALL BE OF SATISFACTORY QUALITY TO SUSTAIN AN ADEQUATE GROWTH OF PLANTS AND SHALL NOT CONTAIN HARMFUL, NATURAL OR MAN-MADE ELEMENTS DETRIMENTAL TO PLANTS. WATER MEETING THE ABOVE STANDARD SHALL BE OBTAINED ON THE SITE FROM THE OWNER, IF AVAILABLE, AND THE CONTRACTOR SHALL BE RESPONSIBLE TO MAKE ARRANGEMENTS FOR ITS USE BY HIS TANKS, HOSES, SPRINKLERS, ETC. IF SUCH WATER IS NOT AVAILABLE AT THE SITE, THE CONTRACTOR SHALL PROVIDE SUCH SATISFACTORY WATER FROM SOURCES OFF THE SITE AT NO ADDITIONAL COST TO THE OWNER.

G. COMMERCIAL FERTILIZER

COMMERCIAL FERTILIZER SHALL BE A COMPLETE FORMULA; IT SHALL BE UNIFORM IN COMPOSITION, DRY AND FREE FLOWING. THIS FERTILIZER SHALL BE DELIVERED TO THE SITE IN THE ORIGINAL UNOPENED CONTAINERS, EACH BEARING THE MANUFACTURER'S GUARANTEED STATEMENT OF ANALYSIS.

FIFTY PERCENT (50%) OF THE NITROGEN SHALL BE DERIVED FROM NATURAL ORGANIC SOURCES. THE FOLLOWING FERTILIZERS SHALL BE USED AND APPLIED AT RATES AS SUGGESTED BY MANUFACTURER'S SPECIFICATIONS:

1. SHRUBS AND TREES - MILORGANITE, OR APPROVED EQUAL
2. ANNUALS AND GROUNDCOVERS - OSMOCOTE/SIERRA BLEND 14-14-14
3. SOD - 8-8-8 FERTILIZER

IN ADDITION TO SURFACE APPLIED FERTILIZERS, ALL CONTAINER GROWN AND FIELD GROWN PLANT MATERIAL SHALL RECEIVE "AGRIFORM" PLANTING TABLETS 24-10-5 FORMULA, 21 GRAM OR EQUAL. THESE TABLETS SHALL BE PLACED AT A DEPTH OF ROOT BALL AT THE RATE AS SPECIFIED BY MANUFACTURER.

H. MULCH

MULCH MATERIAL SHALL BE MOISTENED AT THE TIME OF APPLICATION TO PREVENT WIND DISPLACEMENT, AND APPLIED AT A DEPTH OF 3 INCHES. SEE PLANT LIST FOR TYPE OF MATERIAL ("FLORA-MULCH," EUCALYPTUS MULCH, PINE STRAW, OR CYPRESS) AND GRADE.

I. DIGGING AND HANDLING

1. PROTECT ROOTS OR BALLS OF PLANTS AT ALL TIMES FROM SUN AND DRYING WINDS, WATER AND FREEZING, AS NECESSARY UNTIL PLANTING. PLANT MATERIALS SHALL BE ADEQUATELY PACKED TO PREVENT BREAKAGE AND DRYING OUT DURING TRANSIT. TREES TRANSPORTED MORE THAN TEN (10) MILES OR WHICH ARE NOT PLANTED WITHIN THREE (3) DAYS OF DELIVERY TO SITE SHALL BE SPRAYED WITH AN ANTI-TRANSPIRANT PRODUCT ("WILTPRUF" OR EQUAL) TO MINIMIZE TRANSPIRATIONAL WATER LOSS.

2. BALLED AND BURLAPPED PLANTS (B&B) SHALL BE DUG WITH FIRM, NATURAL BALLS OF SOIL OF SUFFICIENT SIZE TO ENCOMPASS THE FIBROUS AND FEEDING ROOTS OF THE PLANTS. NO PLANTS MOVED WITH A BALL SHALL BE PLANTED IF THE BALL IS CRACKED OR BROKEN. PLANTS BALLED AND BURLAPPED OR CONTAINER GROWN SHALL NOT BE HANDLED BY STEMS.

3. PLANTS MARKED "BR" IN THE PLANT LIST SHALL BE DUG WITH BARE ROOTS. THE ROOTS SHALL NOT BE CUT WITHIN THE MINIMUM SPREAD SPECIFIED IN THE PLANT LIST. CARE SHALL BE EXERCISED THAT THE ROOTS DO NOT DRY OUT IN MOVING AND PRIOR TO PLANTING.

4. PROTECTION OF PALMS (IF APPLICABLE): ONLY A MINIMUM OF FRONDS SHALL BE REMOVED FROM THE CROWN OF THE PALM TREES TO FACILITATE MOVING AND HANDLING. CLEAR TRUNK (CT) SHALL BE AS SPECIFIED AFTER THE MINIMUM OF FRONDS HAVE BEEN REMOVED. ALL PALMS SHALL BE BRACED PER DETAIL.

5. EXCAVATION OF TREE PITS SHALL BE DONE USING EXTREME CARE TO AVOID DAMAGE TO SURFACE AND SUBSURFACE ELEMENTS SUCH AS UTILITIES OR HARDSCAPE ELEMENTS, FOOTERS AND PREPARED SUB- BASES.

J. CONTAINER GROWN STOCK

1. 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 WHICH ARE OF GOOD QUALITY AND ARE IN A HEALTHY GROWING CONDITION.

2. AN ESTABLISHED CONTAINER GROWN PLANT SHALL BE TRANSPLANTED INTO A CONTAINER AND GROWN IN THAT CONTAINER SUFFICIENTLY LONG 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. CONTAINER GROWN STOCK SHALL NOT BE HANDLED BY THEIR STEMS.

3. PLANT ROOTS BOUND IN CONTAINERS SHALL NOT BE ACCEPTABLE.

4. SUBSTITUTION OF NON-CONTAINER GROWN MATERIAL FOR MATERIAL EXPLICITLY SPECIFIED TO BE CONTAINER GROWN WILL NOT BE PERMITTED UNLESS WRITTEN APPROVAL IS OBTAINED FROM THE OWNER AND LANDSCAPE ARCHITECT.

K. COLLECTED STOCK

WHEN THE USE OF COLLECTED STOCK IS PERMITTED AS INDICATED ON THE PLANT LIST SCHEDULE, THE MINIMUM SIZES OF ROOTBALLS SHALL BE EQUAL TO THAT SPECIFIED FOR THE NEXT LARGER SIZE OF NURSERY GROWN STOCK OF THE SAME VARIETY.

L. NATIVE STOCK

PLANTS COLLECTED FROM WILD OR NATIVE STANDS SHALL BE CONSIDERED NURSERY GROWN WHEN THEY HAVE BEEN SUCCESSFULLY REESTABLISHED IN A NURSERY ROW AND GROWN UNDER REGULAR NURSERY CULTURAL PRACTICES FOR A MINIMUM OF TWO (2) GROWING SEASONS AND HAVE ATTAINED ADEQUATE ROOT AND TOP GROWTH TO INDICATE FULL RECOVERY FROM TRANSPLANTING INTO THE NURSERY ROW.

M. MATERIALS LIST

QUANTITIES NECESSARY TO COMPLETE THE WORK ON THE DRAWINGS SHALL BE FURNISHED BY THE CONTRACTOR. QUANTITY ESTIMATES HAVE BEEN MADE CAREFULLY, BUT THE LANDSCAPE ARCHITECT OR OWNER ASSUMES NO LIABILITY FOR OMISSIONS OR ERRORS. SHOULD A DISCREPANCY OCCUR BETWEEN THE BIDDERS TAKE OFF AND THE PLANT LIST QUANTITY, THE LANDSCAPE ARCHITECT SHALL BE NOTIFIED FOR CLARIFICATION PRIOR TO THE SUBMISSIONS OF BIDS. ALL DIMENSIONS AND/OR SIZES SPECIFIED SHALL BE THE MINIMUM ACCEPTABLE SIZE

N. FINE GRADING

1. FINE GRADING UNDER THIS CONTRACT SHALL CONSIST OF FINAL FINISHED GRADING OF LAWN AND PLANTING AREAS THAT HAVE BEEN ROUGH GRADED BY OTHERS. BERMING AS SHOWN ON THE DRAWINGS SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR, UNLESS OTHERWISE NOTED.

2. THE LANDSCAPE CONTRACTOR SHALL FINE GRADE THE LAWN AND PLANTING AREAS TO BRING THE ROUGH GRADE UP TO FINAL FINISHED GRADE ALLOWING FOR THICKNESS OF SOD AND/OR MULCH DEPTH. THIS CONTRACTOR SHALL FINE GRADE BY HAND AND/OR WITH ALL EQUIPMENT NECESSARY INCLUDING A GRADING TRACTOR WITH FRONT-END LOADER FOR TRANSPORTING SOIL WITHIN THE SITE.

3. ALL PLANTING AREAS SHALL BE GRADED AND MAINTAINED TO ALLOW FREE FLOW OF SURFACE WATER. AREAS ADJACENT TO BUILDINGS SHALL SLOPE AWAY FROM THE BUILDINGS.

O. PLANTING PROCEDURES

1. CLEANING UP BEFORE COMMENCING WORK: THE CONTRACTOR SHALL CLEAN UP WORK AND SURROUNDING AREAS OF ALL RUBBISH OR OBJECTIONABLE MATTER. ALL MORTAR, CEMENT, AND TOXIC MATERIAL SHALL BE REMOVED FROM THE SURFACE OF ALL PLANTING BEDS. THESE MATERIALS SHALL NOT BE MIXED WITH THE SOIL. SHOULD THE CONTRACTOR FIND SUCH SOIL CONDITIONS BENEATH THE SOIL WHICH WILL IN ANY WAY ADVERSELY AFFECT THE PLANT GROWTH, HE SHALL IMMEDIATELY CALL IT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT OR OWNER. FAILURE TO DO SO BEFORE PLANTING SHALL MAKE THE CORRECTIVE MEASURES THE RESPONSIBILITY OF THE CONTRACTOR.

2. VERIFY LOCATIONS OF ALL UTILITIES, CONDUITS, SUPPLY LINES AND CABLES, INCLUDING BUT NOT LIMITED TO: ELECTRIC, GAS (LINES AND TANKS), WATER, SANITARY SEWER, STORMWATER LINES, CABLE AND TELEPHONE. PROPERLY MAINTAIN AND PROTECT EXISTING UTILITIES.

3. SUBGRADE EXCAVATION: SITE CONTRACTOR IS RESPONSIBLE TO REMOVE ALL EXISTING AND IMPORTED LIMEROCK AND LIMEROCK SUB-BASE FROM ALL LANDSCAPE PLANTING AREAS TO A MINIMUM DEPTH OF 36". SITE CONTRACTOR IS RESPONSIBLE TO BACKFILL THESE PLANTING AREAS TO ROUGH FINISHED GRADE WITH CLEAN TOPSOIL FROM AN ON-SITE SOURCE OR AN IMPORTED SOURCE. IF LIMEROCK OR OTHER ADVERSE CONDITIONS OCCUR IN PLANTED AREAS AFTER 36" DEEP EXCAVATION BY SITE CONTRACTOR, AND POSITIVE DRAINAGE CAN NOT BE ACHIEVED, LANDSCAPE CONTRACTOR SHALL UTILIZE PLANTING DETAIL THAT ADDRESSES POOR DRAINAGE.

4. FURNISH NURSERY'S CERTIFICATE OF COMPLIANCE WITH ALL REQUIREMENTS AS HEREIN SPECIFIED AND REQUIRED. INSPECT AND SELECT PLANT MATERIALS BEFORE PLANTS ARE DUG AT NURSERY OR GROWING SITE.

5. GENERAL: COMPLY WITH APPLICABLE FEDERAL, STATE, COUNTY, AND LOCAL REGULATIONS GOVERNING LANDSCAPE MATERIALS AND WORK. CONFORM TO ACCEPTED HORTICULTURAL PRACTICES AS USED IN THE TRADE. PLANTS SHALL BE PROTECTED UPON ARRIVAL AT THE SITE BY BEING THOROUGHLY WATERED AND PROPERLY MAINTAINED UNTIL PLANTED. PLANTS SHALL NOT REMAIN UNPROTECTED FOR A PERIOD EXCEEDING TWENTY-FOUR (24) HOURS. AT ALL TIMES WORKMANLIKE METHODS CUSTOMARY IN GOOD HORTICULTURAL PRACTICES SHALL BE EXERCISED.

6. THE WORK SHALL BE COORDINATED WITH OTHER TRADES TO PREVENT CONFLICTS. COORDINATE THE PLANTING WITH THE IRRIGATION WORK TO ASSURE AVAILABILITY OF WATER AND PROPER LOCATION OF IRRIGATION ITEMS AND PLANTS.

7. ALL PLANTING PITS SHALL BE EXCAVATED TO SIZE AND DEPTH IN ACCORDANCE WITH THE USA STANDARD FOR NURSERY STOCK 260.1, UNLESS SHOWN OTHERWISE ON THE DRAWINGS, AND BACKFILLED WITH THE PREPARED PLANTING SOIL AS SPECIFIED HEREIN BEFORE (SECTION E). TEST ALL TREE PITS WITH WATER BEFORE PLANTING TO ASSURE PROPER DRAINAGE PERCOLATION IS AVAILABLE. NO ALLOWANCE WILL BE MADE FOR LOST PLANTS DUE TO IMPROPER DRAINAGE. IF POOR DRAINAGE EXISTS, UTILIZE PLANTING DETAIL THAT ADDRESSES THIS CONDITION. TREES SHALL BE SET PLUMB AND HELD IN POSITION UNTIL THE PLANTING MIXTURE HAS BEEN FLUSHED INTO PLACE WITH A SLOW, FULL HOSE STREAM. ALL PLANTING SHALL BE PERFORMED BY PERSONNEL FAMILIAR WITH PLANTING PROCEDURE AND UNDER THE SUPERVISION OF A QUALIFIED PLANTING FOREMAN. PROPER "JETTING IN" SHALL BE ASSURED TO ELIMINATE AIR POCKETS AROUND THE ROOTS. "JET STICK" OR EQUAL IS RECOMMENDED.

8. TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGE TO BUILDINGS AND BUILDING STRUCTURES WHILE INSTALLING TREES.

9. SOIL MIXTURE SHALL BE AS SPECIFIED IN SECTION E OF THESE SPECIFICATIONS. IN ADDITION, EACH PLANTING PIT SHALL RECEIVE 21-GRAM "AGRIFORM" PLANTING TABLETS PER MANUFACTURER'S SPECIFICATIONS OR AS FOLLOWS:

- TWO (2) TABLETS PER 1 GAL. PLANT
- THREE (3) TABLETS PER 3 GAL. PLANT
- FOUR (4) TABLETS PER 10 GAL. PLANT
- LARGER MATERIAL - TWO (2) TABLETS PER 1/2" OF TRUNK CALIPER

10. TREES AND SHRUBS SHALL BE SET STRAIGHT AND AT SUCH A LEVEL THAT AFTER SETTLEMENT, THE PLANT CROWN WILL STAND ONE (1) TO TWO (2) INCHES ABOVE GRADE. EACH PLANT SHALL BE SET IN THE CENTER OF THE PIT. PLANTING SOIL MIXTURE SHALL BE BACKFILLED AND THOROUGHLY TAMPED AROUND THE BALL AND SHALL BE SETTLED BY WATER AFTER TAMPING.

11. FILL HOLE WITH SOIL MIXTURE, MAKING CERTAIN ALL SOIL IS SATURATED. TO DO THIS, FILL HOLE WITH WATER AND ALLOW TO SOAK MINIMUM TWENTY (20) MINUTES, STIRRING IF NECESSARY TO GET SOIL THOROUGHLY WET. PACK LIGHTLY WITH FEET. ADD MORE WET SOIL MIXTURE. DO NOT COVER TOP OF BALL WITH SOIL MIXTURE, ONLY WITH MULCH. ALL BURLAP, ROPE, WIRES, ETC., SHALL BE REMOVED FROM THE SIDES AND TOPS OF BALLS, BUT NO BURLAP SHALL BE PULLED FROM UNDERNEATH.

12. PRUNING: EACH TREE SHALL BE PRUNED TO PRESERVE THE NATURAL CHARACTER OF THE PLANT AS SHOWN ON THE DRAWINGS. ALL SOFT WOOD OR SUCKER GROWTH AND ALL BROKEN OR BADLY DAMAGED BRANCHES SHALL BE REMOVED WITH A CLEAN CUT.

13. SHRUBS AND GROUND COVER PLANTS SHALL BE EVENLY SPACED IN ACCORDANCE WITH THE DRAWINGS AND AS INDICATED ON THE PLANT LIST. CULTIVATE ALL PLANTING AREAS TO A MINIMUM DEPTH OF 6", REMOVE AND DISPOSE ALL DEBRIS. TILL INTO TOP 4" THE PLANTING SOIL MIX AS SPECIFIED IN SECTION E. THOROUGHLY WATER ALL PLANTS AFTER INSTALLATION.

14. TREE GUYING AND BRACING SHALL BE INSTALLED BY THE LANDSCAPE CONTRACTOR IN ACCORDANCE WITH THE PLANS TO INSURE STABILITY AND MAINTAIN TREES IN AN UPRIGHT POSITION. IF THE LANDSCAPE CONTRACTOR AND OWNER DECIDE TO WAIVE THE TREE GUYING AND BRACING, THE OWNER SHALL NOTIFY THE LANDSCAPE ARCHITECT IN WRITING OF THEIR INTENTIONS AND AGREE TO HOLD HARMLESS THE LANDSCAPE ARCHITECT IN THE EVENT ANY TREES FALL DOWN AND DAMAGE PERSON OR PROPERTY.

15. MULCHING: PROVIDE A THREE (3) INCH MINIMUM LAYER OF SPECIFIED MULCH OVER THE ENTIRE AREA OF EACH SHRUB BED, GROUND COVER AND VINE BED AND TREE PIT.

16. HERBICIDE WEED CONTROL: ALL PLANT BEDS SHALL BE KEPT FREE OF NOXIOUS WEEDS UNTIL FINAL ACCEPTANCE OF WORK. IF DIRECTED BY THE OWNER, "ROUND-UP" SHALL BE APPLIED FOR WEED CONTROL BY QUALIFIED PERSONNEL TO ALL PLANTING AREAS IN SPOT APPLICATIONS PER MANUFACTURER'S PRECAUTIONS AND SPECIFICATIONS. PRIOR TO FINAL INSPECTION, TREAT ALL PLANTING BEDS WITH AN APPROVED PRE-EMERGENT HERBICIDE AT AN APPLICATION RATE RECOMMENDED BY THE MANUFACTURER.

P. LAWN SODDING

1. THE WORK CONSISTS OF LAWN BED PREPARATION, SOIL PREPARATION, AND SODDING COMPLETE, IN STRICT ACCORDANCE WITH THE SPECIFICATIONS AND THE APPLICABLE DRAWINGS TO PRODUCE A GRASS LAWN ACCEPTABLE TO THE OWNER.

2. LAWN BED PREPARATION: ALL AREAS THAT ARE TO BE SODDED SHALL BE CLEARED OF ANY ROUGH GRASS, WEEDS, AND DEBRIS, AND THE GROUND BROUGHT TO AN EVEN GRADE. THE WHOLE SURFACE SHALL BE ROLLED WITH A ROLLER WEIGHING NOT MORE THAN ONE-HUNDRED (100) POUNDS PER FOOT OF WIDTH. DURING THE ROLLING, ALL DEPRESSIONS CAUSED BY SETTLEMENT OF ROLLING SHALL BE FILLED WITH ADDITIONAL SOIL, AND THE SURFACE SHALL BE REGRADED AND ROLLED UNTIL PRESENTING A SMOOTH AND EVEN FINISH THAT IS UP TO THE REQUIRED GRADE.

3. SOIL PREPARATION: PREPARE LOOSE BED FOUR (4) INCHES DEEP. APPLY FERTILIZER AT RATE OF TWENTY (20) POUNDS PER ONE THOUSAND (1000) SQUARE FEET. APPLICATION SHALL BE UNIFORM, UTILIZING APPROVED MECHANICAL SPREADERS. MIX FERTILIZER THOROUGHLY WITH THE SOIL TO A DEPTH OF THREE (3) INCHES. HAND RAKE UNTIL ALL BUMPS AND DEPRESSIONS ARE REMOVED. WET PREPARED AREA THOROUGHLY.

4. SODDING

A. THE CONTRACTOR SHALL SOD ALL AREAS THAT ARE NOT PAVED OR PLANTED AS DESIGNATED ON THE DRAWINGS WITHIN THE CONTRACT LIMITS, UNLESS SPECIFICALLY NOTED OTHERWISE.

B. 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.

C. SOD PANELS SHALL BE LAID TIGHTLY TOGETHER SO AS TO MAKE A SOLID SODDED LAWN AREA. SOD SHALL BE LAID UNIFORMLY AGAINST THE EDGES OF ALL CURBS AND OTHER HARDSCAPE ELEMENTS, PAVED AND PLANTED AREAS. ADJACENT TO BUILDINGS, A FOUR INCH MULCH STRIP SHALL BE PROVIDED. IMMEDIATELY FOLLOWING SOD LAYING, THE LAWN AREAS SHALL BE ROLLED WITH A LAWN ROLLER CUSTOMARILY USED FOR SUCH PURPOSES, AND THEN THOROUGHLY IRRIGATED. IF, IN THE OPINION OF THE OWNER, TOP-DRESSING IS NECESSARY AFTER ROLLING TO FILL THE VOIDS BETWEEN THE SOD PANELS AND TO EVEN OUT INCONSISTENCIES IN THE SOD, CLEAN SAND AS APPROVED BY THE LANDSCAPE ARCHITECT OR OWNER SHALL BE UNIFORMLY SPREAD OVER THE ENTIRE SURFACE OF THE SOD AND THOROUGHLY WATERED IN.

5. DURING DELIVERY, PRIOR TO AND DURING THE PLANTING OF THE LAWN AREAS, THE SOD PANELS SHALL AT ALL TIMES BE PROTECTED FROM EXCESSIVE DRYING AND UNNECESSARY EXPOSURE OF THE ROOTS TO THE SUN. ALL SOD SHALL BE STACKED SO AS NOT TO BE DAMAGED BY SWEATING OR EXCESSIVE HEAT AND MOISTURE.

6. LAWN MAINTENANCE:

A. WITHIN THE CONTRACT LIMITS, THE CONTRACTOR SHALL PRODUCE A DENSE, WELL ESTABLISHED LAWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR AND RE-SODDING OF ALL ERODED, SUNKEN OR BARE SPOTS UNTIL CERTIFICATION OF ACCEPTABILITY BY THE LANDSCAPE ARCHITECT OR OWNER. REPAIRED SODDING SHALL BE ACCOMPLISHED AS IN THE ORIGINAL WORK (INCLUDING REGRADING IF NECESSARY).

B. WATER EVERY DAY FOR TEN (10) SUCCESSIVE DAYS, THEN WATER THREE (3) TIMES PER WEEK (AT EVEN INTERVALS) FOR TWO (2) ADDITIONAL WEEKS. ALL WATERING SHALL BE OF SUFFICIENT QUANTITY TO WET OR RESTORE WATER TO DEPTH OF FOUR (4) INCHES.

Q. CLEAN-UP

UPON COMPLETION OF ALL PLANTING WORK AND BEFORE FINAL ACCEPTANCE, THE CONTRACTOR SHALL REMOVE ALL MATERIAL, EQUIPMENT, AND DEBRIS RESULTING FROM HIS WORK. ALL PAVED AREAS SHALL BE BROOM CLEANED AND THE SITE LEFT IN A NEAT AND ACCEPTABLE CONDITION AS APPROVED BY THE OWNER'S AUTHORIZED REPRESENTATIVE.

R. PLANT MATERIAL MAINTENANCE

ALL PLANTS AND PLANTING INCLUDED UNDER THIS CONTRACT SHALL BE MAINTAINED BY WATERING, CULTIVATING, SPRAYING, AND ALL OTHER OPERATIONS (SUCH AS RE-STAKING OR REPAIRING GUY SUPPORTS) NECESSARY TO INSURE A HEALTHY CONDITION BY THE CONTRACTOR UNTIL CERTIFICATION OF ACCEPTABILITY BY THE LANDSCAPE ARCHITECT OR OWNER. MAINTENANCE AFTER THE CERTIFICATION OF ACCEPTABILITY SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS IN THIS SECTION. CONTRACTORS ARE REQUESTED TO PROVIDE A BID ESTIMATE TO COVER LANDSCAPE AND IRRIGATION MAINTENANCE FOR A PERIOD OF 90 CALENDAR DAYS COMMENCING AFTER ACCEPTANCE.

S. MAINTENANCE (ALTERNATE BID ITEM)

1. CONTRACTORS ARE REQUESTED TO PROVIDE A BID ESTIMATE FOR MAINTENANCE FOLLOWING THE INITIAL 90-DAY MAINTENANCE PERIOD ON A COST PER MONTH BASIS.

T. GUARANTEE

1. THE LIFE AND SATISFACTORY CONDITION OF ALL PLANT MATERIAL INSTALLED BY THE LANDSCAPE CONTRACTOR SHALL BE GUARANTEED BY THE CONTRACTOR FOR A MINIMUM OF ONE (1) CALENDAR YEAR COMMENCING AT THE TIME OF CERTIFICATION OF ACCEPTABILITY BY THE LANDSCAPE ARCHITECT OR OWNER.

2. THE LIFE AND SATISFACTORY CONDITION OF ALL OTHER PLANT MATERIAL (INCLUDING SOD) INSTALLED BY THE LANDSCAPE CONTRACTOR SHALL BE GUARANTEED BY THE CONTRACTOR FOR A MINIMUM OF 90 CALENDAR DAYS, COMMENCING AT THE TIME OF CERTIFICATION OF ACCEPTABILITY BY THE LANDSCAPE ARCHITECT OR OWNER.

3. REPLACEMENT: ANY PLANT NOT FOUND IN A HEALTHY GROWING CONDITION AT THE END OF THE GUARANTEE PERIOD SHALL BE REMOVED FROM THE SITE AND REPLACED AS SOON AS WEATHER CONDITIONS PERMIT. ALL REPLACEMENTS SHALL BE PLANTS OF THE SAME KIND AND SIZE AS SPECIFIED IN THE PLANT LIST. THEY SHALL BE FURNISHED PLANTED AND MULCHED AS SPECIFIED UNDER "PLANTING", AT NO ADDITIONAL COST TO THE OWNER.

4. IN THE EVENT THE OWNER DOES NOT CONTRACT WITH THE CONTRACTOR FOR LANDSCAPE (AND IRRIGATION) MAINTENANCE, THE CONTRACTOR IS ENCOURAGED TO VISIT THE PROJECT SITE PERIODICALLY DURING THE ONE YEAR WARRANTY PERIOD TO EVALUATE MAINTENANCE PROCEDURES BEING PERFORMED BY THE OWNER, AND SHALL NOTIFY THE OWNER IN WRITING OF MAINTENANCE PROCEDURES OR CONDITIONS WHICH THREATEN VIGOROUS AND HEALTH PLANT GROWTH. IT IS SUGGESTED SUCH SITE VISITS SHALL BE CONDUCTED A MINIMUM OF ONCE PER MONTH FOR A PERIOD OF TWELVE (12) MONTHS FROM THE DATE OF ACCEPTANCE.

U. FINAL INSPECTION AND ACCEPTANCE OF WORK

FINAL INSPECTION AT THE END OF THE GUARANTEE PERIOD SHALL BE ON PLANTING, CONSTRUCTION AND ALL OTHER INCIDENTAL WORK PERTAINING TO THIS CONTRACT. ANY REPLACEMENT AT THIS TIME SHALL BE SUBJECT TO THE SAME ONE (1) YEAR GUARANTEE (OR AS SPECIFIED BY THE LANDSCAPE ARCHITECT OR OWNER IN WRITING) BEGINNING WITH THE TIME OF REPLACEMENT AND ENDING WITH THE SAME INSPECTION AND ACCEPTANCE HEREIN DESCRIBED.

THE PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED ON THIS PROJECT. CONTRACTOR'S BID SHALL INCLUDE CONSIDERATION FOR ADDRESSING THIS ISSUE.

CALL 48 HOURS BEFORE YOU DIG

IT'S THE LAW! DIAL 811

811 Know what's below. Call before you dig.

SUNSHINE STATE ONE CALL OF FLORIDA, INC.

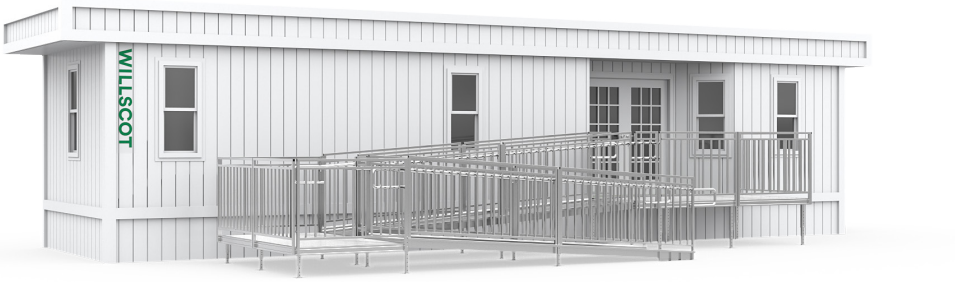
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PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

No.	REVISIONS	DATE	BY

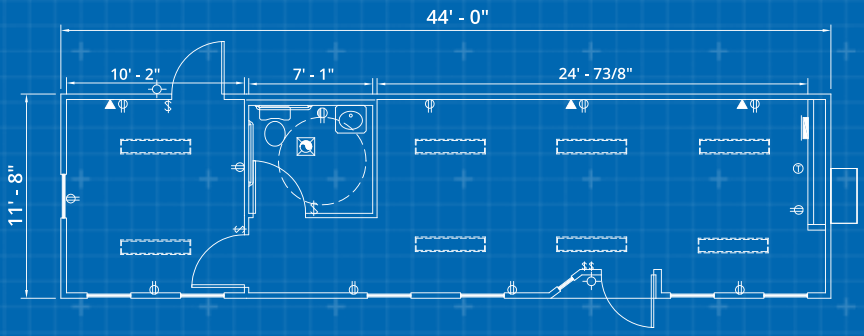
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48' x 12' SALES OFFICE



In addition to your office solution, we can provide additional products and services that complete your space- creating a more productive, comfortable, and safe work environment.



CUSTOMIZATION

- Steps & Ramps
- Furniture & Appliances
- Technology
- Site Services
- Loss Protection

Dimensions

- 48’ Long (including hitch)
- 44’ Box size
- 12’ Wide
- 8’ Ceiling height

Exterior Finish

- Aluminum or wood siding
- I-Beam Frame
- Standard drip rail gutters

Interior Finish

- Vinyl covered gypsum walls
- Commercial carpeting throughout
- Gypsum or T-grid suspended ceiling

Electric

- Fluorescent ceiling lights
- Single phase electric and breaker panel

Heating/Cooling

- Central HVAC and duct heating

Windows/Doors

- Large glass windows
- French door

Other

- Large display/reception area
- Private office(s)
- Handicapped accessible restroom
- Coffee bar

** Photos are representational; actual products vary. Additional floor plans and specifications may vary from those shown and are subject to in-stock availability*

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PROFESSIONAL OFFICE PACKAGE

Whether you need a big open-concept workspace or something more private, we can help you create the ideal work environment. Our package levels are designed to fit any need or budget.



PROFESSIONAL	
Standard Desk	1x
Small White Board	1x
Floor Chair Mat	1x
Small Office Trash Can	1x
Over Door Coat Hook	1x
Luxhide Executive Chair	1x
Stackable Side Chair	2x
3 Drawer Pedestal File Cabinet	1x
Office Supply Starter Kit	1x

RECOMMENDED ADD-ONS



A



B



C



D

A | 50" Flat Screen

B | 4 High Bookcase

C | Wardrobe / Cupboard Tower

D | Modesty Panels*

Our office packages have been thoughtfully designed to fit in your space – saving you time and money.

WILLSCOT™

THE ESSENTIALS

PROFESSIONAL CAFÉ PACKAGE

You want your modular space solution to be ready to work and that includes providing a place to grab a cup of coffee, keep your snacks cool, or warm up lunch. Keep your employees fueled up with refrigeration, cooking and coffee making essentials.



PROFESSIONAL	
Coffee Pot	1x
Microwave	1x
Convenience Starter Kit	1x
Large Trash Can	1x
Café Table	1x
Full Size Refrigerator	1x
Keurig	1x

RECOMMENDED ADD-ONS



A



B



C



D

A | Vented Lockers

B | Wardrobe / Cupboard Tower

C | Folding Chairs

D | Manager's Chairs

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WILLSCOT™

Williams Scotsman, Inc.
1775 N Delaware Street
Chandler, AZ 85225-1747

Your Williams Scotsman Representative
Eric Ramos
Phone: (480) 940-8463
Email: emramos@willscot.com
Toll Free: 800-782-1500

Contract Number:1442406
Revision: 1
Date: March 11, 2021

Lease Agreement

Lessee:
Cox Armored Mini Storage Management Inc
1650 E. Lamar Road
Phoenix, Arizona, 85016

Contact:
Debbie Conlon
1650 E. Lamar Road
Phoenix, AZ, 85016
Phone: (602) 997-9690 #203
E-mail: debbie@coxarmored.com

Ship To Address:
PEORIA, AZ, 85345

Delivery Date(on or about):
5/24/2021
5/24/2021

Rental Pricing Per Month		**Quantity**	**Price**	**Extended**
48x12 Sales Office (44x12 Box)	Unit Number:	1	$662.90	$662.90
Bas. Entrance-Steps T2		1	$72.00	$72.00
Property Damage Waiver (11/12)		1	$89.00	$89.00
ADA/IBC Ramp-switchback & step		1	$398.00	$398.00
General Liability - Allen Insurance		1	$22.00	$22.00
Prof. Office Package T2		1	$70.00	$70.00
Prof. Cafe Package T2		1	$75.00	$75.00
Minimum Lease Term: 12 Months			Total Monthly Building Charges:	$662.90
			Subtotal of Other Monthly Charges:	$726.00
			Total Rental Charges Per Month:	$1,388.90
Delivery & Installation				
Ramp - Delivery & Installation		1	$666.20	$666.20
State Inspection Fee		1	$1,780.82	$1,780.82
Hitch removal		1	$50.00	$50.00
Tiedowns into asphalt		8	$116.47	$931.76
Block and Level		1	$211.71	$211.71
Delivery Freight		1	$579.16	$579.16
Vinyl skirting		112	$13.08	$1,464.96
			Total Delivery & Installation Charges:	$5,684.61
Final Return Charges*				
Tiedown-Asphalt Removal-Code		8	$20.57	$164.56
Skirting Removal - Vinyl LF		112	$4.17	$467.04
Ramp - Knockdown & Return		1	$666.20	$666.20
Teardown		1	$157.14	$157.14
Return Freight		1	$574.58	$574.58
			Due On Final Invoice*:	$2,029.52
			Total Charges Including (12) Month Rental, Delivery, Installation & Return:**	$24,380.93

Comments

AZ state permitting process is estimated +8 weeks out. Customer is responsible for providing official site plans, power source and plumbing information.

Summary of Charges

Model: SO4812	QUANTITY: 1	Total Charges for (1) Building(s): $24,380.93

Williams Scotsman, Inc.
1775 N Delaware Street
Chandler, AZ 85225-1747

Your Williams Scotsman Representative
Eric Ramos
Phone: (480) 940-8463
Email: emramos@willscot.com
Toll Free: 800-782-1500

Contract Number:1442406
Revision: 1
Date: March 11, 2021

INSURANCE REQUIREMENTS ADDENDUM

QTY	PRODUCT	EQUIPMENT VALUE/BUILDING	DEDUCTIBLE PER UNIT
1	SO4812	$29701.00	$3000.00

Lessee: Cox Armored Mini Storage Management Inc

Pursuant to the Williams Scotsman Lease Agreement and its Terms and Conditions ("Agreement"), a Lessee is obligated to provide insurance to Williams Scotsman, Inc. ("Lessor") with the following insurance coverage**:**

1. **Commercial General Liability Insurance:** policy of combined bodily injury and property damage insurance insuring Lessee and Lessor against any liability arising out of the use, maintenance, or possession of the Equipment. Such insurance shall be in an amount not less than $1,000,000 per occurrence, naming the Lessor as Additional Insured and Loss Payee.
2. **Commercial Property Insurance**: covering all losses or damage, in an amount equal to 100% of the Equipment Value set forth in the Lease providing protection against perils included within the classification and special extended perils (all "risk" insurance), naming the Lessor as Additional Insured and Loss Payee.

By signing below, the Lessee agrees to the terms and conditions stated herein. All other general Terms and Conditions of the Agreement shall remain the same and in full force and effect. Each party is hereby authorized to accept and rely upon a facsimile or electronic signature of the other party on this Addendum. Any such signature shall be treated as an original signature for all purposes.

Commercial General Liability Insurance

Lessee elects to participate in the Commercial General Liability Insurance Program, whereby Lessee will receive insurance coverage through American Southern Insurance Company ("Insurer") and administered by Allen Insurance Group ("Agent"). The Lessee acknowledges and agrees that the policy issued by the Insurer is a third party liability policy that covers those amounts that Lessee is legally obligated to pay due to bodily insurance and property damage arising from the proper use and occupancy of Equipment leased from Williams Scotsman up to the policy limits. Coverage is subject to underwriting and specific terms and conditions set forth in the policy. An outline of cover is available upon request. By signing below, Lessee understands and agrees that the Lessor is not providing the insurance coverage and serves only as a billing agent for the Insurer and its Agent; and, accordingly, it assumes no liability therefore.

Signature of Lessee: _____ Print Name: _____ Date: _____

Damage Waiver Program

Lessee elects to participate in the Lessor's Damage Waiver Program. Lessee understands and agrees that under this program, the Lessor waives, for a fee, Lessee's obligation to carry Commercial Property Insurance and Lessee's liability to Lessor for repair or replacement of the modular units leased from Williams Scotsman resulting from loss or damage as specified in the Lease Agreement. Lessee remains liable to Williams Scotsman for the amount of the damage deductible per unit of equipment noted above. Please refer to the Agreement for specific details on coverage, exclusions and restrictions on coverage. The Property Damage Waiver is not and shall not constitute a contract for insurance.

Signature of Lessee: _____ Print Name: _____ Date: _____

Please return this signed document with the signed lease agreement


FUZION

Natural Resource Assessment

RV Storage Ft. Pierce

St. Lucie County, Florida

Prepared for:
Macritchie Storage Ventures, LLC
715 5th Avenue, SW, Suite 1700
Calgary AB T2P 2X6, Canada

147814000
March 2021
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445 24th Street, Suite 200
Vero Beach, FL 32960

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APPENDIX D – SHPO FLORIDA MASTER SITE FILE REPORT

Natural Resource Assessment
Technical Memorandum

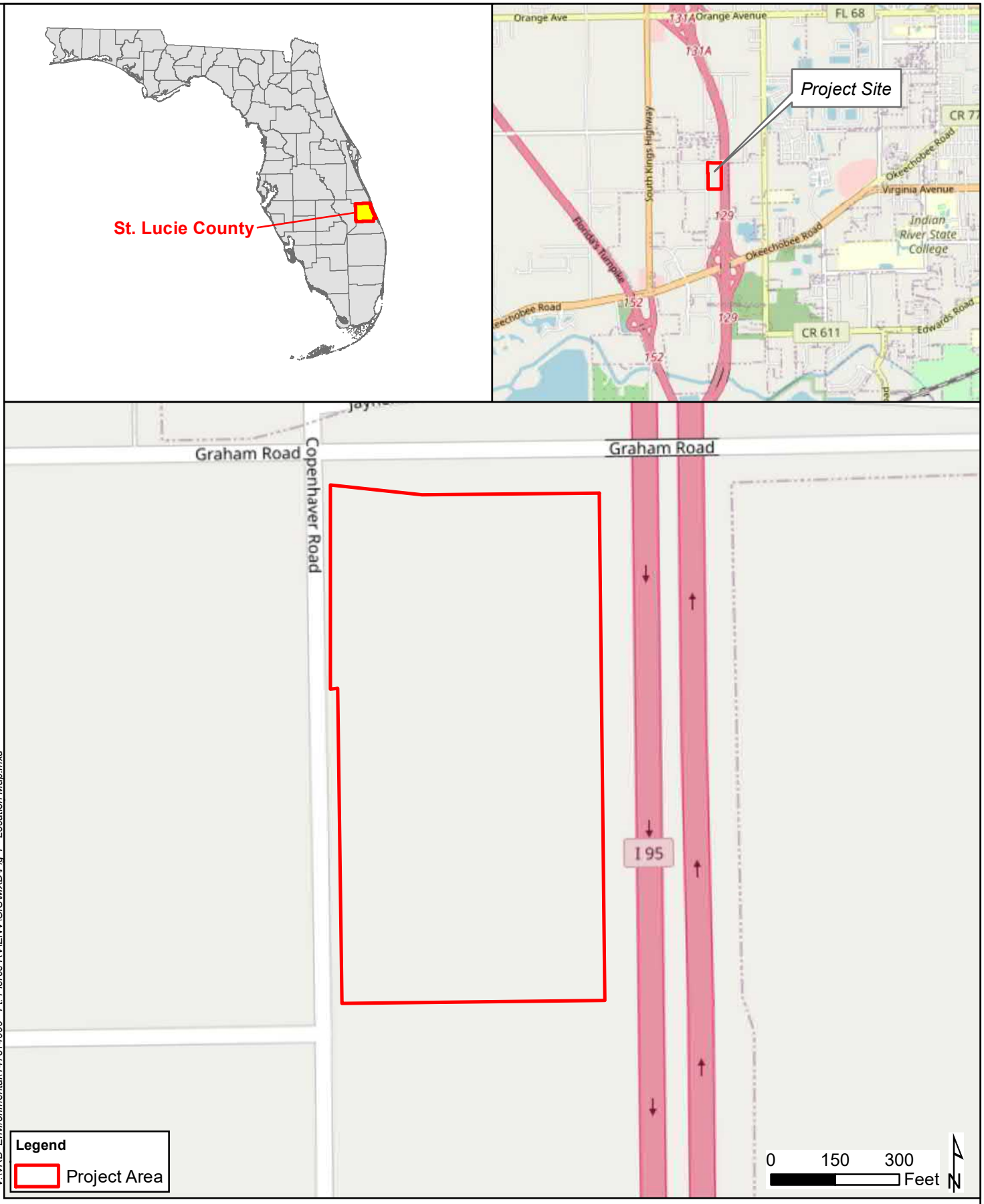
RV Storage Ft. Pierce
St. Lucie County, Florida

1.0 INTRODUCTION

The following technical memorandum summarizes a review of readily available documentation and the results of field reconnaissance conducted at the project site. The purpose of this Natural Resource Assessment was to characterize the existing conditions of the above-referenced project site relative to threatened and endangered species and their habitat, ecological communities, land cover and vegetation, wetlands, soils, hydrology, archaeological and historical resources, and floodplains.

The scope of this assessment included field reconnaissance to determine habitat present and to determine environmental regulatory constraints for this project site.

The project site is approximately 17 acres and is located in Fort Pierce, near the southeast corner of Graham Road and Copenhaver Road in Section 13, Township 35 South, Range 39 East, St. Lucie County, Florida. A location map is attached as ***Figure 1***. A portion of the U.S. Geological Service (USGS) 7.5-Minute Providence, Florida quadrangle map depicting the location of the project site is attached as ***Figure 2***. Based on review of the USGS quadrangle map, elevations on the project site are approximately 10 feet.



V:\VRB Environmental\147814000 - Ft. Pierce RV\ENV\GIS\MXD\Fig 1 - Location Map.mxd

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Project Location Map

Ft. Pierce RV Natural Resource Assessment
St. Lucie County, Florida

1 inch = 300 feet	PROJECT NUMBER: 147814000	FEBRUARY 2021	FIGURE 1



V:\VRB Environmental\147814000 - Ft. Pierce RV\ENV\GIS\MXD\Fig 2 - USGS Map.mxd

Source: ESRI, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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USGS 7.5 Minute Quadrangle Map

Ft. Pierce RV Natural Resource Assessment
St. Lucie County, Florida

1 inch = 1,000 feet	PROJECT NUMBER: 147814000	FEBRUARY 2021	FIGURE 2

2.0 METHODOLOGY

The methodology for this assessment included a review of the following resources:

- Florida Natural Areas Inventory (FNAI) Biodiversity Matrix (http://www.fnai.org/biointro.cfm)
- Various Geographic Information System (GIS) data layers from the U.S. Fish and Wildlife Service (USFWS), U.S. Geological Survey (USGS), Florida Fish and Wildlife Conservation Commission (FWC) [(https://public.myfwc.com/FWRI/EagleNests/nestlocator.aspx)]
- USFWS IPaC data [(https://ecos.fws.gov/ipac/)]
- U.S. Department of Agriculture (USDA)/Natural Resources Conservation Service (NRCS) Soil Survey of St. Lucie County, Florida (http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx)
- State Historic Preservation Officer (SHPO), Florida Master Site File (http://www.flheritage.com/)
- USFWS National Wetlands Inventory (NWI) Maps (Web-based maps available from http://www.fws.gov/wetlands/Data/mapper.html)
- Federal Emergency Management Agency (FEMA) Digital Flood Insurance Rate Maps (FIRM; Web-based maps available from http://msc.fema.gov/)
- United States Geological Survey (USGS) Quadrangle Maps, Land Boundary Information System (LABINS; http://www.labins.org)
- South Florida Water Management District Interactive GIS Map (SFWMD.gov)
- Florida Department of Environmental Protection (FDEP) MapDirect GIS (https://floridadep.gov)
- St. Lucie County Land Development Code

On March 10, 2021 a field review of the project limits was conducted by environmental scientists to document the existing habitat conditions and determine potential wildlife utilization. The field review also included a 15% gopher tortoise survey.

3.0 EXISTING CONDITIONS

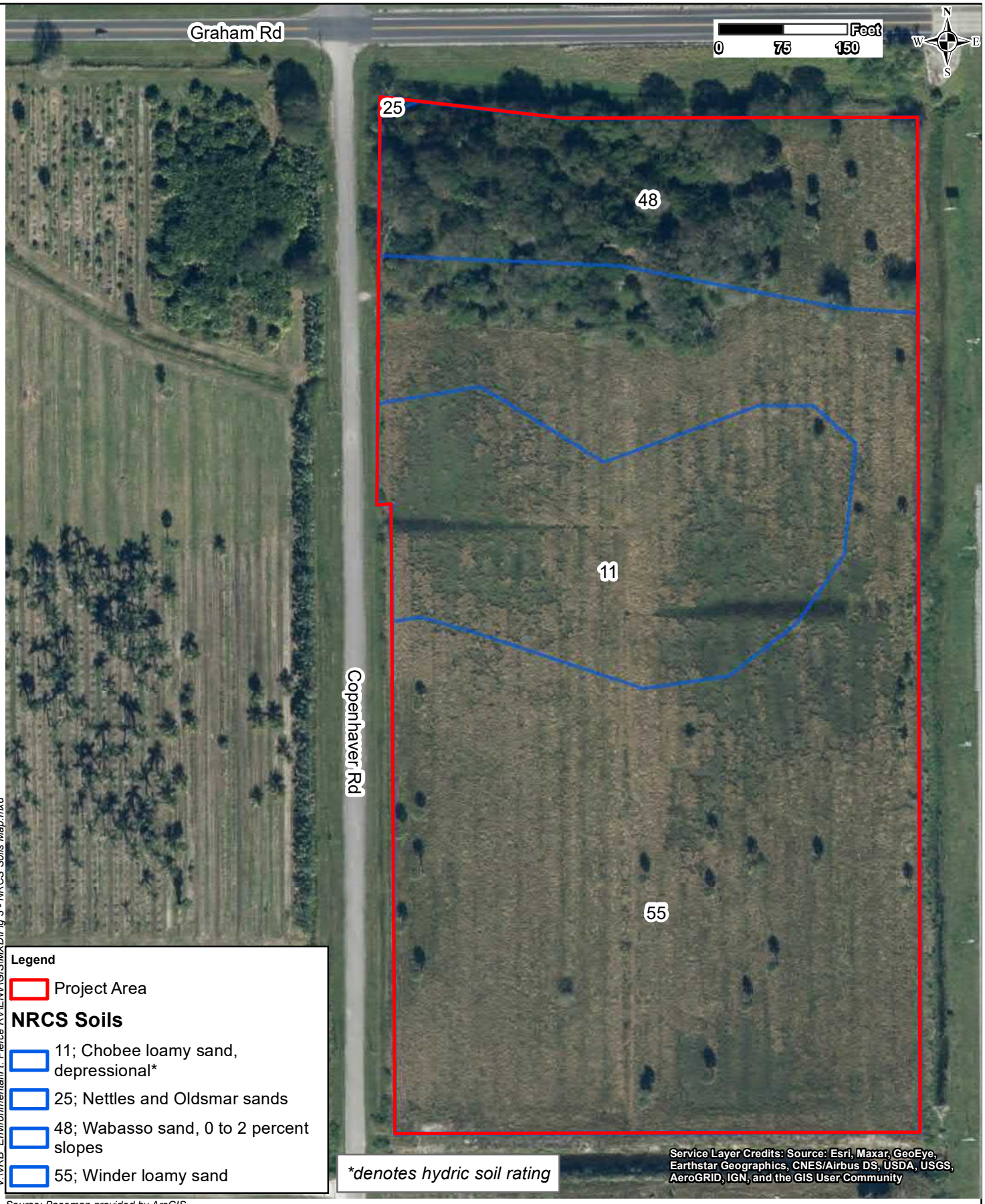
3.1 SOILS

The USDA/NRCS *Soil Survey of St. Lucie County, Florida,* maps the following soil on the property: (11) Chobee Loamy Sand, (25) Nettles and Oldsmar Sands, (48) Wabasso Sand, and (55) Winder Loamy Sand. A copy of the digital USDA/NRCS soils mapping data is illustrated in ***Figure 3*** and details regarding each soil are provided in ***Table 1***.

Table 1
NRCS Soils Identified Within Study Area

Soil ID Number[1]	Soil Name	Occurrence[2]	Characteristics	Drainage Class	Groundwater Depth	Hydric, Hydric Inclusions, or Non-hydric
11	Chobee Loamy Sand	Depressional areas	Moderately rapid to very slow permeability	Very poorly drained	Above surface to 10 inches	Hydric
25	Nettles and Oldsmar Sands	Broad flats and depressional areas	Very slow to slow	Poorly drained	10-40 inches	Non-hydric
48	Wabasso Sand	Flatwood areas	Rapid to moderately slow permeability	Poorly drained	10-40 inches	Non-hydric
55	Winder Loamy Sand	Depressional areas	Rapid to slow permeability	Poorly drained	10-40 inches	Non-hydric

[1] Reference: https://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/florida/FL111/0/lucie.pdf
[2] Reference: https://soilseries.sc.egov.usda.gov/OSD_Docs/A/ANKONA.html



V:\VRB Environmental\Ft. Pierce RV\ENV\GIS\MXD\Fig 3 - NRCS Soils Map.mxd

Source: Basemap provided by ArcGIS

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445 24th Street, Suite 200, Vero Beach, FL 32960
Phone (772) 794-4100
www.kimley-horn.com

NRCS Soils Map

Ft. Pierce RV Natural Resource Assessment
St. Lucie County, Florida

1 inch = 150 feet	PROJECT NUMBER: 147814000	FEBRUARY 2021	FIGURE 3

3.2 LAND COVER AND NATURAL COMMUNITIES

Vegetative communities on the project site were identified through pedestrian transects and aerial photograph interpretation. Vegetative communities were classified using the *Florida Land Use, Cover, and Forms Classification System* (FLUCFCS, Florida Department of Transportation, 1999). A FLUCFCS map of the project site is attached as ***Figure 4***. The description of the upland land cover provided below characterizes dominant vegetation observed along random pedestrian transects and does not represent an all-inclusive vegetative inventory.

FLUCFCS 211 – IMPROVED PASTURES

This cover type encompassed approximately 13.25 acres of the project site and was primarily made up of smut grass (*Sporobolus indicus*) with scattered cabbage palm (*Sabal palmetto*), laurel oak (*Quercus laurifolia*), live oak (*Quercus virginiana*), and Brazilian pepper (*Schinus terebinthifolius*).

FLUCFCS 420 – UPLAND HARDWOOD FOREST

This cover type encompassed approximately 2.74 acres of the project site. The canopy was primarily made up of mature live oak and laurel oak, and cabbage palm. The understory included Brazilian pepper, saw palmetto (*Serenoa repens*), lantana (*Lantana camara*), and clover (*Trifolium* spp.).

3.3 WETLANDS, TIDAL WATERS AND OTHER SURFACE WATERS

The presence of wetlands was evaluated based on the Florida unified wetland delineation methodologies in accordance with Chapter 62-340, Florida Administrative Code (FAC) and Chapter 62-331 FAC under the State 404 Program. These methods consider prevalence of wetland vegetation, hydric soil indicators, and wetland hydrology. Surface waters include both natural and manmade bodies of water, such as streams, lakes, ponds, canals, and ditches. Based on initial database review and subsequent assessment of the vegetative communities, hydrologic conditions, and soils observed during on-site reconnaissance, there appears to be approximately 0.96 acres of wetlands and surface waters on-site.

FLUCFCS 510 – STREAMS AND WATERWAYS

This cover type encompassed approximately 0.14 acres of the project site and encompasses a surface water through the central portion of the property, which does not appear to connect to any other waterways. This surface water feature appears to have been historically excavated.

FLUCFCS 643 – WET PRAIRIES

This cover type encompassed approximately 0.82 acres of the project site and was primarily made up of smartweed (*Persicaria setacea*), hydrocotyl (*Hydrocotyle vulgaris*), torpedo grass (*Panicum repens*), jointed spikerush (*Eleocharis interstincta*), pickerel weed (*Pontederia cordata*), beaksedge (*Rhynchospora spp*.), and occasional smut grass.

3.4 WILDLIFE UTILIZATION

Wildlife observed included the mourning dove (*Zenaida macroura*), black vulture (*Coragyps atratus*), great blue heron (*Ardea herodias*), and monarch butterfly (*Danaus plexippus*).

3.5 ENDANGERED, THREATENED, AND SPECIES OF SPECIAL CONCERN

A list of protected species potentially occurring within the project vicinity was generated using the databases described in Section 2.0 Methodology. Information regarding previously documented occurrences, on-site observations conducted as part of this assessment, and likelihood of occurrence is summarized below.

FNAI – The FNAI report includes data from FNAI Matrix Unit 65769 (***Appendix A***). Based on the FNAI report, there are no documented listed species within the vicinity of the site. FNAI lists wood storks (*Mycteria Americana*) as likely to occur within the matrix unit.

FWC – There are no known wading bird colonies on, or within one mile of, the project site. Additionally, no bald eagles (*Haliaeetus leucocephalus*) or evidence of bald eagles were observed on the project site and there are no documented occurrences of bald eagles or their nests within one mile of the project site. No further coordination is anticipated regarding these species.

USFWS Consultation Areas – The project site is in the below-listed USFWS Consultation Areas.

- Audubon's crested caracara
- Florida scrub-jay
- Everglade snail kite
- Grasshopper sparrow

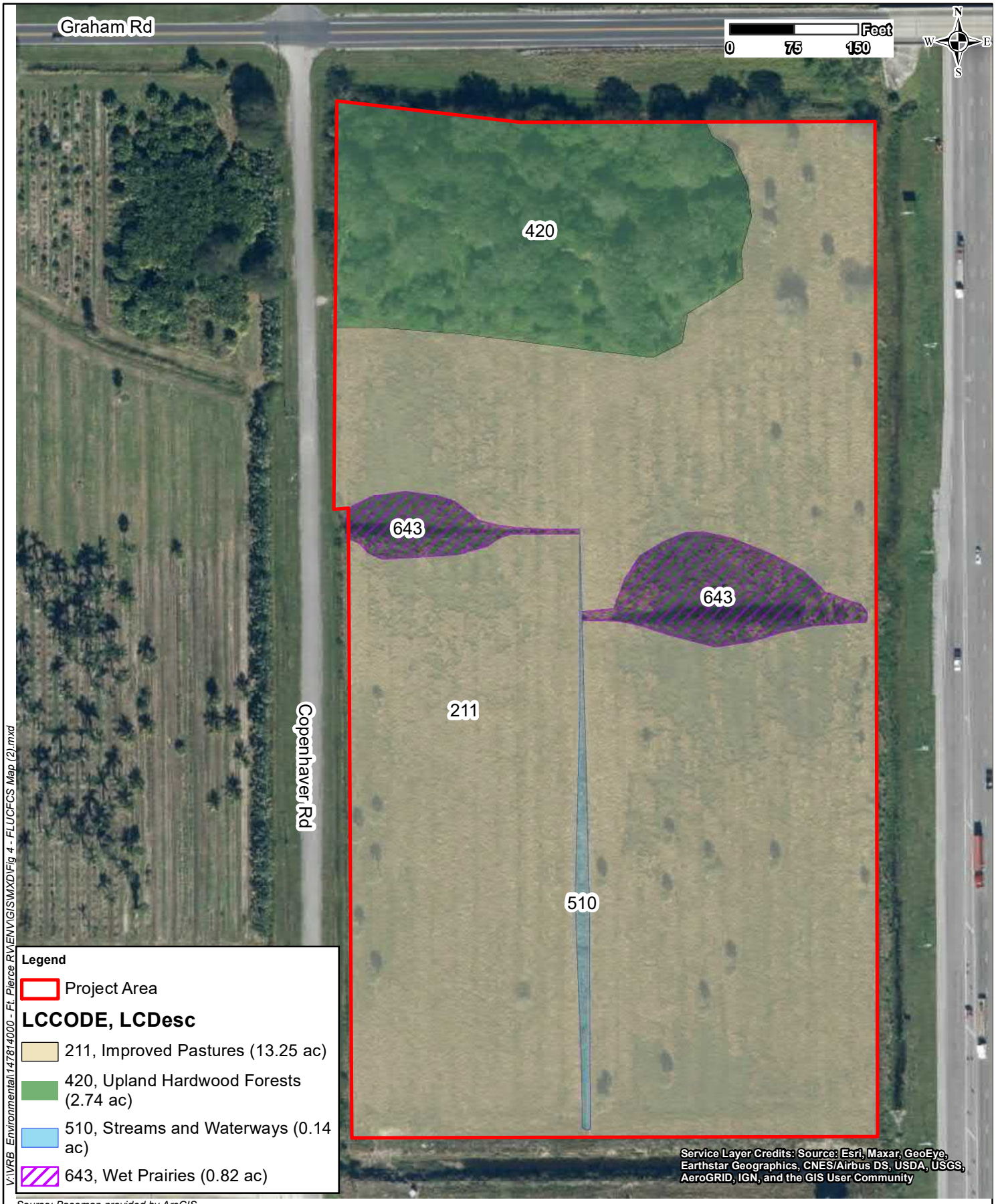
Habitat for the Florida scrub-jay, everglade snail kite, and grasshopper sparrow does not occur on-site, thus, no further coordination regarding these species is anticipated. Suitable habitat for the Audubon's crested caracara is present on-site, and the species is discussed further below.

USFWS Wood Stork Colonies – The project site is within the core foraging area (CFA) of two known wood stork colonies, North Fork St. Lucie River and Cypress Creek Bluefield Road. The CFA for an active wood stork colony is defined as a circular area within an 18.6-mile radius from the wood stork colony. Potential wood stork foraging habitat exists within the wetlands and surface water on-site. More on this is discussed below.

USFWS IPaC Data – The IPaC Trust Resources includes historical data in their reporting, which results in some species findings that do not reflect current on-site conditions. The following species are listed in the data and have suitable habitat within the project site: wood stork and Audubon's crested caracara. Species listed in the data that do not have suitable habitat on-site include: Everglade snail kite, Florida grasshopper sparrow, whooping crane, American alligator, hawksbill sea turtle, leatherback sea turtle, loggerhead sea turtle, Miami blue butterfly, Florida panther, and southeastern beach mouse. This dataset confirmed that the project site is not within any USFWS designated Critical Habitat (***Appendix A***).

Based on field reconnaissance and database reviews, a list of state and federally listed species potentially occurring on, or within the immediate vicinity of, the project site has been compiled. ***Table 2*** lists species that may occur and their likelihood of occurrence. Likelihood of occurrence is based on actual observation of the species, signs of the species (burrows, tracks, scat, etc.), observance of suitable habitat, or documented occurrences of the species within various databases.

Table 2						
Potential Listed Species Occurrence						
Common Name		Scientific Name	Federal Status	State Status	Comments	Likelihood of Occurrence
Birds	Wood Stork	*Mycteria americana*	T	FT	Observed On-site: No Observed in Proximity: No Habitat Present: Yes Habitat Type: Foraging	Moderate
	Audubon's Crested Caracara	*Polyborus plancus audubonii*	T	FT	Observed On-site: No Observed in Proximity: No Habitat Present: Yes Habitat Type: Nesting/foraging	Moderate
	Burrowing Owl	*Athene cunicularia*	NL	ST	Observed On-site: No Observed in Proximity: No Habitat Present: Marginal Habitat Type: Burrowing/foraging	Low
	Southeastern American Kestrel	*Falco sparverius paulus*	NL	ST	Observed On-site: No Observed in Proximity: No Habitat Present: Yes Habitat Type: Nesting/foraging	Moderate
	Florida Sandhill Crane	*Grus canadensis pratensis*	NL	ST	Observed On-site: No Observed in Proximity: No Habitat Present: Yes Habitat Type: Nesting/foraging	Moderate
Reptiles	Eastern Indigo Snake	*Drymarchon corais couperi*	T	FT	Observed On-site: No Observed in Proximity: No Habitat Present: Marginal Habitat Type: foraging	Low
	Gopher Tortoise	*Gopherus polyphemus*	C	ST	Observed On-site: No Observed in Proximity: No Habitat Present: Yes Habitat Type: Burrowing/foraging	Moderate
Federal Status: E = Endangered; T = Threatened; T(S/A) = Threatened due to Similarity of Appearance; C = Candidate Species; NL = Not Listed. State Status: FE- Federally Endangered; FT – Federally Threatened; FT(S/A) – Federally Threatened due to Similarity of Appearance; ST- State Threatened; SSC = Species of Special Concern. Note: Coordination is not required with FWC for Federally listed species.						



V:\VRB Environmental\147814000 - Ft. Pierce RV\ENV\GIS\MXD\Fig 4 - FLUCFCS Map (2).mxd

Source: Basemap provided by ArcGIS

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445 24th Street, Suite 200, Vero Beach, FL 32960
Phone (772) 794-4100
www.kimley-horn.com

FLUCFCS Map

Ft. Pierce RV Natural Resource Assessment
St. Lucie County, Florida

1 inch = 150 feet	PROJECT NUMBER: 147814000	MARCH 2021	FIGURE 4

Based on the database review and field reconnaissance, the following species could occur on-site or require additional evaluation, survey, or permitting.

Eastern Indigo Snake

The eastern indigo snake occurs in a range of habitats, including pine flatwoods, scrubby flatwoods, high pine, dry prairie, tropical hardwood hammocks, edges of freshwater marshes, agricultural fields, coastal dunes, and human-altered habitats. The snake requires large tracts of land to survive and often winters in burrows of gopher tortoises, armadillos, cotton rats, and land crabs (in coastal areas) and forages in hydric habitats. No individuals were observed during field reconnaissance; however, marginal habitat for the eastern indigo snake does exist on-site. Thus, per the Eastern Indigo Snake Effect Determination Key (August 13, 2013), if the USFWS *Standard Protection Measures for the Eastern Indigo Snake* (***Appendix B***) are implemented during construction, impacts to the Eastern indigo snake are not anticipated to occur, and no further action is anticipated.

Audubon's Crested Caracara

The Audubon's crested caracara inhabits wet prairies with cabbage palms and may also be found in wooded areas with saw palmetto, pastures and farmlands, cypress, and scrub oaks. During field reconnaissance, potential nesting and foraging habitat for the caracara was observed on-site. Thus, consultation with USFWS and a crested caracara survey is recommended to determine the presence or absence of a nest onsite. Surveys must adhere to the *USFWS Crested Caracara Draft Survey Protocol Additional Guidance (2016-2017 Breeding Season)* (***Appendix C***) and begin no later than January 10 and continue through April 30.

Wood Stork

The wood stork inhabits both fresh and saltwater habitats, such as fresh and saltwater marshes, tidal flats, wet prairies, cypress swamps, and drainage features. As part of the Effect Determination Key for the Wood Stork in South Florida, 18.6-mile core foraging area (CFA) buffers were established around known wood stork colonies. These buffers monitor proposed impacts to suitable foraging habitats (SFH) for the wood stork, which include shallow-water areas containing relatively open (<25% aquatic vegetation) water with a permanent or seasonal water depth between 2 and 15 inches. No wood storks were observed during field reconnaissance; however, the surface water and wetlands on-site

provides SFH for wood storks. Therefore, if impacts to the surface water or wetlands are anticipated, coordination regarding the wood stork will be required with the SFWMD and a wood stork foraging assessment may be required. Further discussion is provided in Section 4.3 below.

Burrowing Owl

The Florida burrowing owl is a small, ground-dwelling owl that is boldly spotted and bared with brown and white. They often dig their own burrow and line the entrance with decorative materials prior to laying eggs at the bottom of the burrow. They inhabit high, sparsely vegetated, sandy ground and can be found in ruderal areas such as pastures, airports, ball fields, and road rights-of-ways. Burrowing owl habitat on-site is marginal, and no individuals or burrows were observed. No further action is required regarding this species.

Southeast American Kestrel

The southeast American Kestrel's range is limited by nest and perch site availability, foraging habitat and food supply all near one another. Kestrels utilize a wide variety of habitats and nest in open pine habitats, woodland edges, prairies, and pastures throughout much of Florida. Nest sites are in tall dead trees or utility poles generally with an unobstructed view of surroundings. No kestrels were observed within the project site, however, habitat is present on-site. A kestrel survey for the Florida subspecies (*Falco sparverius paulus*) is recommended before development occurs, which will need to be conducted during non-migratory periods when the northern kestrel would not be present. That survey can be conducted between May – August.

Sandhill Crane

The Florida sandhill crane is listed as threatened by the FWC and inhabits prairies, freshwater marshes, and pasture lands. This crane is known to forage within agricultural areas like feed lots and crop fields, golf courses and other open lawns. Potential foraging habitat occurs on-site; however, nesting habitat was marginal on-site and no sandhill cranes were observed. If Florida sandhill cranes are not nesting on-site, no further action is required.

Gopher Tortoise

The gopher tortoise is a burrowing tortoise that inhabits upland habitats such as pine flatwoods, xeric oak hammocks, and open sandy pastures, but can also often occur in disturbed areas. A 15% gopher tortoise burrow survey was conducted, and no gopher tortoises or their burrows were observed. Potential habitat for the gopher tortoise does occur on-site, and thus a 100% gopher tortoise survey will need to be completed no more than 90 days prior to construction. Impacts to or within 25 feet of gopher tortoise burrows require a relocation permit from FWC. This permit authorizes gopher tortoises to be relocated by an authorized agent off the development property to a protected certified recipient area.

Listed Plant Species

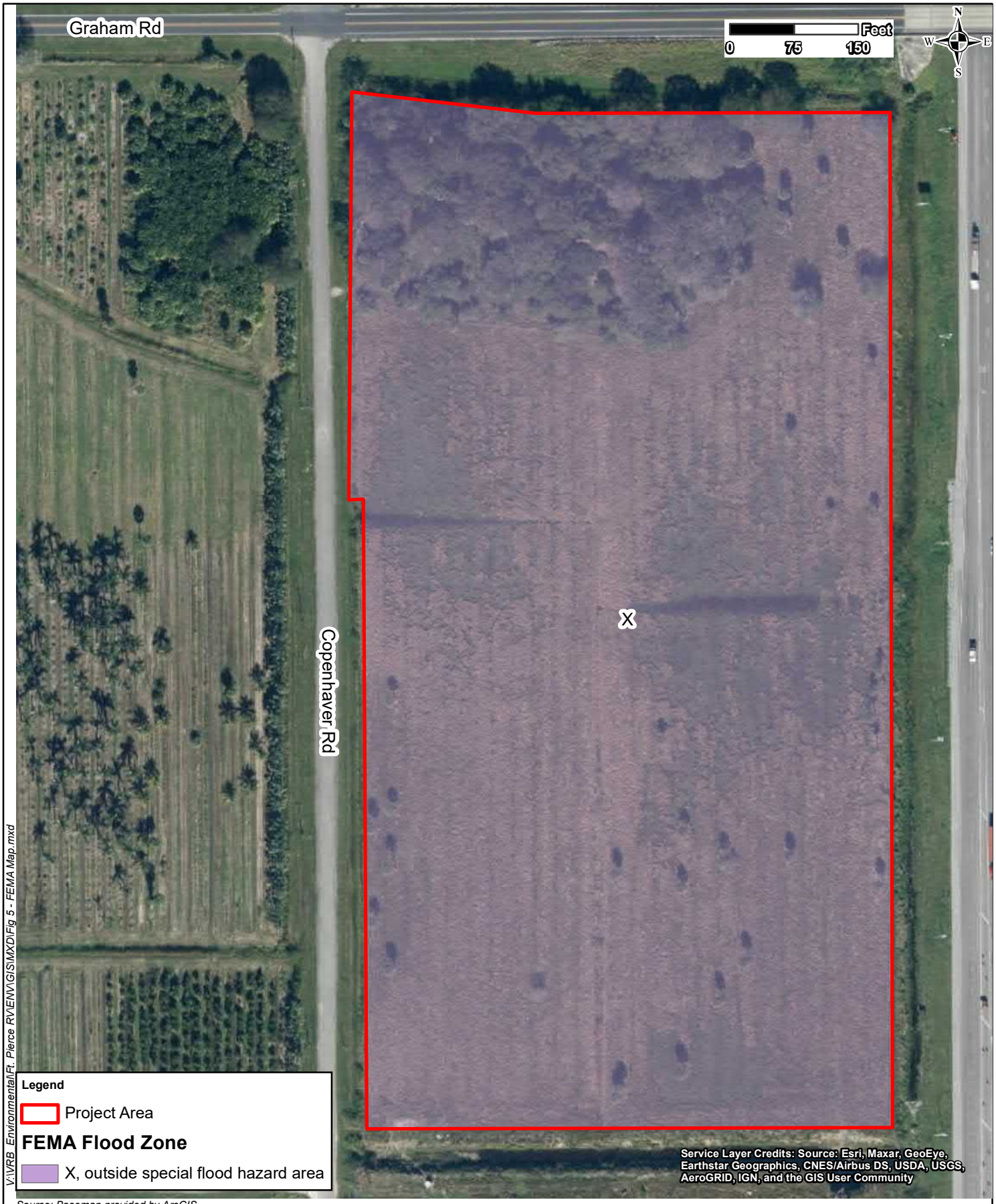
The Florida Department of Agriculture and Consumer Service's *Notes on Florida's Threatened and Endangered Plants*, and Richard Wunderlin's *Guide to Vascular Plants of Florida*, were consulted to assess habitat requirements for listed plant species. Although seven state-listed plants were noted by FNAI as possibly occurring in this area, none were observed during field reconnaissance. No further action is required regarding listed plant species.

3.6 HISTORIC AND ARCHAEOLOGICAL RESOURCES

Kimley-Horn requested an inquiry from the Department of State, State Historic Preservation Officer (SHPO) Division of Historical Resources Florida Master Site File (FMSF) regarding the presence of known historical or archaeological findings on the project site, or in the immediate vicinity (***Appendix D***). The FMSF lists two standing structures and one resource group within a 0.25-mile radius of the project area, however, none are within the project site, thus no historic or archaeological resources are anticipated to be impacted by development of the project site.

3.7 FLOODPLAIN INFORMATION

The FEMA FIRM panel [12061C0166E] indicates that the entirety of the project site is located within Flood Zone X – defined as areas determined to be outside of the special flood hazard area. A FEMA flood zone map is attached as ***Figure 5***. No required floodplain compensation is anticipated.



V:\IVRB Environmental\Ft. Pierce RV\ENV\GIS\MXD\Fig 5 - FEMA Map.mxd

Source: Basemap provided by ArcGIS

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445 24th Street, Suite 200, Vero Beach, FL 32960
Phone (772) 794-4100
www.kimley-horn.com

FEMA Flood Zone Map

Ft. Pierce RV Natural Resource Assessment
St. Lucie County, Florida

1 inch = 150 feet	PROJECT NUMBER: 147814000	FEBRUARY 2021	FIGURE 5

4.0 REGULATORY REQUIREMENTS

4.1 LOCAL ENVIRONMENTAL ORDINANCES

Based on a review of the municipal codes and ordinances for St. Lucie County, existing permitting requirements and regulations of state and federal regulatory agencies must be followed and applied. Additionally, per the Land Development Code of St. Lucie County, vegetation removal activities of native species in unincorporated areas requires a Vegetation Removal Permit from the Public Works Director. A tree survey will be required to determine status of trees on-site.

The St. Lucie County Land Development Code also gives St. Lucie County regulatory authority over all wetlands, however this authority is carried out via coordination with state and federal agencies. Thus, a state or federal permit required for construction, dredging, filling, or alteration within jurisdictional wetlands will supersede the county permitting mechanism. Mitigation must demonstrate no net losses due to impacts of these areas. Additionally, a minimum 10-foot buffer zone of native upland transitional vegetation is required around any isolated wetlands preserved on development sites.

4.2 STATE REGULATORY REQUIREMENTS

Environmental Resource Permit

An Environmental Resource Permit (ERP) will be required for the project if impacts to the on-site surface water or wetlands are proposed. The ERP evaluates the project impacts to wetlands, surface waters, and stormwater management design including floodplain impacts. An ERP may also be required from the SFWMD if any stormwater improvements are proposed as part of this project. Drainage design and stormwater management is not discussed further in this report as the scope was limited to natural resources.

It should be noted that the FDEP has assumed administration of the Clean Water Act (CWA) Section 404 program. FDEP will process Section 404 permits within State-assumed Waters of the US (WOTUS) rather than the US Army Corps of Engineers (USACE). Based on a preliminary review, there do not appear to be WOTUS present on-site, and therefore, authorization under Section 404 should not be required.

Listed Species Permitting

The following state-listed species may potentially occur on-site:

- Gopher tortoise
- Southeastern American kestrel

Gopher Tortoise

Based on the presence of potential gopher tortoise habitat on-site, a 100% gopher tortoise burrow survey is required to be conducted within 90 days prior to construction commencement, and a gopher tortoise relocation permit will be required from FWC if any relocation is required.

Southeastern American kestrel

Based on the on-site habitat suitable for the southeastern American kestrel, a kestrel survey is recommended for the Florida subspecies prior to site development. This will need to be conducted between May and August.

4.3 FEDERAL REGULATORY REQUIREMENTS

Section 404 Dredge and Fill Permitting

Please refer to State Regulatory Requirements above. Based on a preliminary review, WOTUS do not appear to be present on-site, and therefore, authorization under Section 404 is not required. This project is not within 300 ft. of a USACE retained water, so permitting under Section 404 can be authorized under the DEP State 404 Program.

Federal Listed Species

The following federally listed species were observed or potentially occur on-site:

- Wood Stork
- Eastern indigo snake
- Audubon's crested caracara

Wood Stork

The proposed project occurs within the CFA of two wood stork colonies. Foraging habitat is present in the surface water through the central portion of the property. In accordance with USFWS's 2010 South Florida Programmatic Concurrence and Key, a wood stork foraging analysis may be required if impacts to SFH are proposed. Mitigation requirements will be based on this analysis.

Eastern Indigo Snake

Per the Eastern Indigo Snake Effect Determination Key (August 13, 2013), if the USFWS Standard Protection Measures for the Eastern Indigo Snake (***Appendix B***) are implemented during construction, impacts to the Eastern indigo snake are not anticipated to occur, and no further action is anticipated to be required.

Audubon's Crested Caracara

Potential caracara habitat exists on-site. Therefore, consultation with USFWS and a crested caracara survey is recommendedto determine the presence or absence of a nest on-site. Surveys must adhere to the USFWS Crested Caracara Draft Survey Protocol Additional Guidance (2016-2017 Breeding Season) and begin no later than January 10 and continue through April 30.

5.0 SUMMARY AND RECOMMENDATIONS

- A tree survey and Vegetation Removal Permit from St. Lucie County may be required for tree removal prior to development.
- An ERP from SFWMD will be required to authorize stormwater improvements and any wetland or surface water impacts as part of site development. Based on the FMSF, there were no historic or archaeological resources within the study area.
- The site does not appear to contain jurisdictional WOTUS, so authorization under Section 404 will not be required through a State 404 Program permit.
- The following state and federally listed species were observed or potentially occur on-site: Audubon's crested caracara, wood stork, gopher tortoise, Southeastern American kestrel, and Eastern indigo snake. Additional surveys and permits may be required for the crested caracara, gopher tortoise, kestrel, and wood stork. Implementation of the Standard Protection Measures is recommended for the eastern indigo snake.

- The project site is not within a FEMA designated floodplain, and additional engineering analysis regarding the floodplain is not anticipated. This topic will be evaluated during civil engineering design and permitting with the SFWMD.

APPENDIX A
FNAI BIODIVERSITY MATRIX
IPAC SPECIES LIST

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
850-224-8207
850-681-9364 fax
www.fnai.org

Florida Natural Areas Inventory

Biodiversity Matrix Query Results

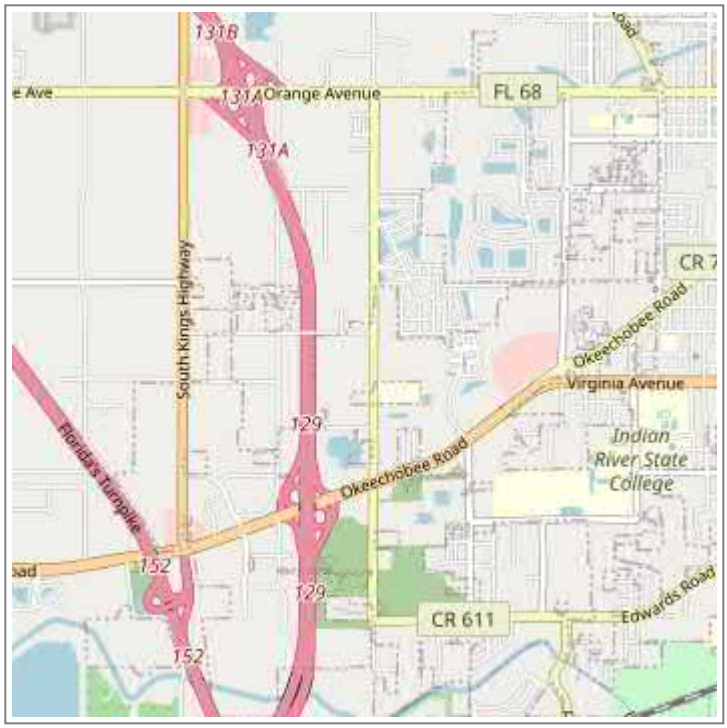
UNOFFICIAL REPORT

Created 3/15/2021

(Contact the FNAI Data Services Coordinator at 850.224.8207 or kbrinegar@fnai.fsu.edu for information on an official Standard Data Report)

NOTE: The Biodiversity Matrix includes only rare species and natural communities tracked by FNAI.

Report for 1 Matrix Unit: 65769



Descriptions

DOCUMENTED - There is a documented occurrence in the FNAI database of the species or community within this Matrix Unit.

DOCUMENTED-HISTORIC - There is a documented occurrence in the FNAI database of the species or community within this Matrix Unit; however the occurrence has not been observed/reported within the last twenty years.

LIKELY - The species or community is *known* to occur in this vicinity, and is considered likely within this Matrix Unit because:

1. documented occurrence overlaps this and adjacent Matrix Units, but the documentation isn't precise enough to indicate which of those Units the species or community is actually located in; *or*
2. there is a documented occurrence in the vicinity and there is suitable habitat for that species or community within this Matrix Unit.

POTENTIAL - This Matrix Unit lies within the known or predicted range of the species or community based on expert knowledge and environmental variables such as climate, soils, topography, and landcover.

Matrix Unit ID: 65769

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

2 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Mesic flatwoods	G4	S4	N	N
Mycteria americana Wood Stork	G4	S2	LT	FT

Matrix Unit ID: 65769

13 **Potential** Elements for Matrix Unit 65769

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing

Athene cunicularia floridana Florida Burrowing Owl	G4T3	S3	N	SSC
Coelorachis tuberculosa Piedmont Jointgrass	G3	S3	N	T
Conradina grandiflora Large-flowered Rosemary	G3	S3	N	T
Drymarchon couperi Eastern Indigo Snake	G3	S3	LT	FT
Eudocimus albus White Ibis	G5	S4	N	SSC
Glandularia maritima Coastal Vervain	G3	S3	N	E
Gopherus polyphemus Gopher Tortoise	G3	S3	C	ST
Lechea cernua Nodding Pinweed	G3	S3	N	T
Linum carteri var. smallii Small's Flax	G2T2	S2	N	E
Nemastylis floridana Celestial Lily	G2	S2	N	E
Pteroglossaspis ecristata Giant Orchid	G2G3	S2	N	T
Sceloporus woodi Florida Scrub Lizard	G2G3	S2S3	N	N
Sciurus niger shermani Sherman's Fox Squirrel	G5T3	S3	N	SSC

Disclaimer

The data maintained by the Florida Natural Areas Inventory represent the single most comprehensive source of information available on the locations of rare species and other significant ecological resources statewide. However, the data are not always based on comprehensive or site-specific field surveys. Therefore, this information should not be regarded as a final statement on the biological resources of the site being considered, nor should it be substituted for on-site surveys. FNAI shall not be held liable for the accuracy and completeness of these data, or opinions or conclusions drawn from these data. FNAI is not inviting reliance on these data. Inventory data are designed for the purposes of conservation planning and scientific research and are not intended for use as the primary criteria for regulatory decisions.

Unofficial Report

These results are considered unofficial. FNAI offers a Standard Data Request option for those needing certifiable data.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Field Office
1339 20th Street
Vero Beach, FL 32960-3559
Phone: (772) 562-3909 Fax: (772) 562-4288
http://fws.gov/verobeach

In Reply Refer To: March 18, 2021
Consultation Code: 04EF2000-2021-SLI-0510
Event Code: 04EF2000-2021-E-01258
Project Name: Ft. Pierce RV

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

South Florida Ecological Services Field Office
1339 20th Street
Vero Beach, FL 32960-3559
(772) 562-3909

Project Summary

Consultation Code: 04EF2000-2021-SLI-0510
Event Code: 04EF2000-2021-E-01258
Project Name: Ft. Pierce RV
Project Type: DEVELOPMENT
Project Description: NRA
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@27.42731565,-80.38981320093714,14z



Counties: St. Lucie County, Florida

Endangered Species Act Species

There is a total of 16 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Florida Panther *Puma (=Felis) concolor coryi* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1763	Endangered
Puma (=mountain Lion) *Puma (=Felis) concolor (all subsp. except coryi)* Population: FL No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6049	Similarity of Appearance (Threatened)
Southeastern Beach Mouse *Peromyscus polionotus niveiventris* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3951	Threatened

Birds

NAME	STATUS
Audubon's Crested Caracara *Polyborus plancus audubonii* Population: FL pop. No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8250	Threatened
Everglade Snail Kite *Rostrhamus sociabilis plumbeus* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/7713	Endangered
Florida Grasshopper Sparrow *Ammodramus savannarum floridanus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/32	Endangered
Whooping Crane *Grus americana* Population: U.S.A. (CO, ID, FL, NM, UT, and the western half of Wyoming) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/758	Experimental Population, Non-Essential
Wood Stork *Mycteria americana* Population: AL, FL, GA, MS, NC, SC No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8477	Threatened

Reptiles

NAME	STATUS
American Alligator *Alligator mississippiensis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/776	Similarity of Appearance (Threatened)
Hawksbill Sea Turtle *Eretmochelys imbricata* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3656	Endangered
Leatherback Sea Turtle *Dermochelys coriacea* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1493	Endangered
Loggerhead Sea Turtle *Caretta caretta* Population: Northwest Atlantic Ocean DPS There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1110	Threatened

Insects

NAME	STATUS
Miami Blue Butterfly *Cyclargus (=Hemiargus) thomasi bethunebakeri*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/3797

Flowering Plants

NAME	STATUS
Fragrant Prickly-apple *Cereus eriophorus var. fragrans*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/982

Lakela's Mint *Dicerandra immaculata*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/6390

Tiny Polygala *Polygala smallii*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/996

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

APPENDIX B

STANDARD PROTECTION MEASURES FOR THE EASTERN INDIGO SNAKE

United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960

August 1, 2017

Donnie Kinard
U.S. Army Corps of Engineers
Post Office Box 4970
Jacksonville, Florida 32232-0019

Subject: Consultation Key for the Eastern Indigo Snake – Revised

Dear Mr. Kinard:

This letter revises and replaces the January 25, 2010, and August 13, 2013, letters to the U.S. Army Corps of Engineers (Corps) regarding the use of the eastern indigo snake programmatic effect determination key (Key) for projects occurring within the South Florida Ecological Service's Office (SFESO) jurisdiction. This revision supersedes all prior versions of the Key in the SFESO area. The purpose of this revision is to clarify portions of the previous keys based on questions we have been asked, specifically related to habitat and refugia used by eastern indigo snakes (*Drymarchon corais couperi*), in the southern portion of their range and within the jurisdiction of the SFESO. This Key is provided pursuant to the Service's authorities under the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C.1531 *et seq.*). This Key revision has been assigned Service Consultation Code: 41420-2009-I-0467-R001.

The purpose of this Key is to assist the Corps (or other Federal action agency) in making appropriate effects determinations for the eastern indigo snake under section 7 of the Act, and streamline informal consultation with the SFESO for the eastern indigo snake when the proposed action can be walked through the Key. The Key is a tool available to the Corps (or other Federal action agency) for the purposes of expediting section 7 consultations. There is no requirement to use the Key. There will be cases when the use of the Key is not appropriate. These include, but are not limited to: where project specific information is outside of the scope of the Key or instances where there is new biological information about the species. In these cases, we recommend the Corps (or other Federal action agency) initiates traditional consultation pursuant to section 7 of the Act, and identify that consultation is being requested outside of the Key.

This Key uses project size and home ranges of eastern indigo snakes as the basis for making determinations of "may affect, but is not likely to adversely affect" (NLAA) and "may affect. and is likely to adversely affect" (may affect). Suitable habitat for the eastern indigo snake consists of a mosaic of habitats types, most of which occur throughout South Florida. Information on home ranges for individuals is not available in specific habitats in South Florida. Therefore, the SFESO uses the information from a 26-year study conducted by Layne and Steiner (1996) at Archbold Biological Station, Lake Placid, Florida, as the best available

information. Layne and Steiner (1996) determined the average home range size for a female eastern indigo snake was 46 acres and 184 acres for a male.

Projects that would remove/destroy less than 25 acres of eastern indigo snake habitat are expected to result in the loss of a portion of an eastern indigo snakes home range that would not impair the ability of the individual to feed, breed, and shelter. Therefore, the Service finds that take would not be reasonably certain to occur due to habitat loss. However, these projects have the potential to injure or kill an eastern indigo snake if the individual is crushed by equipment during site preparation or other project aspects. The Service's *Standard Protection Measures for the Eastern Indigo Snake* (Service 2013 or most current version) and the excavation of underground refugia (where a snake could be buried, trapped and/or injured), when implemented, are designed to avoid these forms of take. Consequently, projects less than 25 acres that include the Service's *Standard Protection Measures for the Eastern Indigo Snake* (Service 2013 or most current version) and a commitment to excavate underground refugia as part of the proposed action would be expected to avoid take and thus, may affect, but are not likely to adversely affect the species.

If a proposed project would impact less than 25 acres of vegetated eastern indigo snake habitat (not urban/ human-altered) completely surrounded by urban development, and an eastern indigo snake has been observed on site, the Key should not be used. The Service recommends formal consultation for this situation because of the expected increased value of the vegetated habitat within the individual's home range.

Projects that would remove 25 acres or more of eastern indigo snake habitat could remove more than half of a female eastern indigo snakes home range. This loss of habitat within a home range would be expected to significantly impair the ability of that individual to feed, breed, and shelter. Therefore, the Service finds take through habitat loss would be reasonably certain to occur and formal consultation is appropriate. Furthermore, these projects have the potential to injure or kill an eastern indigo snake if the individual is crushed by equipment during site preparation or other project aspects. The Service's *Standard Protection Measures* for the *Eastern Indigo Snake* (Service 2013 or most current version) and the excavation of underground refugia (where a snake could be buried, trapped and/or injured), when implemented, are designed to avoid these forms of take.

Eastern indigo snakes use a variety of habitat and are difficult to detect. Therefore, site specific information on the land use, observations of eastern indigo snakes within the vicinity, as well as other factors, as appropriate, will all be considered by the Service when making a final recommendation on the appropriate effects determination and whether it is appropriate to conclude consultation with the Corps (or other Federal action agency) formally or informally for projects that will impact 25 acres or more of habitat. Accordingly, when the use of the Key results in a determination of "may affect," the Corps (or other Federal action agency) is advised that consultation may be concluded informally or formally, depending on the project specific effects to eastern indigo snakes. Technical assistance from the Service can assist you in making a determination prior to submitting a request for consultation. In circumstances where the Corps (or other Federal action agency) desires to proceed with a consultation request prior to receiving

additional technical assistance from the Service, we recommend the agency documents the biological rationale for their determination and proceed with a request accordingly.

If the use of the Key results in a determination of "no effect," no further consultation is necessary with the SFESO. If the use of the Key results in a determination of "NLAA," the SFESO concurs with this determination based on the rationale provide above, and no further consultation is necessary for the effects of the proposed action on the eastern indigo snake. For "no effect" or "NLAA" determinations, the Service recommends that the Corps (or other Federal action agency) documents the pathway used to reach your no effect or NLAA determination in the project record and proceed with other species analysis as warranted.

Eastern Indigo Snake Programmatic Effect Determination Key
Revised July 2017
South Florida Ecological Service Office

Scope of the Key

This Key should be used only in the review of permit applications for effects determinations for the eastern indigo snake (*Drymarchon corais couperi*) within the South Florida Ecological Service's Office (SFESO) area (Broward, Charlotte, Collier, De Soto, Glades, Hardee, Hendry, Highlands, Lee, Indian River, Martin, Miami-Dade, Monroe, Okeechobee, Osceola, Palm Beach, Polk, Sarasota, and St. Lucie Counties). There is no designated critical habitat for the eastern indigo snake.

This Key is subject to revision as the Corps (or other Federal action agency) and Service deem necessary and in particular whenever there is new information on eastern indigo snake biology and effects of proposed projects.

The Key is a tool available to the Corps (or other Federal action agency) for the purposes of expediting section 7 consultations. There is no requirement to use the Key. There will be cases when the use of the Key is not appropriate. These include, but are not limited to: where project specific information is outside of the scope of the Key or instances where there is new biological information about the species. In these cases, we recommend the Corps (or other Federal action agency) initiates traditional consultation pursuant to section 7 of the Act, and identify that consultation is being requested outside of the Key.

Habitat

Habitat use varies seasonally between upland and wetland areas, especially in the more northern parts of the species' range. In southern parts of their range eastern indigo snakes are habitat generalists which use most available habitat types. Movements between habitat types in northern areas of their range may relate to the need for thermal refugia (protection from cold and/or heat).

In northern areas of their range eastern indigo snakes prefer an interspersion of tortoise-inhabited sandhills and wetlands (Landers and Speake 1980). In these northern regions eastern indigo

snakes most often use forested areas rich with gopher tortoise burrows, hollowed root channels, hollow logs, or the burrows of rodents, armadillos, or land crabs as thermal refugia during cooler seasons (Lawler 1977; Moler 1985a; Layne and Steiner 1996). The eastern indigo snake in the northern region is typically classified as a longleaf pine savanna specialist because here, in the northern four-fifths of its range, the eastern indigo snake is typically only found in vicinity of xeric longleaf pine–turkey oak sandhills inhabited by the gopher tortoise (Means 2006).

In the milder climates of central and southern Florida, comprising the remaining one fifth of its range, thermal refugia such as those provided by gopher tortoise burrows may not be as critical to survival of indigo snakes. Consequently, eastern indigo snakes in these regions use a more diverse assemblage of habitats such as pine flatwoods, scrubby flatwoods, floodplain edges, sand ridges, dry glades, tropical hammocks, edges of freshwater marshes, muckland fields, coastal dunes, and xeric sandhill communities; with highest population concentrations of eastern indigo snakes occurring in the sandhill and pineland regions of northern and central Florida (Service 1999). Eastern indigo snakes have also been found on agricultural lands with close proximity to wetlands (Zeigler 2006).

In south Florida, agricultural sites (*e.g.*, sugar cane fields and citrus groves) are occupied by eastern indigo snakes. The use of sugarcane fields by eastern indigo snakes was first documented by Layne and Steiner in 1996. In these areas there is typically an abundance of wetland and upland ecotones (due to the presence of many ditches and canals), which support a diverse prey base for foraging. In fact, some speculate agricultural areas may actually have a higher density of eastern indigo snakes than natural communities due to the increased availability of prey. Gopher tortoise burrows are absent at these locations but there is an abundance of both natural and artificial refugia. Enge and Endries (2009) reporting on the status of the eastern indigo snake included sugarcane fields and citrus groves in a Global Information Systems (GIS)-base map of potential eastern indigo snake habitat. Numerous sightings of eastern indigo snakes within sugarcane fields have been reported within south Florida (Florida Fish and Wildlife Conservation Commission Indigo Snake Database [Enge 2017]). A recent study associated with the Comprehensive Everglades Restoration Plan (CERP) (A-1 FEB Project formerly A-1 Reservoir; Service code: 41420-2006-F-0477) documented eastern indigo snakes within sugarcane fields. The snakes used artificial habitats such as piles of limerock, construction debris, and pump stations. Recent studies also associated with the CERP at the C-44 Project (Service code: 41420-2009-FA-0314), and C-43 Project (Service code: 41420-2007-F-0589) documented eastern indigo snakes within citrus groves. The snakes used artificial habitats such as boards, sheets of tin, construction debris, pipes, drain pipes in abandoned buildings and septic tanks.

In extreme south Florida (*i.e.*, the Everglades and Florida Keys), eastern indigo snakes also utilize tropical hardwood hammocks, pine rocklands, freshwater marshes, abandoned agricultural land, coastal prairie, mangrove swamps, and human-altered habitats. Though eastern indigo snakes have been found in all available habitats of south Florida it is thought they prefer hammocks and pine forests since most observations occur there and use of these areas is disproportionate compared to the relatively small total area of these habitats (Steiner *et al.* 1983).

Even though thermal stress may not be a limiting factor throughout the year in south Florida, eastern indigo snakes still seek and use underground refugia. On the sandy central ridge of central Florida, eastern indigo snakes use gopher tortoise burrows more (62 percent) than other underground refugia (Layne and Steiner 1996). Other underground refugia used include armadillo (*Dasypus novemcinctus*) burrows near citrus groves, cotton rat (*Sigmodon hispidus*) burrows, and land crab (*Cardisoma guanhumi*) burrows in coastal areas (Layne and Steiner 1996; Wilson and Porras 1983). Natural ground holes, hollows at the base of trees or shrubs, ground litter, trash piles, and crevices of rock-lined ditch walls are also used (Layne and Steiner 1996). These refugia are used most frequently where tortoise burrows are not available, principally in low-lying areas off the central and coastal ridges.

Minimization Measures

The Service developed protection measures for the eastern indigo snake "Standard Protection Measures for the Eastern Indigo Snake" (Service 2013) located at: https://www.fws.gov/verobeach/ReptilesPDFs/20130812_EIS%20Standard%20Protection%20Measures_final.pdf. These protections measures (or the most updated version) are considered a minimization measure for projects proposed within eastern indigo snake habitat.

Determinations

If the use of this Key results in a determination of "**no effect**," no further consultation is necessary with the SFESO.

If the use of this Key results in a determination of "**NLAA**," the SFESO concurs with this determination and no further consultation is necessary for the effects of the proposed action on the eastern indigo snake.

For no effect or NLAA determinations, the Corps (or other Federal action agency) should make a note in the project file indicating the pathway used to reach your no effect or NLAA determination.

If a proposed project would impact less than 25 acres of vegetated eastern indigo snake habitat (not urban/ human-altered) completely surrounded by urban development, and an eastern indigo snake has been observed on site, the subsequent Key should not be used. The Service recommends formal consultation for this situation because of the expected increased value of the vegetated habitat within the individual's home range.

If the use of this Key results in a determination of "**may affect**," consultation may be concluded informally or formally depending on project effects to eastern indigo snakes. Technical assistance from the Service can assist you in making a determination prior to submitting a request for consultation. In circumstances where the Corps desires to proceed with a consultation request prior to receiving additional technical assistance from the Service, we recommend the Corps document the biological rationale for their determination and proceed with a request accordingly.

A. Project is not located in open water or salt marsh.....go to B

Project is located solely in open water or salt marsh.....**no effect**

B. Permit will be conditioned for use of the Service's most current guidance for Standard Protection Measures For The Eastern Indigo Snake (currently 2013) during site preparation and project construction.....go to C

Permit will not be conditioned as above for the eastern indigo snake, or it is not known whether an applicant intends to use these measures and consultation with the Service is requested.....**may affect**

C. The project will impact less than 25 acres of eastern indigo snake habitat (*e.g.*, sandhill, scrub, pine flatwoods, pine rocklands, scrubby flatwoods, high pine, dry prairie, coastal prairie, mangrove swamps, tropical hardwood hammocks, hydric hammocks, edges of freshwater marshes, agricultural fields [including sugar cane fields and active, inactive, or abandoned citrus groves], and coastal dunes).....go to D

The project will impact 25 acres or more of eastern indigo snake habitat (*e.g.*, sandhill, scrub, pine flatwoods, pine rocklands, scrubby flatwoods, high pine, dry prairie, coastal prairie, mangrove swamps, tropical hardwood hammocks, hydric hammocks, edges of freshwater marshes, agricultural fields [including sugar cane fields and active, inactive, or abandoned citrus groves], and coastal dunes).....**may affect**

D. The project has no known holes, cavities, active or inactive gopher tortoise burrows, or other underground refugia where a snake could be buried, trapped and/or injured during project activities.....**NLAA**

The project has known holes, cavities, active or inactive gopher tortoise burrows, or other underground refugia where a snake could be buried, trapped and /or injured.....go to E

E. Any permit will be conditioned such that all gopher tortoise burrows, active or inactive, will be excavated prior to site manipulation in the vicinity of the burrow[1]. If an eastern indigo snake is encountered, the snake must be allowed to vacate the area prior to additional site manipulation in the vicinity. Any permit will also be conditioned such that holes, cavities, and snake refugia other than gopher tortoise burrows will be inspected each morning before planned site manipulation of a particular area, and, if occupied by an eastern indigo snake, no work will commence until the snake has vacated the vicinity of proposed work.....**NLAA**[2]

Permit will not be conditioned as outlined above.....**may affect**

End Key

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[1] If excavating potentially occupied burrows, active or inactive, individuals must first obtain state authorization via a Florida Fish and Wildlife Conservation Commission Authorized Gopher Tortoise Agent permit. The excavation method selected should also minimize the potential for injury of an indigo snake. Applicants should follow the excavation guidance provided within the most current Gopher Tortoise Permitting Guidelines found at http://myfwc.com/gophertortoise.

[2] Please note, if the proposed project will impact less than 25 acres of vegetated eastern indigo snake habitat (not urban/ human-altered) completely surrounded by urban development, and an eastern indigo snake has been observed on site, NLAA is not the appropriate conclusion. The Service recommends formal consultation for this situation because of the expected increased value of the vegetated habitat within the individual's home range

Working with the Fish and Wildlife Foundation of Florida, the Service has established a fund to support conservation and recovery for the eastern indigo snake. Any project that has the potential to affect the eastern indigo snake and/or its habitat is encouraged to make a voluntary contribution to this fund. If you would like additional information about how to make a contribution and how these monies are used to support eastern indigo snake recovery please contact Ashleigh Blackford, Connie Cassler, or José Rivera at 772-562-3559.

This revised Key is effective immediately upon receipt by the Corps. Should circumstances change or new information become available regarding the eastern indigo snake and/or implementation of the Key, the determinations herein may be reconsidered and this Key further revised or amended.

Thank you for your continued cooperation in the effort to conserve fish and wildlife resources. If you have any questions or comments regarding this Key, please contact the SFESO at 772-562-3909.

Sincerely,

Roxanna Hinzman
Field Supervisor
South Florida Ecological Services

Cc:
Corps, Jacksonville, Florida (Dale Beter, Muriel Blaisdell, Ingrid Gilbert, Angela Ryan, Irene Sadowski, Victoria White, Alisa Zarbo)
Service, Athens, Georgia (Michelle Elmore)
Service, Jacksonville, Florida (Annie Dziergowski)
Service, Panama City, Florida (Sean Blomquist)

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STANDARD PROTECTION MEASURES FOR THE EASTERN INDIGO SNAKE
U.S. Fish and Wildlife Service
August 12, 2013

The eastern indigo snake protection/education plan (Plan) below has been developed by the U.S. Fish and Wildlife Service (USFWS) in Florida for use by applicants and their construction personnel. At least **30 days prior** to any clearing/land alteration activities, the applicant shall notify the appropriate USFWS Field Office via e-mail that the Plan will be implemented as described below (North Florida Field Office: jaxregs@fws.gov; South Florida Field Office: verobeach@fws.gov; Panama City Field Office: panamacity@fws.gov). As long as the signatory of the e-mail certifies compliance with the below Plan (including use of the attached poster and brochure), no further written confirmation or "approval" from the USFWS is needed and the applicant may move forward with the project.

If the applicant decides to use an eastern indigo snake protection/education plan other than the approved Plan below, written confirmation or "approval" from the USFWS that the plan is adequate must be obtained. At least 30 days prior to any clearing/land alteration activities, the applicant shall submit their unique plan for review and approval. The USFWS will respond via e-mail, typically within 30 days of receiving the plan, either concurring that the plan is adequate or requesting additional information. A concurrence e-mail from the appropriate USFWS Field Office will fulfill approval requirements.

The Plan materials should consist of: 1) a combination of posters and pamphlets (see **Poster Information** section below); and 2) verbal educational instructions to construction personnel by supervisory or management personnel before any clearing/land alteration activities are initiated (see **Pre-Construction Activities** and **During Construction Activities** sections below).

POSTER INFORMATION

Posters with the following information shall be placed at strategic locations on the construction site and along any proposed access roads (a final poster for Plan compliance, to be printed on 11" x 17" or larger paper and laminated, is attached):

DESCRIPTION: The eastern indigo snake is one of the largest non-venomous snakes in North America, with individuals often reaching up to 8 feet in length. They derive their name from the glossy, blue-black color of their scales above and uniformly slate blue below. Frequently, they have orange to coral reddish coloration in the throat area, yet some specimens have been reported to only have cream coloration on the throat. These snakes are not typically aggressive and will attempt to crawl away when disturbed. Though indigo snakes rarely bite, they should NOT be handled.

SIMILAR SNAKES: The black racer is the only other solid black snake resembling the eastern indigo snake. However, black racers have a white or cream chin, thinner bodies, and WILL BITE if handled.

LIFE HISTORY: The eastern indigo snake occurs in a wide variety of terrestrial habitat types throughout Florida. Although they have a preference for uplands, they also utilize some wetlands

and agricultural areas. Eastern indigo snakes will often seek shelter inside gopher tortoise burrows and other below- and above-ground refugia, such as other animal burrows, stumps, roots, and debris piles. Females may lay from 4 - 12 white eggs as early as April through June, with young hatching in late July through October.

PROTECTION UNDER FEDERAL AND STATE LAW: The eastern indigo snake is classified as a Threatened species by both the USFWS and the Florida Fish and Wildlife Conservation Commission. "Taking" of eastern indigo snakes is prohibited by the Endangered Species Act without a permit. "Take" is defined by the USFWS as an attempt to kill, harm, harass, pursue, hunt, shoot, wound, trap, capture, collect, or engage in any such conduct. Penalties include a maximum fine of $25,000 for civil violations and up to $50,000 and/or imprisonment for criminal offenses, if convicted.

Only individuals currently authorized through an issued Incidental Take Statement in association with a USFWS Biological Opinion, or by a Section 10(a)(1)(A) permit issued by the USFWS, to handle an eastern indigo snake are allowed to do so.

IF YOU SEE A <u>LIVE</u> EASTERN INDIGO SNAKE ON THE SITE:

- Cease clearing activities and allow the live eastern indigo snake sufficient time to move away from the site without interference;
- Personnel must NOT attempt to touch or handle snake due to protected status.
- Take photographs of the snake, if possible, for identification and documentation purposes.
- Immediately notify supervisor or the applicant's designated agent, **and** the appropriate USFWS office, with the location information and condition of the snake.
- If the snake is located in a vicinity where continuation of the clearing or construction activities will cause harm to the snake, the activities must halt until such time that a representative of the USFWS returns the call (within one day) with further guidance as to when activities may resume.

IF YOU SEE A <u>DEAD</u> EASTERN INDIGO SNAKE ON THE SITE:

- Cease clearing activities and immediately notify supervisor or the applicant's designated agent, **and** the appropriate USFWS office, with the location information and condition of the snake.
- Take photographs of the snake, if possible, for identification and documentation purposes.
- Thoroughly soak the dead snake in water and then freeze the specimen. The appropriate wildlife agency will retrieve the dead snake.

Telephone numbers of USFWS Florida Field Offices to be contacted if a live or dead eastern indigo snake is encountered:

North Florida Field Office – (904) 731-3336
Panama City Field Office – (850) 769-0552
South Florida Field Office – (772) 562-3909

PRE-CONSTRUCTION ACTIVITIES

1. The applicant or designated agent will post educational posters in the construction office and throughout the construction site, including any access roads. The posters must be clearly visible to all construction staff. A sample poster is attached.

2. Prior to the onset of construction activities, the applicant/designated agent will conduct a meeting with all construction staff (annually for multi-year projects) to discuss identification of the snake, its protected status, what to do if a snake is observed within the project area, and applicable penalties that may be imposed if state and/or federal regulations are violated. An educational brochure including color photographs of the snake will be given to each staff member in attendance and additional copies will be provided to the construction superintendent to make available in the onsite construction office (a final brochure for Plan compliance, to be printed double-sided on 8.5" x 11" paper and then properly folded, is attached). Photos of eastern indigo snakes may be accessed on USFWS and/or FWC websites.

3. Construction staff will be informed that in the event that an eastern indigo snake (live or dead) is observed on the project site during construction activities, all such activities are to cease until the established procedures are implemented according to the Plan, which includes notification of the appropriate USFWS Field Office. The contact information for the USFWS is provided on the referenced posters and brochures.

DURING CONSTRUCTION ACTIVITIES

1. During initial site clearing activities, an onsite observer may be utilized to determine whether habitat conditions suggest a reasonable probability of an eastern indigo snake sighting (example: discovery of snake sheds, tracks, lots of refugia and cavities present in the area of clearing activities, and presence of gopher tortoises and burrows).

2. If an eastern indigo snake is discovered during gopher tortoise relocation activities (i.e. burrow excavation), the USFWS shall be contacted within one business day to obtain further guidance which may result in further project consultation.

3. Periodically during construction activities, the applicant's designated agent should visit the project area to observe the condition of the posters and Plan materials, and replace them as needed. Construction personnel should be reminded of the instructions (above) as to what is expected if any eastern indigo snakes are seen.

POST CONSTRUCTION ACTIVITIES

Whether or not eastern indigo snakes are observed during construction activities, a monitoring report should be submitted to the appropriate USFWS Field Office within 60 days of project completion. The report can be sent electronically to the appropriate USFWS e-mail address listed on page one of this Plan.

APPENDIX C

USFWS CRESTED CARACARA DRAFT SURVEY PROTOCOL ADDITIONAL GUIDANCE

USFWS Crested Caracara Draft Survey Protocol – Additional Guidance (2016-2017 Breeding Season)

The northern crested caracara (*Caracara cheriway*) is a resident, diurnal, and non-migratory raptor that occurs primarily in Florida, Texas, Arizona, Cuba, Mexico, Central America, and the northern portions of South America (Morrison and Dwyer 2012). Only the Florida population, which is isolated from the remainder of the species, is listed as threatened under the Endangered Species Act.

In order to avoid the potential for unauthorized take, future project sites within the caracara consultation area (Figure 1) containing habitats (same or similar) as described below should undergo a formal caracara survey to determine site utilization by caracaras. The intent of caracara surveys is three-fold: (1) to determine the location(s) of active caracara nest(s) that could be adversely affected by the proposed project; (2) to determine the presence and use of the project area by breeding and non-breeding caracaras, including the approximate boundaries of breeding territories, if possible; and (3) to determine the fate and productivity of any caracara nest found.

We recommend coordinating with the U.S. Fish and Wildlife Service (Service) prior to conducting surveys, including submittal of a proposed survey plan and list of observers which follows the guidance below. Following the guidance will ensure that the surveys are timed during the period of greatest detection to document caracaras within or adjacent to the proposed project. The Service has caracara observation and nest location data as well as designated caracara congregation areas that may be of use for planning surveys. For project consultations under the Endangered Species Act, surveys must follow this protocol and must be no older than the previous caracara nesting season (January – April) in order to be considered valid. In the event that construction or vegetation clearing activity will occur more than one year after permitting is completed, contact the Service to discuss the need for follow-up surveys.

Foraging and Nesting Habitat

The Florida caracara population commonly occurs on dry or wet prairies with scattered cabbage palms (*Sabal palmetto*). It may also be found in lightly wooded areas. Scattered saw palmetto (*Serenoa repens*), scrub oaks (*Quercus geminata, Q. minima, Q. pumila*), and cypress (*Taxodium* spp.) may also be present. Widespread changes in land use may have caused a change in habitat use in this species. Morrison and Humphrey (2001) found a strong association of caracara home ranges with improved pasture. The presence of seasonal wetlands, which may serve as foraging habitat, is an important factor in the attractiveness of these pastures to caracaras (Service 1999). Therefore, today we recognize caracara foraging habitat (and nesting territories) as those areas with short herbaceous vegetation. This includes native wet and dry prairies, but also improved, unimproved, and woodland pastures, sod farms, row crops, levees, and rangeland. Juvenile caracaras may also use citrus and tree farms.

The primary nesting substrate is cabbage palm, although there have been rare reports of nesting in slash pine (pers. obs.), cypress, oak, red cedar (Morrison 2007), Australian pine

(*Casuarina* sp.), saw palmetto, and black gum (*Nyssa sylvatica*), and even more atypical locations such as an electrical substation, radio tower, and billboard (Dwyer and DallaRosa 2015).

Survey Design and Planning

The protective area for a caracara nest is a radius of about 1,500 meters (m) (4,920 feet) from the nest. Therefore, the survey area should include the project area and a 1,500-m buffer zone around the perimeter of the project area (including access roads) to account for off-site nest trees in territories that might overlap onto the project area. A recent aerial photograph depicting the project boundary and buffer zone should be used to identify all areas of suitable habitat and to preliminarily map observation blocks. An observation block is defined as an area easily observable from one vantage point. Enough observation blocks must be identified to cover all suitable habitats within the project boundary and 1,500-m buffer. Surveyors should try to obtain legal access to non-project property within the survey area where suitable habitat exists; these efforts should be documented (e.g., copy of letter, email, etc.). If permission cannot be obtained, contact the Service for additional guidance prior to initiating surveys.

Prior to the first survey, a site visit should be conducted to confirm suitable habitat and the location of observation blocks. Based on this site assessment (*e.g.*, presence of visual obstructions), observation blocks may need to be revised. During the site visit, also identify observer survey stations (at least one per observation block). Survey stations should be located to allow full, unobstructed view of the observation block – strategic points are those where caracaras are more likely to be seen going to and from potential nesting or foraging sites. Based on the site assessment, update the aerial photo to show suitable habitat, and labeled observation blocks and their respective survey stations. The location of survey stations may be adjusted if needed based on initial survey results in order to obtain a different/better view of caracara activity. Any adjustments to the survey design should be documented via revised maps.

Observer Qualifications

Information from a recent study (Dwyer *et al.* 2012) suggested that the probability that a visit or series of visits (*i.e.*, a survey) would lead to the discovery of an existing caracara nest increases with an experienced observer. Due to their cryptic nest site locations and unorthodox method of foraging (walking on the ground), successful nest site surveys require a specific skillset acquired by conducting numerous surveys under the supervision of an experienced caracara surveyor. In addition, caracaras can be hard to find and identify at long distances, especially under low-light conditions. Caracaras may also be wary of humans and will change their behavior in the presence of people, which can make locating nests extremely difficult for less experienced observers. Due to these factors, surveys must be conducted by a qualified biologist having at least two years of experience conducting bird surveys and at least 40 hours of caracara survey experience (i.e., equivalent to one survey season) under the supervision of an experienced caracara surveyor. If an observer does not meet these minimum qualifications,

the observer should be accompanied by a qualified observer who will serve as the primary observer. Even in cases of qualified observers, and where staff resources allow it, having two observers at the same station can increase the probability of finding a nest.

Conducting Foraging and Nesting Surveys

The highest probability of success in finding caracara nests is during the period of January through March. This period covers the time when adult caracaras are foraging to feed nestlings and therefore, become more visible to observers. As such, surveys must start no later than January 10 and continue through April 30 to provide adequate data to conclude whether or not the site contains an active caracara nest and/or foraging habitat. If the survey starts after January 10, and no nest are found, the survey may not be considered valid by the Service. Surveys considered invalid should be repeated the following nesting season using the latest Service protocol to ensure that early nesting birds were not missed. Surveys should not be conducted in November or December without additional coordination with the Service to avoid disturbing nesting caracaras during nest initiation or incubation, when they are more prone to disturbance.

A complete survey of the project area consists of one survey session every two weeks of each observation block within the project area and the 1,500-m buffer from early January (i.e., Jan 1 - 10) through April 30 (unless a nest is found within the observation block prior to April 30; in that event, begin Productivity Surveys as described below). A survey session is defined as a single survey within an identified observation block initiated at least 15 minutes prior to sunrise and lasting 3 hours (Dwyer et al. 2012). The entire 3-hour survey session must be spent viewing the one observation block – observers cannot rotate between stations, cruise roads, or leave the observation block unless following a flying caracara. If the survey area is large or includes obstructed views, and multiple observation blocks are required, then multiple observers (preferred) or additional survey sessions will be needed to complete the survey of the entire project area. Afternoon or evening surveys are optional, but cannot be substituted for early morning surveys (in the event of not finding a nest). More frequent morning surveys (i.e., more than one during any two-week period) of an observation block are also optional, and can increase the probability of finding a nest, but cannot replace the subsequent “once per two-week surveys” through April 30 (in the event of not finding a nest).

Surveys should be conducted from inside a vehicle (best option is a truck or similar vehicle to maximize height and minimize view obstructions) or an appropriate wildlife blind using high-power binoculars. This minimizes caracara disturbance and behavior alteration, and increases the probability of finding nest locations. Depending on the distance being surveyed, or the proximity of the caracara/nest being observed, it may also be acceptable for the observer to be adjacent to the vehicle if that affords better viewing. A spotting scope is essential when documenting behavior of caracaras and confirming nest tree locations that are far away. If this cannot be accomplished (e.g., due to visibility or vehicle access restrictions), the Service should be contacted to provide site-specific guidance.

Weather conditions must be adequate to clearly view the whole area. Surveys should not be conducted when it is rainy or foggy (Dwyer *et al*. 2012). Wind speed should be less than 12 miles per hour (19 kilometers per hour; Beaufort Number 3). Weather conditions and other important information must be recorded on field data sheets as itemized below (see Reporting).

During the survey, from a stationary position, search for caracara activity, including birds perched in trees or on sentinel posts, flying along roads or levees, or carrying nesting material or food. Watch for other birds, such as American crows (*Corvus brachyrhynchos*), red-tailed hawks (*Buteo jamaicensis*), red-shouldered hawks (*Buteo lineatus*), bald eagles (*Haliaeetus leucocephalus*), and turkey vultures (*Cathertes aura*), that might elicit an aggressive response from caracaras. Nesting caracaras will often chase potential predators away from the nest, thus revealing their presence. Also, vultures can indicate the presence of carrion that may attract caracaras. If the observer is near or on a road, pay attention to road-killed animals that may serve as forage for caracaras. If in a pasture, look for cow or calf carcasses on which caracaras may forage.

If a caracara is sighted, document its activity (*i.e.*, foraging, roosting, preening, territorial behavior, etc.) and location on an aerial map. If a caracara is in flight, document on the aerial map the direction the bird came from, the direction it is flying in, and if it is carrying nesting material or food. Make all reasonable efforts to track the bird to a potential nest location. If a potential nest tree is detected, then the observer can reposition to improve observation of the bird's behavior. All observer locations during a survey should be marked on the aerial. All caracara observations must be recorded on the field data sheets, including time of observation, number of birds, plumage (adult/juvenile), activity/behavior (*e.g.*, perching, foraging, feeding, preening, courtship or territorial display, etc.), and nest stage (building, incubating, nestlings, fledglings), if applicable. Corresponding caracara locations and flight paths must be marked and labeled on the aerial map. Also mark any potential or confirmed nest tree locations on the aerial photo, with GPS coordinates of the observation site and an estimate of the direction and distance of the nest from the observation point (a rangefinder may help to measure distance). Do not try to approach the nest as this may cause the caracara to abandon their nesting attempt. It may be possible to use a compass bearing from two different locations to triangulate the location of a nest tree that may be too far away and not near recognizable landmarks.

Survey sessions of each observation block must be repeated at two week intervals. Once a nest tree location is confirmed, report the location to the Service and transition to Productivity Surveys. In addition to location of nest trees, the survey data described above can be used to understand the use of the survey area (*e.g.*, as foraging or roosting habitat) by both breeding and non-breeding caracaras. Non-breeding caracaras can include both juveniles and adults. Detailed survey data are also useful in approximating boundaries of breeding territories, which is typically important to identifying the number of territories that may be impacted by a proposed project and the anticipated effect that proposed activities may have on a breeding

caracara pair. This is especially true for projects which are large in size or include habitat conversion. For more details on caracaras, see Service (1999) and Morrison and Dwyer (2012).

Conducting Productivity Surveys

Once a nest tree is confirmed or highly suspected, begin productivity surveys. These surveys involve the same repeated, two-week visits, but the surveyor need only observe the nest for the amount of time necessary to determine nest status (*i.e.,* incubating, nestlings, fledglings, or failed) and may survey the nest tree at any time during the day (assuming the weather conditions are appropriate). This will likely require much less effort per day than nest surveys. Many times, a spotting scope can be more useful than binoculars in observing activity in the nest that will indicate the nest status. As nesting progresses, the nestlings will become more active and easier to observe. Record the bird activity and number of nestlings. Record the fledging date and number of fledglings. From the fledging date, and previous observations, estimate the egg-laying date. If the nest appears to fail, continue surveying the nest tree area until April 30 as re-nesting may occur. If nests are deemed active on April 30, continue surveying those nest trees until they are either successful or have failed.

Reporting

An example field data sheet is provided at the end of this document, but observers may use their own data sheet format as long as the required information is collected. Requirements for final reports are as follows:

1. Map of field-verified habitat types within the project area and 1,500-m buffer;
2. Copies of marked aerial photo(s) showing all suitable habitat, with labeled observation blocks and their respective survey stations (including any alternate station locations used);
3. For each survey station, copies of any photos taken that document the field of view, nest tree or caracaras;
4. Documentation of efforts to contact adjacent landowners, and copies of access agreements, if applicable;
5. A summary table with the following information for each observer: name, hours of experience conducting caracara surveys (as of January 1), approximate number of caracara nests previously found, and whether the observer served as a primary or secondary observer;
6. Copies of all individual field data sheets which include the following information for each survey:
    - observation block/survey station identification,
    - survey date,
    - observer name(s),
    - observer location (*e.g.*, in a vehicle, blind, on foot),
    - start and end times,

- start and end weather conditions (temperature, wind speed and direction, cloud cover, visibility, and precipitation),
- caracara location/activity details including (for each observation):
  - time of observation,
  - number of birds,
  - plumage,
  - activity/behavior, and
  - nesting stage, if applicable, and
- an aerial map showing all observed caracara locations and flight paths (labeled to correspond with activity details) and any potential/confirmed nest tree locations; and

7. Location data (*e.g.*, latitude/longitude) for all caracara observations and potential/confirmed nest trees in Excel, projected shapefile (the preferred projection is Florida Albers NAD83 in meters), or .kml/.kmz format and attributed to include the information in (6) above.

Additional survey or reporting requirements may exist if the caracara surveys are required by a Service Biological Opinion (BO)(in this event, refer to the Terms and Conditions of the BO). For questions or additional guidance regarding the above survey protocol, please contact the Service's caracara lead biologist, Steve Schubert, at 772-469-4249 or 772-562-3909.

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U.S. Fish and Wildlife Service (Service). 1999. South Florida multi-species recovery plan. Atlanta, Georgia. http://www.fws.gov/verobeach/MSRPPDFs/AudubonsCrestedCaracara.pdf

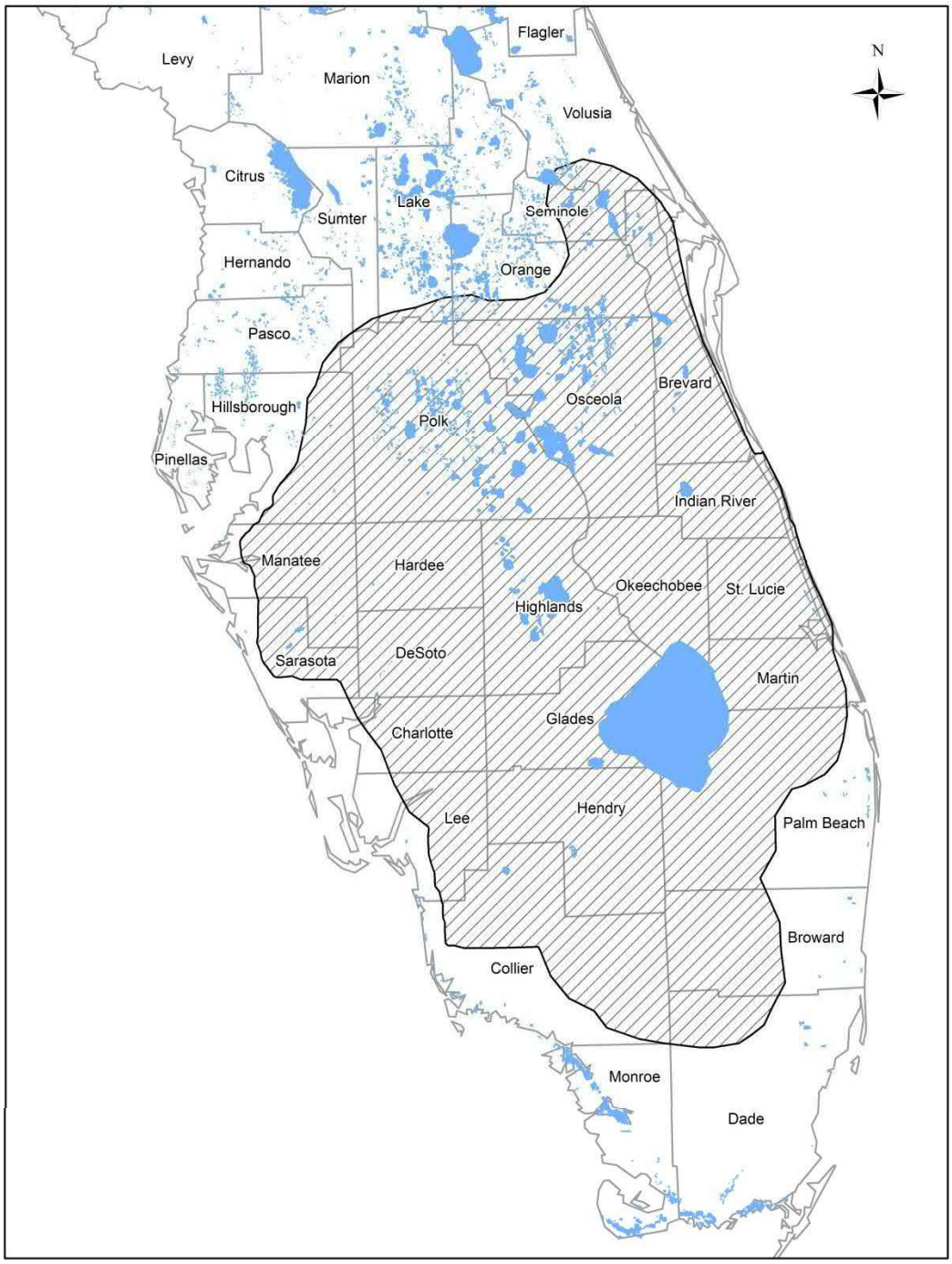


Figure 1. USFWS consultation area for crested caracara.

USFWS Crested Caracara Draft Survey Protocol –
Additional Guidance (2016-2017 Breeding Season)

Caracara Survey Form (updated 12/9/2016)

Project Name: _____

Location/Observation Block/Lat-Long:_____

Date	Start Time	Stop Time	Observer Name(s) and Experience Level(s)

Weather

Time	Air Temp	Wind Speed and Direction	% Cloud Cover	Cloud Type	Rain/Fog
Start:					
Finish:					

Observation Point Information

General Site and Habitat Conditions; Other Activities in the Area

Observations

(flight data, perching, preening, courtship, feeding, nest building, incubation, head throwback, diving, reaction to passing planes/traffic/pedestrians, other bird species, etc)

Observer Location	Age A/Im	Time	Description of behavior, flight path, etc

APPENDIX D

SHPO FLORIDA MASTER SITE FILE REPORT

This record search is for informational purposes only and does NOT constitute a project review. This search only identifies resources recorded at the Florida Master Site File and does NOT provide project approval from the Division of Historical Resources. Contact the Compliance and Review Section of the Division of Historical Resources at CompliancePermits@dos.MyFlorida.com for project review information.

March 15, 2021

Chloe Gossett
Kimley-Horn | 1920 Wekiva Way, Suite 200, West Palm Beach, FL 33411
Direct: 561 840 0217 | Mobile: 816 916 2233

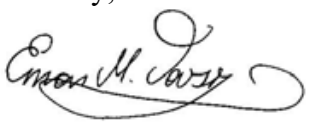
In response to your request on March 15, 2021, the Florida Master Site File lists two standing structures and one resource group recorded within 0.25 miles of the project area in St. Lucie County.

When interpreting the results of our search, please consider the following information:

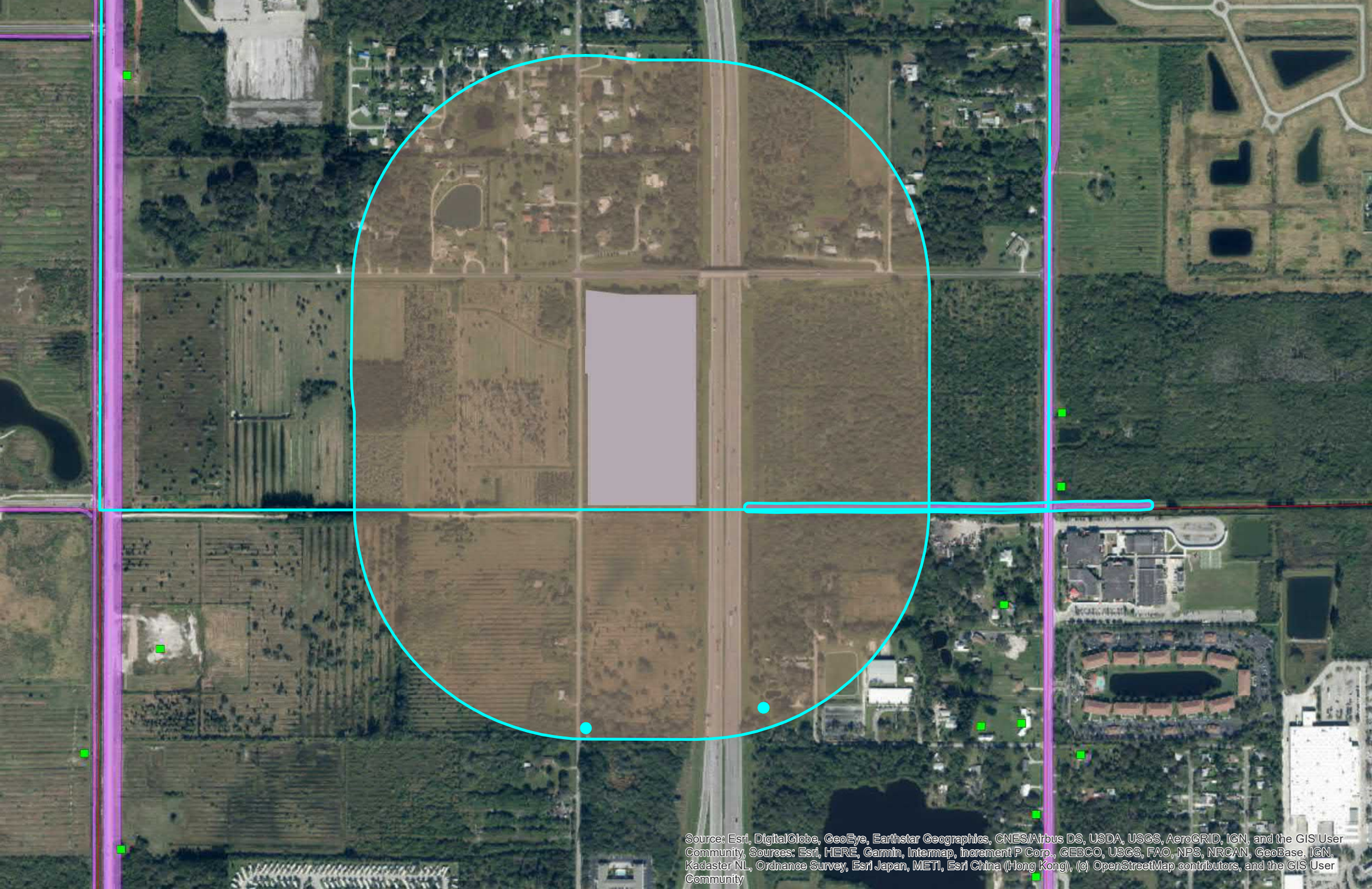
- **This search area may contain *unrecorded* archaeological sites, historical structures or other resources even if previously surveyed for cultural resources.**
- **Because vandalism and looting are common at Florida sites, we ask that you limit the distribution of location information on archaeological sites.**
- **While many of our records document historically significant resources, the documentation of a resource at the Florida Master Site File does not necessarily mean the resource is historically significant.**
- **Federal, state and local laws require formal environmental review for most projects. This search DOES NOT constitute such a review. If your project falls under these laws, you should contact the Compliance and Review Section of the Division of Historical Resources at** CompliancePermits@dos.MyFlorida.com

Please do not hesitate to contact us if you have any questions regarding the results of this search.

Sincerely,



Eman M. Vovsi, Ph.D.
Florida Master Site File
Eman.Vovsi@DOS.MyFlorida.com


Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

AR=0
SS=2
CM=0
RG=1
BR=0
Total=3

Cultural Resource Roster

SiteID	Type	Site Name	Address	Additional Info	SHPO Eval	NR Status
SL01399	SS	2398 Peter Road	2398 Peter RD, Fort Pierce G.V.	1941 Masonry Vernacular		
SL01774	SS	6105 Tedder Road	6105 Tedder RD W, Ft Pierce	c1958 Masonry Vernacular	Not Eligible	
SL03140	RG	Canal No. 37	Fort Pierce	Linear Resource - 1 Contrib Resources	Not Eligible	

TRAFFIC IMPACT ANALYSIS

FORT PIERCE RV STORAGE

CITY OF FORT PIERCE, FL

Prepared for:

MACRITCHIE, INC.

Prepared by:

KIMLEY-HORN AND ASSOCIATES, INC.

MARCH 2021

Kimley»Horn

TRAFFIC IMPACT ANALYSIS

FORT PIERCE RV STORAGE

CITY OF FORT PIERCE, FL

Prepared for:

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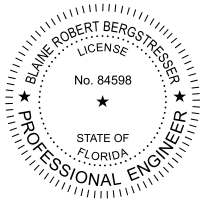
Prepared by:

KIMLEY-HORN AND ASSOCIATES, INC.

147814000
March 2021
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445 24th Street, Suite 200
Vero Beach, FL 32960

Kimley»Horn

THIS IS TO CERTIFY THAT THE ENCLOSED CALCULATIONS WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION.



Blaine Bergstresser, P.E.

Florida Registration #84598

Kimley-Horn Registry #696

Date: _____

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APPENDICES

APPENDIX A: Conceptual Site Plan

APPENDIX B: GTCRPM Model Output

APPENDIX C: Turning Movement Counts

APPENDIX D: Intersection Volume Development Worksheets

APPENDIX E: Synchro (v10) Output

- AM Peak Hour
  - 2021 Existing Traffic Conditions
  - 2024 Future Year Background Traffic Conditions
  - 2024 Future Buildout Conditions
- PM Peak Hour
  - 2021 Existing Traffic Conditions
  - 2024 Future Year Background Traffic Conditions
  - 2024 Future Buildout Conditions

APPENDIX F: NCHRP Report 457 Output

INTRODUCTION

Kimley-Horn performed a traffic impact analysis (TIA) to support a Recreational Vehicle (RV) storage facility generally located on the south side of Graham Road, east of Copenhaver Road, and west of I-95 Turnpike in St. Lucie County, Florida. The project property is currently vacant and is in the process of being annexed into the City of Fort Pierce. The development is proposed to consist of ±503 RV storage spaces and anticipated to have a buildout year of 2024.

The TIA evaluates traffic operational conditions and identifies transportation improvement needs within the study area under existing, future background, and future buildout traffic conditions. The analysis has been performed in accordance with St. Lucie County *Land Development Code Section 11.02.09* as adjacent roadway segments to the development are maintained by St. Lucie County.

Access to the site will be provided via one full-access driveway onto Copenhaver Road. There will also be an emergency exit north of the main entrance on Copenhaver Road, but it will not be evaluated because it will not be used in typical conditions. The access points are shown on the conceptual site plan provided in **Appendix A**.

This traffic analysis is based on traffic data collected in the field and supplemented by information obtained from St. Lucie County and Florida Department of Transportation (FDOT) sources. The study observed the established procedures found in Institute of Transportation Engineers (ITE) sources, FDOT sources, and the *Highway Capacity Manual 6* (HCM 6).

PROJECT TRIP GENERATION

Trip generation for the development was determined using data found in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, Tenth Edition. ITE land use code (LUC) 151 (Mini-Warehouse) was applied in the trip generation calculations using storage units as the independent variable.

The trip generation for the development is anticipated to be 91 daily net existing trips, 6 AM (3 in, 3 out) peak hour net new external trips, and 10 PM (5 in, 5 out) peak hour trips upon buildout. **Table 1** illustrates the trip generation calculations for the site.

Table 1 - Trip Generation of Proposed Development

Land Use	Intensity	Daily Trips	AM Peak Hour of Adjacent Street			PM Peak Hour of Adjacent Street		
			Total	In	Out	Total	In	Out
Proposed Development Mini-Warehouse (RV Storage)	503 Units	91	6	3	3	10	5	5
TOTAL NET EXISTING TRIPS		91	6	3	3	10	5	5

Trip Generation was calculated using the data from ITE's Trip Generation Manual, 10th Edition

Mini-Warehouse [ITE 151]

Daily	T = 18.86(x) - 4.09 (X/100 is number of storage units)
AM Peak Hour of Adjacent Street	T = 1.98(X) - 3.79; (X/100 is number of storage units); (51% in/49% out)
PM Peak Hour of Adjacent Street	T = 1.52(X) + 2.02; (X/100 is number of storage units); (50% in/50% out)

TRIP DISTRIBUTION, ASSIGNMENT, AND STUDY AREA

Projected traffic demand of project trips on study roadways was derived with use of the adopted regional travel demand model. Land use data for the project was entered into a new traffic analysis zone (TAZ) within the Greater Treasure Coast Regional Planning Model (GTCRPM) set and situated within the existing roadway network to appropriately represent project access. The model was used to assign trips for all trip purposes between allocated origin and destination pairs using project buildout year model data. Trip distribution for the project was extracted from the completed model assignment and reviewed for logic. The resulting model plots showing percent of daily project distribution are provided in **Appendix B**.

The study area was determined based on the St. Lucie County *Land Development Code Section 11.02.09*, which states that the study area should include all major roadways within 2.0-mile radius of the site. To determine roadway segments to be included in the TIA, a 1.0% significance test was performed for all major roadway segments within a 1.0-mile radius of the project site. Roadway segments that have less than 1.0% impact from the proposed development would be considered deminimis and will not be included within the roadway study area. The percent significance for project trips was determined by comparing the maximum directional peak hour project trips to the directional peak hour service capacity as provided the latest St. Lucie Transportation Planning Organization (TPO) Traffic Counts and Level of Service Report. Therefore, the following roadway segments were included within the project's study area:

- Copenhaver Road, from Graham Road to White Road

In addition to the above noted roadway segments, the following intersections are included within the study area:

- Graham Road & Copenhaver Road (unsignalized)
- Copenhaver Road & Project Driveway (unsignalized)

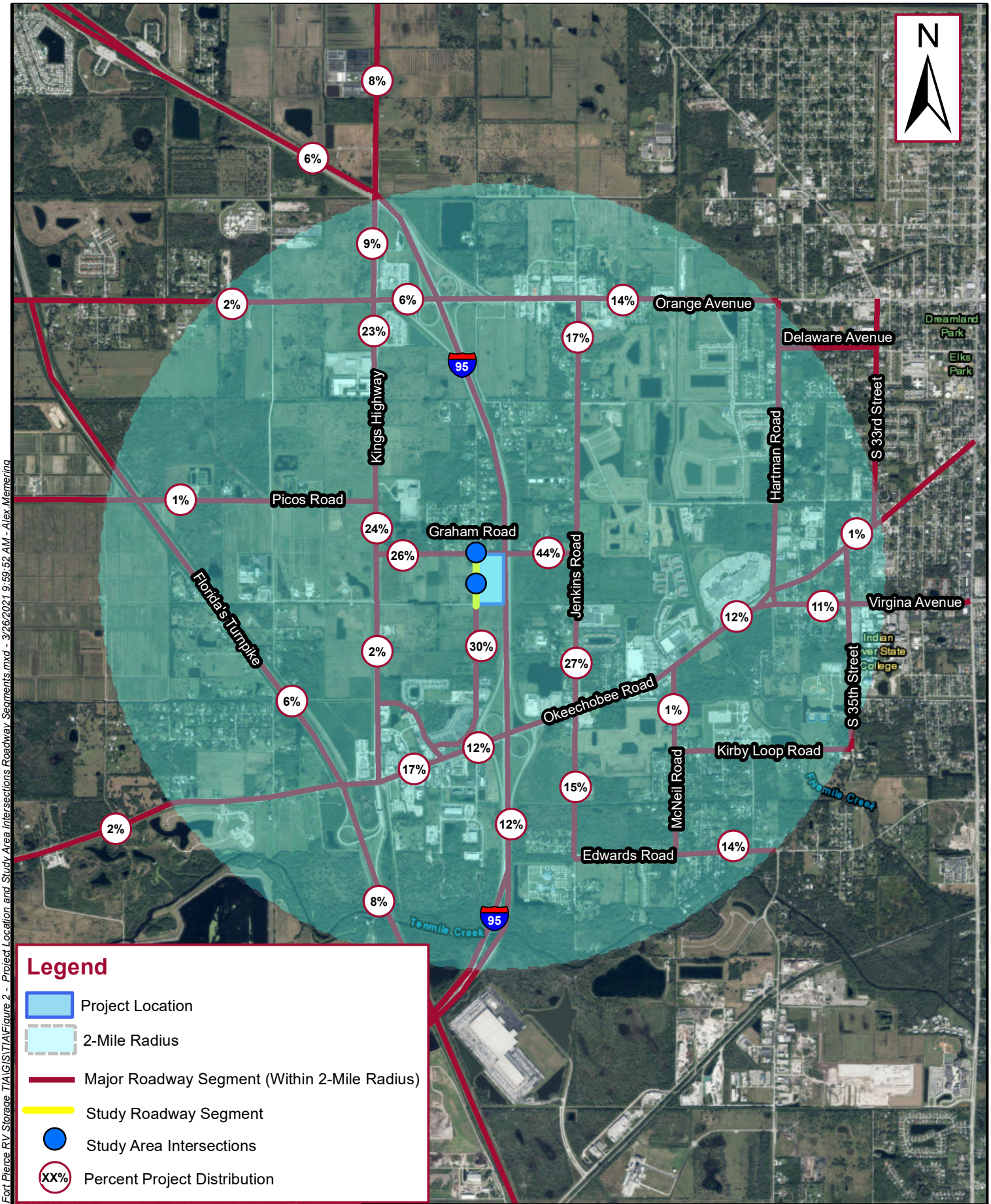
Table 2 illustrates the project impacts on roadways within a 2-mile radius per St. Lucie County Land Development Code 11.02.09 and the proposed study area. The site location, trip distribution, and study area for the traffic analysis is illustrated in **Figure 1**.

Table 2 – Study Area Determination

Roadway		Roadway Attributes [1]				Peak Hour Directional Maximum Service Volume [2]	PM Peak Hour Project Traffic				Significant Impact? [5]	Include In Study Area? [6]
From	To	Functional Classification	Area Type	Adopted LOS	Number of Lanes		% Assign [3]	NB / EB	SB / WB	Max % Impact [4]		
Copenhaver Road												
Graham Road	White Road	Local	U	D	2U	675	70.0%	4	4	0.59%	No	Yes [7]
Crossroads Parkway												
Okeechobee Road	Kings Highway	Local	U	D	2U	790	2.0%	0	0	0.00%	No	No
Delaware Avenue												
Hartman Road	S 33rd Street	Minor Collector	U	D	2U	600	2.0%	0	0	0.00%	No	No
Florida's Turnpike (SR 91)												
Orange Avenue	Okeechobee Road	Expressway	U	B	4D	2,260	6.0%	0	0	0.00%	No	No
Okeechobee Road	Glades Cut-Off Road	Expressway	U	D	4D	3,660	8.0%	0	0	0.00%	No	No
Graham Road												
Kings Highway	Jenkins Road	Local	U	D	2U	630	44.0%	2	2	0.32%	No	No
Hartman Road												
Okeechobee Road	Peterson Road	Minor Arterial	U	D	2U	750	0.0%	0	0	0.00%	No	No
Peterson Road	Deleware Avenue	Minor Arterial	U	D	2U	540	0.0%	0	0	0.00%	No	No
Deleware Avenue	Orange Avenue	Minor Arterial	U	D	2U	790	2.0%	0	0	0.00%	No	No
I-95												
Midway Road	Okeechobee Road	Interstate	U	C	6D	4,580	12.0%	1	1	0.02%	No	No
Okeechobee Road	Orange Avenue	Interstate	U	D	8D	7,320	0.0%	0	0	0.00%	No	No
Jenkins Road												
Edwards Road	Okeechobee Road	Minor Arterial	U	D	2U	880	15.0%	1	1	0.11%	No	No
Okeechobee Road	Graham Road	Minor Arterial	U	D	2U	920	27.0%	1	1	0.11%	No	No
Graham Road	Peterson Road	Minor Arterial	U	D	2U	630	17.0%	1	1	0.16%	No	No
Peterson Road	Orange Avenue	Minor Arterial	U	D	2U	920	14.0%	1	1	0.11%	No	No
Kings Highway												
Okeechobee Road	Crossroads Parkway	Principal Arterial	U	D	2U	830	0.0%	0	0	0.00%	No	No
Crossroads Parkway	Graham Road	Principal Arterial	U	D	2U	660	2.0%	0	0	0.00%	No	No
Graham Road	Picos Road	Principal Arterial	U	D	2U	660	24.0%	1	1	0.15%	No	No
Picos Road	Orange Avenue	Principal Arterial	U	D	2U	830	23.0%	1	1	0.12%	No	No
Orange Avenue	Angle Road	Principal Arterial	U	D	2U	870	9.0%	0	0	0.00%	No	No
Kirby Loop Road												
Edwards Road	35th Street	Minor Collector	U	D	2U	630	0.0%	0	0	0.00%	No	No
McNeil Road												
Okeechobee Road	Kirby Loop Road	Major Collector	U	D	2U	790	1.0%	0	0	0.00%	No	No
Kirby Loop Road	Edwards Road	Major Collector	U	D	2U	540	0.0%	0	0	0.00%	No	No
Okeechobee Road												
McCarty Road	Florida's Turnpike	Principal Arterial	R	B	4D	1,810	2.0%	0	0	0.00%	No	No
Florida's Turnpike	Kings Highway	Principal Arterial	U	C	4D	2,010	2.0%	0	0	0.00%	No	No
Kings Highway	Crossroads Parkway	Principal Arterial	U	D	6D	4,170	17.0%	1	1	0.02%	No	No
Crossroads Parkway	I-95	Principal Arterial	U	D	6D	4,170	6.0%	0	0	0.00%	No	No
I-95	Jenkins Road	Principal Arterial	U	D	6D	4,240	0.0%	0	0	0.00%	No	No
Jenkins Road	McNeil Road	Principal Arterial	U	D	6D	4,040	12.0%	1	1	0.02%	No	No
McNeil Road	Virginia Avenue	Principal Arterial	U	D	6D	3,170	12.0%	1	1	0.03%	No	No
Virginia Avenue	Hartman Road	Minor Arterial	U	D	4D	2,100	1.0%	0	0	0.00%	No	No
Hartman Road	35th St	Minor Arterial	U	D	4D	1,630	0.0%	0	0	0.00%	No	No
35th St	33rd St	Minor Arterial	U	D	4D	1,630	1.0%	0	0	0.00%	No	No
Orange Avenue												
Campbell Road	Kings Highway	Minor Arterial	R	D	2U	1,070	2.0%	0	0	0.00%	No	No
Kings Highway	I-95	Principal Arterial	U	D	4D	2,000	6.0%	0	0	0.00%	No	No
I-95	Jenkins Road	Principal Arterial	U	D	4D	2,000	0.0%	0	0	0.00%	No	No
Jenkins Road	Hartman Road	Principal Arterial	U	D	4D	2,000	14.0%	1	1	0.05%	No	No
Peters Road												
White Road	Crossroads Parkway	Local	U	D	2U	675	30.0%	2	2	0.30%	No	No
Picos Road												
Campbell Road	Kings Highway	Major Collector	U	D	2U	540	1.0%	0	0	0.00%	No	No
S 33rd Street												
Okeechobee Road	Deleware Avenue	Major Collector	U	D	2U	750	1.0%	0	0	0.00%	No	No
Deleware Avenue	Orange Avenue	Major Collector	U	D	2U	790	0.0%	0	0	0.00%	No	No
S 35th Street												
Kirby Loop Road	Cortez Boulevard	Minor Collector	U	D	2U	540	0.0%	0	0	0.00%	No	No
Cortez Boulevard	Virginia Avenue	Major Collector	U	D	2U	790	0.0%	0	0	0.00%	No	No
Virginia Avenue	Okeechobee Road	Major Collector	U	D	2U	750	1.0%	0	0	0.00%	No	No
Virginia Avenue												
Okeechobee Road	Hartman Road	Principal Arterial	U	D	6D	3,020	11.0%	1	1	0.03%	No	No
Hartman Road	S 35th Street	Principal Arterial	U	D	6D	3,020	10.0%	1	1	0.03%	No	No
S 35th Street	S 25th Street	Principal Arterial	U	D	6D	3,020	9.0%	0	0	0.00%	No	No

Notes:

1. The roadway attributes were obtained from the latest St. Lucie County Level of Service Report (Fall/Winter 2019/2020), 2010 FDOT St. Lucie County Federal Functional Classification Map, City of Fort Pierce Transportation Element, and supplemented with the 2020 FDOT Quality/LOS Tables.
2. Peak Hour Directional Maximum Service Volumes were determined using the sources listed in Note 1.
3. Percent project traffic assignment was calculated based on Greater Treasure Coast Regional Plannig Model (GTCRPM) Plots.
4. Percent impact was calculated as the maximum PM peak hour directional project traffic divided by the directional service volume.
5. A 1% significance test was perfomed for all major roadway segments within 1.0-mile radius of the project site.
6. The study area includes all roadway segments impacted by 1.0% or more of project traffic within 1.0-mile radius of the project site. Roadway segments that experience less than 1.0% impact from project traffic are considered deminimis impacts and are not included within the roadway study area.
7. The adjacent roadway segment of Copenhaver Road from Graham Road to White Road will be included within the study area as this the first accessed roadway from the site.



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445 24th Street, Suite 200, Vero Beach FL 32960
Phone: 772 794 4100

FIGURE 1 - STUDY AREA, PROJECT LOCATION, AND TRIP DISTRIBUTION

FORT PIERCE RV STORAGE
CITY OF FORT PIERCE, FLORIDA

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Z:\OCA_Civil\147814000 - Fort Pierce RV Storage TIA\GIS\TIA\Figure 2 - Project Location and Study Area Intersections Roadway Segments.mxd - 3/26/2021 9:59:52 AM - Alex.Memering

HISTORICAL GROWTH RATE

The University of Florida's Bureau of Economic and Business Research (BEBR) analyzes population growth trends in counties throughout the state, along with other statistical metrics. To determine a reasonable background growth rate for the study area, the medium BEBR growth rate for St. Lucie County was calculated.

The medium BEBR growth rate for Year 2025 is approximately 1.55%. Therefore, a 1.55% annual background growth rate was applied for use on all roadway segments in this analysis to provide conservative results. Table 3 illustrates the growth rate calculations per BEBR population trends. Growth rate calculations are provided in **Table 3**.

Table 3 – Growth Rate Calculations

County	BEBR Pop Estimate	BEBR Population Projections (April 1)		
	Apr 1, 2019	Range	2025	2025
St. Lucie County	309,359	Low	319,300	0.46%
		Medium	342,900	1.55%
		High	364,600	2.55%

Source: Bureau of Economic and Business Research (BEBR) *Projections of Florida*

COMMITTED IMPROVEMENTS

Based on the St. Lucie Transportation Planning Organization (TPO) 2045 Long Range Transportation Plan (LRTP), the TPO's Transportation Improvement Program (TIP), and the Florida Department of Transportation (FDOT) 5-year work program, no improvements were located within the study area of the development.

ROADWAY SEGMENT ANALYSIS

The study area roadway segments were evaluated for level of service (LOS) and volume-to-capacity (v/c) ratios based on 2021 existing, 2024 future background, and 2024 future buildout conditions during both the AM and PM peak hours. AM peak hour (7AM-9AM) and PM (4PM-6PM) peak hour turning movement counts were performed at the study area intersections in March 2021. The turning movement counts were adjusted to peak season using adjustment factors published by FDOT. A peak season correctional factor from 2019 Florida Traffic Online was applied to the turning movement counts in order to grow the counts to typical peak season traffic conditions. The turning movement counts are provided in **Appendix C**.

AM and PM peak hour directional traffic volumes on the study area roadway segments were compared to the adopted LOS standard obtained from St. Lucie County and roadway service volumes from the 2020 FDOT Quality and Level of Service Handbook.

Based on 2021 existing conditions roadway segment analysis, all study area roadway segments are shown to operate acceptably during both the AM and PM peak hour. The existing AM and PM peak hour traffic conditions is provided in **Table 4** and **Table 5**, respectively.

FUTURE 2024 BACKGROUND TRAFFIC CONDITIONS ANALYSIS

The 2024 future background (without project) traffic volumes were developed by calculating the existing peak season traffic volumes and anticipated background growth applied through year 2024. An annual background growth rate of 1.55% was applied to the existing roadway segment volumes as previously calculated.

AM and PM peak hour directional traffic volumes on the study area roadway segments were compared to the adopted LOS standard as obtained from St. Lucie County guidelines and roadway service volumes from the 2020 FDOT Quality and Level of Service Handbook.

Table 6 and **Table 7** illustrate the 2024 future background (without project) traffic volumes and LOS analysis during AM and PM peak hour traffic conditions. The study area roadway segments are shown to operate acceptably during 2024 future background (without project) AM and PM peak hour traffic conditions.

FUTURE 2024 BUILDOUT TRAFFIC CONDITIONS ANALYSIS

The 2024 buildout (with project) traffic volumes were calculated as the sum of the background traffic volumes and project traffic. AM and PM peak hour directional traffic volumes on the study area roadway segments were compared to the adopted LOS standard as obtained from St. Lucie County guidelines and roadway service volumes from the 2020 FDOT Quality and Level of Service Handbook.

Table 8 and **Table 9** illustrate the 2024 buildout (with project) traffic volumes and LOS analysis during AM and PM peak hour traffic conditions. The study area roadway segments are shown to operate acceptably during 2024 buildout (with project) AM and PM peak hour traffic conditions.

Table 4 - Existing PM peak Hour Roadway Conditions

Roadway From	To	Roadway Attributes [1] Functional Classification	Area Type	Adopted LOS	Number of Lanes	Peak Hour Directional Maximum Service Volume [2]	Existing Peak Season Traffic Conditions Volumes [3] NB/EB	SB/WB	Max V/C Ratio	LOS
Copenhaver Road Graham Road	White Road	Local	U	D	2U	675	43	27	0.06	C

Notes:

1. The roadway attributes were obtained from the 2010 FDOT St. Lucie County Federal Functional Classification Map, St. Lucie County Transportation Element, and supplemented with the 2020 FDOT Quality/LOS Tables.
2. Peak Hour Directional Maximum Service Volumes were determined using the sources listed in Note 1.
3. Existing Peak Season Traffic Volumes obtained from turning movement counts performed in March 2021.

Table 5 - Existing PM peak Hour Roadway Conditions

Roadway From	To	Roadway Attributes [1] Functional Classification	Area Type	Adopted LOS	Number of Lanes	Peak Hour Directional Maximum Service Volume [2]	Existing Peak Season Traffic Conditions Volumes [3] NB/EB	SB/WB	Max V/C Ratio	LOS
Copenhaver Road Graham Road	White Road	Local	U	D	2U	675	41	47	0.07	C

Notes:

1. The roadway attributes were obtained from the 2010 FDOT St. Lucie County Federal Functional Classification Map, St. Lucie County Transportation Element, and supplemented with the 2020 FDOT Quality/LOS Tables.
2. Peak Hour Directional Maximum Service Volumes were determined using the sources listed in Note 1.
3. Existing Peak Season Traffic Volumes obtained from turning movement counts performed in March 2021.

Table 6 – Future Buildout AM Peak Hour Roadway Conditions

Roadway		Peak Hour Directional Maximum Service Volume [1]	Applied Growth Rate [2]	Future Background Peak Hour Traffic Conditions				AM Peak Hour Project Traffic			Future Buildout Peak Hour Traffic Conditions			
				Volumes [2]		Max V/C Ratio	LOS				Volumes [4]		Max V/C Ratio	LOS
From	To			NB / EB	SB / WB			% Assign [3]	NB / EB	SB / WB	NB / EB	SB / WB		
Copenhaver Road														
Graham Road	Project Driveway	675	1.55%	45	28	0.07	C	70.0%	2	2	47	30	0.07	C
Project Driveway	White Road	675	1.55%	45	28	0.07	C	30.0%	1	1	46	29	0.07	C

Notes:

1. The roadway attributes were obtained from the latest 2010 FDOT St. Lucie County Federal Functional Classification Map, St. Lucie County Transportation Element, and supplemented with the 2020 FDOT Quality/LOS Tables.

2. Peak Hour Directional Maximum Service Volumes were determined using the sources listed in Note 1.
3. Percent project traffic assignment was calculated as the maximum across roadway segment.
4. Buildout project traffic volumes are the summation of future background traffic and project traffic.

Table 7 – Future Buildout PM Peak Hour Roadway Conditions

Roadway		Peak Hour Directional Maximum Service Volume [1]	Applied Growth Rate [2]	Future Background Peak Hour Traffic Conditions				PM Peak Hour Project Traffic			Future Buildout Peak Hour Traffic Conditions			
				Volumes [2]		Max V/C Ratio	LOS				Volumes [4]		Max V/C Ratio	LOS
From	To			NB / EB	SB / WB			% Assign [3]	NB / EB	SB / WB	NB / EB	SB / WB		
Copenhaver Road														
Graham Road	Project Driveway	675	1.55%	43	49	0.07	C	70.0%	4	4	47	53	0.08	C
Project Driveway	White Road	675	1.55%	43	49	0.07	C	30.0%	2	2	45	51	0.08	C

Notes:

1. The roadway attributes were obtained from the latest 2010 FDOT St. Lucie County Federal Functional Classification Map, St. Lucie County Transportation Element, and supplemented with the 2020 FDOT Quality/LOS Tables.

2. Peak Hour Directional Maximum Service Volumes were determined using the sources listed in Note 1.
3. Percent project traffic assignment was calculated as the maximum across roadway segment.
4. Buildout project traffic volumes are the summation of future background traffic and project traffic.

INTERSECTION CAPACITY ANALYSIS

Intersection analyses was performed for the intersections within the project's study area. The intersection was evaluated for 2021 existing, 2024 future background (without project), and 2024 future buildout (with project) traffic conditions during both the AM and PM peak hour. AM peak hour (7AM-9AM) and PM (4PM-6PM) peak hour turning movement counts were performed at the study area intersections in March 2021. The turning movement counts were adjusted to peak season using adjustment factors published by FDOT. The turning movement counts are provided in **Appendix C**.

Intersection volume development worksheets detailing the future traffic development at the intersections are provided in **Appendix D**. The AM and PM peak hour intersection turning movement volumes at buildout for the study area intersections are illustrated in **Figure 2**.

2021 EXISTING TRAFFIC CONDITIONS ANALYSIS

Synchro (v10) software, which is based on *Highway Capacity Manual (2010*) was utilized to perform the intersection evaluations. Existing intersection geometry, peak hour factor and percent heavy vehicles (as obtained from the traffic counts) were input into Synchro (v10) for the analysis.

Table 8 details the intersection LOS results for 2021 existing traffic conditions. The study area intersection is shown to operate with an acceptable overall LOS and v/c ratio less than 1.0. Synchro 10 output is provided within **Appendix E**.

Table 8 – 2021 Existing Traffic Conditions Intersection Summary

Intersection	2021 Existing Conditions		
	Inter-section LOS	Inter-section Delay (S)	Max Movement V/C
AM Peak Hour Traffic			
Unsignalized[1] Graham Road & Copenhaver Road	B/B	10.7/11.2	0.07/0.07
PM Peak Hour Traffic			
Unsignalized[1] Graham Road & Copenhaver Road	B/B	10.2/11.0	0.06/0.03

Notes:
1. Intersection LOS and delay at unsignalized intersections are reported for the stop-controlled approaches only.

2024 FUTURE BACKGROUND TRAFFIC CONDITIONS ANALYSIS

The intersection of Graham Road and Copenhaver Road within the study area was evaluated for 2024 future background (without project) traffic conditions. An annual background growth rate of 1.55% was applied to the existing peak season volumes as outlined previously. **Table 9** details the results of the intersection analysis considering 2024 future background (without project) traffic volumes. The study area intersection is shown to operate with acceptable LOS, delays, and v/c ratios less than 1.0. Synchro 10 output is provided within **Appendix E**.

Table 9 – 2024 Future Background Traffic Conditions Intersection Summary

Intersection	2024 Future Background Conditions		
	Inter-section LOS	Inter-section Delay (S)	Max Movement V/C
AM Peak Hour Traffic			
Unsignalized[1]			
Graham Road & Copenhaver Road	B/B	10.8/11.4	0.08/0.08
PM Peak Hour Traffic			
Unsignalized[1]			
Graham Road & Copenhaver Road	B/B	10.2/11.1	0.06/0.03

Notes:
1. Intersection LOS and delay at unsignalized intersections are reported for the stop-controlled approaches only.

2024 FUTURE BUILDOUT TRAFFIC CONDITIONS ANALYSIS

The intersection and driveway within the study area was evaluated for 2024 buildout (with project) traffic conditions. Project traffic from the proposed development was added to the future background traffic volumes to calculate future buildout traffic volumes.

Table 10 details the results of the intersection analysis considering 2024 buildout (with project) traffic volumes. The study area intersection and project driveway are shown to operate with an acceptable level LOS and v/c ratio less than 1.0 upon buildout. Synchro 10 output is provided within **Appendix E**.

Table 10 – 2024 Future Buildout Traffic Conditions Intersection Summary

Intersection	2024 Future Buildout Conditions		
	Inter-section LOS	Inter-section Delay (S)	Inter-section V/C
AM Peak Hour Traffic			
Unsignalized[1]			
Graham Road & Copenhaver Road	B/B	10.9/11.5	0.08/0.08
Copenhaver Road & Project Driveway	A	9.7	0.01
PM Peak Hour Traffic			
Unsignalized[1]			
Graham Road & Copenhaver Road	B/B	10.5/11.2	0.08/0.03
Copenhaver Road & Project Driveway	A	9.7	0.01

Notes:
1. Intersection LOS and delay at unsignalized intersections are reported for the stop-controlled approaches only.

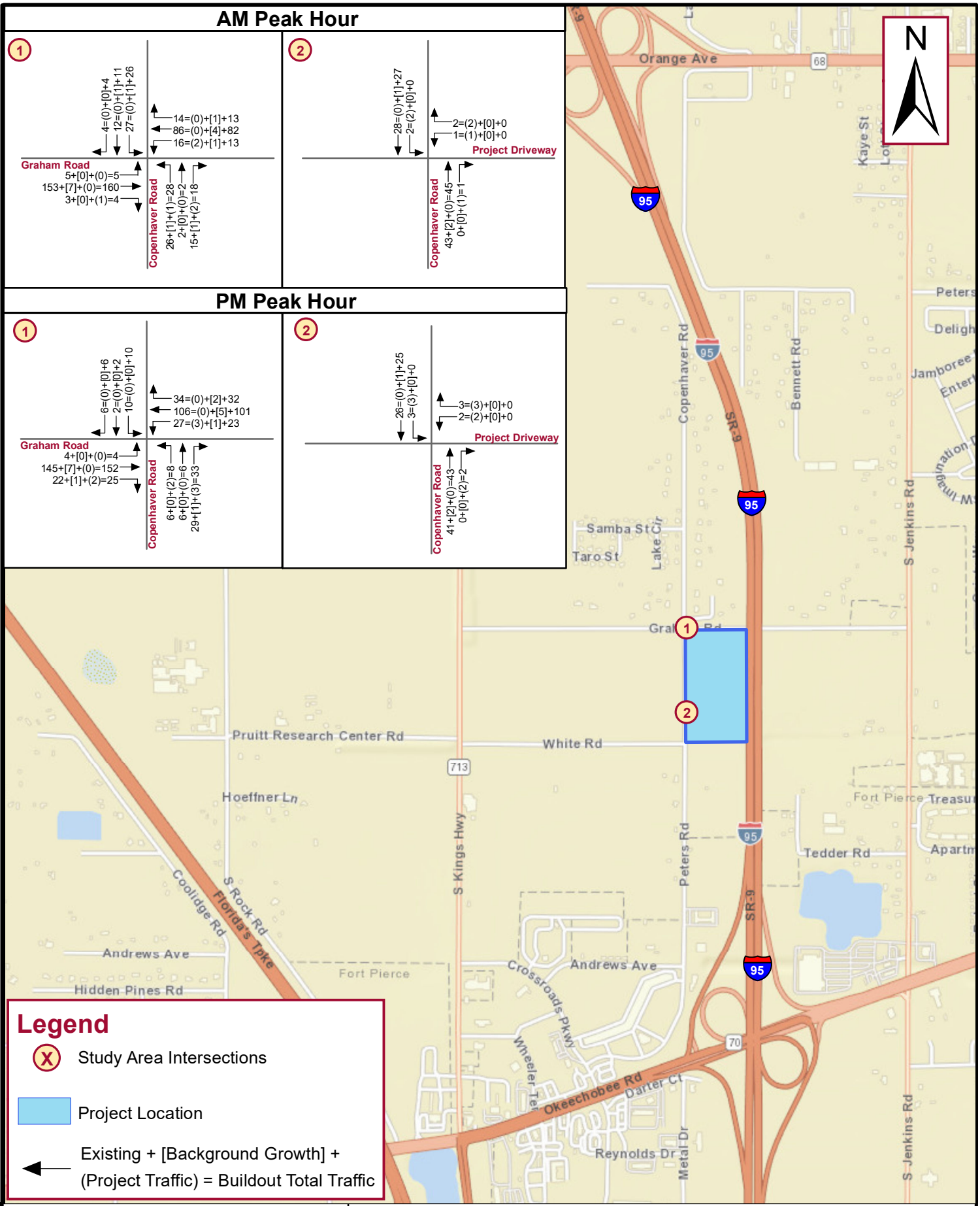


FIGURE 2 - AM & PM PEAK HOUR BUILDOUT TRAFFIC VOLUMES

FORT PIERCE RV STORAGE
CITY OF FORT PIERCE, FLORIDA

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445 24th Street, Suite 200, Vero Beach FL 32960
Phone: 772 794 4100

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Z:\OCA_Civil\147814000 - Fort Pierce RV Storage TIA\GIS\TIA\Figure 2 - AM PM Peak Hour Buildout Traffic Volumes.mxd - 3/26/2021 10:02:24 AM - Alex.Memering

SITE ACCESS ANALYSIS

Access to the site will be provided via one full-access driveway onto Copenhaver Road. There will also be an emergency exit north of the main entrance on Copenhaver Road, but it was not be evaluated because it will not be used in typical conditions.

PROJECT DRIVEWAY AT PROPOSED FULL ACCESS DRIVEWAY

The observed traffic volumes on Copenhaver Road, as well as the projected ingress turning volumes at the proposed project driveway, were compared to the thresholds of the National Cooperative of Highway Research Programs (NCHRP) Report 457 for determination of whether a major road left-turn lane is required at a stop-controlled minor street intersection. Report NCHRP 457 compares the major street speed, approach volume, opposing volume, and left-turning volume to determine whether a dedicated left-turn lane is warranted on the major street approach. Based on the low ingress left-turn volumes projected at the project driveway, and the low existing traffic volumes on Copenhaver Road during the AM and PM peak hours, an exclusive southbound left-turn lane at the project driveway is not warranted based on the criteria within the NCHRP 457 analysis.

The observed traffic volumes on Copenhaver Road, as well as the projected ingress turning volumes at the proposed project driveway, were compared to the thresholds of the NCHRP Report 457 for determination of whether a major road right-turn lane is required at a stop-controlled minor street intersection. Report NCHRP 457 compares the major street speed, approach volume, and right-turning volume to determine whether a dedicated right-turn lane is warranted on the major street approach. Based on the low ingress right-turn volumes projected at the project driveway, and the low existing traffic volumes on Copenhaver Road during the AM and PM peak hours, an exclusive northbound right-turn lane at the project driveway is not warranted based on the criteria within the NCHRP 457 analysis.

The NCRHP Report 457 output for the southbound left-turn lane and northbound right-turn lane during the AM and PM peak hour are provided within **Appendix F**.

CONCLUSION

This traffic impact analysis was prepared to support the proposed Recreational Vehicle (RV) storage facility generally located on the south side of Graham Road, east of Copenhaver Road, and west of I-95 Turnpike in City of Fort Pierce, Florida. The project property is currently vacant and is in the process of being annexed into the City of Fort Pierce. The development is proposed to consist of ±503 RV storage spaces and anticipated to have a buildout year of 2024.

The analysis concludes that all road segments and intersections within the study area are anticipated to operate with acceptable LOS during both AM and PM peak hour 2021 existing, 2024 future background (without project), and 2024 future buildout traffic conditions.

Access to the site will be provided via one full-access driveway onto Copenhaver Road. There will also be an emergency exit north of the main entrance on Copenhaver Road, but it was not be evaluated because it will not be used in typical conditions. Based on the low ingress projected volumes at the project driveway on Copenhaver Road, no ingress turn lanes are warranted at the proposed project driveway.

The results within this report satisfy the requirements set forth by St. Lucie County for evaluating proposed development impacts.

APPENDICES

APPENDIX A:
Conceptual Site Plan

PRE-APP QUESTIONS:

1. WOULD THIS DEVELOPMENT TRIGGER A TRAFFIC STUDY?
2. WHAT ARE THE FIRE / LIFE SAFETY REQUIREMENTS? IN PARTICULAR, FOR SPRINKLERING OF THE CANOPIES OR IF FIRE HYDRANTS ARE REQUIRED AROUND THE SITE.
3. ARE THERE ANY OFF-SITE IMPROVEMENTS THAT ARE EXPECTED AS PART OF THIS DEVELOPMENT?
4. WHAT ARE THE SITE SCREENING AND SIGNAGE REQUIREMENTS. IN PARTICULAR, WE WOULD REQUEST VISIBILITY FROM I-95.

PROPOSED ENTRANCE
COPENHAVER RD
EMERGENCY SITE ACCESS ONLY
PROPOSED OFFICE
PROPOSED DUMP STATIONS
PROPOSED DUMPSTERS
PROPOSED PUMP ROOM
PROPOSED WASH STATIONS
PROPOSED DETENTION POND
TREE PROTECTION AREA
GRAHAM RD
PROPOSED SWALE
I-95

49
85
92
40
26
8
28
51
32

45.0'
40.0'

CANOPY SAMPLE



SITE DATA
SITE ADDRESS: 2192 COPENHAVER RD, FT PIERCE, FL
PARCEL ID: 2313432000000004

TOTAL SITE AREA: 17.375 AC
45' RV STORAGE: 443 SPACES
40' RV STORAGE: 60 SPACES
TOTAL RV STORAGE: 503 SPACES

ASSUMED ZONING: C-3 (GENERAL COMMERCIAL)

STORMWATER FACILITIES: ~3.74 AC
10-YR, 24-HOUR ASSUMED VOLUME: ≈8.57 AC-FT
25-YR, 72-HOUR ASSUMED VOLUME: ≈14.09 AC-FT

TREE PROTECTION AREA: ~3.03 AC

RV STORAGE - FT. PIERCE - CONCEPTUAL SITE PLAN

9 CANOPIES:
443 (11'X45') STALLS; 60 (11'X40' STALLS)

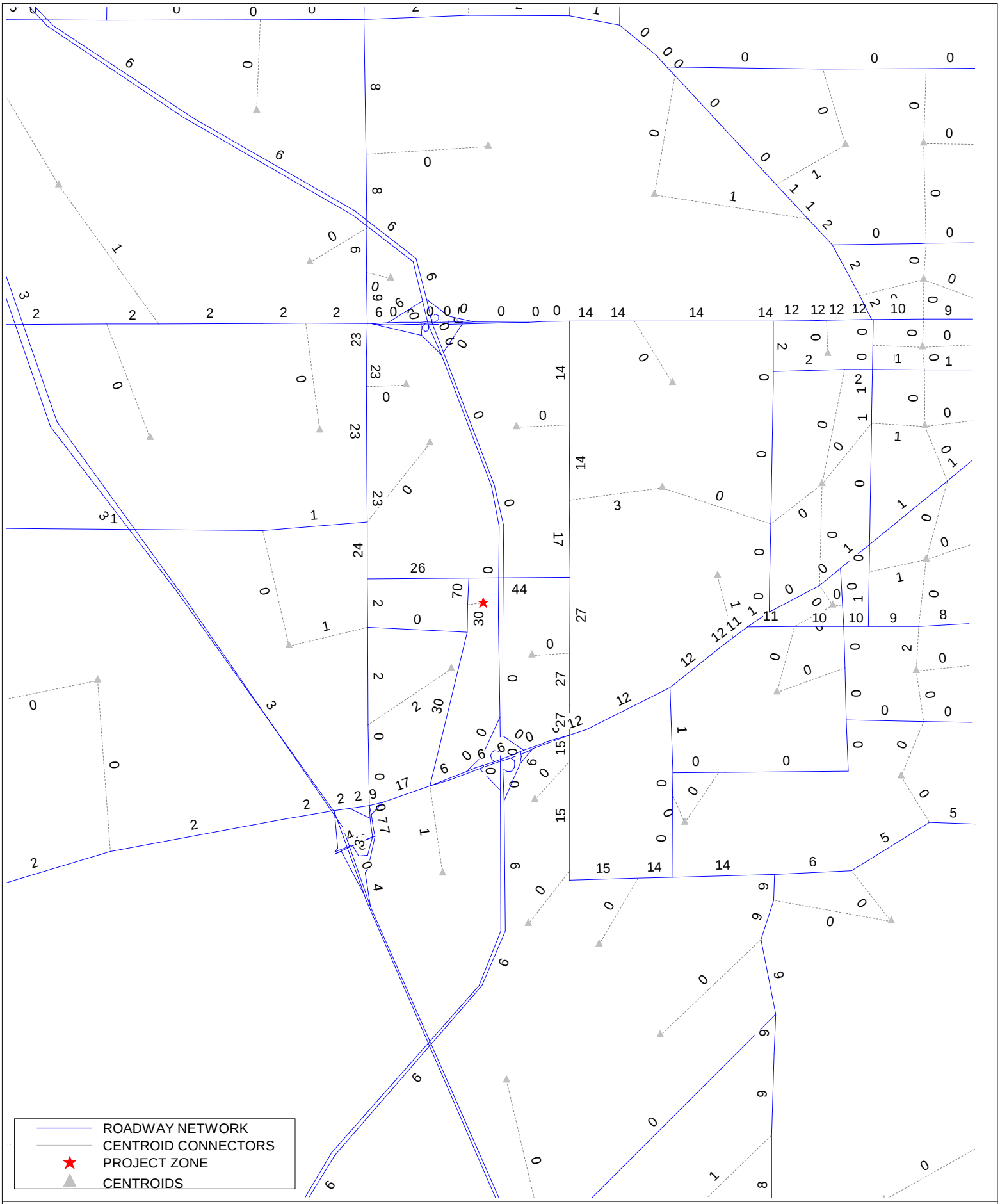
NORTH

GRAPHIC SCALE IN FEET
0 25 50 100

DATE: 11/30/2020

Kimley»Horn

APPENDIX B:
GTCRPM Model Output



MODEL RUN - FORT PIERCE RV STORAGE
TRAFFIC DISTRIBUTION (PERCENTAGES)
3/1/2021
C:\FSUTMS\D4\GTCRPM\NGTC33\Base\minor mods\OUTPUT\FINAL_LOADED_A05.NET

cube

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APPENDIX C:
Turning Movement Counts

AM and PM peak hour turning movement counts were performed on March 11, 2021.

		Graham Road & Copenhaver Road (AM Peak Hour)											
		Northbound			Southbound			Eastbound			Westbound		
Interval	Time	L	T	R	L	T	R	L	T	R	L	T	R
1	7:00	1	0	2	8	0	1	0	28	1	3	16	2
2	7:15	2	0	5	5	3	1	0	44	0	4	15	1
3	7:30	9	1	3	8	3	1	0	41	0	5	26	1
4	7:45	7	0	4	2	3	2	4	38	1	0	20	8
5	8:00	8	1	3	11	2	0	1	30	2	4	21	3
6	8:15	0	0	5	3	0	0	0	29	1	8	21	2
7	8:30	5	0	2	4	0	2	0	25	1	3	16	2
8	8:45	1	0	7	9	1	0	0	19	1	3	13	5
AM Peak Hour: 7:15AM - 8:15AM				PHF	0.90								
	PH Vol.	26	2	15	26	11	4	5	153	3	13	82	13

		Graham Road & Copenhaver Road (PM Peak Hour)											
		Northbound			Southbound			Eastbound			Westbound		
Interval	Time	L	T	R	L	T	R	L	T	R	L	T	R
1	16:00	1	0	2	3	2	1	2	37	3	3	24	3
2	16:15	2	1	2	3	1	2	0	27	4	4	23	7
3	16:30	2	3	5	1	0	4	3	34	7	5	37	7
4	16:45	1	1	10	5	1	2	1	38	7	7	16	7
5	17:00	3	2	6	2	0	0	0	28	4	7	21	8
6	17:15	0	0	8	2	1	0	0	45	4	4	27	10
7	17:30	2	1	6	2	0	2	2	31	4	10	26	8
8	17:45	3	0	10	6	0	2	1	23	2	8	25	4
PM Peak Hour: 4:30PM - 5:30PM				PHF	0.89								
	PH Vol.	6	6	29	10	2	6	4	145	22	23	101	32

		Project Driveway & Copenhaver Road (AM Peak Hour)											
		Northbound			Southbound			Eastbound			Westbound		
Interval	Time	L	T	R	L	T	R	L	T	R	L	T	R
1	7:00	0	3	0	0	4	0	0	0	0	0	0	0
2	7:15	0	7	0	0	7	0	0	0	0	0	0	0
3	7:30	0	13	0	0	8	0	0	0	0	0	0	0
4	7:45	0	11	0	0	4	0	0	0	0	0	0	0
5	8:00	0	12	0	0	8	0	0	0	0	0	0	0
6	8:15	0	5	0	0	9	0	0	0	0	0	0	0
7	8:30	0	7	0	0	4	0	0	0	0	0	0	0
8	8:45	0	8	0	0	5	0	0	0	0	0	0	0
AM Peak Hour: 7:15AM - 8:15AM													
	PH Vol.	0	43	0	0	27	0	0	0	0	0	0	0

		Project Driveway & Copenhaver Road (PM Peak Hour)											
		Northbound			Southbound			Eastbound			Westbound		
Interval	Time	L	T	R	L	T	R	L	T	R	L	T	R
1	16:00	0	3	0	0	8	0	0	0	0	0	0	0
2	16:15	0	5	0	0	8	0	0	0	0	0	0	0
3	16:30	0	10	0	0	4	0	0	0	0	0	0	0
4	16:45	0	12	0	0	8	0	0	0	0	0	0	0
5	17:00	0	11	0	0	9	0	0	0	0	0	0	0
6	17:15	0	8	0	0	4	0	0	0	0	0	0	0
7	17:30	0	9	0	0	5	0	0	0	0	0	0	0
8	17:45	0	13	0	0	0	0	0	0	0	0	0	0
PM Peak Hour: 4:30PM - 5:30PM													
	PH Vol.	0	41	0	0	25	0	0	0	0	0	0	0

APPENDIX D:
Intersection Volume Development Worksheets

INTERSECTION VOLUME DEVELOPMENT

Graham Road & Copenhaver Road

AM PEAK HOUR	Northbound			Southbound			Eastbound			Westbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 3/11/2021	26	2	15	26	11	4	5	153	3	13	82	13
Peak Season Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2021 Peak Season Volumes	26	2	15	26	11	4	5	153	3	13	82	13
Annual Growth Rate	1.55%	1.55%	1.55%	1.55%	1.55%	1.55%	1.55%	1.55%	1.55%	1.55%	1.55%	1.55%
2024 Background Growth	1	0	1	1	1	0	0	7	0	1	4	1
Traffic % Assignment	26%		44%						26%	44%		
Project Traffic Direction	OUT		OUT						IN	IN		
Project Traffic	1		2						1	2		
2024 Background Traffic	27	2	16	27	12	4	5	160	3	14	86	14
2024 Total Traffic	28	2	18	27	12	4	5	160	4	16	86	14

PM PEAK HOUR	Northbound			Southbound			Eastbound			Westbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 3/11/2021	6	6	29	10	2	6	4	145	22	23	101	32
Peak Season Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2021 Peak Season Volumes	6	6	29	10	2	6	4	145	22	23	101	32
Annual Growth Rate	1.55%	1.55%	1.55%	1.55%	1.55%	1.55%	1.55%	1.55%	1.55%	1.55%	1.55%	1.55%
2024 Background Growth	0	0	1	0	0	0	0	7	1	1	5	2
Traffic % Assignment	26%		44%						26%	44%		
Project Traffic Direction	OUT		OUT						IN	IN		
Project Traffic	2		3						2	3		
2024 Background Traffic	6	6	30	10	2	6	4	152	23	24	106	34
2024 Total Traffic	8	6	33	10	2	6	4	152	25	27	106	34

INTERSECTION VOLUME DEVELOPMENT

Copenhaver Road & Project Driveway

AM PEAK HOUR	Northbound			Southbound			Eastbound			Westbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 3/11/2021	0	43	0	0	27	0	0	0	0	0	0	0
Peak Season Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2021 Peak Season Volumes	0	43	0	0	27	0	0	0	0	0	0	0
Annual Growth Rate	1.55%	1.55%	1.55%	1.55%	1.55%	1.55%	1.55%	1.55%	1.55%	1.55%	1.55%	1.55%
2024 Background Growth	0	2	0	0	1	0	0	0	0	0	0	0
Traffic % Assignment			30%	70%						30%		70%
Project Traffic Direction			IN	IN						OUT		OUT
Project Traffic			1	2						1		2
2024 Background Traffic	0	45	0	0	28	0	0	0	0	0	0	0
2024 Total Traffic	0	45	1	2	28	0	0	0	0	1	0	2

PM PEAK HOUR	Northbound			Southbound			Eastbound			Westbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Counted on 3/11/2021	0	41	0	0	25	0	0	0	0	0	0	0
Peak Season Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2021 Peak Season Volumes	0	41	0	0	25	0	0	0	0	0	0	0
Annual Growth Rate	1.55%	1.55%	1.55%	1.55%	1.55%	1.55%	1.55%	1.55%	1.55%	1.55%	1.55%	1.55%
2024 Background Growth	0	2	0	0	1	0	0	0	0	0	0	0
Traffic % Assignment			30%	70%						30%		70%
Project Traffic Direction			IN	IN						OUT		OUT
Project Traffic			2	3						2		3
2024 Background Traffic	0	43	0	0	26	0	0	0	0	0	0	0
2024 Total Traffic	0	43	2	3	26	0	0	0	0	2	0	3

APPENDIX E:
Synchro (v10) Output

AM Peak Hour

2021 Existing Traffic Conditions



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	153	3	13	82	13	26	2	15	26	11	4
Future Volume (vph)	5	153	3	13	82	13	26	2	15	26	11	4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	170	3	14	91	14	29	2	17	29	12	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	179	0	0	119	0	0	48	0	0	45	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	153	3	13	82	13	26	2	15	26	11	4
Future Vol, veh/h	5	153	3	13	82	13	26	2	15	26	11	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	170	3	14	91	14	29	2	17	29	12	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	105	0	0	173	0	0	318	317	172	319	311	98
Stage 1	-	-	-	-	-	-	184	184	-	126	126	-
Stage 2	-	-	-	-	-	-	134	133	-	193	185	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1486	-	-	1404	-	-	635	599	872	634	604	958
Stage 1	-	-	-	-	-	-	818	747	-	878	792	-
Stage 2	-	-	-	-	-	-	869	786	-	809	747	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1486	-	-	1404	-	-	615	590	872	613	595	958
Mov Cap-2 Maneuver	-	-	-	-	-	-	615	590	-	613	595	-
Stage 1	-	-	-	-	-	-	815	744	-	874	783	-
Stage 2	-	-	-	-	-	-	842	777	-	788	744	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.9	10.7	11.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	684	1486	-	-	1404	-	-	630
HCM Lane V/C Ratio	0.07	0.004	-	-	0.01	-	-	0.072
HCM Control Delay (s)	10.7	7.4	0	-	7.6	0	-	11.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.2

2024 Future Year Background Traffic Conditions



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	160	3	14	86	14	27	2	16	27	12	4
Future Volume (vph)	5	160	3	14	86	14	27	2	16	27	12	4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	178	3	16	96	16	30	2	18	30	13	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	187	0	0	128	0	0	50	0	0	47	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	160	3	14	86	14	27	2	16	27	12	4
Future Vol, veh/h	5	160	3	14	86	14	27	2	16	27	12	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	178	3	16	96	16	30	2	18	30	13	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	112	0	0	181	0	0	337	336	180	338	329	104
Stage 1	-	-	-	-	-	-	192	192	-	136	136	-
Stage 2	-	-	-	-	-	-	145	144	-	202	193	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1478	-	-	1394	-	-	617	585	863	616	590	951
Stage 1	-	-	-	-	-	-	810	742	-	867	784	-
Stage 2	-	-	-	-	-	-	858	778	-	800	741	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1478	-	-	1394	-	-	595	575	863	594	580	951
Mov Cap-2 Maneuver	-	-	-	-	-	-	595	575	-	594	580	-
Stage 1	-	-	-	-	-	-	806	738	-	863	775	-
Stage 2	-	-	-	-	-	-	829	769	-	777	737	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.9	10.8	11.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	668	1478	-	-	1394	-	-	611
HCM Lane V/C Ratio	0.075	0.004	-	-	0.011	-	-	0.078
HCM Control Delay (s)	10.8	7.4	0	-	7.6	0	-	11.4
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.3

2024 Future Buildout Conditions



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	160	3	16	86	14	28	2	18	27	12	4
Future Volume (vph)	5	160	3	16	86	14	28	2	18	27	12	4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	25%	13%	2%	2%	4%	2%	11%	2%	2%	2%
Adj. Flow (vph)	6	178	3	18	96	16	31	2	20	30	13	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	187	0	0	130	0	0	53	0	0	47	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	160	3	16	86	14	28	2	18	27	12	4
Future Vol, veh/h	5	160	3	16	86	14	28	2	18	27	12	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	25	13	2	2	4	2	11	2	2	2
Mvmt Flow	6	178	3	18	96	16	31	2	20	30	13	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	112	0	0	181	0	0	341	340	180	343	333	104
Stage 1	-	-	-	-	-	-	192	192	-	140	140	-
Stage 2	-	-	-	-	-	-	149	148	-	203	193	-
Critical Hdwy	4.12	-	-	4.23	-	-	7.14	6.52	6.31	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.317	-	-	3.536	4.018	3.399	3.518	4.018	3.318
Pot Cap-1 Maneuver	1478	-	-	1331	-	-	609	582	840	611	587	951
Stage 1	-	-	-	-	-	-	805	742	-	863	781	-
Stage 2	-	-	-	-	-	-	849	775	-	799	741	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1478	-	-	1331	-	-	587	571	840	586	576	951
Mov Cap-2 Maneuver	-	-	-	-	-	-	587	571	-	586	576	-
Stage 1	-	-	-	-	-	-	801	738	-	859	770	-
Stage 2	-	-	-	-	-	-	819	764	-	774	737	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.1	10.9	11.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	661	1478	-	-	1331	-	-	605
HCM Lane V/C Ratio	0.081	0.004	-	-	0.013	-	-	0.079
HCM Control Delay (s)	10.9	7.4	0	-	7.7	0	-	11.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.3



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	2	45	1	2	28
Future Volume (vph)	1	2	45	1	2	28
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	100%	100%	2%	100%	100%	2%
Adj. Flow (vph)	1	2	50	1	2	31
Shared Lane Traffic (%)						
Lane Group Flow (vph)	3	0	51	0	0	33
Sign Control	Stop		Free			Free

Intersection Summary

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	2	45	1	2	28
Future Vol, veh/h	1	2	45	1	2	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	100	100	2	100	100	2
Mvmt Flow	1	2	50	1	2	31

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	86	51	0	0	51	0
Stage 1	51	-	-	-	-	-
Stage 2	35	-	-	-	-	-
Critical Hdwy	7.4	7.2	-	-	5.1	-
Critical Hdwy Stg 1	6.4	-	-	-	-	-
Critical Hdwy Stg 2	6.4	-	-	-	-	-
Follow-up Hdwy	4.4	4.2	-	-	3.1	-
Pot Cap-1 Maneuver	722	797	-	-	1104	-
Stage 1	771	-	-	-	-	-
Stage 2	785	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	721	797	-	-	1104	-
Mov Cap-2 Maneuver	721	-	-	-	-	-
Stage 1	771	-	-	-	-	-
Stage 2	783	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	0.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	770	1104	-
HCM Lane V/C Ratio	-	-	0.004	0.002	-
HCM Control Delay (s)	-	-	9.7	8.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

PM Peak Hour

2021 Existing Traffic Conditions



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	145	22	23	101	32	6	6	29	10	2	6
Future Volume (vph)	4	145	22	23	101	32	6	6	29	10	2	6
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	4	163	25	26	113	36	7	7	33	11	2	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	192	0	0	175	0	0	47	0	0	20	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary
Control Type: Unsignalized



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	3	43	2	3	26
Future Volume (vph)	2	3	43	2	3	26
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	100%	100%	2%	100%	100%	2%
Adj. Flow (vph)	2	3	48	2	3	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	0	50	0	0	32
Sign Control	Stop		Free			Free

Intersection Summary
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	3	43	2	3	26
Future Vol, veh/h	2	3	43	2	3	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	100	100	2	100	100	2
Mvmt Flow	2	3	48	2	3	29

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	84	49	0	0	50	0
Stage 1	49	-	-	-	-	-
Stage 2	35	-	-	-	-	-
Critical Hdwy	7.4	7.2	-	-	5.1	-
Critical Hdwy Stg 1	6.4	-	-	-	-	-
Critical Hdwy Stg 2	6.4	-	-	-	-	-
Follow-up Hdwy	4.4	4.2	-	-	3.1	-
Pot Cap-1 Maneuver	724	800	-	-	1105	-
Stage 1	773	-	-	-	-	-
Stage 2	785	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	722	800	-	-	1105	-
Mov Cap-2 Maneuver	722	-	-	-	-	-
Stage 1	773	-	-	-	-	-
Stage 2	783	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	0.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	767	1105	-
HCM Lane V/C Ratio	-	-	0.007	0.003	-
HCM Control Delay (s)	-	-	9.7	8.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

APPENDIX F:
NCHRP Report 457 Output

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	145	22	23	101	32	6	6	29	10	2	6
Future Vol, veh/h	4	145	22	23	101	32	6	6	29	10	2	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	163	25	26	113	36	7	7	33	11	2	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	149	0	0	188	0	0	372	385	176	387	379	131
Stage 1	-	-	-	-	-	-	184	184	-	183	183	-
Stage 2	-	-	-	-	-	-	188	201	-	204	196	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1432	-	-	1386	-	-	585	549	867	572	553	919
Stage 1	-	-	-	-	-	-	818	747	-	819	748	-
Stage 2	-	-	-	-	-	-	814	735	-	798	739	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1432	-	-	1386	-	-	568	536	867	535	540	919
Mov Cap-2 Maneuver	-	-	-	-	-	-	568	536	-	535	540	-
Stage 1	-	-	-	-	-	-	816	745	-	817	732	-
Stage 2	-	-	-	-	-	-	789	720	-	759	737	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.1	10.2	11
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	743	1432	-	-	1386	-	-	622
HCM Lane V/C Ratio	0.062	0.003	-	-	0.019	-	-	0.033
HCM Control Delay (s)	10.2	7.5	0	-	7.6	0	-	11
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.1

2024 Future Year Background Traffic Conditions



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	152	23	24	106	34	6	6	30	10	2	6
Future Volume (vph)	4	152	23	24	106	34	6	6	30	10	2	6
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	4	171	26	27	119	38	7	7	34	11	2	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	201	0	0	184	0	0	48	0	0	20	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.1

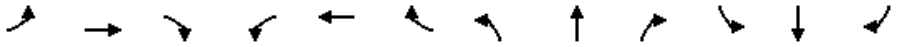
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	152	23	24	106	34	6	6	30	10	2	6
Future Vol, veh/h	4	152	23	24	106	34	6	6	30	10	2	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	171	26	27	119	38	7	7	34	11	2	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	157	0	0	197	0	0	389	403	184	405	397	138
Stage 1	-	-	-	-	-	-	192	192	-	192	192	-
Stage 2	-	-	-	-	-	-	197	211	-	213	205	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1423	-	-	1376	-	-	570	536	858	556	540	910
Stage 1	-	-	-	-	-	-	810	742	-	810	742	-
Stage 2	-	-	-	-	-	-	805	728	-	789	732	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1423	-	-	1376	-	-	553	523	858	519	527	910
Mov Cap-2 Maneuver	-	-	-	-	-	-	553	523	-	519	527	-
Stage 1	-	-	-	-	-	-	808	740	-	808	726	-
Stage 2	-	-	-	-	-	-	779	712	-	749	730	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.1	10.2	11.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	733	1423	-	-	1376	-	-	607
HCM Lane V/C Ratio	0.064	0.003	-	-	0.02	-	-	0.033
HCM Control Delay (s)	10.2	7.5	0	-	7.7	0	-	11.1
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.1

2024 Future Buildout Conditions



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	152	25	27	106	34	8	6	33	10	2	6
Future Volume (vph)	4	152	25	27	106	34	8	6	33	10	2	6
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	2%	2%	8%	11%	2%	2%	25%	2%	9%	2%	2%	2%
Adj. Flow (vph)	4	171	28	30	119	38	9	7	37	11	2	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	203	0	0	187	0	0	53	0	0	20	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	152	25	27	106	34	8	6	33	10	2	6
Future Vol, veh/h	4	152	25	27	106	34	8	6	33	10	2	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	8	11	2	2	25	2	9	2	2	2
Mvmt Flow	4	171	28	30	119	38	9	7	37	11	2	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	157	0	0	199	0	0	396	410	185	413	405	138
Stage 1	-	-	-	-	-	-	193	193	-	198	198	-
Stage 2	-	-	-	-	-	-	203	217	-	215	207	-
Critical Hdwy	4.12	-	-	4.21	-	-	7.35	6.52	6.29	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.35	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.35	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.299	-	-	3.725	4.018	3.381	3.518	4.018	3.318
Pot Cap-1 Maneuver	1423	-	-	1321	-	-	525	531	840	549	535	910
Stage 1	-	-	-	-	-	-	759	741	-	804	737	-
Stage 2	-	-	-	-	-	-	749	723	-	787	731	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1423	-	-	1321	-	-	508	516	840	508	520	910
Mov Cap-2 Maneuver	-	-	-	-	-	-	508	516	-	508	520	-
Stage 1	-	-	-	-	-	-	757	739	-	802	719	-
Stage 2	-	-	-	-	-	-	723	705	-	743	729	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.3	10.5	11.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	705	1423	-	-	1321	-	-	598
HCM Lane V/C Ratio	0.075	0.003	-	-	0.023	-	-	0.034
HCM Control Delay (s)	10.5	7.5	0	-	7.8	0	-	11.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.1

NCHRP 457 - Graham Rd Copenhaver Rd
Southbound Left-Turn Lane
AM Peak Hour

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

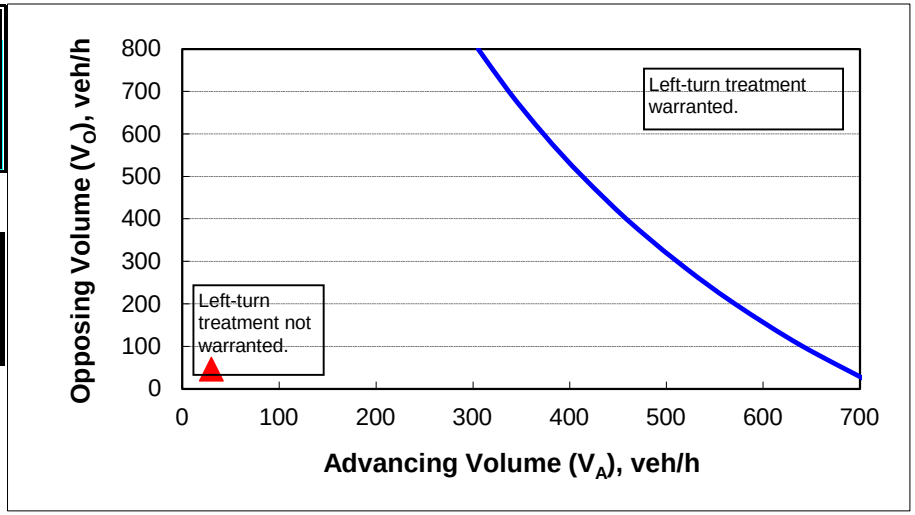
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	35
Percent of left-turns in advancing volume (V_A), %:	7%
Advancing volume (V_A), veh/h:	30
Opposing volume (V_O), veh/h:	46

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	684
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

NCHRP 457 - Graham Rd Copenhaver Rd
Southbound Left-Turn Lane
PM Peak Hour

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

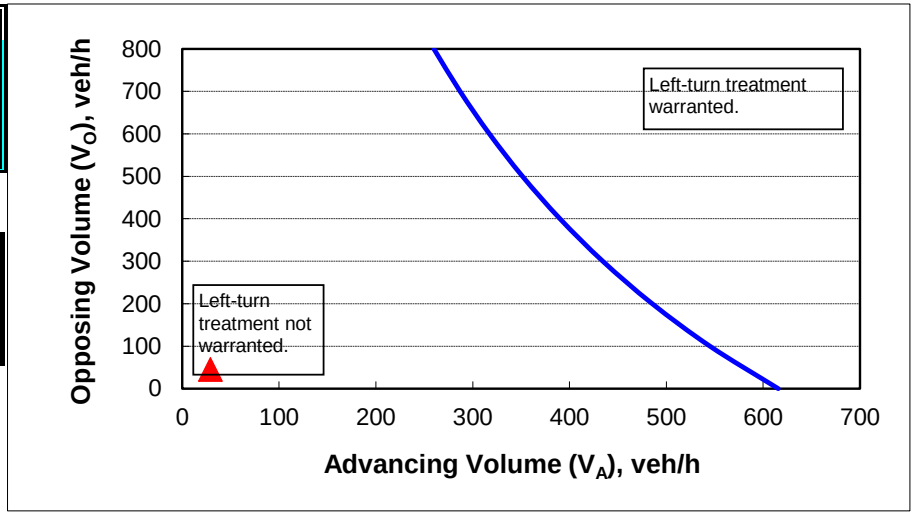
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	35
Percent of left-turns in advancing volume (V_A), %:	10%
Advancing volume (V_A), veh/h:	29
Opposing volume (V_O), veh/h:	45

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	582
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

NCHRP 457 - Copenhaver Road Project Driveway
Northbound Right-Turn Lane
AM Peak Hour

Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

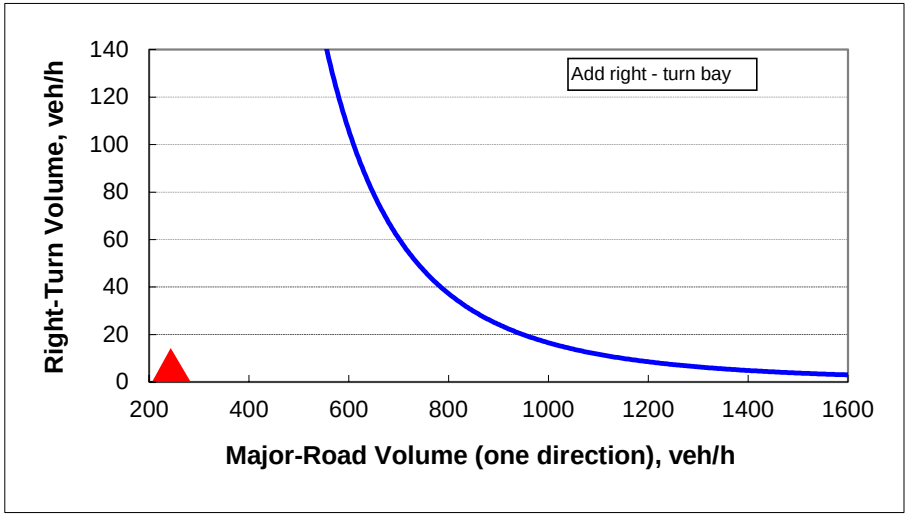
INPUT

Roadway geometry:	2-lane roadway

Variable	Value
Major-road speed, mph:	35
Major-road volume (one direction), veh/h:	45
Right-turn volume, veh/h:	1

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	1304659
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	



NCHRP 457 - Copenhaver Road Project Driveway
Northbound Right-Turn Lane
PM Peak Hour

Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

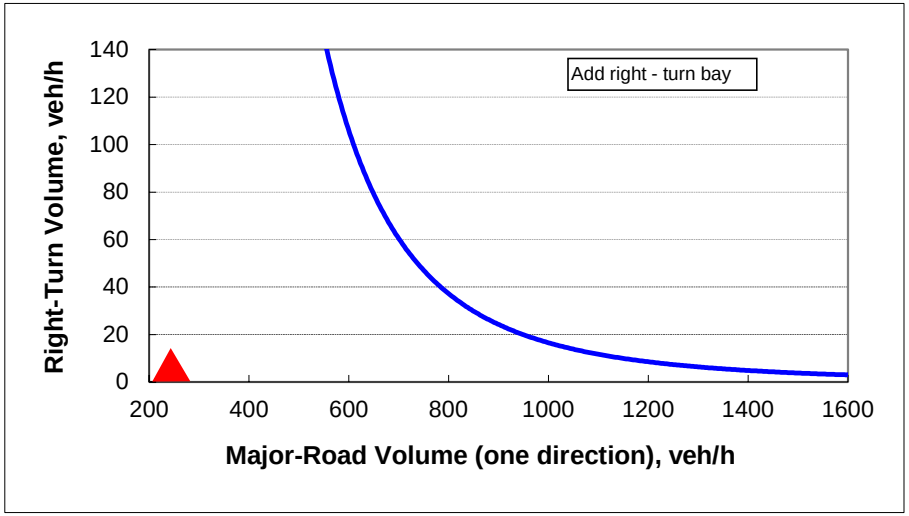
INPUT

Roadway geometry:	2-lane roadway

Variable	Value
Major-road speed, mph:	35
Major-road volume (one direction), veh/h:	43
Right-turn volume, veh/h:	2

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	1539188
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	



July 7, 2021
147814000

City of Fort Pierce
5160 N.W. Milner Drive
Port St. Lucie, Florida 34983
772-621-3400

Re: Development Review – Peters Road RV Storage
Technical Review Project # 21-07000013

Please accept the following responses to the Engineering's review comments concerning the above referenced project.

Comment 1) Bicycle Parking shall be provided at a ratio of 1 space per every 10 parking spaces pursuant to City Code 125-315 (f)(1)(a). Since there are only 4 customer parking spaces a minimum of 2 bicycle spaces needs to be provided.

Response 1) ***Two (2) bicycle spaces have been added to the site next to the proposed sales office.***

Comment 2) The Traffic Study shall be approved and satisfied by St. Lucie County and their reviewer before the item is forwarded to the Planning Board for review.

Response 2) ***Acknowledged.***

Comment 3) Typically, dry detention areas cannot front a right-of-way (I-95). In coordination with the City Engineering Department, a bioswale could be an alternate option as opposed to the dry detention and will help to create more landscaped area.

Response 3) ***A bioswale will be used as an alternate option as opposed to the dry detention area. Please see L-100 Landscape Plan to see plantings in the dry detention area.***

Comment 4) Sidewalks shall be provided along all rights-of-way pursuant to City Code 125-317.

Response 4) ***Sidewalks have been provided along the right-of-way of Peters Road.***

Comment 5) Provide a colored site plan (aerial overview) that also includes the landscaping, lakes, bioswales, etc.

Response 5) ***A colored site plan will be provided prior to the Planning Board meeting.***

Comment 6) Provide a water feature and littoral planting in the pond.

Response 6) ***Littoral planting and a fountain have been added to the wet pond.***

Comment 7) Colored rendering of the covered parking structures needs to be provided.

Response 7) ***Photos of structures used on previous projects have been included with this submittal. Please also see link below for the company that provides the parking***

structures.
https://www.parknshade.com/rv-parking-structures-1

Comment 8) Sheet Make a note on the site plan that all spaces will be covered.

Response 8) Note has been added to C-100 Site Plan.

Comment 9) It is noted that a tree protection area is being provided. Would it be possible to put a conservation easement (or alternate type) on this area to ensure that it stays preserved?

Response 9) We are not proposing a conservation easement at this time. The area will stay preserved as any development in that area will require site plan approval and tree removal permits from the City.

Engineering Comment:

Comment 1) The submitted survey was a photocopy. Prior to placement on the city commission agenda, the applicant shall submit a certified boundary and topographic survey per the requirements specified in the City of Fort Pierce Code of Ordinances Section 119-2.

Response 1) A hard copy of the survey will be sent to the Engineering Department.

Advisory Comments:

Comment 1) The project is bordered on the west and north by two Saint Lucie County roadways, Peters Road aka as Copenhaver Road and Graham Road. The applicant shall contact Saint Lucie County for information pertaining to required right-of-way donation and roadway improvements. At the minimum, installation of a sidewalk or contribution to the SLC sidewalk fund shall occur.

Response 1) Acknowledged.

Comment 2) The drainage plan was reviewed conceptually and will be reviewed in depth at time Building Permit application.

Response 2) Acknowledged.

Comment 3) The project shall have all State and Federal permits in place prior to conducting any land clearing operations as the submitted Natural Resource Assessment indicates that wetlands are present on the site as well as possible threatened species.

Response 3) Acknowledged.

SLC Schools Comment:

Comment 1) As noted in the cover letter, the engineer is working thru the design of the adjacent roadway. The land development code requires that the developer construct sidewalks along the adjacent right-of-way. The plan should be revised to include sidewalks along

Copenhaver/Peters Road and Graham Road.

Response 1) ***Sidewalk has been added along Peters Road. A large portion of the right-of-way along Graham Road is an overpass of I-95.***

St. Lucie TPO Comment:

Comment 1) Historical Growth Rate: The "Traffic Impact Analysis" for the proposed development uses the BEBR Medium population growth rate projection for St. Lucie County to determine the background growth rate for the study area. The use of this growth rate projection does not "provide conservative results" that is claimed as it does not accurately reflect the historical trend of growth in St. Lucie County and underestimates the traffic projections. The BEBR High population growth rate projection should be consistent with the actual annual growth rate in the County since 1995 and with the SmartMoves 2045 Long Range Transportation Plan.

Response 1) ***Acknowledged. We are waiting to receive comments from St. Lucie County in regard to our TIA. We will address this comment with the other comments***

Should you have any additional questions please do not hesitate to contact me at (772) 794-4136 or Tyler.Enright@kimley-horn.com.

Sincerely,

KIMLEY-HORN AND ASSOCIATES, INC.

Tyler Enright, E.I.