THE SUNRISE CITY
FORT PIERCE
PLANNING DEPARTMENT Florida

DEVELOPMENT REVIEW

Property Information

Property address or Location: White Rd - TBD

Parcel ID #(s): 2313-333-0001-000-7 ; 2313-331-0000-000-4

Project description: 26.53 ac distribution center with 390,000 sq ft building with infrastructure

Application Type

☒ Site Plan ☐ Conditional Use w/New Construction ☐ Conceptual Development Plan

☐ Minor Amendment ☒ Major Amendment

Site Information

Non-Residential: Proposed Sq. Ft.: 390000 Site Acreage: 26.53

Residential: Proposed Units: _____ Proposed Sq. Ft.: _____ Site Acreage: _____

J A Development Partners, LLC	Jeff H Iravani, Inc - Authorized Agent
Property Owner(s)	**Applicant/Representative, Title, Company**
4923 W Cypress Street	1934 Commerce Lane Suite 5
Street Address	Street Address
Tampa FL 33607	Jupiter FL 33458
City State Zip	City State Zip
813-505-4036	561-575-6030
Phone Number	Phone Number
ken@tampaglobal.com	JHI@JHIinc.com
Email Address	Email Address

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

_____

Property Owner(s) Signature(s)

APPOINTMENTS ARE REQUIRED FOR APPLICATION SUBMITTALS

CALL 772.467.3737 OR E-MAIL PLANNING_DL@CITYOFFORTPIERCE.COM

For more information, please refer to the website:

https://www.cityoffortpierce.com/971/Application-Submittal-for-Technical-Revi

General Information

- **Incomplete application packets will not be accepted.**
- In-take meetings are required for application submittals.
- Site plan approval is valid for one (1) year following City Commission approval. To maintain site plan approval, vertical improvements, permitted by the Building Department must commence prior to the 12-month expiration date.
- Fee Schedule - https://www.cityoffortpierce.com/DocumentCenter/View/2620/Fee-Schedule-
- Public Notice Fees - https://www.cityoffortpierce.com/DocumentCenter/View/8818/Public-Notice-Fees-

Site Plan submittal requirements:

Submit one (1) original & three (3) hard copies and one (1) CD or Flash Drive of the following. Additional copies will be required of subsequent submittals.

- ☑ Complete application
- ☑ Warranty Deed
- ☑ SLC Property Record Card
- ☑ Detailed project description
- ☑ General location map (see Section 125-313)
- ☑ Survey (see Section 125-313)
- ☑ Site Plan (see Section 125-313)
- ☑ Landscaping Plan (see Section 123-37)
- ☑ Conceptual Drainage Plan (see Section 125-313)
- ☑ Environmental Impact Report
- ☑ Beach/Dune System protection plan, if applicable (see Section 125-313)
- ☑ Lighting Plan (see Section 125-313)
- ☑ 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 Information

Property address or Location: See attached

Parcel ID #(s): See attached

Project description: 26.53 ac distribution Center w/ 390,000 sq ft building with infrastructure

J A Development Partners, LLC	Jeff H Iravani, Inc- Authorized Agent
Property Owner(s)	**Applicant/Representative, Title, Company**
4923 W Cypress Street	1934 Commerce Lane Suite 5
Street Address	Street Address
Tampa FL 33607	Jupiter FL 33458
City State Zip	City State Zip
813-505-4036	561-575-6030
Phone Number	Phone Number
Ken@tampaglobal.com	JHI@JHIinc.com
Email Address	Email Address

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

Jeff H Iravani - Authorized Agent

Property Owner(s) Signature(s)

APPOINTMENTS ARE REQUIRED FOR APPLICATION SUBMITTALS

CALL 772.467.3737 OR E-MAIL PLANNING_DL@CITYOFFORTPIERCE.COM

For more information, please refer to the website:

https://www.cityoffortpierce.com/971/Application-Submittal-for-Technical-Revi

Design Review Application Checklist
(City Code of Ordinances 125-314)

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 123-66, 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 125-313 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 125-313.
c. A final site lighting plan that meets the requirements of subsection 125-313(d)(8).
d. A final landscape plan that meets the requirements of articles II and III of chapter 123.
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.

THE SUNRISE CITY
FORT PIERCE
PLANNING DEPARTMENT
Florida

CONCURRENCY
CAPACITY ANALYSIS

I. Site Data:

	Existing Use	Future Land Use	Zoning
North	vacant	Commercial, County	CG/AG-1 County
South	Office/Whse under dev	GC	CP-1
East	Agriculture	RU, County	AR-1, County
West	Institutional	SD, County	PNRD, County

	Future Land Use	Zoning Classification	Maximum Intensity Residential: Dwelling Units per Acre Other: Square Footage	Total Acreage	Flood Zone
Current	CG	CP-1	693 ksf	26.531	N/A
****Proposed**	CG	CP-1	390 ksf	26.53	N/A

II. Public Facilities Information:

A. Potable Water:	
Average Use	Residential: 100 gallons per day per person (du x 2.6= persons x 100 gpd = demand) Other: 0.125 gallons per day per square foot
Demand Analysis	Maximum
Current Zoning/FLU	Total gallons per day 86,598
**Proposed Zoning/FLU	Total gallons per day 48,750
**Change in Demand	Total gallons per day -37,848

B. Wastewater:	
Average Use	Residential: 100 gallons per day per person (du x 2.6= persons x 100 gpd = demand) Other: 0.1 gallons per day per square foot
Demand Analysis	Maximum
Current Zoning/FLU	Total gallons per day 90,900
**Proposed Zoning/FLU	Total gallons per day 44,200
**Change in Demand	Total gallons per day -46,700

C. Parks and Recreation (Residential Classifications Only): N/A
(Du x 2.6 = persons + 44,227 = population /LOS)

Park Type	LOS	Existing Population Park Demand	Proposed Population Park Demand	Change in Demand
Regional	20 acres per 1,000 people			
Urban District	5 acres per 1,000 people			
Community	2.5 acres per 1,000 people			
Neighborhood	1.36 acres per 1,000 people			

D. Public Schools (Residential Classifications Only): N/A
Single Family: (du x 0.405 = students/70% K-8/30% High)
Multi-family: (du x 0.207 = students/70% K-8/30% High)

	K-8	High
School Name		
City		
Distance		
Current Zoning/FLU Enrollment Demand		
****Proposed Zoning/FLU Enrollment Demand**		
****Change in Demand**		

E. Solid Waste: Residential (2 yard serves 15 units, 4 yard serves 30 units, 6 yard serves 45 units, 8 yard serves 60 units)

Demand Analysis	Maximum
Current Zoning/FLU	22.8 yd
****Proposed Zoning/FLU**	11.1 yd
***Change in Demand**	- 11.7 yd

F. Stormwater:
Potential increase in volume discharged due to increased impervious coverage, reduced groundwater seepage or loss of surface water storage impacting Adopted LOS of 25-year 3-day storm Pre vs. Post Runoff (Storm sewers to convey 5 year- 1 day storm event; Canals to convey 3 year – 1 day storm event)

Impact	Post development discharge will be less than pre-development due to drainage improvements. Per NSLRWCD, discharge is limited per lot size so there will be no negative impact.

III. Transportation Analysis: *Complete ITE Trip Generation Form (Attached)*

G. Transportation Analysis: Complete ITE Trip Generation Data Form Most recent ITE Code for use; HCM Roadway Capacity		
	AADT	**AM/PM Peak Hour Trips**
Demand Analysis	Maximum	Maximum
Current Zoning/FLU	2,112	257/234
****Proposed Zoning/FLU**	1,027	125/114
***Change in Demand**	Trips -1,085	Trips -132/-120
Impact to Capacity	Project meets concurrency per TIR by O'Rourke Enginnering	

IV. Project Description

PHASING
Is this project (phase) part of a larger project? ☑ Yes ☐ No
If yes, enumerate each phase, the number of units or square footage in each phase and beginning/completion date.
Total Project: Residential Units: Single Family: Multifamily:
Non-residential (square footage): PH-1 & 221 ksf EACH TOTAL 442 ksf
Mixed-use (describe use):
(If this is a single phase project, name it Phase I – Total)

RESIDENTIAL DATA

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

NON-RESIDENTIAL DATA					
Type(s) specify	**Phase**	**Square footage**	**Acres**	**Expecting beginning date**	**Expected completion date**
Distribution, warehouse, office		442 ksf	34.81	04/01/2023	04/01/2024

A. Indicate whether the proposed project will be eliminating any existing recreational facilities. If yes, detail the number and type being eliminated. ☐ Yes ☑ No

B. 1. Does this application involve demolition or re-use of any structure(s)? ☐ Yes ☑ No
If yes, what is the size of the structure(s) to be demolished or re-used? _____
2. What is the current use of the structure to be demolished or re-used? _____
3. Are you claiming trip credits for the demolition or re-use of a structure(s) at the site? ☐ Yes ☐ No
If yes, provide estimates of credits for each previous use at the site. (Attach sheet with calculations)

C. Exemptions Requested: None

** Complete section if requesting a change in zoning, future land use, or expanding

J A Development Partners, LLC

June 17, 2022

RE: Kings Highway Commerce Center
Southeast corner of Kings Highway and Graham Road
Fort Pierce, Florida

To Whom It May Concern:

J A Development Partners, LLC , the owner of the above referenced parcel, hereby authorizes Jeff H. Iravani, Inc to be our authorized agent to obtain all the required annexation, re-zoning, site plan approvals & civil related permits and to sign on our behalf on all applicable applications for the above referenced project.

Sincerely,

Signature: _____

Name: KENNETH J. MORIN

Title: MANAGER

STATE OF FLORIDA
COUNTY OF PALM BEACH

The foregoing instrument was acknowledged before me this 21st day of June, 2022, by Kenneth J. Morin who is personally known to me (or) produced a drivers' license as identification and who did (did not) take an oath.

_____
Notary Public

Seal

KRISTINA ILLING
MY COMMISSION # HH 199265
EXPIRES: July 8, 2024
Bonded Thru Notary Public Underwriters

Shad Properties Group, LLC
6301 W. Broward Blvd
Plantation, FL 33317

June 17, 2022

RE: Parcel ID # 2313-333-0001-000-7
Kings Highway Commerce Center
Southeast corner of Kings Highway and Graham Road
Fort Pierce, Florida

To Whom It May Concern:

Shad Properties Group, LLC, the owner of the above referenced parcel, hereby authorizes Jeff H. Iravani, Inc to be our authorized agent to obtain all the required annexation, re-zoning, site plan approvals & civil related permits and to sign on our behalf on all applicable applications for the above referenced project.

Sincerely,

Signature: Nabeela Islam Shad

Name: NABEELA ISLAM SHAD

Title: MANAGER

STATE OF FLORIDA BROWARD
COUNTY OF ~~PALM BEACH~~

The foregoing instrument was acknowledged before me this 20 day of June, 2022, by Nabeela Shad who is personally known to me (or) produced a drivers' license as identification and who did (did not) take an oath.

Syed Hussain
Notary Public Syed Hussain

Seal

SYED HUSSAIN
Notary Public - State of Florida
Commission # HH 163972
My Comm. Expires Sep 19, 2025
Bonded through National Notary Assn.

Property Identification

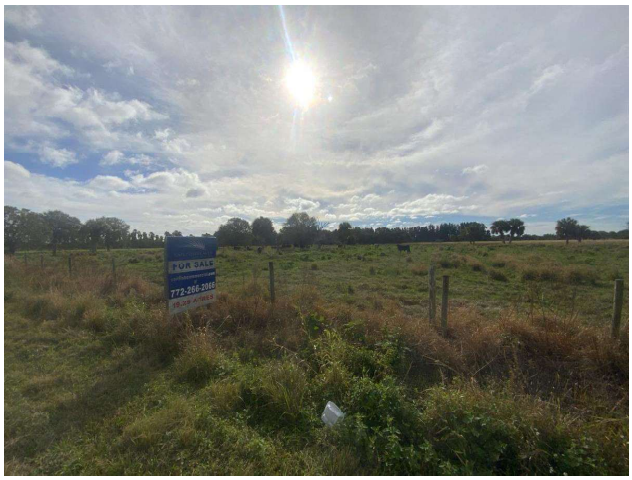
Site Address: WHITE RD
Sec/Town/Range: 13/35S/39E
Parcel ID: 2313-331-0000-000-4
Jurisdiction: Fort Pierce

Use Type: 6000
Account #: 13744
Map ID: 23/13S
Zoning: Comm Parkw

Ownership

JA LEGACY DEVELOPMENT
PARTNERS LLC

4923 W Cypress ST
Tampa, FL 33607



Legal Description

13 35 39 E 1/2 OF SW 1/4 OF SW 1/4-LESS N 40 FT AND LESS S 35 FT FOR RD RS/W- (19.29 AC)

Current Values

Just/Market Value:	$675,150
Assessed Value:	$5,305
Exemptions:	$0
Taxable Value:	$5,305

Property taxes are subject to change upon change of ownership.

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

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

Total Areas

Finished/Under Air (SF):	0
Gross Sketched Area (SF):	0
Land Size (acres):	19.29
Land Size (SF):	840,272.4

Building Design Wind Speed

Occupancy Category	I	II	III
Speed	140	150	160

Sources/links:

Sale History

Date	Book/Page	Sale Code	Deed	Grantor	Price
Nov 7, 2023	5070 / 1676	0001	SPWD	J A Enterprises Inc	$1,977,400
Feb 19, 2014	3605 / 0859	0111	CertTtle	Graham Groves Development LLC	$70,100
Jun 10, 2005	2276 / 2278	XX01	SPWD	Graham Groves	$1,400,000
Apr 7, 1995	0951 / 0771	XX00	WD	Kenneth H Lelly	$221,900
Dec 20, 1994	0934 / 1835	XX01	WD	Kenneth H Lelly	$100
Aug 1, 1980	0338 / 2795	XX00	CV		$124,900

Building Information (1 of 1)

Finished Area: 0 SF

Gross Sketched Area: 0 SF

Exterior Data

View:	Roof Cover:	Roof Structure:
Building Type:	Year Built: N/A	Frame:

Grade:	Effective Year: N/A	Primary Wall:
Story Height:	No. Units: 0	Secondary Wall:

Interior Data

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

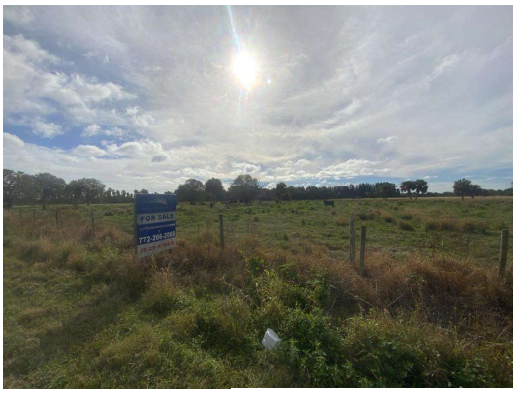


Image or Sketch unavailable for display

Sketch Area Legend

Sub Area	Description	Area	Fin. Area	Perimeter

Special Features and Yard Items

Type	Qty	Units	Year Blt

Current Year Values

Current Values Breakdown

Building:	$0
Land:	$675,150
Just/Market:	$675,150
Ag Credit:	$669,845
Save Our Homes or 10% Cap:	$0
Assessed:	$5,305
Exemption(s):	$0
Taxable:	$5,305

Current Year Exemption Value Breakdown

Current Year Special Assessment Breakdown

Start Year	AssessCode	Units	Description	Amount
2006	0041	53	Fort Pierce Stormwater Charge	$3,657.00

Start Year	AssessCode	Units	Description	Amount
2013	0054	19.29	North St. Lucie Water Management District	$443.67

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

Property Identification

Site Address: TBD
Sec/Town/Range: 13/35S/39E
Parcel ID: 2313-333-0001-000-7
Jurisdiction: Fort Pierce

Use Type: 6000
Account #: 156018
Map ID: 23/13S
Zoning: Comm Parkw

Ownership

Shad Properties Group LLC

311 Laurel Springs RD
Anniston, AL 36207

Legal Description

13 35 39 THAT PART OF SEC MPDAF: FROM SW COR OF SW 1/4, TH N 89 44 39 E 25 FT, TH N 00 11 05 W 614.19 FT, TH N 89 44 38 E 110 FT TO POB; TH CONT N 89 44 38 E 528.29 FT, TH S 00 56 56 W 614.19 FT TO S LI OF SEC, THE S 89 44 39 W 62.45 FT, TH N 00 15 21 W 44.07 FT, TH S 89 44 39 W 83.73 FT TO CURVE CONC NE, R OF 776 FT, TH NWLY ALG ARC 201.78 FT TO TO CURVE CONC SW, R OF 886 FT, TH NWLY ALG ARC 162.30 FT TO CURVE CONC NE, R OF 25 FT, TH NWLY ALG ARC 37.38 FT, TH N 00 11 05 W 491.91 FT TO POB (6.752 AC - 294,117 SF) (OR 2095-1237)

Current Values

Just/Market Value:	$506,400
Assessed Value:	$1,857
Exemptions:	$0
Taxable Value:	$1,857

Property taxes are subject to change upon change of ownership.

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

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

Total Areas

Finished/Under Air (SF):	0
Gross Sketched Area (SF):	0
Land Size (acres):	6.75
Land Size (SF):	294,117

Building Design Wind Speed

Occupancy Category	I	II	III
Speed	140	150	160

Sources/links:

Sale History

Date	Book/Page	Sale Code	Deed	Grantor	Price
Nov 12, 2004	2095 / 1237	XX00	WD	Wynne (TR) Matthew L	$540,000
Nov 6, 2003	1846 / 1516	XX00	WD	A P Hoeffner Sons Inc	$525,000

Building Information (1 of 1)

Finished Area: 0 SF

Gross Sketched Area: 0 SF

Exterior Data

View:	Roof Cover:	Roof Structure:
Building Type:	Year Built: N/A	Frame:
Grade:	Effective Year: N/A	Primary Wall:
Story Height:	No. Units: 0	Secondary Wall:

Interior Data

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

Image or Sketch unavailable for display

Sketch Area Legend

Sub Area	Description	Area	Fin. Area	Perimeter

Special Features and Yard Items

Type	Qty	Units	Year Blt

Current Year Values

Current Values Breakdown

Building:	$0
Land:	$506,400
Just/Market:	$506,400
Ag Credit:	$504,543
Save Our Homes or 10% Cap:	$0
Assessed:	$1,857
Exemption(s):	$0
Taxable:	$1,857

Current Year Exemption Value Breakdown

Current Year Special Assessment Breakdown

Start Year	AssessCode	Units	Description	Amount
2017	0054	6.752	North St. Lucie Water Management District	$155.30
Start Year	AssessCode	Units	Description	Amount
2023	0041	18.2	Fort Pierce Stormwater Charge	$1,255.80

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

Historical Values

Year	Just/Market	Assessed	Exemptions	Taxable
2023	$506,400	$1,857	$0	$1,857

2022	$472,640	$1,857	$0	$1,857
2021	$472,640	$1,857	$0	$1,857
2020	$472,640	$1,857	$0	$1,857

Permits

Number	Issue Date	Description	Amount	Fee

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

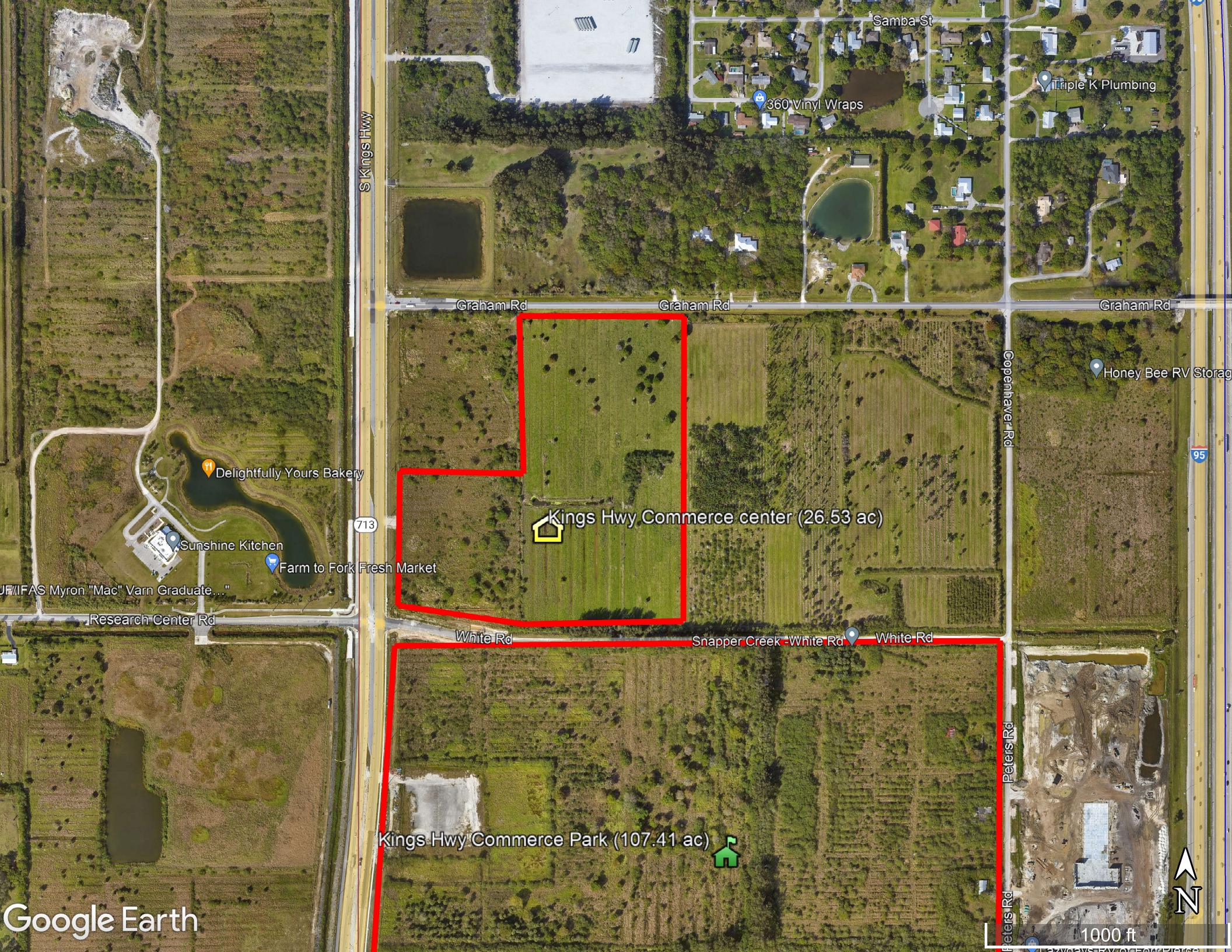
Historical Values

Year	Just/Market	Assessed	Exemptions	Taxable
2023	$675,150	$5,305	$0	$5,305
2022	$567,126	$5,305	$0	$5,305
2021	$434,025	$5,305	$0	$5,305
2020	$434,025	$5,305	$0	$5,305

Permits

Number	Issue Date	Description	Amount	Fee

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


Samba St
Triple K Plumbing
360 Vinyl Wraps
S Kings Hwy
Graham Rd
Graham Rd
Graham Rd
Honey Bee RV Storag
Coppinger Rd
95
Delightfully Yours Bakery
Kings Hwy Commerce center (26.53 ac)
713
Sunshine Kitchen
Farm to Fork Fresh Market
UF/IFAS Myron "Mac" Varn Graduate...
Research Center Rd
White Rd
Snapper Creek -White Rd
White Rd
Peters Rd
Kings Hwy Commerce Park (107.41 ac)
Peters Rd
N
1000 ft
Google Earth

JOSEPH E. SMITH, CLERK OF THE CIRCUIT COURT - SAINT LUCIE COUNTY
FILE # 3926462 OR BOOK 3605 PAGE 859, Recorded 02/19/2014 at 10:14 AM
Doc Tax: $490.70

St. Lucie County File Date: 02/19/2014 08:38 AM

J.A. ENTERPRISES, INC.,
Plaintiff,

VS.

GRAHAM GROVES DEVELOPMENT, LLC,
an administratively dissolved Florida limited
liability company; and
UNKNOWN TENANT #1,
Defendants.

IN THE CIRCUIT COURT, NINETEENTH
JUDICIAL CIRCUIT, IN AND FOR THE
COUNTY OF ST LUCIE, STATE OF
FLORIDA - CIVIL DIVISION
CASE NO. 562012CA003461

CERTIFICATE OF TITLE

The undersigned Clerk of the Court certifies that (s)he executed and filed a Certificate of Sale in this action on Feb, 4,2014 for the property described herein and that no objections to the sale have been filed within the time allowed for filing objections.

The following property in St Lucie County, Florida:

The East 1/2 of the Southwest 1/4 of the Southwest 1/4 of Section 13, Township 35 South, Range 39 East, lying and being in St. Lucie County, Florida, less and except the North forty feet (40') for the right of way for Graham Road.

Property Address: 0 White Road, Fort Pierce, Florida.
WAS SOLD TO:

J.A. ENTERPRISES, INC.
100 Davit Drive
North Palm Beach, FL 33408

WITNESS my hand and the seal of this Court On 19 February, 2014

JOSEPH E. SMITH
CLERK OF CIRCUIT COURT

BY: _____
Deputy Clerk

JOANNE HOLMAN, CLERK OF THE CIRCUIT COURT - SAINT LUCIE COUNTY
FILE # 2501878 OR BOOK 2095 PAGE 1237, Recorded 11/17/2004 at 12:03 PM
Doc Tax: $3780.00

This Instrument Prepared by:
Treasure Coast Abstract & Title Insurance Co.
401 South Indian River Drive
Fort Pierce, Fl 34950

Return to CH BX: 76

WARRANTY DEED

THIS WARRANTY DEED, executed this 12th day of November, 2004 by:

MATTHEW LYLE WYNNE, a single adult, individually and as Trustee

8000 South U.S.1, Suite 402
Port St. Lucie, Florida 34982

hereinafter called the Grantor, to:

SHAD PROPERTIES GROUP, LLC, a Florida limited liability company
6301 W. Broward Boulevard
Plantation, Florida 33317

hereinafter called the Grantee:

"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 Grantor, for and in consideration of the sum of $10.00 in hand paid by the said second party, the receipt whereof is hereby acknowledged, hereby grants, bargains, sells, aliens, remises, releases, conveys and confirms unto the Grantee forever, all that certain land situate, lying and being in the County of St. Lucie, State of Florida, to-wit:

See Exhibit "A" attached hereto

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 the 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 whomever; and that said land is free of all encumbrances, except taxes accruing subsequent to December 31, 2004

IN WITNESS WHEREOF, the Grantor has caused these presents to be executed the day and year first above written.

Signed, Sealed and Delivered
in the presence of:

AMANDA STOPKOWITZ, Witness
(Print or Type Name)

JACQUELYN BREWER, Witness
(Print or Type Name)

By: _____
Matthew Lyle Wynne, as Trustee

STATE OF FLORIDA
COUNTY OF ST. LUCIE

I HEREBY CERTIFY that the foregoing instrument was acknowledged before me this 12th day of NOVEMBER, 2004, by MATTHEW LYLE WYNNE, a single adult, individually and as Trustee who is personally known to me and who did not take an oath.

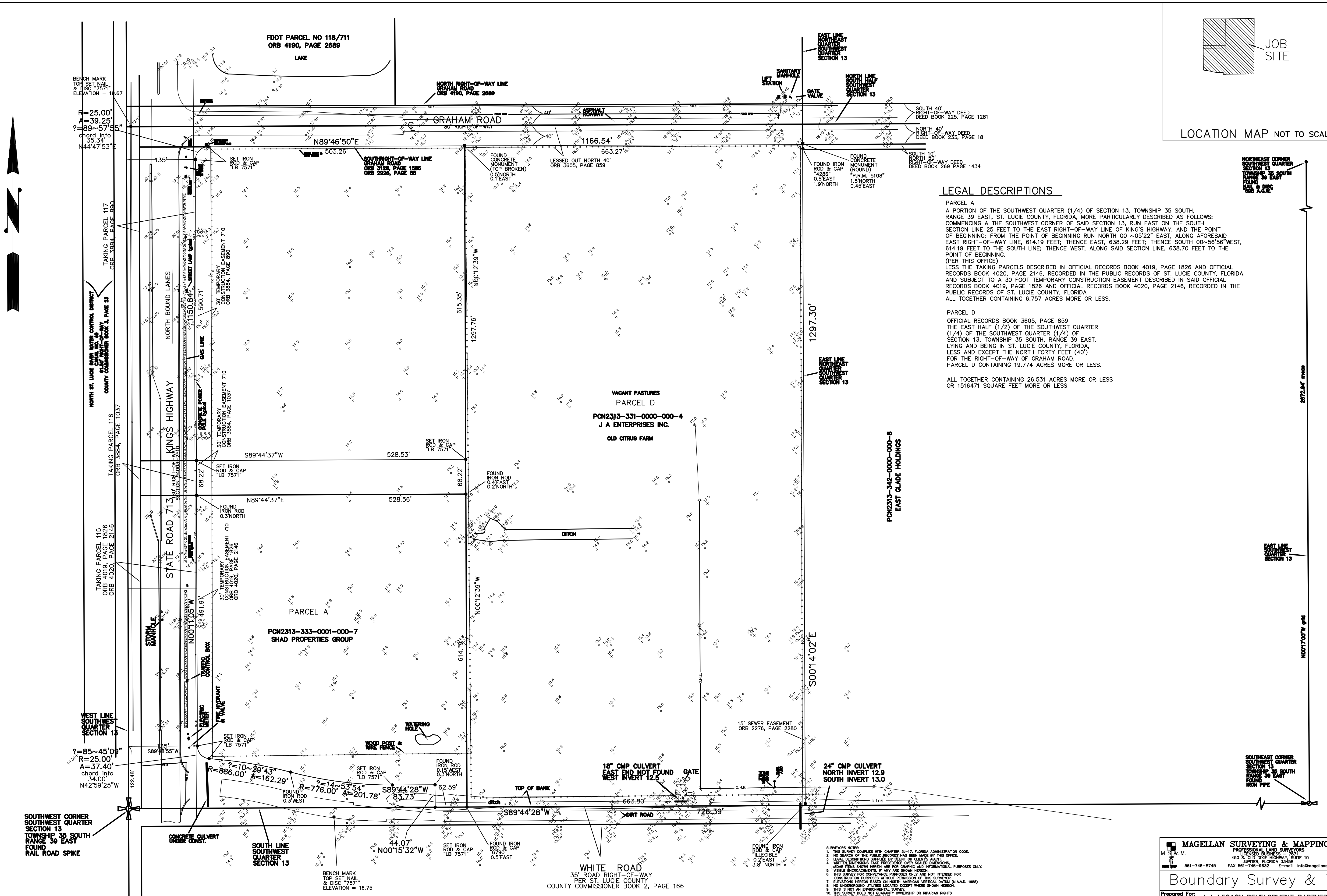
JACQUELYN B. BREWER
MY COMMISSION # DD 164638
EXPIRES: March 9, 2007
Bonded Thru Notary Public Underwriters

JACQUELYN BREWER NOTARY PUBLIC
State of Florida at Large
My Commission Expires: _____
My Commission No.: _____

EXHIBIT "A"

PARCEL B:
A portion of the Southwest ¼ of Section 13, Township 35 South, Range 39 East, St. Lucie County, Florida, more particularly described as follows:
Commencing at the Southwest corner of said Section 13, run East on the South Section Line 25 feet to the East right-of-way line of King's Highway, and the Point of Beginning. From the Point of Beginning run N.00°05'22" E., along aforesaid East right-of-way, 614.19 feet; thence East, 638.29 feet; thence S. 00°56'56" W., 614.19 feet to the South Section Line; thence West, along said Section Line, 638.70 feet to the Point of Beginning.
All the above containing 9.00 acres, more or less.

The above described property is not now nor ever has been the homestead of the Grantor.



LEGAL DESCRIPTIONS

PARCEL A

A PORTION OF THE SOUTHWEST QUARTER (1/4) OF SECTION 13, TOWNSHIP 35 SOUTH, RANGE 39 EAST, ST. LUCIE COUNTY, FLORIDA, MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING A THE SOUTHWEST CORNER OF SAID SECTION 13, RUN EAST ON THE SOUTH SECTION LINE 25 FEET TO THE EAST RIGHT-OF-WAY LINE OF KING'S HIGHWAY, AND THE POINT OF BEGINNING; FROM THE POINT OF BEGINNING RUN NORTH 00 ~05'22" EAST, ALONG AFORESAID EAST RIGHT-OF-WAY LINE, 614.19 FEET; THENCE EAST, 638.29 FEET; THENCE SOUTH 00~56'56"WEST, 614.19 FEET TO THE SOUTH LINE; THENCE WEST, ALONG SAID SECTION LINE, 638.70 FEET TO THE POINT OF BEGINNING.
(PER THIS OFFICE)
LESS THE TAKING PARCELS DESCRIBED IN OFFICIAL RECORDS BOOK 4019, PAGE 1826 AND OFFICIAL RECORDS BOOK 4020, PAGE 2146, RECORDED IN THE PUBLIC RECORDS OF ST. LUCIE COUNTY, FLORIDA. AND SUBJECT TO A 30 FOOT TEMPORARY CONSTRUCTION EASEMENT DESCRIBED IN SAID OFFICIAL RECORDS BOOK 4019, PAGE 1826 AND OFFICIAL RECORDS BOOK 4020, PAGE 2146, RECORDED IN THE PUBLIC RECORDS OF ST. LUCIE COUNTY, FLORIDA
ALL TOGETHER CONTAINING 6.757 ACRES MORE OR LESS.

PARCEL D

OFFICIAL RECORDS BOOK 3605, PAGE 859
THE EAST HALF (1/2) OF THE SOUTHWEST QUARTER (1/4) OF THE SOUTHWEST QUARTER (1/4) OF SECTION 13, TOWNSHIP 35 SOUTH, RANGE 39 EAST, LYING AND BEING IN ST. LUCIE COUNTY, FLORIDA, LESS AND EXCEPT THE NORTH FORTY FEET (40') FOR THE RIGHT-OF-WAY OF GRAHAM ROAD.
PARCEL D CONTAINING 19.774 ACRES MORE OR LESS.

ALL TOGETHER CONTAINING 26.531 ACRES MORE OR LESS OR 1516471 SQUARE FEET MORE OR LESS

NOTE:
THIS SURVEY PERFORMED WITHOUT BENEFIT OF TITLE

SURVEYORS NOTES:
1. THIS SURVEY COMPLIES WITH CHAPTER 5J-17, FLORIDA ADMINISTRATION CODE.
2. NO SEARCH OF THE PUBLIC RECORDS HAS BEEN MADE BY THIS OFFICE.
3. LEGAL DESCRIPTIONS SUPPLIED BY CLIENT OR CLIENT'S AGENT.
4. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS, SOME ITEMS SHOWN HEREIN ARE FOR GRAPHIC AND INFORMATIONAL PURPOSES ONLY.
5. VISIBLE ENCROACHMENTS, IF ANY ARE SHOWN HEREON.
6. THIS SURVEY FOR CONVEYANCE PURPOSES ONLY AND NOT INTENDED FOR CONSTRUCTION PURPOSES WITHOUT PERMISSION OF THIS SURVEYOR.
7. ELEVATIONS HEREON BASED ON NORTH AMERICAN VERTICAL DATUM (N.A.V.D. 1988)
8. NO UNDERGROUND UTILITIES LOCATED EXCEPT WHERE SHOWN HEREON.
9. THIS IS NOT AN ENVIRONMENTAL SURVEY.
10. THIS SURVEY DOES NOT GUARANTY OWNERSHIP OR RIPARIAN RIGHTS BEYOND MEAN HIGH WATER LINE.
11. BEARINGS HEREON BASED ON THE MEASURED GRID BEARING OF S89°44'28"W ALONG THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 13 AND ALL OTHER BEARINGS ARE RELATIVE THERETO.
12. ADDITIONS OR DELETIONS TO SURVEY MAPS OR REPORTS BY OTHER THAN THE SIGNING PARTY OR PARTIES IS PROHIBITED WITHOUT WRITTEN CONSENT OF THE SIGNING PARTY OR PARTIES.
13. FORM BOARD TIE-IN & UNDER CONSTRUCTION TIE-IN SURVEYS INTENT IS TO SHOW SETBACK COMPLIANCE; OWNER AND/OR CONTRACTOR ACCEPTS RESPONSIBILITY FOR PLACEMENT OF FORMBOARDS UPON RECIEPT OF THIS SURVEY. PLUMBING AND OTHER UTILITIES INSTALLED AT CONTRACTORS RISK.
14. THIS SURVEY IS NOT VALID WITHOUT SURVEYORS SIGNATURE & EMBOSSED SEAL, OR A VERIFIABLE ELECTRONIC SIGNATURE IN ACCORDANCE WITH STATE STATUTE 668.001-668.006.

RONALD E. STOTLER
PROFESSIONAL SURVEYOR AND MAPPER
CERTIFICATE NO. 5026
STATE OF FLORIDA

MAGELLAN SURVEYING & MAPPING, INC.
PROFESSIONAL LAND SURVEYORS
LICENSED BUSINESS - 7571
450 S. OLD DIXIE HIGHWAY, SUITE 10
JUPITER, FLORIDA 33458
561-746-8745 FAX 561-746-9632 E-mail info@magellansurveying.com

Boundary Survey & Topo

Prepared For: J A LEGACY DEVELOPMENT PARTNERS, LLC

Drawn by RES	Date Of Survey	Scale
Field: TF F.B.187 Pg32	JULY 20, 2022	1"= 80'
BOUNDARY, 07-08-2022 REVISIONS: ADD TOPO, 07-20-2022 ADD R/W INFO-COUNTY COMMENTS, 08-30-2022		Drawing Number 22-116

Jeff H. Iravani, Inc.
Consulting Engineers
1934 Commerce Lane, Suite 5
Jupiter, Florida 33458
Tel: (561) 575-6030 Fax: (561) 575-6088
Email: JHI@JHIinc.com Website: www.JHIinc.com

Kings Highway Commerce Center
Amended Site Plan Narrative
April 15, 2024

The above project site plan was approved by the city on January 18, 2023 as a 35 acre 442,000 square foot industrial development. The site plan approval is valid until May 14, 2025.

A site plan amendment is being requested to reduce the lot area to 26.52 acres and a reduction in building size to 390,000 square feet. This equates to an overall reduction in site acreage of 8.48 acres and a reduction in building size of 52,000 square feet.

The 2 lots in the southeast corner of Kings Hwy & Graham Road, (Parcels B and C respectively), have been removed from the proposed development. The use of the site remains as industrial, office/warehouse and distribution.

Building access and employee parking areas shall be located in front of the buildings. Loading docks are located at the rear of the building to keep the truck traffic separated from employee vehicular/ pedestrian traffic.

The project shall be constructed in 2 phases. Building-I, which encompasses 188,000 square feet shall be constructed as Phase 1. Building-2, encompassing 202,000 square feet will be considered Phase-II.

The access is provided by one right turn only access from Kings highway, with right turn storage lane, and 2 driveways each onto Graham Road and White Road.

The proposed development includes a lake with fountain, littoral plantings, one bioswale along White Road and 3 additional dry detentions. The proposed open space is 26% which exceeds the required 20%.

Landscape enhancements to the property will include a combination of both native and non native trees and palms as well as 16 relocated native Oak trees and 60 Sabal Palms.

The previously approved 35 ac site, and the original submittal of the 26 ac site had the Building-I loading area on the south side to keep the truck traffic separated from cars/employees' traffic and to provide easy access for the truck which is very important to the proper function of the use.

Per staff comment, the loading area on Building-I was reversed to face north due to White Road being along the south property line frontage. However, this layout causes an access issue for the truck circulation, particularly at the west driveway on White Road. The truck traffic has to make a 90 degree and then a 180-degree movement to access White Road. This causes difficult and undesirable access for trucks in addition to having the truck and other vehicular traffic mixed. Based on our discussion with staff, we would like to offer the previous site plan as an alternative. In order to buffer the loading area from White Road, a 6' wall is provided along the White Road with landscaping on the southside of the wall facing White Road. The 6' wall buffers loading docks from a driver line of sight on White Road. The trees buffer the remainder of the building area.

We appreciate the staff allowing us to offer an alternate site plan.

Jeff H. Iravani, Inc.
Consulting Engineers
1934 Commerce Lane, Suite 5
Jupiter, Florida 33458
Tel: (561) 575-6030 Fax: (561) 575-6088
Email: JHI@JHIinc.com Website: www.JHIinc.com

Kings Highway Commerce Center
Design Review Narrative
April 15, 2024

The design intent for this project is to provide an attractive site design along with aesthetically pleasing, modern, innovative architectural design for the proposed industrial use. While the proposed design is intended to be aesthetically pleasing, it is also intended to provide functionality for its use as an industrial site. This shall be accomplished through the use of site elements, landscape vegetation and architectural features.

Site elements for the subject property shall include features such as a lighted fountain within the lake along Kings highway. Architectural features proposed include vertical and horizontal projections, covered pedestrian walkways, architectural features on the wall to break up the wall areas, roof variation at the building corners and covered entries to the building. Concealed light features shall be utilized at entries to provide both light and architectural interest.

The building façade will be further enhanced through the use of foundation plantings. These plantings will provide variation in heights, textures, and materials to aid in softening the building, as well as to provide an aesthetically pleasing composition. This will be particularly important at the entrances where 'human scale' views will be necessary. Green living walls are utilized to both soften the buildings architecture as well as provide a for the addition of flowering foliage.

Truck circulations are enhanced by use of wide access, large radii and wider interior drives. Access is provided from Kings Hwy and both White and Graham Roads. Truck traffic shall be kept separate from employee traffic by separating the parking and loading areas to the front and rear of the buildings.

Bioswales and littoral planting areas have been provided on the site to improve stormwater filtration, as well as provide a visually appealing element to the design. The Bioswales will also aid in providing habitat diversity in terms of added native plantings for pollinators and wading birds.

The overall plant palette provides a combination of both native and non-native plantings which will provide color and texture variations to further enhance the visual appeal of the site.

The proposed landscape plan further makes use of the existing native Oak trees and Sabal Palms on site. The use of these elements will provide greater height, screening and environmental sustainability by reusing the existing site vegetation to the greatest extent possible. Additional native plantings, such as Slash Pines, Red Maple and Green Buttonwood trees will further enhance the biodiversity of the site.

Jeff Iravani

From: Vennis Gilmore <vgilmore@cityoffortpierce.com>
Sent: Tuesday, April 18, 2023 4:32 PM
To: JHI@JHIINC.com; Planning Department; Alicia Rosenthal
Subject: RE: Kings Highway Commerce Center

Good Afternoon,

The City of Fort Pierce Planning Department acknowledges and accept the new extension timeframe of 12 months and 119 days, which will make the new expiration date May 14th, 2025, for the Kings Highway Commerce Center Site Plan. This extension is due to the State of Florida Executive Orders.

Best Regards,

Vennis Gilmore | Assistant Planning Director | City of Fort Pierce
Planning Department
Phone: 772.467.3741 100 North U.S. 1 Fort Pierce, FL 34950

Website | Facebook | Survey

From: JHI@JHIINC.com <jhi@jhiinc.com>
Sent: Tuesday, April 18, 2023 4:25 PM
To: Vennis Gilmore <vgilmore@cityoffortpierce.com>
Cc: JHI@JHIINC.com
Subject: RE: Kings Highway Commerce Center

Hi Vennis,

I believe the ext yr is 2025

Thank you

Jeff

Jeff H. Iravani, PE
Jeff H. Iravani, Inc
1934 Commerce Ln-5
Jupiter, FL 33458
Tel: (561) 575-6030

Cell: (561) 329-2468
Fax: (561) 575-6088
JHI@JHIinc.com
www.JHIinc.com

From: Vennis Gilmore <vgilmore@cityoffortpierce.com>
Sent: Tuesday, April 18, 2023 4:16 PM
To: JHI@JHIINC.com
Cc: Kevin Freeman <kfreeman@cityoffortpierce.com>; Alicia Rosenthal <arosenthal@cityoffortpierce.com>; Planning Department <planning@cityoffortpierce.com>
Subject: RE: Kings Highway Commerce Center

Good Afternoon,

The City of Fort Pierce Planning Department acknowledges and accept the new extension timeframe of 12 months and 119 days, which will make the new expiration date May 14th, 2024, for the Kings Highway Commerce Center Site Plan. This extension is due to the State of Florida Executive Orders.

Best Regards,

Vennis Gilmore | Assistant Planning Director | City of Fort Pierce
Planning Department
Phone: 772.467.3741 100 North U.S. 1 Fort Pierce, FL 34950

Website | Facebook | Survey

From: JHI@JHIINC.com <jhi@jhiinc.com>
Sent: Tuesday, April 18, 2023 4:10 PM
To: Vennis Gilmore <vgilmore@cityoffortpierce.com>
Cc: Kevin Freeman <kfreeman@cityoffortpierce.com>; Alicia Rosenthal <arosenthal@cityoffortpierce.com>; JHI@JHIINC.com
Subject: FW: Kings Highway Commerce Center

Good afternoon Vennis,

Please see attached our request to extend the site plan approval for the above project & provide us w/ a response.

Thank you

Jeff

Jeff H. Iravani, PE

Jeff H. Iravani, Inc
1934 Commerce Ln-5
Jupiter, FL 33458
Tel: (561) 575-6030
Cell: (561) 329-2468
Fax: (561) 575-6088
JHI@JHIinc.com
www.JHIinc.com

From: JHI@JHIINC.com
Sent: Friday, February 10, 2023 9:44 AM
To: Vennis Gilmore <vgilmore@cityoffortpierce.com>
Cc: Kevin Freeman <kfreeman@cityoffortpierce.com>; 'Alicia Rosenthal' <arosenthal@cityoffortpierce.com>
Subject: RE: Kings Highway Commerce Center

Good morning Vennis,

Please see attached our request to extend the site plan approval for the above project.
This is based on Governor's Executive Orders and for a period of 12 months plus 119 days tolling.

Thank you
Jeff

Jeff H. Iravani, PE
Jeff H. Iravani, Inc
1934 Commerce Ln-5
Jupiter, FL 33458
Tel: (561) 575-6030
Cell: (561) 329-2468
Fax: (561) 575-6088
JHI@JHIinc.com
www.JHIinc.com

Please note that Our email address has changed to
JHI@JHIinc.com

Site Plan

For

Kings Highway Commerce Center

Section 13 Township 35S Range 39E

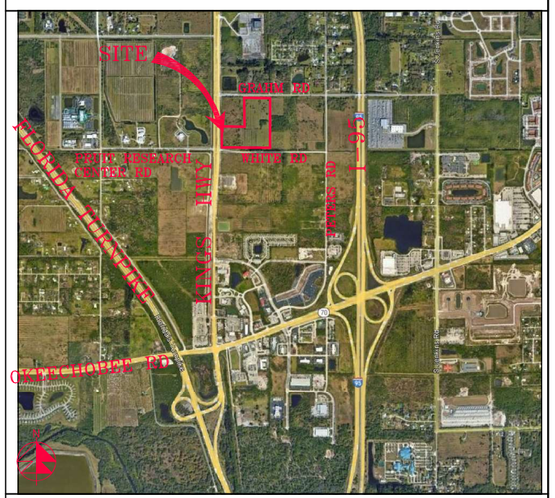
Fort Pierce, Florida

Developer

JA Development Partners, LLC

4923 W Cypress Street,
Tampa, Florida 33607

Aerial



Vicinity Map

Drawing Index

REVISIONS

04/12/2024 REV/CITY

Jeff H. Iravani, Inc.
Consulting Engineers
1934 COMMERCE LANE, SUITE 5
JUPITER, FLORIDA 33458
EMAIL: JHI@JHIinc.com
TEL: (561) 575-6030
FAX: (561) 575-6088
WEBSITE: www.JHIinc.com

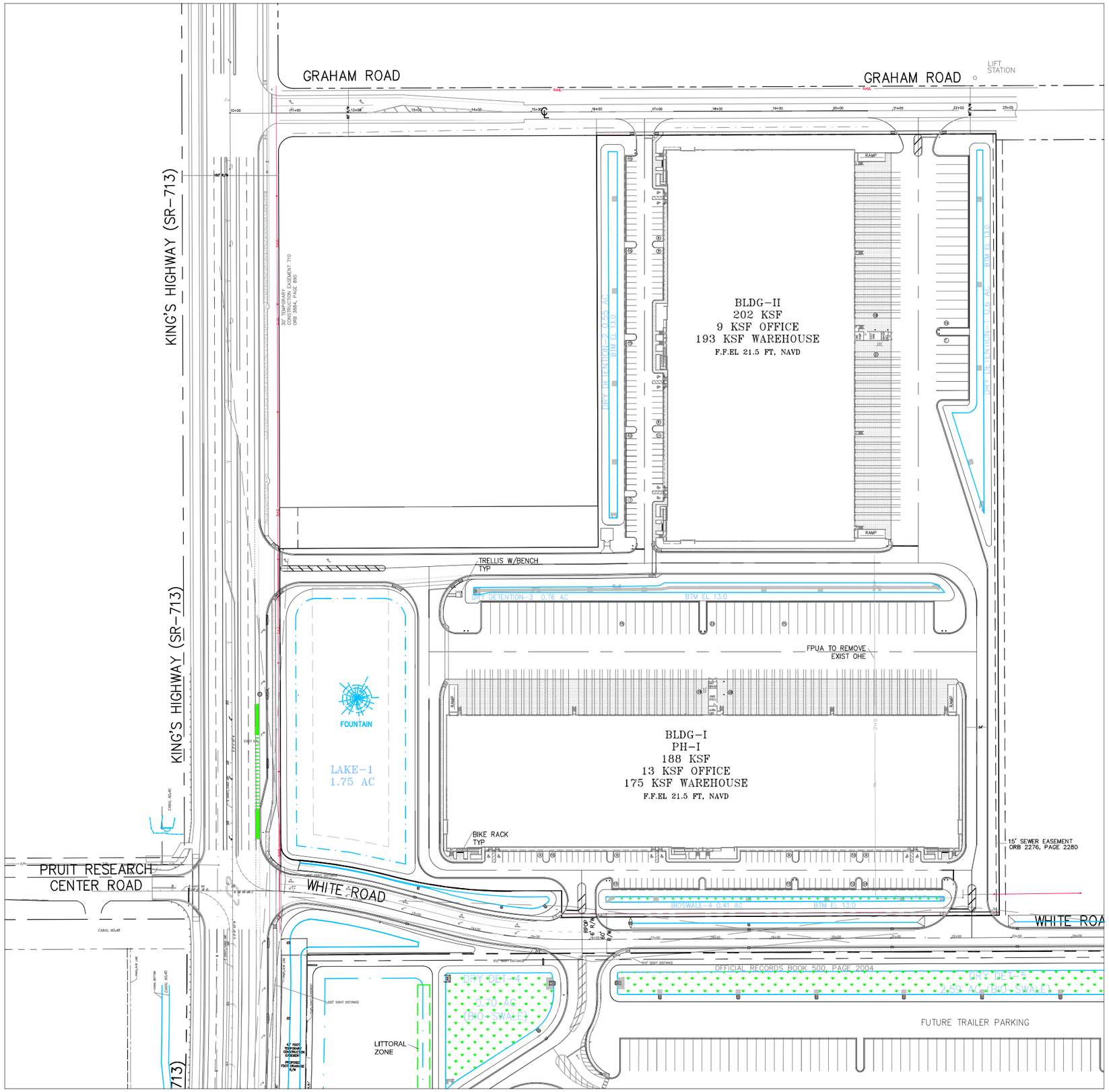
Kings Highway Commerce Center
Fort Pierce, Florida

Cover Sheet

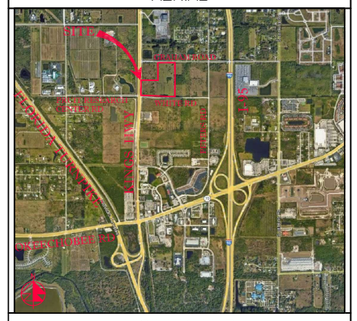
JOB NO.	DRAWN BY	DESIGNED BY	SCALE	DATE
2205-1402	CLJ	JHI	NA	07-07-22

SEAL

SHEET NO.
C-1



AERIAL



VICINITY MAP

SECTION 13, TWP 35S, RGE 39E

N

80' 0 40' 80' 160'

SCALE: 1" = 80'

SITE DATA

PROPOSED USE	OFFICE/WAREHOUSE/DISTRIBUTION		
FUTURE LAND USE	GC		
PROPOSED ZONING	CP-1		
PARCEL AREA	1,155,298 SF	26.52 AC	100%
BUILDOUT			
BUILDING AREA	390,000 SF		34.2%
OFFICE	22,000 SF		
WAREHOUSE	368,000 SF		
PHASE-I			
BUILDING AREA	188,000 SF		
OFFICE	13,000 SF		
WAREHOUSE	175,000 SF		
PHASE-II			
BUILDING AREA	202,000 SF		
OFFICE	9,000 SF		
WAREHOUSE	193,000 SF		
PARKING REQ PH-I			101 SP
OFFICE ITE RATE	13,000 SF @ 2.39/KSF		32 SP
WAREHOUSE ITE RATE	175,000 SF @ 0.39/KSF		69 SP
HANDICAP			5 SP
BICYCLE			6 SP
PARKING PROP			130 SP
HANDICAP			6 SP
BICYCLE			8 SP
LOADING REQ			8 SP
LOADING PROP			55 SP
PARKING REQ PH-II			98 SP
OFFICE ITE RATE	9,000 SF @ 2.39/KSF		22 SP
WAREHOUSE ITE RATE	193,000 SF @ 0.39/KSF		76 SP
HANDICAP			5 SP
BICYCLE			6 SP
PARKING PROP			98 SP
HANDICAP			6 SP
BICYCLE			8 SP
LOADING REQ			8 SP
LOADING PROP			39 SP
PAVT/SW	470,515 SF	10.80 AC	
TOTAL IMPERVIOUS	860,515 SF	19.75 AC	74%
LAKE	76,421 SF	1.75 AC	
PERVIOUS	218,362 SF	5.02 AC	
OPEN SPACE	294,783 SF	6.77 AC	26%
BLDG HEIGHT	65 FT MAX		

SETBACKS	REQ'D	PROP
FRONT	25'	273'
REAR	20'	60.6'
SIDE STREET	20'	187.3'
SIDE	10'	NA

PCN 2313-333-0001-000-7
2313-331-0000-000-4

LEGACY
DEVELOPMENT PARTNERS

REVISIONS

09/21/22 REV SLC
07/11/23 REV CLT
10/03/23 REV SP
01/08/24 REV SP

Jeff H. Iravani, Inc.
Consulting Engineers
TEL: (561) 575-6030
FAX: (561) 575-6088
1934 COMMERCE LANE SUITE 5
JUPITER, FLORIDA 33458
WEBSITE: www.JHIinc.com
EMAIL: JHI@JHIinc.com

Kings Highway
Commerce Center
Fort Pierce, Florida

Master Site Plan

JOB NO.	DRAWN BY	DESIGNED BY	SCALE	DATE
2205-1402	DDI	JHI	1"=80'	07-07-22

SEAL

SHEET NO.
MSP-2

SEE SHT SP-5

KING'S HIGHWAY (SR-713)

FDOT EASM'T

30'

STOP SIGN & BAR TYP

170.9'

BICYCLE RACK 4 SPACES

313.67'

STOP SIGN & BAR TYP

DRY DETENTION-3 0.76 AC

BTM EL 13.0

2.21 AC

FOUNTAIN

LAKE-1
1.75 AC

GREEN PAVEMENT STRIPING PER FDOT DEV714CCPM & DEV976GCPM

"BEGIN RT TURN LANE YIELD TO BIKES" SIGN R4-4

1,026' SIGHT DISTANCE

WHITE ROAD

RAMP

821'2"

BLDG-I
PH-I
188 KSF
13 KSF OFFICE
175 KSF WAREHOUSE
F.F.EL 21.5 FT, NAVD

851.5'

330'

BICYCLE RACK 4 SPACES

BIOSWALE-4 0.41 AC

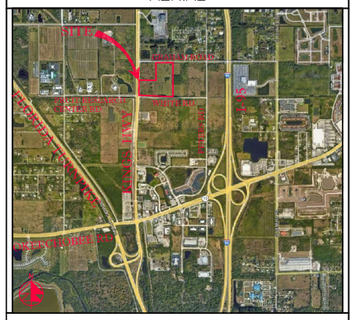
STOP SIGN & BAR TYP

6' PROP R/W

SEE SHT SP-4

STRIPING LEGEND
(A) 6" SOLID WHITE
(B) 8" SOLID WHITE
(C) 12" SOLID WHITE
(D) 18" SOLID WHITE
(E) 24" SOLID WHITE
(F) 6" SKIP WHITE TYP (10'-30')
(G) 6" SKIP WHITE TYP (6'-10')
(H) 6" SKIP WHITE TYP (2'-4')
(I) 6" SOLID YELLOW
(J) 18" SOLID YELLOW
(K) 6" DOUBLE YELLOW
(L) 6" SKIP YELLOW (10'-30')
(M) 6" SKIP YELLOW TYP (6'-10')
(N) 6" SKIP YELLOW TYP (2'-4')
(P) PRM BI-DIRECTIONAL AMBER/AMBER
(R) FDP WHITE
(S) FDP YELLOW
(T) RPM BI-DIRECTIONAL WHITE/RED
(U) RPM BI-DIRECTIONAL RED/YELLOW

AERIAL



VICINITY MAP

SECTION 13, TWP 35S, RGE 39E

N

40' 0 20' 40' 80'

SCALE: 1" = 40'

REVISIONS

Jeff H. Iravani, Inc.
Consulting Engineers
1934 COMMERCE LANE, SUITE 5
JUPITER, FLORIDA 33458
TEL: (561) 575-6030
FAX: (561) 575-6088
EMAIL: JHI@JHIinc.com
WEBSITE: www.JHIinc.com

Kings Highway Commerce Center

Fort Pierce, Florida

Site Plan

DATE	SCALE	DESIGNED BY	DRAWN BY	JOB NO.
07-07-22	1"=40'	JHI	DDI	2205-1402

SEAL

SHEET NO.
SP-3

SEE SHT SP-6

SEE SHT SP-3

BICYCLE RACK
4 SPACES

313.67'

RAMP

STOP SIGN & BAR
TYP

DRY DETENTION-3 0.76 AC

BTM EL 13.0

BLDG-I
PH-I
188 KSF
13 KSF OFFICE
175 KSF WAREHOUSE
F.F.EL 21.5 FT, NAVD

821'-2"

150'

651.5'

BICYCLE RACK
4 SPACES

BICYCLE RACK
4 SPACES

BIOSWALE-4 0.41 AC

BTM EL 13.0

6' PROP R/W

STOP SIGN & BAR
TYP

510' SIGHT DISTANCE

510' SIGHT DISTANCE

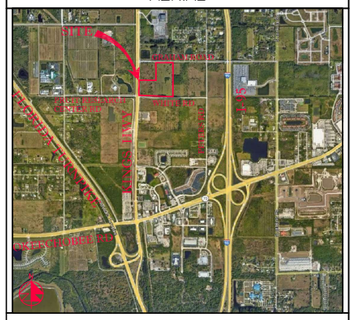
OFFICIAL RECORDS BOOK 500, PAGE 2004

15' SEWER EA
ORB 2276, P

DRY DET-5

13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00

AERIAL



VICINITY MAP

SECTION 13, TWP 35S, RGE 39E

N

40' 0 20' 40' 80'

SCALE: 1" = 40'

STRIPING LEGEND

- (A) 6" SOLID WHITE
- (B) 8" SOLID WHITE
- (C) 12" SOLID WHITE
- (D) 18" SOLID WHITE
- (E) 24" SOLID WHITE
- (F) 6" SKIP WHITE TYP (10'-30')
- (G) 6" SKIP WHITE TYP (6'-10')
- (H) 6" SKIP WHITE TYP (2'-4')
- (I) 6" SOLID YELLOW
- (J) 18" SOLID YELLOW
- (K) 6" DOUBLE YELLOW
- (L) 6" SKIP YELLOW (10'-30')
- (M) 6" SKIP YELLOW TYP (6'-10')
- (N) 6" SKIP YELLOW TYP (2'-4')
- (P) PRM BI-DIRECTIONAL AMBER/AMBER
- (Q) FDP WHITE
- (S) FDP YELLOW
- (T) RPM BI-DIRECTIONAL WHITE/RED
- (U) RPM BI-DIRECTIONAL RED/YELLOW

REVISIONS

05/15/2024 REV/CITY

Jeff H. Iravani, Inc.
Consulting Engineers
1934 COMMERCE LANE, SUITE 5
JUPITER, FLORIDA 33458
TEL: (561) 575-6030
FAX: (561) 575-6088
EMAIL: JHI@JHIinc.com
WEBSITE: www.JHIinc.com

Kings Highway Commerce Center

Fort Pierce, Florida

Site Plan

DATE	SCALE	DESIGNED BY	DRAWN BY	JOB NO.
07-07-22	1"=40'	JHI	DDI	2205-1402

SEAL

SHEET NO.

SP-4

KING'S HIGHWAY (SR-713)

GRAHAM ROAD

O.H.E.

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00

30' TEMPORARY CONSTRUCTION EASEMENT 710 ORB 3884, PAGE 890

STOP SIGN & BAR TYP

BICYCLE RACK 4 SPACES

BLDG-II
202 KSF
9 KSF OFFICE
193 KSF WAREHOUSE
F.F.EL 21.5 FT, NAVD

DRY DETENTION-2 0.55 AC
BTM EL 13.0

DRY DETENTION-3 0.76 AC
BTM EL 13.0

FDOT EASM'T

313.67'

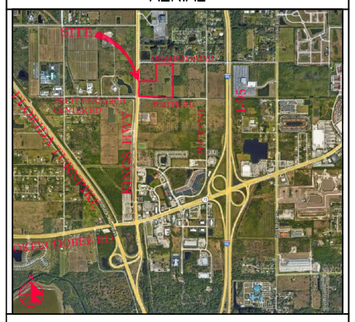
170.9'

SEE SHT SP-6

SEE SHT SP-3

STRIPING LEGEND
(A) 6" SOLID WHITE
(B) 8" SOLID WHITE
(C) 12" SOLID WHITE
(D) 18" SOLID WHITE
(E) 24" SOLID WHITE
(F) 6" SKIP WHITE TYP (10'-30')
(G) 6" SKIP WHITE TYP (6'-10')
(H) 6" SKIP WHITE TYP (2'-4')
(I) 6" SOLID YELLOW
(J) 18" SOLID YELLOW
(K) 6" DOUBLE YELLOW
(L) 6" SKIP YELLOW (10'-30')
(M) 6" SKIP YELLOW TYP (6'-10')
(N) 6" SKIP YELLOW TYP (2'-4')
(P) PRM BI-DIRECTIONAL AMBER/AMBER
(Q) FDP WHITE
(S) FDP YELLOW
(T) RPM BI-DIRECTIONAL WHITE/RED
(U) RPM BI-DIRECTIONAL RED/YELLOW

AERIAL



VICINITY MAP

SECTION 13, TWP 35S, RGE 39E

N

40' 0 20' 40' 80'

SCALE: 1" = 40'

REVISIONS

05/15/2024 REV/CITY

Jeff H. Iravani, Inc.
Consulting Engineers
1934 COMMERCE LANE, SUITE 5
JUPITER, FLORIDA 33458
TEL: (561) 575-6030
FAX: (561) 575-6088
EMAIL: JHI@JHIinc.com
WEBSITE: www.JHIinc.com

Kings Highway Commerce Center

Fort Pierce, Florida

Site Plan

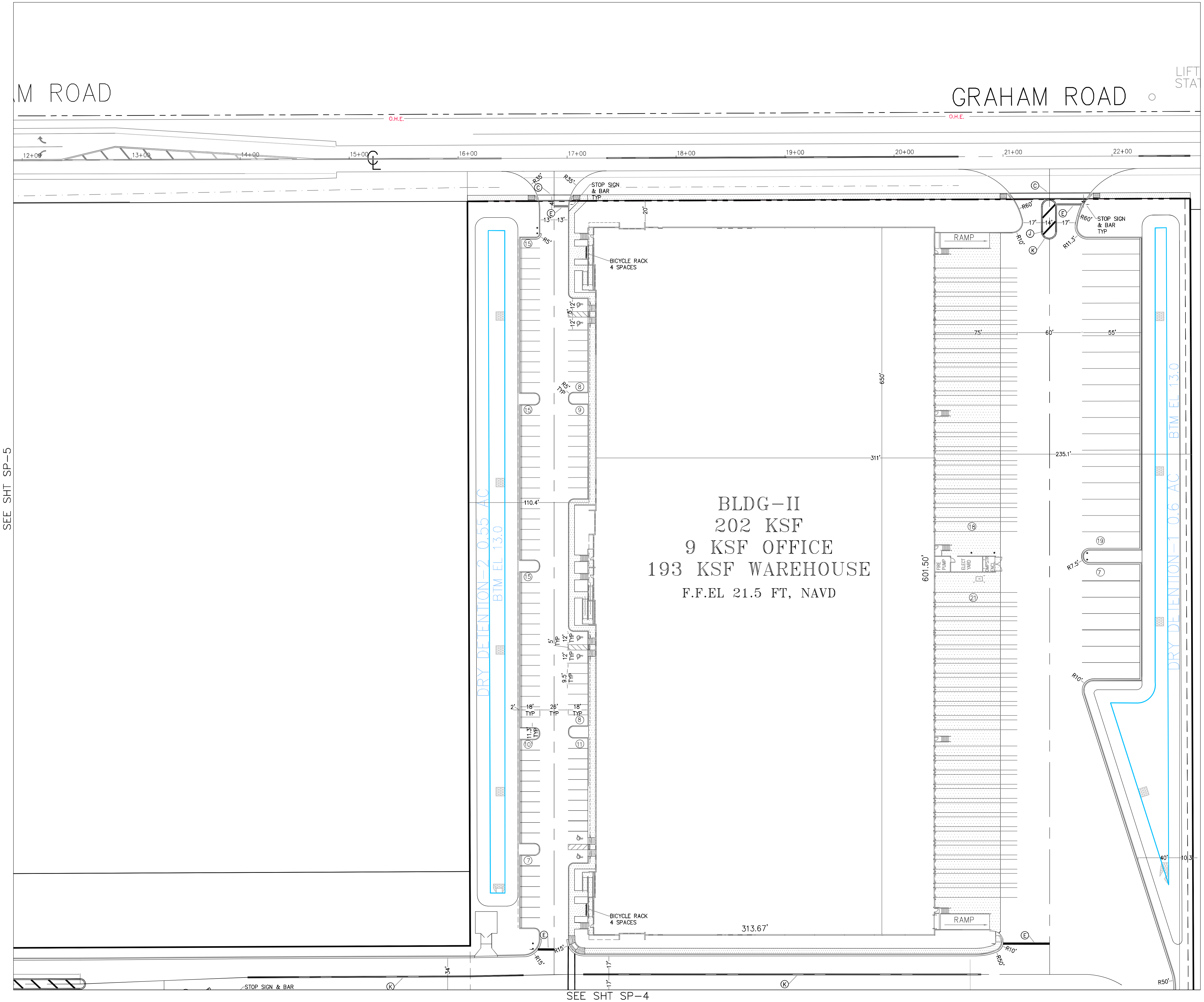
DATE	SCALE	DESIGNED BY	DRAWN BY	JOB NO.
07-07-22	1"=40'	JHI	DDI	2205-1402

SEAL

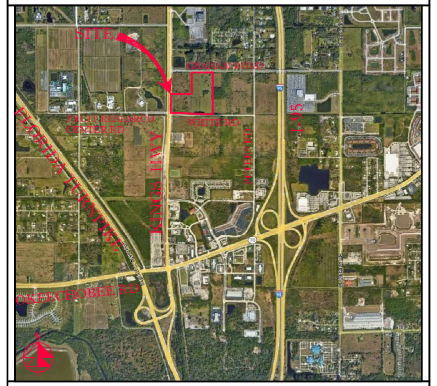
CDA 6986

SHEET NO.

SP-5



AERIAL



VICINITY MAP

SECTION 13, TWP 35S, RGE 39E

N

40' 0 20' 40' 80'

SCALE: 1" = 40'

STRIPING LEGEND
Ⓐ 6" SOLID WHITE
Ⓑ 8" SOLID WHITE
Ⓒ 12" SOLID WHITE
Ⓓ 18" SOLID WHITE
Ⓔ 24" SOLID WHITE
Ⓕ 6" SKIP WHITE TYP (10'–30')
Ⓖ 6" SKIP WHITE TYP (6'–10')
Ⓗ 6" SKIP WHITE TYP (2'–4')
Ⓘ 6" SOLID YELLOW
Ⓙ 18" SOLID YELLOW
Ⓚ 6" DOUBLE YELLOW
Ⓛ 6" SKIP YELLOW (10'–30')
Ⓜ 6" SKIP YELLOW TYP (6'–10')
Ⓝ 6" SKIP YELLOW TYP (2'–4')
Ⓟ PRM BI-DIRECTIONAL AMBER/AMBER
Ⓡ FDP WHITE
Ⓢ FDP YELLOW
Ⓣ RPM BI-DIRECTIONAL WHITE/RED
Ⓤ RPM BI-DRIECTIONAL RED/YELLOW

REVISIONS

05/15/2024 REV/CITY

Jeff H. Iravani, Inc.
Consulting Engineers
1934 COMMERCE LANE, SUITE 5
JUPITER, FLORIDA 33458
TEL: (561) 575-6030
FAX: (561) 575-6088
EMAIL: JHI@JHIinc.com
WEBSITE: www.JHIinc.com

Kings Highway Commerce Center

Fort Pierce, Florida

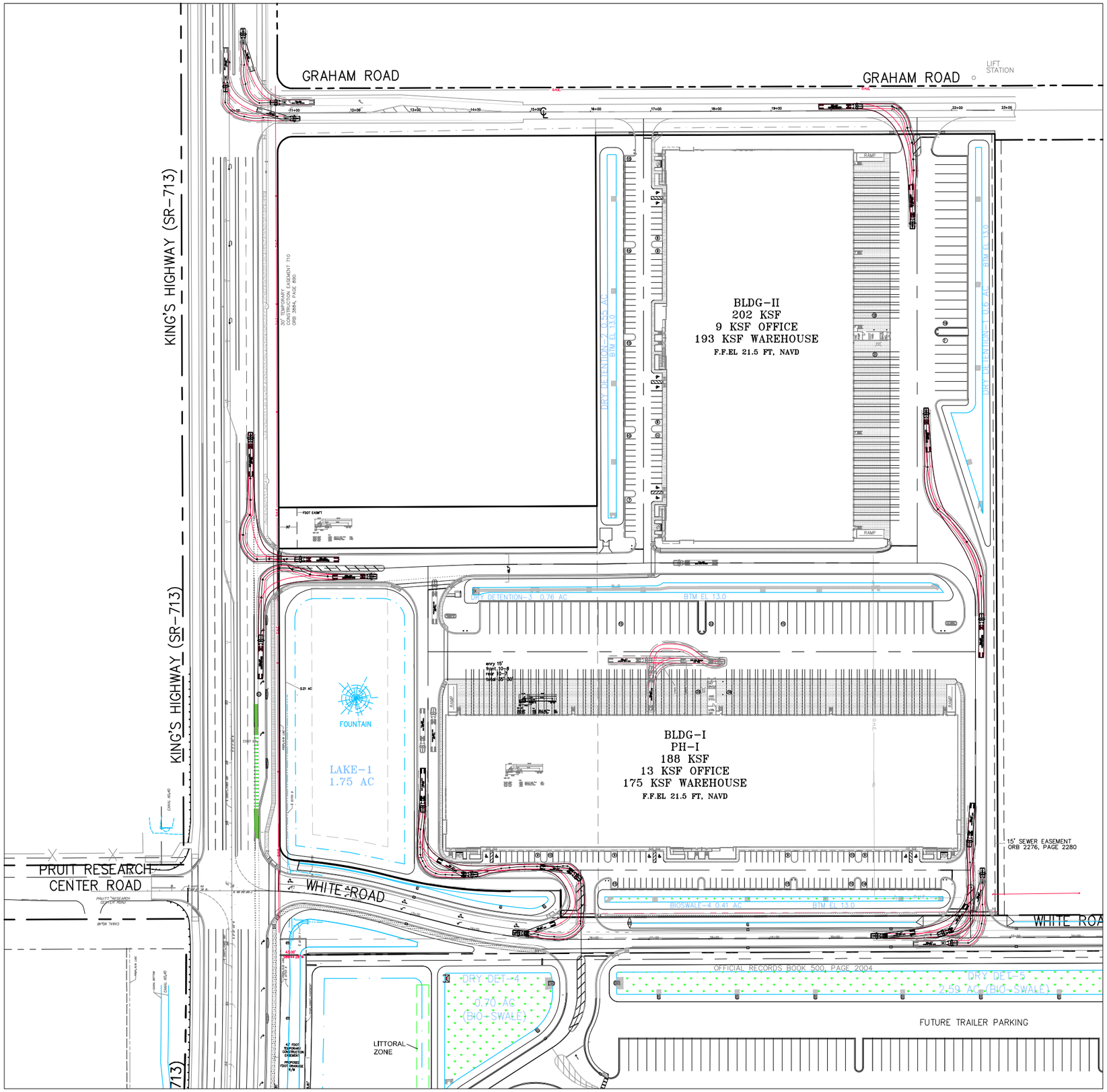
Site Plan

JOB NO.	DRAWN BY	DESIGNED BY	SCALE	DATE
2205-1402	DDI	JHI	1"=40'	07-07-22

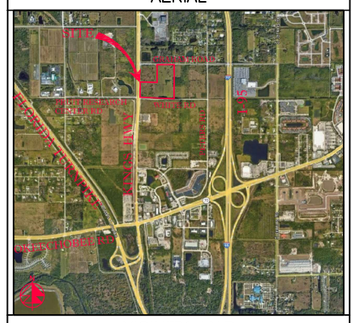
SEAL

SHEET NO.

SP-6



AERIAL



VICINITY MAP

SECTION 13, TWP 35S, RGE 39E

N

80' 0 40' 80' 160'

SCALE: 1" = 80'

REVISIONS

09/21/22 REV SLC
07/11/23 REV CLT
10/03/23 REV SP
01/08/24 REV SP

Jeff H. Iravani, Inc.
Consulting Engineers
1934 COMMERCE LANE, SUITE 5
JUPITER, FLORIDA 33458
TEL: (561) 575-6030
FAX: (561) 575-6088
EMAIL: JHI@JHIinc.com
WEBSITE: www.JHIinc.com

Kings Highway
Commerce Center
Fort Pierce, Florida

Truck Circulation
Overall Plan

DATE	SCALE	DESIGNED BY	DRAWN BY	JOB NO.
07-07-22	1"=80'	JHI	DDI	2205-1402

LEGACY
DEVELOPMENT PARTNERS

SEAL

SHEET NO.
TC-1

MATCHLINE SEE SHEET 4

MATCHLINE SEE SHEET 2

KING'S HIGHWAY

WHITE ROAD

FOUNTAIN

LAKE 1
1.75 AC

LITTORAL PLANTING (3,774 sf)
(209) GREAT SPIKE RUSH
(146) PICKEREL WEED
(145) FIRE FLAG

BLDG-1
PH-1
221 KSF
15 KSF OFFICE
206 KSF WAREHOUSE

RAMP

FIRE HYDRANT

WATER MAIN

STORM WATER DRAINAGE

TYPE F CURB

5' SIDEWALK

GAS (2) VALVES

O.H.E.

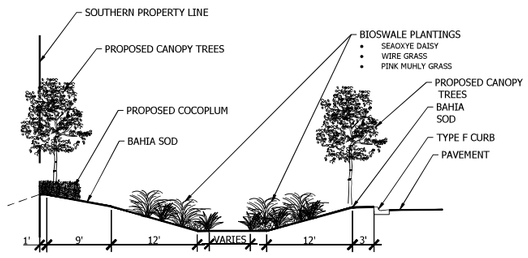
DRY DETENTION #4/ BIOSWALE CROSS SECTION

BIO SWALE PLANTINGS (4,636 sf)
(478) MYREGRASS
(714) SEAOXEYE DAISY
(410) PINK MUHLY GRASS

SOD

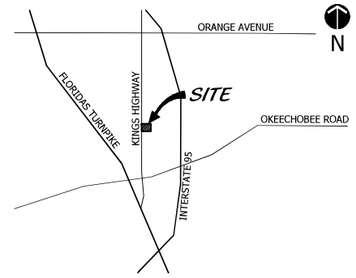
30'

40'

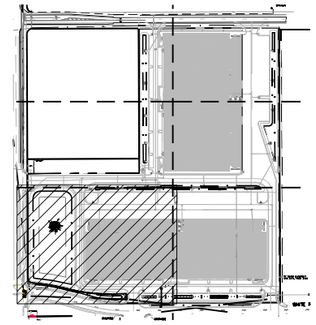


(A)- DRY DETENTION #4/ BIO SWALE PLANTING- SOUTH PROPERTY LINE

LOCATION MAP



SHEET LAYOUT MAP



48 HOURS BEFORE DIGGING
CALL TOLL FREE
811
SUNSHINE STATE ONE CALL OF FLORIDA, INC.

Landscape Plan

0' 15' 30' 60' 90' 120'

Scale: 1" = 30'-0"

North

Cotleur & Hearing
Landscape Architects
Land Planners
Environmental Consultants
1934 Commerce Lane
Suite 1
Jupiter, Florida 33458
561.747.6336 · Fax 747.1377
www.cotleurhearing.com
Lic# LC-26000535

King's Highway Commerce Center

Landscape Plan
City of Fort Pierce, Florida

REGISTERED LANDSCAPE ARCHITECT
CHARLESTON E. HEARING
LA 0000943
STATE OF FLORIDA

DESIGNED	DEH
DRAWN	AGB
APPROVED	DEH
JOB NUMBER	21-0130
DATE	07-28-22
REVISIONS	10-07-22
	11/10/23
	04-15-24

April 15, 2024 1:24:49 p.m.
Drawing: 21-1001 LP.DWG

SHEET 1 OF 7

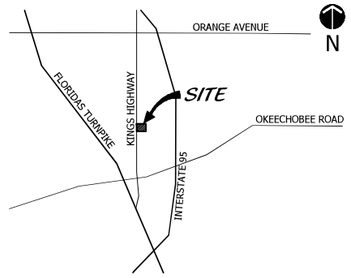
MATCHLINE SEE SHEET 3

MATCHLINE SEE SHEET 1

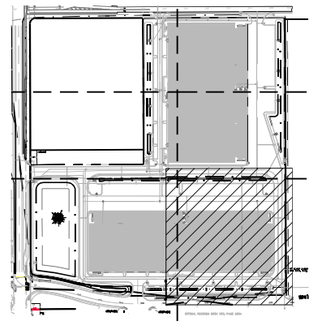
BLDG-1
PH-1
221 KSF
15 KSF OFFICE
206 KSF WAREHOUSE

WHITE ROAD

LOCATION MAP



SHEET LAYOUT MAP



48 HOURS BEFORE DIGGING
CALL TOLL FREE
811
SUNSHINE STATE ONE CALL OF FLORIDA, INC.

Landscape Plan

0' 15' 30' 60' 90' 120'

Scale: 1" = 30'-0"

North

Cotleur & Hearing
Landscape Architects
Land Planners
Environmental Consultants
1934 Commerce Lane
Suite 1
Jupiter, Florida 33458
561.747.6336 · Fax 747.1377
www.cotleurhearing.com
Lic# LC-26000535

King's Highway Commerce Center
Landscape Plan
City of Fort Pierce, Florida

REGISTERED LANDSCAPE ARCHITECT
CHARLSON E. HEARING
LA 0000943
STATE OF FLORIDA

DESIGNED	DEH
DRAWN	AGB
APPROVED	DEH
JOB NUMBER	21-0130
DATE	07-28-22
REVISIONS	10-07-22
	11/10/23
	04-15-24

April 15, 2024 1:24:49 p.m.
Drawing: 21-1001 LP.DWG

SHEET 2 OF 7

MATCHLINE SEE SHEET 5

MATCHLINE SEE SHEET 4

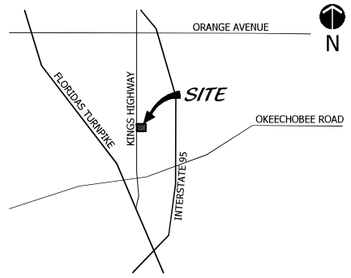
BLDG-2
PH-1
202 KSF
9 KSF OFFICE
193 KSF WAREHOUSE

BIO SWALE PLANTINGS (9,324 sf)
(961) WIREGRASS
(1,436) SEAOXEYE DAISY
(824) PINK MUHLY GRASS

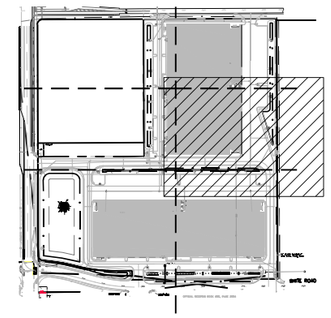
AR 3
BS 7
QV24 1
CID 58
SOD
SP 5
TF 96
SP 2
TF 77
CE 3
FIRE HYDRANT
WATER MAIN TYP
TYPE F CURB
SP 3
SOD
SPARR 5
CU3 96
QV 1
SOD
CE 2
STORM DRAINAGE
RAMP
DETECTABLE WARNING STRIP TYP
SIDEWALK
WATER MAIN
TJ 1
BS 7
CLD15 14
PP 5
LN 4
CLD15 13
PP 5
CLD15 13
QV 10
PP 5
CLD15 6
SPC 5
MUH 85
RE22 1
SOD

MATCHLINE SEE SHEET 2

LOCATION MAP



SHEET LAYOUT MAP



Landscape Plan

0' 15' 30' 60' 90' 120'

Scale: 1" = 30'-0"

North

48 HOURS BEFORE DIGGING
CALL TOLL FREE
811
SUNSHINE STATE ONE CALL OF FLORIDA, INC.

Cotleur & Hearing
Landscape Architects
Land Planners
Environmental Consultants
1934 Commerce Lane
Suite 1
Jupiter, Florida 33458
561.747.6336 · Fax 747.1377
www.cotleurhearing.com
Lic# LC-26000535

King's Highway Commerce Center
Landscape Plan
City of Fort Pierce, Florida

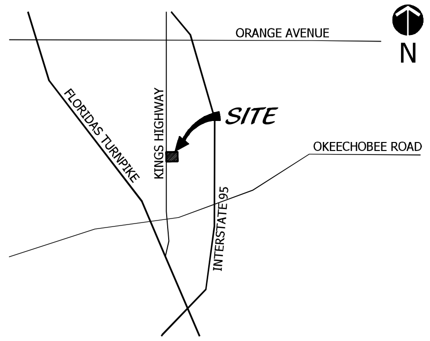
REGISTERED LANDSCAPE ARCHITECT
THOMASSON E. HEARING
LA 0000943
STATE OF FLORIDA

DESIGNED	DEH
DRAWN	AGB
APPROVED	DEH
JOB NUMBER	21-0130
DATE	07-28-22
REVISIONS	10-07-22
	11/10/23
	04-15-24

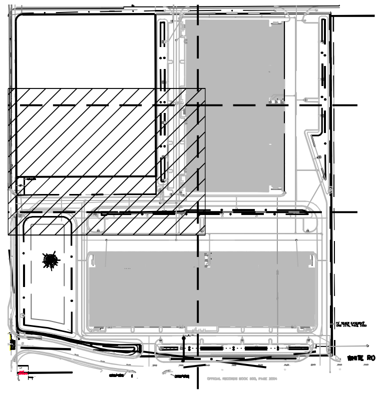
April 15, 2024 1:24:49 p.m.
Drawing: 21-1001 LP.DWG

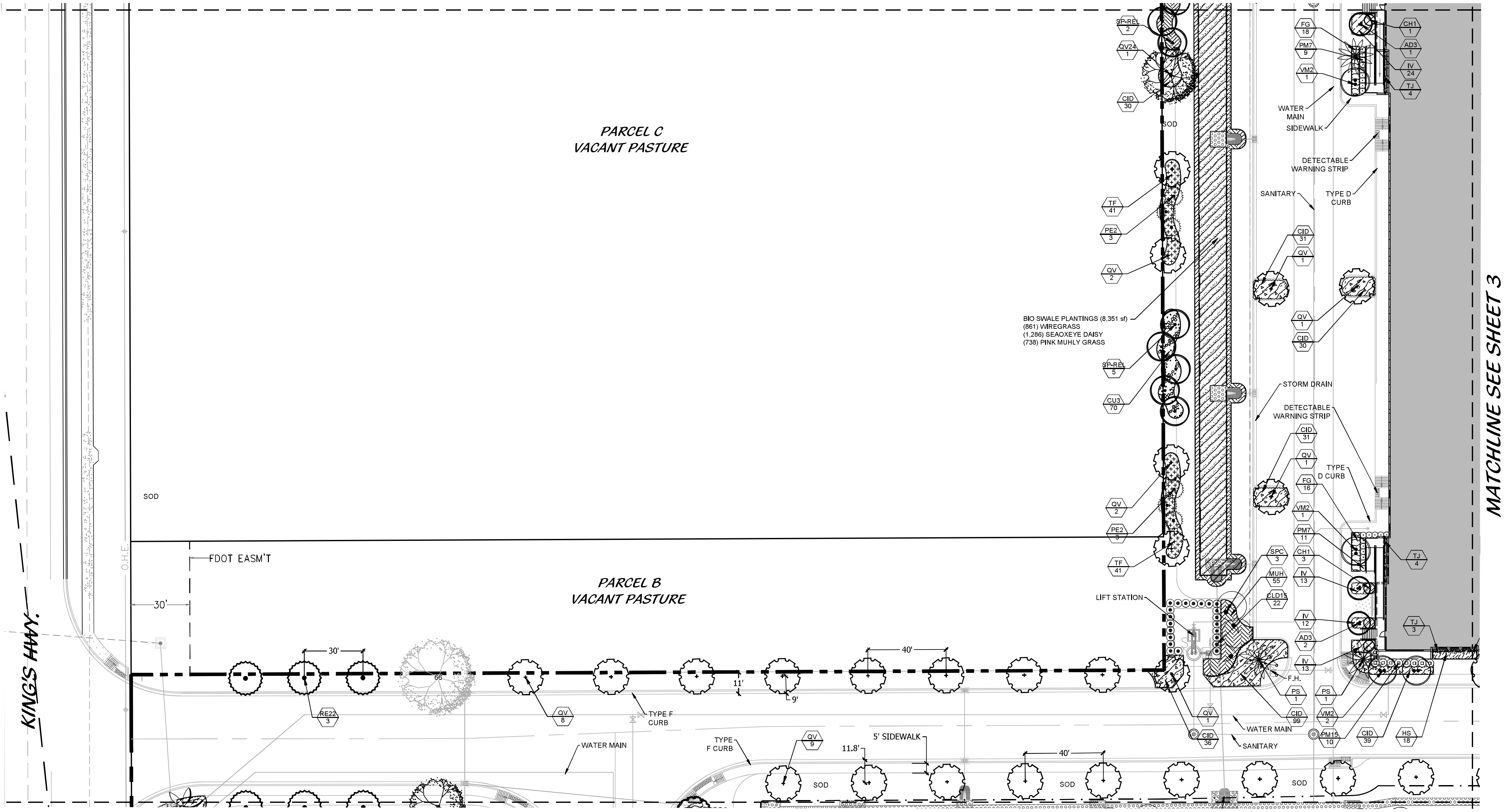
SHEET 3 OF 7

LOCATION MAP



SHEET LAYOUT MAP





Landscape Plan

Scale: 1" = 30'-0"

North

48 HOURS BEFORE DIGGING
CALL TOLL FREE
811
SUNSHINE STATE ONE CALL
OF FLORIDA, INC.

Cotleur & Hearing
Landscape Architects
Land Planners
Environmental Consultants
1934 Commerce Lane
Suite 1
Jupiter, Florida 33458
561.747.6336 · Fax 747.1377
www.cotleurhearing.com
Lic# LC-26000535

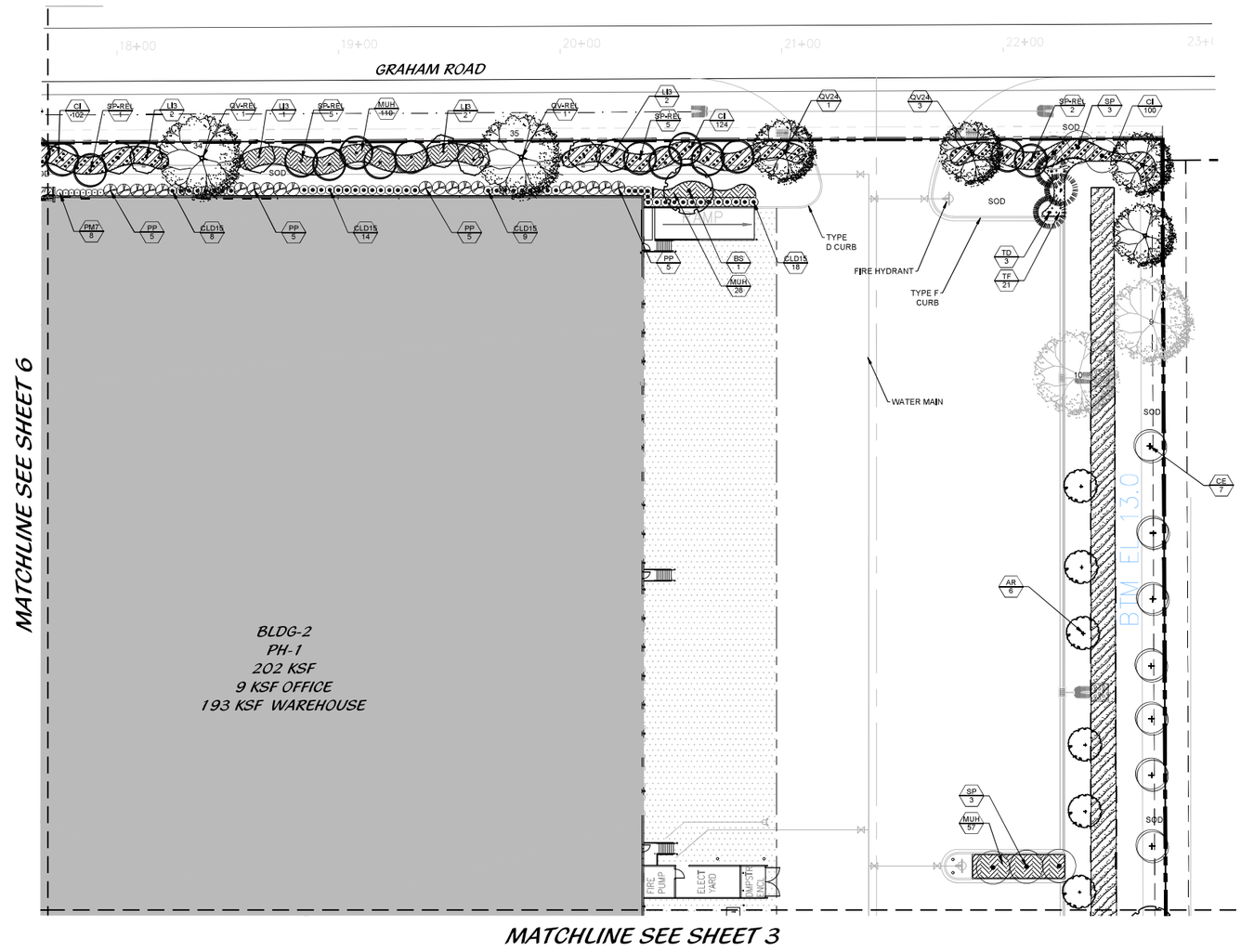
King's Highway Commerce Center
Landscape Plan
City of Fort Pierce, Florida

REGISTERED LANDSCAPE ARCHITECT
DONALDSON E. HEARING
LA 0000943
STATE OF FLORIDA

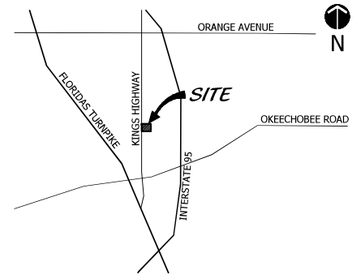
DESIGNED	DEH
DRAWN	AGB
APPROVED	DEH
JOB NUMBER	21-0130
DATE	07-28-22
REVISIONS	10-07-22
	11/10/23
	04-15-24

April 15, 2024 1:24:49 p.m.
Drawing: 21-1001 LP.DWG

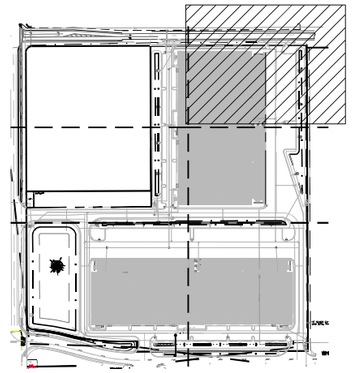
SHEET 4 OF 7



LOCATION MAP



SHEET LAYOUT MAP



Landscape Plan

0' 15' 30' 60' 90' 120'

Scale: 1" = 30'-0"

North

48 HOURS BEFORE DIGGING
CALL TOLL FREE
811
SUNSHINE STATE ONE CALL OF FLORIDA, INC.

Cotleur & Hearing
Landscape Architects
Land Planners
Environmental Consultants
1934 Commerce Lane
Suite 1
Jupiter, Florida 33458
561.747.6336 · Fax 747.1377
www.cotleurhearing.com
Lic# LC-26000535

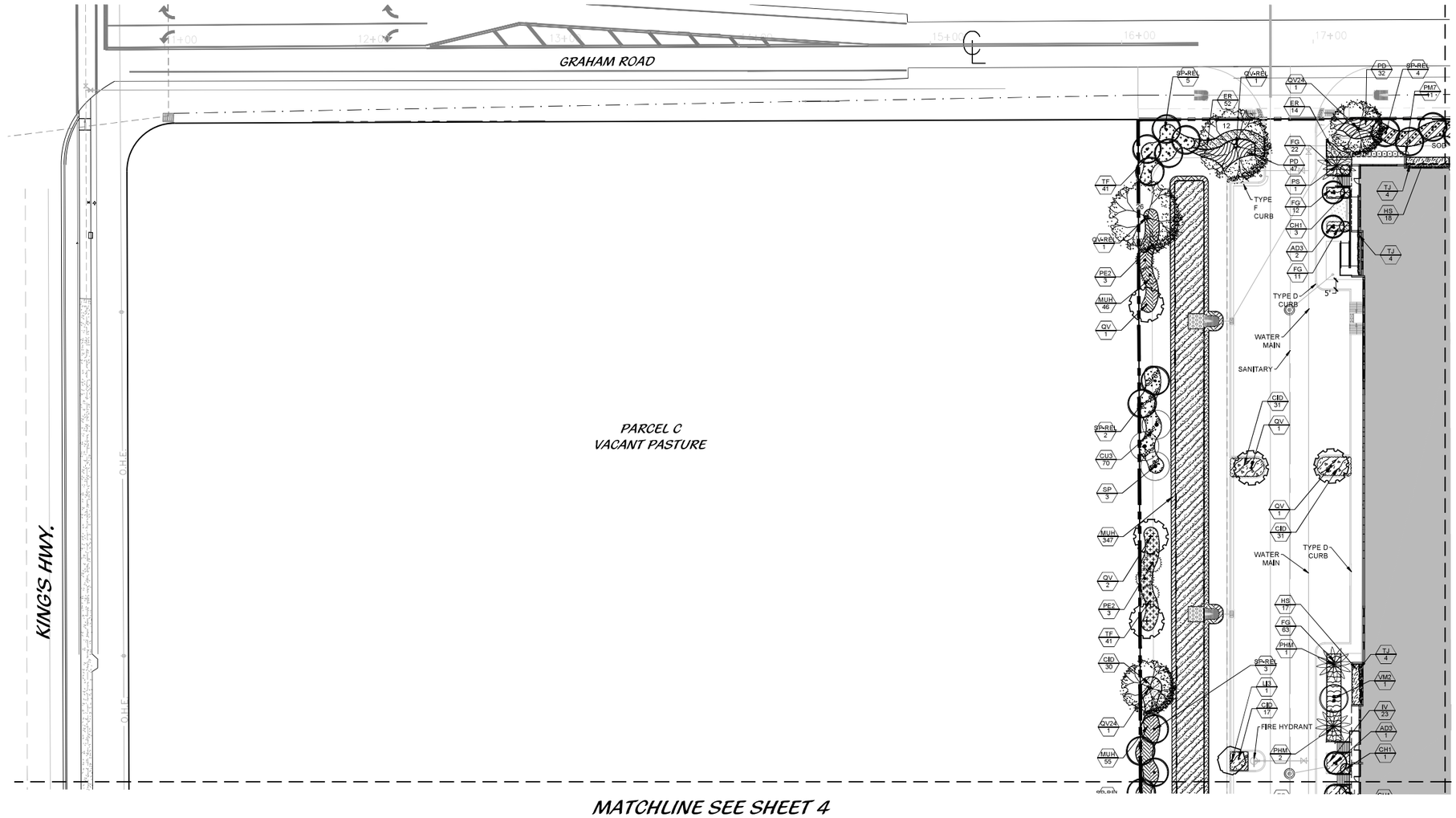
King's Highway Commerce Center
Landscape Plan
City of Fort Pierce, Florida

REGISTERED LANDSCAPE ARCHITECT
THOMAS E. HEARING
LA 0000943
STATE OF FLORIDA

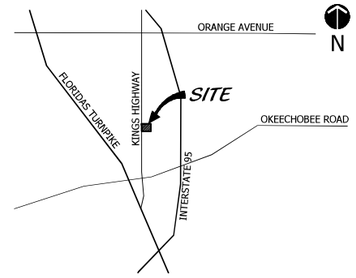
DESIGNED	DEH
DRAWN	AGB
APPROVED	DEH
JOB NUMBER	21-0130
DATE	07-28-22
REVISIONS	10-07-22
	11/10/23
	04-15-24

April 15, 2024 1:24:49 p.m.
Drawing: 21-1001 LP.DWG

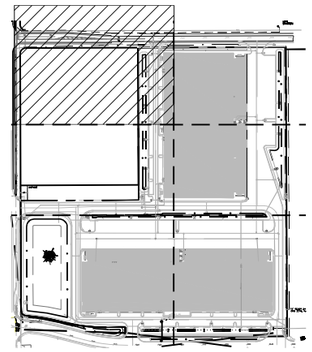
SHEET 5 OF 7



LOCATION MAP



SHEET LAYOUT MAP



Landscape Plan

0' 15' 30' 60' 90' 120'

Scale: 1" = 30'-0"

North

48 HOURS BEFORE DIGGING
CALL TOLL FREE
811
SUNSHINE STATE ONE CALL OF FLORIDA, INC.

Cotleur & Hearing
Landscape Architects
Land Planners
Environmental Consultants
1934 Commerce Lane
Suite 1
Jupiter, Florida 33458
561.747.6336 · Fax 747.1377
www.cotleurhearing.com
Lic# LC-26000535

King's Highway Commerce Center

Landscape Plan

City of Fort Pierce, Florida

REGISTERED LANDSCAPE ARCHITECT
DONALDSON E. HEARING
LA 0000943
STATE OF FLORIDA

DESIGNED	DEH
DRAWN	AGB
APPROVED	DEH
JOB NUMBER	21-0130
DATE	07-28-22
REVISIONS	10-07-22
	11/10/23
	04-15-24

April 15, 2024 1:24:49 p.m.
Drawing: 21-1001 LP.DWG

SHEET 6 OF 7

LANDSCAPE NOTES

ALL PLANT MATERIAL SHALL BE FLORIDA NUMBER 1 OR BETTER AS DEFINED BY THE DIVISION OF PLANT INDUSTRY 'FLORIDA GRADES AND STANDARDS' LATEST EDITION.

ALL LANDSCAPE SHALL CONFORM TO THE REQUIREMENTS OF THE TOWN OF JUPITER LAND DEVELOPMENT REGULATIONS. THE TOWN OF JUPITER LANDSCAPE CODE (LDRs) SHALL GOVERN IN THE EVENT OF A CONFLICT.

VEGETATION REMOVAL PERMITS ARE REQUIRED PRIOR TO REMOVING, CLEARING OR STRIPPING ANY VEGETATION FROM THE PROPERTY.

AT THE TIME OF BUILDING PERMIT, THE APPLICANT SHALL EXECUTE HOLD HARMLESS AGREEMENTS WITH ALL APPLICABLE UTILITIES FOR LANDSCAPING WITHIN UTILITY EASEMENTS.

THE LANDSCAPE CONTRACTOR SHALL NOT MAKE ANY SUBSTITUTIONS AND/ OR CHANGES WITHOUT THE AUTHORIZATION OF TOWN OF JUPITER, THE OWNER AND THE LANDSCAPE ARCHITECT.

THE LANDSCAPE CONTRACTOR SHALL REVIEW THE PROJECT DRAINAGE AND UTILITY PLANS PRIOR TO CONSTRUCTION AND AVOID ALL CONFLICTS. THE LANDSCAPE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO COMMENCING WORK.

THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITS.

THE CONTRACTOR SHALL COORDINATE THE PLANTING AND TRIMMING OF STREET TREES TO ENSURE FULL VISIBILITY TO TRAFFIC CONTROL AND SAFETY SIGNAGE

TREES SHALL BE POSITIONED TO AVOID CONFLICTS WITH SIGNAGE AND SITE LIGHTING. LARGER TREES WILL BE PROVIDED AT INTERSECTIONS WHERE DEEMED NECESSARY.

ALL VEGETATION SHALL BE SELECTED AND POSITIONED SO THAT IT DOES NOT PRESENT OBSTRUCTIONS TO THE LINE OF SIGHT AT INTERSECTIONS PURSUANT TO SECTION 27-1262(a)(9)(c) OF THE TOWN OF JUPITER CODE.

ALL ABOVE GROUND UTILITIES I.E. TRANSFORMERS, SWITCH BOXES, AC CONDENSERS AND ALIKE SHALL BE FULLY SCREENED FROM VIEW ON THREE SIDES WITH LANDSCAPING. THE LANDSCAPING SHALL TO THE TALLEST POINT OF SAID EQUIPMENT AT TIME OF PLANTING.

ALL TREES SHALL BE LOCATED WITHIN A MULCH PLANTING BED WITH A MINIMUM OF TWO (2) FEET OF CLEARANCE TO THE EDGE OF THE BED.

SOD AND IRRIGATION SHALL BE INSTALLED IN ANY ADJACENT RIGHT OF WAY BETWEEN THE SIDEWALK AND THE CURB.

ALL SOD SHALL BE STENOTAPHRUM SECONDATUS FLORITAM-PALMETTO (ST. AUGUSTINE SOD).

TREES WITHIN PLANTING ISLANDS LESS THAN FIVE (5) FEET IN WIDTH SHALL BE LOCATED TO AVOID CONFLICTS WITH THE OVERHANG OF VEHICLES.

TYPE D RAISED CONCRETE CURBING SHALL BE PROVIDED AROUND ALL PLANTING ISLANDS WITHIN VEHICULAR USE AREAS.

TREES AT ENTRANCE WAYS AND WITHIN SIGHT TRIANGLES SHALL BE TRIMMED IN SUCH A FASHION TO MINIMIZE SITE VISIBILITY CONFLICTS. CLEAR VISIBILITY SHALL BE MAINTAINED BETWEEN 30 INCHES AND 7 FEET. TEN FOOT BY THIRTY FOOT SIGHT VISIBILITY TRIANGLES SHALL BE PROVIDED AT THE INTERSECTIONS WITH THE PUBLIC RIGHT OF WAY. IN ADDITION ALL LANDSCAPING SHALL CONFORM TO THE REQUIREMENTS OF FDOT INDEX 546.

EARTH BERMS SHALL NOT EXCEED A 3:1 SLOPE 4:1 SLOPES OR GREATER ARE PREFERABLE.

ALL TREES PLANTED UNDER OR ADJACENT TO FPL POWER LINES WILL COMPLY WITH THE FPL RIGHT TREE IN THE RIGHT PLACE GUIDELINES (REV 5/95)

PERIMETER TREES AT THE TIME OF PLANTING SHALL BE SPACED IN A WAY THAT COMPLEMENTS THE SPACING OF ANY EXISTING TREES ON ADJACENT DEVELOPED AREAS.

ALL LANDSCAPE ISLANDS AND BEDS SHALL BE FREE FROM SHELL ROCK AND CONSTRUCTION DEBRIS, EXCAVATED TO A DEPTH OF 30 INCHES OR TO CLEAN NATIVE SOILS AND FILLED WITH THE SPECIFIED BACKFILL MIXTURE.

ALL LANDSCAPE ISLANDS SHALL INCORPORATE THE INSTALLATION OF MOUNDING OF NATIVE SOILS A MINIMUM OF SIX INCHES (6") ABOVE THE TOP OF CURB.

19.5" 'BIO BARRIER' ROOT BARRIER SHALL BE PROVIDED FOR SHADE TREES PLANTED WITHIN SIX (6') FEET OF PUBLIC CURBS, SIDEWALKS OR PUBLIC RIGHT OF WAYS. ALL ROOT BARRIER SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURES RECOMMENDATIONS. THE TOTAL LENGTH OF THE ROOT BARRIERS SHALL BE 20' ADJACENT TO THE SIDEWALK AND 20' ADJACENT TO THE CURB.

ALL AREAS SHALL BE FULLY IRRIGATED IN ACCORDANCE WITH THE REQUIREMENTS OF THE TOWN OF JUPITER. THE IRRIGATION WATER SOURCE SHALL BE WELL WATER FOR COMMON AREAS AND POTABLE WATER AROUND THE BUILDING FOUNDATION.

CATCH BASINS AND DRAINAGE SHALL NOT BE LOCATED WITH IN REQUIRED PERIMETER BUFFERS OR PRESERVE AREAS.

THE IRRIGATION SYSTEM SHALL BE DESIGNED TO PROVIDE 100% OVERLAP COVERAGE TO ALL LANDSCAPE AND SOD AREAS.

THE IRRIGATION SYSTEM SHALL BE EQUIPPED WITH A RAIN SENSOR/CUT OFF SWITCH IN ACCORDANCE WITH STATE AND LOCAL REQUIREMENTS.

EXISTING TREES AND VEGETATION TO REMAIN SHALL BE STAKED AND BARRICADED PRIOR TO ANY LAND CLEARING. TREES TO BE RELOCATED SHALL BE ROOT PRUNED AND PROTECTED DURING CONSTRUCTION.

ALL TREES PROPOSED TO BE PRESERVED ON SITE SHALL BE PROTECTED IN ACCORDANCE WITH THE PROCEDURES OUTLINED IN DIVISION IV., VEGETATION REMOVAL REQUIREMENTS IN THE TOWN OF JUPITER CODE PRIOR TO THE ISSUANCE OF A C.O.

ANY AREA DESIGNATED WITH EXISTING VEGETATION TO REMAIN THAT IS DISTURBED DURING CONSTRUCTION WILL BE RESTORED WITH NATIVE PLANTINGS.

EXISTING TREES PRESERVED OR RELOCATED ON SITE SHALL BE PRUNED ACCORDING TO ANSI A300 STANDARDS OR BY AN ISA CERTIFIED ARBORIST.

ALL EXISTING LANDSCAPING AND TREES TO REMAIN SHALL BE BARRICADED WITH ORANGE CONSTRUCTION BARRICADE. THE BARRICADE SHALL BE INSTALLED AT THE DRIP LINE OF THE TREE/PALM OR AT THE EDGE OF THE SHRUB MASS. BARRICADES SHALL REMAIN IN PLACE THROUGHOUT THE DURATION OF CONSTRUCTION.

EXISTING, SUITABLE NATIVE VEGETATION LOCATED WITHIN THE PROPOSED DEVELOPMENT AREAS SHALL BE RELOCATED TO SUPPLEMENT THE LANDSCAPING. NATIVE VEGETATION SHALL BE RELOCATED BY TREE SPADE OR CRANE. PRIOR TO THE CLEARING OF THE SITE THE APPLICANT SHALL IDENTIFY ALL NATIVE VEGETATION TO BE RELOCATED.

RELOCATION METHODOLOGY: EXISTING NATIVE VEGETATION DETERMINED TO BE SUITABLE FOR RELOCATION SHALL BE RELOCATED TO TARGET AREAS USING HYDROLOGIC TREE SPADES. THE SIZE OF SPADE SHALL VARY FROM 90" TO 45" DEPENDING ON THE SIZE AND TYPE OF VEGETATION TO BE MOVED. THE APPLICANT SHALL IDENTIFY PRIOR TO THE CLEARING OF THE SITE ALL EXISTING NATIVE VEGETATION TO BE RELOCATED. FOLLOWING RELOCATION, VEGETATION SHALL BE WATERED DAILY FOR A PERIOD NOT LESS THAN 90 DAYS AFTER WHICH IT SHALL BE WATERED ON AN AS NEED BASIS TO INSURE SURVIVAL. AT A MINIMUM THE APPLICANT SHALL INSURE 60% SURVIVAL FOR ALL RELOCATED PLANT MATERIAL.

LANDSCAPE SPECIFICATIONS

1. GENERAL LANDSCAPE REQUIREMENTS

LANDSCAPE CONTRACT WORK INCLUDES, BUT IS NOT LIMITED TO, SOIL PREPARATION, FINE OR FINISH GRADING, FURNISHING AND INSTALLING PLANT MATERIAL, WATERING, STAKING, GUYING AND MULCHING.

PLANT SIZE AND QUALITY

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

ALL CONTAINER GROWN MATERIAL SHALL BE HEALTHY, VIGOROUS, WELL-ROOTED PLANTS AND ESTABLISHED IN THE CONTAINER IN WHICH THEY ARE SOLD. THE PLANTS SHALL HAVE TOPS OF GOOD QUALITY AND BE IN A HEALTHY GROWING CONDITION.

AN ESTABLISHED CONTAINER GROWN PLANT SHALL BE TRANSPLANTED INTO A CONTAINER AND GROWN IN THAT CONTAINER SUFFICIENTLY LONG ENOUGH FOR THE NEW FIBROUS ROOTS TO HAVE DEVELOPED SO THAT THE ROOT MASS WILL RETAIN ITS SHAPE AND HOLD TOGETHER WHEN REMOVED FROM THE CONTAINER.

STANDARD PLANTING MIXTURE SHALL BE ONE (1) PART RECYCLED ORGANIC MATERIAL ADDED TO THREE (3) PARTS EXISTING NATIVE SOIL.

REPLACEMENT SOIL SHALL BE USED AS SPECIFIED TO REPLACE EXISTING SOILS THAT ARE DETERMINED BY THE LANDSCAPE ARCHITEC TO BE UNSUITABLE FOR PLANTING, IE. ROAD BASE, PAVEMENT, ETC. REPLACMENT SOIL MIX SHALL CONTAIN 60% SAND AND 40% MUCK. SAND SHALL BE 100% CLEAN NATIVE SAND SCREENED TO 1/4" AND MUCK SHALL BE 100% CLEAN ORGANIC NATIVE MUCK SCREENED TO 1/2". ALL SOIL SHALL BE MIXED PRIOR TO DELIVERY ON SITE.

MULCH SHALL BE SHREDDED MELALEUCA, EUCALYPTUS OR GRADE "A" RECYCLED. ALL MULCH IS TO BE APPLIED TO A DEPTH OF 3", EXCEPT AS OTHERWISE NOTED.

FERTILIZER IN BACKFILL MIXTURE FOR ALL PLANTS SHALL CONSIST OF MILORGANITE ACTIVATED SLUDGE MIXED WITH THE BACKFILL AT A RATE OF NOT LESS THAN 50 LBS. PER CUBIC YARD.

FERTILIZER FOR TREES AND SHRUBS MAY BE TABLET FORM OR GRANULAR. GRANULAR FERTILIZER SHALL BE UNIFORM IN COMPOSITION, DRY AND FREE-FLOWING. THIS FERTILIZER SHALL BE DELIVERED TO THE SITE IN THE ORIGINAL UNOPENED BAGS, EACH BEARING THE MANUFACTURER'S STATEMENT OF ANALYSIS, AND SHALL MEET THE FOLLOWING REQUIREMENTS: 16% NITROGEN, 7% PHOSPHORUS, 12% POTASSIUM, PLUS IRON. TABLET FERTILIZER (AGRIFORM OR EQUAL) IN 21 GRAM SIZE SHALL MEET THE FOLLOWING REQUIREMENTS: 20% NITROGEN, 10% PHOSPHORUS AND 5% POTASSIUM.

FERTILIZER WILL BE APPLIED AT THE FOLLOWING RATES:

PLANT SIZE	16-7-12	AGRIFORM TABLETS (21 GRAM)
1 GAL.	1/4 LB.	1
3 GAL.	1/3 LB.	3
7-15 GAL.	1/2 LB.	6
1"-6" CALIPER	2 LBS./1" CALIPER	2 PER 1" CALIPER
6" AND LARGER	3 LBS./1" CALIPER	2 PER 1" CALIPER

"FLORIDA EAST COAST PALM SPECIAL" SHALL BE APPLIED TO ALL PALMS AT INSTALLATION AT A RATE OF ½ LB. PER INCH OF TRUNK UNLESS OTHERWISE SPECIFIED.

FIELD GROWN TREES AND PALMS PREVIOUSLY ROOT PRUNED SHALL OBTAIN A ROOT BALL WITH SUFFICIENT ROOTS FOR CONTINUED GROWTH WITHOUT RESULTING SHOCK.

CONTRACTOR SHALL NOT MARK OR SCAR TRUNK IN ANY FASHION.

PLANTS SHALL BE WATERED AS NECESSARY OR WITHIN 24 HOURS AFTER NOTIFICATION BY THE LANDSCAPE ARCHITECT.

THE LOCATIONS OF PLANTS, AS SHOWN IN THESE PLANS, ARE APPROXIMATE. THE FINAL LOCATIONS MAY BE ADJUSTED TO ACCOMMODATE UNFORESEEN FIELD CONDITIONS. MAJOR ADJUSTMENTS TO THE LAYOUT ARE TO BE APPROVED BY THE LANDSCAPE ARCHITECT.

ALL PLASTIC FABRIC SHALL BE REMOVED FROM PLANT MATERIAL AT TIME OF INSTALLATION.

ALL TREES MUST BE STAKED AS SHOWN ON THE PLANTING DETAILS WITHIN 24 HOURS OF PLANTING. STAKES TO REMAIN FOR A MINIMUM OF 9 MONTHS, BUT NO LONGER THAN 18 MONTHS. CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE AND REMOVAL OF THE STAKES.

ALL TREES MUST BE PRUNED AS PER LANDSCAPE ARCHITECT'S DIRECTION. SABAL PALMS MAY BE HURRICANE CUT.

ALL SHRUBS, TREES AND GROUND COVER WILL HAVE IMPROVED SOIL AS PER PLANTING SOIL NOTES. THE SOILS SHALL BE PLACED IN THE HOLE DURING PLANTING. TOP DRESSING ONLY IS NOT ACCEPTABLE.

DO NOT ALLOW AIR POCKETS TO FORM WHEN BACKFILLING. ALL TREES SHALL BE SPIKED IN UTILIZING WATER AND A TREE BAR.

THE LANDSCAPE CONTRACTOR SHALL WATER, MULCH, WEED, PRUNE, AND OTHERWISE MAINTAIN ALL PLANTS, INCLUDING SOD, UNTIL COMPLETION OF CONTRACT OR ACCEPTANCE BY LANDSCAPE ARCHITECT. SETTLED PLANTS SHALL BE RESET TO PROPER GRADE, PLANTING SAUCERS RESTORED, AND DEFECTIVE WORK CORRECTED.

THE LANDSCAPE CONTRACTOR SHALL AT ALL TIMES KEEP THE PREMISES FREE FROM ACCUMULATION OF WASTE MATERIALS OR DEBRIS CAUSED BY HIS CREWS DURING THE PERFORMANCE OF THE WORK. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL PROMPTLY REMOVE ALL WASTE MATERIALS, DEBRIS, UNUSED PLANT MATERIAL, EMPTY PLANT CONTAINERS AND ALL EQUIPMENT FROM THE PROJECT SITE.

UPON COMPLETION OF THE WORK, THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT AND REQUEST A FINAL INSPECTION. ANY ITEMS THAT ARE JUDGED INCOMPLETE OR UNACCEPTABLE BY THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE SHALL BE CORRECTED BY THE LANDSCAPE CONTRACTOR WITHIN 14 DAYS.

ALL LABOR AND MATERIAL FOR SOIL AMENDMENTS AND FERTILIZER THAT IS REQUIRED TO INSURE THE SUCCESSFUL ESTABLISHMENT AND SURVIVAL OF THE PROPOSED VEGETATION, AS WELL AS ALL THE COST FOR THE REMOVAL OF UNSUITABLE OR EXCESS BACKFILL MATERIAL, SHALL BE INCLUDED IN THE CONTRACTOR'S BID TO PERFORM THE WORK REPRESENTED IN THIS PLAN SET.

2. PLANTING TREES

EXCAVATE PIT AS PER PLANTING DETAILS.

BACKFILL AROUND BALL WITH STANDARD PLANTING MIXTURE AND SLIGHTLY COMPACT, WATER THOROUGHLY AS LAYERS ARE PLACED TO ELIMINATE VOIDS AND AIR POCKETS. BUILD A 6" HIGH BERM OF STANDARD PLANTING MIXTURE BEYOND EDGE OF EXCAVATION. APPLY 3" (AFTER SETTLEMENT) OF MULCH EXCEPT WITHIN 6" OF TRUNK.

PRUNE TREE TO REMOVE DAMAGED BRANCHES, IMPROVE NATURAL SHAPE AND THIN OUT STRUCTURE. DO NOT REMOVE MORE THAN 15% OF BRANCHES. DO NOT PRUNE BACK TERMINAL LEADER.

GUY AND STAKE TREE IN ACCORDANCE WIT THE STAKING DETAILS IMMEDIATELY AFTER PLANTING.

3. PLANTING SHRUBS

LAYOUT SHRUBS TO CREATE A CONTINUOUS SMOOTH FRONT LINE AND FILL IN BEHIND.

EXCAVATE PIT OR TRENCH TO 1-1/2 TIMES THE DIAMETER OF THE BALLS OR CONTAINERS OR 1'-0" WIDER THAN THE SPREAD OF ROOTS FOR POSITIONING AT PROPER HEIGHT. BACKFILL AROUND PLANTS WITH STANDARD PLANTING MIXTURE, COMPACTED TO ELIMINATE VOIDS AND AIR POCKETS. FORM GRADE SLIGHTLY DISHED AND BERMED AT EDGES OF EXCAVATION. APPLY 3" OF MULCH EXCEPT WITHIN 3" OF STEMS.

PRUNE SHRUBS TO REMOVE DAMAGED BRANCHES, IMPROVE NATURAL SHAPE AND THIN OUT STRUCTURE. DO NOT REMOVE MORE THAN 15% OF BRANCHES.

4. PLANTING GROUND COVER

LOOSEN SUBGRADE TO DEPTH OF 4" IN AREAS WHERE TOPSOIL HAS BEEN STRIPPED AND SPREAD SMOOTH.

SPACE PLANTS AS OTHERWISE INDICATED. DIG HOLES LARGE ENOUGH TO ALLOW SPREADING OF ROOTS. COMPACT BACKFILLTO ELIMINATE VOIDS AND LEAVE GRADE SLIGHTLY DISHED AT EACH PLANT. WATER THOROUGHLY. APPLY 3" OF MULCH OVER ENTIRE PLANTING BED, LIFTING PLANT FOLIAGE ABOVE MULCH.

DURING PERIODS OF HOT SUN AND/OR WIND AT TIME OF PLANTING, PROVIDE PROTECTIVE COVER FOR SEVERAL DAYS OR AS NEEDED.

5. PLANTING LAWNS

SODDING: SOD TYPE SPECIFIED ON PLANT LIST SHALL BE MACHINE STRIPPED NOT MORE THAN 24 HOURS PRIOR TO LAYING.

LOOSEN SUBGRADE TO DEPTH OF 4" AND GRADE WITH TOPSOIL EITHER PROVIDED ON SITE OR IMPORTED STANDARD PLANTING MIX TO FINISH DESIGN ELEVATIONS. ROLL PREPARED LAWN SURFACE. WATER THOROUGHLY, BUT DO NOT CREATE MUDDY SOIL CONDITION.

FERTILIZE SOIL AT THE RATE OF APPROXIMATELY 10 LBS. PER 1,000 S.F. SPREAD FERTILIZER OVER THE AREA TO RECEIVE GRASS BY USING AN APPROVED DISTRIBUTION DEVICE CALIBRATED TO DISTRIBUTE THE APPROPRIATE QUANTITY. DO NOT FERTILIZE WHEN WIND VELOCITY EXCEEDS 15 M.P.H. THOROUGHLY MIX FERTILIZER INTO THE TOP 2" OF TOPSOIL.

LAY SOD STRIPS WITH TIGHT JOINTS, DO NOT OVERLAP, STAGGER STRIPS TO OFFSET JOINTS IN ADJACENT COURSES. WORK SIFTED STANDARD PLANTING MIXTURE INTO MINOR CRACKS BETWEEN PIECES OF SOD AND REMOVE EXCESS SOIL DEPOSITS FROM SODDED AREAS. SOD ON SLOPES GREATER THAN 3:1 SHALL BE STAKED IN PLACE. ROLL OR STAMP LIGHTLY AND WATER THOROUGHLY WITH A FINE SPRAY IMMEDIATELY AFTER PLANTING.

6. MISCELLANEOUS LANDSCAPE WORK

LANDSCAPE MAINTENANCE

MAINTAIN LANDSCAPE WORK UNTIL FINAL ACCEPTANCE IS ISSUED BY THE OWNER'S REPRESENTATIVE. INCLUDE WATERING, WEEDING, CULTIVATING, RESTORATION OF GRADE, MOWING AND TRIMMING GRASS, PRUNING TREES AND SHRUBS, PROTECTION FROM INSECTS AND DISEASES, FERTILIZING AND SIMILAR OPERATIONS AS NEEDED TO INSURE NORMAL GROWTH AND GOOD HEALTH FOR LIVE PLANT MATERIAL.

PLANT MATERIAL SUBSTITUTION

NO SUBSTITUTION OF PLANT MATERIAL, TYPE OR SIZES WILL BE PERMITTED WITHOUT AUTHORIZATION FROM THE LANDSCAPE ARCHITECT.

PLANTING BED PREPARATION

ALL PLANTING BEDS SHALL BE PROPERLY PREPARED PRIOR TO THE COMMENCEMENT OF ANY PLANTING. PLANTING AREAS, INCLUDING LAWNS SHALL BE FREE OF ALL WEEDS AND NUISANCE VEGETATION. IF TORPEDO GRASS (PANICUM REPENS) IS PRESENT OR ENCOUNTERED DURING PLANTING, THE LANDSCAPE CONTRACTOR SHALL STOP ALL PLANTING UNTIL IT CAN BE DEMONSTRATED THAT IT HAS BEEN COMPLETELY REMOVED OR ERADICATED. THERE SHALL BE NO EXCEPTIONS TO THIS PROVISION.

ALL LANDSCAPE ISLANDS AND BEDS WILL BE FREE OF SHELL ROCK AND CONSTRUCTION DEBRIS AND WILL BE EXCAVATED TO A DEPTH OF 30 INCHES OR TO CLEAN, NATIVE SOIL AND FILLED WITH THE SPECIFIED REPLACEMENT SOIL.

LANDSCAPE WARRANTY

THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF SIX (6) MONTHS FROM THE DATE OF CONDITIONAL ACCEPTANCE IN WRITING FROM THE LANDSCAPE ARCHITECT. AT THE TIME OF CONDITIONAL ACCEPTANCE, THE SIX (6) MONTH PERIOD SHALL COMMENCE. ANY MATERIALS WHICH HAVE DIED OR DECLINED TO THE POINT WHERE THEY NO LONGER MEET FLORIDA #1 CONDITION DURING THIS PERIOD SHALL BE PROMPTLY REPLACED WITH SPECIMENS THAT MEET THE MINIMUM REQUIREMENTS CALLED FOR ON THE DRAWINGS. THE LANDSCAPE CONTRACTOR SHALL NOT BE HELD RESPONSIBLE FOR THE DEATH OR DAMAGE RESULTING FROM ACTS OF GOD SUCH AS LIGHTNING, VANDALISM, AND AUTOMOBILES OR FROM NEGLIGENCE BY THE OWNER. CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING AND OTHERWISE MAINTAINING PLANTS UP TO THE CONDITIONAL ACCEPTANCE PERIOD, UNLESS A WRITTEN AGREEMENT WITH THE LANDSCAPE ARCHITECT PROVIDES FOR A DIFFERENT ARRANGEMENT.

PLANTING DETAILS

SHRUB/GROUNDCOVER PLANTING DETAIL

NTS

PALM PLANTING DETAIL

NTS

LARGE TREE PLANTING DETAIL

NTS

PLANT SCHEDULE

CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	NATIVE	LOW MAINT	REMARKS
TREES									
AR	24	ACER RUBRUM	RED MAPLE	25 GAL	2.5" CAL. MIN.	12\` O.A.X 5\` SPRD	Y	Y	FULL CANOPY, 5\` C.T. MIN.
BS	38	BURSERA SIMARUBA	GUMBO LIMBO	FIELD GROWN	3"CAL	14\` HT, 6\` - 8\` SPRD	Y		FULL CANOPY
CE	18	CONOCARPUS ERECTUS	GREEN BUTTONWOOD	30 GAL. OR F.G.	2.5" CAL	12\` O.A.	Y		FULL CANOPY
LI3	8	LAGERSTROEMIA INDICA \`MUSKOGEE\`	CRAPE MYRTLE	65 GAL. MIN.	2.5" CAL.	12\` O.A.X 5\` SPRD	N	N	FULL & THICK CANOPY, FLORIDA FANCY, 5\` C.T.
LJ65	2	LIGUSTRUM JAPONICUM	JAPANESE PRIVET	65 GAL	3 TRK MIN., 1"-2" CAL. EA.	8\` HT, 8\` SPRD.	N		FULL CANOPY, 4\` CT., MULTI-TRUNK, FF
MDD	2	MAGNOLIA GRANDIFLORA \`D.D. BLANCHARD\`	SOUTHERN MAGNOLIA	100 GAL	5" CAL	18\`-20\` O.A.	Y		FULL CANOPY, SOUTH GROWN, MATCHING,FF
PE2	15	PINUS ELLIOTTII \`DENSA\`	SLASH PINE	FIELD GROWN	3"-4" CAL	10-12\` OA	Y		FULL CANOPY; PLANTED IN PRESERVE
PP	35	POLYALTHIA LONGIFOLIA PENDULA	INDIAN MAST TREE	45 GAL	2.5" CAL. MIN.	12\`-14\` HT.	N		FULL & THICK, MATCHED
QV	77	QUERCUS VIRGINIANA	LIVE OAK	30 GAL. OR F.G.	2.5" CAL. MIN.	12\` HT. X 5\` SPRD.	Y		FULL CANOPY, 4\` CT MIN.
QV-REL	13	QUERCUS VIRGINIANA \`CATHEDRAL\`	CATHEDRAL LIVE OAK	RELOCATED	RELOCATED	RELOCATED	Y	Y	RELOCATED FROM ON SITE
QV24	12	QUERCUS VIRGINIANA \`CATHEDRAL\` ~	CATHEDRAL LIVE OAK	FIELD GROWN	6"-8" CAL.	25\` X 25\`	Y	Y	SINGLE, STRAIGHT TRUNK. FULL CANOPY, SYMMETRICAL. 6\` CT MIN.
TD	3	TAXODIUM DISTICHUM	BALD CYPRESS	45 GAL	2.5"-3" CAL	10\`-12\` HT X 4\`-6\` SPRD	Y		FULL CANOPY, FL #1 OR BETTER
PALM TREES									
CH1	8	CHAMAEROPS HUMILIS ~	EUROPEAN FAN PALM	FIELD GROWN	N.A.	5\`-6\` O.A.		N	3 STEMS MIN., 2\` STEM FOOTAGE PER TRUNK; LIMB UP 2\`. FULL & THICK, MATCHED.
LN	4	LIVISTONA NITIDA	NITIDA PALM	FIELD GROWN	N.A.	14\`-16\` OA			FULL CANOPY, DIAMOND CUT, FLORIDA FANCY.
PHM	7	PHOENIX DACTYLIFERA \`MEDJOOL\`	MEDJOOL DATE PALM	FIELD GROWN	N.A.	10\`-12\` WD.	N		STRAIGHT TRUNK, FULL CANOPY, DIAMOND CUT. HT.
PS	5	PHOENIX SYLVESTRIS	SYLVESTER DATE PALM	FG	N/A	10\` C.T.	N		FLORIDA FANCY, HEAVY CALIPER, MATCHED, DIAMOND CUT TRUNK
RE22	23	ROYSTONEA REGIA	ROYAL PALM	FG	N/A	22\` C.T.	Y		FULL HEAD, HEAVY CALIPER, FLORIDA #1 OR BETTER
SPC	35	SABAL PALMETTO	CABBAGE PALM	FIELD GROWN	N.A.	14\`, 18\`, 22\` CT., STGG.			SLICK, CURVED TRUNK, STAGGER HEIGHTS IN CLUSTERS
SP	39	SABAL PALMETTO	CABBAGE PALM	N.A.	N.A.	14\`, 18\`, 22\` STGG.	Y		SLICK, STRAIGHT TRUNKS, STAGGER HEIGHTS.
SP-REL	60	SABAL PALMETTO	CABBAGE PALM	N.A.	N.A.	RELOCATED	Y		RELOCATED FROM ON SITE
AD3	12	VEITCHIA MERRILLII-ADONIDIA	TRIPLE CHRISTMAS PALM	FIELD GROWN	N.A.	12\`-14\` HT.	N	N	FULL CANOPY, TRIPLE TRUNK
VM2	13	VEITCHIA MONTGOMERYANA	DOUBLE MONTGOMERY PALM	FIELD GROWN	N.A.	14\`-16\` OA			FULL CANOPY, DOUBLE TRUNK
SIGNATURE PALM									
XP	3	X BUTIAGRUS NABONNANDII	MULE PALM	FG		8\` CT.			MATCHING

CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT	SIZE	SPACE	NATIVE	LOW MAINT	REMARKS
SHRUBS									
AGG	2	AGAVE AMERICANA \`GAINESVILLE BLUE\`	GAINESVILLE BLUE AGAVE	30 GAL	4\`-5\` O.A. X 3\`-4\` SPRD.	A.S.	N		FULL & THICK
CIR	140	CHRYSOBALANUS ICACO \`RED TIP\`	RED TIP COCOPLUM	7 GAL	3\` X 3\`	3\` O.C.	Y		FULL
CLD15	130	CLUSIA GUTTIFERA	CLUSIA	15 GAL	6\` HT. X 3\` SPRD.	3\` O.C.	N		FULL & THICK
PM7	93	PODOCARPUS MAKII	PODOCARPUS	7 GAL	3\` X 2\`	2\` O.C.	N		FULL & THICK
PM15	35	PODOCARPUS MAKII~	PODOCARPUS	15 GAL	5\` O.A., 2\` SPRD	2\` O.C.	N		FULL & THICK
PM30	8	PODOCARPUS MAKII~	PODOCARPUS	30 GAL	6\` X 3\`	3\` O.C.	N	N	FULL & THICK. SHRUB FORM
TJ	48	TRACHELOSPERMUM JASMINOIDES	JASMINE VINE	25 GAL	10-12\` O.A.	A.S.			CLIMBING
GROUND COVERS									
CI	698	CHRYSOBALANUS ICACO	COCOPLUM	3 GAL	18" X18"	30" O.C.	Y		FULL & THICK
CID	724	CHRYSOBALANUS ICACO \`HORIZONTAL\`	DWARF COCOPLUM	3 GAL	12" X 12"	24" O.C.	Y		FULL & THICK, NOT STRETCHED, FF
CU3	306	COCCOLOBA UVIFERA	SEA GRAPE	3 GAL	24" X 24"	24" O.C.	Y		FULL & THICK
CF	78	CODIAEUM VARIEGATUM 'FANTASY'	FANTASY CROTON	1 GAL	18" X 12"	24" OC	N		
ER	66	EUPHORBIA MILLII \`ROSY\`	CROWN OF THORNS	3 GAL	12" X 12"	24" OC	N		FULL AND THICK
FG	276	FICUS MACROPHYLLA \`GREEN ISLAND\`	GREEN ISLAND FICUS	3 GAL	15" X 15"	24" O.C.	N		FULL & THICK
HS	120	HIBISCUS \`SEMINOLE PINK\`	SEMINOLE PINK HIBISCUS	7 GAL	24" X 24"	2.5\` O.C.	N		FULL & THICK
IV	124	ILEX VOMITORIA \`SHILLINGS DWARF\`	DWARF YAUPON HOLLY	3 GAL	15" X 15"	24" O.C.	Y		FULL & THICK
MUH	1,074	MUHLENBERGIA CAPILLARIS	PINK MUHLY GRASS	3 GAL	24" X 24"	30" O.C.	Y		FULL &THICK
PD	94	PODOCARPUS MACROPHYLLUS \`DWARF PRINGLES\` ~	DWARF PODOCARPUS	3 GAL	15" X 15"	18" O.C.			FULL & THICK
RL	209	RONDELETIA LEUCOPHYLLA	PANAMA ROSE	3 GAL	18" X 18"	24" O.C.	N		FULL & THICK
TF	653	TRIPSACUM FLORIDANA	DWARF FAKAHATCHEE GRASS	3 GAL	24" X 24"	2.5\` O.C.	Y		FULL & THICK
	3,774 SF	LITTORAL PLANTING							
EP	209	ELEOCHARIS PALUSTRIS	GREAT SPIKE RUSH	1 GAL	6" X 6"	3\` OC	N		FULL & THICK
PC	148	PONTEDERIA CORDATA	PICKEREL WEED	1 GAL	6" HT	3\` OC	Y		FULL & THICK
TG	145	THALIA GENICULATA	FIRE FLAG	1 GAL	6" HT	3\` OC	Y		FULL & THICK
	22,311 SF	BIO SWALE PLANTINGS							
WIR	2,300	ARISTADA STRICTA BEYRICHIANA	WIREGRASS	1 GAL	12" X 6"	18" O.C.			FULL
BA2	3,436	BORRICHIA ARBORESCENS	SEAOXEYE DAISY	1 GAL	6" X 6"	18" OC	Y		FULL
MUH2	1,972	MUHLENBERGIA CAPILLARIS	PINK MUHLY GRASS	3 GAL	24" X 24"	24" O.C.	Y		FULL &THICK
	3,774 SF	LITTORAL PLANTING							
EP	209	ELEOCHARIS PALUSTRIS	GREAT SPIKE RUSH	1 GAL	6" X 6"	3\` OC	N		FULL & THICK
PC	148	PONTEDERIA CORDATA	PICKEREL WEED	1 GAL	6" HT	3\` OC	Y		FULL & THICK
TG	145	THALIA GENICULATA	FIRE FLAG	1 GAL	6" HT	3\` OC	Y		FULL & THICK

LANDSCAPE DATA

LANDSCAPE MATERIAL	QTY	% NATIVE
TOTAL TREES PROPOSED	247	
PROPOSED NATIVE TREES	200	81%
TOTAL PALMS PROPOSED	209	
PROPOSED NATIVE PALMS	157	75%
TOTAL SHRUBS PROPOSED	13,088	
PROPOSED NATIVE SHRUBS	11,929	91%

MITIGATION DATA

MITIGATION TABLE- TOTAL PROPERTY AREA	
TOTAL NATIVE TREES ON SITE	25
TOTAL NATIVE TREES TO MITIGATE (GREATER THAN 14" DBH)	9
TOTAL MITIGATION DBH (INCHES)	163
TOTAL MITIGATION TREES REQUIRED (12' HT, 2.5" CALIPER)	65.2
TOTAL NATIVE PALMS ON SITE	60
TOTAL NATIVE PALMS TO RELOCATE	60
TOTAL PALMS TO MITIGATE	0

48 HOURS BEFORE DIGGING
CALL TOLL FREE
811
SUNSHINE STATE ONE CALL
OF FLORIDA, INC.

Landscape Details

Cotleur & Hearing
Landscape Architects
Land Planners
Environmental Consultants
1934 Commerce Lane
Suite 1
Jupiter, Florida 33458
561.747.6336 · Fax 747.1377
www.cotleurhearing.com
Lic# LC-26000535

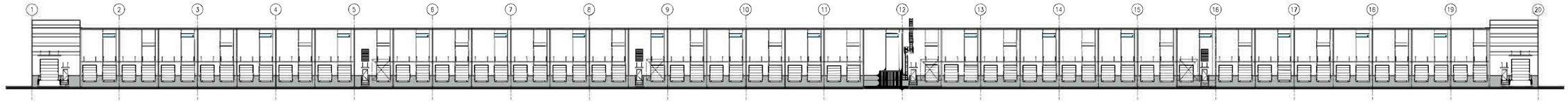
King's Highway Commerce Center
Landscape Plan
City of Fort Pierce, Florida

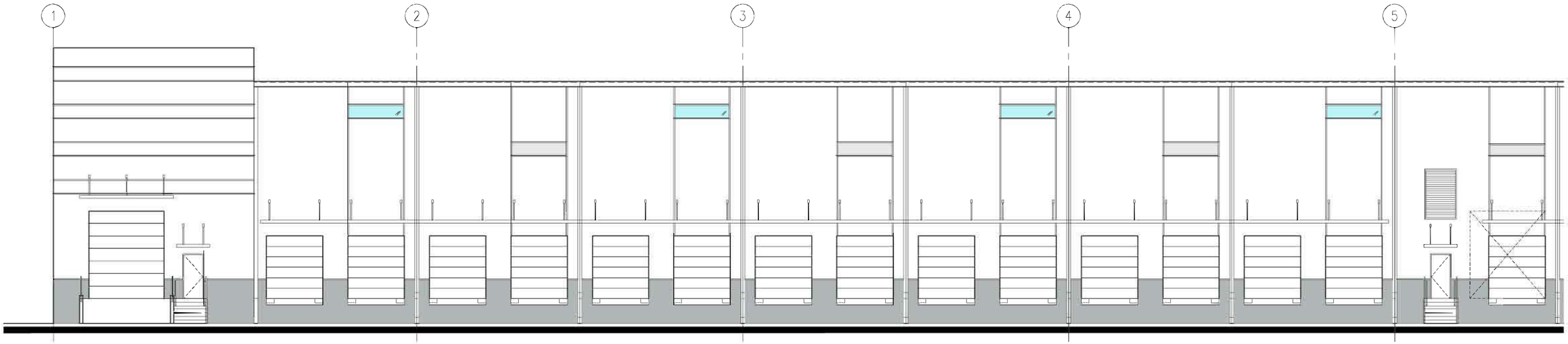
DONALDSON E. HEARING
LA 0000943

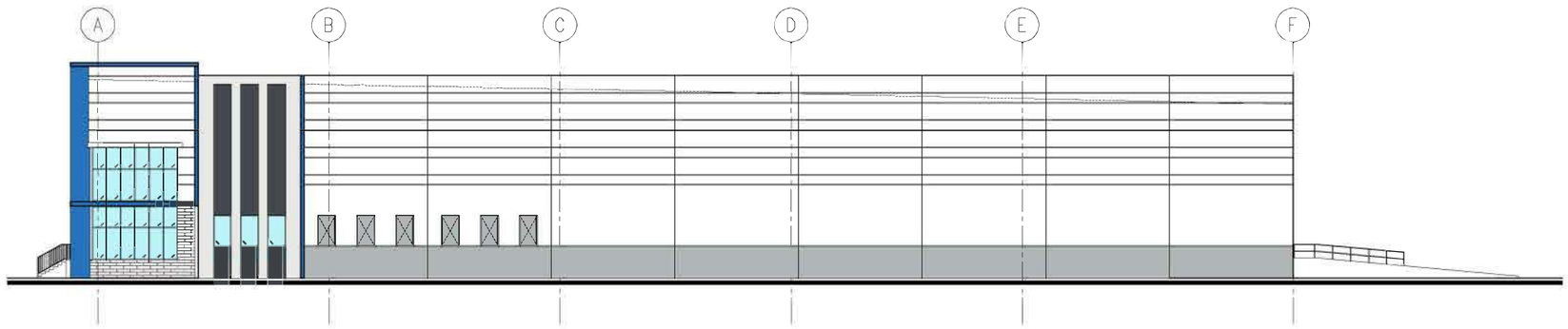
DESIGNED DEH
DRAWN AGB
APPROVED DEH
JOB NUMBER 21-0130
DATE 07-28-22
REVISIONS 10-07-22
11/10/23
04-15-24

April 15, 2024 1:24:49 p.m.
Drawing: 21-1001 LP.DWG

SHEET 7 OF 7







0' 8' 16'

SCALE:1/16"=16'

K·I·N·G·S H·I·G·H·W·A·Y

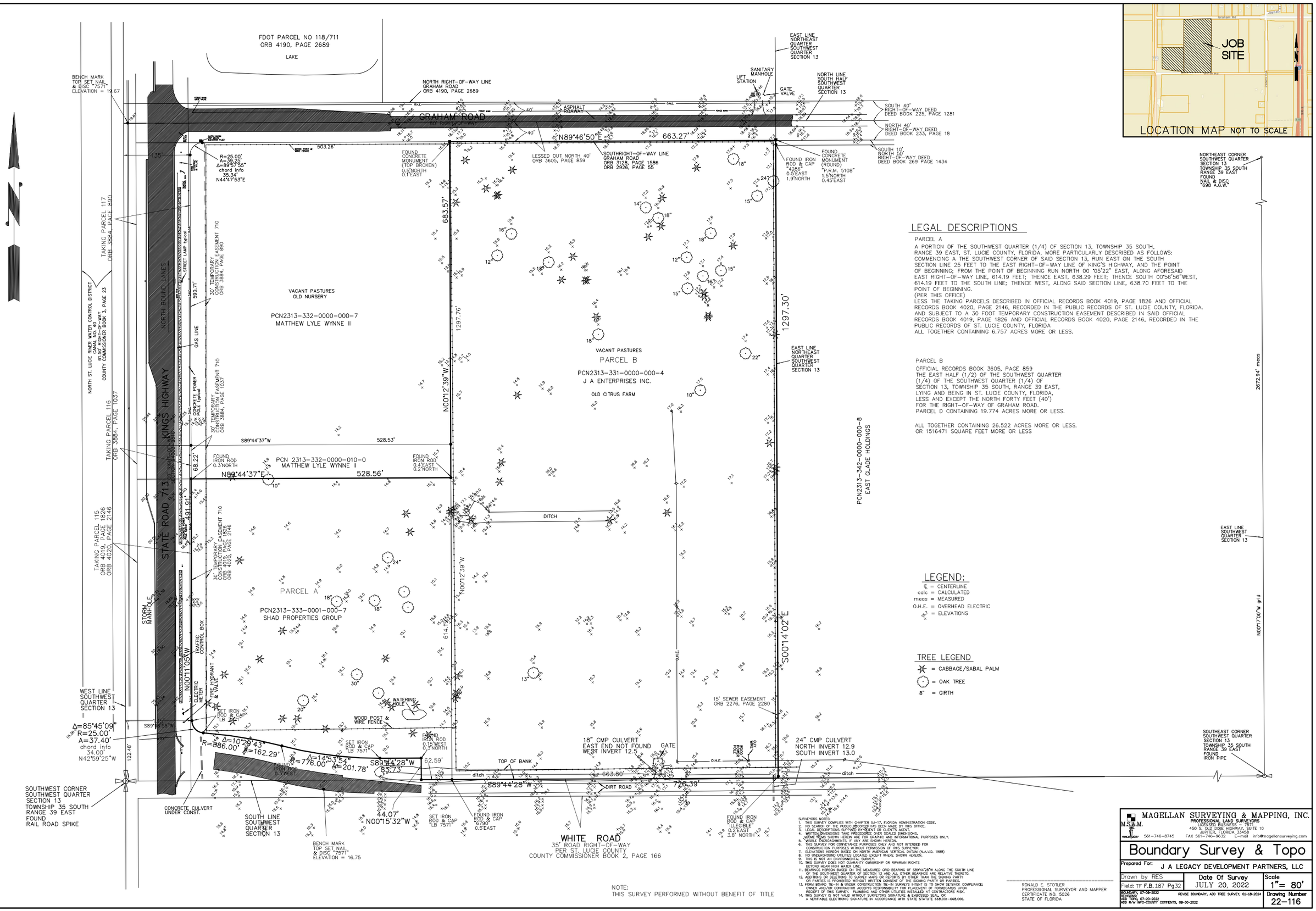
JANUARY 10, 2022

FT. PIERCE, FLORIDA

21384

ARCHITECTURE


LINCOLN BROWN ILLUSTRATION



LEGAL DESCRIPTIONS

PARCEL A

A PORTION OF THE SOUTHWEST QUARTER (1/4) OF SECTION 13, TOWNSHIP 35 SOUTH, RANGE 39 EAST, ST. LUCIE COUNTY, FLORIDA, MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING A THE SOUTHWEST CORNER OF SAID SECTION 13, RUN EAST ON THE SOUTH SECTION LINE 25 FEET TO THE EAST RIGHT-OF-WAY LINE OF KING'S HIGHWAY, AND THE POINT OF BEGINNING; FROM THE POINT OF BEGINNING RUN NORTH 00 °05'22" EAST, ALONG AFORESAID EAST RIGHT-OF-WAY LINE, 614.19 FEET; THENCE EAST, 638.29 FEET; THENCE SOUTH 00°56'56"WEST, 614.19 FEET TO THE SOUTH LINE; THENCE WEST, ALONG SAID SECTION LINE, 638.70 FEET TO THE POINT OF BEGINNING.
(PER THIS OFFICE)
LESS THE TAKING PARCELS DESCRIBED IN OFFICIAL RECORDS BOOK 4019, PAGE 1826 AND OFFICIAL RECORDS BOOK 4020, PAGE 2146, RECORDED IN THE PUBLIC RECORDS OF ST. LUCIE COUNTY, FLORIDA.
AND SUBJECT TO A 30 FOOT TEMPORARY CONSTRUCTION EASEMENT DESCRIBED IN SAID OFFICIAL RECORDS BOOK 4019, PAGE 1826 AND OFFICIAL RECORDS BOOK 4020, PAGE 2146, RECORDED IN THE PUBLIC RECORDS OF ST. LUCIE COUNTY, FLORIDA
ALL TOGETHER CONTAINING 6.757 ACRES MORE OR LESS.

PARCEL B

OFFICIAL RECORDS BOOK 3605, PAGE 859
THE EAST HALF (1/2) OF THE SOUTHWEST QUARTER (1/4) OF THE SOUTHWEST QUARTER (1/4) OF SECTION 13, TOWNSHIP 35 SOUTH, RANGE 39 EAST, LYING AND BEING IN ST. LUCIE COUNTY, FLORIDA, LESS AND EXCEPT THE NORTH FORTY FEET (40') FOR THE RIGHT-OF-WAY OF GRAHAM ROAD.
PARCEL D CONTAINING 19.774 ACRES MORE OR LESS.

ALL TOGETHER CONTAINING 26.522 ACRES MORE OR LESS.
OR 1516471 SQUARE FEET MORE OR LESS

NOTE:
THIS SURVEY PERFORMED WITHOUT BENEFIT OF TITLE

SURVEYORS NOTES:
1. THIS SURVEY COMPLIES WITH CHAPTER 5J-17, FLORIDA ADMINISTRATION CODE.
2. NO SEARCH OF THE PUBLIC RECORDS HAS BEEN MADE BY THIS OFFICE.
3. LEGAL DESCRIPTIONS SUPPLIED BY CLIENT OR CLIENTS AGENT.
4. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS, OTHER ITEMS SHOWN HEREIN ARE FOR GRAPHIC AND INFORMATIONAL PURPOSES ONLY.
5. VISIBLE ENCROACHMENTS, IF ANY ARE SHOWN HEREON.
6. THIS SURVEY FOR CONVEYANCE PURPOSES ONLY AND NOT INTENDED FOR CONSTRUCTION PURPOSES WITHOUT PERMISSION OF THIS SURVEYOR.
7. ELEVATIONS HEREON BASED ON NORTH AMERICAN VERTICAL DATUM (N.A.V.D. 1988)
8. NO UNDERGROUND UTILITIES LOCATED EXCEPT WHERE SHOWN HEREON.
9. NO TITLE OPINION OR ABSTRACT IS SURVEY.
10. THIS SURVEY DOES NOT ESTABLISH OWNERSHIP OR RIPARIAN RIGHTS BEYOND MEAN HIGH WATER LINE.
11. BEARINGS HEREON BASED ON THE MEASURED GRID BEARING OF S89°44'28"W ALONG THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 13 AND ALL OTHER BEARINGS ARE RELATIVE THERETO.
12. ADDITIONS OR DELETIONS TO SURVEY MAPS OR REPORTS BY OTHER THAN THE SIGNING PARTY OR PARTIES IS PROHIBITED WITHOUT WRITTEN CONSENT OF THE SIGNING PARTY OR PARTIES.
13. FIRM BEARS TIE-IN & UNDER CONSTRUCTION TIE-IN SURVEYS INTENT IS TO SHOW SETBACK COMPLIANCE; OWNER AND/OR CONTRACTOR ACCEPTS RESPONSIBILITY FOR PLACEMENT OF FORWARDARDS UPON RECEIPT OF THIS SURVEY. PLUMBING AND OTHER UTILITIES INSTALLED AT CONTRACTORS RISK.
14. THIS SURVEY IS NOT VALID WITHOUT SURVEYORS SIGNATURE & EMBOSSED SEAL, OR A VERIFIABLE ELECTRONIC SIGNATURE IN ACCORDANCE WITH STATE STATUTE 668.001-668.006.

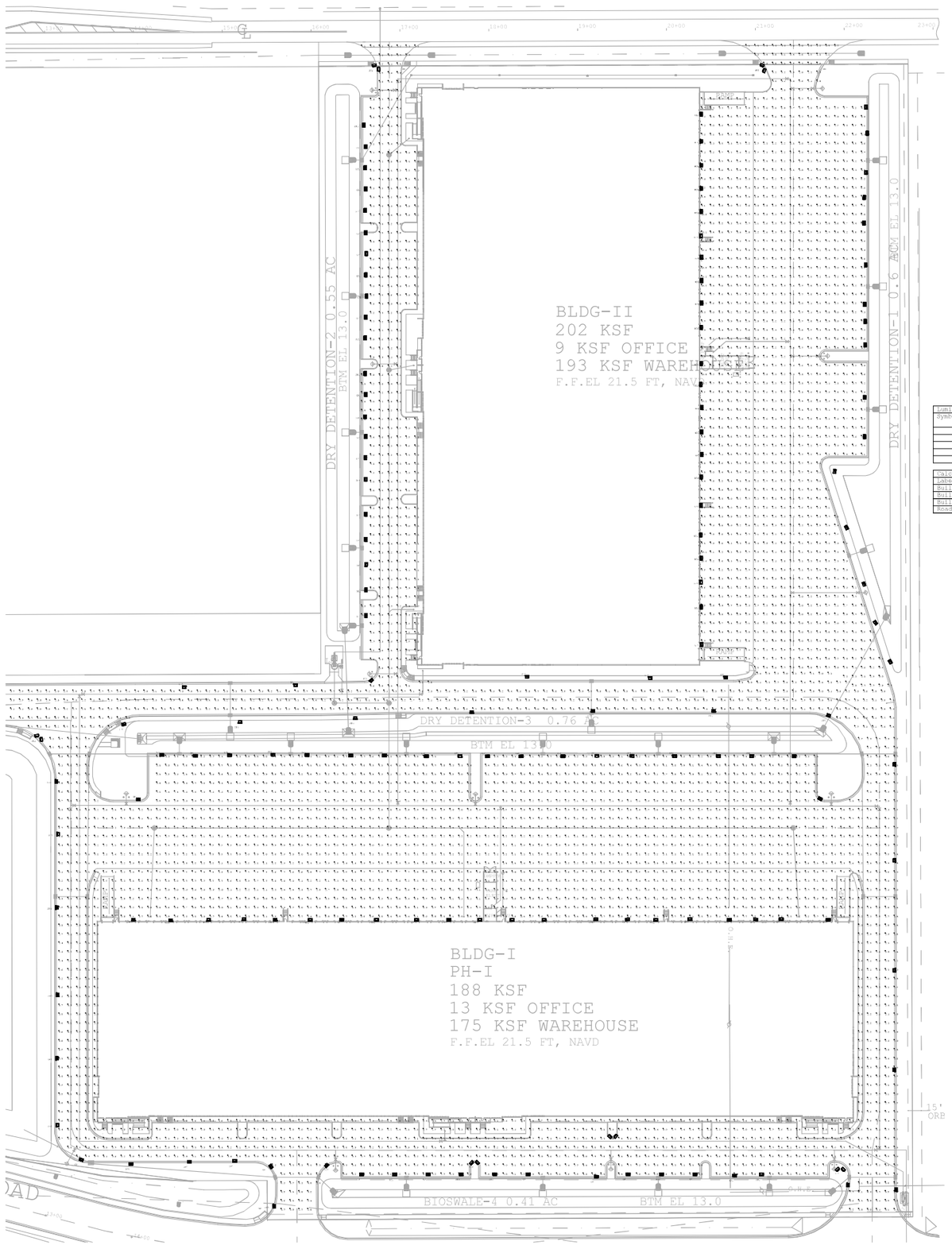
RONALD E. STOTLER
PROFESSIONAL SURVEYOR AND MAPPER
CERTIFICATE NO. 5026
STATE OF FLORIDA

MAGELLAN SURVEYING & MAPPING, INC.
PROFESSIONAL LAND SURVEYORS
LICENSED BUSINESS #7511
450 S. OLD DIXIE HIGHWAY, SUITE 10
JUPITER, FLORIDA 33458
561-746-8745 FAX 561-746-9632 E-mail info@magellansurveying.com

Boundary Survey & Topo

Prepared For: J A LEGACY DEVELOPMENT PARTNERS, LLC

Drawn by RES	Date Of Survey JULY 20, 2022	Scale 1"= 80'
Field: TF F.B.187 Pg.32		
BOUNDARY, 07-09-2022 REVISED, ADD TOPO, 07-20-2022 ADD R/W INFO-COUNTY COMMENTS, 08-30-2022	REVISE BOUNDARY, ADD TREE SURVEY, 01-18-2024	Drawing Number 22-116



1 PHOTOMETRIC PLAN
SCALE: 1/64" = 1'-0"

ELECTRICAL SHEET INDEX

PHOTOMETRIC NOTES

1. SEE SHEETS E0.2A THROUGH E0.4B FOR ENLARGED PHOTOMETRIC VIEWS.

Luminaire Schedule

Symbol	Qty	Label	Arrangement	Description	Tag	LLF	Luminaire Lumens	Luminaire Watts	Total Watts	Mounting Height
	35	GWC-SA2E-527-U-T4FT	Single	GWC-SA2E-527-U-T4FT	MP2	1.000	11975	128	4480	18
	28	GLEON-SA1B-527-U-SL3	Single	GLEON-SA1B-527-U-SL3	SP3	1.000	16947	171	4788	25
	6	GLEON-SA1B-527-U-T4FT_1	2 @ 90 degrees	GLEON-SA1B-527-U-T4FT	SP2	1.000	13902	129	1548	25
	5	GWC-SA2E-527-U-T4FT	Single	GWC-SA2E-527-U-T4FT	MP1	1.000	8820	85	680	18
	77	GLEON-SA1B-527-U-T4FT	Single	GLEON-SA1B-527-U-T4FT	SP1	1.000	13902	129	9933	25

Calculation Summary

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Building 1	Illuminance	Fc	3.09	9.9	0.9	3.43	11.00
Building 2 East	Illuminance	Fc	3.24	10.9	0.7	4.63	15.57
Building 2 West	Illuminance	Fc	4.69	9.6	1.3	3.76	7.38
Roadway	Illuminance	Fc	3.72	9.7	0.6	6.20	16.17

LEGACY
DEVELOPMENT PARTNERS

RGD
CONSULTING
ENGINEERS
JUPITER | ORLANDO
561-743-0165 | 407-845-6630
WWW.RGDENGINEERS.COM
2151 ALT A1A #2000, JUPITER, FL 33477
CERT OF AUTH 5454

MEP ENGINEER: RGD CONSULTING ENGINEERS
2151 SOUTH HIGHWAY A1A ALT
SUITE 2000, JUPITER, FL 33477

CLIENT: COTLEUR & HEARING
1934 COMMERCE LANE, SUITE 1,
JUPITER, FL, 33458

DATE 10.16.2023

REVISIONS:

NO.	DESCRIPTION	DATE

KEY PLAN
AREA DESCRIPTION

N

PROJECT ADDRESS:
KING'S HIGHWAY COMMERCE PARK
FORT PIERCE, FLORIDA

PROJECT NAME:
KING'S HIGHWAY
COMMERCE PARK PHASE
I

DATE: 10/16/23

RGD PROJ. NO: 22-1147

SCALE: AS SHOWN

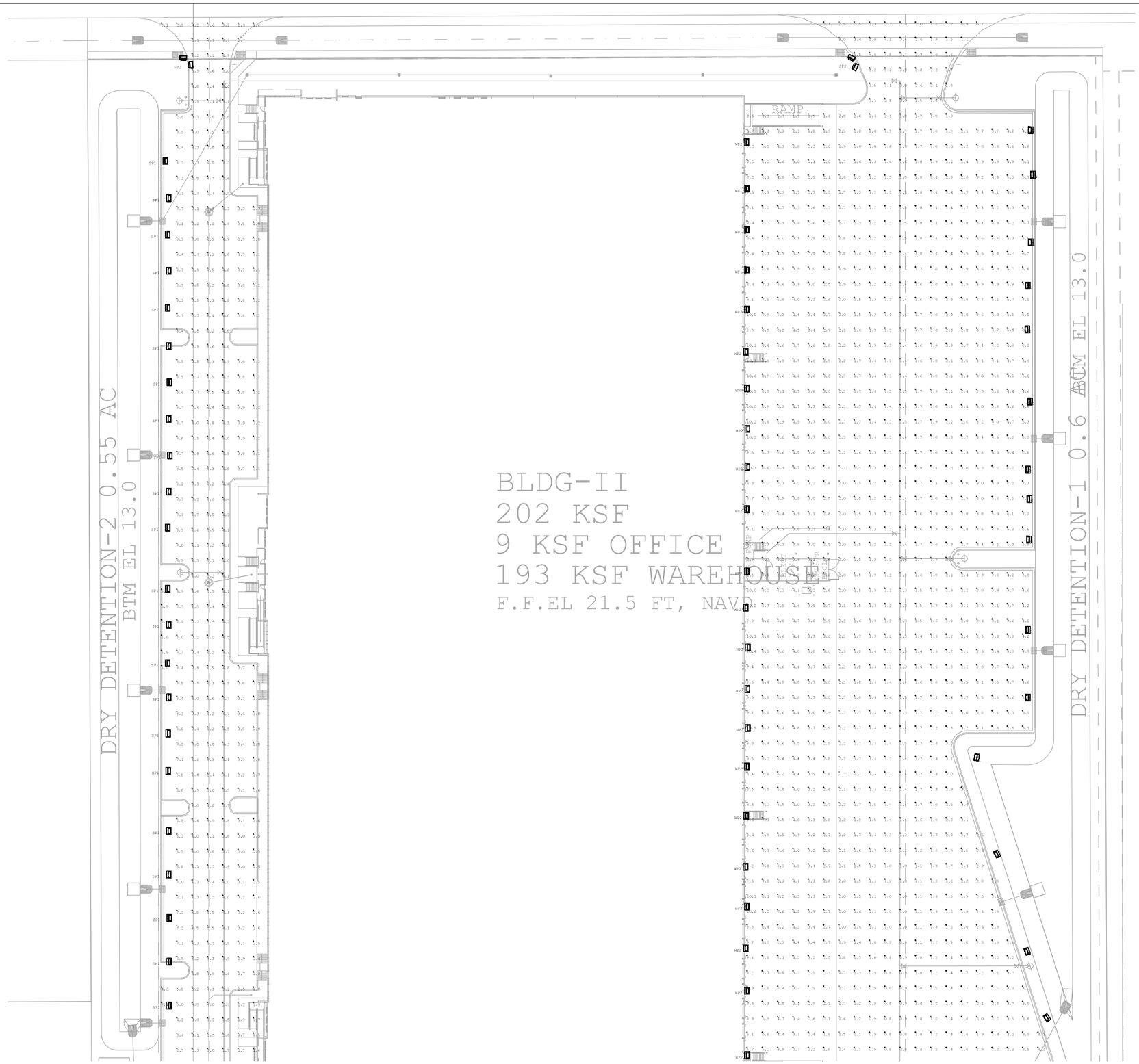
DRAWN:

CHECKED:

SHEET NAME:
PHOTOMETRIC PLAN

SHEET NO.
E0.1

PROJECT PHASE:
100% CONSTRUCTION DOCUMENTS



1 ENLARGED PHOTOMETRIC PLAN - BUILDING 2
SCALE: 1/32" = 1'-0"

LEGACY
DEVELOPMENT PARTNERS

RGD
CONSULTING
ENGINEERS
JUPITER | ORLANDO
561-743-0165 | 407-845-6630
WWW.RGDENGINEERS.COM
2151 ALT A1A #2000, JUPITER, FL 33477
CERT OF AUTH 5454

MEP ENGINEER: RGD CONSULTING ENGINEERS
2151 SOUTH HIGHWAY A1A ALT
SUITE 2000, JUPITER, FL 33477

CLIENT: COTLEUR & HEARING
1934 COMMERCE LANE, SUITE 1,
JUPITER, FL, 33458

DATE 10.16.2023

REVISIONS:

NO.	DESCRIPTION	DATE

KEY PLAN
AREA DESCRIPTION

N

PROJECT ADDRESS:
KING'S HIGHWAY COMMERCE PARK
FORT PIERCE, FLORIDA

PROJECT NAME:
KING'S HIGHWAY
COMMERCE PARK PHASE
I

DATE: 10/16/23

RGD PROJ. NO: 22-1147

SCALE: AS SHOWN

DRAWN:

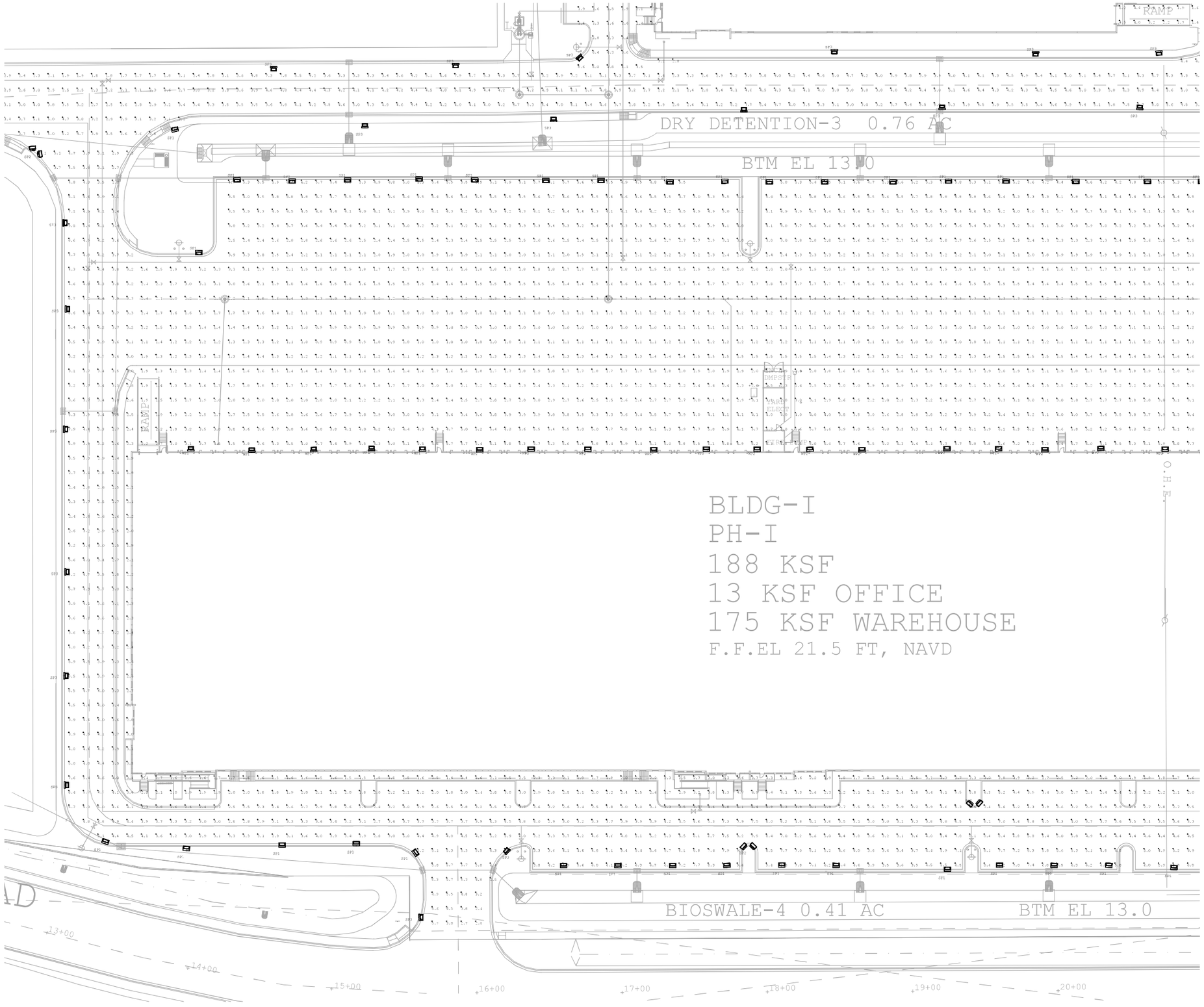
CHECKED:

SHEET NAME:

ENLARGED PHOTOMETRIC PLAN - BUILDING 2

SHEET NO. E0.2A

PROJECT PHASE:
100% CONSTRUCTION DOCUMENTS



1 ENLARGED PHOTOMETRIC PLAN - BUILDING 1
SCALE: 1/32" = 1'-0"

LEGACY
DEVELOPMENT PARTNERS

RGD
CONSULTING
ENGINEERS
JUPITER | ORLANDO
561-743-0165 | 407-845-6630
WWW.RGDENGINEERS.COM
2151 ALT A1A #2000, JUPITER, FL 33477
CERT OF AUTH 5454

MEP ENGINEER: RGD CONSULTING ENGINEERS
2151 SOUTH HIGHWAY A1A ALT
SUITE 2000, JUPITER, FL 33477

CLIENT: COTLEUR & HEARING
1934 COMMERCE LANE, SUITE 1,
JUPITER, FL, 33458

DATE 10.16.2023

REVISIONS:

NO.	DESCRIPTION	DATE

KEY PLAN
AREA DESCRIPTION

PROJECT ADDRESS:
KING'S HIGHWAY COMMERCE PARK
FORT PIERCE, FLORIDA

PROJECT NAME:
KING'S HIGHWAY
COMMERCE PARK PHASE
I

DATE: 10/16/23

RGD PROJ. NO: 22-1147

SCALE: AS SHOWN

DRAWN:

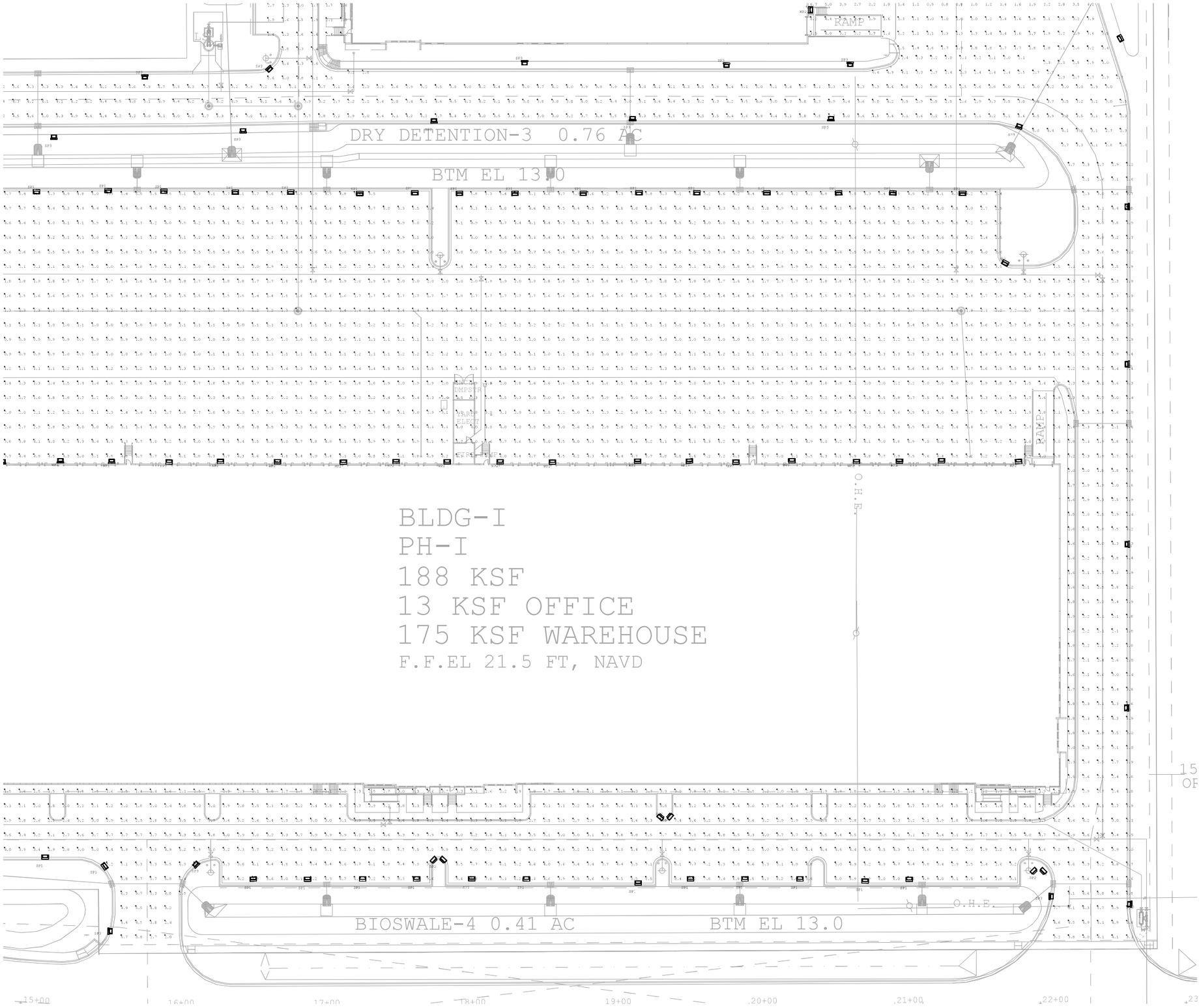
CHECKED:

SHEET NAME:

ENLARGED PHOTOMETRIC PLAN - BUILDING 1

SHEET NO. E0.3A

PROJECT PHASE:
100% CONSTRUCTION DOCUMENTS



1 ENLARGED PHOTOMETRIC PLAN - BUILDING 1
SCALE: 1/32" = 1'-0"

LEGACY
DEVELOPMENT PARTNERS

RGD
CONSULTING
ENGINEERS
JUPITER | ORLANDO
561-743-0165 | 407-845-6630
WWW.RGDENGINEERS.COM
2151 ALT A1A #2000, JUPITER, FL 33477
CERT OF AUTH 5454

MEP ENGINEER: RGD CONSULTING ENGINEERS
2151 SOUTH HIGHWAY A1A ALT
SUITE 2000, JUPITER, FL 33477

CLIENT: COTLEUR & HEARING
1934 COMMERCE LANE, SUITE 1,
JUPITER, FL, 33458

DATE 10.16.2023

REVISIONS:

NO.	DESCRIPTION	DATE

KEY PLAN
AREA DESCRIPTION

PROJECT ADDRESS:
KING'S HIGHWAY COMMERCE PARK
FORT PIERCE, FLORIDA

PROJECT NAME:
KING'S HIGHWAY
COMMERCE PARK PHASE
I

DATE: 10/16/23

RGD PROJ. NO: 22-1147

SCALE: AS SHOWN

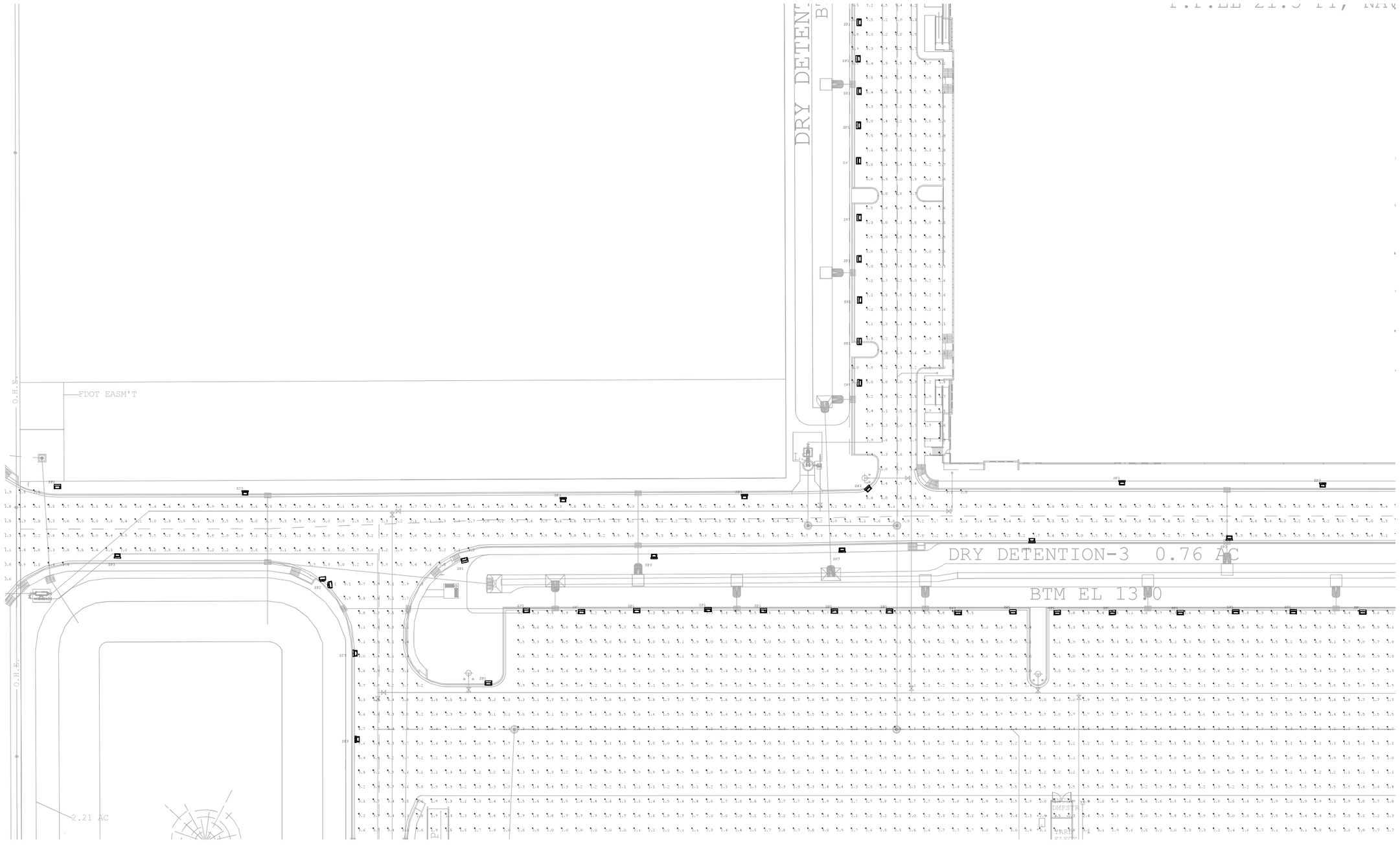
DRAWN:

CHECKED:

SHEET NAME:
ENLARGED PHOTOMETRIC PLAN - BUILDING 1

SHEET NO.
E0.3B

PROJECT PHASE:
100% CONSTRUCTION DOCUMENTS



1 ENLARGED PHOTOMETRIC PLAN - ROADWAY

SCALE: 1/32" = 1'-0"

LEGACY DEVELOPMENT PARTNERS

RGD
CONSULTING ENGINEERS
JUPITER | ORLANDO
561-743-0165 | 407-845-6630
WWW.RGDENGINEERS.COM
2151 ALT A1A #2000, JUPITER, FL 33477
CERT OF AUTH 5454

MEP ENGINEER: RGD CONSULTING ENGINEERS
2151 SOUTH HIGHWAY A1A ALT
SUITE 2000, JUPITER, FL 33477

CLIENT: COTLEUR & HEARING
1934 COMMERCE LANE, SUITE 1,
JUPITER, FL, 33458

DATE 10.16.2023

REVISIONS:

NO.	DESCRIPTION	DATE

KEY PLAN
AREA DESCRIPTION

N

PROJECT ADDRESS:
KING'S HIGHWAY COMMERCE PARK
FORT PIERCE, FLORIDA

PROJECT NAME:
KING'S HIGHWAY
COMMERCE PARK PHASE
I

DATE: 10/16/23

RGD PROJ. NO: 22-1147

SCALE: AS SHOWN

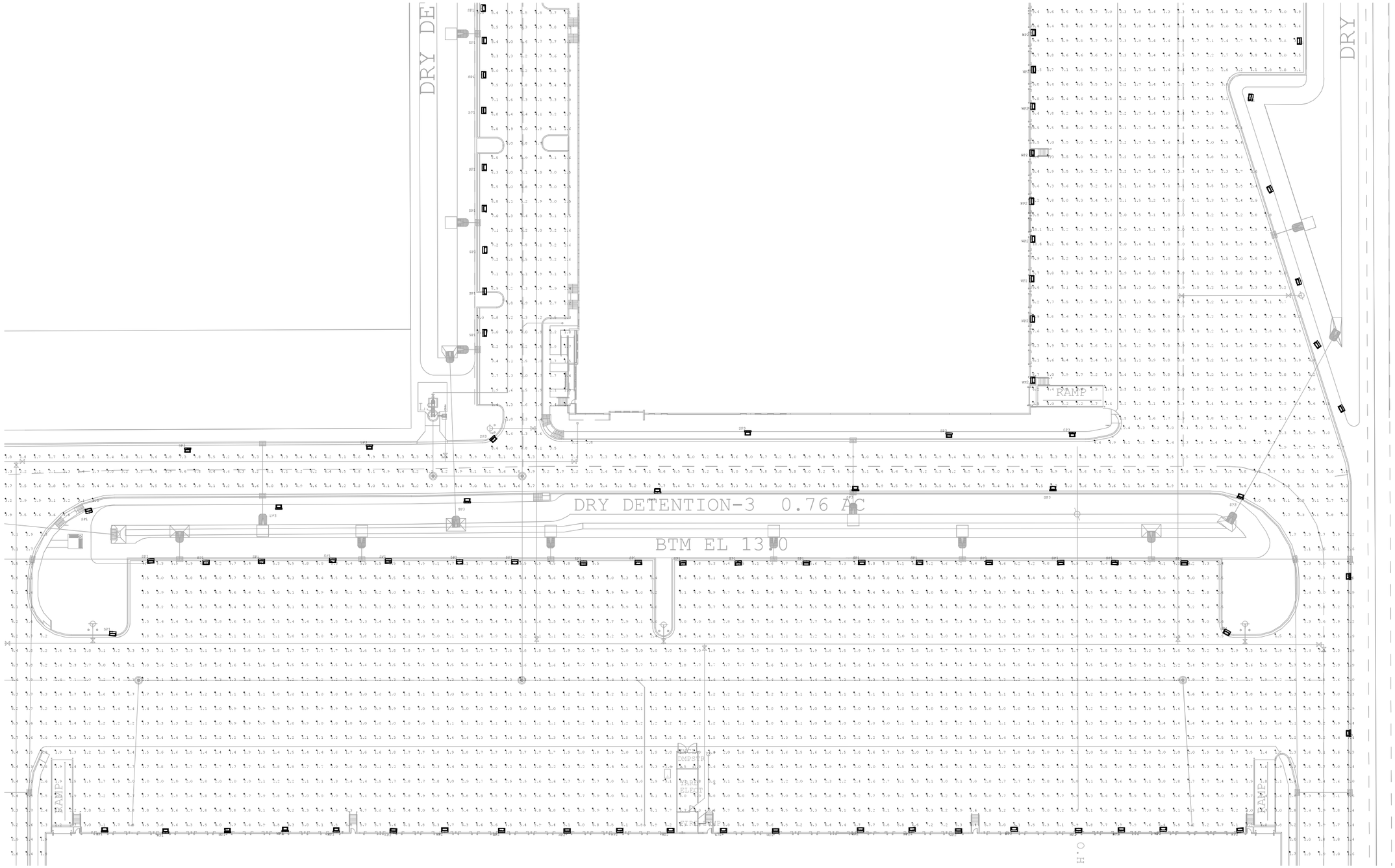
DRAWN:

CHECKED:

SHEET NAME:
ENLARGED PHOTOMETRIC PLAN - ROADWAY

SHEET NO. E0.4A

PROJECT PHASE:
100% CONSTRUCTION DOCUMENTS



1 ENLARGED PHOTOMETRIC PLAN - ROADWAY
SCALE: 1/32" = 1'-0"

LEGACY
DEVELOPMENT PARTNERS

RGD
CONSULTING ENGINEERS
JUPITER | ORLANDO
561-743-0165 | 407-845-6630
WWW.RGDENGINEERS.COM
2151 ALT A1A #2000, JUPITER, FL 33477
CERT OF AUTH 5454

MEP ENGINEER: RGD CONSULTING ENGINEERS
2151 SOUTH HIGHWAY A1A ALT
SUITE 2000, JUPITER, FL 33477

CLIENT: COTLEUR & HEARING
1934 COMMERCE LANE, SUITE 1,
JUPITER, FL, 33458

DATE 10.16.2023

REVISIONS:

NO.	DESCRIPTION	DATE

KEY PLAN
AREA DESCRIPTION

N

PROJECT ADDRESS:
KING'S HIGHWAY COMMERCE PARK
FORT PIERCE, FLORIDA

PROJECT NAME:
KING'S HIGHWAY
COMMERCE PARK PHASE
I

DATE: 10/16/23

RGD PROJ. NO: 22-1147

SCALE: AS SHOWN

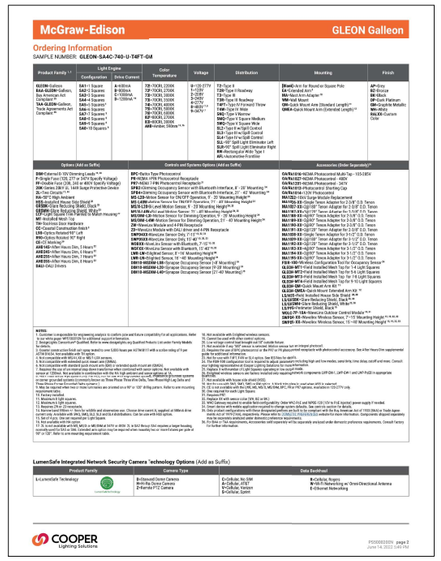
DRAWN:

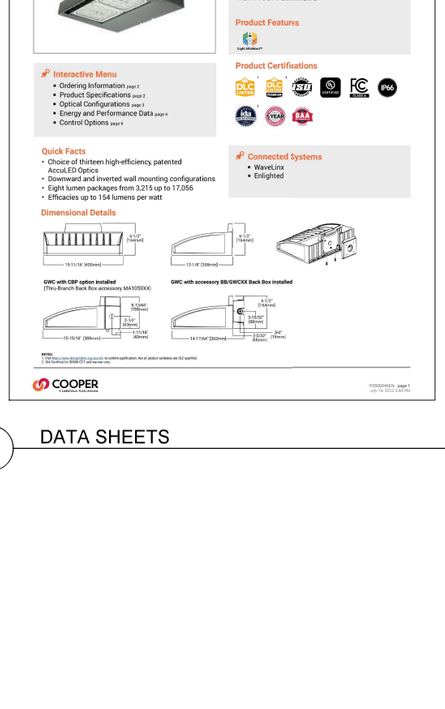
CHECKED:

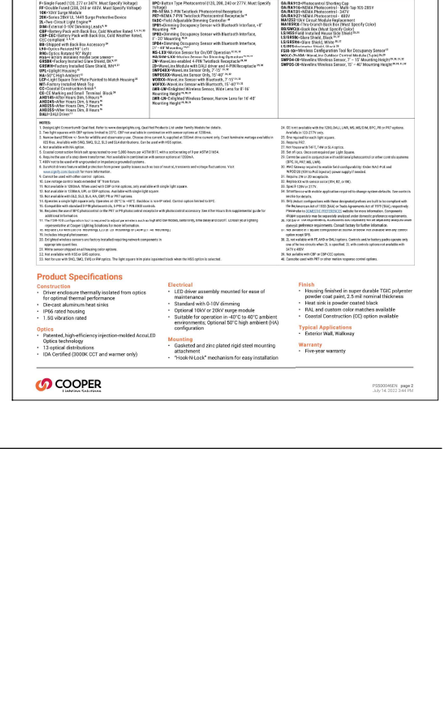
SHEET NAME:
ENLARGED PHOTOMETRIC PLAN - ROADWAY

SHEET NO. E0.4B

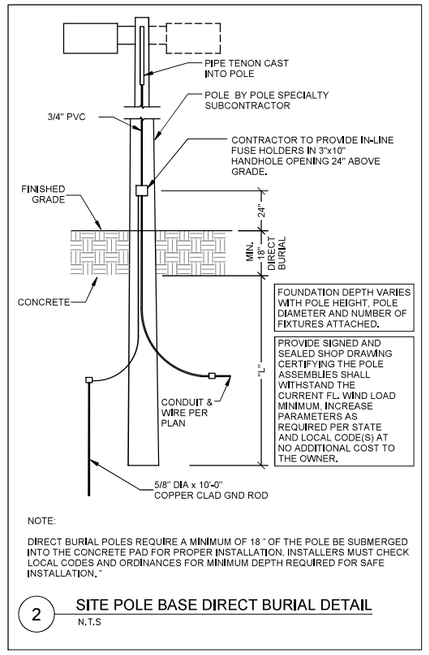
PROJECT PHASE:
100% CONSTRUCTION DOCUMENTS







1 DATA SHEETS



NOTE:

DIRECT BURIAL POLES REQUIRE A MINIMUM OF 18 " OF THE POLE BE SUBMERGED INTO THE CONCRETE PAD FOR PROPER INSTALLATION. INSTALLERS MUST CHECK LOCAL CODES AND ORDINANCES FOR MINIMUM DEPTH REQUIRED FOR SAFE INSTALLATION. "

2 SITE POLE BASE DIRECT BURIAL DETAIL
N.T.S

LEGACY DEVELOPMENT PARTNERS

RGD
CONSULTING ENGINEERS
JUPITER | ORLANDO
561-743-0165 | 407-845-6630
WWW.RGDENGINEERS.COM
2151 ALT A1A #2000, JUPITER, FL 33477
CERT OF AUTH 5454

MEP ENGINEER: RGD CONSULTING ENGINEERS
2151 SOUTH HIGHWAY A1A ALT
SUITE 2000, JUPITER, FL 33477

CLIENT: COTLEUR & HEARING
1934 COMMERCE LANE, SUITE 1,
JUPITER, FL, 33458

DATE 10.16.2023

REVISIONS:

NO.	DESCRIPTION	DATE

KEY PLAN
AREA DESCRIPTION
N

PROJECT ADDRESS:
KING'S HIGHWAY COMMERCE PARK
FORT PIERCE, FLORIDA

PROJECT NAME:
KING'S HIGHWAY
COMMERCE PARK PHASE
I

DATE: 10/16/23

RGD PROJ. NO: 22-1147

SCALE: AS SHOWN

DRAWN:

CHECKED:

SHEET NAME:

DATA SHEETS AND DETAILS

SHEET NO. E1.1

PROJECT PHASE:

100% CONSTRUCTION DOCUMENTS

Stormwater Management Report

For

Kings Highway Commerce Center

Ft. Pierce, Florida

06/30/2023
01/01/24

Prepared By:

Jeff H. Iravani, Inc.
Consulting Engineers
1934 Commerce Lane, Suite 5
Jupiter, Florida 33458

Tel: (561) 575-6030
Fax: (561) 575-6088
www.JHIinc.com
JHI@JHIinc.com

Jeff H. Iravani, P.E.
Florida Registration # 33155
FR # 6986

Contents

I. Introduction

The site is located on the north side of White Road 0.1 mile east of Kings Hwy and approximately 1 mile north of Okeechobee Rd (SR-70) and consists of 26.53 ac of land. 0.1 ac is to be dedicated to St. Lucie County for the sidewalk on White Road.
See Exhibit-A.

An industrial development including warehouse, distribution, and related offices with ultimate buildout of 390 ksf of buildings and supporting infrastructure is proposed.

The site historical discharge is to North St. Lucie River Water Control District (NSLRWCD) Canal C-40 along the west side of Kings Hwy via 1-24" RCP and then into the Ten Mile Creek and ultimately into the St. Lucie River North Fork which is considered impaired.

The proposed master drainage system consists of a 1.76 ac wet retention/detention and 5 dry detentions totaling 2.44 ac.

The dry detention area shall provide the pre-treatment requirements.

Discharge to C-40 is through a control structure CS-1 located on the NWC of the Lake-1.

The construction of this project shall be split into two phases:

Phase-I includes the master drainage system, the main drive, & access to Kings Hwy along w/ 2 driveways onto White Rd.

Phase-II includes Building-II along w/ 2 driveways onto Graham Road.

Off-site improvements include a right turn lane on Kings Hwy for the main access.

Section 13, Township 35S, Range 39E, City of Fort Pierce, St. Lucie County, Florida

II. Site Data

Item	Total (ac)	Phase-I (ac)	Phase-II (ac)
Parcel Area	26.53	15.97	10.56
R/W Dedication	0.10		
Project Area	26.43		
Bldg	8.95	4.31	4.64
Pavt/SW	10.82	6.95	3.87
Lake	1.76	1.76	0
Impervious Total	21.53	13.02	8.51
% Impervious	81.5%		
Pervious*	5.0	2.95	2.05
Dry Detentions	2.44	1.35	1.09
Pervious w/o dry det	2.56	1.6	0.96
Impervious w/o lakes	19.77	11.27	8.51

*Includes Dry Detentions

S = 6.8" (Depressional) x (1-0.815) x 0.75 = 0.94 in
CN = 91.4

III. Off-site Discharge

There is off-site discharge. This project has Kings Hwy to the west, Graham Road to the north, Peter's Road to the east & White Rd to the south. There is an agricultural parcel to the east that discharges to a ditch along White Road and to C-37 on the east side of Peters Rd.

IV. Wetlands

There are no wetlands on this property**.** As per an aerial photograph of the site, the entire site was utilized for agricultural use.

V. Water Table

Per soil report, the average water table in 09/02/2022 was 10.9 FT, NAVD.
The control elevation in the NSLRWCD C-40 is 8.5 FT, NAVD in wet season & 11.5 in dry season.
HWT of 12.0 FT, NAVD is assumed for this project.

VI. Design Criteria

Water Quality
Bleeder el is set @ 13.0 to provide 1' of wet retention in the lakes.
Weir el is set @ 14.7 to provide 1.7' of wet detention.
Impaired outfall waters require add'l 50% water quality.
Required water quality is the greater of below in wet detention x 1.5:

a. 2.5" wet detention over impervious area.
b. 1.25" wet retention over impervious area.
c. 1" wet detention over the entire project area.

V req wet det =2.5"A/12(A-lake-Bldg-pervious area)/(A-lake-Bldg)
(2.5"x26.43)(26.43-1.76-8.95-5.0)/(26.43-1.76-8.95))/12 = 3.75 A-F
1"(26.43-1.76-2.44) /12 = 1.85 A-F
3.75 x 1.5 = **5.63 A-F**
V prop wet det =1.7' (lake area (@ 13.0 + @ 14.7)/2 = 1.7'(1.87+1.95)/2= **3.1 A-F**

V prop wet ret = 1' (lake area (@ 12.0 + @ 13)/2 =1'(1.76+1.87)/2= **1.82 A-F**

V req pre-treat = (26.43-1.76-2.44) x 0.5"/12 = **0.93 A-F**
Dry detention will be utilized.
1' of dry detention is proposed at all dry detention areas.
V dry det= 1'(A@ 13.0 bottom+ A@ 14 weir)/2=1'(0.79+1.3)/2= **1.05 A-F>0.93**

Req'd dry detention volume would be 75% of wet detention.
Req'd retention volume would be 50% of wet detention.

Water quality prop/req'd = 3.1/5.63 + 1.05/(0.75 x 5.63) + 1.82/(0.5 x 5.63) = 1**36%**

Nutrient treatment
Wet retention shall be utilized.
Prop retention = 1.82a-f x 12/(26.43-1.76 lake-2.44 dry det) = 0.98" ~ 1"

Design Elevations
Min Pavt EL
10yr-24hr storm peak stage 15.88 FT, NAVD
Min Pavt EL 16.00 FT

Perimeter Berm EL

25yr-72 hr storm peak stage	16.78 FT, NAVD	(City of Ft. Pierce)
10yr-72hr storm peak stage	16.57 FT	(NSLRWCD)
Min perim berm EL	16.80 FT	

Min Fin Floor EL
100yr-72hr storm peak stage 17.4 FT, NAVD
Min F.F. EL 17.50 FT

VII. Allowable Discharge

NSLRWCD allowable discharge is 2" per day for a 10yr-72hr storm. This is a volume-based limitation. There is no limitation on the peak discharge rate.
V allowable (10yr-72hr) = 26.43 ac x 2"/12 = 4.41 A-F /day
V max prop (10yr-72hr) = 4.3 A-F /day < 4.41 66.0-hr to 90.0 hr (see 10yr-72hr storm routing).

VIII. Bleeder Design

(SFWMD) Bleeder is to discharge 1/2" in 24 hr.
Q SFWMD = 26.43 ac x 1/2" x 43,560/(12 x 3600 x 24) = 0.56 cfs

$Q = 4.8 \times A \times (H)^{0.5}$
H avg = 0.85'
$0.56 = 4.8 \times A \times 0.85^{0.5}$
A = 0.125 sf = 18 sq in
Use 4.7 in circular bleeder

IX. Utilities

Fort Pierce Utility Authority would be providing water & wastewater services to the proposed development.

X. Maintenance Entity

The applicant shall be the maintenance entity.

XI. Irrigation

The lake surface water shall be utilized for irrigation purposes. A water use permit shall be obtained from SFWMD.

XII. ICPR Flood Routing

See ICPR Node diagram & basin map.
The retention volumes are not included in flood routing calculations to be conservative and due to low soil hydraulic conductivity.

Grading assumption for ICPR Input:
1. Surface el's 16.0-17.5
2. F.F. el 17.5 min

XIII. Nutrient Removal

St. Lucie River is considered impaired so post development nutrient loading rates, nitrogen (TN) & phosphorus (TP), need to match pre-development.

"Evaluation of Current **S**tormwater **D**esign **C**riteria within **S**tate of **F**lorida "final report (**FSDC**) dated June 2007 is utilized in this section. The referenced portions of FSDC are attached under Appendix. The 2012 South Florida Environmental Report Appendix 10-1 (**SFER**) for land use categories in the St. Lucie River Watershed will be used for the nutrient concentrations. SFWMD Vol IV Manual 2012 reference is shown as **SFWMD.**

The project is in Zone-2 per FSDC Fig 4-3

Per FSDC Fig 6.1, BOD removal in excess of 95% shall be achieved if removal efficiency is provided for both nitrogen & phosphorus.

The proposed development is considered industrial. FSDC 4.1.5.
The site was previously developed as citrus groves from 1968 to mid-1990's & now is used as a pasture. Therefore, unimproved pasture, as defined in Florida Fish & Wildlife "Florida Land Use Classification…, December 2012, is assumed for the pre-development land use.
Existing soil is assumed to be depressional.

Pre Dev-Nutrient Loading Basin 26.43 ac
Post Dev Nutrient Loading Basin = 26.43-1.76 lake-2.44 dry det = **22.23 ac**

Pre-Development
Type D soil
Pasture in good condition,
NDCIA CN = 80 SCS TR 55 (SCS) Table 2-2c

Post Development
Open Space in good condition
Pervious area CN = 80 SCS Table 2-2a
NDCIA Imp = 0
NDCIA Total = 2.56 ac Perv w/o dry det Sec II

NDCIA CN = 80
DCIA = 19.77 ac Imp w/o lake Sec II
DCIA % = (19.77/(22.23) = **88.9%**

Pre Dev Mean Annual C = 0.111 FSDC Appendix C Zone-2
Post Dev Mean Annual C = 0.732

XIII. Nutrient Removal cont'd

Post-dev vs Pre dev loading
TN 1.27 mg/l vs 1.19 mg/l SFER
Req % removal = ((1.27x0.732x22.23) - (1.19x0.111x26.43)) / (1.27x0.732x22.23) = 83.1%
TP 0.37 mg/l vs 0.25 mg/l SFER
Req % removal = ((0.37x0.732x22.23) - (0.25x0.111x26.43)) / (0.37x0.732x22.23) = 87.8%

Annual rainfall = 53.5" FSDC Appendix A-3
Mean annual runoff = 0.732 x 53.5 = 39.16"
V_{runoff} = 39.16"(22.23ac)/(12x365) = 0.198 A-F /day
$V_{perm\ pool}$ = 16.3 a-f
$T_{wet\ det\ residence}$ = 16.3/0.198 = 83 days

Removal Efficiency (RE)
1" of retention shall be provided
It is proposed to provide 1" of retention & wet detention w/ 83 days residency.

1" retention has 71.48% RE FSDC Appendix-D
detention w/ 83 days residency has 72.45% RE TP FSDC Fig 5-9
41.56% RE TN FSDC Fig 5-10
Overall Removal Efficiency (ORE)
ORE TN = 0.715 + (1-0.715) (0.416) = **83.4% > 83.1%** FSDC 6.1.2 Eq-1
ORE TP = 0.715 + (1-0.715) (0.725) = 92.2**% > 87.8%**

Exhibit A


Graham Rd
Graham Rd
Copenhaver Rd
Bar
Market
White Rd
White Rd
White Rd
Snapper Creek - White Rd

==========
==== Basins ====
==========

Name: A-DET 1 Node: A-DET 1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 5.840 Time Shift(hrs): 0.00
Curve Number: 91.40 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B-DET 2 Node: B-DET 2 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 4.190 Time Shift(hrs): 0.00
Curve Number: 91.40 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: C-DET 3 Node: C-DET 3 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 6.620 Time Shift(hrs): 0.00
Curve Number: 91.40 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: D-DET 45 Node: D-DET 45 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 7.100 Time Shift(hrs): 0.00
Curve Number: 91.40 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: H-PreDev Node: M-PreDev Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Flmod Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 46.00
Area(ac): 26.430 Time Shift(hrs): 0.00
Curve Number: 80.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: K-lake 1 Node: K-lake 1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00

Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 2.780 Time Shift(hrs): 0.00
Curve Number: 91.40 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

==========
==== Nodes ==========
==========

Name: A-DET 1 Base Flow(cfs): 0.000 Init Stage(ft): 13.000
Group: BASE Warn Stage(ft): 17.500
Type: Stage/Area

Stage(ft)	Area(ac)
12.900	0.0000
13.000	0.1700
16.000	0.5400
17.500	3.6600

Name: B-DET 2 Base Flow(cfs): 0.000 Init Stage(ft): 13.000
Group: BASE Warn Stage(ft): 17.500
Type: Stage/Area

Stage(ft)	Area(ac)
12.900	0.0000
13.000	0.2000
16.000	0.5500
17.500	1.7800

Name: C-DET 3 Base Flow(cfs): 0.000 Init Stage(ft): 13.000
Group: BASE Warn Stage(ft): 17.500
Type: Stage/Area

Stage(ft)	Area(ac)
12.900	0.0000
13.000	0.2400
16.000	0.7600
17.500	4.4600

Name: D-DET 45 Base Flow(cfs): 0.000 Init Stage(ft): 13.000
Group: BASE Warn Stage(ft): 17.500
Type: Stage/Area

Stage(ft)	Area(ac)
12.900	0.0000
13.000	0.1900
16.000	0.5900
17.500	4.4600

Name: K-lake 1 Base Flow(cfs): 0.000 Init Stage(ft): 13.700
Group: BASE Warn Stage(ft): 17.500
Type: Stage/Area

Stage(ft)	Area(ac)

12.990	0.0000
13.000	1.8700
16.000	2.2300
16.500	2.6600
17.000	2.7800

Name: L-CANAL Base Flow(cfs): 0.000 Init Stage(ft): 11.500
Group: BASE Warn Stage(ft): 14.500
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	11.500
61.22	15.540
180.00	13.720

Name: M-PreDev Base Flow(cfs): 0.000 Init Stage(ft): 14.500
Group: BASE Warn Stage(ft): 18.000
Type: Stage/Area

Stage(ft)	Area(ac)
14.500	0.0000
16.000	26.4300

==========
==== Pipes ====
==========

Name: DD 1-3 From Node: A-DET 1 Length(ft): 117.00
Group: BASE To Node: C-DET 3 Count: 1
Friction Equation: Automatic
Solution Algorithm: Most Restrictive
Flow: Both
Entrance Loss Coef: 0.00
Exit Loss Coef: 1.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	30.00	30.00
Rise(in):	30.00	30.00
Invert(ft):	12.000	12.000
Manning's N:	0.020000	0.020000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

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

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

Name: DD 2-3 From Node: B-DET 2 Length(ft): 123.00
Group: BASE To Node: C-DET 3 Count: 1
Friction Equation: Automatic
Solution Algorithm: Most Restrictive
Flow: Both
Entrance Loss Coef: 0.00
Exit Loss Coef: 1.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	30.00	30.00
Rise(in):	30.00	30.00
Invert(ft):	12.000	12.000
Manning's N:	0.013000	0.013000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

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

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

==========
==== Drop Structures ==========
==========

Name:	CS-1	From Node:	K-lake 1	Length(ft):	84.00
Group:	BASE	To Node:	L-CANAL	Count:	1

	UPSTREAM	DOWNSTREAM		
Geometry:	Circular	Circular	Friction Equation:	Average Conveyance
Span(in):	24.00	24.00	Solution Algorithm:	Most Restrictive
Rise(in):	24.00	24.00	Flow:	None
Invert(ft):	8.500	8.000	Entrance Loss Coef:	0.000
Manning's N:	0.013000	0.013000	Exit Loss Coef:	0.000
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dn
			Solution Incs:	0

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

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

*** Weir 1 of 2 for Drop Structure CS-1 ***

			TABLE
Count:	1	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.130
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	3.00	Invert(ft):	14.700
Rise(in):	30.00	Control Elev(ft):	14.700

*** Weir 2 of 2 for Drop Structure CS-1 ***

			TABLE
Count:	1	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.130
Geometry:	Circular	Orifice Disc Coef:	0.600
Span(in):	4.70	Invert(ft):	13.000
Rise(in):	4.70	Control Elev(ft):	13.000

Name:	CS-12	From Node:	C-DET 3	Length(ft):	155.00
Group:	BASE	To Node:	K-lake 1	Count:	1

	UPSTREAM	DOWNSTREAM		
Geometry:	Circular	Circular	Friction Equation:	Average Conveyance
Span(in):	36.00	36.00	Solution Algorithm:	Most Restrictive
Rise(in):	36.00	36.00	Flow:	Both
Invert(ft):	9.000	7.000	Entrance Loss Coef:	0.000
Manning's N:	0.013000	0.013000	Exit Loss Coef:	1.000
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
			Solution Incs:	10

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

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

*** Weir 1 of 2 for Drop Structure CS-12 ***

			TABLE
Count:	1	Bottom Clip(in):	0.000
Type:	Horizontal	Top Clip(in):	0.000

```
                  Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Rectangular           Orifice Disc Coef: 0.600

              Span(in): 70.00                       Invert(ft): 14.000
              Rise(in): 35.00                Control Elev(ft): 14.000

*** Weir 2 of 2 for Drop Structure CS-12 ***
                                                                    TABLE
                 Count: 1                     Bottom Clip(in): 0.000
                  Type: Vertical: Mavis          Top Clip(in): 0.000
                  Flow: Both                   Weir Disc Coef: 3.200
              Geometry: Circular              Orifice Disc Coef: 0.600

              Span(in): 3.00                        Invert(ft): 12.000
              Rise(in): 3.00                 Control Elev(ft): 12.000


-------------------------------------------------------------------------------------------------
         Name: CS-451              From Node: D-DET 45          Length(ft): 77.00
        Group: BASE                  To Node: K-lake 1               Count: 1

               UPSTREAM       DOWNSTREAM                Friction Equation: Average Conveyance
     Geometry: Circular       Circular                 Solution Algorithm: Most Restrictive
     Span(in): 36.00          36.00                                Flow: Both
     Rise(in): 36.00          36.00                   Entrance Loss Coef: 0.000
   Invert(ft): 9.000          6.500                       Exit Loss Coef: 1.000
  Manning's N: 0.020000       0.020000                  Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                      Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                        Solution Incs: 10

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

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



*** Weir 1 of 2 for Drop Structure CS-451 ***
                                                                    TABLE
                 Count: 1                     Bottom Clip(in): 0.000
                  Type: Horizontal               Top Clip(in): 0.000
                  Flow: Both                   Weir Disc Coef: 3.200
              Geometry: Rectangular           Orifice Disc Coef: 0.600

              Span(in): 70.00                       Invert(ft): 14.000
              Rise(in): 35.00                Control Elev(ft): 14.000

*** Weir 2 of 2 for Drop Structure CS-451 ***
                                                                    TABLE
                 Count: 1                     Bottom Clip(in): 0.000
                  Type: Vertical: Mavis          Top Clip(in): 0.000
                  Flow: Both                   Weir Disc Coef: 3.200
              Geometry: Circular              Orifice Disc Coef: 0.600

              Span(in): 3.00                        Invert(ft): 12.000
              Rise(in): 3.00                 Control Elev(ft): 12.000


===============================================================================================
==== Hydrology Simulations ====================================================================
===============================================================================================

         Name: 100YR-72HR
     Filename: C:\ICPRUSER1\100YR-72HR.R32

      Override Defaults: Yes
    Storm Duration(hrs): 72.00
          Rainfall File: SFWMD72
    Rainfall Amount(in): 12.23

Time(hrs)       Print Inc(min)
--------------- ---------------
48.000          60.00
72.000          15.00
```

```
------------------------------------------------------------------------------------------------------
         Name: 10YR-24HR
     Filename: C:\ICPRUSER1\10YR-24HR.R32

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

Time(hrs)       Print Inc(min)
--------------- ---------------
8.000           60.00
16.000          30.00
24.000          60.00

------------------------------------------------------------------------------------------------------
         Name: 10YR-72HR
     Filename: C:\ICPRUSER1\10 yr 72 hr.R32

      Override Defaults: Yes
    Storm Duration(hrs): 72.00
          Rainfall File: SFWMD72
    Rainfall Amount(in): 8.10

Time(hrs)       Print Inc(min)
--------------- ---------------
48.000          60.00
72.000          15.00

------------------------------------------------------------------------------------------------------
         Name: 25yr-72hr
     Filename: C:\ICPRUSER1\25 year 72 hr.R32

      Override Defaults: Yes
    Storm Duration(hrs): 72.00
          Rainfall File: SFWMD72
    Rainfall Amount(in): 9.50

Time(hrs)       Print Inc(min)
--------------- ---------------
48.000          60.00
72.000          15.00

------------------------------------------------------------------------------------------------------
         Name: 5YR-24HR
     Filename: C:\ICPRUSER1\5YR-24HR.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Flmod
    Rainfall Amount(in): 15.00

Time(hrs)       Print Inc(min)
--------------- ---------------
8.000           60.00
16.000          30.00
24.000          60.00

==============================================================================================
==== Routing Simulations ======================================================================
==============================================================================================

         Name: 100YR-72HR          Hydrology Sim: 100YR-72HR
     Filename: C:\ICPRUSER1\100YR-72HR.I32

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

        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 72.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:
```

IBP

Time(hrs)	Print Inc(min)
36.000	720.000
48.000	240.000
60.000	60.000
72.000	60.000

Group	Run
BASE	Yes

Name: 10YR-24HR Hydrology Sim: 10YR-24HR
Filename: C:\ICPRUSER1\10YR-24HR.I32

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

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 24.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
4.000	240.000
10.000	60.000
12.000	15.000
24.000	120.000

Group	Run
BASE	Yes

Name: 10YR-72HR Hydrology Sim: 10YR-72HR
Filename: C:\ICPRUSER1\10YR72HR.I32

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

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

IBP

Time(hrs)	Print Inc(min)
36.000	120.000
48.000	120.000
60.000	60.000
96.000	60.000
360.000	120.000

Group	Run
BASE	Yes

Name: 25yr-72hr Hydrology Sim: 25yr-72hr

Filename: C:\ICPRUSER1\25YR72HR.I32

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

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 72.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

IBP

Time(hrs)	Print Inc(min)
36.000	120.000
48.000	120.000
60.000	60.000
72.000	60.000
360.000	360.000

Group	Run
BASE	Yes

Name: 5YR-24HR Hydrology Sim: 5YR-24HR
Filename: C:\ICPRUSER1\5YR-24HR.I32

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

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 24.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
4.000	240.000
10.000	60.000
12.000	15.000
24.000	120.000

Group	Run
BASE	Yes

Kings Hwy Commerce Center
01/08/24
Node Max

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
A-DET 1	BASE	100YR-72HR	72.00	17.402	17.500	0.0050	150528	60.00	31.261	60.04	3.463
B-DET 2	BASE	100YR-72HR	72.00	17.402	17.500	0.0050	74031	60.00	22.429	60.11	5.766
C-DET 3	BASE	100YR-72HR	72.00	17.402	17.500	0.0049	183729	60.00	44.303	60.03	11.050
D-DET 45	BASE	100YR-72HR	72.00	17.401	17.500	0.0049	183203	60.00	38.006	60.00	8.748
K-lake 1	BASE	100YR-72HR	72.00	17.401	17.500	0.0048	125294	60.00	34.617	0.00	0.000
L-CANAL	BASE	100YR-72HR	61.22	15.540	14.500	0.0011	0	0.00	0.000	0.00	0.000
M-PreDev	BASE	100YR-72HR	72.00	16.045	18.000	0.0028	1185582	60.25	62.857	0.00	0.000
A-DET 1	BASE	10YR-24HR	22.92	15.882	17.500	0.0050	22897	12.00	19.078	12.17	8.522
B-DET 2	BASE	10YR-24HR	22.92	15.882	17.500	0.0043	23365	12.00	13.687	12.15	4.184
C-DET 3	BASE	10YR-24HR	22.94	15.882	17.500	0.0042	32232	12.00	33.350	12.10	21.127
D-DET 45	BASE	10YR-24HR	22.95	15.879	17.500	0.0041	24999	12.00	23.194	12.04	14.642
K-lake 1	BASE	10YR-24HR	22.97	15.878	17.500	0.0050	96501	12.03	44.230	22.54	1.949
L-CANAL	BASE	10YR-24HR	24.00	13.084	14.500	0.0011	0	22.54	1.949	0.00	0.000
M-PreDev	BASE	10YR-24HR	24.00	15.463	18.000	0.0022	739093	12.50	32.545	0.00	0.000
A-DET 1	BASE	10YR-72HR	68.20	16.569	17.500	0.0050	75118	60.00	20.427	59.97	6.469
B-DET 2	BASE	10YR-72HR	68.20	16.569	17.500	0.0049	44288	60.00	14.656	60.17	3.710
C-DET 3	BASE	10YR-72HR	68.20	16.569	17.500	0.0049	94231	60.00	32.060	60.03	15.947
D-DET 45	BASE	10YR-72HR	68.23	16.566	17.500	0.0048	89312	60.00	24.834	60.03	13.318
K-lake 1	BASE	10YR-72HR	68.25	16.565	17.500	0.0047	116546	60.01	38.634	72.00	2.364
L-CANAL	BASE	10YR-72HR	61.23	15.540	14.500	0.0011	0	72.00	2.364	0.00	0.000
M-PreDev	BASE	10YR-72HR	72.01	15.687	18.000	0.0023	911332	60.25	38.811	0.00	0.000
A-DET 1	BASE	25yr-72hr	68.21	16.783	17.500	0.0050	94503	60.00	24.084	59.82	5.641
B-DET 2	BASE	25yr-72hr	68.21	16.783	17.500	0.0048	51924	60.00	17.280	60.13	4.538
C-DET 3	BASE	25yr-72hr	68.21	16.782	17.500	0.0048	117194	60.00	36.789	59.96	14.845
D-DET 45	BASE	25yr-72hr	68.22	16.779	17.500	0.0046	113261	60.00	29.281	59.90	13.017
K-lake 1	BASE	25yr-72hr	68.26	16.778	17.500	0.0043	118771	60.00	38.927	71.99	2.761
L-CANAL	BASE	25yr-72hr	61.22	15.540	14.500	0.0011	0	71.99	2.761	0.00	0.000
M-PreDev	BASE	25yr-72hr	72.01	15.818	18.000	0.0026	1011582	60.25	46.994	0.00	0.000

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
10YR-72HR	A-DET 1	BASE	0.00	13.000	17.500	7548	0.000	0.000	0.0	0.0
10YR-72HR	B-DET 2	BASE	0.00	13.000	17.500	8863	0.000	0.000	0.0	0.0
10YR-72HR	C-DET 3	BASE	0.00	13.000	17.500	10748	0.000	-0.197	0.0	0.0
10YR-72HR	D-DET 45	BASE	0.00	13.000	17.500	8276	0.000	-0.197	0.0	0.0
10YR-72HR	K-lake 1	BASE	0.00	13.700	17.500	85116	-0.395	0.412	0.0	0.0
10YR-72HR	L-CANAL	BASE	0.00	11.500	14.500	0	0.412	0.000	0.0	0.0
10YR-72HR	M-PreDev	BASE	0.00	14.500	18.000	113	0.000	0.000	0.0	0.0
10YR-72HR	A-DET 1	BASE	2.02	13.050	17.500	7818	0.000	0.255	0.0	0.0
10YR-72HR	B-DET 2	BASE	2.02	13.050	17.500	9119	0.000	0.354	0.0	0.0
10YR-72HR	C-DET 3	BASE	2.02	13.049	17.500	11120	0.609	-0.181	0.1	-0.0
10YR-72HR	D-DET 45	BASE	2.02	13.151	17.500	9151	0.000	-0.164	0.0	-0.0
10YR-72HR	K-lake 1	BASE	2.02	13.634	17.500	84773	-0.345	0.384	-0.1	0.1
10YR-72HR	L-CANAL	BASE	2.02	11.633	14.500	0	0.384	0.000	0.1	0.0
10YR-72HR	M-PreDev	BASE	2.02	14.500	18.000	113	0.000	0.000	0.0	0.0
10YR-72HR	A-DET 1	BASE	4.02	13.094	17.500	8054	0.000	0.296	0.0	0.1
10YR-72HR	B-DET 2	BASE	4.02	13.094	17.500	9341	0.000	0.407	0.0	0.1
10YR-72HR	C-DET 3	BASE	4.02	13.092	17.500	11450	0.704	-0.164	0.2	-0.1
10YR-72HR	D-DET 45	BASE	4.02	13.263	17.500	9804	0.000	-0.132	0.0	-0.1
10YR-72HR	K-lake 1	BASE	4.02	13.576	17.500	84466	-0.296	0.357	-0.1	0.1
10YR-72HR	L-CANAL	BASE	4.02	11.765	14.500	0	0.357	0.000	0.1	0.0
10YR-72HR	M-PreDev	BASE	4.02	14.500	18.000	113	0.000	0.000	0.0	0.0
10YR-72HR	A-DET 1	BASE	6.02	13.134	17.500	8269	0.009	0.338	0.0	0.1
10YR-72HR	B-DET 2	BASE	6.02	13.134	17.500	9545	0.006	0.456	0.0	0.2
10YR-72HR	C-DET 3	BASE	6.02	13.132	17.500	11752	0.804	-0.148	0.3	-0.1
10YR-72HR	D-DET 45	BASE	6.02	13.348	17.500	10297	0.011	-0.099	0.0	-0.1
10YR-72HR	K-lake 1	BASE	6.02	13.523	17.500	84192	-0.242	0.332	-0.2	0.2
10YR-72HR	L-CANAL	BASE	6.02	11.897	14.500	0	0.332	0.000	0.2	0.0
10YR-72HR	M-PreDev	BASE	6.02	14.500	18.000	113	0.000	0.000	0.0	0.0
10YR-72HR	A-DET 1	BASE	8.02	13.183	17.500	8534	0.037	0.393	0.0	0.2
10YR-72HR	B-DET 2	BASE	8.02	13.183	17.500	9795	0.026	0.513	0.0	0.2
10YR-72HR	C-DET 3	BASE	8.02	13.181	17.500	12122	0.947	-0.129	0.4	-0.1
10YR-72HR	D-DET 45	BASE	8.02	13.421	17.500	10724	0.044	-0.056	0.0	-0.1
10YR-72HR	K-lake 1	BASE	8.02	13.478	17.500	83956	-0.167	0.308	-0.2	0.2
10YR-72HR	L-CANAL	BASE	8.02	12.029	14.500	0	0.308	0.000	0.2	0.0
10YR-72HR	M-PreDev	BASE	8.02	14.500	18.000	113	0.000	0.000	0.0	0.0
10YR-72HR	A-DET 1	BASE	10.02	13.242	17.500	8852	0.059	0.458	0.0	0.2
10YR-72HR	B-DET 2	BASE	10.02	13.242	17.500	10096	0.042	0.586	0.0	0.3
10YR-72HR	C-DET 3	BASE	10.02	13.240	17.500	12568	1.111	-0.107	0.6	-0.1
10YR-72HR	D-DET 45	BASE	10.02	13.468	17.500	10992	0.072	0.036	0.0	-0.1
10YR-72HR	K-lake 1	BASE	10.02	13.444	17.500	83778	-0.042	0.277	-0.2	0.3
10YR-72HR	L-CANAL	BASE	10.02	12.161	14.500	0	0.277	0.000	0.3	0.0
10YR-72HR	M-PreDev	BASE	10.02	14.500	18.000	113	0.000	0.000	0.0	0.0
10YR-72HR	A-DET 1	BASE	12.02	13.307	17.500	9201	0.077	0.530	0.0	0.3
10YR-72HR	B-DET 2	BASE	12.02	13.307	17.500	10426	0.056	0.670	0.0	0.4
10YR-72HR	C-DET 3	BASE	12.02	13.305	17.500	13055	1.288	-0.080	0.8	-0.1
10YR-72HR	D-DET 45	BASE	12.02	13.489	17.500	11115	0.094	0.062	0.0	-0.1
10YR-72HR	K-lake 1	BASE	12.02	13.420	17.500	83654	0.018	0.253	-0.2	0.3
10YR-72HR	L-CANAL	BASE	12.02	12.293	14.500	0	0.253	0.000	0.3	0.0
10YR-72HR	M-PreDev	BASE	12.02	14.500	18.000	113	0.000	0.000	0.0	0.0
10YR-72HR	A-DET 1	BASE	14.02	13.373	17.500	9556	0.093	0.608	0.0	0.4
10YR-72HR	B-DET 2	BASE	14.02	13.373	17.500	10761	0.067	0.763	0.0	0.6

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
10YR-72HR	C-DET 3	BASE	14.02	13.371	17.500	13552	1.476	-0.043	1.0	-0.2
10YR-72HR	D-DET 45	BASE	14.02	13.511	17.500	11242	0.113	0.077	0.0	-0.1
10YR-72HR	K-lake 1	BASE	14.02	13.403	17.500	83566	0.079	0.235	-0.2	0.4
10YR-72HR	L-CANAL	BASE	14.02	12.425	14.500	0	0.235	0.000	0.4	0.0
10YR-72HR	M-PreDev	BASE	14.02	14.501	18.000	482	0.000	0.000	0.0	0.0
10YR-72HR	A-DET 1	BASE	16.02	13.431	17.500	9868	0.106	0.690	0.1	0.5
10YR-72HR	B-DET 2	BASE	16.02	13.431	17.500	11056	0.076	0.862	0.0	0.7
10YR-72HR	C-DET 3	BASE	16.02	13.429	17.500	13987	1.673	0.043	1.3	-0.2
10YR-72HR	D-DET 45	BASE	16.02	13.535	17.500	11381	0.128	0.088	0.1	-0.1
10YR-72HR	K-lake 1	BASE	16.02	13.395	17.500	83524	0.181	0.227	-0.2	0.4
10YR-72HR	L-CANAL	BASE	16.02	12.557	14.500	0	0.227	0.000	0.4	0.0
10YR-72HR	M-PreDev	BASE	16.02	14.515	18.000	11839	0.030	0.000	0.0	0.0
10YR-72HR	A-DET 1	BASE	18.02	13.484	17.500	10150	0.116	0.751	0.1	0.7
10YR-72HR	B-DET 2	BASE	18.02	13.484	17.500	11323	0.084	0.936	0.1	0.8
10YR-72HR	C-DET 3	BASE	18.02	13.481	17.500	14381	1.819	0.070	1.6	-0.1
10YR-72HR	D-DET 45	BASE	18.02	13.561	17.500	11537	0.142	0.097	0.1	-0.0
10YR-72HR	K-lake 1	BASE	18.02	13.393	17.500	83514	0.222	0.225	-0.1	0.4
10YR-72HR	L-CANAL	BASE	18.02	12.689	14.500	0	0.225	0.000	0.4	0.0
10YR-72HR	M-PreDev	BASE	18.02	14.535	18.000	27212	0.079	0.000	0.0	0.0
10YR-72HR	A-DET 1	BASE	20.02	13.537	17.500	10432	0.126	0.810	0.1	0.8
10YR-72HR	B-DET 2	BASE	20.02	13.537	17.500	11590	0.090	1.007	0.1	1.0
10YR-72HR	C-DET 3	BASE	20.02	13.534	17.500	14776	1.960	0.088	1.9	-0.1
10YR-72HR	D-DET 45	BASE	20.02	13.590	17.500	11705	0.153	0.104	0.1	-0.0
10YR-72HR	K-lake 1	BASE	20.02	13.395	17.500	83520	0.252	0.226	-0.1	0.5
10YR-72HR	L-CANAL	BASE	20.02	12.821	14.500	0	0.226	0.000	0.5	0.0
10YR-72HR	M-PreDev	BASE	20.02	14.556	18.000	43305	0.126	0.000	0.0	0.0
10YR-72HR	A-DET 1	BASE	22.02	13.590	17.500	10716	0.134	0.868	0.1	0.9
10YR-72HR	B-DET 2	BASE	22.02	13.590	17.500	11858	0.096	1.078	0.1	1.2
10YR-72HR	C-DET 3	BASE	22.02	13.587	17.500	15172	2.097	0.103	2.2	-0.1
10YR-72HR	D-DET 45	BASE	22.02	13.621	17.500	11883	0.163	0.111	0.1	-0.0
10YR-72HR	K-lake 1	BASE	22.02	13.398	17.500	83537	0.278	0.230	-0.1	0.5
10YR-72HR	L-CANAL	BASE	22.02	12.953	14.500	0	0.230	0.000	0.5	0.0
10YR-72HR	M-PreDev	BASE	22.02	14.577	18.000	59269	0.170	0.000	0.1	0.0
10YR-72HR	A-DET 1	BASE	24.02	13.643	17.500	11000	0.142	0.925	0.1	1.1
10YR-72HR	B-DET 2	BASE	24.02	13.643	17.500	12126	0.102	1.148	0.1	1.4
10YR-72HR	C-DET 3	BASE	24.02	13.640	17.500	15570	2.233	0.115	2.6	-0.1
10YR-72HR	D-DET 45	BASE	24.02	13.652	17.500	12066	0.173	0.118	0.2	0.0
10YR-72HR	K-lake 1	BASE	24.02	13.403	17.500	83563	0.300	0.229	-0.0	0.6
10YR-72HR	L-CANAL	BASE	24.02	13.085	14.500	0	0.229	0.000	0.6	0.0
10YR-72HR	M-PreDev	BASE	24.02	14.598	18.000	74930	0.211	0.000	0.1	0.0
10YR-72HR	A-DET 1	BASE	26.02	13.723	17.500	11423	0.217	1.017	0.2	1.2
10YR-72HR	B-DET 2	BASE	26.02	13.722	17.500	12526	0.155	1.237	0.1	1.6
10YR-72HR	C-DET 3	BASE	26.02	13.719	17.500	16160	2.500	0.130	3.0	-0.1
10YR-72HR	D-DET 45	BASE	26.02	13.719	17.500	12454	0.263	0.131	0.2	0.0
10YR-72HR	K-lake 1	BASE	26.02	13.413	17.500	83616	0.364	0.210	0.0	0.6
10YR-72HR	L-CANAL	BASE	26.02	13.217	14.500	0	0.210	0.000	0.6	0.0
10YR-72HR	M-PreDev	BASE	26.02	14.622	18.000	93703	0.352	0.000	0.1	0.0
10YR-72HR	A-DET 1	BASE	28.02	13.810	17.500	11887	0.227	1.103	0.2	1.4
10YR-72HR	B-DET 2	BASE	28.02	13.810	17.500	12964	0.163	1.343	0.1	1.8
10YR-72HR	C-DET 3	BASE	28.02	13.806	17.500	16808	2.703	0.145	3.4	-0.1
10YR-72HR	D-DET 45	BASE	28.02	13.795	17.500	12893	0.276	0.142	0.2	0.1

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
10YR-72HR	K-lake 1	BASE	28.02	13.430	17.500	83707	0.395	0.133	0.1	0.6
10YR-72HR	L-CANAL	BASE	28.02	13.349	14.500	0	0.133	0.000	0.6	0.0
10YR-72HR	M-PreDev	BASE	28.02	14.650	18.000	114771	0.438	0.000	0.2	0.0
10YR-72HR	A-DET 1	BASE	30.02	13.896	17.500	12346	0.236	1.180	0.2	1.6
10YR-72HR	B-DET 2	BASE	30.02	13.896	17.500	13398	0.169	1.441	0.2	2.0
10YR-72HR	C-DET 3	BASE	30.02	13.892	17.500	17449	2.888	0.155	3.9	-0.0
10YR-72HR	D-DET 45	BASE	30.02	13.869	17.500	13322	0.287	0.151	0.3	0.1
10YR-72HR	K-lake 1	BASE	30.02	13.460	17.500	83862	0.418	-0.083	0.2	0.6
10YR-72HR	L-CANAL	BASE	30.02	13.481	14.500	0	-0.083	0.000	0.6	0.0
10YR-72HR	M-PreDev	BASE	30.02	14.677	18.000	135588	0.503	0.000	0.3	0.0
10YR-72HR	A-DET 1	BASE	32.02	13.982	17.500	12801	0.243	1.248	0.3	1.8
10YR-72HR	B-DET 2	BASE	32.02	13.982	17.500	13828	0.175	1.527	0.2	2.2
10YR-72HR	C-DET 3	BASE	32.02	13.978	17.500	18084	3.050	0.162	4.4	-0.0
10YR-72HR	D-DET 45	BASE	32.02	13.942	17.500	13749	0.296	0.155	0.3	0.1
10YR-72HR	K-lake 1	BASE	32.02	13.509	17.500	84117	0.433	-0.186	0.2	0.6
10YR-72HR	L-CANAL	BASE	32.02	13.613	14.500	0	-0.186	0.000	0.6	0.0
10YR-72HR	M-PreDev	BASE	32.02	14.703	18.000	155788	0.561	0.000	0.4	0.0
10YR-72HR	A-DET 1	BASE	34.02	14.041	17.500	13112	0.250	1.391	0.3	2.0
10YR-72HR	B-DET 2	BASE	34.02	14.041	17.500	14121	0.179	1.702	0.2	2.5
10YR-72HR	C-DET 3	BASE	34.02	14.036	17.500	18512	3.376	0.546	4.9	0.1
10YR-72HR	D-DET 45	BASE	34.02	14.012	17.500	14156	0.304	0.232	0.4	0.1
10YR-72HR	K-lake 1	BASE	34.02	13.580	17.500	84488	0.898	-0.234	0.3	0.6
10YR-72HR	L-CANAL	BASE	34.02	13.745	14.500	0	-0.234	0.000	0.6	0.0
10YR-72HR	M-PreDev	BASE	34.02	14.729	18.000	175397	0.613	0.000	0.5	0.0
10YR-72HR	A-DET 1	BASE	36.02	14.050	17.500	13157	0.255	1.421	0.4	2.2
10YR-72HR	B-DET 2	BASE	36.02	14.049	17.500	14163	0.183	1.739	0.3	2.8
10YR-72HR	C-DET 3	BASE	36.02	14.045	17.500	18573	3.449	0.666	5.4	0.2
10YR-72HR	D-DET 45	BASE	36.02	14.021	17.500	14206	0.310	0.305	0.4	0.2
10YR-72HR	K-lake 1	BASE	36.02	13.692	17.500	85074	1.093	-0.248	0.5	0.5
10YR-72HR	L-CANAL	BASE	36.02	13.877	14.500	0	-0.248	0.000	0.5	0.0
10YR-72HR	M-PreDev	BASE	36.02	14.753	18.000	194449	0.661	0.000	0.6	0.0
10YR-72HR	A-DET 1	BASE	38.02	14.052	17.500	13172	0.263	1.429	0.4	2.5
10YR-72HR	B-DET 2	BASE	38.02	14.052	17.500	14177	0.189	1.746	0.3	3.1
10YR-72HR	C-DET 3	BASE	38.02	14.047	17.500	18593	3.473	0.692	6.0	0.3
10YR-72HR	D-DET 45	BASE	38.02	14.024	17.500	14223	0.319	0.314	0.5	0.2
10YR-72HR	K-lake 1	BASE	38.02	13.811	17.500	85695	1.131	-0.257	0.7	0.5
10YR-72HR	L-CANAL	BASE	38.02	14.009	14.500	0	-0.257	0.000	0.5	0.0
10YR-72HR	M-PreDev	BASE	38.02	14.778	18.000	213069	0.711	0.000	0.7	0.0
10YR-72HR	A-DET 1	BASE	40.02	14.055	17.500	13184	0.267	1.433	0.5	2.7
10YR-72HR	B-DET 2	BASE	40.02	14.055	17.500	14189	0.192	1.750	0.3	3.4
10YR-72HR	C-DET 3	BASE	40.02	14.050	17.500	18611	3.486	0.702	6.6	0.4
10YR-72HR	D-DET 45	BASE	40.02	14.027	17.500	14240	0.325	0.318	0.5	0.3
10YR-72HR	K-lake 1	BASE	40.02	13.931	17.500	86326	1.147	-0.264	0.9	0.4
10YR-72HR	L-CANAL	BASE	40.02	14.141	14.500	0	-0.264	0.000	0.4	0.0
10YR-72HR	M-PreDev	BASE	40.02	14.801	18.000	231273	0.752	0.000	0.8	0.0
10YR-72HR	A-DET 1	BASE	42.02	14.064	17.500	13230	0.271	1.408	0.5	3.0
10YR-72HR	B-DET 2	BASE	42.02	14.063	17.500	14232	0.194	1.719	0.4	3.7
10YR-72HR	C-DET 3	BASE	42.02	14.059	17.500	18676	3.434	0.497	7.2	0.5
10YR-72HR	D-DET 45	BASE	42.02	14.049	17.500	14369	0.329	0.151	0.6	0.3
10YR-72HR	K-lake 1	BASE	42.02	14.047	17.500	86929	0.778	-0.274	1.0	0.4
10YR-72HR	L-CANAL	BASE	42.02	14.273	14.500	0	-0.274	0.000	0.4	0.0

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
10YR-72HR	M-PreDev	BASE	42.02	14.824	18.000	249020	0.789	0.000	0.9	0.0
10YR-72HR	A-DET 1	BASE	44.01	14.129	17.500	13572	0.274	1.161	0.5	3.2
10YR-72HR	B-DET 2	BASE	44.01	14.128	17.500	14555	0.197	1.403	0.4	3.9
10YR-72HR	C-DET 3	BASE	44.01	14.125	17.500	19165	2.875	0.131	7.7	0.5
10YR-72HR	D-DET 45	BASE	44.01	14.126	17.500	14815	0.333	0.177	0.7	0.4
10YR-72HR	K-lake 1	BASE	44.01	14.124	17.500	87334	0.438	-0.305	1.1	0.4
10YR-72HR	L-CANAL	BASE	44.01	14.404	14.500	0	-0.305	0.000	0.4	0.0
10YR-72HR	M-PreDev	BASE	44.01	14.847	18.000	266237	0.823	0.000	1.1	0.0
10YR-72HR	A-DET 1	BASE	46.01	14.204	17.500	13968	0.277	1.474	0.6	3.4
10YR-72HR	B-DET 2	BASE	46.01	14.204	17.500	14929	0.199	1.824	0.4	4.2
10YR-72HR	C-DET 3	BASE	46.01	14.199	17.500	19703	3.612	-0.133	8.2	0.5
10YR-72HR	D-DET 45	BASE	46.01	14.201	17.500	15252	0.337	0.165	0.7	0.4
10YR-72HR	K-lake 1	BASE	46.01	14.200	17.500	87730	0.164	-0.334	1.2	0.3
10YR-72HR	L-CANAL	BASE	46.01	14.536	14.500	0	-0.334	0.000	0.3	0.0
10YR-72HR	M-PreDev	BASE	46.01	14.869	18.000	283152	0.855	0.000	1.2	0.0
10YR-72HR	A-DET 1	BASE	48.01	14.279	17.500	14361	0.280	1.220	0.6	3.6
10YR-72HR	B-DET 2	BASE	48.01	14.279	17.500	15299	0.201	1.483	0.5	4.5
10YR-72HR	C-DET 3	BASE	48.01	14.276	17.500	20260	3.020	-0.018	8.8	0.5
10YR-72HR	D-DET 45	BASE	48.01	14.277	17.500	15693	0.341	0.166	0.8	0.4
10YR-72HR	K-lake 1	BASE	48.01	14.276	17.500	88128	0.281	-0.361	1.2	0.2
10YR-72HR	L-CANAL	BASE	48.01	14.668	14.500	0	-0.361	0.000	0.2	0.0
10YR-72HR	M-PreDev	BASE	48.01	14.890	18.000	299643	0.884	0.000	1.3	0.0
10YR-72HR	A-DET 1	BASE	50.01	14.362	17.500	14791	0.322	1.235	0.7	3.8
10YR-72HR	B-DET 2	BASE	50.01	14.362	17.500	15705	0.231	1.496	0.5	4.7
10YR-72HR	C-DET 3	BASE	50.01	14.359	17.500	20855	3.095	-0.025	9.3	0.5
10YR-72HR	D-DET 45	BASE	50.01	14.360	17.500	16176	0.391	0.186	0.8	0.4
10YR-72HR	K-lake 1	BASE	50.01	14.359	17.500	88563	0.314	-0.406	1.3	0.2
10YR-72HR	L-CANAL	BASE	50.01	14.800	14.500	0	-0.406	0.000	0.2	0.0
10YR-72HR	M-PreDev	BASE	50.01	14.913	18.000	316642	1.007	0.000	1.5	0.0
10YR-72HR	A-DET 1	BASE	51.00	14.410	17.500	15035	0.380	1.242	0.7	3.9
10YR-72HR	B-DET 2	BASE	51.00	14.410	17.500	15933	0.273	1.492	0.5	4.8
10YR-72HR	C-DET 3	BASE	51.00	14.407	17.500	21189	3.165	0.035	9.5	0.5
10YR-72HR	D-DET 45	BASE	51.00	14.408	17.500	16452	0.462	0.224	0.9	0.5
10YR-72HR	K-lake 1	BASE	51.00	14.407	17.500	88810	0.439	-0.441	1.3	0.1
10YR-72HR	L-CANAL	BASE	51.00	14.866	14.500	0	-0.441	0.000	0.1	0.0
10YR-72HR	M-PreDev	BASE	51.00	14.924	18.000	325793	1.144	0.000	1.6	0.0
10YR-72HR	A-DET 1	BASE	52.01	14.463	17.500	15299	0.419	1.219	0.7	4.0
10YR-72HR	B-DET 2	BASE	52.01	14.462	17.500	16181	0.301	1.459	0.5	4.9
10YR-72HR	C-DET 3	BASE	52.01	14.460	17.500	21549	3.153	0.062	9.8	0.5
10YR-72HR	D-DET 45	BASE	52.01	14.460	17.500	16759	0.510	0.245	0.9	0.5
10YR-72HR	K-lake 1	BASE	52.01	14.459	17.500	89086	0.506	-0.480	1.3	0.1
10YR-72HR	L-CANAL	BASE	52.01	14.932	14.500	0	-0.480	0.000	0.1	0.0
10YR-72HR	M-PreDev	BASE	52.01	14.938	18.000	336025	1.289	0.000	1.7	0.0
10YR-72HR	A-DET 1	BASE	53.00	14.526	17.500	15613	0.546	1.173	0.8	4.1
10YR-72HR	B-DET 2	BASE	53.00	14.526	17.500	16475	0.392	1.380	0.6	5.1
10YR-72HR	C-DET 3	BASE	53.00	14.523	17.500	21971	3.172	0.245	10.1	0.5
10YR-72HR	D-DET 45	BASE	53.00	14.524	17.500	17126	0.664	0.332	1.0	0.5
10YR-72HR	K-lake 1	BASE	53.00	14.522	17.500	89415	0.837	-0.520	1.4	0.1
10YR-72HR	L-CANAL	BASE	53.00	14.998	14.500	0	-0.520	0.000	0.1	0.0
10YR-72HR	M-PreDev	BASE	53.00	14.953	18.000	347543	1.599	0.000	1.8	0.0
10YR-72HR	A-DET 1	BASE	54.01	14.605	17.500	16035	0.680	1.434	0.8	4.2

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
10YR-72HR	B-DET 2	BASE	54.01	14.604	17.500	16873	0.488	1.716	0.6	5.2
10YR-72HR	C-DET 3	BASE	54.01	14.600	17.500	22552	3.921	0.157	10.4	0.6
10YR-72HR	D-DET 45	BASE	54.01	14.601	17.500	17577	0.827	0.408	1.0	0.5
10YR-72HR	K-lake 1	BASE	54.01	14.600	17.500	89819	0.888	-0.560	1.5	0.0
10YR-72HR	L-CANAL	BASE	54.01	15.064	14.500	0	-0.560	0.000	0.0	0.0
10YR-72HR	M-PreDev	BASE	54.01	14.971	18.000	361736	2.015	0.000	2.0	0.0
10YR-72HR	A-DET 1	BASE	55.01	14.695	17.500	16520	0.815	1.454	0.9	4.3
10YR-72HR	B-DET 2	BASE	55.01	14.694	17.500	17330	0.585	1.683	0.6	5.3
10YR-72HR	C-DET 3	BASE	55.01	14.690	17.500	23232	4.061	0.388	10.7	0.6
10YR-72HR	D-DET 45	BASE	55.01	14.691	17.500	18096	0.991	0.496	1.1	0.6
10YR-72HR	K-lake 1	BASE	55.01	14.689	17.500	90285	1.272	-0.597	1.6	-0.0
10YR-72HR	L-CANAL	BASE	55.01	15.130	14.500	0	-0.597	0.000	-0.0	0.0
10YR-72HR	M-PreDev	BASE	55.01	14.993	18.000	378435	2.492	0.000	2.1	0.0
10YR-72HR	A-DET 1	BASE	56.01	14.798	17.500	17073	0.955	1.426	1.0	4.5
10YR-72HR	B-DET 2	BASE	56.01	14.797	17.500	17853	0.685	1.634	0.7	5.5
10YR-72HR	C-DET 3	BASE	56.01	14.794	17.500	24011	4.143	0.578	11.0	0.6
10YR-72HR	D-DET 45	BASE	56.01	14.794	17.500	18693	1.161	0.588	1.2	0.6
10YR-72HR	K-lake 1	BASE	56.01	14.791	17.500	90822	1.620	-0.623	1.7	-0.1
10YR-72HR	L-CANAL	BASE	56.01	15.196	14.500	0	-0.623	0.000	-0.1	0.0
10YR-72HR	M-PreDev	BASE	56.01	15.019	18.000	398033	3.016	0.000	2.4	0.0
10YR-72HR	A-DET 1	BASE	57.01	14.915	17.500	17700	1.123	1.372	1.1	4.6
10YR-72HR	B-DET 2	BASE	57.01	14.914	17.500	18447	0.806	1.572	0.8	5.6
10YR-72HR	C-DET 3	BASE	57.01	14.911	17.500	24895	4.218	0.811	11.4	0.7
10YR-72HR	D-DET 45	BASE	57.01	14.910	17.500	19371	1.366	0.700	1.3	0.7
10YR-72HR	K-lake 1	BASE	57.01	14.908	17.500	91430	2.046	-0.631	1.8	-0.1
10YR-72HR	L-CANAL	BASE	57.01	15.262	14.500	0	-0.631	0.000	-0.1	0.0
10YR-72HR	M-PreDev	BASE	57.01	15.048	18.000	420437	3.625	0.000	2.6	0.0
10YR-72HR	A-DET 1	BASE	58.01	15.051	17.500	18431	1.439	1.158	1.2	4.7
10YR-72HR	B-DET 2	BASE	58.01	15.051	17.500	19142	1.032	1.440	0.8	5.7
10YR-72HR	C-DET 3	BASE	58.01	15.048	17.500	25932	4.228	1.276	11.7	0.8
10YR-72HR	D-DET 45	BASE	58.01	15.046	17.500	20162	1.749	0.916	1.4	0.7
10YR-72HR	K-lake 1	BASE	58.01	15.043	17.500	92138	2.877	-0.616	2.0	-0.2
10YR-72HR	L-CANAL	BASE	58.01	15.328	14.500	0	-0.616	0.000	-0.2	0.0
10YR-72HR	M-PreDev	BASE	58.01	15.081	18.000	446058	4.482	0.000	3.0	0.0
10YR-72HR	A-DET 1	BASE	59.01	15.222	17.500	19351	2.100	1.178	1.3	4.8
10YR-72HR	B-DET 2	BASE	59.01	15.221	17.500	20008	1.507	1.302	0.9	5.8
10YR-72HR	C-DET 3	BASE	59.01	15.219	17.500	27224	4.861	2.094	12.1	0.9
10YR-72HR	D-DET 45	BASE	59.01	15.216	17.500	21144	2.554	1.365	1.6	0.8
10YR-72HR	K-lake 1	BASE	59.01	15.211	17.500	93013	4.459	-0.545	2.3	-0.2
10YR-72HR	L-CANAL	BASE	59.01	15.394	14.500	0	-0.545	0.000	-0.2	0.0
10YR-72HR	M-PreDev	BASE	59.01	15.121	18.000	476466	5.920	0.000	3.4	0.0
10YR-72HR	A-DET 1	BASE	60.00	16.096	17.500	32204	20.351	6.347	2.2	5.1
10YR-72HR	B-DET 2	BASE	60.00	16.012	17.500	24408	14.601	2.551	1.6	6.0
10YR-72HR	C-DET 3	BASE	60.00	16.003	17.500	33488	31.967	15.765	13.6	1.6
10YR-72HR	D-DET 45	BASE	60.00	15.954	17.500	25433	24.742	13.147	2.7	1.4
10YR-72HR	K-lake 1	BASE	60.00	15.801	17.500	96100	38.599	0.972	4.1	-0.2
10YR-72HR	L-CANAL	BASE	60.00	15.460	14.500	0	0.972	0.000	-0.2	0.0
10YR-72HR	M-PreDev	BASE	60.00	15.200	18.000	537181	27.644	0.000	4.8	0.0
10YR-72HR	A-DET 1	BASE	61.01	16.437	17.500	63116	2.953	1.923	3.2	5.4
10YR-72HR	B-DET 2	BASE	61.01	16.430	17.500	39338	2.118	1.183	2.3	6.2
10YR-72HR	C-DET 3	BASE	61.01	16.428	17.500	79155	6.454	4.458	15.2	2.5

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
10YR-72HR	D-DET 45	BASE	61.01	16.409	17.500	71636	3.590	0.666	3.9	2.0
10YR-72HR	K-lake 1	BASE	61.01	16.407	17.500	112394	6.530	1.987	6.0	-0.1
10YR-72HR	L-CANAL	BASE	61.01	15.526	14.500	0	1.987	0.000	-0.1	0.0
10YR-72HR	M-PreDev	BASE	61.01	15.402	18.000	692139	27.899	0.000	7.1	0.0
10YR-72HR	A-DET 1	BASE	62.01	16.494	17.500	68287	1.627	0.731	3.4	5.5
10YR-72HR	B-DET 2	BASE	62.01	16.493	17.500	41586	1.168	0.619	2.4	6.2
10YR-72HR	C-DET 3	BASE	62.01	16.493	17.500	86067	3.195	2.054	15.6	2.7
10YR-72HR	D-DET 45	BASE	62.01	16.488	17.500	80595	1.978	0.883	4.1	2.1
10YR-72HR	K-lake 1	BASE	62.01	16.486	17.500	115358	3.712	2.130	6.4	0.1
10YR-72HR	L-CANAL	BASE	62.01	15.528	14.500	0	2.130	0.000	0.1	0.0
10YR-72HR	M-PreDev	BASE	62.01	15.506	18.000	772251	16.000	0.000	8.9	0.0
10YR-72HR	A-DET 1	BASE	63.01	16.525	17.500	71076	1.058	0.604	3.5	5.6
10YR-72HR	B-DET 2	BASE	63.01	16.524	17.500	42692	0.759	0.486	2.5	6.3
10YR-72HR	C-DET 3	BASE	63.01	16.524	17.500	89416	2.289	1.716	15.8	2.9
10YR-72HR	D-DET 45	BASE	63.01	16.521	17.500	84215	1.286	0.738	4.3	2.1
10YR-72HR	K-lake 1	BASE	63.01	16.519	17.500	116068	2.958	2.202	6.7	0.3
10YR-72HR	L-CANAL	BASE	63.01	15.513	14.500	0	2.202	0.000	0.3	0.0
10YR-72HR	M-PreDev	BASE	63.01	15.565	18.000	817105	9.916	0.000	10.0	0.0
10YR-72HR	A-DET 1	BASE	64.01	16.547	17.500	73079	1.026	0.600	3.6	5.6
10YR-72HR	B-DET 2	BASE	64.01	16.546	17.500	43481	0.736	0.483	2.6	6.3
10YR-72HR	C-DET 3	BASE	64.01	16.546	17.500	91792	2.246	1.711	16.0	3.0
10YR-72HR	D-DET 45	BASE	64.01	16.543	17.500	86704	1.247	0.743	4.4	2.2
10YR-72HR	K-lake 1	BASE	64.01	16.541	17.500	116299	2.942	2.255	6.9	0.4
10YR-72HR	L-CANAL	BASE	64.01	15.497	14.500	0	2.255	0.000	0.4	0.0
10YR-72HR	M-PreDev	BASE	64.01	15.598	18.000	842789	6.025	0.000	10.6	0.0
10YR-72HR	A-DET 1	BASE	65.01	16.555	17.500	73849	0.621	0.527	3.7	5.7
10YR-72HR	B-DET 2	BASE	65.01	16.555	17.500	43788	0.445	0.389	2.6	6.3
10YR-72HR	C-DET 3	BASE	65.01	16.555	17.500	92726	1.620	1.501	16.2	3.2
10YR-72HR	D-DET 45	BASE	65.01	16.552	17.500	87740	0.755	0.640	4.4	2.2
10YR-72HR	K-lake 1	BASE	65.01	16.551	17.500	116399	2.436	2.285	7.2	0.6
10YR-72HR	L-CANAL	BASE	65.01	15.482	14.500	0	2.285	0.000	0.6	0.0
10YR-72HR	M-PreDev	BASE	65.01	15.618	18.000	857999	3.691	0.000	11.1	0.0
10YR-72HR	A-DET 1	BASE	66.01	16.560	17.500	74275	0.626	0.529	3.7	5.7
10YR-72HR	B-DET 2	BASE	66.01	16.560	17.500	43956	0.449	0.392	2.7	6.4
10YR-72HR	C-DET 3	BASE	66.01	16.559	17.500	93231	1.630	1.510	16.3	3.3
10YR-72HR	D-DET 45	BASE	66.01	16.557	17.500	88267	0.761	0.647	4.5	2.3
10YR-72HR	K-lake 1	BASE	66.01	16.555	17.500	116448	2.455	2.305	7.4	0.8
10YR-72HR	L-CANAL	BASE	66.01	15.467	14.500	0	2.305	0.000	0.8	0.0
10YR-72HR	M-PreDev	BASE	66.01	15.632	18.000	868528	3.013	0.000	11.3	0.0
10YR-72HR	A-DET 1	BASE	67.01	16.565	17.500	74689	0.626	0.533	3.8	5.8
10YR-72HR	B-DET 2	BASE	67.01	16.564	17.500	44119	0.449	0.394	2.7	6.4
10YR-72HR	C-DET 3	BASE	67.01	16.564	17.500	93721	1.636	1.520	16.4	3.4
10YR-72HR	D-DET 45	BASE	67.01	16.561	17.500	88777	0.761	0.651	4.6	2.4
10YR-72HR	K-lake 1	BASE	67.01	16.560	17.500	116495	2.469	2.325	7.6	1.0
10YR-72HR	L-CANAL	BASE	67.01	15.451	14.500	0	2.325	0.000	1.0	0.0
10YR-72HR	M-PreDev	BASE	67.01	15.643	18.000	877635	2.774	0.000	11.6	0.0
10YR-72HR	A-DET 1	BASE	68.01	16.569	17.500	75087	0.619	0.536	3.8	5.8
10YR-72HR	B-DET 2	BASE	68.01	16.569	17.500	44275	0.444	0.395	2.7	6.4
10YR-72HR	C-DET 3	BASE	68.01	16.568	17.500	94191	1.633	1.529	16.6	3.5
10YR-72HR	D-DET 45	BASE	68.01	16.566	17.500	89266	0.753	0.654	4.6	2.4
10YR-72HR	K-lake 1	BASE	68.01	16.564	17.500	116540	2.478	2.344	7.8	1.2

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
10YR-72HR	L-CANAL	BASE	68.01	15.436	14.500	0	2.344	0.000	1.2	0.0
10YR-72HR	M-PreDev	BASE	68.01	15.655	18.000	886166	2.687	0.000	11.8	0.0
10YR-72HR	A-DET 1	BASE	69.01	16.567	17.500	74890	0.414	0.499	3.8	5.9
10YR-72HR	B-DET 2	BASE	69.01	16.566	17.500	44199	0.297	0.347	2.8	6.5
10YR-72HR	C-DET 3	BASE	69.01	16.566	17.500	93968	1.316	1.422	16.7	3.7
10YR-72HR	D-DET 45	BASE	69.01	16.564	17.500	89061	0.504	0.603	4.7	2.5
10YR-72HR	K-lake 1	BASE	69.01	16.562	17.500	116523	2.222	2.353	8.0	1.4
10YR-72HR	L-CANAL	BASE	69.01	15.421	14.500	0	2.353	0.000	1.4	0.0
10YR-72HR	M-PreDev	BASE	69.01	15.665	18.000	893805	2.191	0.000	12.0	0.0
10YR-72HR	A-DET 1	BASE	70.01	16.563	17.500	74522	0.414	0.499	3.9	5.9
10YR-72HR	B-DET 2	BASE	70.01	16.562	17.500	44054	0.297	0.347	2.8	6.5
10YR-72HR	C-DET 3	BASE	70.01	16.562	17.500	93530	1.316	1.422	16.8	3.8
10YR-72HR	D-DET 45	BASE	70.01	16.560	17.500	88604	0.504	0.605	4.7	2.5
10YR-72HR	K-lake 1	BASE	70.01	16.558	17.500	116480	2.224	2.356	8.1	1.6
10YR-72HR	L-CANAL	BASE	70.01	15.405	14.500	0	2.356	0.000	1.6	0.0
10YR-72HR	M-PreDev	BASE	70.01	15.673	18.000	900111	1.942	0.000	12.2	0.0
10YR-72HR	A-DET 1	BASE	71.01	16.559	17.500	74156	0.417	0.500	3.9	5.9
10YR-72HR	B-DET 2	BASE	71.01	16.558	17.500	43910	0.299	0.348	2.8	6.5
10YR-72HR	C-DET 3	BASE	71.01	16.558	17.500	93097	1.321	1.425	16.9	3.9
10YR-72HR	D-DET 45	BASE	71.01	16.556	17.500	88149	0.507	0.606	4.8	2.6
10YR-72HR	K-lake 1	BASE	71.01	16.554	17.500	116438	2.229	2.360	8.3	1.8
10YR-72HR	L-CANAL	BASE	71.01	15.390	14.500	0	2.360	0.000	1.8	0.0
10YR-72HR	M-PreDev	BASE	71.01	15.680	18.000	905874	1.837	0.000	12.3	0.0
10YR-72HR	A-DET 1	BASE	72.01	16.555	17.500	73773	0.000	0.496	3.9	6.0
10YR-72HR	B-DET 2	BASE	72.01	16.554	17.500	43758	0.000	0.319	2.8	6.6
10YR-72HR	C-DET 3	BASE	72.01	16.554	17.500	92643	0.816	1.400	17.0	4.0
10YR-72HR	D-DET 45	BASE	72.01	16.551	17.500	87674	0.000	0.565	4.8	2.6
10YR-72HR	K-lake 1	BASE	72.01	16.550	17.500	116395	1.965	2.364	8.5	2.0
10YR-72HR	L-CANAL	BASE	72.01	15.375	14.500	0	2.364	0.000	2.0	0.0
10YR-72HR	M-PreDev	BASE	72.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	73.01	16.533	17.500	71862	0.000	0.414	3.9	6.0
10YR-72HR	B-DET 2	BASE	73.01	16.533	17.500	43009	0.000	0.247	2.8	6.6
10YR-72HR	C-DET 3	BASE	73.01	16.533	17.500	90396	0.661	1.181	17.1	4.1
10YR-72HR	D-DET 45	BASE	73.01	16.531	17.500	85388	0.000	0.490	4.8	2.6
10YR-72HR	K-lake 1	BASE	73.01	16.530	17.500	116184	1.671	2.338	8.6	2.2
10YR-72HR	L-CANAL	BASE	73.01	15.359	14.500	0	2.338	0.000	2.2	0.0
10YR-72HR	M-PreDev	BASE	73.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	74.01	16.513	17.500	69979	0.000	0.406	3.9	6.1
10YR-72HR	B-DET 2	BASE	74.01	16.512	17.500	42267	0.000	0.245	2.8	6.6
10YR-72HR	C-DET 3	BASE	74.01	16.512	17.500	88164	0.650	1.161	17.1	4.2
10YR-72HR	D-DET 45	BASE	74.01	16.510	17.500	83057	0.000	0.480	4.8	2.7
10YR-72HR	K-lake 1	BASE	74.01	16.509	17.500	115967	1.641	2.311	8.8	2.4
10YR-72HR	L-CANAL	BASE	74.01	15.344	14.500	0	2.311	0.000	2.4	0.0
10YR-72HR	M-PreDev	BASE	74.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	75.01	16.492	17.500	68081	0.000	0.398	3.9	6.1
10YR-72HR	B-DET 2	BASE	75.01	16.491	17.500	41519	0.000	0.242	2.8	6.6
10YR-72HR	C-DET 3	BASE	75.01	16.491	17.500	85915	0.640	1.141	17.2	4.3
10YR-72HR	D-DET 45	BASE	75.01	16.489	17.500	80709	0.000	0.470	4.8	2.7
10YR-72HR	K-lake 1	BASE	75.01	16.488	17.500	115438	1.612	2.284	8.9	2.6
10YR-72HR	L-CANAL	BASE	75.01	15.329	14.500	0	2.284	0.000	2.6	0.0
10YR-72HR	M-PreDev	BASE	75.01	15.687	18.000	911332	0.000	0.000	12.4	0.0

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
10YR-72HR	A-DET 1	BASE	76.01	16.471	17.500	66168	0.000	0.390	3.9	6.1
10YR-72HR	B-DET 2	BASE	76.01	16.470	17.500	40765	0.000	0.240	2.8	6.6
10YR-72HR	C-DET 3	BASE	76.01	16.470	17.500	83648	0.630	1.123	17.2	4.4
10YR-72HR	D-DET 45	BASE	76.01	16.468	17.500	78341	0.000	0.461	4.8	2.8
10YR-72HR	K-lake 1	BASE	76.01	16.467	17.500	114649	1.583	2.257	9.1	2.8
10YR-72HR	L-CANAL	BASE	76.01	15.313	14.500	0	2.257	0.000	2.8	0.0
10YR-72HR	M-PreDev	BASE	76.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	77.01	16.449	17.500	64237	0.000	0.382	3.9	6.2
10YR-72HR	B-DET 2	BASE	77.01	16.449	17.500	40005	0.000	0.238	2.8	6.7
10YR-72HR	C-DET 3	BASE	77.01	16.449	17.500	81359	0.620	1.103	17.3	4.5
10YR-72HR	D-DET 45	BASE	77.01	16.447	17.500	75951	0.000	0.451	4.8	2.8
10YR-72HR	K-lake 1	BASE	77.01	16.446	17.500	113854	1.554	2.229	9.2	2.9
10YR-72HR	L-CANAL	BASE	77.01	15.298	14.500	0	2.229	0.000	2.9	0.0
10YR-72HR	M-PreDev	BASE	77.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	78.01	16.428	17.500	62288	0.000	0.374	3.9	6.2
10YR-72HR	B-DET 2	BASE	78.01	16.428	17.500	39237	0.000	0.235	2.8	6.7
10YR-72HR	C-DET 3	BASE	78.01	16.427	17.500	79049	0.610	1.084	17.3	4.6
10YR-72HR	D-DET 45	BASE	78.01	16.426	17.500	73539	0.000	0.441	4.8	2.8
10YR-72HR	K-lake 1	BASE	78.01	16.425	17.500	113050	1.525	2.201	9.3	3.1
10YR-72HR	L-CANAL	BASE	78.01	15.283	14.500	0	2.201	0.000	3.1	0.0
10YR-72HR	M-PreDev	BASE	78.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	79.01	16.406	17.500	60319	0.000	0.366	3.9	6.2
10YR-72HR	B-DET 2	BASE	79.01	16.406	17.500	38461	0.000	0.233	2.8	6.7
10YR-72HR	C-DET 3	BASE	79.01	16.406	17.500	76716	0.599	1.064	17.4	4.7
10YR-72HR	D-DET 45	BASE	79.01	16.404	17.500	71102	0.000	0.430	4.8	2.9
10YR-72HR	K-lake 1	BASE	79.01	16.403	17.500	112239	1.495	2.173	9.4	3.3
10YR-72HR	L-CANAL	BASE	79.01	15.267	14.500	0	2.173	0.000	3.3	0.0
10YR-72HR	M-PreDev	BASE	79.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	80.01	16.384	17.500	58330	0.000	0.358	3.9	6.2
10YR-72HR	B-DET 2	BASE	80.01	16.384	17.500	37677	0.000	0.231	2.8	6.7
10YR-72HR	C-DET 3	BASE	80.01	16.384	17.500	74359	0.589	1.044	17.4	4.8
10YR-72HR	D-DET 45	BASE	80.01	16.382	17.500	68640	0.000	0.420	4.8	2.9
10YR-72HR	K-lake 1	BASE	80.01	16.381	17.500	111419	1.464	2.145	9.6	3.5
10YR-72HR	L-CANAL	BASE	80.01	15.252	14.500	0	2.145	0.000	3.5	0.0
10YR-72HR	M-PreDev	BASE	80.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	81.01	16.362	17.500	56319	0.000	0.346	3.9	6.3
10YR-72HR	B-DET 2	BASE	81.01	16.362	17.500	36885	0.000	0.212	2.8	6.7
10YR-72HR	C-DET 3	BASE	81.01	16.362	17.500	71976	0.558	1.025	17.5	4.9
10YR-72HR	D-DET 45	BASE	81.01	16.360	17.500	66151	0.000	0.409	4.8	2.9
10YR-72HR	K-lake 1	BASE	81.01	16.359	17.500	110590	1.434	2.116	9.7	3.7
10YR-72HR	L-CANAL	BASE	81.01	15.237	14.500	0	2.116	0.000	3.7	0.0
10YR-72HR	M-PreDev	BASE	81.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	82.01	16.339	17.500	54283	0.000	0.259	3.9	6.3
10YR-72HR	B-DET 2	BASE	82.01	16.339	17.500	36083	0.000	-0.143	2.8	6.7
10YR-72HR	C-DET 3	BASE	82.01	16.339	17.500	69574	0.116	1.038	17.5	4.9
10YR-72HR	D-DET 45	BASE	82.01	16.338	17.500	63632	0.000	0.401	4.8	3.0
10YR-72HR	K-lake 1	BASE	82.01	16.337	17.500	109751	1.438	2.087	9.8	3.8
10YR-72HR	L-CANAL	BASE	82.01	15.221	14.500	0	2.087	0.000	3.8	0.0
10YR-72HR	M-PreDev	BASE	82.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	83.01	16.317	17.500	52224	0.000	0.234	3.9	6.3
10YR-72HR	B-DET 2	BASE	83.01	16.317	17.500	35272	0.000	-0.178	2.8	6.7

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
10YR-72HR	C-DET 3	BASE	83.01	16.317	17.500	67136	0.055	1.022	17.5	5.0
10YR-72HR	D-DET 45	BASE	83.01	16.315	17.500	61083	0.000	0.390	4.8	3.0
10YR-72HR	K-lake 1	BASE	83.01	16.314	17.500	108902	1.412	2.058	9.9	4.0
10YR-72HR	L-CANAL	BASE	83.01	15.206	14.500	0	2.058	0.000	4.0	0.0
10YR-72HR	M-PreDev	BASE	83.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	84.01	16.294	17.500	50139	0.000	0.204	3.9	6.3
10YR-72HR	B-DET 2	BASE	84.01	16.294	17.500	34450	0.000	-0.214	2.8	6.7
10YR-72HR	C-DET 3	BASE	84.01	16.294	17.500	64667	-0.010	1.007	17.5	5.1
10YR-72HR	D-DET 45	BASE	84.01	16.292	17.500	58502	0.000	0.379	4.8	3.0
10YR-72HR	K-lake 1	BASE	84.01	16.291	17.500	108043	1.386	2.029	10.0	4.2
10YR-72HR	L-CANAL	BASE	84.01	15.191	14.500	0	2.029	0.000	4.2	0.0
10YR-72HR	M-PreDev	BASE	84.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	85.01	16.270	17.500	48026	0.000	0.170	3.9	6.4
10YR-72HR	B-DET 2	BASE	85.01	16.270	17.500	33618	0.000	-0.252	2.8	6.7
10YR-72HR	C-DET 3	BASE	85.01	16.270	17.500	62164	-0.082	0.992	17.5	5.2
10YR-72HR	D-DET 45	BASE	85.01	16.269	17.500	55886	0.000	0.368	4.8	3.1
10YR-72HR	K-lake 1	BASE	85.01	16.268	17.500	107172	1.360	1.998	10.1	4.3
10YR-72HR	L-CANAL	BASE	85.01	15.175	14.500	0	1.998	0.000	4.3	0.0
10YR-72HR	M-PreDev	BASE	85.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	86.01	16.247	17.500	45884	0.000	0.126	3.9	6.4
10YR-72HR	B-DET 2	BASE	86.01	16.247	17.500	32773	0.000	-0.292	2.8	6.7
10YR-72HR	C-DET 3	BASE	86.01	16.247	17.500	59626	-0.166	0.979	17.5	5.3
10YR-72HR	D-DET 45	BASE	86.01	16.245	17.500	53233	0.000	0.356	4.8	3.1
10YR-72HR	K-lake 1	BASE	86.01	16.244	17.500	106288	1.335	1.968	10.3	4.5
10YR-72HR	L-CANAL	BASE	86.01	15.160	14.500	0	1.968	0.000	4.5	0.0
10YR-72HR	M-PreDev	BASE	86.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	87.01	16.223	17.500	43709	0.000	0.070	3.9	6.4
10YR-72HR	B-DET 2	BASE	87.01	16.223	17.500	31915	0.000	-0.338	2.8	6.6
10YR-72HR	C-DET 3	BASE	87.01	16.223	17.500	57050	-0.268	0.968	17.5	5.4
10YR-72HR	D-DET 45	BASE	87.01	16.221	17.500	50538	0.000	0.345	4.8	3.1
10YR-72HR	K-lake 1	BASE	87.01	16.220	17.500	105391	1.313	1.937	10.4	4.7
10YR-72HR	L-CANAL	BASE	87.01	15.145	14.500	0	1.937	0.000	4.7	0.0
10YR-72HR	M-PreDev	BASE	87.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	88.01	16.198	17.500	41504	0.000	0.116	3.9	6.4
10YR-72HR	B-DET 2	BASE	88.01	16.198	17.500	31043	0.000	-0.403	2.8	6.6
10YR-72HR	C-DET 3	BASE	88.01	16.198	17.500	54433	-0.287	0.960	17.5	5.4
10YR-72HR	D-DET 45	BASE	88.01	16.197	17.500	47800	0.000	0.335	4.8	3.2
10YR-72HR	K-lake 1	BASE	88.01	16.196	17.500	104479	1.295	1.906	10.5	4.8
10YR-72HR	L-CANAL	BASE	88.01	15.129	14.500	0	1.906	0.000	4.8	0.0
10YR-72HR	M-PreDev	BASE	88.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	89.01	16.174	17.500	39256	0.000	0.000	3.9	6.4
10YR-72HR	B-DET 2	BASE	89.01	16.173	17.500	30156	0.000	-0.449	2.8	6.6
10YR-72HR	C-DET 3	BASE	89.01	16.174	17.500	51771	-0.449	0.954	17.4	5.5
10YR-72HR	D-DET 45	BASE	89.01	16.172	17.500	45014	0.000	0.322	4.8	3.2
10YR-72HR	K-lake 1	BASE	89.01	16.171	17.500	103551	1.276	1.874	10.6	5.0
10YR-72HR	L-CANAL	BASE	89.01	15.114	14.500	0	1.874	0.000	5.0	0.0
10YR-72HR	M-PreDev	BASE	89.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	90.01	16.148	17.500	36967	0.000	-0.153	3.9	6.4
10YR-72HR	B-DET 2	BASE	90.01	16.148	17.500	29253	0.000	-0.499	2.8	6.5
10YR-72HR	C-DET 3	BASE	90.01	16.148	17.500	49061	-0.652	0.951	17.4	5.6
10YR-72HR	D-DET 45	BASE	90.01	16.147	17.500	42176	0.000	0.309	4.8	3.2

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
10YR-72HR	K-lake 1	BASE	90.01	16.146	17.500	102606	1.261	1.841	10.7	5.1
10YR-72HR	L-CANAL	BASE	90.01	15.099	14.500	0	1.841	0.000	5.1	0.0
10YR-72HR	M-PreDev	BASE	90.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	91.01	16.123	17.500	34631	0.000	-0.222	3.9	6.4
10YR-72HR	B-DET 2	BASE	91.01	16.122	17.500	28331	0.000	-0.555	2.8	6.5
10YR-72HR	C-DET 3	BASE	91.01	16.123	17.500	46298	-0.777	0.951	17.3	5.7
10YR-72HR	D-DET 45	BASE	91.01	16.121	17.500	39282	0.000	0.298	4.8	3.2
10YR-72HR	K-lake 1	BASE	91.01	16.120	17.500	101643	1.248	1.808	10.8	5.3
10YR-72HR	L-CANAL	BASE	91.01	15.084	14.500	0	1.808	0.000	5.3	0.0
10YR-72HR	M-PreDev	BASE	91.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	92.01	16.096	17.500	32244	0.000	-0.293	3.9	6.3
10YR-72HR	B-DET 2	BASE	92.01	16.096	17.500	27390	0.000	-0.616	2.8	6.5
10YR-72HR	C-DET 3	BASE	92.01	16.096	17.500	43476	-0.909	0.954	17.3	5.7
10YR-72HR	D-DET 45	BASE	92.01	16.095	17.500	36326	0.000	0.286	4.8	3.3
10YR-72HR	K-lake 1	BASE	92.01	16.094	17.500	100658	1.239	1.774	10.9	5.4
10YR-72HR	L-CANAL	BASE	92.01	15.068	14.500	0	1.774	0.000	5.4	0.0
10YR-72HR	M-PreDev	BASE	92.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	93.01	16.069	17.500	29800	0.000	-0.370	3.9	6.3
10YR-72HR	B-DET 2	BASE	93.01	16.069	17.500	26426	0.000	-0.685	2.8	6.4
10YR-72HR	C-DET 3	BASE	93.01	16.070	17.500	40590	-1.055	0.963	17.2	5.8
10YR-72HR	D-DET 45	BASE	93.01	16.068	17.500	33300	0.000	0.273	4.8	3.3
10YR-72HR	K-lake 1	BASE	93.01	16.067	17.500	99650	1.236	1.739	11.0	5.6
10YR-72HR	L-CANAL	BASE	93.01	15.053	14.500	0	1.739	0.000	5.6	0.0
10YR-72HR	M-PreDev	BASE	93.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	94.01	16.042	17.500	27292	0.000	-0.455	3.9	6.3
10YR-72HR	B-DET 2	BASE	94.01	16.041	17.500	25437	0.000	-0.763	2.8	6.3
10YR-72HR	C-DET 3	BASE	94.01	16.042	17.500	37633	-1.219	0.982	17.1	5.9
10YR-72HR	D-DET 45	BASE	94.01	16.040	17.500	30196	0.000	0.262	4.8	3.3
10YR-72HR	K-lake 1	BASE	94.01	16.039	17.500	98617	1.244	1.703	11.1	5.7
10YR-72HR	L-CANAL	BASE	94.01	15.038	14.500	0	1.703	0.000	5.7	0.0
10YR-72HR	M-PreDev	BASE	94.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	95.01	16.013	17.500	24711	0.000	-0.554	3.9	6.2
10YR-72HR	B-DET 2	BASE	95.01	16.013	17.500	24421	0.000	-0.856	2.8	6.3
10YR-72HR	C-DET 3	BASE	95.01	16.014	17.500	34597	-1.410	1.016	17.0	6.0
10YR-72HR	D-DET 45	BASE	95.01	16.012	17.500	27004	0.000	0.251	4.8	3.3
10YR-72HR	K-lake 1	BASE	95.01	16.011	17.500	97553	1.267	1.667	11.2	5.9
10YR-72HR	L-CANAL	BASE	95.01	15.022	14.500	0	1.667	0.000	5.9	0.0
10YR-72HR	M-PreDev	BASE	95.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	96.01	15.984	17.500	23443	0.000	-0.616	3.9	6.2
10YR-72HR	B-DET 2	BASE	96.01	15.984	17.500	23883	0.000	-0.918	2.8	6.2
10YR-72HR	C-DET 3	BASE	96.01	15.985	17.500	33006	-1.534	1.039	16.8	6.1
10YR-72HR	D-DET 45	BASE	96.01	15.983	17.500	25599	0.000	0.246	4.8	3.4
10YR-72HR	K-lake 1	BASE	96.01	15.982	17.500	97045	1.285	1.629	11.3	6.0
10YR-72HR	L-CANAL	BASE	96.01	15.007	14.500	0	1.629	0.000	6.0	0.0
10YR-72HR	M-PreDev	BASE	96.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	97.01	15.955	17.500	23289	0.000	-0.629	3.9	6.1
10YR-72HR	B-DET 2	BASE	97.01	15.955	17.500	23737	0.000	-0.933	2.8	6.1
10YR-72HR	C-DET 3	BASE	97.01	15.956	17.500	32790	-1.563	1.032	16.7	6.2
10YR-72HR	D-DET 45	BASE	97.01	15.954	17.500	25433	0.000	0.242	4.8	3.4
10YR-72HR	K-lake 1	BASE	97.01	15.953	17.500	96895	1.274	1.593	11.4	6.1
10YR-72HR	L-CANAL	BASE	97.01	14.992	14.500	0	1.593	0.000	6.1	0.0

5.1-0.8 = 4.3 a-f

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
10YR-72HR	M-PreDev	BASE	97.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	99.01	15.900	17.500	22990	0.000	-0.656	3.9	6.0
10YR-72HR	B-DET 2	BASE	99.01	15.899	17.500	23453	0.000	-0.964	2.8	6.0
10YR-72HR	C-DET 3	BASE	99.01	15.900	17.500	32369	-1.619	1.018	16.5	6.3
10YR-72HR	D-DET 45	BASE	99.01	15.898	17.500	25109	0.000	0.234	4.8	3.4
10YR-72HR	K-lake 1	BASE	99.01	15.898	17.500	96604	1.252	1.523	11.6	6.4
10YR-72HR	L-CANAL	BASE	99.01	14.961	14.500	0	1.523	0.000	6.4	0.0
10YR-72HR	M-PreDev	BASE	99.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	101.01	15.846	17.500	22701	0.000	-0.680	3.9	5.9
10YR-72HR	B-DET 2	BASE	101.01	15.845	17.500	23180	0.000	-0.992	2.8	5.8
10YR-72HR	C-DET 3	BASE	101.01	15.847	17.500	31964	-1.673	1.006	16.2	6.5
10YR-72HR	D-DET 45	BASE	101.01	15.845	17.500	24798	0.000	0.226	4.8	3.4
10YR-72HR	K-lake 1	BASE	101.01	15.844	17.500	96324	1.232	1.457	11.8	6.6
10YR-72HR	L-CANAL	BASE	101.01	14.930	14.500	0	1.457	0.000	6.6	0.0
10YR-72HR	M-PreDev	BASE	101.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	103.01	15.794	17.500	22422	0.000	-0.704	3.9	5.8
10YR-72HR	B-DET 2	BASE	103.01	15.794	17.500	22917	0.000	-1.020	2.8	5.6
10YR-72HR	C-DET 3	BASE	103.01	15.795	17.500	31573	-1.724	0.995	15.9	6.7
10YR-72HR	D-DET 45	BASE	103.01	15.793	17.500	24497	0.000	0.219	4.8	3.5
10YR-72HR	K-lake 1	BASE	103.01	15.792	17.500	96053	1.214	1.395	12.0	6.9
10YR-72HR	L-CANAL	BASE	103.01	14.900	14.500	0	1.395	0.000	6.9	0.0
10YR-72HR	M-PreDev	BASE	103.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	105.01	15.744	17.500	22153	0.000	-0.727	3.9	5.7
10YR-72HR	B-DET 2	BASE	105.01	15.744	17.500	22662	0.000	-1.046	2.8	5.5
10YR-72HR	C-DET 3	BASE	105.01	15.745	17.500	31196	-1.773	0.985	15.6	6.8
10YR-72HR	D-DET 45	BASE	105.01	15.743	17.500	24207	0.000	0.212	4.8	3.5
10YR-72HR	K-lake 1	BASE	105.01	15.742	17.500	95792	1.197	1.337	12.2	7.1
10YR-72HR	L-CANAL	BASE	105.01	14.869	14.500	0	1.337	0.000	7.1	0.0
10YR-72HR	M-PreDev	BASE	105.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	107.01	15.696	17.500	21894	0.000	-0.749	3.9	5.6
10YR-72HR	B-DET 2	BASE	107.01	15.695	17.500	22417	0.000	-1.073	2.8	5.3
10YR-72HR	C-DET 3	BASE	107.01	15.697	17.500	30831	-1.822	0.979	15.3	7.0
10YR-72HR	D-DET 45	BASE	107.01	15.695	17.500	23926	0.000	0.206	4.8	3.6
10YR-72HR	K-lake 1	BASE	107.01	15.694	17.500	95540	1.184	1.281	12.4	7.3
10YR-72HR	L-CANAL	BASE	107.01	14.838	14.500	0	1.281	0.000	7.3	0.0
10YR-72HR	M-PreDev	BASE	107.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	109.01	15.649	17.500	21643	0.000	-0.769	3.9	5.4
10YR-72HR	B-DET 2	BASE	109.01	15.649	17.500	22180	0.000	-1.097	2.8	5.1
10YR-72HR	C-DET 3	BASE	109.01	15.650	17.500	30480	-1.866	0.968	15.0	7.2
10YR-72HR	D-DET 45	BASE	109.01	15.648	17.500	23656	0.000	0.199	4.8	3.6
10YR-72HR	K-lake 1	BASE	109.01	15.647	17.500	95296	1.167	1.229	12.6	7.5
10YR-72HR	L-CANAL	BASE	109.01	14.808	14.500	0	1.229	0.000	7.5	0.0
10YR-72HR	M-PreDev	BASE	109.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	111.01	15.604	17.500	21401	0.000	-0.789	3.9	5.3
10YR-72HR	B-DET 2	BASE	111.01	15.603	17.500	21951	0.000	-1.120	2.8	4.9
10YR-72HR	C-DET 3	BASE	111.01	15.605	17.500	30140	-1.909	0.961	14.7	7.3
10YR-72HR	D-DET 45	BASE	111.01	15.603	17.500	23394	0.000	0.194	4.8	3.6
10YR-72HR	K-lake 1	BASE	111.01	15.602	17.500	95061	1.155	1.180	12.8	7.7
10YR-72HR	L-CANAL	BASE	111.01	14.777	14.500	0	1.180	0.000	7.7	0.0
10YR-72HR	M-PreDev	BASE	111.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	113.01	15.560	17.500	21167	0.000	-0.808	3.9	5.2

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
10YR-72HR	B-DET 2	BASE	113.01	15.560	17.500	21729	0.000	-1.143	2.8	4.7
10YR-72HR	C-DET 3	BASE	113.01	15.562	17.500	29811	-1.950	0.953	14.4	7.5
10YR-72HR	D-DET 45	BASE	113.01	15.559	17.500	23142	0.000	0.188	4.8	3.7
10YR-72HR	K-lake 1	BASE	113.01	15.559	17.500	94833	1.141	1.133	13.0	7.9
10YR-72HR	L-CANAL	BASE	113.01	14.746	14.500	0	1.133	0.000	7.9	0.0
10YR-72HR	M-PreDev	BASE	113.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	115.01	15.518	17.500	20941	0.000	-0.826	3.9	5.0
10YR-72HR	B-DET 2	BASE	115.01	15.518	17.500	21515	0.000	-1.164	2.8	4.5
10YR-72HR	C-DET 3	BASE	115.01	15.520	17.500	29494	-1.990	0.945	14.1	7.6
10YR-72HR	D-DET 45	BASE	115.01	15.517	17.500	22897	0.000	0.183	4.8	3.7
10YR-72HR	K-lake 1	BASE	115.01	15.517	17.500	94614	1.127	1.088	13.2	8.1
10YR-72HR	L-CANAL	BASE	115.01	14.716	14.500	0	1.088	0.000	8.1	0.0
10YR-72HR	M-PreDev	BASE	115.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	117.01	15.477	17.500	20722	0.000	-0.843	3.9	4.9
10YR-72HR	B-DET 2	BASE	117.01	15.477	17.500	21308	0.000	-1.185	2.8	4.4
10YR-72HR	C-DET 3	BASE	117.01	15.479	17.500	29187	-2.028	0.936	13.7	7.8
10YR-72HR	D-DET 45	BASE	117.01	15.477	17.500	22661	0.000	0.177	4.8	3.7
10YR-72HR	K-lake 1	BASE	117.01	15.476	17.500	94401	1.113	1.044	13.4	8.3
10YR-72HR	L-CANAL	BASE	117.01	14.685	14.500	0	1.044	0.000	8.3	0.0
10YR-72HR	M-PreDev	BASE	117.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	119.01	15.438	17.500	20511	0.000	-0.860	3.9	4.8
10YR-72HR	B-DET 2	BASE	119.01	15.438	17.500	21109	0.000	-1.205	2.8	4.2
10YR-72HR	C-DET 3	BASE	119.01	15.440	17.500	28891	-2.065	0.928	13.4	7.9
10YR-72HR	D-DET 45	BASE	119.01	15.438	17.500	22433	0.000	0.172	4.8	3.7
10YR-72HR	K-lake 1	BASE	119.01	15.437	17.500	94196	1.100	1.002	13.6	8.4
10YR-72HR	L-CANAL	BASE	119.01	14.654	14.500	0	1.002	0.000	8.4	0.0
10YR-72HR	M-PreDev	BASE	119.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	121.01	15.400	17.500	20307	0.000	-0.876	3.9	4.6
10YR-72HR	B-DET 2	BASE	121.01	15.400	17.500	20916	0.000	-1.225	2.8	4.0
10YR-72HR	C-DET 3	BASE	121.01	15.402	17.500	28605	-2.100	0.920	13.0	8.1
10YR-72HR	D-DET 45	BASE	121.01	15.400	17.500	22213	0.000	0.167	4.8	3.8
10YR-72HR	K-lake 1	BASE	121.01	15.399	17.500	93998	1.087	0.963	13.7	8.6
10YR-72HR	L-CANAL	BASE	121.01	14.624	14.500	0	0.963	0.000	8.6	0.0
10YR-72HR	M-PreDev	BASE	121.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	123.01	15.363	17.500	20110	0.000	-0.891	3.9	4.5
10YR-72HR	B-DET 2	BASE	123.01	15.363	17.500	20729	0.000	-1.243	2.8	3.8
10YR-72HR	C-DET 3	BASE	123.01	15.365	17.500	28328	-2.134	0.912	12.7	8.2
10YR-72HR	D-DET 45	BASE	123.01	15.363	17.500	22000	0.000	0.163	4.8	3.8
10YR-72HR	K-lake 1	BASE	123.01	15.363	17.500	93807	1.074	0.926	13.9	8.7
10YR-72HR	L-CANAL	BASE	123.01	14.593	14.500	0	0.926	0.000	8.7	0.0
10YR-72HR	M-PreDev	BASE	123.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	125.01	15.328	17.500	19919	0.000	-0.906	3.9	4.3
10YR-72HR	B-DET 2	BASE	125.01	15.328	17.500	20549	0.000	-1.261	2.8	3.5
10YR-72HR	C-DET 3	BASE	125.01	15.330	17.500	28061	-2.167	0.904	12.3	8.4
10YR-72HR	D-DET 45	BASE	125.01	15.328	17.500	21795	0.000	0.158	4.8	3.8
10YR-72HR	K-lake 1	BASE	125.01	15.327	17.500	93621	1.062	0.891	14.1	8.9
10YR-72HR	L-CANAL	BASE	125.01	14.563	14.500	0	0.891	0.000	8.9	0.0
10YR-72HR	M-PreDev	BASE	125.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	127.01	15.294	17.500	19735	0.000	-0.920	3.9	4.2
10YR-72HR	B-DET 2	BASE	127.01	15.293	17.500	20374	0.000	-1.278	2.8	3.3
10YR-72HR	C-DET 3	BASE	127.01	15.296	17.500	27802	-2.198	0.897	12.0	8.5

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
10YR-72HR	D-DET 45	BASE	127.01	15.293	17.500	21595	0.000	0.154	4.8	3.8
10YR-72HR	K-lake 1	BASE	127.01	15.293	17.500	93442	1.050	0.858	14.3	9.0
10YR-72HR	L-CANAL	BASE	127.01	14.532	14.500	0	0.858	0.000	9.0	0.0
10YR-72HR	M-PreDev	BASE	127.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	129.01	15.260	17.500	19556	0.000	-0.933	3.9	4.0
10YR-72HR	B-DET 2	BASE	129.01	15.260	17.500	20205	0.000	-1.295	2.8	3.1
10YR-72HR	C-DET 3	BASE	129.01	15.262	17.500	27550	-2.228	0.889	11.6	8.7
10YR-72HR	D-DET 45	BASE	129.01	15.260	17.500	21402	0.000	0.150	4.8	3.9
10YR-72HR	K-lake 1	BASE	129.01	15.260	17.500	93268	1.039	0.828	14.4	9.2
10YR-72HR	L-CANAL	BASE	129.01	14.501	14.500	0	0.828	0.000	9.2	0.0
10YR-72HR	M-PreDev	BASE	129.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	131.01	15.228	17.500	19382	0.000	-0.946	3.9	3.9
10YR-72HR	B-DET 2	BASE	131.01	15.228	17.500	20041	0.000	-1.311	2.8	2.9
10YR-72HR	C-DET 3	BASE	131.01	15.230	17.500	27307	-2.257	0.882	11.2	8.8
10YR-72HR	D-DET 45	BASE	131.01	15.228	17.500	21215	0.000	0.146	4.8	3.9
10YR-72HR	K-lake 1	BASE	131.01	15.227	17.500	93100	1.029	0.800	14.6	9.3
10YR-72HR	L-CANAL	BASE	131.01	14.471	14.500	0	0.800	0.000	9.3	0.0
10YR-72HR	M-PreDev	BASE	131.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	133.01	15.197	17.500	19213	0.000	-0.959	3.9	3.7
10YR-72HR	B-DET 2	BASE	133.01	15.196	17.500	19881	0.000	-1.326	2.8	2.7
10YR-72HR	C-DET 3	BASE	133.01	15.199	17.500	27070	-2.285	0.876	10.9	9.0
10YR-72HR	D-DET 45	BASE	133.01	15.196	17.500	21033	0.000	0.145	4.8	3.9
10YR-72HR	K-lake 1	BASE	133.01	15.196	17.500	92936	1.021	0.773	14.8	9.4
10YR-72HR	L-CANAL	BASE	133.01	14.440	14.500	0	0.773	0.000	9.4	0.0
10YR-72HR	M-PreDev	BASE	133.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	135.01	15.166	17.500	19049	0.000	-0.971	3.9	3.6
10YR-72HR	B-DET 2	BASE	135.01	15.166	17.500	19726	0.000	-1.341	2.8	2.5
10YR-72HR	C-DET 3	BASE	135.01	15.168	17.500	26840	-2.311	0.870	10.5	9.1
10YR-72HR	D-DET 45	BASE	135.01	15.166	17.500	20856	0.000	0.142	4.8	3.9
10YR-72HR	K-lake 1	BASE	135.01	15.165	17.500	92776	1.011	0.749	14.9	9.6
10YR-72HR	L-CANAL	BASE	135.01	14.409	14.500	0	0.749	0.000	9.6	0.0
10YR-72HR	M-PreDev	BASE	135.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	137.01	15.136	17.500	18890	0.000	-0.982	3.9	3.4
10YR-72HR	B-DET 2	BASE	137.01	15.136	17.500	19575	0.000	-1.355	2.8	2.2
10YR-72HR	C-DET 3	BASE	137.01	15.139	17.500	26616	-2.337	0.864	10.1	9.3
10YR-72HR	D-DET 45	BASE	137.01	15.136	17.500	20683	0.000	0.138	4.8	4.0
10YR-72HR	K-lake 1	BASE	137.01	15.136	17.500	92621	1.002	0.726	15.1	9.7
10YR-72HR	L-CANAL	BASE	137.01	14.379	14.500	0	0.726	0.000	9.7	0.0
10YR-72HR	M-PreDev	BASE	137.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	139.01	15.107	17.500	18734	0.000	-0.994	3.9	3.2
10YR-72HR	B-DET 2	BASE	139.01	15.107	17.500	19428	0.000	-1.369	2.8	2.0
10YR-72HR	C-DET 3	BASE	139.01	15.110	17.500	26398	-2.363	0.858	9.7	9.4
10YR-72HR	D-DET 45	BASE	139.01	15.107	17.500	20515	0.000	0.135	4.8	4.0
10YR-72HR	K-lake 1	BASE	139.01	15.107	17.500	92470	0.993	0.704	15.3	9.8
10YR-72HR	L-CANAL	BASE	139.01	14.348	14.500	0	0.704	0.000	9.8	0.0
10YR-72HR	M-PreDev	BASE	139.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	141.01	15.079	17.500	18582	0.000	-1.004	3.9	3.1
10YR-72HR	B-DET 2	BASE	141.01	15.079	17.500	19284	0.000	-1.383	2.8	1.8
10YR-72HR	C-DET 3	BASE	141.01	15.081	17.500	26185	-2.387	0.853	9.3	9.5
10YR-72HR	D-DET 45	BASE	141.01	15.079	17.500	20351	0.000	0.132	4.8	4.0
10YR-72HR	K-lake 1	BASE	141.01	15.079	17.500	92323	0.985	0.684	15.4	9.9

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
10YR-72HR	L-CANAL	BASE	141.01	14.317	14.500	0	0.684	0.000	9.9	0.0
10YR-72HR	M-PreDev	BASE	141.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	143.01	15.051	17.500	18434	0.000	-1.015	3.9	2.9
10YR-72HR	B-DET 2	BASE	143.01	15.051	17.500	19144	0.000	-1.396	2.8	1.6
10YR-72HR	C-DET 3	BASE	143.01	15.054	17.500	25977	-2.411	0.848	8.9	9.7
10YR-72HR	D-DET 45	BASE	143.01	15.051	17.500	20191	0.000	0.129	4.8	4.0
10YR-72HR	K-lake 1	BASE	143.01	15.051	17.500	92179	0.977	0.666	15.6	10.0
10YR-72HR	L-CANAL	BASE	143.01	14.287	14.500	0	0.666	0.000	10.0	0.0
10YR-72HR	M-PreDev	BASE	143.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	145.01	15.024	17.500	18289	0.000	-1.025	3.9	2.7
10YR-72HR	B-DET 2	BASE	145.01	15.024	17.500	19006	0.000	-1.409	2.8	1.3
10YR-72HR	C-DET 3	BASE	145.01	15.027	17.500	25773	-2.434	0.843	8.5	9.8
10YR-72HR	D-DET 45	BASE	145.01	15.024	17.500	20034	0.000	0.126	4.8	4.1
10YR-72HR	K-lake 1	BASE	145.01	15.024	17.500	92038	0.969	0.649	15.8	10.1
10YR-72HR	L-CANAL	BASE	145.01	14.256	14.500	0	0.649	0.000	10.1	0.0
10YR-72HR	M-PreDev	BASE	145.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	147.01	14.998	17.500	18147	0.000	-1.035	3.9	2.6
10YR-72HR	B-DET 2	BASE	147.01	14.998	17.500	18872	0.000	-1.421	2.8	1.1
10YR-72HR	C-DET 3	BASE	147.01	15.000	17.500	25574	-2.457	0.838	8.1	10.0
10YR-72HR	D-DET 45	BASE	147.01	14.998	17.500	19881	0.000	0.124	4.8	4.1
10YR-72HR	K-lake 1	BASE	147.01	14.998	17.500	91900	0.962	0.633	15.9	10.3
10YR-72HR	L-CANAL	BASE	147.01	14.225	14.500	0	0.633	0.000	10.3	0.0
10YR-72HR	M-PreDev	BASE	147.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	149.01	14.972	17.500	18007	0.000	-1.045	3.9	2.4
10YR-72HR	B-DET 2	BASE	149.01	14.972	17.500	18740	0.000	-1.434	2.8	0.9
10YR-72HR	C-DET 3	BASE	149.01	14.975	17.500	25379	-2.479	0.834	7.7	10.1
10YR-72HR	D-DET 45	BASE	149.01	14.972	17.500	19731	0.000	0.121	4.8	4.1
10YR-72HR	K-lake 1	BASE	149.01	14.972	17.500	91764	0.955	0.619	16.1	10.4
10YR-72HR	L-CANAL	BASE	149.01	14.195	14.500	0	0.619	0.000	10.4	0.0
10YR-72HR	M-PreDev	BASE	149.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	151.01	14.947	17.500	17871	0.000	-1.054	3.9	2.2
10YR-72HR	B-DET 2	BASE	151.01	14.946	17.500	18611	0.000	-1.446	2.8	0.6
10YR-72HR	C-DET 3	BASE	151.01	14.949	17.500	25187	-2.500	0.830	7.3	10.2
10YR-72HR	D-DET 45	BASE	151.01	14.947	17.500	19583	0.000	0.119	4.8	4.1
10YR-72HR	K-lake 1	BASE	151.01	14.946	17.500	91631	0.948	0.605	16.2	10.5
10YR-72HR	L-CANAL	BASE	151.01	14.164	14.500	0	0.605	0.000	10.5	0.0
10YR-72HR	M-PreDev	BASE	151.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	153.01	14.922	17.500	17736	0.000	-1.064	3.9	2.0
10YR-72HR	B-DET 2	BASE	153.01	14.921	17.500	18484	0.000	-1.458	2.8	0.4
10YR-72HR	C-DET 3	BASE	153.01	14.924	17.500	24998	-2.521	0.825	6.9	10.4
10YR-72HR	D-DET 45	BASE	153.01	14.922	17.500	19438	0.000	0.117	4.8	4.1
10YR-72HR	K-lake 1	BASE	153.01	14.921	17.500	91501	0.942	0.593	16.4	10.6
10YR-72HR	L-CANAL	BASE	153.01	14.134	14.500	0	0.593	0.000	10.6	0.0
10YR-72HR	M-PreDev	BASE	153.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	155.01	14.897	17.500	17604	0.000	-1.073	3.9	1.9
10YR-72HR	B-DET 2	BASE	155.01	14.897	17.500	18358	0.000	-1.469	2.8	0.1
10YR-72HR	C-DET 3	BASE	155.01	14.900	17.500	24812	-2.542	0.822	6.5	10.5
10YR-72HR	D-DET 45	BASE	155.01	14.897	17.500	19295	0.000	0.116	4.8	4.2
10YR-72HR	K-lake 1	BASE	155.01	14.897	17.500	91372	0.937	0.582	16.5	10.7
10YR-72HR	L-CANAL	BASE	155.01	14.103	14.500	0	0.582	0.000	10.7	0.0
10YR-72HR	M-PreDev	BASE	155.01	15.687	18.000	911332	0.000	0.000	12.4	0.0

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
10YR-72HR	A-DET 1	BASE	157.01	14.873	17.500	17473	0.000	-1.082	3.9	1.7
10YR-72HR	B-DET 2	BASE	157.01	14.872	17.500	18235	0.000	-1.481	2.8	-0.1
10YR-72HR	C-DET 3	BASE	157.01	14.875	17.500	24629	-2.562	0.818	6.0	10.7
10YR-72HR	D-DET 45	BASE	157.01	14.873	17.500	19154	0.000	0.114	4.8	4.2
10YR-72HR	K-lake 1	BASE	157.01	14.872	17.500	91245	0.931	0.572	16.7	10.8
10YR-72HR	L-CANAL	BASE	157.01	14.072	14.500	0	0.572	0.000	10.8	0.0
10YR-72HR	M-PreDev	BASE	157.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	159.01	14.849	17.500	17345	0.000	-1.090	3.9	1.5
10YR-72HR	B-DET 2	BASE	159.01	14.848	17.500	18113	0.000	-1.492	2.8	-0.3
10YR-72HR	C-DET 3	BASE	159.01	14.851	17.500	24448	-2.582	0.814	5.6	10.8
10YR-72HR	D-DET 45	BASE	159.01	14.849	17.500	19015	0.000	0.112	4.8	4.2
10YR-72HR	K-lake 1	BASE	159.01	14.849	17.500	91120	0.926	0.563	16.9	10.8
10YR-72HR	L-CANAL	BASE	159.01	14.042	14.500	0	0.563	0.000	10.8	0.0
10YR-72HR	M-PreDev	BASE	159.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	161.01	14.825	17.500	17217	0.000	-1.099	3.9	1.3
10YR-72HR	B-DET 2	BASE	161.01	14.825	17.500	17993	0.000	-1.503	2.8	-0.6
10YR-72HR	C-DET 3	BASE	161.01	14.828	17.500	24270	-2.602	0.810	5.2	10.9
10YR-72HR	D-DET 45	BASE	161.01	14.825	17.500	18877	0.000	0.110	4.8	4.2
10YR-72HR	K-lake 1	BASE	161.01	14.825	17.500	90996	0.920	0.555	17.0	10.9
10YR-72HR	L-CANAL	BASE	161.01	14.011	14.500	0	0.555	0.000	10.9	0.0
10YR-72HR	M-PreDev	BASE	161.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	163.01	14.801	17.500	17091	0.000	-1.107	3.9	1.1
10YR-72HR	B-DET 2	BASE	163.01	14.801	17.500	17873	0.000	-1.514	2.8	-0.8
10YR-72HR	C-DET 3	BASE	163.01	14.804	17.500	24093	-2.621	0.807	4.8	11.1
10YR-72HR	D-DET 45	BASE	163.01	14.802	17.500	18741	0.000	0.108	4.8	4.2
10YR-72HR	K-lake 1	BASE	163.01	14.801	17.500	90873	0.915	0.548	17.2	11.0
10YR-72HR	L-CANAL	BASE	163.01	13.980	14.500	0	0.548	0.000	11.0	0.0
10YR-72HR	M-PreDev	BASE	163.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	165.01	14.778	17.500	16966	0.000	-1.116	3.9	1.0
10YR-72HR	B-DET 2	BASE	165.01	14.778	17.500	17755	0.000	-1.524	2.8	-1.1
10YR-72HR	C-DET 3	BASE	165.01	14.781	17.500	23917	-2.640	0.803	4.3	11.2
10YR-72HR	D-DET 45	BASE	165.01	14.778	17.500	18605	0.000	0.107	4.8	4.2
10YR-72HR	K-lake 1	BASE	165.01	14.778	17.500	90751	0.910	0.542	17.3	11.1
10YR-72HR	L-CANAL	BASE	165.01	13.950	14.500	0	0.542	0.000	11.1	0.0
10YR-72HR	M-PreDev	BASE	165.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	167.01	14.755	17.500	16841	0.000	-1.124	3.9	0.8
10YR-72HR	B-DET 2	BASE	167.01	14.755	17.500	17637	0.000	-1.535	2.8	-1.3
10YR-72HR	C-DET 3	BASE	167.01	14.758	17.500	23742	-2.659	0.800	3.9	11.3
10YR-72HR	D-DET 45	BASE	167.01	14.755	17.500	18471	0.000	0.105	4.8	4.3
10YR-72HR	K-lake 1	BASE	167.01	14.755	17.500	90630	0.905	0.537	17.5	11.2
10YR-72HR	L-CANAL	BASE	167.01	13.919	14.500	0	0.537	0.000	11.2	0.0
10YR-72HR	M-PreDev	BASE	167.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	169.01	14.732	17.500	16717	0.000	-1.132	3.9	0.6
10YR-72HR	B-DET 2	BASE	169.01	14.732	17.500	17519	0.000	-1.545	2.8	-1.6
10YR-72HR	C-DET 3	BASE	169.01	14.735	17.500	23568	-2.677	0.797	3.4	11.5
10YR-72HR	D-DET 45	BASE	169.01	14.732	17.500	18337	0.000	0.104	4.8	4.3
10YR-72HR	K-lake 1	BASE	169.01	14.732	17.500	90510	0.900	0.534	17.6	11.3
10YR-72HR	L-CANAL	BASE	169.01	13.888	14.500	0	0.534	0.000	11.3	0.0
10YR-72HR	M-PreDev	BASE	169.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	171.01	14.709	17.500	16593	0.000	-1.140	3.9	0.4
10YR-72HR	B-DET 2	BASE	171.01	14.708	17.500	17402	0.000	-1.555	2.8	-1.9

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
10YR-72HR	C-DET 3	BASE	171.01	14.712	17.500	23394	-2.695	0.794	3.0	11.6
10YR-72HR	D-DET 45	BASE	171.01	14.709	17.500	18202	0.000	0.101	4.8	4.3
10YR-72HR	K-lake 1	BASE	171.01	14.709	17.500	90389	0.895	0.533	17.8	11.4
10YR-72HR	L-CANAL	BASE	171.01	13.858	14.500	0	0.533	0.000	11.4	0.0
10YR-72HR	M-PreDev	BASE	171.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	173.01	14.686	17.500	16468	0.000	-1.147	3.9	0.2
10YR-72HR	B-DET 2	BASE	173.01	14.685	17.500	17284	0.000	-1.565	2.8	-2.1
10YR-72HR	C-DET 3	BASE	173.01	14.689	17.500	23219	-2.713	0.792	2.6	11.7
10YR-72HR	D-DET 45	BASE	173.01	14.686	17.500	18068	0.000	0.101	4.8	4.3
10YR-72HR	K-lake 1	BASE	173.01	14.686	17.500	90268	0.892	0.534	17.9	11.5
10YR-72HR	L-CANAL	BASE	173.01	13.827	14.500	0	0.534	0.000	11.5	0.0
10YR-72HR	M-PreDev	BASE	173.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	175.01	14.662	17.500	16343	0.000	-1.155	3.9	0.0
10YR-72HR	B-DET 2	BASE	175.01	14.662	17.500	17165	0.000	-1.575	2.8	-2.4
10YR-72HR	C-DET 3	BASE	175.01	14.665	17.500	23043	-2.730	0.789	2.1	11.8
10YR-72HR	D-DET 45	BASE	175.01	14.662	17.500	17932	0.000	0.100	4.8	4.3
10YR-72HR	K-lake 1	BASE	175.01	14.662	17.500	90146	0.889	0.537	18.1	11.6
10YR-72HR	L-CANAL	BASE	175.01	13.796	14.500	0	0.537	0.000	11.6	0.0
10YR-72HR	M-PreDev	BASE	175.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	177.01	14.639	17.500	16216	0.000	-1.163	3.9	-0.2
10YR-72HR	B-DET 2	BASE	177.01	14.638	17.500	17045	0.000	-1.586	2.8	-2.6
10YR-72HR	C-DET 3	BASE	177.01	14.642	17.500	22865	-2.748	0.786	1.7	12.0
10YR-72HR	D-DET 45	BASE	177.01	14.639	17.500	17795	0.000	0.099	4.8	4.4
10YR-72HR	K-lake 1	BASE	177.01	14.639	17.500	90022	0.885	0.539	18.2	11.6
10YR-72HR	L-CANAL	BASE	177.01	13.766	14.500	0	0.539	0.000	11.6	0.0
10YR-72HR	M-PreDev	BASE	177.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	179.01	14.615	17.500	16088	0.000	-1.170	3.9	-0.4
10YR-72HR	B-DET 2	BASE	179.01	14.615	17.500	16925	0.000	-1.596	2.8	-2.9
10YR-72HR	C-DET 3	BASE	179.01	14.618	17.500	22686	-2.767	0.783	1.2	12.1
10YR-72HR	D-DET 45	BASE	179.01	14.615	17.500	17657	0.000	0.098	4.8	4.4
10YR-72HR	K-lake 1	BASE	179.01	14.615	17.500	89898	0.881	0.541	18.3	11.7
10YR-72HR	L-CANAL	BASE	179.01	13.735	14.500	0	0.541	0.000	11.7	0.0
10YR-72HR	M-PreDev	BASE	179.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	181.01	14.591	17.500	15960	0.000	-1.179	3.9	-0.6
10YR-72HR	B-DET 2	BASE	181.01	14.591	17.500	16803	0.000	-1.607	2.8	-3.2
10YR-72HR	C-DET 3	BASE	181.01	14.594	17.500	22506	-2.786	0.778	0.7	12.2
10YR-72HR	D-DET 45	BASE	181.01	14.591	17.500	17518	0.000	0.096	4.8	4.4
10YR-72HR	K-lake 1	BASE	181.01	14.591	17.500	89773	0.874	0.538	18.5	11.8
10YR-72HR	L-CANAL	BASE	181.01	13.720	14.500	0	0.538	0.000	11.8	0.0
10YR-72HR	M-PreDev	BASE	181.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	183.01	14.567	17.500	15832	0.000	-1.188	3.9	-0.8
10YR-72HR	B-DET 2	BASE	183.01	14.567	17.500	16682	0.000	-1.619	2.8	-3.4
10YR-72HR	C-DET 3	BASE	183.01	14.570	17.500	22327	-2.807	0.771	0.3	12.4
10YR-72HR	D-DET 45	BASE	183.01	14.568	17.500	17381	0.000	0.094	4.8	4.4
10YR-72HR	K-lake 1	BASE	183.01	14.567	17.500	89649	0.865	0.531	18.6	11.9
10YR-72HR	L-CANAL	BASE	183.01	13.720	14.500	0	0.531	0.000	11.9	0.0
10YR-72HR	M-PreDev	BASE	183.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	185.01	14.544	17.500	15706	0.000	-1.197	3.9	-1.0
10YR-72HR	B-DET 2	BASE	185.01	14.543	17.500	16563	0.000	-1.630	2.8	-3.7
10YR-72HR	C-DET 3	BASE	185.01	14.547	17.500	22150	-2.827	0.763	-0.2	12.5
10YR-72HR	D-DET 45	BASE	185.01	14.544	17.500	17244	0.000	0.092	4.8	4.4

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
10YR-72HR	K-lake 1	BASE	185.01	14.544	17.500	89526	0.855	0.523	18.8	12.0
10YR-72HR	L-CANAL	BASE	185.01	13.720	14.500	0	0.523	0.000	12.0	0.0
10YR-72HR	M-PreDev	BASE	185.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	187.01	14.520	17.500	15581	0.000	-1.206	3.9	-1.2
10YR-72HR	B-DET 2	BASE	187.01	14.520	17.500	16445	0.000	-1.642	2.8	-4.0
10YR-72HR	C-DET 3	BASE	187.01	14.524	17.500	21974	-2.848	0.755	-0.7	12.6
10YR-72HR	D-DET 45	BASE	187.01	14.521	17.500	17109	0.000	0.090	4.8	4.4
10YR-72HR	K-lake 1	BASE	187.01	14.520	17.500	89405	0.845	0.516	18.9	12.1
10YR-72HR	L-CANAL	BASE	187.01	13.720	14.500	0	0.516	0.000	12.1	0.0
10YR-72HR	M-PreDev	BASE	187.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	189.01	14.497	17.500	15454	0.000	-1.219	3.9	-1.4
10YR-72HR	B-DET 2	BASE	189.01	14.497	17.500	16324	0.000	-1.658	2.8	-4.2
10YR-72HR	C-DET 3	BASE	189.01	14.501	17.500	21799	-2.878	0.748	-1.1	12.7
10YR-72HR	D-DET 45	BASE	189.01	14.498	17.500	16975	0.000	0.088	4.8	4.4
10YR-72HR	K-lake 1	BASE	189.01	14.497	17.500	89284	0.836	0.508	19.1	12.2
10YR-72HR	L-CANAL	BASE	189.01	13.720	14.500	0	0.508	0.000	12.2	0.0
10YR-72HR	M-PreDev	BASE	189.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	191.00	14.475	17.500	15358	0.000	-0.997	3.9	-1.5
10YR-72HR	B-DET 2	BASE	191.00	14.475	17.500	16237	0.000	-1.347	2.8	-4.5
10YR-72HR	C-DET 3	BASE	191.00	14.477	17.500	21664	-2.344	0.536	-1.6	12.8
10YR-72HR	D-DET 45	BASE	191.00	14.475	17.500	16844	0.000	0.068	4.8	4.5
10YR-72HR	K-lake 1	BASE	191.00	14.475	17.500	89166	0.604	0.501	19.2	12.3
10YR-72HR	L-CANAL	BASE	191.00	13.720	14.500	0	0.501	0.000	12.3	0.0
10YR-72HR	M-PreDev	BASE	191.00	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	193.00	14.452	17.500	15248	0.000	-1.020	3.9	-1.7
10YR-72HR	B-DET 2	BASE	193.00	14.452	17.500	16134	0.000	-1.372	2.8	-4.7
10YR-72HR	C-DET 3	BASE	193.00	14.455	17.500	21518	-2.393	0.532	-2.0	12.9
10YR-72HR	D-DET 45	BASE	193.00	14.453	17.500	16713	0.000	0.067	4.8	4.5
10YR-72HR	K-lake 1	BASE	193.00	14.452	17.500	89049	0.598	0.493	19.3	12.3
10YR-72HR	L-CANAL	BASE	193.00	13.720	14.500	0	0.493	0.000	12.3	0.0
10YR-72HR	M-PreDev	BASE	193.00	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	195.01	14.430	17.500	15136	0.000	-1.034	3.9	-1.9
10YR-72HR	B-DET 2	BASE	195.01	14.430	17.500	16029	0.000	-1.388	2.8	-4.9
10YR-72HR	C-DET 3	BASE	195.01	14.432	17.500	21367	-2.422	0.526	-2.4	13.0
10YR-72HR	D-DET 45	BASE	195.01	14.430	17.500	16583	0.000	0.063	4.8	4.5
10YR-72HR	K-lake 1	BASE	195.01	14.430	17.500	88932	0.589	0.486	19.4	12.4
10YR-72HR	L-CANAL	BASE	195.01	13.720	14.500	0	0.486	0.000	12.4	0.0
10YR-72HR	M-PreDev	BASE	195.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	197.01	14.408	17.500	15025	0.000	-1.047	3.9	-2.0
10YR-72HR	B-DET 2	BASE	197.01	14.408	17.500	15925	0.000	-1.400	2.8	-5.2
10YR-72HR	C-DET 3	BASE	197.01	14.410	17.500	21215	-2.446	0.518	-2.8	13.1
10YR-72HR	D-DET 45	BASE	197.01	14.408	17.500	16455	0.000	0.063	4.8	4.5
10YR-72HR	K-lake 1	BASE	197.01	14.408	17.500	88817	0.581	0.478	19.5	12.5
10YR-72HR	L-CANAL	BASE	197.01	13.720	14.500	0	0.478	0.000	12.5	0.0
10YR-72HR	M-PreDev	BASE	197.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	199.01	14.386	17.500	14914	0.000	-1.055	3.9	-2.2
10YR-72HR	B-DET 2	BASE	199.01	14.386	17.500	15820	0.000	-1.407	2.8	-5.4
10YR-72HR	C-DET 3	BASE	199.01	14.389	17.500	21064	-2.462	0.509	-3.2	13.2
10YR-72HR	D-DET 45	BASE	199.01	14.386	17.500	16329	0.000	0.062	4.8	4.5
10YR-72HR	K-lake 1	BASE	199.01	14.386	17.500	88703	0.570	0.471	19.6	12.6
10YR-72HR	L-CANAL	BASE	199.01	13.720	14.500	0	0.471	0.000	12.6	0.0

Simulation	Node	Group	Time	Stage	Warning Stage	Surface Area	Total Inflow	Total Outflow	Total Vol In	Total Vol Out
			hrs	ft	ft	ft2	cfs	cfs	af	af
10YR-72HR	M-PreDev	BASE	199.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	201.01	14.365	17.500	14804	0.000	-1.061	3.9	-2.4
10YR-72HR	B-DET 2	BASE	201.01	14.365	17.500	15717	0.000	-1.412	2.8	-5.6
10YR-72HR	C-DET 3	BASE	201.01	14.367	17.500	20912	-2.472	0.498	-3.6	13.3
10YR-72HR	D-DET 45	BASE	201.01	14.365	17.500	16204	0.000	0.060	4.8	4.5
10YR-72HR	K-lake 1	BASE	201.01	14.365	17.500	88591	0.559	0.463	19.7	12.7
10YR-72HR	L-CANAL	BASE	201.01	13.720	14.500	0	0.463	0.000	12.7	0.0
10YR-72HR	M-PreDev	BASE	201.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	203.01	14.344	17.500	14695	0.000	-1.062	3.9	-2.6
10YR-72HR	B-DET 2	BASE	203.01	14.343	17.500	15614	0.000	-1.413	2.8	-5.9
10YR-72HR	C-DET 3	BASE	203.01	14.346	17.500	20762	-2.476	0.487	-4.0	13.4
10YR-72HR	D-DET 45	BASE	203.01	14.344	17.500	16081	0.000	0.057	4.8	4.5
10YR-72HR	K-lake 1	BASE	203.01	14.344	17.500	88480	0.544	0.455	19.7	12.7
10YR-72HR	L-CANAL	BASE	203.01	13.720	14.500	0	0.455	0.000	12.7	0.0
10YR-72HR	M-PreDev	BASE	203.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	205.01	14.323	17.500	14586	0.000	-1.065	3.9	-2.7
10YR-72HR	B-DET 2	BASE	205.01	14.322	17.500	15512	0.000	-1.413	2.8	-6.1
10YR-72HR	C-DET 3	BASE	205.01	14.325	17.500	20613	-2.478	0.475	-4.4	13.4
10YR-72HR	D-DET 45	BASE	205.01	14.323	17.500	15959	0.000	0.057	4.8	4.5
10YR-72HR	K-lake 1	BASE	205.01	14.323	17.500	88371	0.532	0.448	19.8	12.8
10YR-72HR	L-CANAL	BASE	205.01	13.720	14.500	0	0.448	0.000	12.8	0.0
10YR-72HR	M-PreDev	BASE	205.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	207.01	14.302	17.500	14479	0.000	-1.065	3.9	-2.9
10YR-72HR	B-DET 2	BASE	207.01	14.302	17.500	15411	0.000	-1.411	2.8	-6.3
10YR-72HR	C-DET 3	BASE	207.01	14.304	17.500	20465	-2.477	0.462	-4.8	13.5
10YR-72HR	D-DET 45	BASE	207.01	14.302	17.500	15840	0.000	0.055	4.8	4.5
10YR-72HR	K-lake 1	BASE	207.01	14.302	17.500	88263	0.518	0.440	19.9	12.9
10YR-72HR	L-CANAL	BASE	207.01	13.720	14.500	0	0.440	0.000	12.9	0.0
10YR-72HR	M-PreDev	BASE	207.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	209.01	14.282	17.500	14373	0.000	-1.064	3.9	-3.1
10YR-72HR	B-DET 2	BASE	209.01	14.281	17.500	15311	0.000	-1.407	2.8	-6.6
10YR-72HR	C-DET 3	BASE	209.01	14.284	17.500	20319	-2.471	0.448	-5.2	13.6
10YR-72HR	D-DET 45	BASE	209.01	14.282	17.500	15721	0.000	0.054	4.8	4.5
10YR-72HR	K-lake 1	BASE	209.01	14.282	17.500	88156	0.502	0.432	20.0	13.0
10YR-72HR	L-CANAL	BASE	209.01	13.720	14.500	0	0.432	0.000	13.0	0.0
10YR-72HR	M-PreDev	BASE	209.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	211.01	14.262	17.500	14269	0.000	-1.059	3.9	-3.3
10YR-72HR	B-DET 2	BASE	211.01	14.261	17.500	15212	0.000	-1.401	2.8	-6.8
10YR-72HR	C-DET 3	BASE	211.01	14.264	17.500	20174	-2.460	0.434	-5.6	13.7
10YR-72HR	D-DET 45	BASE	211.01	14.262	17.500	15604	0.000	0.051	4.8	4.6
10YR-72HR	K-lake 1	BASE	211.01	14.261	17.500	88051	0.485	0.424	20.1	13.0
10YR-72HR	L-CANAL	BASE	211.01	13.720	14.500	0	0.424	0.000	13.0	0.0
10YR-72HR	M-PreDev	BASE	211.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	213.01	14.242	17.500	14166	0.000	-1.057	3.9	-3.4
10YR-72HR	B-DET 2	BASE	213.01	14.242	17.500	15115	0.000	-1.395	2.8	-7.0
10YR-72HR	C-DET 3	BASE	213.01	14.244	17.500	20031	-2.452	0.420	-6.0	13.7
10YR-72HR	D-DET 45	BASE	213.01	14.242	17.500	15490	0.000	0.050	4.8	4.6
10YR-72HR	K-lake 1	BASE	213.01	14.242	17.500	87948	0.470	0.417	20.2	13.1
10YR-72HR	L-CANAL	BASE	213.01	13.720	14.500	0	0.417	0.000	13.1	0.0
10YR-72HR	M-PreDev	BASE	213.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	215.01	14.222	17.500	14064	0.000	-1.052	3.9	-3.6

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
10YR-72HR	B-DET 2	BASE	215.01	14.222	17.500	15019	0.000	-1.388	2.8	-7.3
10YR-72HR	C-DET 3	BASE	215.01	14.225	17.500	19890	-2.440	0.404	-6.4	13.8
10YR-72HR	D-DET 45	BASE	215.01	14.222	17.500	15376	0.000	0.049	4.8	4.6
10YR-72HR	K-lake 1	BASE	215.01	14.222	17.500	87846	0.453	0.409	20.2	13.2
10YR-72HR	L-CANAL	BASE	215.01	13.720	14.500	0	0.409	0.000	13.2	0.0
10YR-72HR	M-PreDev	BASE	215.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	217.01	14.203	17.500	13964	0.000	-1.046	3.9	-3.8
10YR-72HR	B-DET 2	BASE	217.01	14.203	17.500	14925	0.000	-1.379	2.8	-7.5
10YR-72HR	C-DET 3	BASE	217.01	14.206	17.500	19751	-2.425	0.388	-6.8	13.9
10YR-72HR	D-DET 45	BASE	217.01	14.203	17.500	15265	0.000	0.047	4.8	4.6
10YR-72HR	K-lake 1	BASE	217.01	14.203	17.500	87745	0.435	0.401	20.3	13.2
10YR-72HR	L-CANAL	BASE	217.01	13.720	14.500	0	0.401	0.000	13.2	0.0
10YR-72HR	M-PreDev	BASE	217.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	219.00	14.184	17.500	13863	0.000	-1.326	3.9	-4.0
10YR-72HR	B-DET 2	BASE	219.00	14.184	17.500	14829	0.000	-1.740	2.8	-7.8
10YR-72HR	C-DET 3	BASE	219.00	14.188	17.500	19622	-3.066	0.502	-7.3	13.9
10YR-72HR	D-DET 45	BASE	219.00	14.184	17.500	15156	0.000	0.053	4.8	4.6
10YR-72HR	K-lake 1	BASE	219.00	14.184	17.500	87647	0.555	0.393	20.4	13.3
10YR-72HR	L-CANAL	BASE	219.00	13.720	14.500	0	0.393	0.000	13.3	0.0
10YR-72HR	M-PreDev	BASE	219.00	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	221.00	14.166	17.500	13768	0.000	-1.031	3.9	-4.2
10YR-72HR	B-DET 2	BASE	221.00	14.166	17.500	14740	0.000	-1.358	2.8	-8.0
10YR-72HR	C-DET 3	BASE	221.00	14.168	17.500	19479	-2.390	0.354	-7.7	14.0
10YR-72HR	D-DET 45	BASE	221.00	14.166	17.500	15048	0.000	0.044	4.8	4.6
10YR-72HR	K-lake 1	BASE	221.00	14.166	17.500	87550	0.398	0.385	20.5	13.4
10YR-72HR	L-CANAL	BASE	221.00	13.720	14.500	0	0.385	0.000	13.4	0.0
10YR-72HR	M-PreDev	BASE	221.00	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	223.00	14.148	17.500	13672	0.000	-1.023	3.9	-4.4
10YR-72HR	B-DET 2	BASE	223.00	14.147	17.500	14650	0.000	-1.347	2.8	-8.2
10YR-72HR	C-DET 3	BASE	223.00	14.150	17.500	19346	-2.370	0.336	-8.1	14.1
10YR-72HR	D-DET 45	BASE	223.00	14.148	17.500	14942	0.000	0.042	4.8	4.6
10YR-72HR	K-lake 1	BASE	223.00	14.147	17.500	87455	0.378	0.377	20.5	13.4
10YR-72HR	L-CANAL	BASE	223.00	13.720	14.500	0	0.377	0.000	13.4	0.0
10YR-72HR	M-PreDev	BASE	223.00	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	225.00	14.130	17.500	13578	0.000	-1.014	3.9	-4.5
10YR-72HR	B-DET 2	BASE	225.00	14.130	17.500	14561	0.000	-1.334	2.8	-8.5
10YR-72HR	C-DET 3	BASE	225.00	14.132	17.500	19215	-2.348	0.316	-8.5	14.1
10YR-72HR	D-DET 45	BASE	225.00	14.130	17.500	14838	0.000	0.041	4.8	4.6
10YR-72HR	K-lake 1	BASE	225.00	14.129	17.500	87361	0.357	0.369	20.6	13.5
10YR-72HR	L-CANAL	BASE	225.00	13.720	14.500	0	0.369	0.000	13.5	0.0
10YR-72HR	M-PreDev	BASE	225.00	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	227.01	14.112	17.500	13483	0.000	-1.278	3.9	-4.7
10YR-72HR	B-DET 2	BASE	227.01	14.111	17.500	14471	0.000	-1.675	2.8	-8.7
10YR-72HR	C-DET 3	BASE	227.01	14.115	17.500	19093	-2.953	0.387	-9.0	14.2
10YR-72HR	D-DET 45	BASE	227.01	14.112	17.500	14735	0.000	0.043	4.8	4.6
10YR-72HR	K-lake 1	BASE	227.01	14.112	17.500	87269	0.431	0.361	20.7	13.5
10YR-72HR	L-CANAL	BASE	227.01	13.720	14.500	0	0.361	0.000	13.5	0.0
10YR-72HR	M-PreDev	BASE	227.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	229.01	14.095	17.500	13395	0.000	-0.994	3.9	-4.9
10YR-72HR	B-DET 2	BASE	229.01	14.095	17.500	14389	0.000	-1.307	2.8	-8.9
10YR-72HR	C-DET 3	BASE	229.01	14.097	17.500	18960	-2.301	0.275	-9.4	14.2

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
10YR-72HR	D-DET 45	BASE	229.01	14.095	17.500	14635	0.000	0.037	4.8	4.6
10YR-72HR	K-lake 1	BASE	229.01	14.094	17.500	87178	0.313	0.353	20.7	13.6
10YR-72HR	L-CANAL	BASE	229.01	13.720	14.500	0	0.353	0.000	13.6	0.0
10YR-72HR	M-PreDev	BASE	229.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	231.01	14.078	17.500	13306	0.000	-0.983	3.9	-5.1
10YR-72HR	B-DET 2	BASE	231.01	14.078	17.500	14305	0.000	-1.292	2.8	-9.2
10YR-72HR	C-DET 3	BASE	231.01	14.080	17.500	18836	-2.275	0.252	-9.8	14.3
10YR-72HR	D-DET 45	BASE	231.01	14.078	17.500	14537	0.000	0.036	4.8	4.6
10YR-72HR	K-lake 1	BASE	231.01	14.078	17.500	87090	0.288	0.345	20.8	13.7
10YR-72HR	L-CANAL	BASE	231.01	13.720	14.500	0	0.345	0.000	13.7	0.0
10YR-72HR	M-PreDev	BASE	231.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	233.01	14.062	17.500	13220	0.000	-0.971	3.9	-5.2
10YR-72HR	B-DET 2	BASE	233.01	14.061	17.500	14223	0.000	-1.276	2.8	-9.4
10YR-72HR	C-DET 3	BASE	233.01	14.064	17.500	18715	-2.247	0.226	-10.1	14.3
10YR-72HR	D-DET 45	BASE	233.01	14.061	17.500	14440	0.000	0.035	4.8	4.6
10YR-72HR	K-lake 1	BASE	233.01	14.061	17.500	87003	0.260	0.337	20.8	13.7
10YR-72HR	L-CANAL	BASE	233.01	13.720	14.500	0	0.337	0.000	13.7	0.0
10YR-72HR	M-PreDev	BASE	233.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	235.01	14.045	17.500	13133	0.000	-1.211	3.9	-5.4
10YR-72HR	B-DET 2	BASE	235.01	14.045	17.500	14140	0.000	-1.588	2.8	-9.6
10YR-72HR	C-DET 3	BASE	235.01	14.049	17.500	18604	-2.799	0.244	-10.6	14.4
10YR-72HR	D-DET 45	BASE	235.01	14.045	17.500	14345	0.000	0.034	4.8	4.6
10YR-72HR	K-lake 1	BASE	235.01	14.044	17.500	86917	0.278	0.328	20.9	13.8
10YR-72HR	L-CANAL	BASE	235.01	13.720	14.500	0	0.328	0.000	13.8	0.0
10YR-72HR	M-PreDev	BASE	235.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	237.01	14.030	17.500	13051	0.000	-1.190	3.9	-5.6
10YR-72HR	B-DET 2	BASE	237.01	14.029	17.500	14063	0.000	-1.560	2.8	-9.9
10YR-72HR	C-DET 3	BASE	237.01	14.033	17.500	18489	-2.750	0.188	-11.0	14.4
10YR-72HR	D-DET 45	BASE	237.01	14.029	17.500	14252	0.000	0.032	4.8	4.6
10YR-72HR	K-lake 1	BASE	237.01	14.028	17.500	86833	0.221	0.320	20.9	13.8
10YR-72HR	L-CANAL	BASE	237.01	13.720	14.500	0	0.320	0.000	13.8	0.0
10YR-72HR	M-PreDev	BASE	237.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	239.01	14.015	17.500	12974	0.000	-1.169	3.9	-5.8
10YR-72HR	B-DET 2	BASE	239.01	14.015	17.500	13990	0.000	-1.534	2.8	-10.1
10YR-72HR	C-DET 3	BASE	239.01	14.018	17.500	18381	-2.703	0.121	-11.5	14.4
10YR-72HR	D-DET 45	BASE	239.01	14.013	17.500	14161	0.000	0.031	4.8	4.7
10YR-72HR	K-lake 1	BASE	239.01	14.012	17.500	86749	0.151	0.312	20.9	13.9
10YR-72HR	L-CANAL	BASE	239.01	13.720	14.500	0	0.312	0.000	13.9	0.0
10YR-72HR	M-PreDev	BASE	239.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	241.01	14.004	17.500	12916	0.000	-1.168	3.9	-6.0
10YR-72HR	B-DET 2	BASE	241.01	14.004	17.500	13936	0.000	-1.530	2.8	-10.4
10YR-72HR	C-DET 3	BASE	241.01	14.008	17.500	18301	-2.698	0.064	-11.9	14.4
10YR-72HR	D-DET 45	BASE	241.01	14.000	17.500	14086	0.000	0.018	4.8	4.7
10YR-72HR	K-lake 1	BASE	241.01	13.995	17.500	86656	0.082	0.302	21.0	13.9
10YR-72HR	L-CANAL	BASE	241.01	13.720	14.500	0	0.302	0.000	13.9	0.0
10YR-72HR	M-PreDev	BASE	241.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	243.01	13.998	17.500	12882	0.000	-1.164	3.9	-6.2
10YR-72HR	B-DET 2	BASE	243.01	13.997	17.500	13904	0.000	-1.523	2.8	-10.6
10YR-72HR	C-DET 3	BASE	243.01	14.001	17.500	18254	-2.687	0.041	-12.4	14.4
10YR-72HR	D-DET 45	BASE	243.01	13.988	17.500	14017	0.000	0.027	4.8	4.7
10YR-72HR	K-lake 1	BASE	243.01	13.975	17.500	86555	0.068	0.291	21.0	14.0

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
10YR-72HR	L-CANAL	BASE	243.01	13.720	14.500	0	0.291	0.000	14.0	0.0
10YR-72HR	M-PreDev	BASE	243.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	245.01	13.991	17.500	12848	0.000	-1.157	3.9	-6.4
10YR-72HR	B-DET 2	BASE	245.01	13.991	17.500	13872	0.000	-1.515	2.8	-10.9
10YR-72HR	C-DET 3	BASE	245.01	13.995	17.500	18206	-2.672	0.046	-12.8	14.4
10YR-72HR	D-DET 45	BASE	245.01	13.973	17.500	13930	0.000	0.030	4.8	4.7
10YR-72HR	K-lake 1	BASE	245.01	13.957	17.500	86461	0.076	0.281	21.0	14.0
10YR-72HR	L-CANAL	BASE	245.01	13.720	14.500	0	0.281	0.000	14.0	0.0
10YR-72HR	M-PreDev	BASE	245.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	247.01	13.984	17.500	12808	0.000	-1.150	3.9	-6.6
10YR-72HR	B-DET 2	BASE	247.01	13.983	17.500	13834	0.000	-1.506	2.8	-11.1
10YR-72HR	C-DET 3	BASE	247.01	13.987	17.500	18150	-2.656	0.051	-13.2	14.5
10YR-72HR	D-DET 45	BASE	247.01	13.958	17.500	13838	0.000	0.031	4.8	4.7
10YR-72HR	K-lake 1	BASE	247.01	13.941	17.500	86374	0.082	0.271	21.0	14.1
10YR-72HR	L-CANAL	BASE	247.01	13.720	14.500	0	0.271	0.000	14.1	0.0
10YR-72HR	M-PreDev	BASE	247.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	249.01	13.975	17.500	12764	0.000	-1.143	3.9	-6.8
10YR-72HR	B-DET 2	BASE	249.01	13.975	17.500	13792	0.000	-1.497	2.8	-11.4
10YR-72HR	C-DET 3	BASE	249.01	13.979	17.500	18089	-2.640	0.055	-13.7	14.5
10YR-72HR	D-DET 45	BASE	249.01	13.942	17.500	13746	0.000	0.030	4.8	4.7
10YR-72HR	K-lake 1	BASE	249.01	13.925	17.500	86294	0.085	0.261	21.0	14.1
10YR-72HR	L-CANAL	BASE	249.01	13.720	14.500	0	0.261	0.000	14.1	0.0
10YR-72HR	M-PreDev	BASE	249.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	251.01	13.966	17.500	12717	0.000	-1.136	3.9	-6.9
10YR-72HR	B-DET 2	BASE	251.01	13.966	17.500	13748	0.000	-1.488	2.8	-11.6
10YR-72HR	C-DET 3	BASE	251.01	13.970	17.500	18023	-2.624	0.057	-14.1	14.5
10YR-72HR	D-DET 45	BASE	251.01	13.926	17.500	13655	0.000	0.029	4.8	4.7
10YR-72HR	K-lake 1	BASE	251.01	13.911	17.500	86219	0.086	0.252	21.0	14.2
10YR-72HR	L-CANAL	BASE	251.01	13.720	14.500	0	0.252	0.000	14.2	0.0
10YR-72HR	M-PreDev	BASE	251.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	253.01	13.957	17.500	12668	0.000	-1.129	3.9	-7.1
10YR-72HR	B-DET 2	BASE	253.01	13.957	17.500	13702	0.000	-1.478	2.8	-11.9
10YR-72HR	C-DET 3	BASE	253.01	13.961	17.500	17955	-2.607	0.059	-14.5	14.5
10YR-72HR	D-DET 45	BASE	253.01	13.911	17.500	13568	0.000	0.028	4.8	4.7
10YR-72HR	K-lake 1	BASE	253.01	13.897	17.500	86148	0.087	0.243	21.0	14.2
10YR-72HR	L-CANAL	BASE	253.01	13.720	14.500	0	0.243	0.000	14.2	0.0
10YR-72HR	M-PreDev	BASE	253.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	255.01	13.948	17.500	12617	0.000	-1.121	3.9	-7.3
10YR-72HR	B-DET 2	BASE	255.01	13.947	17.500	13654	0.000	-1.469	2.8	-12.1
10YR-72HR	C-DET 3	BASE	255.01	13.951	17.500	17884	-2.590	0.061	-15.0	14.5
10YR-72HR	D-DET 45	BASE	255.01	13.897	17.500	13485	0.000	0.026	4.8	4.7
10YR-72HR	K-lake 1	BASE	255.01	13.885	17.500	86082	0.087	0.234	21.1	14.2
10YR-72HR	L-CANAL	BASE	255.01	13.720	14.500	0	0.234	0.000	14.2	0.0
10YR-72HR	M-PreDev	BASE	255.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	257.01	13.938	17.500	12565	0.000	-1.114	3.9	-7.5
10YR-72HR	B-DET 2	BASE	257.01	13.937	17.500	13604	0.000	-1.459	2.8	-12.4
10YR-72HR	C-DET 3	BASE	257.01	13.941	17.500	17811	-2.572	0.062	-15.4	14.5
10YR-72HR	D-DET 45	BASE	257.01	13.883	17.500	13407	0.000	0.024	4.8	4.7
10YR-72HR	K-lake 1	BASE	257.01	13.873	17.500	86019	0.086	0.225	21.1	14.3
10YR-72HR	L-CANAL	BASE	257.01	13.720	14.500	0	0.225	0.000	14.3	0.0
10YR-72HR	M-PreDev	BASE	257.01	15.687	18.000	911332	0.000	0.000	12.4	0.0

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
10YR-72HR	A-DET 1	BASE	259.01	13.928	17.500	12512	0.000	-1.106	3.9	-7.7
10YR-72HR	B-DET 2	BASE	259.01	13.927	17.500	13554	0.000	-1.448	2.8	-12.6
10YR-72HR	C-DET 3	BASE	259.01	13.931	17.500	17737	-2.554	0.062	-15.8	14.5
10YR-72HR	D-DET 45	BASE	259.01	13.871	17.500	13333	0.000	0.023	4.8	4.7
10YR-72HR	K-lake 1	BASE	259.01	13.861	17.500	85959	0.085	0.217	21.1	14.3
10YR-72HR	L-CANAL	BASE	259.01	13.720	14.500	0	0.217	0.000	14.3	0.0
10YR-72HR	M-PreDev	BASE	259.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	261.01	13.918	17.500	12458	0.000	-1.098	3.9	-7.9
10YR-72HR	B-DET 2	BASE	261.01	13.917	17.500	13504	0.000	-1.438	2.8	-12.8
10YR-72HR	C-DET 3	BASE	261.01	13.921	17.500	17662	-2.536	0.063	-16.2	14.5
10YR-72HR	D-DET 45	BASE	261.01	13.859	17.500	13263	0.000	0.021	4.8	4.7
10YR-72HR	K-lake 1	BASE	261.01	13.850	17.500	85903	0.084	0.208	21.1	14.3
10YR-72HR	L-CANAL	BASE	261.01	13.720	14.500	0	0.208	0.000	14.3	0.0
10YR-72HR	M-PreDev	BASE	261.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	263.01	13.907	17.500	12404	0.000	-1.090	3.9	-8.0
10YR-72HR	B-DET 2	BASE	263.01	13.907	17.500	13453	0.000	-1.428	2.8	-13.1
10YR-72HR	C-DET 3	BASE	263.01	13.911	17.500	17586	-2.518	0.063	-16.7	14.5
10YR-72HR	D-DET 45	BASE	263.01	13.847	17.500	13198	0.000	0.020	4.8	4.7
10YR-72HR	K-lake 1	BASE	263.01	13.840	17.500	85849	0.083	0.200	21.1	14.4
10YR-72HR	L-CANAL	BASE	263.01	13.720	14.500	0	0.200	0.000	14.4	0.0
10YR-72HR	M-PreDev	BASE	263.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	265.01	13.897	17.500	12350	0.000	-1.082	3.9	-8.2
10YR-72HR	B-DET 2	BASE	265.01	13.897	17.500	13401	0.000	-1.417	2.8	-13.3
10YR-72HR	C-DET 3	BASE	265.01	13.901	17.500	17510	-2.499	0.062	-17.1	14.5
10YR-72HR	D-DET 45	BASE	265.01	13.837	17.500	13137	0.000	0.019	4.8	4.7
10YR-72HR	K-lake 1	BASE	265.01	13.831	17.500	85799	0.081	0.192	21.1	14.4
10YR-72HR	L-CANAL	BASE	265.01	13.720	14.500	0	0.192	0.000	14.4	0.0
10YR-72HR	M-PreDev	BASE	265.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	267.01	13.887	17.500	12296	0.000	-1.074	3.9	-8.4
10YR-72HR	B-DET 2	BASE	267.01	13.887	17.500	13350	0.000	-1.407	2.8	-13.5
10YR-72HR	C-DET 3	BASE	267.01	13.890	17.500	17435	-2.481	0.062	-17.5	14.6
10YR-72HR	D-DET 45	BASE	267.01	13.827	17.500	13079	0.000	0.017	4.8	4.7
10YR-72HR	K-lake 1	BASE	267.01	13.821	17.500	85751	0.079	0.184	21.1	14.4
10YR-72HR	L-CANAL	BASE	267.01	13.720	14.500	0	0.184	0.000	14.4	0.0
10YR-72HR	M-PreDev	BASE	267.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	269.01	13.877	17.500	12242	0.000	-1.066	3.9	-8.6
10YR-72HR	B-DET 2	BASE	269.01	13.877	17.500	13300	0.000	-1.396	2.8	-13.8
10YR-72HR	C-DET 3	BASE	269.01	13.880	17.500	17359	-2.462	0.061	-17.9	14.6
10YR-72HR	D-DET 45	BASE	269.01	13.818	17.500	13025	0.000	0.016	4.8	4.7
10YR-72HR	K-lake 1	BASE	269.01	13.813	17.500	85706	0.077	0.176	21.2	14.5
10YR-72HR	L-CANAL	BASE	269.01	13.720	14.500	0	0.176	0.000	14.5	0.0
10YR-72HR	M-PreDev	BASE	269.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	271.01	13.867	17.500	12189	0.000	-1.058	3.9	-8.8
10YR-72HR	B-DET 2	BASE	271.01	13.866	17.500	13249	0.000	-1.386	2.8	-14.0
10YR-72HR	C-DET 3	BASE	271.01	13.870	17.500	17285	-2.443	0.060	-18.3	14.6
10YR-72HR	D-DET 45	BASE	271.01	13.809	17.500	12975	0.000	0.015	4.8	4.7
10YR-72HR	K-lake 1	BASE	271.01	13.805	17.500	85664	0.076	0.168	21.2	14.5
10YR-72HR	L-CANAL	BASE	271.01	13.720	14.500	0	0.168	0.000	14.5	0.0
10YR-72HR	M-PreDev	BASE	271.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	273.01	13.857	17.500	12136	0.000	-1.050	3.9	-8.9
10YR-72HR	B-DET 2	BASE	273.01	13.857	17.500	13199	0.000	-1.375	2.8	-14.2

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
10YR-72HR	C-DET 3	BASE	273.01	13.860	17.500	17211	-2.425	0.059	-18.7	14.6
10YR-72HR	D-DET 45	BASE	273.01	13.801	17.500	12927	0.000	0.014	4.8	4.7
10YR-72HR	K-lake 1	BASE	273.01	13.797	17.500	85624	0.073	0.160	21.2	14.5
10YR-72HR	L-CANAL	BASE	273.01	13.720	14.500	0	0.160	0.000	14.5	0.0
10YR-72HR	M-PreDev	BASE	273.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	275.01	13.847	17.500	12084	0.000	-1.042	3.9	-9.1
10YR-72HR	B-DET 2	BASE	275.01	13.847	17.500	13150	0.000	-1.365	2.8	-14.5
10YR-72HR	C-DET 3	BASE	275.01	13.850	17.500	17139	-2.406	0.058	-19.1	14.6
10YR-72HR	D-DET 45	BASE	275.01	13.793	17.500	12883	0.000	0.013	4.8	4.7
10YR-72HR	K-lake 1	BASE	275.01	13.790	17.500	85587	0.071	0.153	21.2	14.6
10YR-72HR	L-CANAL	BASE	275.01	13.720	14.500	0	0.153	0.000	14.6	0.0
10YR-72HR	M-PreDev	BASE	275.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	277.01	13.838	17.500	12034	0.000	-1.034	3.9	-9.3
10YR-72HR	B-DET 2	BASE	277.01	13.837	17.500	13102	0.000	-1.354	2.8	-14.7
10YR-72HR	C-DET 3	BASE	277.01	13.841	17.500	17067	-2.388	0.057	-19.5	14.6
10YR-72HR	D-DET 45	BASE	277.01	13.786	17.500	12842	0.000	0.012	4.8	4.7
10YR-72HR	K-lake 1	BASE	277.01	13.783	17.500	85552	0.069	0.145	21.2	14.6
10YR-72HR	L-CANAL	BASE	277.01	13.720	14.500	0	0.145	0.000	14.6	0.0
10YR-72HR	M-PreDev	BASE	277.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	279.01	13.828	17.500	11984	0.000	-1.026	3.9	-9.4
10YR-72HR	B-DET 2	BASE	279.01	13.828	17.500	13056	0.000	-1.344	2.8	-14.9
10YR-72HR	C-DET 3	BASE	279.01	13.831	17.500	16998	-2.371	0.055	-19.9	14.6
10YR-72HR	D-DET 45	BASE	279.01	13.779	17.500	12803	0.000	0.011	4.8	4.7
10YR-72HR	K-lake 1	BASE	279.01	13.777	17.500	85519	0.067	0.138	21.2	14.6
10YR-72HR	L-CANAL	BASE	279.01	13.720	14.500	0	0.138	0.000	14.6	0.0
10YR-72HR	M-PreDev	BASE	279.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	281.01	13.819	17.500	11935	0.000	-1.019	3.9	-9.6
10YR-72HR	B-DET 2	BASE	281.01	13.819	17.500	13010	0.000	-1.335	2.8	-15.1
10YR-72HR	C-DET 3	BASE	281.01	13.822	17.500	16930	-2.354	0.053	-20.3	14.6
10YR-72HR	D-DET 45	BASE	281.01	13.773	17.500	12767	0.000	0.011	4.8	4.7
10YR-72HR	K-lake 1	BASE	281.01	13.771	17.500	85488	0.064	0.130	21.2	14.6
10YR-72HR	L-CANAL	BASE	281.01	13.720	14.500	0	0.130	0.000	14.6	0.0
10YR-72HR	M-PreDev	BASE	281.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	283.01	13.810	17.500	11888	0.000	-1.012	3.9	-9.8
10YR-72HR	B-DET 2	BASE	283.01	13.810	17.500	12965	0.000	-1.325	2.8	-15.3
10YR-72HR	C-DET 3	BASE	283.01	13.813	17.500	16864	-2.337	0.052	-20.7	14.6
10YR-72HR	D-DET 45	BASE	283.01	13.767	17.500	12733	0.000	0.010	4.8	4.7
10YR-72HR	K-lake 1	BASE	283.01	13.766	17.500	85459	0.061	0.123	21.2	14.6
10YR-72HR	L-CANAL	BASE	283.01	13.720	14.500	0	0.123	0.000	14.6	0.0
10YR-72HR	M-PreDev	BASE	283.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	285.01	13.802	17.500	11843	0.000	-1.005	3.9	-10.0
10YR-72HR	B-DET 2	BASE	285.01	13.801	17.500	12922	0.000	-1.316	2.8	-15.6
10YR-72HR	C-DET 3	BASE	285.01	13.805	17.500	16801	-2.321	0.050	-21.1	14.6
10YR-72HR	D-DET 45	BASE	285.01	13.762	17.500	12702	0.000	0.009	4.8	4.7
10YR-72HR	K-lake 1	BASE	285.01	13.761	17.500	85433	0.059	0.116	21.2	14.7
10YR-72HR	L-CANAL	BASE	285.01	13.720	14.500	0	0.116	0.000	14.7	0.0
10YR-72HR	M-PreDev	BASE	285.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	287.01	13.793	17.500	11799	0.000	-0.998	3.9	-10.1
10YR-72HR	B-DET 2	BASE	287.01	13.793	17.500	12881	0.000	-1.307	2.8	-15.8
10YR-72HR	C-DET 3	BASE	287.01	13.797	17.500	16739	-2.306	0.048	-21.4	14.6
10YR-72HR	D-DET 45	BASE	287.01	13.757	17.500	12673	0.000	0.008	4.8	4.7

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
10YR-72HR	K-lake 1	BASE	287.01	13.756	17.500	85408	0.056	0.109	21.3	14.7
10YR-72HR	L-CANAL	BASE	287.01	13.720	14.500	0	0.109	0.000	14.7	0.0
10YR-72HR	M-PreDev	BASE	287.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	289.01	13.785	17.500	11757	0.000	-0.992	3.9	-10.3
10YR-72HR	B-DET 2	BASE	289.01	13.785	17.500	12841	0.000	-1.299	2.8	-16.0
10YR-72HR	C-DET 3	BASE	289.01	13.789	17.500	16681	-2.291	0.046	-21.8	14.7
10YR-72HR	D-DET 45	BASE	289.01	13.752	17.500	12647	0.000	0.008	4.8	4.7
10YR-72HR	K-lake 1	BASE	289.01	13.751	17.500	85385	0.053	0.102	21.3	14.7
10YR-72HR	L-CANAL	BASE	289.01	13.720	14.500	0	0.102	0.000	14.7	0.0
10YR-72HR	M-PreDev	BASE	289.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	291.01	13.778	17.500	11717	0.000	-0.986	3.9	-10.4
10YR-72HR	B-DET 2	BASE	291.01	13.778	17.500	12803	0.000	-1.291	2.8	-16.2
10YR-72HR	C-DET 3	BASE	291.01	13.781	17.500	16624	-2.277	0.043	-22.2	14.7
10YR-72HR	D-DET 45	BASE	291.01	13.748	17.500	12622	0.000	0.007	4.8	4.7
10YR-72HR	K-lake 1	BASE	291.01	13.747	17.500	85364	0.051	0.095	21.3	14.7
10YR-72HR	L-CANAL	BASE	291.01	13.720	14.500	0	0.095	0.000	14.7	0.0
10YR-72HR	M-PreDev	BASE	291.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	293.01	13.771	17.500	11679	0.000	-0.980	3.9	-10.6
10YR-72HR	B-DET 2	BASE	293.01	13.771	17.500	12767	0.000	-1.283	2.8	-16.4
10YR-72HR	C-DET 3	BASE	293.01	13.774	17.500	16571	-2.263	0.041	-22.6	14.7
10YR-72HR	D-DET 45	BASE	293.01	13.744	17.500	12600	0.000	0.006	4.8	4.7
10YR-72HR	K-lake 1	BASE	293.01	13.744	17.500	85344	0.048	0.089	21.3	14.7
10YR-72HR	L-CANAL	BASE	293.01	13.720	14.500	0	0.089	0.000	14.7	0.0
10YR-72HR	M-PreDev	BASE	293.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	295.01	13.764	17.500	11643	0.000	-0.974	3.9	-10.8
10YR-72HR	B-DET 2	BASE	295.01	13.764	17.500	12733	0.000	-1.276	2.8	-16.6
10YR-72HR	C-DET 3	BASE	295.01	13.767	17.500	16521	-2.250	0.039	-22.9	14.7
10YR-72HR	D-DET 45	BASE	295.01	13.741	17.500	12579	0.000	0.006	4.8	4.7
10YR-72HR	K-lake 1	BASE	295.01	13.740	17.500	85326	0.045	0.082	21.3	14.7
10YR-72HR	L-CANAL	BASE	295.01	13.720	14.500	0	0.082	0.000	14.7	0.0
10YR-72HR	M-PreDev	BASE	295.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	297.01	13.758	17.500	11609	0.000	-0.969	3.9	-10.9
10YR-72HR	B-DET 2	BASE	297.01	13.757	17.500	12701	0.000	-1.269	2.8	-16.8
10YR-72HR	C-DET 3	BASE	297.01	13.761	17.500	16473	-2.238	0.036	-23.3	14.7
10YR-72HR	D-DET 45	BASE	297.01	13.738	17.500	12560	0.000	0.005	4.8	4.7
10YR-72HR	K-lake 1	BASE	297.01	13.737	17.500	85310	0.042	0.075	21.3	14.8
10YR-72HR	L-CANAL	BASE	297.01	13.720	14.500	0	0.075	0.000	14.8	0.0
10YR-72HR	M-PreDev	BASE	297.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	299.01	13.752	17.500	11578	0.000	-0.964	3.9	-11.1
10YR-72HR	B-DET 2	BASE	299.01	13.751	17.500	12672	0.000	-1.263	2.8	-17.1
10YR-72HR	C-DET 3	BASE	299.01	13.755	17.500	16429	-2.227	0.034	-23.7	14.7
10YR-72HR	D-DET 45	BASE	299.01	13.735	17.500	12543	0.000	0.005	4.8	4.7
10YR-72HR	K-lake 1	BASE	299.01	13.734	17.500	85295	0.039	0.069	21.3	14.8
10YR-72HR	L-CANAL	BASE	299.01	13.720	14.500	0	0.069	0.000	14.8	0.0
10YR-72HR	M-PreDev	BASE	299.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	301.01	13.746	17.500	11549	0.000	-0.960	3.9	-11.2
10YR-72HR	B-DET 2	BASE	301.01	13.746	17.500	12644	0.000	-1.257	2.8	-17.3
10YR-72HR	C-DET 3	BASE	301.01	13.749	17.500	16388	-2.218	0.031	-24.1	14.7
10YR-72HR	D-DET 45	BASE	301.01	13.732	17.500	12528	0.000	0.004	4.8	4.7
10YR-72HR	K-lake 1	BASE	301.01	13.732	17.500	85282	0.036	0.062	21.3	14.8
10YR-72HR	L-CANAL	BASE	301.01	13.720	14.500	0	0.062	0.000	14.8	0.0

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
10YR-72HR	M-PreDev	BASE	301.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	303.01	13.741	17.500	11522	0.000	-0.956	3.9	-11.4
10YR-72HR	B-DET 2	BASE	303.01	13.741	17.500	12619	0.000	-1.252	2.8	-17.5
10YR-72HR	C-DET 3	BASE	303.01	13.744	17.500	16351	-2.209	0.029	-24.4	14.7
10YR-72HR	D-DET 45	BASE	303.01	13.730	17.500	12514	0.000	0.004	4.8	4.7
10YR-72HR	K-lake 1	BASE	303.01	13.729	17.500	85270	0.033	0.056	21.3	14.8
10YR-72HR	L-CANAL	BASE	303.01	13.720	14.500	0	0.056	0.000	14.8	0.0
10YR-72HR	M-PreDev	BASE	303.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	305.01	13.737	17.500	11498	0.000	-0.953	3.9	-11.6
10YR-72HR	B-DET 2	BASE	305.01	13.736	17.500	12596	0.000	-1.248	2.8	-17.7
10YR-72HR	C-DET 3	BASE	305.01	13.740	17.500	16317	-2.201	0.026	-24.8	14.7
10YR-72HR	D-DET 45	BASE	305.01	13.728	17.500	12502	0.000	0.003	4.8	4.7
10YR-72HR	K-lake 1	BASE	305.01	13.727	17.500	85260	0.030	0.050	21.3	14.8
10YR-72HR	L-CANAL	BASE	305.01	13.720	14.500	0	0.050	0.000	14.8	0.0
10YR-72HR	M-PreDev	BASE	305.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	307.01	13.733	17.500	11476	0.000	-0.950	3.9	-11.7
10YR-72HR	B-DET 2	BASE	307.01	13.732	17.500	12576	0.000	-1.244	2.8	-17.9
10YR-72HR	C-DET 3	BASE	307.01	13.736	17.500	16287	-2.194	0.024	-25.1	14.7
10YR-72HR	D-DET 45	BASE	307.01	13.726	17.500	12492	0.000	0.003	4.8	4.7
10YR-72HR	K-lake 1	BASE	307.01	13.726	17.500	85250	0.027	0.043	21.3	14.8
10YR-72HR	L-CANAL	BASE	307.01	13.720	14.500	0	0.043	0.000	14.8	0.0
10YR-72HR	M-PreDev	BASE	307.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	309.01	13.729	17.500	11457	0.000	-0.948	3.9	-11.9
10YR-72HR	B-DET 2	BASE	309.01	13.729	17.500	12558	0.000	-1.241	2.8	-18.1
10YR-72HR	C-DET 3	BASE	309.01	13.732	17.500	16261	-2.189	0.021	-25.5	14.7
10YR-72HR	D-DET 45	BASE	309.01	13.724	17.500	12483	0.000	0.002	4.8	4.7
10YR-72HR	K-lake 1	BASE	309.01	13.724	17.500	85242	0.024	0.037	21.3	14.8
10YR-72HR	L-CANAL	BASE	309.01	13.720	14.500	0	0.037	0.000	14.8	0.0
10YR-72HR	M-PreDev	BASE	309.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	311.01	13.726	17.500	11441	0.000	-0.946	3.9	-12.0
10YR-72HR	B-DET 2	BASE	311.01	13.726	17.500	12543	0.000	-1.238	2.8	-18.3
10YR-72HR	C-DET 3	BASE	311.01	13.729	17.500	16239	-2.184	0.019	-25.9	14.7
10YR-72HR	D-DET 45	BASE	311.01	13.723	17.500	12475	0.000	0.002	4.8	4.7
10YR-72HR	K-lake 1	BASE	311.01	13.723	17.500	85236	0.021	0.031	21.3	14.8
10YR-72HR	L-CANAL	BASE	311.01	13.720	14.500	0	0.031	0.000	14.8	0.0
10YR-72HR	M-PreDev	BASE	311.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	313.01	13.724	17.500	11428	0.000	-0.945	3.9	-12.2
10YR-72HR	B-DET 2	BASE	313.01	13.723	17.500	12531	0.000	-1.237	2.8	-18.5
10YR-72HR	C-DET 3	BASE	313.01	13.727	17.500	16220	-2.182	0.017	-26.2	14.7
10YR-72HR	D-DET 45	BASE	313.01	13.722	17.500	12469	0.000	0.002	4.8	4.7
10YR-72HR	K-lake 1	BASE	313.01	13.722	17.500	85230	0.018	0.025	21.3	14.8
10YR-72HR	L-CANAL	BASE	313.01	13.720	14.500	0	0.025	0.000	14.8	0.0
10YR-72HR	M-PreDev	BASE	313.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	315.01	13.722	17.500	11418	0.000	-0.945	3.9	-12.3
10YR-72HR	B-DET 2	BASE	315.01	13.722	17.500	12521	0.000	-1.237	2.8	-18.7
10YR-72HR	C-DET 3	BASE	315.01	13.725	17.500	16207	-2.182	0.015	-26.6	14.7
10YR-72HR	D-DET 45	BASE	315.01	13.721	17.500	12464	0.000	0.001	4.8	4.7
10YR-72HR	K-lake 1	BASE	315.01	13.721	17.500	85226	0.016	0.018	21.3	14.8
10YR-72HR	L-CANAL	BASE	315.01	13.720	14.500	0	0.018	0.000	14.8	0.0
10YR-72HR	M-PreDev	BASE	315.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	317.01	13.721	17.500	11413	0.000	-0.946	3.9	-12.5

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
10YR-72HR	B-DET 2	BASE	317.01	13.721	17.500	12516	0.000	-1.237	2.8	-18.9
10YR-72HR	C-DET 3	BASE	317.01	13.724	17.500	16199	-2.183	0.014	-27.0	14.7
10YR-72HR	D-DET 45	BASE	317.01	13.720	17.500	12460	0.000	0.001	4.8	4.7
10YR-72HR	K-lake 1	BASE	317.01	13.720	17.500	85223	0.015	0.011	21.3	14.8
10YR-72HR	L-CANAL	BASE	317.01	13.720	14.500	0	0.011	0.000	14.8	0.0
10YR-72HR	M-PreDev	BASE	317.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	319.01	13.720	17.500	11409	0.000	-0.946	3.9	-12.7
10YR-72HR	B-DET 2	BASE	319.01	13.720	17.500	12512	0.000	-1.237	2.8	-19.1
10YR-72HR	C-DET 3	BASE	319.01	13.723	17.500	16193	-2.182	0.013	-27.3	14.7
10YR-72HR	D-DET 45	BASE	319.01	13.720	17.500	12459	0.000	0.000	4.8	4.7
10YR-72HR	K-lake 1	BASE	319.01	13.720	17.500	85221	0.014	0.005	21.3	14.8
10YR-72HR	L-CANAL	BASE	319.01	13.720	14.500	0	0.005	0.000	14.8	0.0
10YR-72HR	M-PreDev	BASE	319.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	321.01	13.720	17.500	11407	0.000	-0.945	3.9	-12.8
10YR-72HR	B-DET 2	BASE	321.01	13.719	17.500	12510	0.000	-1.237	2.8	-19.3
10YR-72HR	C-DET 3	BASE	321.01	13.723	17.500	16190	-2.182	0.013	-27.7	14.7
10YR-72HR	D-DET 45	BASE	321.01	13.720	17.500	12458	0.000	0.000	4.8	4.7
10YR-72HR	K-lake 1	BASE	321.01	13.720	17.500	85221	0.013	0.002	21.3	14.8
10YR-72HR	L-CANAL	BASE	321.01	13.720	14.500	0	0.002	0.000	14.8	0.0
10YR-72HR	M-PreDev	BASE	321.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	323.01	13.719	17.500	11405	0.000	-0.945	3.9	-13.0
10YR-72HR	B-DET 2	BASE	323.01	13.719	17.500	12509	0.000	-1.237	2.8	-19.5
10YR-72HR	C-DET 3	BASE	323.01	13.723	17.500	16188	-2.182	0.012	-28.0	14.7
10YR-72HR	D-DET 45	BASE	323.01	13.720	17.500	12458	0.000	0.000	4.8	4.7
10YR-72HR	K-lake 1	BASE	323.01	13.720	17.500	85221	0.012	0.001	21.3	14.8
10YR-72HR	L-CANAL	BASE	323.01	13.720	14.500	0	0.001	0.000	14.8	0.0
10YR-72HR	M-PreDev	BASE	323.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	325.01	13.719	17.500	11404	0.000	-0.945	3.9	-13.1
10YR-72HR	B-DET 2	BASE	325.01	13.719	17.500	12508	0.000	-1.237	2.8	-19.7
10YR-72HR	C-DET 3	BASE	325.01	13.722	17.500	16186	-2.182	0.011	-28.4	14.7
10YR-72HR	D-DET 45	BASE	325.01	13.720	17.500	12458	0.000	0.000	4.8	4.7
10YR-72HR	K-lake 1	BASE	325.01	13.720	17.500	85221	0.011	0.001	21.3	14.8
10YR-72HR	L-CANAL	BASE	325.01	13.720	14.500	0	0.001	0.000	14.8	0.0
10YR-72HR	M-PreDev	BASE	325.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	327.01	13.719	17.500	11403	0.000	-0.945	3.9	-13.3
10YR-72HR	B-DET 2	BASE	327.01	13.719	17.500	12507	0.000	-1.237	2.8	-19.9
10YR-72HR	C-DET 3	BASE	327.01	13.722	17.500	16185	-2.182	0.011	-28.8	14.7
10YR-72HR	D-DET 45	BASE	327.01	13.720	17.500	12458	0.000	0.000	4.8	4.7
10YR-72HR	K-lake 1	BASE	327.01	13.720	17.500	85221	0.011	0.000	21.3	14.8
10YR-72HR	L-CANAL	BASE	327.01	13.720	14.500	0	0.000	0.000	14.8	0.0
10YR-72HR	M-PreDev	BASE	327.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	329.01	13.719	17.500	11403	0.000	-0.945	3.9	-13.4
10YR-72HR	B-DET 2	BASE	329.01	13.719	17.500	12507	0.000	-1.237	2.8	-20.1
10YR-72HR	C-DET 3	BASE	329.01	13.722	17.500	16185	-2.182	0.011	-29.1	14.7
10YR-72HR	D-DET 45	BASE	329.01	13.720	17.500	12458	0.000	0.000	4.8	4.7
10YR-72HR	K-lake 1	BASE	329.01	13.720	17.500	85221	0.011	0.000	21.3	14.8
10YR-72HR	L-CANAL	BASE	329.01	13.720	14.500	0	0.000	0.000	14.8	0.0
10YR-72HR	M-PreDev	BASE	329.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	331.01	13.719	17.500	11403	0.000	-0.945	3.9	-13.6
10YR-72HR	B-DET 2	BASE	331.01	13.719	17.500	12506	0.000	-1.236	2.8	-20.3
10YR-72HR	C-DET 3	BASE	331.01	13.722	17.500	16185	-2.182	0.011	-29.5	14.7

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
10YR-72HR	D-DET 45	BASE	331.01	13.720	17.500	12458	0.000	0.000	4.8	4.7
10YR-72HR	K-lake 1	BASE	331.01	13.720	17.500	85221	0.011	0.000	21.4	14.8
10YR-72HR	L-CANAL	BASE	331.01	13.720	14.500	0	0.000	0.000	14.8	0.0
10YR-72HR	M-PreDev	BASE	331.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	333.01	13.719	17.500	11402	0.000	-0.945	3.9	-13.8
10YR-72HR	B-DET 2	BASE	333.01	13.719	17.500	12506	0.000	-1.236	2.8	-20.5
10YR-72HR	C-DET 3	BASE	333.01	13.722	17.500	16184	-2.182	0.011	-29.8	14.7
10YR-72HR	D-DET 45	BASE	333.01	13.720	17.500	12458	0.000	0.000	4.8	4.7
10YR-72HR	K-lake 1	BASE	333.01	13.720	17.500	85221	0.011	0.000	21.4	14.8
10YR-72HR	L-CANAL	BASE	333.01	13.720	14.500	0	0.000	0.000	14.8	0.0
10YR-72HR	M-PreDev	BASE	333.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	335.01	13.719	17.500	11402	0.000	-0.945	3.9	-13.9
10YR-72HR	B-DET 2	BASE	335.01	13.719	17.500	12506	0.000	-1.236	2.8	-20.7
10YR-72HR	C-DET 3	BASE	335.01	13.722	17.500	16184	-2.182	0.011	-30.2	14.7
10YR-72HR	D-DET 45	BASE	335.01	13.720	17.500	12458	0.000	0.000	4.8	4.7
10YR-72HR	K-lake 1	BASE	335.01	13.720	17.500	85221	0.011	0.000	21.4	14.8
10YR-72HR	L-CANAL	BASE	335.01	13.720	14.500	0	0.000	0.000	14.8	0.0
10YR-72HR	M-PreDev	BASE	335.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	337.01	13.719	17.500	11402	0.000	-0.945	3.9	-14.1
10YR-72HR	B-DET 2	BASE	337.01	13.719	17.500	12506	0.000	-1.236	2.8	-21.0
10YR-72HR	C-DET 3	BASE	337.01	13.722	17.500	16184	-2.182	0.011	-30.6	14.7
10YR-72HR	D-DET 45	BASE	337.01	13.720	17.500	12458	0.000	0.000	4.8	4.7
10YR-72HR	K-lake 1	BASE	337.01	13.720	17.500	85221	0.011	0.000	21.4	14.8
10YR-72HR	L-CANAL	BASE	337.01	13.720	14.500	0	0.000	0.000	14.8	0.0
10YR-72HR	M-PreDev	BASE	337.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	339.01	13.719	17.500	11402	0.000	-0.945	3.9	-14.2
10YR-72HR	B-DET 2	BASE	339.01	13.719	17.500	12506	0.000	-1.236	2.8	-21.2
10YR-72HR	C-DET 3	BASE	339.01	13.722	17.500	16184	-2.182	0.011	-30.9	14.7
10YR-72HR	D-DET 45	BASE	339.01	13.720	17.500	12458	0.000	0.000	4.8	4.7
10YR-72HR	K-lake 1	BASE	339.01	13.720	17.500	85221	0.011	0.000	21.4	14.8
10YR-72HR	L-CANAL	BASE	339.01	13.720	14.500	0	0.000	0.000	14.8	0.0
10YR-72HR	M-PreDev	BASE	339.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	341.01	13.719	17.500	11402	0.000	-0.945	3.9	-14.4
10YR-72HR	B-DET 2	BASE	341.01	13.719	17.500	12506	0.000	-1.236	2.8	-21.4
10YR-72HR	C-DET 3	BASE	341.01	13.722	17.500	16184	-2.182	0.011	-31.3	14.7
10YR-72HR	D-DET 45	BASE	341.01	13.720	17.500	12458	0.000	0.000	4.8	4.7
10YR-72HR	K-lake 1	BASE	341.01	13.720	17.500	85221	0.011	0.000	21.4	14.8
10YR-72HR	L-CANAL	BASE	341.01	13.720	14.500	0	0.000	0.000	14.8	0.0
10YR-72HR	M-PreDev	BASE	341.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	343.01	13.719	17.500	11402	0.000	-0.945	3.9	-14.5
10YR-72HR	B-DET 2	BASE	343.01	13.719	17.500	12506	0.000	-1.236	2.8	-21.6
10YR-72HR	C-DET 3	BASE	343.01	13.722	17.500	16184	-2.182	0.011	-31.6	14.7
10YR-72HR	D-DET 45	BASE	343.01	13.720	17.500	12458	0.000	0.000	4.8	4.7
10YR-72HR	K-lake 1	BASE	343.01	13.720	17.500	85221	0.011	0.000	21.4	14.8
10YR-72HR	L-CANAL	BASE	343.01	13.720	14.500	0	0.000	0.000	14.8	0.0
10YR-72HR	M-PreDev	BASE	343.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	345.01	13.719	17.500	11402	0.000	-0.945	3.9	-14.7
10YR-72HR	B-DET 2	BASE	345.01	13.719	17.500	12506	0.000	-1.236	2.8	-21.8
10YR-72HR	C-DET 3	BASE	345.01	13.722	17.500	16184	-2.182	0.011	-32.0	14.7
10YR-72HR	D-DET 45	BASE	345.01	13.720	17.500	12458	0.000	0.000	4.8	4.7
10YR-72HR	K-lake 1	BASE	345.01	13.720	17.500	85221	0.011	0.000	21.4	14.8

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
10YR-72HR	L-CANAL	BASE	345.01	13.720	14.500	0	0.000	0.000	14.8	0.0
10YR-72HR	M-PreDev	BASE	345.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	347.01	13.719	17.500	11402	0.000	-0.945	3.9	-14.8
10YR-72HR	B-DET 2	BASE	347.01	13.719	17.500	12506	0.000	-1.236	2.8	-22.0
10YR-72HR	C-DET 3	BASE	347.01	13.722	17.500	16184	-2.182	0.011	-32.4	14.7
10YR-72HR	D-DET 45	BASE	347.01	13.720	17.500	12458	0.000	0.000	4.8	4.7
10YR-72HR	K-lake 1	BASE	347.01	13.720	17.500	85221	0.011	0.000	21.4	14.8
10YR-72HR	L-CANAL	BASE	347.01	13.720	14.500	0	0.000	0.000	14.8	0.0
10YR-72HR	M-PreDev	BASE	347.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	349.01	13.719	17.500	11402	0.000	-0.945	3.9	-15.0
10YR-72HR	B-DET 2	BASE	349.01	13.719	17.500	12506	0.000	-1.236	2.8	-22.2
10YR-72HR	C-DET 3	BASE	349.01	13.722	17.500	16184	-2.182	0.011	-32.7	14.8
10YR-72HR	D-DET 45	BASE	349.01	13.720	17.500	12458	0.000	0.000	4.8	4.7
10YR-72HR	K-lake 1	BASE	349.01	13.720	17.500	85221	0.011	0.000	21.4	14.8
10YR-72HR	L-CANAL	BASE	349.01	13.720	14.500	0	0.000	0.000	14.8	0.0
10YR-72HR	M-PreDev	BASE	349.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	351.01	13.719	17.500	11402	0.000	-0.945	3.9	-15.2
10YR-72HR	B-DET 2	BASE	351.01	13.719	17.500	12506	0.000	-1.236	2.8	-22.4
10YR-72HR	C-DET 3	BASE	351.01	13.722	17.500	16184	-2.182	0.011	-33.1	14.8
10YR-72HR	D-DET 45	BASE	351.01	13.720	17.500	12458	0.000	0.000	4.8	4.7
10YR-72HR	K-lake 1	BASE	351.01	13.720	17.500	85221	0.011	0.000	21.4	14.8
10YR-72HR	L-CANAL	BASE	351.01	13.720	14.500	0	0.000	0.000	14.8	0.0
10YR-72HR	M-PreDev	BASE	351.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	353.01	13.719	17.500	11402	0.000	-0.945	3.9	-15.3
10YR-72HR	B-DET 2	BASE	353.01	13.719	17.500	12506	0.000	-1.236	2.8	-22.6
10YR-72HR	C-DET 3	BASE	353.01	13.722	17.500	16184	-2.182	0.011	-33.4	14.8
10YR-72HR	D-DET 45	BASE	353.01	13.720	17.500	12458	0.000	0.000	4.8	4.7
10YR-72HR	K-lake 1	BASE	353.01	13.720	17.500	85221	0.011	0.000	21.4	14.8
10YR-72HR	L-CANAL	BASE	353.01	13.720	14.500	0	0.000	0.000	14.8	0.0
10YR-72HR	M-PreDev	BASE	353.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	355.01	13.719	17.500	11402	0.000	-0.945	3.9	-15.5
10YR-72HR	B-DET 2	BASE	355.01	13.719	17.500	12506	0.000	-1.236	2.8	-22.8
10YR-72HR	C-DET 3	BASE	355.01	13.722	17.500	16184	-2.182	0.011	-33.8	14.8
10YR-72HR	D-DET 45	BASE	355.01	13.720	17.500	12458	0.000	0.000	4.8	4.7
10YR-72HR	K-lake 1	BASE	355.01	13.720	17.500	85221	0.011	0.000	21.4	14.8
10YR-72HR	L-CANAL	BASE	355.01	13.720	14.500	0	0.000	0.000	14.8	0.0
10YR-72HR	M-PreDev	BASE	355.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	357.01	13.719	17.500	11402	0.000	-0.945	3.9	-15.6
10YR-72HR	B-DET 2	BASE	357.01	13.719	17.500	12506	0.000	-1.236	2.8	-23.0
10YR-72HR	C-DET 3	BASE	357.01	13.722	17.500	16184	-2.182	0.011	-34.2	14.8
10YR-72HR	D-DET 45	BASE	357.01	13.720	17.500	12458	0.000	0.000	4.8	4.7
10YR-72HR	K-lake 1	BASE	357.01	13.720	17.500	85221	0.011	0.000	21.4	14.8
10YR-72HR	L-CANAL	BASE	357.01	13.720	14.500	0	0.000	0.000	14.8	0.0
10YR-72HR	M-PreDev	BASE	357.01	15.687	18.000	911332	0.000	0.000	12.4	0.0
10YR-72HR	A-DET 1	BASE	359.01	13.719	17.500	11402	0.000	-0.945	3.9	-15.8
10YR-72HR	B-DET 2	BASE	359.01	13.719	17.500	12506	0.000	-1.236	2.8	-23.2
10YR-72HR	C-DET 3	BASE	359.01	13.722	17.500	16184	-2.182	0.011	-34.5	14.8
10YR-72HR	D-DET 45	BASE	359.01	13.720	17.500	12458	0.000	0.000	4.8	4.7
10YR-72HR	K-lake 1	BASE	359.01	13.720	17.500	85221	0.011	0.000	21.4	14.8
10YR-72HR	L-CANAL	BASE	359.01	13.720	14.500	0	0.000	0.000	14.8	0.0
10YR-72HR	M-PreDev	BASE	359.01	15.687	18.000	911332	0.000	0.000	12.4	0.0

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
10YR-72HR	A-DET 1	BASE	360.00	13.719	17.500	11402	0.000	-0.945	3.9	-15.9
10YR-72HR	B-DET 2	BASE	360.00	13.719	17.500	12506	0.000	-1.236	2.8	-23.3
10YR-72HR	C-DET 3	BASE	360.00	13.722	17.500	16184	-2.182	0.011	-34.7	14.8
10YR-72HR	D-DET 45	BASE	360.00	13.720	17.500	12458	0.000	0.000	4.8	4.7
10YR-72HR	K-lake 1	BASE	360.00	13.720	17.500	85221	0.011	0.000	21.4	14.8
10YR-72HR	L-CANAL	BASE	360.00	13.720	14.500	0	0.000	0.000	14.8	0.0
10YR-72HR	M-PreDev	BASE	360.00	15.687	18.000	911332	0.000	0.000	12.4	0.0

Appendix

The next step is to compute the project-specific S-value to use for determining the runoff volume which will be discharged from the site. The depth to the water table will be 3 feet (17.0 - 14.0 = 3.0), consequently the total amount of water which can be stored under pervious surfaces will be 4.95 inches. If 15% of the project will be in lakes and 35% will be covered by impervious surfaces, then the remainder, or 50% will be pervious areas and the appropriate weighted S-value will be:

$$4.95" \times (1 - (.15+.35)) = 2.48" = S$$

Figure E-1 is a graphical representation of the cumulative water storage capabilities of the soil profile for the developed and undisturbed conditions versus the depth to the average wet season water table for the typical sandy soils found within the South Florida Water Management District boundaries.

In about April, 1993, the US SCS furnished the District test data for Immokalee and Riviera soils which show less soil storage than the typical soils described above. The following table shows the average values as compared to the typical values (Coastal). Although the lesser storage values result in higher SCS runoff curve numbers, the depressional and flatwoods soils typically are in flat and depressed areas with standing water, thus the areas have low runoff potential.

SOIL STORAGE

Depth to W.T.	Coastal (1) Stor. (In.)	CN	Flatwoods (2) Stor. (In.)	CN	Depressional (3) Stor. (In.)	CN
1'	0.6	94	0.6	94	0.6	94
2'	2.5	80	2.5	80	2.1	83
3'	6.6	60	5.4	65	4.4	69
4'	10.9	48	9.0	53	6.8	60

(1) Sandy soils 0 - 40" thick with water tables dropping below 40" - St. Lucie series is representative

(2) Water tables 15" - 40" - Immokalee series is representative

(3) Water tables above ground - 15" - Riviera and Pompano series are representative

Figure E-1 is also a graphical comparison of the cumulative water storage capabilities of the soil profile for flatwoods and depressional storage.

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

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

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

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

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

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

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

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

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

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

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

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

Poor: Factors impair infiltration and tend to increase runoff.

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

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

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

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

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

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

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

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

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

Evaluation of Current Stormwater Design Criteria within the State of Florida

Final Report

Prepared for:

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

FDEP Contract No. SO108

June 2007

Prepared By:

Harvey H. Harper, Ph.D., P.E.
David M. Baker, P.E.

Environmental Research & Design, Inc.
3419 Trentwood Blvd., Suite 102
Orlando, FL 32812

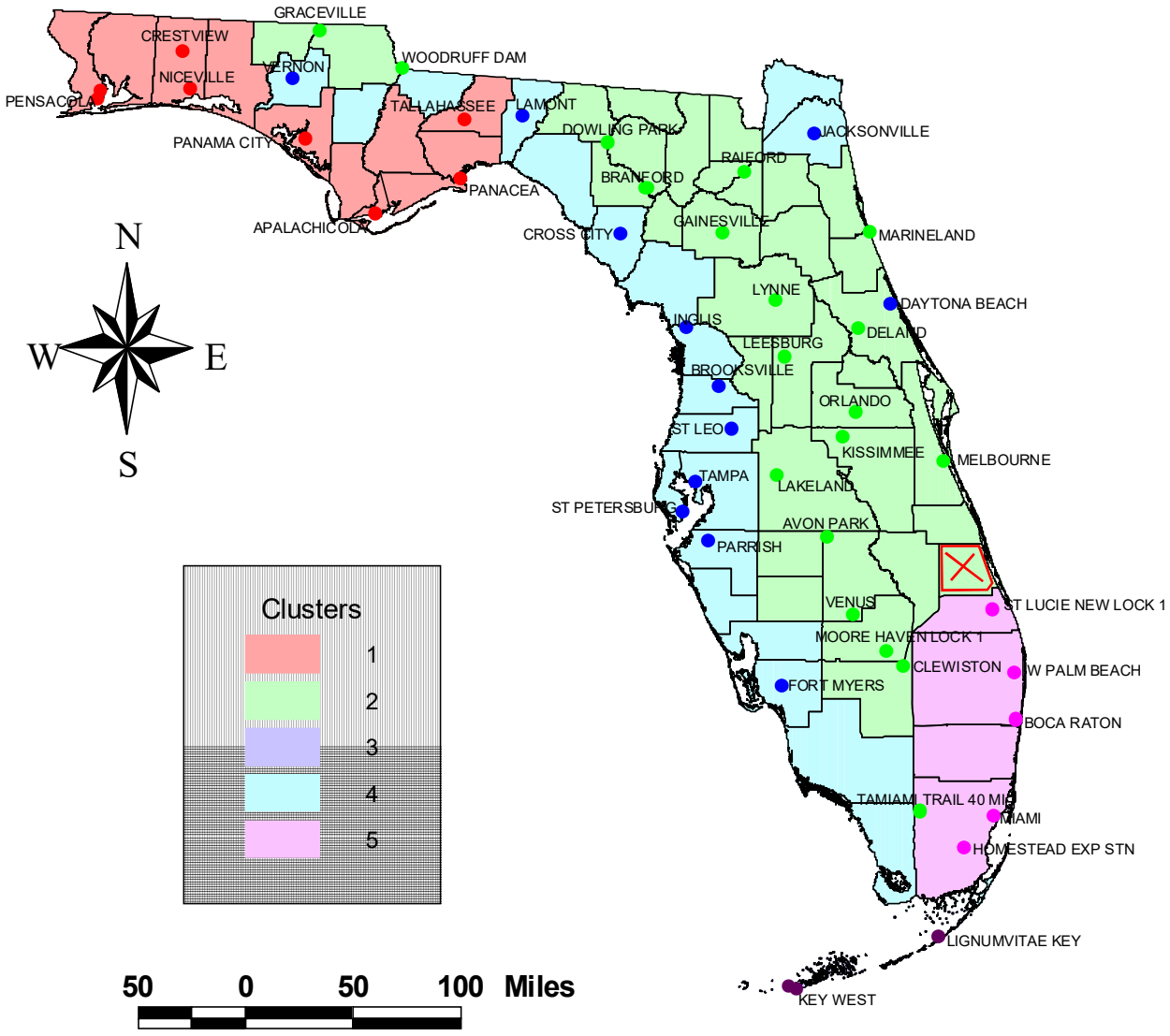


Figure 4-3. Meteorological Zones Identified Using Cluster Analysis.

Unfortunately, not all counties in Florida have long-term meteorological monitoring sites with hourly data. For purposes of designating meteorological zones, counties without a monitoring site were grouped according to the meteorological characteristics of adjacent counties with monitoring sites. The resulting zones appear to be relatively intuitive with respect to meteorological processes. The cluster groupings only have two apparent outliers, Daytona Beach and Tamiami Trail, which appear out of place. However, in a data set containing 45 points, an analysis conducted at a 95% probability level would be expected to have approximately 2-3 outlier values. A listing of counties included in each meteorological zone is given in Table 4-23.

TABLE 4-23

COUNTIES INCLUDED IN THE DESIGNATED METEORLOGICAL ZONES

ZONE				
1	**2**	**3**	**4**	**5**
Okaloosa	St. Lucie	Monroe	Washington	Martin
Liberty	Columbia		Manatee	Broward
Bay	DeSoto		Levy	Miami-Dade
Wakulla	St. Johns		Pasco	Palm Beach
Leon	Seminole		Pinellas	
Santarosa	Sumter		Lee	
Gulf	Flagler		Hillsborough	
Franklin	Suwannee		Hernando	
Escambia	Gadsden		Sarasota	
Walton	Gilchrist		Duval	
	Glades		Dixie	
	Calhoun		Collier	
	Hamilton		Citrus	
	Hardee		Charlotte	
	Hendry		Taylor	
	Union		Nassau	
	Highlands		Jefferson	
	Putnam		Monroe	
	Holmes			
	Indian River			
	Jackson			
	Volusia			
	Lafayette			
	Lake			
	Polk			
	Brevard			
	Bradford			
	Baker			
	Madison			
	Osceola			
	Marion			
	Orange			
	Clay			
	Okeechobee			
	Alachua			

A summary of mean runoff coefficients for each cluster as a function of land use and hydrologic soil group is given in Table 4-24. The values summarized in this table reflect the mean runoff coefficients for each land use and hydrologic soil group and each meteorological monitoring site included in each of the five clusters. The values summarized in Table 4-24 reflect differences in runoff coefficients as a result of frequency distributions of common rain events only. This analysis does not include variability in rainfall depth throughout the State which must be multiplied times the mean runoff coefficients to obtain an estimate of annual runoff volume.

$$BOD_i = BOD_o \times exp(-K \times t)$$

where:

BOD_t = BOD at time, t (mg/l)

BOD_o = initial BOD (mg/l)

t = time (days)

K = decomposition constant ($time^{-1}$)

BOD decomposition constants (K) in surface waters are temperature-dependent but are typically on the order of 0.1/day. A graphical representation of the theoretical removal of BOD as a function of time, based upon a decomposition constant of 0.1/day, is given in Figure 6-1. This relationship can be used to estimate the time required to achieve a certain BOD removal efficiency within a wet detention pond. A removal efficiency of approximately 80% is achieved for BOD after a residence time of approximately 15 days, with removal efficiencies in excess of 95% after approximately 30-35 days. As a result, the removal of BOD in aquatic systems occurs at a much more rapid rate than removal of total nitrogen or total phosphorus, as indicated in Figures 5-10 and 5-11. Therefore, if a stormwater management system provides the required removal efficiency for both total nitrogen and total phosphorus, the system will also easily provide the same pollutant removal efficiency for BOD.

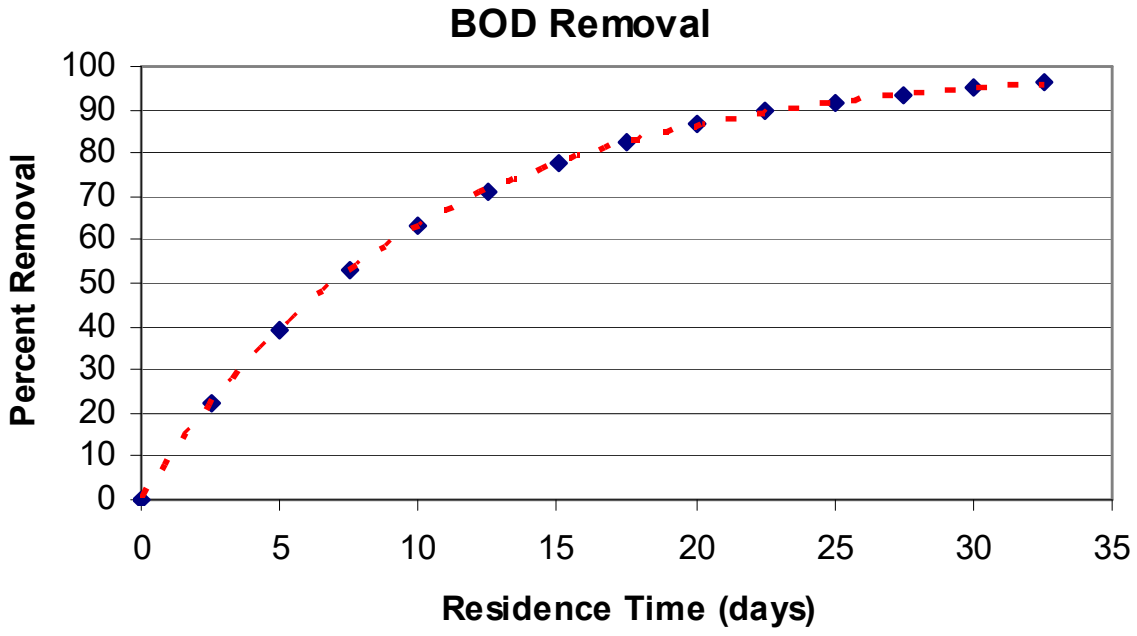


Figure 6-1. Theoretical Removal of BOD as a Function of Residence Time in a Wet Detention Pond.

4.1.5 Low-Intensity Commercial Areas

For the purposes of this evaluation, the term intensity refers to the level of use of the commercial area rather than an indication of the type of business or density of development. Low-intensity commercial areas are defined as areas which receive only a moderate amount of traffic volume and where cars may be parked during the day for extended periods of time. Since most commercial activities themselves generate relatively little pollutant loading, the majority of pollutant deposition occurs as a result of automobiles and trucks operating within the commercial area. Low-intensity commercial areas include schools, churches, professional office sites, and small shopping centers. High-intensity commercial areas include downtown business districts and large regional shopping areas.

A summary of hydrologic characteristics from low-intensity commercial stormwater characterization studies is given in Table B.3. Nine separate studies were identified in the available literature, with watershed areas ranging from 2.17-50.70 acres. Percentage imperviousness for the commercial sites range from 60% to approximately 100%. Eight of the nine studies utilize curb and gutter stormsewer systems, with swales utilized for drainage conveyance at the Florida Aquarium site.

A summary of mean stormwater emc values from low-intensity commercial stormwater studies is given in Table 4-7. Characterization data for total nitrogen, total phosphorus, and TSS are provided for each of the nine studies, with eight of the nine studies providing characterization data for BOD. As observed in previous land use categories, characterization data for heavy metals is somewhat limited. In general, low-intensity commercial areas are characterized by relatively low levels of total nitrogen, total phosphorus, and BOD, although TSS concentrations are somewhat elevated. Runoff characteristics reported by Harper and Herr (1993) are not included in calculation of the mean value since the runoff in this study received pre-treatment in a vegetated swale prior to collection.

TABLE 4-7

SUMMARY OF MEAN STORMWATER CHARACTERISTICS FROM LOW-INTENSITY COMMERCIAL STORMWATER STUDIES

LOCATION	REFERENCE	MEAN emc VALUE (mg/l)										
		TN	TP	BOD	TSS	Cd	Cr	Cu	Fe	Ni	Pb	Zn
Orlando Areawide Study[1]	ECFRPC (1978)	0.89	0.16	3.6	146	--	--	--	--	--	0.068[2]	--
Ft. Lauderdale - Coral Ridge Mall	Miller (1979)	1.10	0.10	5.4	45.0	--	--	0.015	--	--	0.387[2]	0.128
Tampa - Norma Park	U.S. EPA (1983)	1.19	0.15	12.0	22.0	--	--	--	--	--	0.046[2]	0.037
Orlando - International Market Place	Harper (1988)	1.53	0.19	11.6	111	0.008	0.013	0.031	1.10	0.028	0.136[2]	0.168
DeBary[3]	Harper and Herr (1993)	0.761	0.260	6.9	79.1	0.0005	0.003	0.010	0.582	--	0.009	0.028
Bradfordville	ERD (2000)	2.14	0.160	9.0	38.3	--	--	--	--	--	--	--
Tallahassee - Cross Creek Shopping Center	COT and ERD (2002)	0.925	0.15	8.0	15.0	--	--	0.008	--	--	0.002	0.045
Sarasota County	ERD (2004)	0.88	0.31	4.3	39.9	--	--	--	--	--	--	--
Florida Aquarium - Tampa	Teague, et al. (2005)	0.761	0.215	--	42.4	0.003	--	0.019	1.17	--	0.008	0.090
Overall Mean Value		**1.18**	**0.179**	**7.7**	**57.5**	**0.006**	**0.013**	**0.018**	**1.14**	**0.028**	**0.005**	**0.094**

1. Average of studies performed on a parking lot, motel complex, and commercial strip development
2. Data not included in calculation of mean value
3. Values excluded from means due to swale pre-treatment

Zone 2
Mean Annual Runoff Coefficients (C Values) as a Function of DCIA Percentage and Non-DCIA Curve Number (CN)

82.9%

NDCIA CN	Percent DCIA																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
30	0.002	0.043	0.083	0.123	0.164	0.204	0.244	0.285	0.325	0.366	0.406	0.446	0.487	0.527	0.567	0.608	0.648	0.688	0.729	0.769	0.809
35	0.004	0.044	0.085	0.125	0.165	0.205	0.246	0.286	0.326	0.366	0.407	0.447	0.487	0.528	0.568	0.608	0.648	0.689	0.729	0.769	0.809
40	0.007	0.047	0.087	0.127	0.167	0.207	0.248	0.288	0.328	0.368	0.408	0.448	0.488	0.528	0.569	0.609	0.649	0.689	0.729	0.769	0.809
45	0.010	0.050	0.090	0.130	0.170	0.210	0.250	0.290	0.330	0.370	0.410	0.450	0.490	0.530	0.570	0.610	0.650	0.690	0.729	0.769	0.809
50	0.015	0.055	0.095	0.134	0.174	0.214	0.254	0.293	0.333	0.373	0.412	0.452	0.492	0.531	0.571	0.611	0.651	0.690	0.730	0.770	0.809
55	0.022	0.061	0.101	0.140	0.179	0.219	0.258	0.298	0.337	0.376	0.416	0.455	0.494	0.534	0.573	0.613	0.652	0.691	0.731	0.770	0.809
60	0.030	0.069	0.108	0.147	0.186	0.225	0.264	0.303	0.342	0.381	0.420	0.459	0.498	0.537	0.576	0.615	0.654	0.693	0.731	0.770	0.809
65	0.042	0.080	0.119	0.157	0.195	0.234	0.272	0.311	0.349	0.387	0.426	0.464	0.502	0.541	0.579	0.618	0.656	0.694	0.733	0.771	0.809
70	0.057	0.095	0.133	0.170	0.208	0.245	0.283	0.321	0.358	0.396	0.433	0.471	0.509	0.546	0.584	0.621	0.659	0.697	0.734	0.772	0.809
75	0.079	0.116	0.152	0.189	0.225	0.262	0.298	0.335	0.371	0.408	0.444	0.481	0.517	0.554	0.590	0.627	0.663	0.700	0.736	0.773	0.809
80	0.111	0.146	0.181	0.216	0.251	0.285	0.320	0.355	0.390	0.425	0.460	0.495	0.530	0.565	0.600	0.635	0.670	0.705	0.740	0.774	0.809
85	0.160	0.192	0.225	0.257	0.290	0.322	0.355	0.387	0.420	0.452	0.485	0.517	0.550	0.582	0.614	0.647	0.679	0.712	0.744	0.777	0.809
90	0.242	0.270	0.299	0.327	0.355	0.384	0.412	0.440	0.469	0.497	0.526	0.554	0.582	0.611	0.639	0.667	0.696	0.724	0.753	0.781	0.809
95	0.404	0.424	0.444	0.464	0.485	0.505	0.525	0.546	0.566	0.586	0.606	0.627	0.647	0.667	0.688	0.708	0.728	0.749	0.769	0.789	0.809
98	0.595	0.605	0.616	0.627	0.638	0.648	0.659	0.670	0.680	0.691	0.702	0.713	0.723	0.734	0.745	0.756	0.766	0.777	0.788	0.799	0.809

0.69

Table B-4. Estimated runoff and TN and TP loads [in pounds per acre per year (lbs/ac/yr)] and concentrations [in milligrams per liter (mg/L)] for 2004 land use categories in the St. Lucie River Watershed.

Land Use Category	Land Use Description	FLUCCS	Runoff (in/yr)	Unit TN Load (lbs/ ac/yr)	TN Concen- tration (mg/L)	Unit TP Load (lbs/ ac/yr)	TP Concen- tration (mg/L)
Residential Low Density	Residential Low Density[1]	1100	17.5676	4.29	1.08	0.49	0.12
Residential Medium Density	Residential Medium Density[2]	1200	20.7617	6.24	1.33	1.40	0.30
Residential High Density	Residential High Density[2]	1300	23.9558	9.36	1.73	3.00	0.55
Other Urban	Commercial and Services[2]	1400	25.5528	8.58	1.48	1.40	0.24
	Industrial[2]	1500	27.1499	7.80	1.27	2.40	0.39
	Extractive[2]	1600	23.9558	5.46	1.01	0.66	0.12
	Institutional[2]	1700	23.9558	5.46	1.01	2.40	0.44
	Recreational[2]	1800	17.5676	5.46	1.37	0.96	0.24
Improved Pastures	Improved Pastures	2110	19.1646	8.66	2.00	1.90	0.44
Unimproved Pastures	Unimproved Pastures	2120	15.9705	4.29	1.19	0.92	0.25
Woodland Pastures/Rangeland	Woodland Pastures	2130	15.9705	3.20	0.89	0.88	0.24
	Rangeland	3000	15.9705	3.20	0.89	0.28	0.08
Row Crops	Row Crops	2140	22.3587	11.70	2.31	4.50	0.89
Sugar Cane	Sugar Cane	2156	19.1646	6.24	1.44	0.63	0.15
Citrus	Citrus	2210	19.1646	6.63	1.53	1.80	0.42
Sod Farms	Sod Farms	2420	19.1646	7.02	1.62	2.52	0.58
Ornamentals	Ornamentals	2430	19.1646	9.36	2.16	2.90	0.67
Horse Farms	Horse Farms	2510	15.9705	12.48	3.45	1.82	0.50
Dairies	Dairies	2520	15.9705	15.60	4.32	9.38	2.60
Other Areas	Field Crops	2150	15.9705	5.17	1.43	2.96	0.82
	Mixed Crops	2160	19.1646	8.58	1.98	3.50	0.81
	Fruit Orchards	2220	19.1646	7.02	1.62	2.30	0.53
	Other Groves	2230	19.1646	7.02	1.62	2.30	0.53
	Cattle Feeding Operations	2310	19.1646	42.16	9.72	8.96	2.07
	Poultry Feeding Operations	2320	19.1646	7.80	1.80	1.50	0.35
	Tree Nurseries	2410	15.9705	9.36	2.59	2.90	0.80
	Specialty Farms	2500	15.9705	6.24	1.73	1.82	0.50
	Aquaculture	2540	7.98525	7.80	4.32	0.70	0.39
	Fallow Crop Land	2610	19.1646	5.46	1.26	0.70	0.16
Tree Plantations	Tree Plantations	4400	15.9705	2.42	0.67	0.18	0.05
Water	Water	5000	3.1941	0.70	0.97	0.05	0.07
Natural Areas	Upland Forests (not including 4400s)	4000	14.3735	1.95	0.60	0.28	0.09
	Wetlands	6000	1.59705	1.17	3.24	0.01	0.03
	Barren Land	7000	23.9558	5.46	1.01	0.75	0.14
	Open Land	1900	15.9705	3.12	0.86	0.28	0.08
Transportation	Transportation	8100	27.1499	7.18	1.17	1.65	0.27
Communication/Utilities	Communications	8200	15.9705	4.68	1.30	0.48	0.13
	Utilities	8300	15.9705	4.68	1.30	0.48	0.13

[1]Assumed to be on septic systems.

[2]Assumed discharge from wastewater treatment outside of the watershed.

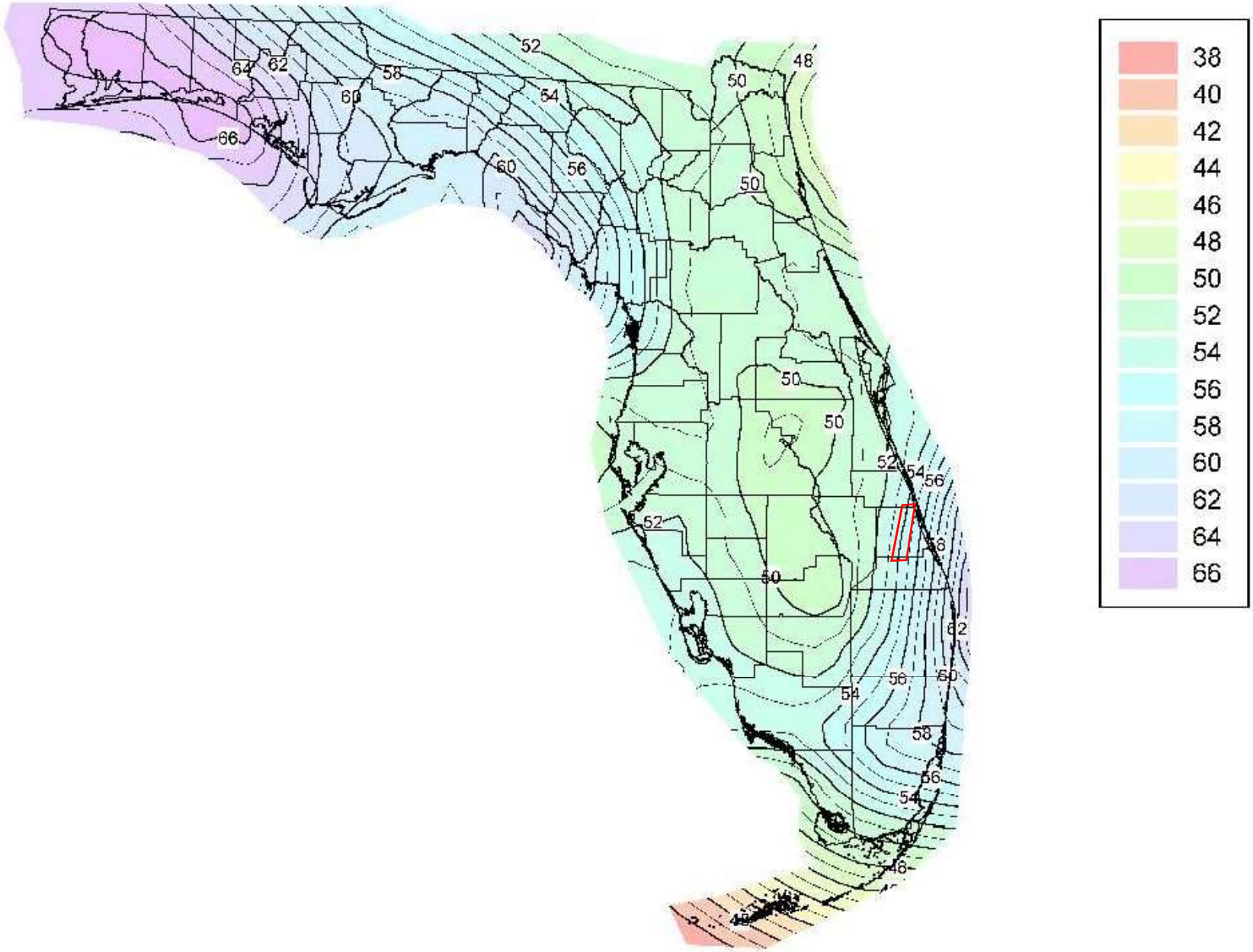
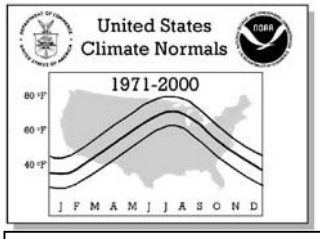


Figure 3-2. Isopleths of Mean Annual Precipitation in Florida from 1971-2000.



CLIMATOGRAPHY OF THE UNITED STATES NO. 81

Monthly Normals of Temperature, Precipitation, and Heating and Cooling Degree Days

1971-2000

FLORIDA

PRECIPITATION NORMALS (Total in Inches)

No.	Station Name	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
001	APALACHICOLA AP	4.87	3.76	4.95	3.00	2.62	4.30	7.31	7.29	7.10	4.18	3.62	3.51	56.51
002	ARCADIA	2.13	2.43	3.10	1.86	3.87	7.81	7.64	7.02	6.77	2.87	2.08	1.76	49.34
003	ARCHBOLD BIO STATION	2.32	2.38	3.25	2.33	3.98	7.74	7.66	7.42	6.50	3.00	2.07	1.95	50.60
004	AVON PARK 2 W	2.48	2.41	3.02	2.17	3.63	8.25	6.81	7.18	5.98	3.02	2.27	1.87	49.09
005	BABSON PARK 1 ENE	2.06	2.56	3.13	1.95	4.10	6.86	8.23	7.29	5.65	2.29	2.48	1.75	48.35
006	BARTOW	2.51	2.82	3.11	2.53	3.81	6.78	8.56	6.52	6.68	2.71	2.18	2.37	50.58
007	BELLE GLADE EXP STN	2.51	1.88	2.65	2.41	5.04	7.33	7.34	7.16	7.09	3.54	2.79	1.82	51.56
008	BITHLO	2.35	2.69	2.81	1.88	3.47	7.26	6.86	8.06	6.14	3.75	2.14	1.87	49.28
009	BRADENTON 5 ESE	2.94	2.66	3.36	1.83	2.85	7.41	8.71	9.43	7.25	2.88	2.35	2.45	54.12
010	BROOKSVILLE CHIN HILL	3.27	3.24	4.22	2.62	3.40	7.24	7.16	8.24	5.96	2.38	2.39	2.45	52.57
011	BUSHNELL 2 E	3.43	3.02	3.93	2.34	3.79	6.18	6.43	7.24	6.00	2.14	2.18	2.52	49.20
012	CANAL POINT USDA	2.60	2.27	3.44	2.42	4.61	7.64	6.22	6.69	7.28	3.91	2.95	2.07	52.10
013	CHIPLEY 3 E	6.09	4.81	6.11	3.84	4.21	5.24	6.92	5.38	4.76	2.90	4.12	3.86	58.24
014	CLERMONT 7 S	3.11	2.58	3.81	2.18	3.67	7.86	6.78	6.96	5.59	2.40	2.40	2.40	49.74
015	CLEWISTON US ENGINEERS	2.38	2.01	2.68	2.16	4.50	7.15	6.58	6.28	4.99	2.87	2.28	1.52	45.40
016	CRESCENT CITY	3.34	2.83	4.06	2.56	3.52	6.53	6.34	6.28	6.11	3.12	2.55	2.55	49.79
017	CRESTVIEW BOB SIKES AP	6.49	4.91	7.06	4.26	4.94	7.41	6.83	6.34	4.88	3.02	4.20	3.60	63.94
018	CROSS CITY 2 WNW	4.41	3.54	4.42	3.48	3.06	6.34	8.92	9.67	6.10	2.93	2.35	3.27	58.49
019	DAYTONA BEACH INTL AP	3.13	2.74	3.84	2.54	3.26	5.69	5.17	6.09	6.61	4.48	3.03	2.71	49.29
020	DE FUNIAK SPRINGS	5.61	5.39	6.23	3.93	4.95	6.60	7.67	6.77	6.03	3.23	4.76	4.35	65.52
021	DELAND 1 SSE	3.35	2.96	3.84	2.80	4.27	7.60	7.88	7.70	7.17	4.09	2.72	2.65	57.03
022	DESOTO CITY 8 SW	2.31	2.57	3.10	2.20	3.61	8.21	7.00	6.97	6.48	2.64	2.30	1.62	49.01
023	DEVILS GARDEN	2.37	2.09	2.78	2.63	4.33	8.58	7.52	8.10	6.53	3.52	2.58	1.64	52.67
024	EVERGLADES	1.71	1.49	1.92	1.93	3.56	9.89	7.34	8.62	8.23	3.80	1.89	1.72	52.10
025	FEDERAL POINT	3.09	2.89	3.68	2.34	3.55	6.67	6.16	6.57	6.83	3.34	2.70	2.72	50.54
026	FERNANDINA BEACH	3.82	3.17	4.01	2.91	2.87	5.30	5.80	5.34	7.73	4.22	2.49	2.73	50.39
027	FLAMINGO RANGER STN	1.94	1.63	1.87	2.06	5.06	7.25	4.73	7.43	7.20	4.26	2.46	1.57	47.46
028	FORT DRUM 5 NW	2.27	2.47	3.78	2.43	4.47	8.05	7.60	7.27	6.60	3.73	2.30	1.86	52.83
029	FORT GREEN 12 WSW	2.43	2.62	3.31	2.09	3.42	8.18	8.29	7.78	6.86	2.62	2.13	2.23	51.96
030	FORT LAUDERDALE	2.94	2.70	2.80	3.91	6.33	10.01	6.70	6.88	8.26	6.44	4.57	2.65	64.19
031	FORT MYERS (PAGE AP)	2.23	2.10	2.74	1.67	3.42	9.77	8.98	9.54	7.86	2.59	1.71	1.58	54.19
032	FORT PIERCE	2.70	2.99	3.27	2.77	4.38	5.84	5.79	6.35	7.81	5.82	3.50	2.28	53.50
033	FOUNTAIN 3 SSE	5.83	4.69	6.38	3.05	4.39	7.20	8.00	6.50	6.61	2.95	4.01	4.41	64.02
034	GAINESVILLE 3 WSW	4.13	3.90	3.94	3.03	3.70	5.87	5.34	6.69	5.33	1.89	2.58	3.05	49.45
035	GAINESVILLE 11 WNW	3.95	2.34	4.31	2.92	3.34	6.20	7.50	7.89	4.05	2.99	1.87	2.20	49.56
036	GAINESVILLE RGNL AP	3.51	3.39	4.26	2.86	3.23	6.78	6.10	6.63	4.37	2.50	2.17	2.56	48.36
037	GLEN ST MARY 1 W	4.34	3.41	4.52	3.29	3.58	6.53	6.33	7.33	5.36	3.10	2.23	2.92	52.94
038	HASTINGS ARC	3.39	2.69	3.94	2.72	3.47	6.98	5.56	6.37	7.40	3.94	2.88	2.65	51.99
039	HIALEAH	2.34	2.22	3.20	3.90	6.08	10.24	7.00	9.20	8.88	6.56	3.83	2.59	66.04
040	HIGH SPRINGS	4.35	3.69	4.33	3.28	3.63	6.88	7.53	7.92	4.56	2.96	2.28	2.74	54.15
041	HILLSBOROUGH RVR ST PK	3.35	3.12	3.41	2.23	3.21	7.87	7.27	8.16	7.23	2.71	2.72	3.28	54.56
042	HOMESTEAD EXP STN	1.94	1.78	1.88	2.74	5.77	9.51	6.82	9.16	8.90	5.49	2.59	1.61	58.19
043	IMMOKALEE 3 NNW	2.33	2.26	2.97	2.36	4.08	7.78	7.27	7.49	6.61	2.88	2.27	1.77	50.07
044	INVERNESS 3 SE	3.55	2.96	4.17	2.40	3.33	7.40	7.05	7.52	5.93	2.63	2.27	2.56	51.77
045	JACKSONVILLE CECIL NAS	3.50	3.20	4.16	2.91	3.25	6.54	6.39	7.07	6.69	3.24	2.28	2.65	51.88
046	JACKSONVILLE INTL AP	3.69	3.15	3.93	3.14	3.48	5.37	5.97	6.87	7.90	3.86	2.34	2.64	52.34
047	JACKSONVILLE NAS	3.39	2.59	3.97	2.77	3.22	5.78	5.99	5.87	7.28	3.30	2.35	2.45	48.96
048	JACKSONVILLE BEACH	3.56	2.84	3.92	2.87	3.03	5.70	5.21	6.11	7.53	5.04	2.36	2.75	50.92
049	JASPER	4.96	4.13	5.16	3.45	3.33	6.03	5.62	6.27	4.20	2.87	2.79	3.43	52.24
050	KEY WEST INTL AP	2.22	1.51	1.86	2.06	3.48	4.57	3.27	5.40	5.45	4.34	2.64	2.14	38.94
051	KEY WEST NAS	2.50	1.65	1.80	2.12	3.88	5.42	4.11	5.48	6.33	4.58	2.62	2.24	42.73
052	KISSIMMEE 2	2.39	2.72	3.32	2.02	3.83	6.02	6.55	7.32	6.01	3.17	2.42	2.24	48.01
053	LA BELLE	2.31	2.16	2.89	2.29	3.91	8.88	7.69	7.78	6.57	3.35	2.34	1.71	51.88
054	LAKE ALFRED EXP STN	2.52	2.75	3.43	1.99	4.12	6.88	7.11	7.43	6.53	2.96	2.29	2.28	50.29
055	LAKE CITY 2 E	4.52	3.61	4.90	3.15	3.71	6.91	6.74	7.19	4.67	2.82	2.42	2.96	53.60
056	LAKELAND	2.45	2.73	3.38	2.04	3.81	7.00	7.51	7.33	6.33	2.29	2.12	2.14	49.13
057	LISBON	3.32	2.87	4.03	2.80	4.13	6.13	5.67	6.20	5.76	2.54	2.53	2.65	48.63
058	LIVE OAK	4.99	4.01	5.33	3.29	3.23	6.06	6.35	6.13	4.64	3.26	2.43	3.11	52.83
059	LOXAHATCHEE	2.99	2.23	2.97	2.27	5.33	8.84	7.30	5.58	9.25	5.18	4.44	2.06	58.44
060	MADISON	5.50	4.11	5.59	3.22	3.10	5.82	6.18	5.38	3.94	2.96	3.31	4.07	53.18
061	MAYPORT PILOT STN	2.70	2.58	3.23	2.41	2.13	4.06	4.21	4.45	7.15	4.16	1.74	2.20	41.02
062	MAYO	4.88	3.66	4.85	3.07	3.19	5.82	7.60	7.97	5.07	3.01	2.52	3.23	54.87
063	MELBOURNE WFO	2.48	2.49	2.92	2.08	3.94	5.83	5.38	5.78	7.20	4.76	3.12	2.31	48.29
064	MIAMI BEACH	2.44	2.14	2.20	2.81	4.90	6.90	3.63	5.44	6.31	4.53	3.32	1.98	46.60
065	MIAMI INTL AP	1.88	2.07	2.56	3.36	5.52	8.54	5.79	8.63	8.38	6.19	3.43	2.18	58.53
066	MILTON EXPERIMENT STN	6.39	5.04	7.32	4.35	4.83	7.11	8.17	6.62	6.12	3.66	5.47	4.40	69.48
067	MONTICELLO 3 W	5.63	4.64	6.00	3.63	4.03	5.60	6.50	6.73	4.70	3.32	3.63	3.90	58.31
068	MOORE HAVEN LOCK 1	2.04	2.05	2.93	2.35	3.70	6.98	6.67	6.80	6.42	2.95	1.91	1.64	46.44
069	MOUNTAIN LAKE	2.38	2.43	3.12	2.02	3.88	7.12	7.45	6.64	5.83	2.50	2.23	2.10	47.70

5.2.2.1 SJRWMD Design Criteria

Wet detention ponds designed according to St. Johns River Water Management District (SJRWMD) criteria are characterized by relatively short residence times, ranging from approximately 14-21 days under wet season conditions. Virtually all existing research studies on wet detention systems, as summarized in Table 5-2, have been performed on shallow ponds with relatively short residence times. Six of the eight studies summarized in Table 5-2 are located in the St. Johns River Water Management District, although designs for some of the earlier studies may be different from current design criteria.

A summary of estimated performance efficiencies of wet detention ponds designed according to SJRWMD criteria is given in Table 5-8. The values summarized in this table reflect the overall mean treatment efficiencies for wet detention systems summarized in Table 5-2. The values summarized in Table 5-8 correspond closely to performance efficiencies measured by Harper and Herr (1993) for a wet detention pond constructed according to SJRWMD criteria. Based upon the estimated performance efficiency summarized in Table 5-8, with the possible exception of TSS, wet detention ponds designed according to SJRWMD criteria fail to meet the 80% removal criteria outlined in Chapter 62-40.

TABLE 5-8

ESTIMATED PERFORMANCE EFFICIENCY OF WET DETENTION PONDS DESIGNED ACCORDING TO SJRWMD CRITERIA

PARAMETER	ANNUAL MASS REMOVAL (%)
Total N	25
Total P	65
TSS	75-85
BOD	65-70

5.2.2.2 SFWMD Design Criteria

As discussed in a previous section, wet detention systems designed within the South Florida Water Management District (SFWMD) are often excavated to water depths of 20 ft or more. The SFWMD does not have any specific limitation on pond depth, and developers often dig deep wet detention ponds to provide additional fill for low areas within a development. This technique can result in ponds with substantially extended detention times, often in excess of 200 days.

Mean Annual Mass Removal Efficiencies for 0.75-inches of Retention in Zone 2

NDCIA	Percent DCIA																			
CN	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
30	97.9	98.2	97.5	96.2	94.4	92.1	89.6	86.9	84.1	81.3	78.5	75.9	73.3	70.9	68.5	66.3	64.2	62.2	60.4	58.6
35	96.7	97.3	96.8	95.6	93.8	91.7	89.2	86.6	83.8	81.1	78.4	75.7	73.2	70.8	68.5	66.3	64.2	62.2	60.4	58.6
40	95.0	96.1	95.9	94.8	93.1	91.1	88.7	86.2	83.5	80.8	78.2	75.6	73.1	70.7	68.4	66.2	64.2	62.2	60.4	58.6
45	93.0	94.7	94.6	93.7	92.2	90.3	88.1	85.6	83.1	80.5	77.9	75.4	72.9	70.6	68.3	66.2	64.1	62.2	60.4	58.6
50	90.7	92.8	93.1	92.4	91.1	89.3	87.3	85.0	82.5	80.0	77.5	75.1	72.7	70.4	68.2	66.1	64.0	62.1	60.3	58.6
55	88.0	90.6	91.1	90.7	89.7	88.1	86.3	84.1	81.8	79.4	77.0	74.7	72.4	70.1	68.0	65.9	64.0	62.1	60.3	58.6
60	84.8	87.9	88.8	88.7	88.0	86.7	85.0	83.0	80.9	78.7	76.5	74.2	72.0	69.8	67.8	65.8	63.8	62.0	60.3	58.6
65	81.5	84.9	86.2	86.3	85.8	84.8	83.4	81.7	79.8	77.8	75.7	73.6	71.5	69.5	67.5	65.5	63.7	61.9	60.2	58.6
70	78.1	81.7	83.1	83.5	83.2	82.5	81.4	80.0	78.4	76.6	74.7	72.8	70.9	68.9	67.1	65.2	63.5	61.8	60.2	58.6
75	74.9	78.1	79.6	80.2	80.2	79.8	79.0	77.9	76.5	75.0	73.4	71.7	70.0	68.3	66.5	64.8	63.2	61.6	60.1	58.6
80	71.6	74.3	75.8	76.5	76.7	76.5	76.0	75.2	74.1	73.0	71.7	70.3	68.8	67.3	65.8	64.3	62.8	61.4	60.0	58.6
85	68.6	70.6	71.8	72.5	72.8	72.7	72.4	71.9	71.2	70.3	69.3	68.3	67.1	65.9	64.7	63.5	62.2	61.0	59.8	58.6
90	65.7	66.9	67.7	68.1	68.3	68.3	68.2	67.9	67.5	66.9	66.3	65.6	64.9	64.0	63.2	62.3	61.4	60.5	59.5	58.6
95	62.7	63.0	63.2	63.3	63.4	63.4	63.3	63.2	63.0	62.8	62.5	62.2	61.8	61.4	61.0	60.5	60.1	59.6	59.1	58.6
98	60.8	60.8	60.8	60.7	60.7	60.6	60.5	60.4	60.3	60.2	60.1	59.9	59.8	59.6	59.5	59.3	59.2	59.0	58.8	58.6

Mean Annual Mass Removal Efficiencies for 1.00-inches of Retention in Zone 2

82.9%

NDCIA	Percent DCIA																			
CN	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
30	98.5	98.8	98.5	97.9	96.9	95.6	94.1	92.3	90.4	88.4	86.3	84.2	82.1	80.0	77.9	75.9	74.0	72.2	70.3	68.6
35	97.5	98.2	98.0	97.4	96.5	95.3	93.7	92.0	90.2	88.2	86.2	84.1	82.0	79.9	77.9	75.9	74.0	72.1	70.3	68.6
40	96.4	97.3	97.2	96.8	95.9	94.8	93.3	91.7	89.9	87.9	85.9	83.9	81.8	79.8	77.8	75.8	73.9	72.1	70.3	68.6
45	94.8	96.1	96.3	96.0	95.2	94.1	92.7	91.2	89.4	87.6	85.6	83.6	81.6	79.6	77.7	75.8	73.9	72.1	70.3	68.6
50	93.0	94.8	95.2	94.9	94.3	93.3	92.0	90.5	88.9	87.1	85.3	83.3	81.4	79.5	77.5	75.6	73.8	72.0	70.3	68.6
55	91.0	93.2	93.7	93.6	93.1	92.3	91.1	89.8	88.2	86.6	84.8	82.9	81.1	79.2	77.3	75.5	73.7	72.0	70.2	68.6
60	88.8	91.2	92.0	92.0	91.7	91.0	90.0	88.8	87.4	85.9	84.2	82.4	80.7	78.9	77.1	75.3	73.6	71.9	70.2	68.6
65	86.2	88.9	89.9	90.2	90.0	89.5	88.7	87.6	86.4	85.0	83.4	81.8	80.2	78.5	76.8	75.1	73.4	71.8	70.2	68.6
70	83.6	86.4	87.5	88.0	88.0	87.6	86.9	86.1	85.1	83.8	82.5	81.0	79.5	77.9	76.4	74.8	73.2	71.6	70.1	68.6
75	81.0	83.6	84.9	85.5	85.6	85.3	84.9	84.2	83.4	82.4	81.2	80.0	78.6	77.2	75.8	74.3	72.9	71.5	70.0	68.6
80	78.6	80.8	82.0	82.5	82.8	82.7	82.4	81.9	81.3	80.5	79.6	78.5	77.4	76.3	75.0	73.8	72.5	71.2	69.9	68.6
85	76.1	77.7	78.7	79.3	79.6	79.7	79.5	79.2	78.8	78.2	77.5	76.7	75.9	74.9	74.0	72.9	71.9	70.8	69.7	68.6
90	73.9	74.8	75.5	75.9	76.1	76.2	76.2	76.0	75.7	75.3	74.9	74.4	73.8	73.2	72.5	71.8	71.0	70.3	69.4	68.6
95	71.5	71.8	72.0	72.1	72.2	72.2	72.2	72.1	72.0	71.9	71.7	71.4	71.2	70.9	70.6	70.2	69.9	69.5	69.0	68.6
98	70.2	70.2	70.2	70.2	70.1	70.1	70.1	70.0	69.9	69.8	69.7	69.7	69.6	69.4	69.3	69.2	69.0	68.9	68.8	68.6

73.05%

Each of the four water management districts mentioned previously provides calculations for a treatment volume associated with the wet detention system. This treatment volume is often referred to as the "water quality volume" since the criteria are similar to the water quality treatment criteria for dry retention or dry detention. However, research on wet detention ponds clearly indicates that the most significant factor impacting the performance efficiency of a wet detention pond is the residence time within the system - specifically, the volume of the permanent pool with respect to the volume of runoff entering the pond (Toet, et al., 1990; Harper and Herr, 1993; Rushton, et al., 1995; and DB Environmental, 2005). Since the specified treatment volumes are negligible in comparison to the permanent pool volume contained within the wet detention pond, the treatment volume criteria primarily regulates the drawdown characteristics of the wet detention pond and has little impact on the overall water quality performance efficiency of the system.

Residence time within a wet detention pond is determined by the relationship between the permanent pool volume and the annual runoff inputs, as follows:

$$Detention\ \ Time,\ t_d\ (days) = \frac{PPV}{RO} \times \frac{365\ days}{year}$$

where:

PPV = permanent pool volume (ac-ft)

RO = annual runoff inputs (ac-ft/yr)

For purposes of this calculation, the permanent pool volume is considered to include the total volume of water within the pond below the control elevation.

Criteria related to residence time and pond depth are not included in specific design criteria outlined by the Suwannee River or Southwest Florida Water Management Districts. Wet detention ponds designed in these districts could conceivably have a wide range of detention times and associated performance efficiencies, with some ponds approaching design criteria similar to that used in the St. Johns River Water Management District and other ponds approaching design criteria utilized in the South Florida Water Management District. As a result, estimates of the anticipated performance efficiency of wet detention systems designed in the St. Johns River and South Florida Water Management Districts will be presented in this section, with the anticipated efficiency of wet detention systems designed in the Suwannee River and Southwest Florida Water Management Districts likely to fall somewhere in between.

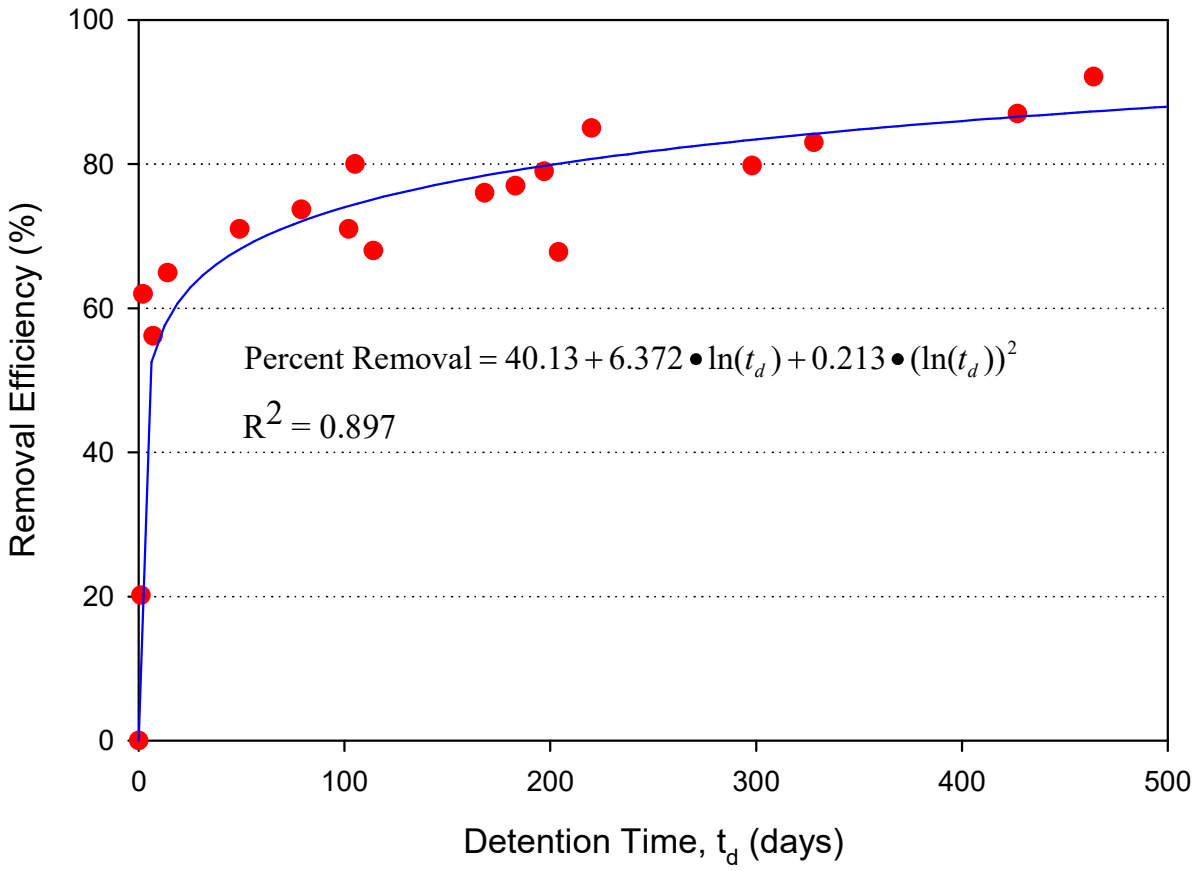


Figure 5-9. Removal Efficiency of Total Phosphorus in Wet Detention Ponds as a Function of Residence Time.

The relationship indicated on Figure 5-9 suggests that removal of phosphorus in wet detention ponds continues to occur, although at a progressively slower rate, with increases in residence time within the system. A removal efficiency of 80% can be achieved at a detention time of about 200 days. The upper limit for removal efficiencies in wet detention ponds appears to be approximately 90%, although removal efficiencies in excess of 90% were achieved at extended detention times in three of the 20 studies. At this point, total phosphorus concentrations within wet detention ponds appear to approach irreducible concentrations which reflect natural background phosphorus levels in surface waterbodies.

Relationships between detention time and removal efficiencies for total nitrogen in wet detention ponds are illustrated on Figure 5-10. The data points presented on this figure are based upon the referenced studies summarized in Table 5-9. The annual mass removal efficiency of 63% reported by Rushton, et al. (1995) for a wet pond with a detention time of 14 days and the removal efficiency of 33% for a 2-day detention time were eliminated from the data set as outliers due to elevated values for the Student T and Cook's D parameters.

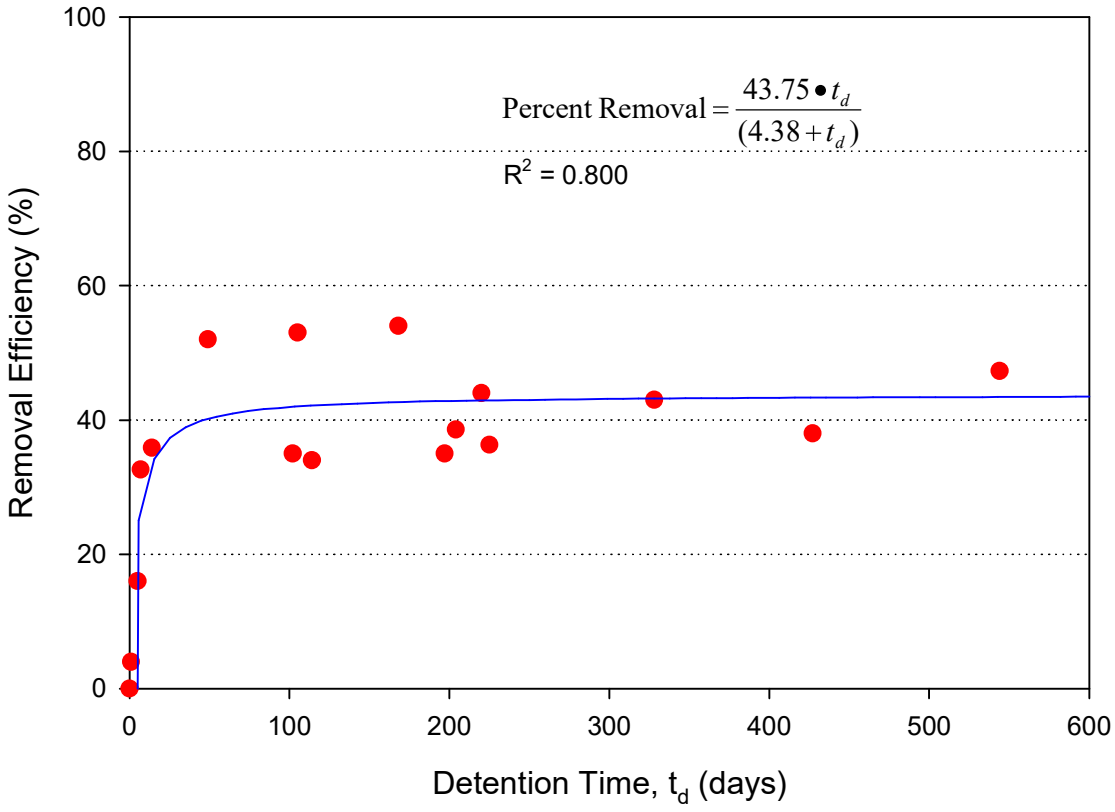


Figure 5-10. Removal Efficiency of Total Nitrogen in Wet Detention Ponds as a Function of Residence Time.

The best-fit for the relationship between removal efficiency and detention time for total nitrogen was obtained using a hyperbolic equation. The final version of this equation is summarized on Figure 5-10. The R^2 value of 0.800 suggests that detention time explains approximately 80% of the observed variability in removal efficiencies for total nitrogen in wet detention ponds. The remaining variability in removal efficiencies for total nitrogen is likely due to variability in methods of analysis between the listed studies as well as variability in the dominant nitrogen form present in the stormwater inflows. In general, inorganic forms of nitrogen (ammonia and NO_x) and particulate nitrogen are removed relatively rapidly in wet detention ponds. The initial rapid removal of nitrogen within the first 10-20 days, indicated on Figure 5-10, is probably a result of the rapid uptake of inorganic nitrogen and the settling of particulate species. Other forms of nitrogen, such as organic nitrogen, are removed at a substantially slower rate and are likely responsible for the dramatic slowdown in removal efficiency observed for total nitrogen after approximately 20-30 days.

The hyperbolic relationship summarized on Figure 5-10 indicates that a removal efficiency of approximately 40% can be achieved for total nitrogen in 50 days, with a maximum efficiency of approximately 45% at extended detention periods. The lack of additional removal efficiencies for total nitrogen observed at extended detention times is probably a reflection of either phosphorus limitation or that irreducible concentrations of total nitrogen have been achieved within the pond.

As indicated previously, wet detention systems must be utilized as part of a treatment train to achieve the required 80% removal efficiency specified under the Water Resource Implementation Rule (Chapter 62-40). When treatment systems are used in series as part of a treatment train, the efficiency of the overall treatment train can be calculated using the following equation:

$$\textit{Overall Treatment Train Efficiency (decimal)} = Eff_1 + (1 - Eff_1) \times Eff_2 \qquad \textit{(Eq. 1)}$$

where:

Eff_1 = efficiency of initial treatment system (decimal)

Eff_2 = efficiency of second treatment system (decimal)

After treatment in the initial system, a load reduction has occurred which is a function of the type of treatment provided. After migrating through the initial treatment system, the remaining load consists of mass which was not removed in the initial system. This mass is then acted upon by the second treatment system with an efficiency associated with the particular type of system used. The overall efficiency can then be calculated according to the above equation.

To achieve an overall annual mass load reduction of 80% using wet detention, a pre-treatment system must first be used to provide a significant portion of the desired pollutant removal effectiveness. For example, assume that a wet detention pond is designed with a detention period of approximately 50 days which is sufficient to achieve a removal efficiency of approximately 40% for total nitrogen. Utilizing the relationship summarized as Eq. 1, and assuming that the efficiency of the wet detention system for total nitrogen (40%) is represented by Eff_2, the efficiency of the initial treatment system (Eff_1) would need to be 67% to achieve an overall treatment efficiency of 80%.

Depending upon the characteristics of the development and the meteorological region, achieving an initial 67% annual mass load reduction using retention will require between 0.25-0.75 inch of dry retention as pre-treatment. When pre-treatment is provided and the remaining stormwater is discharged into the wet detention pond, the overall treatment system will achieve a mass removal efficiency of 80% for total nitrogen. The mass removal efficiency for total phosphorus and other significant pollutants will be substantially in excess of 80%.

O'ROURKE
ENGINEERING & PLANNING

TRAFFIC ANALYSIS

FOR

Kings Highway Commerce Center
Concurrency

Prepared for:

Mr. Ken Morin
JA Development Partners, LLC
4923 W. Cypress St.
Tampa, FL 33607

Prepared by:

O'Rourke Engineering & Planning
22 SE Seminole Street
Stuart, Florida 34994
772-781-7918

June 22, 2022
Revised September 9, 2022
Revised October 17, 2022
Revised January 4, 2024

SR22061.0

Prepared by: O'Rourke Engineering & Planning Certificate of Authorization: #26869 3725 SE Ocean Blvd, Suite 201 Stuart, Florida 34996 772-781-7918	Professional Engineer Susan E. O'Rourke, P.E. Date signed and sealed: 01/04/2024 License #: 42684

O'ROURKE
ENGINEERING & PLANNING

June 22, 2022

Mr. Ken Morin
JA Development Partners, LLC
4923 W. Cypress St.
Tampa, FL 33607

Re: Kings Highway Commerce Center

Dear Mr. Morin:

O'Rourke Engineering & Planning has completed the analysis of the proposed development located east of Kings Highway and north of White Road in Ft. Pierce, St. Lucie County, Florida. The steps in the analysis and the ensuing results are presented herein.

It has been a pleasure working with you. If you have any questions or comments, please give me a call.

Respectfully submitted,

O'Rourke Engineering & Planning

Susan E. O'Rourke, P.E.
Registered Civil Engineer

Concurrency Report – Kings Highway and White Road 10.17.2022

3725 SE Ocean Blvd. | Suite 201 | Stuart, FL 34996 | 772-781-7918 | Susan@OREPtech

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

INTRODUCTION

O'Rourke Engineering & Planning was retained to prepare a traffic analysis for the proposed 390,000 square feet development consisting of warehousing and office located east of Kings Highway and north of White Road in Ft. Pierce, St. Lucie County, Florida. The purpose of this report is to determine the projects impact on the surrounding roadway system.

In order to make the determination that the project complies with County Concurrency Guidelines, the following analytical steps were taken:

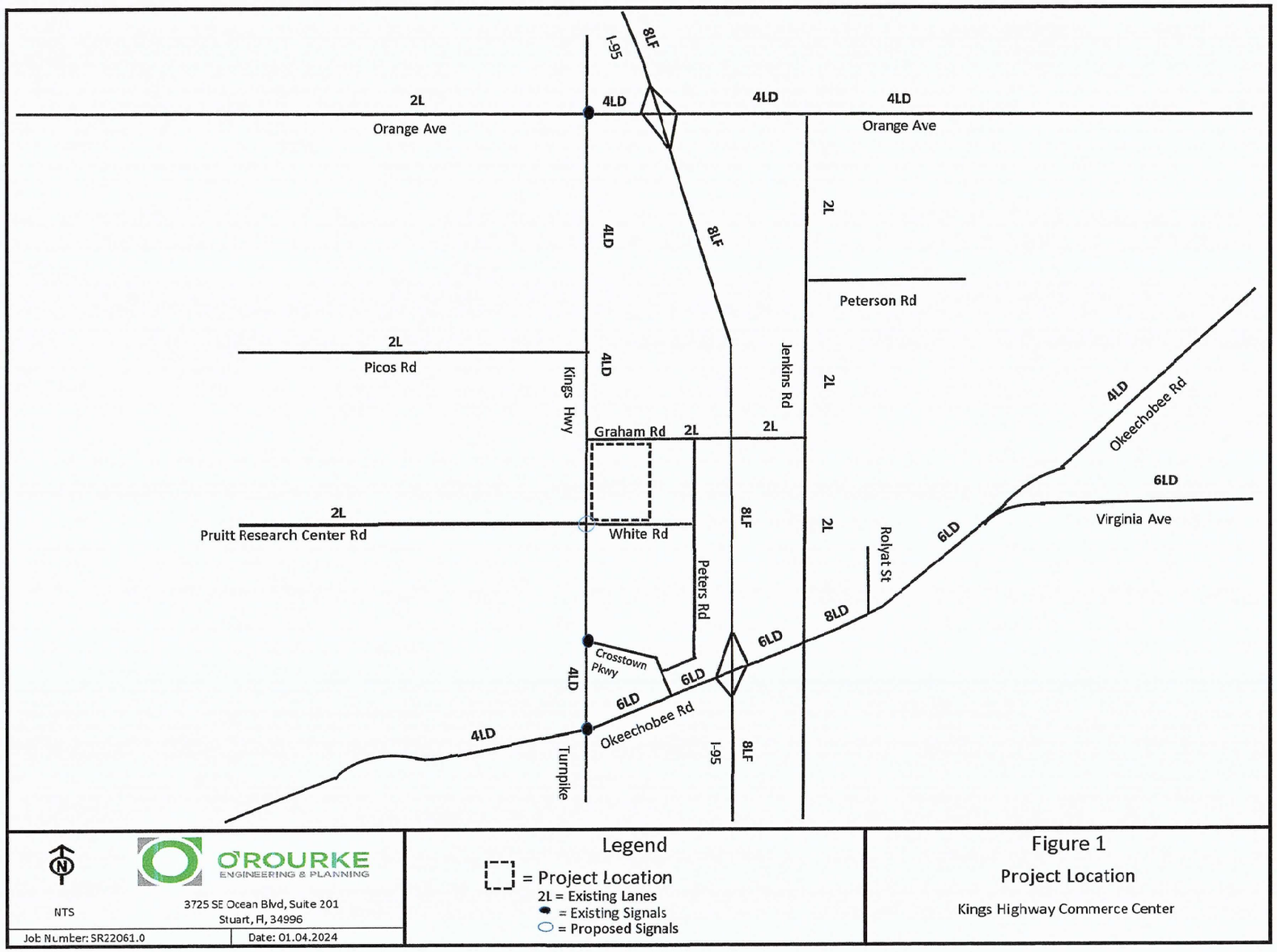
- summary of the project
- summary of existing lane geometries
- summary of the existing traffic volumes
- assessment of project traffic
- determination of impact area
- summary of buildout cumulative traffic volumes
- summary of levels of service with the project traffic added

Each of these steps is outlined herein.

PROJECT DESCRIPTION

The proposed development located east of Kings Highway and north of White Road in Ft. Pierce, St. Lucie County, Florida, will consist of 368,000 square feet of warehouse and 22,000 square feet of office. The site is currently vacant. The project location is shown in **Figure 1**. The traffic study is based on the current site plan.

Appendix A includes the project site plan.


I-95
8LF
2L
4LD
4LD
4LD
Orange Ave
Orange Ave
2L
4LD
8LF
Peterson Rd
2L
Picos Rd
4LD
Kings Hwy
Jenkins Rd
2L
Graham Rd
2L
2L
4LD
Okeechobee Rd
6LD
Virginia Ave
2L
Pruitt Research Center Rd
White Rd
8LF
2L
Rolyat St
6LD
Peters Rd
8LD
6LD
Crosstown Pkwy
4LD
6LD
6LD
Okeechobee Rd
4LD
Turnpike
I-95
8LF
N
NTS
O'ROURKE
ENGINEERING & PLANNING
3725 SE Ocean Blvd, Suite 201
Stuart, Fl, 34996
Job Number: SR22061.0
Date: 01.04.2024
Legend
= Project Location
2L = Existing Lanes
= Existing Signals
= Proposed Signals
Figure 1
Project Location
Kings Highway Commerce Center

EXISTING CONDITIONS

The study area is defined as the roadways upon which the project has an impact of 3% of the level of service capacity of the roadway and 1% on the adjacent link. Once the project traffic was assigned, the study area was refined based on the impact percentages.

The study area roadways were defined in terms of existing lane geometrics and existing traffic volumes.

Existing/Proposed Lane Geometrics and Traffic Control

The study area was reviewed to determine the existing number and type of lanes, and the traffic control along the roadway. Each roadway is described below.

- Peters Road is a two-lane local road with a general north/south alignment.
- S. Jenkins Road is a two-lane arterial with a north/south alignment.
- Graham Road is a two-lane local roadway with an east/west alignment.
- Okeechobee Road is a multi-lane divided arterial roadway with an east/west alignment. It is four-lane divided west of Kings Highway and east of Virginia Avenue. It is six-lane divided from Rolyat Street to Virginia Avenue and from Kings Highway to I-95. There is an eight-lane divided section from east of I-95 to Rolyat Street. There are numerous extended turn lanes and freeway auxiliary lanes.
- Orange Avenue is a four-lane divided arterial with an east/ west alignment.
- Kings Highway is a two-lane arterial with a north/south alignment and is under construction in portions and included in the 5-year TIP to be widened to a four-lane divided roadway.

Existing Traffic Volumes/ Service Volume

Traffic volumes were obtained from the St. Lucie County TPO and FDOT. The count data along with the number of lanes and the associated peak hour/peak direction service volumes will be summarized in the upcoming sections of the report. The service volumes were developed based on the functional classification contained in the County Comprehensive Plan and the St. Lucie County Traffic Counts and Level of Service Report. The 2023 FDOT Quality Level of Service and St. Lucie TPO 2023 Level of Service Report were used to establish capacity. These documents are included in **Appendix B.**

PROJECT TRAFFIC

To estimate future traffic generated by the development, the ITE Trip Generation, 11th Edition trip rates for Warehouse (Land Use Code 150) and Office (Land Use Code 710) were applied to estimate the trips generated by the proposed development as it is currently site planned. These calculations are shown in **Tables 1a, 1b, and 1c**.

As shown, the project will generate 931 new daily trips. There will be 109 AM peak hour trips with 89 entering the project and 20 trips exiting the project. The project will generate 113 new PM peak hour trips. There will be 26 trips entering the project and 87 trips exiting the project in the PM peak hour.

Table 1 - Trip Generation Kings Highway Commerce Park

Table 1a: Daily

Land Use	ITE Code	Intensity	Units	Trip Generation Rate	Directional Split		Net New Trips		
					In	Out	In	Out	Total
General Office	710	22,000	Sft	Ln(T) = 0.87Ln(X) + 3.05	50%	50%	156	155	311
Warehousing	150	368,000	Sft	T = 1.58(X) + 38.29	50%	50%	310	310	620
TOTALS							**466**	**465**	**931**

Source: ITE 11th Edition Trip Generation Rates

Table 1b: AM Peak Hour

Land Use	ITE Code	Intensity	Units	Trip Generation Rate	Directional Split		Net New Trips		
					In	Out	In	Out	Total
General Office	710	22,000	Sft	Ln(T) = 0.86Ln(X) + 1.16	88%	12%	40	6	46
Warehousing	150	368,000	Sft	T = 0.17(X)	77%	23%	49	14	63
TOTALS							**89**	**20**	**109**

Source: ITE 11th Edition Trip Generation Rates

Table 1c: PM Peak Hour

Land Use	ITE Code	Intensity	Units	Trip Generation Rate	Directional Split		Net New Trips		
					In	Out	In	Out	Total
General Office	710	22,000	Sft	Ln(T) = 0.83Ln(X) + 1.29	17%	83%	8	39	47
Warehousing	150	368,000	Sft	T = 0.18(X)	28%	72%	18	48	66
TOTALS							**26**	**87**	**113**

Source: ITE 11th Edition Trip Generation Rates

PROJECT DISTRIBUTION/ ASSIGNMENT/IMPACT

The project traffic was distributed by general geographic direction and then assigned to the roadway network.

Distribution/ Assignment – This general distribution led to an assignment of trips based on the anticipated ultimate destinations and the roadway paths used to reach those destinations. The project assignment is shown in **Figure 2.**

Impact – Tables 2a and 2b summarize the project impact as a percent of service volume capacity. Significant is defined as 1% or more on an adjacent link and 3% or more on all other links. As shown, the project is significant on several links.

OTHER PROJECT TRAFFIC/GROWTH RATE

Other project data includes committed traffic from Creekside, Bent Creek, Celebration Pointe, Whispering Oaks, St. Lucie Commerce Center, Walsh Crossroads, Project Hurricane, Project Hunt, Wawa Kingsgate, Stonemont, Ferrell Communities, Sunnyland, Drawdy Angle Road, KRE, Orange 95, Hillpointe Residential, 7/11 Angle Road, Jenkins Waypoint, and Kings Highway Warehouse. These projects plus a growth rate of 1.5% were added to estimate background traffic. A 4-year, area wide historical growth rate of -0.72% was calculated, but the higher rate of 1.5% was applied.

Details of the background traffic and growth rate are included in **Appendix C**.

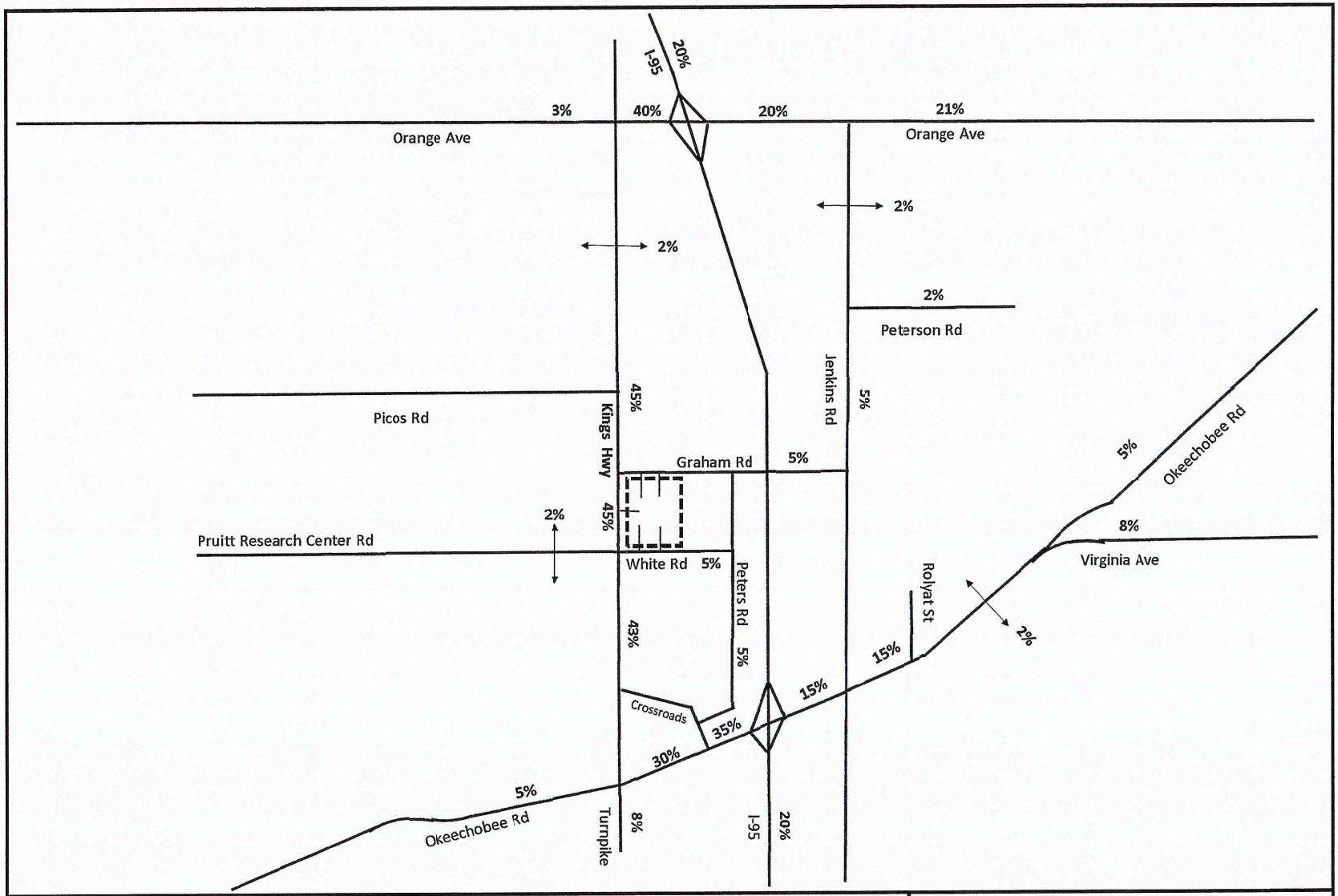
LINK ANALYSIS / REVIEW

The project is significant on several links, these links were analyzed further to ensure they will meet concurrency. **Table 3a and 3b** summarizes the results of the link analysis. As shown, all roadways will operate at acceptable levels of service at project buildout.

INTERSECTION ANALYSIS - Kings Highway and White Road

The intersection of White Road at Kings Highway was analyzed for the AM and PM peak hours using HCS for signalized intersections. As part of the Kings Highway widening project, Research Center Road and White Road will be aligned. The FDOT has approved a signal when warranted through Kings Highway Commerce Park. The intersection will operate at a level of service C in the AM and PM peak hours at project build out as a signalized intersection.

The intersection data are included in **Appendix D.** The LOS results are included in the next section of the report.



NTS Job Number: SR22061.0	O'ROURKE ENGINEERING & PLANNING 3725 SE Ocean Blvd, Suite 201 Stuart, F, 34996 Date: 01.04.2024	Legend = Project Location

Figure 2

Percent Assignment

Kings Highway Commerce Center

TABLE 2a - Project Percent Impact - AM

Segment	From	To	Direction	IN/OUT	Greater than 3% (1% on Adjacent Links) (2)	Peak Hour Service Capacity (E+C) (1)	Project Volume Peak Direction	% Project of Capacity-Peak Hour	Project Percent Assignment
Peters Rd	Crossroads Pkwy	White Rd	NB	IN	NO	750	4	0.53%	5%
	Crossroads Pkwy	White Rd	SB	OUT	NO	750	1	0.13%	5%
	White Rd	Graham Rd	NB	OUT	NO	750	1	0.13%	5%
	White Rd	Graham Rd	SB	IN	NO	750	4	0.53%	5%
Kings Hwy	Okeechobee Rd	Crossroads Pkwy	NB	IN	NO	1900 (3)	38	2.00%	43%
	Okeechobee Rd	Crossroads Pkwy	SB	OUT	NO	1900 (3)	9	0.47%	43%
	Crossroads Pkwy	Graham Rd	NB	IN	YES	1900 (3)	40	2.11%	45%
	Crossroads Pkwy	Graham Rd	SB	OUT	NO	1900 (3)	9	0.47%	45%
	Graham Rd	Picos Rd	NB	OUT	NO	1900 (3)	9	0.47%	45%
	Graham Rd	Picos Rd	SB	IN	NO	1900 (3)	40	2.11%	45%
	Picos Rd	Orange Ave	NB	OUT	NO	1900 (3)	9	0.47%	45%
	Picos Rd	Orange Ave	SB	IN	NO	1900 (3)	40	2.11%	45%
Graham Rd	Kings Hwy	Jenkins Rd	EB	OUT	NO	630	1	0.16%	5%
	Kings Hwy	Jenkins Rd	WB	IN	NO	630	4	0.63%	5%
Virginia Ave	Okeechobee Rd	Hartman Rd	EB	OUT	NO	3020	2	0.07%	8%
	Okeechobee Rd	Hartman Rd	WB	IN	NO	3020	7	0.23%	8%
Orange Ave	Jenkins Rd	Hartman Rd	EB	OUT	NO	2100	4	0.19%	21%
	Jenkins Rd	Hartman Rd	WB	IN	NO	2100	19	0.90%	21%
	I-95	Jenkins Rd	EB	OUT	NO	2100	4	0.19%	20%
	I-95	Jenkins Rd	WB	IN	NO	2100	18	0.86%	20%
	Kings Hwy	I - 95	EB	OUT	NO	2100	8	0.38%	40%
	Kings Hwy	I - 95	WB	IN	NO	2100	36	1.71%	40%
	Campbell Rd	Kings Hwy	EB	IN	NO	1070	3	0.28%	3%
	Campbell Rd	Kings Hwy	WB	OUT	NO	1070	1	0.09%	3%
Jenkins Rd	Graham Rd	Peterson Rd	NB	OUT	NO	630	1	0.16%	5%
	Graham Rd	Peterson Rd	SB	IN	NO	630	4	0.63%	5%
	Peterson Rd	Orange Ave	NB	OUT	NO	920	1	0.11%	3%
	Peterson Rd	Orange Ave	SB	IN	NO	920	3	0.33%	3%
Okeechobee Rd	McCarty Rd	Florida Turnpike	EB	IN	NO	3240	4	0.12%	5%
	McCarty Rd	Florida Turnpike	WB	OUT	NO	3240	1	0.03%	5%
	Florida Turnpike	Kings Hwy	EB	IN	NO	2100	4	0.19%	5%
	Florida Turnpike	Kings Hwy	WB	OUT	NO	2100	1	0.05%	5%
	Kings Hwy	I - 95	EB	OUT	NO	4240	7	0.17%	35%
	Kings Hwy	I - 95	WB	IN	NO	4240	31	0.73%	35%
	I - 95	Jenkins Rd	EB	OUT	NO	4240	3	0.07%	15%
	I - 95	Jenkins Rd	WB	IN	NO	4240	13	0.31%	15%
	Jenkins Rd	McNeil Ave	EB	OUT	NO	4040	3	0.07%	15%
	Jenkins Rd	McNeil Ave	WB	IN	NO	4040	13	0.32%	15%
I-95	Midway Rd	Okeechobee Rd	NB	IN	NO	5500	18	0.33%	20%
	Midway Rd	Okeechobee Rd	SB	OUT	NO	5500	4	0.07%	20%
	Orange Ave	Indrio Rd	NB	OUT	NO	7320	4	0.05%	20%
	Orange Ave	Indrio Rd	SB	IN	NO	7320	18	0.25%	20%

(1) FDOT 2023 Service Capacity Tables & St. Lucie TPO

(2) According to the Guidelines prepared by the TPO and modified by the City and County

(3) C3C Classification = 1,810 * 1.05 Exclusive Right Turn Lanes = 1,900

Two-Way:	109
Net In:	89
Net Out:	20

TABLE 2b - Project Percent Impact - PM

Segment	From	To	Direction	IN/OUT	Greater than 3% (1% on Adjacent Links) (2)	Peak Hour Service Capacity (E+C) (1)	Project Volume Peak Direction	% Project of Capacity-Peak Hour	Project Percent Assignment
Peters Rd	Crossroads Pkwy	White Rd	NB	IN	NO	750	1	0.13%	5%
	Crossroads Pkwy	White Rd	SB	OUT	NO	750	4	0.53%	5%
	White Rd	Graham Rd	NB	OUT	NO	750	4	0.53%	5%
	White Rd	Graham Rd	SB	IN	NO	750	1	0.13%	5%
Kings Hwy	Okeechobee Rd	Crossroads Pkwy	NB	IN	NO	1900 (3)	11	0.58%	43%
	Okeechobee Rd	Crossroads Pkwy	SB	OUT	NO	1900 (3)	37	1.95%	43%
	Crossroads Pkwy	Graham Rd	NB	IN	NO	1900 (3)	12	0.63%	45%
	Crossroads Pkwy	Graham Rd	SB	OUT	YES	1900 (3)	39	2.05%	45%
	Graham Rd	Picos Rd	NB	OUT	NO	1900 (3)	39	2.05%	45%
	Graham Rd	Picos Rd	SB	IN	NO	1900 (3)	12	0.63%	45%
	Picos Rd	Orange Ave	NB	OUT	NO	1900 (3)	39	2.05%	45%
	Picos Rd	Orange Ave	SB	IN	NO	1900 (3)	12	0.63%	45%
Graham Rd	Kings Hwy	Jenkins Rd	EB	OUT	NO	630	4	0.63%	5%
	Kings Hwy	Jenkins Rd	WB	IN	NO	630	1	0.16%	5%
Virginia Ave	Okeechobee Rd	Hartman Rd	EB	OUT	NO	3020	7	0.23%	8%
	Okeechobee Rd	Hartman Rd	WB	IN	NO	3020	2	0.07%	8%
Orange Ave	Jenkins Rd	Hartman Rd	EB	OUT	NO	2100	18	0.86%	21%
	Jenkins Rd	Hartman Rd	WB	IN	NO	2100	5	0.24%	21%
	I-95	Jenkins Rd	EB	OUT	NO	2100	17	0.81%	20%
	I-95	Jenkins Rd	WB	IN	NO	2100	5	0.24%	20%
	Kings Hwy	I - 95	EB	OUT	NO	2100	35	1.67%	40%
	Kings Hwy	I - 95	WB	IN	NO	2100	10	0.48%	40%
	Campbell Rd	Kings Hwy	EB	IN	NO	1070	1	0.09%	3%
	Campbell Rd	Kings Hwy	WB	OUT	NO	1070	3	0.28%	3%
Jenkins Rd	Graham Rd	Peterson Rd	NB	OUT	NO	630	4	0.63%	5%
	Graham Rd	Peterson Rd	SB	IN	NO	630	1	0.16%	5%
	Peterson Rd	Orange Ave	NB	OUT	NO	920	3	0.33%	3%
	Peterson Rd	Orange Ave	SB	IN	NO	920	1	0.11%	3%
Okeechobee Rd	McCarty Rd	Florida Turnpike	EB	IN	NO	3240	1	0.03%	5%
	McCarty Rd	Florida Turnpike	WB	OUT	NO	3240	4	0.12%	5%
	Florida Turnpike	Kings Hwy	EB	IN	NO	2100	1	0.05%	5%
	Florida Turnpike	Kings Hwy	WB	OUT	NO	2100	4	0.19%	5%
	Kings Hwy	I - 95	EB	OUT	NO	4240	30	0.71%	35%
	Kings Hwy	I - 95	WB	IN	NO	4240	9	0.21%	35%
	I - 95	Jenkins Rd	EB	OUT	NO	4240	13	0.31%	15%
	I - 95	Jenkins Rd	WB	IN	NO	4240	4	0.09%	15%
	Jenkins Rd	Virginia Ave	EB	OUT	NO	4040	13	0.32%	15%
	Jenkins Rd	Virginia Ave	WB	IN	NO	4040	4	0.10%	15%
I-95	Midway Rd	Okeechobee Rd	NB	IN	NO	5500	5	0.09%	20%
	Midway Rd	Okeechobee Rd	SB	OUT	NO	5500	17	0.31%	20%
	Orange Ave	Indrio Rd	NB	OUT	NO	7320	17	0.23%	20%
	Orange Ave	Indrio Rd	SB	IN	NO	7320	5	0.07%	20%

(1) FDOT 2023 Service Capacity Tables & St. Lucie TPO

(2) According to the Guidelines prepared by the TPO and modified by the City and County

(3) C3C Classification = 1,810 * 1.05 Exclusive Right Turn Lanes = 1,900

Two-Way:	113
Net In:	26
Net Out:	87

TABLE 3a - Link Analysis - AM

Segment	From	To	Direction	AADT 2023	D Factor	2023 Peak Hour Volume - Peak Direction from TPO[1]	2023 Peak Hour Directional Volumes	Yearly Growth Rate (from 2023 to 2025)	2025 AM Peak Hour + Growth	AM Peak Hour Committed Projects Directional	2025 Growth + Committed Peak Direction	Peak Hour Service Capacity	Project Volume Peak Direction	Total Traffic (Peak Direction)	% Project of Capadty-Peak Hour	Does Project Satisfy Concurrency?	Project Percent Assignment
Kings Hwy	Crossroads Pkwy	Graham Rd	NB	9383	0.562	472	472	1.50%	486	537	1123	1900	40	1163	2.11%	YES	45%
	Crossroads Pkwy	Graham Rd	SB	9383	0.438	472	368[2]	1.50%	379	473	852	1900	9	861	0.47%	YES	45%
	Graham Rd	Picos Rd	NB	7181	0.562	361	361	1.50%	372	523	895	1900	9	904	0.47%	YES	45%
	Graham Rd	Picos Rd	SB	7181	0.438	361	281[2]	1.50%	290	538	828	1900	40	868	2.11%	YES	45%

(1) St. Lucie County 2023 Traffic Counts and LOS Report

(2) Calculated using TPO peak hour volumes and D Factors from traffic counts.

Two-Way:	109
Net In:	89
Net Out:	20
Years Grown:	2

TABLE 3b - Link Analysis - PM

Segment	From	To	Direction	AADT 2023	D Factor	2023 Peak Hour Volume - Peak Direction from TPO[1]	2023 Peak Hour Directional Volumes	Yearly Growth Rate (from 2023 to 2025)	2025 PM Peak Hour + Growth	PM Peak Hour Committed Projects Directional	2025 Growth + Committed Peak Direction	Peak Hour Service Capacity	Project Volume Peak Direction	Total Traffic (Peak Direction)	% Project of Capacity-Peak Hour	Does Project Satisfy Concurrency?	Project Percent Assignment
Kings Hwy	Crossroads Pkwy	Graham Rd	NB	9383	0.438	472	368[2]	1.50%	379	574	953	1900	12	965	0.63%	YES	45%
	Crossroads Pkwy	Graham Rd	SB	9383	0.562	472	472	1.50%	486	623	1109	1900	39	1148	2.05%	YES	45%
	Graham Rd	Picos Rd	NB	7181	0.438	361	281[2]	1.50%	290	649	939	1900	39	978	2.05%	YES	45%
	Graham Rd	Picos Rd	SB	7181	0.562	361	361	1.50%	372	498	870	1900	12	882	0.63%	YES	45%

(1) St. Lucie County 2023 Traffic Counts and LOS Report

(2) Calculated using TPO peak hour volumes and D Factors from traffic counts.

Two-Way:	113
Net In:	26
Net Out:	87
Years Grown:	2

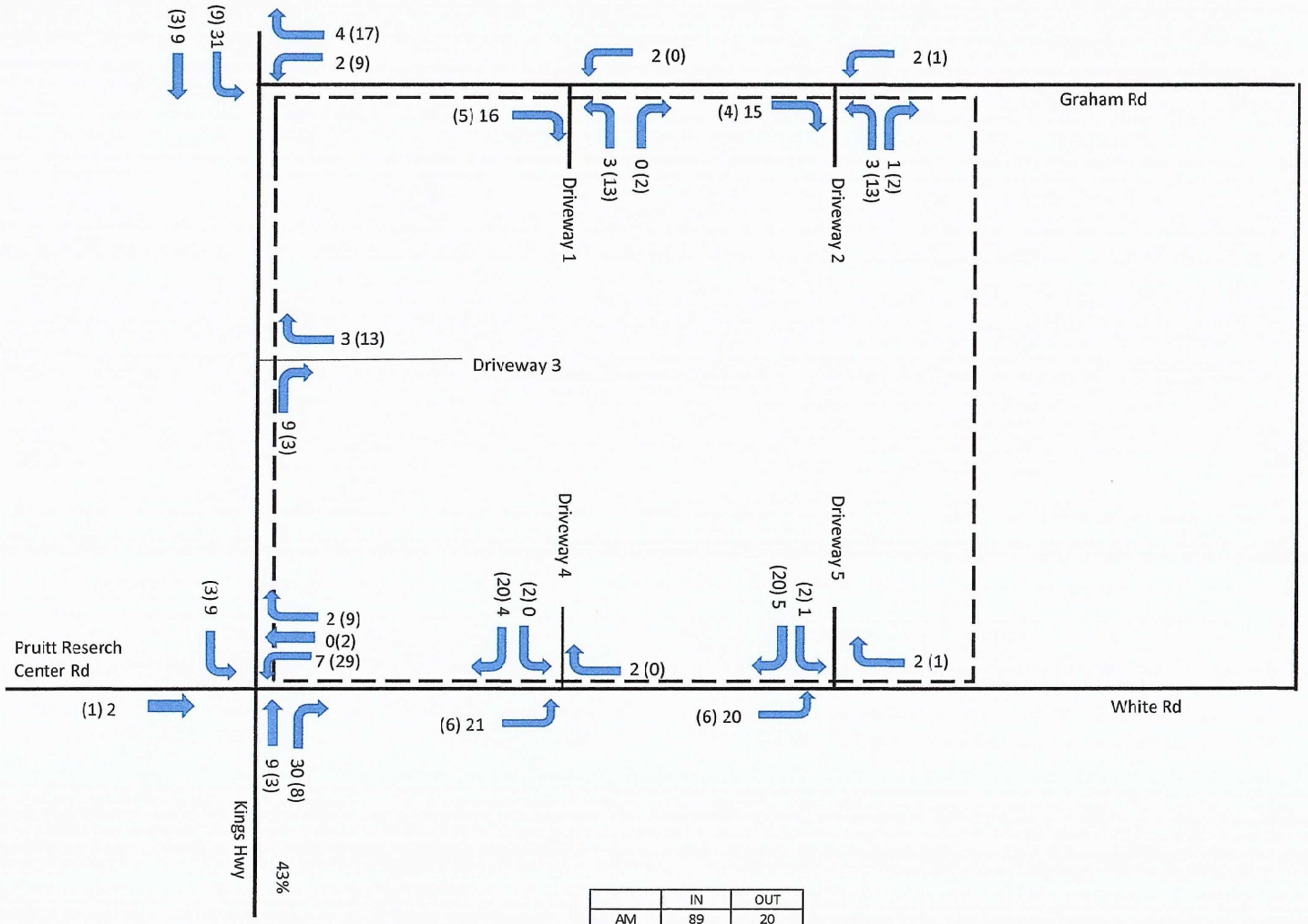
DRIVEWAY VOLUMES – Kings Highway and Graham Road Analysis

The project will have a total of 5 driveways. Driveway 1 is a full access driveway located on Graham Road, Driveway 2 will be a full access driveway on Graham Road, Driveway 3 will be a right-in/right-out on Kings Highway and Driveways 4 and 5 will be full access driveways located on White Road. **Figure 3** shows the driveway volumes for the AM and PM peak hours. A northbound right turn lane is proposed at Driveway 3 on Kings Highway. Turn lanes are not proposed on White Road or Graham Road.

Graham Road at Kings Highway was analyzed as an unsignalized intersection to determine queue lengths and level of service. Both the AM and PM peak hours will operate at acceptable levels of service. The queue westbound will not exceed one vehicle length. The location of Driveway 3 is outside the functional area of the intersection.

CONCLUSION

With 109 net new AM peak hour trips and 113 net new PM peak hour trips, all links and intersections operate at acceptable levels of service with the existing roadway network. Therefore, the project meets the requirements for concurrency.



	IN	OUT
AM	89	20
PM	26	87

NTS

O'ROURKE ENGINEERING & PLANNING

3725 SE Ocean Blvd, Suite 201
Stuart, Fl, 34996

Job Number: SR22061.0 | Date: C1.04.2023

Legend

= Project Location

XX (XX) = AM (PM)

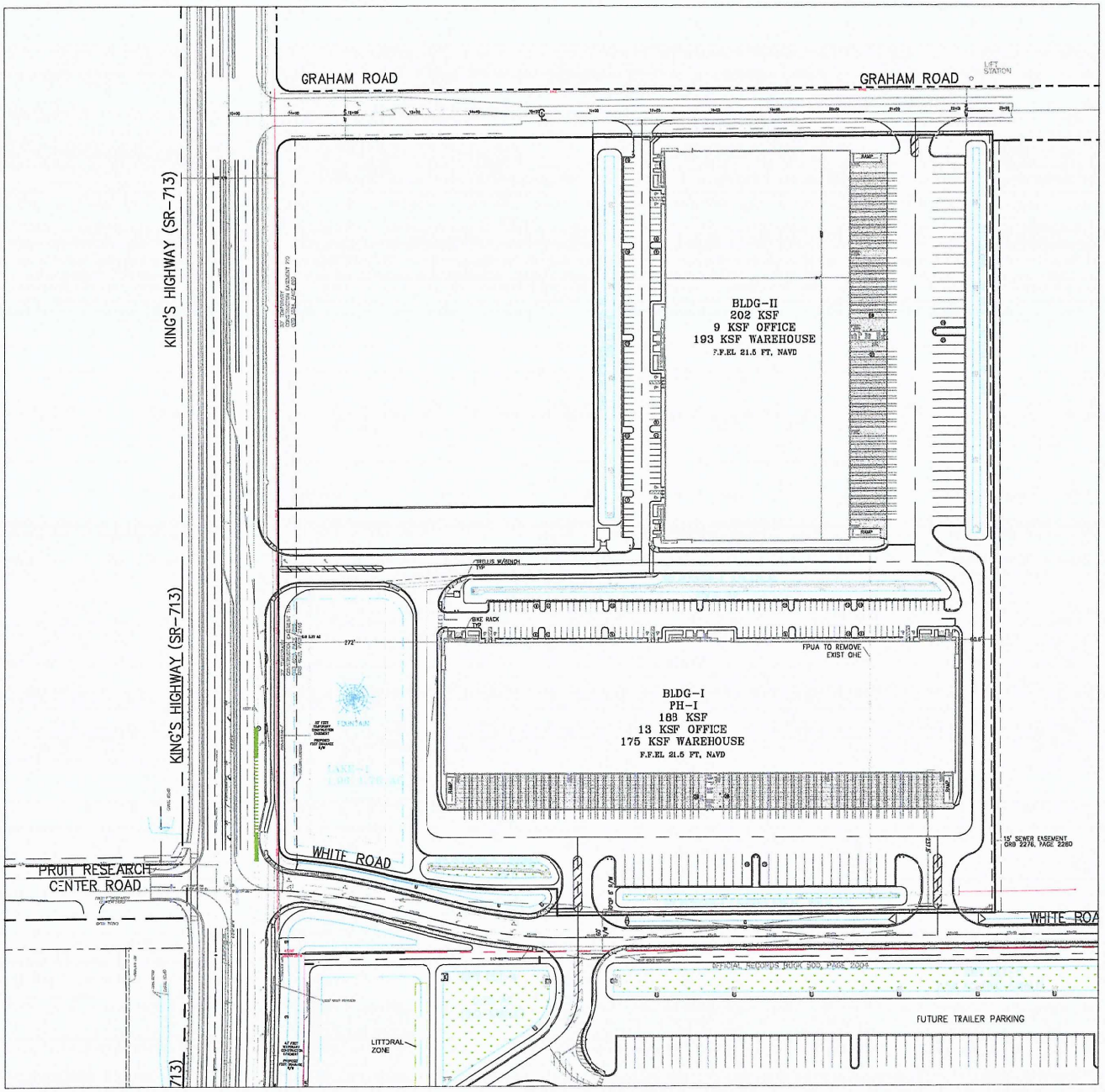
Figure 3

Driveway Volumes

Kings Highway Commerce Center

APPENDIX A

SITE PLAN



AERIAL

VICINITY MAP

SECTION 13, TWP 35S, RGE 39E

N

80' 0 40' 80' 160'

SCALE: 1" = 80'

SITE DATA

PROPOSED USE	OFFICE/WAREHOUSE/DISTRIBUTION		
FUTURE LAND USE	GC		
PROPOSED ZONING	CP-1		
PARCEL AREA	1,155,690 SF	26.53 AC	100%
BUILDOUT			
BUILDING AREA	390,000 SF		34.2%
OFFICE	22,000 SF		
WAREHOUSE	368,000 SF		
PHASE-I			
BUILDING AREA	188,000 SF		
OFFICE	13,000 SF		
WAREHOUSE	175,000 SF		
PHASE-II			
BUILDING AREA	202,000 SF		
OFFICE	9,000 SF		
WAREHOUSE	193,000 SF		
PARKING REQ PH-I			101 SP
OFFICE ITE RATE	13,000 SF @ 2.39/KSF		32 SP
WAREHOUSE ITE RATE	175,000 SF @ 0.39/KSF		69 SP
HANDICAP			5 SP
BICYCLE			6 SP
PARKING PROP			130 SP
HANDICAP			6 SP
BICYCLE			8 SP
LOADING REQ			8 SP
LOADING PROP			55 SP
PARKING REQ PH-II			98 SP
OFFICE ITE RATE	9,000 SF @ 2.39/KSF		22 SP
WAREHOUSE ITE RATE	193,000 SF @ 0.39/KSF		76 SP
HANDICAP			5 SP
BICYCLE			6 SP
PARKING PROP			98 SP
HANDICAP			6 SP
BICYCLE			8 SP
LOADING REQ			8 SP
LOADING PROP			39 SP
PAVT/SW	573,250 SF		
TOTAL IMPERVIOUS	1,015,250 SF		
LAKES	156,816 SF		
PERVIOUS	344,405 SF		
BLDG HEIGHT	65 FT MAX		

SETBACKS	REQ'D	PROP
FRONT	15'	273'
REAR	10'	60.6'
SIDE STREET	10'	187.3'
SIDE	20'	NA

PCN
2313-333-0001-000-7
2313-332-0000-010-0
2313-332-0000-000-7
2313-331-0001-000-4

LEGACY
DEVELOPMENT PARTNERS

REVISIONS
09/21/22 REV SLC
07/11/23 REV SLT
10/03/23 REV SP

Jeff H. Iravani, Inc.
Consulting Engineers
1934 COMMERCE LANE, SUITE 5
JUPITER, FLORIDA 33458
TEL: (561) 575-0030
FAX: (561) 575-0031
EMAIL: JHI@JHInc.com
WEBSITE: www.JHInc.com

Kings Highway
Commerce Center
Fort Pierce, Florida

Master Site Plan

DATE	SCALE	DESIGNED BY	DRAWN BY	JOB NO.
07-07-22	1"=80'	JHI	DDI	2205-1402

SEAL

SHEET NO.
MSP-1

A-1

APPENDIX B

ST. LUCIE COUNTY 2023 LEVEL OF SERVICE REPORT
&
FDOT 2023 QUALITY LEVEL OF SERVICE

St. Lucie Transportation Planning Organization

Coco Vista Centre
466 SW Port St. Lucie Blvd, Suite 111
Port St. Lucie, FL 34953
772-462-1593 www.stlucietpo.org

Traffic Counts and Level of Service Report
2023

Roadway Name	Location	AADT	Pk Hr Service Capacity	AM Pk Hr Pk Dir			PM Pk Hr Pk Dir		
				Volume	LOS	V/C	Volume	LOS	V/C
GATLIN BLVD	E OF I-95 to SAVAGE BLVD	49,323	3,170	2,408	C	0.76	2,408	C	0.76
GATLIN BLVD	SAVAGE BLVD to ROSSER BLVD	49,323	3,170	2,408	C	0.76	2,408	C	0.76
GATLIN BLVD	ROSSER BLVD to SAVONA BLVD	49,323	3,170	2,408	C	0.76	2,408	C	0.76
GATLIN BLVD	SAVONA BLVD to PORT ST LUCIE BLVD	49,323	3,170	2,408	C	0.76	2,408	C	0.76
GEORGIA AVE	25TH ST to OKEECHOBEE RD	4,000	600	233	C	0.39	223	C	0.37
GEORGIA AVE	OKEECHOBEE RD to 17TH ST	4,000	750	233	C	0.31	223	C	0.30
GEORGIA AVE	17TH ST to 13TH ST	5,400	600	275	C	0.46	277	C	0.46
GEORGIA AVE	13TH ST to 7TH ST	2,500	600	152	C	0.25	170	C	0.28
GEORGIA AVE	7TH ST to US 1	2,200	600	121	C	0.20	131	C	0.22
GILSON RD	MARTIN C.L. to BECKER RD	11,039	710	925	F	1.30	957	F	1.35
GILSON RD	BECKER RD to LAKERIDGE DR	11,039	540	925	F	1.71	957	F	1.77
GLADES CUT-OFF RD	RANGE LINE RD to RESERVE BLVD	2,894	1,070	182	B	0.17	192	B	0.18
GLADES CUT-OFF RD	RESERVE BLVD to COMMERCE CENTER DR	5,748	1,070	452	C	0.42	526	C	0.49
GLADES CUT-OFF RD	CARLTON RD to RANGE LINE RD	2,894	390	182	B	0.47	192	B	0.49
GLADES CUT-OFF RD	COMMERCE CENTER DR to MIDWAY RD	3,331	920	162	C	0.18	162	C	0.18
GLADES CUT-OFF RD	MIDWAY RD to JENKINS RD	10,787	790	647	D	0.82	685	D	0.87
GLADES CUT-OFF RD	JENKINS RD to SELVITZ RD	5,900	830	351	C	0.42	326	C	0.39
GRAHAM RD	KINGS HWY to JENKINS RD	2,686	630	170	C	0.27	170	C	0.27
GREEN RIVER PKWY	MARTIN C.L. to CHARLESTON DR	5,780	1,070	401	C	0.38	364	B	0.34
GREEN RIVER PKWY	CHARLESTON DR to MELALEUCA BLVD	5,780	1,070	401	C	0.38	364	B	0.34
GREEN RIVER PKWY	MELALEUCA BLVD to WALTON RD	5,780	1,070	401	C	0.38	364	B	0.34
HARTMAN RD	OKEECHOBEE RD to PETERSON RD	6,204	750	296	C	0.40	289	C	0.39
HARTMAN RD	PETERSON RD to DELAWARE AVE	6,204	540	296	D	0.55	289	D	0.54
HARTMAN RD	DELAWARE AVE to ORANGE AVE	6,204	790	296	C	0.38	289	C	0.37
HEADER CANAL RD	OKEECHOBEE RD to ORANGE AVE	598	670	50	B	0.08	60	B	0.09
HILLMOOR DR	US 1 to LENNARD RD	7,100	790	394	D	0.50	373	C	0.47
I-95	GATLIN BLVD to ST LUCIE WEST BLVD	87,285	5,500	5,058	D	0.92	5,058	D	0.92
I-95	ST LUCIE WEST BLVD to MIDWAY RD	70,410	5,500	4,080	C	0.74	4,080	C	0.74
I-95	MIDWAY RD to OKEECHOBEE RD	81,706	5,500	4,734	D	0.86	4,734	D	0.86

B-1

* Volumes shown were adjusted using FDOT Seasonal Factors
* AADT = Annual Average Daily Traffic

St. Lucie Transportation Planning Organization

Coco Vista Centre
466 SW Port St. Lucie Blvd, Suite 111
Port St. Lucie, FL 34953
772-462-1593 www.stlucietpo.org

Traffic Counts and Level of Service Report
2023

Roadway Name	Location	AADT	Pk Hr Service Capacity	AM Pk Hr Pk Dir			PM Pk Hr Pk Dir		
				Volume	LOS	V/C	Volume	LOS	V/C
I-95	OKEECHOBEE RD to ORANGE AVE	59,903	7,320	3,439	B	0.47	3,439	B	0.47
I-95	ORANGE AVE to INDRIO RD	52,086	7,320	3,018	B	0.41	3,018	B	0.41
INDIAN RIVER DR	CITRUS AVE to ORANGE AVE	5,559	750	276	C	0.37	276	C	0.37
INDIAN RIVER DR	ORANGE AVE to AVENUE A	6,098	750	302	C	0.40	302	C	0.40
INDIAN RIVER DR	AVENUE D to SEAWAY DR	6,293	790	312	C	0.40	312	C	0.40
INDIAN RIVER DR	AVENUE A to AVENUE D	6,293	540	312	D	0.58	312	D	0.58
INDRIO RD	PRIVATE RD to I-95 W RAMP	1,130	1,080	56	B	0.05	56	B	0.05
INDRIO RD	I-95 W RAMP to I-95 E RAMP	1,130	3,240	56	B	0.02	56	B	0.02
INDRIO RD	I-95 E RAMP to KOBLEGARD RD	11,474	3,240	560	B	0.17	560	B	0.17
INDRIO RD	KOBLEGARD RD to JOHNSTON RD	11,474	700	560	C	0.80	560	C	0.80
INDRIO RD	JOHNSTON RD to EMERSON AVE	11,474	880	560	C	0.64	560	C	0.64
INDRIO RD	EMERSON RD to SEMINOLE RD	10,743	920	524	C	0.57	524	C	0.57
INDRIO RD	SEMINOLE RD to KINGS HWY	10,743	790	524	D	0.66	524	D	0.66
INDRIO RD	KINGS HWY to SLASH PINE TRL	6,500	790	411	D	0.52	404	D	0.51
INDRIO RD	SLASH PINE TRL to US 1	6,500	920	411	C	0.45	404	C	0.44
INDRIO RD	US 1 to OLD DIXIE HWY	1,245	750	108	C	0.14	114	C	0.15
JENKINS RD	EDWARDS RD to OKEECHOBEE RD	10,375	880	488	C	0.56	535	C	0.61
JENKINS RD	OKEECHOBEE RD to GRAHAM RD	10,849	920	567	C	0.62	574	C	0.62
JENKINS RD	GRAHAM RD to PETERSON RD	10,849	630	567	C	0.90	574	C	0.91
JENKINS RD	PETERSON RD to ORANGE AVE	10,849	920	567	C	0.62	574	C	0.62
JENNINGS RD	US 1 to LENNARD RD	5,465	2,100	286	C	0.14	273	C	0.13
JOHNSTON RD	ANGLE RD to L20	2,909	1,070	228	B	0.21	200	B	0.19
JOHNSTON RD	L20 to MEADOWOOD DR	2,604	1,070	172	B	0.16	163	B	0.15
JOHNSTON RD	MEADOWOOD DR to OLD JOHNSTON RD	2,604	1,070	172	B	0.16	163	B	0.15
JOHNSTON RD	OLD JOHNSTON RD to INDRIO RD	2,604	1,070	172	B	0.16	163	B	0.15
JOHNSTON RD	INDRIO RD to RUSSOS RD	10,000	1,070	580	C	0.54	547	C	0.51
JOHNSTON RD	RUSSOS RD to INDIAN RIVER C.L.	10,000	1,070	580	C	0.54	547	C	0.51
JUANITA AVE	53RD ST to 25TH ST	1,972	750	126	C	0.17	103	C	0.14
JUANITA AVE	25TH ST to US 1	3,749	750	191	C	0.26	209	C	0.28

* Volumes shown were adjusted using FDOT Seasonal Factors
* AADT = Annual Average Daily Traffic

St. Lucie Transportation Planning Organization

Coco Vista Centre
466 SW Port St. Lucie Blvd, Suite 111
Port St. Lucie, FL 34953
772-462-1593 www.stlucietpo.org

Traffic Counts and Level of Service Report
2023

Roadway Name	Location	AADT	Pk Hr Service Capacity	AM Pk Hr Pk Dir			PM Pk Hr Pk Dir		
				Volume	LOS	V/C	Volume	LOS	V/C
KEEN RD	ANGLE RD to JUANITA AVE	3,200	630	234	C	0.37	253	C	0.40
KEEN RD	JUANITA AVE to ST LUCIE BLVD	3,200	630	234	C	0.37	253	C	0.40
KINGS HWY	OKEECHOBEE RD to CROSSROADS PKWY	9,383	880	472	C	0.54	472	C	0.54
KINGS HWY	CROSSROADS PKWY to GRAHAM RD	9,383	700	472	C	0.67	472	C	0.67
KINGS HWY	GRAHAM RD to PICOS RD	7,181	700	361	C	0.52	361	C	0.52
KINGS HWY	PICOS RD to ORANGE AVE	7,181	880	361	C	0.41	361	C	0.41
KINGS HWY	ORANGE AVE to ANGLE RD	15,247	920	767	C	0.83	767	C	0.83
KINGS HWY	ANGLE RD to ST LUCIE BLVD	11,202	880	547	C	0.62	547	C	0.62
KINGS HWY	ST LUCIE BLVD to INDRIO RD	13,787	880	673	C	0.77	673	C	0.77
KIRBY LOOP RD	EDWARDS RD to 35TH ST	2,581	630	150	C	0.24	139	C	0.22
KITTERMAN RD	OLEANDER AVE to US 1	2,600	750	167	C	0.22	136	C	0.18
KITTERMAN RD	US 1 to LENNARD EXT	2,095	750	123	C	0.16	128	C	0.17
LENNARD RD	US 1 to MARIPOSA AVE	20,570	1,710	1,234	D	0.72	1,170	D	0.68
LENNARD RD	MARIPOSA AVE to MELALEUCA BLVD	20,570	1,710	1,234	D	0.72	1,170	D	0.68
LENNARD RD	MELALEUCA BLVD to JENNINGS RD	20,570	1,630	1,234	D	0.76	1,170	D	0.72
LENNARD RD	JENNINGS RD to HILLMOOR DR	20,570	1,710	1,234	D	0.72	1,170	D	0.68
LENNARD RD	HILLMOOR DR to TIFFANY AVE	20,570	1,710	1,234	D	0.72	1,170	D	0.68
LENNARD RD	TIFFANY AVE to WALTON RD	7,365	1,710	403	C	0.24	389	C	0.23
LENNARD RD	WALTON RD to S OF SAVANNA CLUB BLVD	3,748	790	259	C	0.33	246	C	0.31
LYNGATE DR	VETERANS MEMORIAL PKWY to MORNINGSIDE BLVD	9,700	920	612	C	0.67	553	C	0.60
LYNGATE DR	MORNINGSIDE BLVD to US 1	9,700	920	612	C	0.67	553	C	0.60
MARIPOSA AVE	LENNARD RD to HALLAHAN ST	7,300	880	568	C	0.65	541	C	0.62
MCCARTY RD	WILLIAMS RD to MIDWAY RD	364	540	27	C	0.05	25	C	0.05
MCCARTY RD	MIDWAY RD to OKEECHOBEE RD	431	540	37	C	0.07	37	C	0.07
MCNEIL RD	OKEECHOBEE RD to KIRBY LOOP RD	4,900	790	307	C	0.39	298	C	0.38
MCNEIL RD	KIRBY LOOP RD to EDWARDS RD	4,900	540	307	D	0.57	298	D	0.55
MELALEUCA BLVD	LENNARD RD to GREEN RIVER PKWY	10,710	920	630	C	0.69	601	C	0.65
MIDWAY RD	EAST TORINO PKWY to MILNER DR	25,000	880	1,245	F	1.42	1,298	F	1.48
MIDWAY RD	MILNER DR to W OF SELVITZ RD	25,000	790	1,245	F	1.58	1,298	F	1.64

* Volumes shown were adjusted using FDOT Seasonal Factors
* AADT = Annual Average Daily Traffic

St. Lucie Transportation Planning Organization

Coco Vista Centre
466 SW Port St. Lucie Blvd, Suite 111
Port St. Lucie, FL 34953
772-462-1593 www.stlucietpo.org

Traffic Counts and Level of Service Report
2023

Roadway Name	Location	AADT	Pk Hr Service Capacity	AM Pk Hr Pk Dir			PM Pk Hr Pk Dir		
				Volume	LOS	V/C	Volume	LOS	V/C
KEEN RD	ANGLE RD to JUANITA AVE	3,200	630	234	C	0.37	253	C	0.40
KEEN RD	JUANITA AVE to ST LUCIE BLVD	3,200	630	234	C	0.37	253	C	0.40
KINGS HWY	OKEECHOBEE RD to CROSSROADS PKWY	9,383	880	472	C	0.54	472	C	0.54
KINGS HWY	CROSSROADS PKWY to GRAHAM RD	9,383	700	472	C	0.67	472	C	0.67
KINGS HWY	GRAHAM RD to PICOS RD	7,181	700	361	C	0.52	361	C	0.52
KINGS HWY	PICOS RD to ORANGE AVE	7,181	880	361	C	0.41	361	C	0.41
KINGS HWY	ORANGE AVE to ANGLE RD	15,247	920	767	C	0.83	767	C	0.83
KINGS HWY	ANGLE RD to ST LUCIE BLVD	11,202	880	547	C	0.62	547	C	0.62
KINGS HWY	ST LUCIE BLVD to INDRIO RD	13,787	880	673	C	0.77	673	C	0.77
KIRBY LOOP RD	EDWARDS RD to 35TH ST	2,581	630	150	C	0.24	139	C	0.22
KITTERMAN RD	OLEANDER AVE to US 1	2,600	750	167	C	0.22	136	C	0.18
KITTERMAN RD	US 1 to LENNARD EXT	2,095	750	123	C	0.16	128	C	0.17
LENNARD RD	US 1 to MARIPOSA AVE	20,570	1,710	1,234	D	0.72	1,170	D	0.68
LENNARD RD	MARIPOSA AVE to MELALEUCA BLVD	20,570	1,710	1,234	D	0.72	1,170	D	0.68
LENNARD RD	MELALEUCA BLVD to JENNINGS RD	20,570	1,630	1,234	D	0.76	1,170	D	0.72
LENNARD RD	JENNINGS RD to HILLMOOR DR	20,570	1,710	1,234	D	0.72	1,170	D	0.68
LENNARD RD	HILLMOOR DR to TIFFANY AVE	20,570	1,710	1,234	D	0.72	1,170	D	0.68
LENNARD RD	TIFFANY AVE to WALTON RD	7,365	1,710	403	C	0.24	389	C	0.23
LENNARD RD	WALTON RD to S OF SAVANNA CLUB BLVD	3,748	790	259	C	0.33	246	C	0.31
LYNGATE DR	VETERANS MEMORIAL PKWY to MORNINGSIDE BLVD	9,700	920	612	C	0.67	553	C	0.60
LYNGATE DR	MORNINGSIDE BLVD to US 1	9,700	920	612	C	0.67	553	C	0.60
MARIPOSA AVE	LENNARD RD to HALLAHAN ST	7,300	880	568	C	0.65	541	C	0.62
MCCARTY RD	WILLIAMS RD to MIDWAY RD	364	540	27	C	0.05	25	C	0.05
MCCARTY RD	MIDWAY RD to OKEECHOBEE RD	431	540	37	C	0.07	37	C	0.07
MCNEIL RD	OKEECHOBEE RD to KIRBY LOOP RD	4,900	790	307	C	0.39	298	C	0.38
MCNEIL RD	KIRBY LOOP RD to EDWARDS RD	4,900	540	307	D	0.57	298	D	0.55
MELALEUCA BLVD	LENNARD RD to GREEN RIVER PKWY	10,710	920	630	C	0.69	601	C	0.65
MIDWAY RD	EAST TORINO PKWY to MILNER DR	25,000	880	1,245	F	1.42	1,298	F	1.48
MIDWAY RD	MILNER DR to W OF SELVITZ RD	25,000	790	1,245	F	1.58	1,298	F	1.64

* Volumes shown were adjusted using FDOT Seasonal Factors
* AADT = Annual Average Daily Traffic

St. Lucie Transportation Planning Organization

Coco Vista Centre
466 SW Port St. Lucie Blvd, Suite 111
Port St. Lucie, FL 34953
772-462-1593 www.stlucietpo.org

Traffic Counts and Level of Service Report
2023

Roadway Name	Location	AADT	Pk Hr Service Capacity	AM Pk Hr Pk Dir			PM Pk Hr Pk Dir		
				Volume	LOS	V/C	Volume	LOS	V/C
ORANGE AVE	SHINN RD to CAMPBELL RD	2,957	1,070	142	B	0.13	142	B	0.13
ORANGE AVE	CAMPBELL RD to KINGS HWY	2,957	1,070	142	B	0.13	142	B	0.13
ORANGE AVE	KINGS HWY to I-95	18,080	2,100	910	C	0.43	910	C	0.43
ORANGE AVE	I-95 to JENKINS RD	14,693	2,100	717	C	0.34	717	C	0.34
ORANGE AVE	JENKINS RD to HARTMAN RD	16,898	2,100	825	C	0.39	825	C	0.39
ORANGE AVE	HARTMAN RD to ANGLE RD	16,898	2,100	825	C	0.39	825	C	0.39
ORANGE AVE	ANGLE RD to 25TH ST	9,547	1,710		B			B	
ORANGE AVE	25TH ST to 17TH ST	13,554	1,630	661	C	0.41	661	C	0.41
ORANGE AVE	17TH ST to 13TH ST	13,554	1,710	661	C	0.39	661	C	0.39
ORANGE AVE	13TH ST to 10TH ST	13,554	750	661	D	0.88	661	D	0.88
ORANGE AVE	10TH ST to 7TH ST	9,873	600	482	D	0.80	482	D	0.80
ORANGE AVE	7TH ST to US 1	7,622	600	372	D	0.62	372	D	0.62
ORANGE AVE	US 1 to 2ND ST	4,209	600	209	C	0.35	209	C	0.35
ORANGE AVE	2ND ST to INDIAN RIVER DR	4,209	750	209	C	0.28	209	C	0.28
PARR DR	PORT ST LUCIE BLVD to DARWIN BLVD	2,283	700	177	C	0.25	153	C	0.22
PARR DR	DARWIN BLVD to TULIP BLVD	2,100	540	184	C	0.34	140	C	0.26
PARR DR	SAVONA BLVD to PORT ST LUCIE BLVD	2,283	700	177	C	0.25	153	C	0.22
PARR DR	ROSSER BLVD to SAVONA BLVD	2,283	630	177	C	0.28	153	C	0.24
PEACOCK BLVD	CALIFORNIA BLVD to CASHMERE BLVD	5,417	630	343	C	0.54	381	C	0.61
PEACOCK BLVD	UNIVERSITY BLVD to CALIFORNIA BLVD	11,327	920	778	C	0.85	637	C	0.69
PEACOCK BLVD	ST LUCIE WEST BLVD to UNIVERSITY BLVD	15,129	2,100	699	C	0.33	699	C	0.33
PETERSON RD	BENT CREEK DR to HARTMAN RD	2,195	540	163	C	0.30	150	C	0.28
PICOS RD	CAMPBELL RD to KINGS HWY	1,300	540	87	C	0.16	87	C	0.16
PORT ST LUCIE BLVD	MARTIN C.L. to BECKER RD	16,735	920	774	C	0.84	774	C	0.84
PORT ST LUCIE BLVD	BECKER RD to PAAR DR	16,735	920	774	C	0.84	774	C	0.84
PORT ST LUCIE BLVD	PAAR DR to TULIP BLVD	16,735	700	774	F	1.11	774	F	1.11
PORT ST LUCIE BLVD	TULIP BLVD to DARWIN BLVD	16,735	920	774	C	0.84	774	C	0.84
PORT ST LUCIE BLVD	DARWIN BLVD to GATLIN BLVD	34,500	3,020	1,765	C	0.58	1,744	C	0.58
PORT ST LUCIE BLVD	GATLIN BLVD to DEL RIO BLVD	44,000	3,170	2,481	C	0.78	2,389	C	0.75

* Volumes shown were adjusted using FDOT Seasonal Factors
* AADT = Annual Average Daily Traffic

St. Lucie Transportation Planning Organization

Coco Vista Centre
466 SW Port St. Lucie Blvd, Suite 111
Port St. Lucie, FL 34953
772-462-1593 www.stlucietpo.org

Traffic Counts and Level of Service Report
2023

Roadway Name	Location	AADT	Pk Hr Service Capacity	AM Pk Hr Pk Dir			PM Pk Hr Pk Dir		
				Volume	LOS	V/C	Volume	LOS	V/C
VETERANS MEMORIAL PKWY	PORT ST LUCIE BLVD to LYNGATE DR	16,283	2,100	793	C	0.38	770	C	0.37
VETERANS MEMORIAL PKWY	LYNGATE DR to US 1	12,866	2,100	657	C	0.31	665	C	0.32
VILLAGE GREEN DR	US 1 to WALTON RD	16,192	2,100	968	C	0.46	1,021	C	0.49
VILLAGE GREEN DR	WALTON RD to TIFFANY AVE	5,358	920	351	C	0.38	296	C	0.32
VILLAGE PKWY	DISCOVERY WAY to TRADITION PKWY	27,500	2,650	1,295	D	0.49	1,331	D	0.50
VILLAGE PKWY	BECKER RD to DISCOVERY WAY	27,500	1,710	1,295	D	0.76	1,331	D	0.78
VILLAGE PKWY	TRADITION PKWY to WESTCLIFFE LN	25,240	1,710	1,390	D	0.81	1,391	D	0.81
VILLAGE PKWY	WESTCLIFFE LN to CROSSTOWN PKWY	20,000	1,710	1,060	D	0.62	1,120	D	0.66
VIRGINIA AVE	35TH ST to 25TH ST	23,460	3,020	1,145	C	0.38	1,145	C	0.38
VIRGINIA AVE	OKEECHOBEE RD to HARTMAN RD	22,086	3,020	1,078	C	0.36	1,078	C	0.36
VIRGINIA AVE	HARTMAN RD to 35TH ST	22,086	3,020	1,078	C	0.36	1,078	C	0.36
VIRGINIA AVE	25TH ST to 13TH ST	21,451	3,020	1,047	C	0.35	1,047	C	0.35
VIRGINIA AVE	13TH ST to 11TH ST	23,517	3,020	1,148	C	0.38	1,148	C	0.38
VIRGINIA AVE	11TH ST to SUNRISE BLVD	23,517	3,170	1,148	C	0.36	1,148	C	0.36
VIRGINIA AVE	SUNRISE BLVD to OLEANDER AVE	20,046	3,020	978	C	0.32	978	C	0.32
VIRGINIA AVE	OLEANDER AVE to COLONIAL RD	18,476	3,170	902	C	0.28	902	C	0.28
VIRGINIA AVE	COLONIAL RD to US 1	18,476	3,020	902	C	0.30	902	C	0.30
WALTON RD	US 1 to VILLAGE GREEN DR	13,990	1,710	716	C	0.42	755	C	0.44
WALTON RD	VILLAGE GREEN DR to LENNARD RD	20,500	1,710	1,099	D	0.64	1,093	D	0.64
WALTON RD	LENNARD RD to GREEN RIVER PKWY	10,646	880	581	C	0.66	634	C	0.72
WALTON RD	GREEN RIVER PKWY to INDIAN RIVER DR	6,561	630	421	C	0.67	400	C	0.64
WEATHERBEE RD	OLEANDER AVE to US 1	2,800	750	175	C	0.23	160	C	0.21
WEATHERBEE RD	US 1 to MIDWAY RD	6,200	750	392	D	0.52	392	D	0.52
WESTCLIFFE LN	TREMONTE AVE to VILLAGE PKWY	5,500	1,470	404	C	0.28	370	C	0.25
WESTMORELAND BLVD	MORNINGSIDE BLVD to PORT ST LUCIE BLVD	13,000	920	696	C	0.76	785	C	0.85
WESTMORELAND BLVD	MARTIN C.L. to MORNINGSIDE BLVD	9,456	920	497	C	0.54	544	C	0.59

B-6

* Volumes shown were adjusted using FDOT Seasonal Factors
* AADT = Annual Average Daily Traffic

C3C & C3R

Motor Vehicle Arterial Generalized Service Volume Tables

(C3C-Suburban Commercial)

Peak Hour Directional

	B	C	D	E
1 Lane	*	760	1,070	**
2 Lane	*	1,520	1,810	**
3 Lane	*	2,360	2,680	**
4 Lane	*	3,170	3,180	**

Peak Hour Two-Way

	B	C	D	E
2 Lane	*	1,380	1,950	**
4 Lane	*	2,760	3,290	**
6 Lane	*	4,290	4,870	**
8 Lane	*	5,760	5,780	**

AADT

	B	C	D	E
2 Lane	*	15,300	21,700	**
4 Lane	*	30,700	36,600	**
6 Lane	*	47,700	54,100	**
8 Lane	*	64,000	64,200	**

(C3R-Suburban Residential)

	B	C	D	E
1 Lane	*	970	1,110	**
2 Lane	*	1,700	1,850	**
3 Lane	*	2,620	2,730	**

	B	C	D	E
2 Lane	*	1,760	2,020	**
4 Lane	*	3,090	3,360	**
6 Lane	*	4,760	4,960	**

	B	C	D	E
2 Lane	*	19,600	22,400	**
4 Lane	*	34,300	37,300	**
6 Lane	*	52,900	55,100	**

Adjustment Factors

The peak hour directional service volumes should be adjust by multiplying by 1.2 for one-way facilities
The AADT service volumes should be adjusted by multiplying 0.6 for one way facilities 2 Lane Divided Roadway with an Exclusive Left Turn Lane(s): Multiply by 1.05
2 lane Undivided Roadway with No Exclusive Left Turn Lane(s): Multiply by 0.80
Exclusive right turn lane(s): Multiply by 1.05
Multilane Undivided Roadway with an Exclusive Left Turn Lane(s): Multiply by 0.95
Multilane Roadway with No Exclusive Left Turn Lane(s): Multiply by 0.75
Non-State Signalized Roadway: Multiply by 0.90

This table does not constitute a standard and should be used only for general planning applications. The table should not be used for corridor or intersection design, where more refined techniques exist.
* Cannot be achieved using table input value defaults.
** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached.

APPENDIX C

OTHER PROJECT DATA/GROWTH RATE

Historical Growth Rate Calculation

Segment	From	To	2018 AADT	2022 AADT	4 Year Historical Growth Rate
Okeechobee Blvd	I-95	McNeil Rd	31,000	38,000	5.22%
	McNeil Rd	Virginia Ave	31,500	33,500	1.55%
Jenkins Rd	Okeechobee Blvd	Orange Ave	10,000	8,600	-3.70%
Kings Hwy	Okeechobee Blvd	Graham Rd	13,600	7,000	-15.30%
	Graham Rd	Orange Ave	9,700	5,400	-13.62%
Orange Ave	Kings Hwy	I-95	21,000	14,400	-9.00%
	I-95	Jenkins Rd	13,100	16,200	5.45%
Virginia Ave	Okeechobee Blvd	35th St	21,500	24,000	2.79%
		Total	151,400	147,100	-0.72%

*Source FDOT Historical Traffic Counts

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2022 HISTORICAL AADT REPORT

COUNTY: 94 - ST.LUCIE

SITE: 0030 - SR 70/VIRGINIA AVE - E OF OKEECHOBEE RD (COUNTY 30)

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2022	24000 C	E 12500	W 11500	9.00	51.40	5.40
2021	21000 C	E 10500	W 10500	9.00	50.90	7.10
2020	20000 F	E 10000	W 10000	9.00	51.30	7.10
2019	21000 C	E 10500	W 10500	9.00	51.00	7.10
2018	21500 C	E 11000	W 10500	9.00	51.30	3.60
2017	20300 C	E 10500	W 9800	9.00	50.90	3.60
2016	22500 C	E 12000	W 10500	9.00	50.90	3.60
2015	21000 C	E 11000	W 10000	9.00	51.00	3.30
2014	20400 C	E 10500	W 9900	9.00	50.80	3.90
2013	21000 C	E 10500	W 10500	9.00	50.80	3.90
2012	21000 C	E 10500	W 10500	9.00	56.80	4.50
2011	23500 C	E 11500	W 12000	9.00	57.20	4.50
2010	22000 C	E 11500	W 10500	10.32	55.40	4.50
2009	22000 C	E 11000	W 11000	10.27	57.35	5.20
2007	16900 C	E 8900	W 8000	10.31	58.74	5.20

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2022 HISTORICAL AADT REPORT

COUNTY: 94 - ST.LUCIE

SITE: 0041 - SR 68 / ORANGE AVE - W OF SR 9/I-95 (COUNTY 41)

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2022	14400 C	E 6900	W 7500	9.00	53.00	20.10
2021	18700 C	E 9100	W 9600	9.00	53.10	20.10
2020	19000 C	E 9000	W 10000	9.00	54.30	20.10
2019	19800 C	E 10500	W 9300	9.00	54.30	22.40
2018	21000 C	E 10500	W 10500	9.00	55.20	22.40
2017	19000 C	E 9800	W 9200	9.00	56.20	22.40
2016	21300 C	E 11500	W 9800	9.00	57.10	25.00
2015	17300 C	E 8500	W 8800	9.00	56.30	25.00
2014	15700 S	E 8000	W 7700	9.00	54.70	16.40
2013	15500 F	E 7900	W 7600	9.00	57.20	16.40
2012	15700 C	E 8000	W 7700	9.00	57.00	16.40
2011	17900 C	E 9000	W 8900	9.00	56.50	24.40
2010	18600 C	E 9400	W 9200	11.51	57.07	24.40
2009	16300 C	E 8200	W 8100	11.11	58.68	24.40
2008	26000 C	E 13000	W 13000	11.51	54.38	22.30
2007	27000 C	E 13500	W 13500	11.51	58.16	22.30

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2022 HISTORICAL AADT REPORT

COUNTY: 94 - ST.LUCIE

SITE: 0035 - SR 68 / ORANGE AVE - E OF SR 9/I-95 (COUNTY 35)

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2022	16200 C	E 7700	W 8500	9.00	51.40	18.70
2021	13400 C	E 6500	W 6900	9.00	50.90	18.70
2020	14700 F	E 7300	W 7400	9.00	51.30	16.60
2019	15300 C	E 7600	W 7700	9.00	51.00	16.60
2018	13100 C	E 7000	W 6100	9.00	51.30	16.60
2017	15400 C	E 7300	W 8100	9.00	50.90	10.80
2016	13900 C	E 6700	W 7200	9.00	50.90	10.80
2015	13600 C	E 6700	W 6900	9.00	51.00	10.80
2014	12600 F	E 6200	W 6400	9.00	50.80	10.40
2013	12600 C	E 6200	W 6400	9.00	50.80	10.40
2012	13700 C	E 6700	W 7000	9.00	56.80	10.40
2011	12900 C	E 6600	W 6300	9.00	57.20	16.30
2010	13800 C	E 6800	W 7000	10.32	55.40	16.30
2009	12200 C	E 6000	W 6200	10.27	57.35	16.30
2008	13200 C	E 6600	W 6600	10.45	58.06	9.70
2007	15100 C	E 7500	W 7600	10.31	58.74	16.60

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2022 HISTORICAL AADT REPORT

COUNTY: 94 - ST.LUCIE

SITE: 0742 - SR 70/OKEECHOBEE RD - SW OF SR 70/VIRGINIA AVE (COUNTY 742)

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2022	33500 C	E 17000	W 16500	9.00	51.40	11.40
2021	35500 C	E 18500	W 17000	9.00	50.90	11.40
2020	29500 F	E 14000	W 15500	9.00	51.30	4.60
2019	30500 C	E 14500	W 16000	9.00	51.00	4.60
2018	31500 C	E 16500	W 15000	9.00	51.30	4.60
2017	31500 C	E 15500	W 16000	9.00	50.90	12.00
2016	26000 C	E 15500	W 10500	9.00	50.90	12.00
2015	26500 C	E 11500	W 15000	9.00	51.00	12.00
2014	30000 C	E 15000	W 15000	9.00	50.80	6.10
2013	27000 C	E 12500	W 14500	9.00	50.80	3.80
2012	33000 C	E 16500	W 16500	9.00	56.80	3.80
2008	32500 C	E 16500	W 16000	10.45	58.06	6.70
2007	31500 C	E 15000	W 16500	10.31	58.74	7.40

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2022 HISTORICAL AADT REPORT

COUNTY: 94 - ST.LUCIE

SITE: 0029 - SR 70 / OKEECHOBEE RD - E OF SR 9/I-95 (COUNTY 29)

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2022	38000 C	E 19000	W 19000	9.00	51.40	11.80
2021	25100 C	E 17000	W 8100	9.00	50.90	11.00
2020	32000 F	E 16500	W 15500	9.00	51.30	11.00
2019	33000 C	E 17000	W 16000	9.00	51.00	11.00
2018	31000 C	E 15000	W 16000	9.00	51.30	4.70
2017	34500 C	E 17500	W 17000	9.00	50.90	12.30
2016	28500 F	E 14000	W 14500	9.00	50.90	12.30
2015	28500 C	E 14000	W 14500	9.00	51.00	12.30
2014	25500 F	E 14000	W 11500	9.00	50.80	4.90
2013	25500 C	E 14000	W 11500	9.00	50.80	4.90
2012	28000 C	E 14000	W 14000	9.00	56.80	4.90
2011	30500 C	E 15500	W 15000	9.00	57.20	10.90
2010	30500 C	E 15500	W 15000	10.32	55.40	10.90
2009	26500 C	E 13000	W 13500	10.27	57.35	10.90
2008	29500 C	E 15500	W 14000	10.45	58.06	6.70
2007	33000 C	E 17000	W 16000	10.31	58.74	5.20

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2022 HISTORICAL AADT REPORT

COUNTY: 94 - ST.LUCIE

SITE: 0757 - SR 713 / KINGS HWY - N OF SR 70/OKEECHOBEE RD (COUNTY 757)

YEAR	AADT	DIRECTION 1		DIRECTION 2		*K FACTOR	D FACTOR	T FACTOR
2022	7000 C	N	3400	S	3600	9.00	53.00	31.80
2021	13100 C	N	6800	S	6300	9.00	53.10	37.00
2020	7900 C	N	3900	S	4000	9.00	54.30	37.00
2019	7600 C	N	3700	S	3900	9.00	54.30	23.40
2018	13600 C	N	6500	S	7100	9.00	55.20	23.90
2017	12800 C	N	6100	S	6700	9.00	56.20	23.90
2016	6400 C	N	3100	S	3300	9.00	57.10	23.90
2015	6300 C	N	3000	S	3300	9.00	56.30	26.90
2014	9100 C	N	3900	S	5200	9.00	54.70	46.50
2013	6000 C	N	3000	S	3000	9.00	57.20	17.40
2012	5400 C	N	2700	S	2700	9.00	57.00	17.40
2011	6200 C	N	3200	S	3000	9.00	56.50	22.90
2010	13500 C	N	6800	S	6700	11.51	57.07	22.90
2009	8000 C	N	4000	S	4000	11.11	58.68	22.90
2008	7400 C	N	3500	S	3900	11.51	54.38	23.20
2007	8900 C	N	4400	S	4500	11.51	58.16	25.50

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2022 HISTORICAL AADT REPORT

COUNTY: 94 - ST.LUCIE

SITE: 0076 - SR 713/KINGS HWY - S OF SR 68/ORANGE AVE (COUNTY 76)

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2022	5400 C	N 2800	S 2600	9.00	53.00	31.80
2021	7500 C	N 3800	S 3700	9.00	53.10	24.60
2020	7000 F	N 3500	S 3500	9.00	54.30	37.00
2019	7000 C	N 3500	S 3500	9.00	54.30	22.80
2018	9700 C	N 4600	S 5100	9.00	55.20	22.80
2017	9500 C	N 4700	S 4800	9.00	56.20	22.80
2016	9600 C	N 4600	S 5000	9.00	57.10	32.40
2015	8400 C	N 4100	S 4300	9.00	56.30	32.40
2014	7900 C	N 3800	S 4100	9.00	54.70	19.90
2013	7200 C	N 3400	S 3800	9.00	57.20	14.20
2012	7100 C	N 3400	S 3700	9.00	57.00	14.20
2011	8000 C	N 3900	S 4100	9.00	56.50	17.20
2010	8900 C	N 4400	S 4500	11.51	57.07	17.20
2009	8000 C	N 3800	S 4200	11.11	58.68	17.20
2008	10600 C	N 5200	S 5400	11.51	54.38	11.20
2007	11100 C	N 5400	S 5700	11.51	58.16	7.90

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2022 HISTORICAL AADT REPORT

COUNTY: 94 - ST.LUCIE

SITE: 0273 - CR 611/JENKINS RD - N. OF SR 70/OKEECHOBEE RD (COUNTY 131)

YEAR	AADT	DIRECTION 1		DIRECTION 2		*K FACTOR	D FACTOR	T FACTOR
2022	8600 T	N	4300	S	4300	9.00	51.40	5.00
2021	8600 S	N	4300	S	4300	9.00	50.90	7.20
2020	8800 F	N	4400	S	4400	9.00	51.30	31.50
2019	9200 C	N	4600	S	4600	9.00	51.00	7.80
2018	10000 V	N	4400	S	5600	9.00	51.30	5.80
2017	9900 R	N	4400	S	5500	9.00	50.90	10.00
2016	9700 T	N	4300	S	5400	9.00	50.90	6.20
2015	9600 S	N	4300	S	5300	9.00	51.00	41.80
2014	9600 F	N	4300	S	5300	9.00	50.80	49.50
2013	9600 C	N	4300	S	5300	9.00	50.80	11.90
2012	7100 S	N	3600	S	3500	9.00	56.80	4.80
2011	7100 F	N	3600	S	3500	9.00	57.20	4.80
2010	7100 C	N	3600	S	3500	10.32	55.40	4.80
2009	8500 C	N	4200	S	4300	10.27	57.35	10.70
2008	9100 C	N	4500	S	4600	10.45	58.06	6.60

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

AM APPROVED PROJECTS			Ferrell Communities						Kings Hwy Commerce Park						Sunnyland						Crawdy Angle Road FKA: Pineapple Grove						KRE					
Road Name	From	To	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W
Kings Hwy	Okeechobee Rd	Graham Rd	60%	1,593	109	IN	25	83	45%	1,849	203	IN	163	41	40%	1,637	119	IN	30	89	18%	656	48	IN	12	36	20%	956	102	IN	79	23
	Graham Rd	Picos Rd	40%	1,062	72	OUT	56	17	32%	1,315	145	OUT	29	116	40%	1,637	119	IN	30	89	23%	839	61	IN	15	46	23%	1,099	117	IN	90	27
				2,655	181		In	42		4,108	452		In	362		4,092	298		In	75		3,646	265		In	66		4,778	510		In	393
				Daily	Two-Way		Out	139		Daily	Two-Way		Out	90		Daily	Two-Way		Out	223		Daily	Two-Way		Out	199		Daily	Two-Way		Out	117

C6 - SLCO - Background Traffic - Kings Highway Commerce

AM APPROVED PROJECTS			Stonemont						Creekside						Orange 95 Parcel B						Orange 95 Parcels D & E						Bent Creek @ 50% Complete City of Fort Pierce					
Road Name	From	To	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W
Kings Hwy	Okeechobee Rd	Graham Rd	20%	445	52	IN	41	11	5%	372	28	OUT	21	7	16%	162	20	IN	16	3	16%	174	21	IN	18	4	3%	0	7	IN	2	6
	Graham Rd	Picos Rd	23%	512	60	IN	47	13	5%	372	28	OUT	21	7	19%	192	23	IN	20	4	19%	206	25	IN	21	4	3%	0	7	IN	2	6
				2,226	259		In	203		7,443	564		In	143		1,012	123		In	103		1,086	133		In	111		0	248		In	62
				Daily	Two-Way		Out	56		Daily	Two-Way		Out	421		Daily	Two-Way		Out	20		Daily	Two-Way		Out	22		Daily	Two-Way		Out	186

C-11

AM APPROVED PROJECTS			Celebration Pointe @ 25% Complete City of Fort Pierce						Hillpointe Residential						Whispering Oaks						Project: Hunt						Wawa Kings Highway					
Road Name	From	To	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W
Kings Hwy	Okeechobee Rd	Graham Rd	2%	32	3	IN	1	2	5%	85	5	IN	1	4	2%	56	4	IN	1	3	50%	478	51	IN	42	9	20.0%	284	25	-	13	13
	Graham Rd	Picos Rd	2%	32	3	OUT	2	1	5%	85	5	OUT	4	1	2%	56	4	IN	1	3	43%	411	43	OUT	7	36	20.0%	284	25	-	13	13
				1,385	128		In	32		1,691	101		In	24		2,806	212		In	45		956	101		In	84		1,422	127		In	63
				Daily	Two-Way		Out	96		Daily	Two-Way		Out	77		Daily	Two-Way		Out	167		Daily	Two-Way		Out	17		Daily	Two-Way		Out	64

AM APPROVED PROJECTS			Kings Highway Warehouse						7/11 Angle Road						Jenkins Waypoint / Resurrection Life						Walsh Crossroads						Project Hurricane					
Road Name	From	To	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W
Kings Hwy	Okeechobee Rd	Graham Rd	52%	2,652	355	IN	178	177	20%	180	18	IN	9	9	5%	166	10	IN	3	3	30%	55	4	OUT	2	2	15%	63	7	IN	5	2
	Graham Rd	Picos Rd	52%	2,652	355	IN	178	177	25%	225	23	IN	12	11	5%	166	10	OUT	8	3	30%	55	4	OUT	2	2	15%	63	7	OUT	2	5
				5,100	683		In	342		900	92		In	46		3,318	209		In	53		184	12		In	7		422	48		In	36
				Daily	Two-Way		Out	341		Daily	Two-Way		Out	45		Daily	Two-Way		Out	156		Daily	Two-Way		Out	5		Daily	Two-Way		Out	12

AM APPROVED PROJECTS			SUM Daily		SUM 2 Way		SUM Directional N/E		SUM Directional S/W		Two Way		Directional N/E		Directional S/W	
Road Name	From	To	Residential	Non-Residential	Residential	Non-Residential	Residential	Non-Residential	Residential	Non-Residential	Double Count	Net 2 Way	Double Count	Net	Double Count	Net
Kings Hwy	Okeechobee Rd	Graham Rd	4,597	7,298	333	858	95	565	238	293	-83	1,108	-24	637	-59	473
	Graham Rd	Picos Rd	4,248	7,015	310	828	138	419	172	408	-78	1,061	-35	523	-43	538

PM APPROVED PROJECTS			Ferrell Communities						Kings Hwy Commerce Park						Sunnyland						Drawdy Angle Road FKA: Pineapple Grove						KRE					
Road Name	From	To	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W
Kings Hwy	Okeechobee Rd	Graham Rd	60%	1,593	114	IN	70	44	45%	1,849	219	IN	52	167	40%	1,637	166	IN	104	62	18%	656	66	IN	42	25	20%	956	108	IN	30	78
	Graham Rd	Picos Rd	40%	1,062	76	OUT	30	46	32%	1,315	156	OUT	119	37	40%	1,637	166	IN	104	62	13%	839	85	IN	53	32	23%	1,099	124	IN	35	89
				2,555	190		In	116		3,108	486		In	115		4,092	415		In	261		3,646	369		In	232		4,778	540		In	151
				Daily	Two-Way		Out	74		Daily	Two-Way		Out	371		Daily	Two-Way		Out	154		Daily	Two-Way		Out	137		Daily	Two-Way		Out	389

PM APPROVED PROJECTS			Stonemont						Creekside						Orenge 95 Parcel B						Orange 95 Parcels D & E						Bent Creek @ 50% Complete City of Fort Pierce					
Road Name	From	To	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W
Kings Hwy	Okeechobee Rd	Graham Rd	20%	445	52	IN	14	38	5%	372	34	OUT	13	21	16%	162	20	IN	4	16	16%	174	22	IN	5	17	3%	0	9	IN	6	3
	Graham Rd	Picos Rd	23%	512	60	IN	16	44	5%	372	34	OUT	13	21	19%	192	24	IN	5	19	19%	206	26	IN	6	20	3%	0	9	IN	6	3
				2,225	262		In	70		7,443	682		In	426		1,012	127		In	28		1,086	137		In	30		0	306		In	193
				Daily	Two-Way		Out	192		Daily	Two-Way		Out	256		Daily	Two-Way		Out	99		Daily	Two-Way		Out	107		Daily	Two-Way		Out	113

PM APPROVED PROJECTS			Ce ebration Pointe @ 25% Complete City of Fort Pierce						Hillpointe Residential						Whispering Oaks						Project Hunt						Wawa Kings Highway					
Road Name	From	To	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W
Kings Hwy	Okeechobee Rd	Graham Rd	2%	32	3	IN	2	1	5%	85	6	IN	4	2	2%	56	5	In	3	2	50%	478	57	IN	15	43	20%	284	23	-	12	11
	Graham Rd	Picos Rd	2%	32	3	OUT	1	2	5%	85	6	OUT	2	4	2%	56	5	In	3	2	43%	411	49	OUT	37	12	20%	284	23	-	12	11
				1,585	158		In	101		1,691	129		In	81		2,806	266		In	172		956	114		In	29		1,422	115		In	57
				Daily	Two-Way		Out	57		Daily	Two-Way		Out	48		Daily	Two-Way		Out	94		Daily	Two-Way		Out	85		Daily	Two-Way		Out	58

PM APPROVED PROJECTS			Kings Highway Warehouse						7/11 Argle Road						Jenkins Waypoint / Resurrection Life						Walsh Crossroads						Project Hurricane					
Road Name	From	To	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W	%	Daily	Two-Way Trips	Is N/E In or Out	Directional N/E	Directional S/W
Kings Hwy	Okeechobee Rd	Graham Rd	52%	2,652	350	IN	238	112	20%	180	16	IN	8	8	5%	166	14	N	9	5	30%	55	6	OUT	3	3	15%	63	9	IN	3	6
	Graham Rd	Picos Rd	52%	2,652	350	IN	238	112	25%	225	20	IN	10	10	5%	166	14	CUT	5	9	30%	55	6	OUT	3	3	15%	63	9	OUT	6	3
				5,100	674		In	458		900	80		In	40		3,318	274		In	172		184	21		In	10		422	60		In	23
				Daily	Two-Way		Out	216		Daily	Two-Way		Out	40		Daily	Two-Way		Out	102		Daily	Two-Way		Out	11		Daily	Two-Way		Out	37

PM APPROVED PROJECTS			SUM Daily		SUM 2 Way		SUM Directional N/E		SUM Directional S/W		Two Way		Directional N/E		Directional S/W	
Road Name	From	To	Residential	Non-Residential	Residential	Non-Residential	Residential	Non-Residential	Residential	Non-Residential	Double Count	Nvt 2 Way	Double Count	Net	Double Count	Net
Kings Hwy	Okeechobee Rd	Graham Rd	4,597	7,298	418	883	252	384	166	499	-105	1,197	-63	574	-41	623
	Graham Rd	Picos Rd	4,248	7,015	399	848	218	486	181	362	-100	1,147	-55	649	-45	498

APPENDIX D

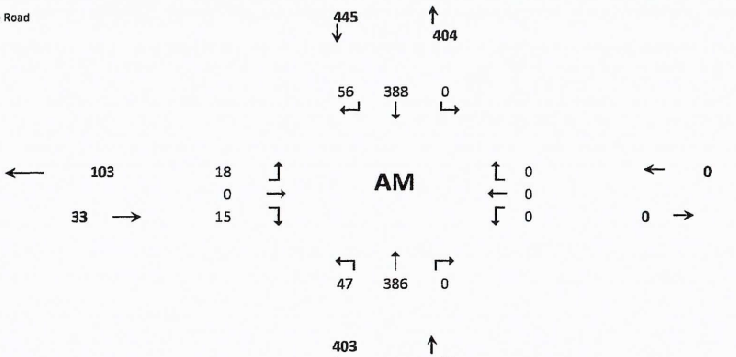
INTERSECTION ANALYSIS

TURNING MOVEMENT VOLUME COUNTS

N/S STREET: Kings Highway
E/W STREET: White Road
CONTROL: TWSC
FILENAME:
COUNT DATE: 2/12/2019
DAY:
CITY: Ft Pierce
INTERSECTION: Kings Highway & White Road
REPORT DATE: 5/22/2022
ANALYSIS YEAR: 2023
Existing

15 Min Period	Northbound NBL	NBT	NBR	Southbound SBL	SBT	SBR	Eastbound EBL	EBT	EBR	Westbound WBL	WBT	WBR	TOTAL	ONE HOUR SUM
7:00-7:15		91			81								172	701
7:15-7:30		81			76								157	708
7:30-7:45		100			101								201	730
7:45-8:00		90			81								171	672
8:00-8:15		86			93								179	642
8:15-8:30		88			91								179	
8:30-8:45		80			63								143	
8:45-9:00		50			91								141	
AM PEAK HOUR IS FROM:	7:30 AM TO 8:30AM													
Volumes	44[1]	364	0	0	366	53[1]	17[1]	0	14[1]	0	0	0	730	
Season Factor	44	364	0	0	366	53	17	0	14	0	0	0	858	
Growth	47	386	0	0	388	56	18	0	15	0	0	0	911	
In/Out	-	-	-	-	-	-	-	-	-	-	-	-		
Percentage	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		
PROJECT	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	47	386	0	0	388	56	18	0	15	0	0	0	911	

[1] Based on existing uses Trip Gen & 55%/45% N/S Split



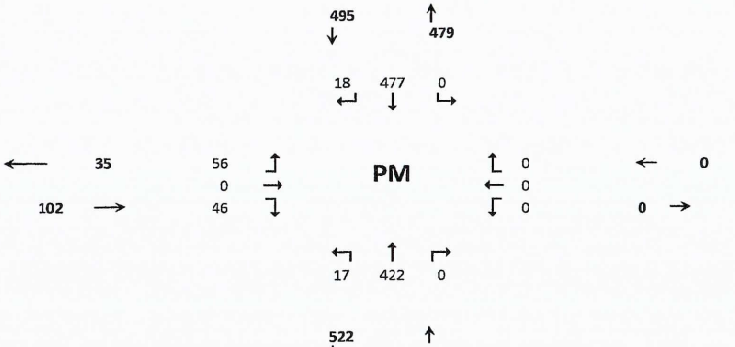
Seasonal Factor: 1
Growth Rate: 1.015
Years Grown: 4
PHF: 0.91

	Trips In	Trips Out
	0	0

N/S STREET: Kings Highway
E/W STREET: White Road
CONTROL: TWSC
FILENAME:
COUNT DATE: 2/12/2019
DAY:
CITY: Ft Pierce
REPORT DATE: 3/24/2022
ANALYSIS YEAR: 2023
Existing

15 Min Period lanes	Northbound NBL	NBT	NBR	Southbound SBL	SBT	SBR	Eastbound EBL	EBT	EBR	Westbound WBL	WBT	WBR	TOTAL	ONE HOUR SUM
4:00-4:15		88			89								177	813
4:15-4:30		116			111								227	847
4:30-4:45		95			103								198	810
4:45-5:00		85			126								211	802
5:00-5:15		102			109								211	730
5:15-5:30		91			99								190	
5:30-5:45		98			92								190	
5:45-6:00		71			68								139	
PM PEAK HOUR S FROM:	4:15PM TO 5:15PM													
Volumes	16[1]	398	0	0	449	17[1]	53[1]	0	43[1]	0	0	0	947	
Season Factor	16	398	0	0	449	17	53	0	43	0	0	0	976	
Growth	17	422	0	0	477	18	56	0	46	0	0	0	1036	
In/Out	-	-	-	-	-	-	-	-	-	-	-	-		
Percentage	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		
PROJECT	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	17	422	0	0	477	18	56	0	46	0	0	0	1036	

(1) Based on existing uses Trip Gen & 55%/45% N/S Split



Seasonal Factor: 1
Growth Rate: 1.015
Years Grown: 4
PHF: 0.93

	Trips In	Trips Out
	0	0

D-1

HCS Two-Way Stop-Control Report

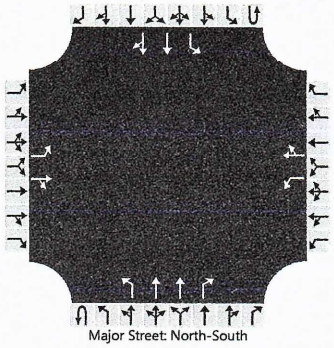
General Information

Analyst	James Kemp
Agency/Co.	O'Rourke Engineering
Date Performed	3/6/2023
Analysis Year	2023
Time Analyzed	AM Peak Hour
Intersection Orientation	North-South
Project Description	Existing

Site Information

Intersection	Kings Hwy & White Rd
Jurisdiction	St. Lucie County
East/West Street	White Road
North/South Street	Kings Hwy
Peak Hour Factor	0.91
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	1	0		1	1	0	0	1	2	1	0	1	2	0
Configuration		L		TR		L		TR		L	T	R		L	T	TR
Volume (veh/h)		18	0	15		0	0	0	0	47	386	0	0	0	388	56
Percent Heavy Vehicles (%)		10	10	10		18	18	18	3	10			3	18		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized										No						
Median Type | Storage		Left Only								1						

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5	6.5	6.9		7.5	6.5	6.9		4.1				4.1		
Critical Headway (sec)		7.70	6.70	7.10		7.86	6.86	7.26		4.30				4.46		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.60	4.10	3.40		3.68	4.18	3.48		2.30				2.38		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		20		16		0		0		52				0		
Capacity, c (veh/h)		378		733		341		0		1017				1026		
v/c Ratio		0.05		0.02		0.00				0.05				0.00		
95% Queue Length, Q_{95} (veh)		0.2		0.1		0.0				0.2				0.0		
Control Delay (s/veh)		15.0		10.0		15.6				8.7				8.5		
Level of Service (LOS)		C		B		C				A				A		
Approach Delay (s/veh)		12.8								0.9				0.0		
Approach LOS		B								A				A		

HCS Two-Way Stop-Control Report

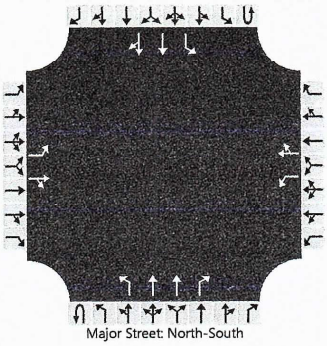
General Information

Analyst	James Kemp
Agency/Co.	O'Rourke Engineering
Date Performed	3/6/2023
Analysis Year	2023
Time Analyzed	PM Peak Hour
Intersection Orientation	North-South
Project Description	Existing

Site Information

Intersection	Kings Hwy & White Rd
Jurisdiction	St. Lucie County
East/West Street	White Road
North/South Street	Kings Hwy
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	1	0		1	1	0	0	1	2	1	0	1	2	0
Configuration		L		TR		L		TR		L	T	R		L	T	TR
Volume (veh/h)		56	0	46		0	0	0	0	17	422	0	0	0	477	18
Percent Heavy Vehicles (%)		10	10	10		18	18	18	3	10			3	18		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized										No						
Median Type | Storage		Left Only								1						

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5	6.5	6.9		7.5	6.5	6.9		4.1				4.1		
Critical Headway (sec)		7.70	6.70	7.10		7.86	6.86	7.26		4.30				4.46		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.60	4.10	3.40		3.68	4.18	3.48		2.30				2.38		

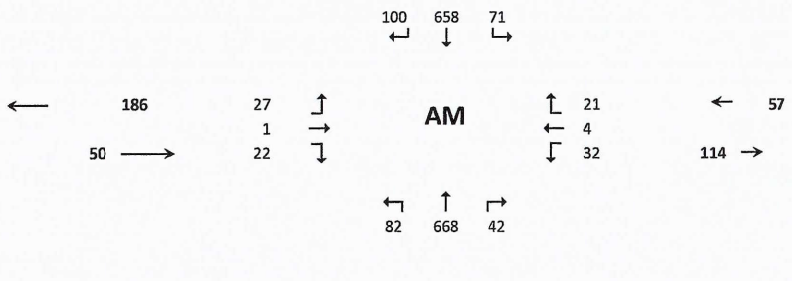
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		60		49		0		0		18				0		
Capacity, c (veh/h)		373		708		354		0		978				998		
v/c Ratio		0.16		0.07		0.00				0.02				0.00		
95% Queue Length, Q_{95} (veh)		0.6		0.2		0.0				0.1				0.0		
Control Delay (s/veh)		16.5		10.5		15.2				8.8				8.6		
Level of Service (LOS)		C		B		C				A				A		
Approach Delay (s/veh)		13.8								0.3				0.0		
Approach LOS		B								A				A		

TURNING MOVEMENT VOLUME COUNTS

N/S STREET: Kings Highway
E/W STREET: White Road
CONTROL: TWSC
FILENAME:
COUNT DATE: 2/12/2019
DAY:
CITY: Ft Pierce
INTERSECTION: Kings Highway & White Road
REPORT DATE: 6/22/2022
ANALYSIS YEAR: 2025 Background
Without Project

15 Min Period	Northbound			Southbound			Eastbound			Westbound				ONE HOUR SUM
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	TOTAL	
7:00-7:15		91			81								172	701
7:15-7:30		81			76								157	708
7:30-7:45		100			101								201	730
7:45-8:00		90			81								171	672
8:00-8:15		86			93								179	642
8:15-8:30		88			91								179	
8:30-8:45		80			63								143	
8:45-9:00		50			91								141	



AM PEAK HOUR IS FROM: 7:30 AM TO 8:30AM

Volumes	44(1)	364	0	0	366	53(1)	17(1)	0	14(1)	0	0	0	730	
Season Factor	44	364	0	0	366	53	17	0	14	0	0	0	858	
Growth	48	398	0	0	400	58	19	0	15	0	0	0	938	
In/Out	-	-	-	-	-	-	-	-	-	-	-	-		
Percentage	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		
PROJECT	0	0	0	0	0	0	0	0	0	0	0	0	0	

Seasonal Factor: 1
Growth Rate: 1.015
Years Grown: 6
PHF: 0.91

SUBPROJECTS

															Trips In	Trips Out
%	0%	10%	15%	25%	15%	0%	0%	0%	0%	45%	0%	30%				
In/Out	-	OUT	IN	IN	IN	-	-	-	-	OUT	-	OUT				
Volume	0	7	42	71	42	0	0	0	0	32	0	21	215	Kings Highway Commerce Park (Phase 1)	283	71
%		30.0%			30.0%											
In/Out		IN			OUT											
Volume	0	42	0	0	9	0	0	0	0	0	0	0	52	St Lucie Commerce Center (25%)	141	31
%		2.0%			2.0%											
In/Out		IN			OUT											
Volume	0	1	0	0	3	0	0	0	0	0	0	0	4	Whispering Oaks	45	167
%		2.0%			2.0%											
In/Out		IN			OUT											
Volume	0	1	0	0	4	0	0	0	0	0	0	0	5	Bent Creek (50%)	62	186
%		15.0%			15.0%											
In/Out		IN			OUT											
Volume	0	9	0	0	10	0	0	0	0	0	0	0	19	Wawa Kings	63	64
%		52.0%			52.0%											
In/Out		IN			OUT											
Volume	0	178	0	0	177	0	0	0	0	0	0	0	355	Kings Highway Warehouse	342	341
%		15.0%			15.0%											
In/Out		IN			OUT											
Volume	0	30	0	0	8	0	0	0	0	0	0	0	38	Stonemont	197	55
%		30.0%			30.0%											
In/Out		OUT			IN											
Volume	0	2	0	0	2	0	0	0	0	0	0	0	4	Walsh Crossroads	7	5
%	40%	0%	0%	0%	0%	50%	50%	5%	40%	0%	5%	0%				
In/Out	IN	-	-	-	-	IN	OUT	OUT	OUT	-	IN	-				
Volume	34	0	0	0	0	42	9	1	7	0	4	0	96	Project Hunt	84	17
%		2.0%			2.0%											
In/Out		IN			OUT											
Volume	0	1	0	0	2	0	0	0	0	0	0	0	3	Celebration Pointe (25%)	30	96
Subtotal	34	270	42	71	258	42	9	1	7	32	4	21	790	Effective Growth Rate: 12.38%		
Total	82	668	42	71	658	100	27	1	22	32	4	21	1728			

(1) Based on existing uses Trip Gen & 55%/45% N/S Split

HCS Two-Way Stop-Control Report

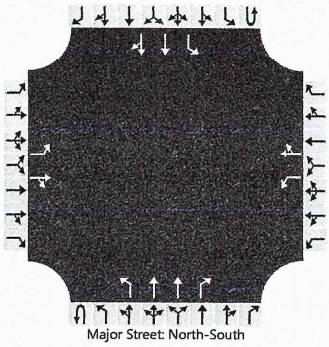
General Information

Analyst	James Kemp
Agency/Co.	O'Rourke Engineering
Date Performed	3/6/2023
Analysis Year	2025
Time Analyzed	AM Peak Hour
Intersection Orientation	North-South
Project Description	Background - Without Project

Site Information

Intersection	Kings Hwy & White Rd
Jurisdiction	St. Lucie County
East/West Street	White Road
North/South Street	Kings Hwy
Peak Hour Factor	0.91
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	1	0		1	1	0	0	1	2	1	0	1	2	0
Configuration		L		TR		L		TR		L	T	R		L	T	TR
Volume (veh/h)		27	1	22		32	4	21	0	82	668	42	0	71	658	100
Percent Heavy Vehicles (%)		10	10	10		18	18	18	3	10			3	18		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized										No						
Median Type | Storage		Left Only								1						

Critical and Follow-up Headways

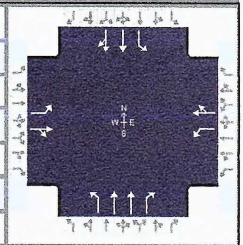
Base Critical Headway (sec)		7.5	6.5	6.9		7.5	6.5	6.9		4.1				4.1		
Critical Headway (sec)		7.70	6.70	7.10		7.86	6.86	7.26		4.30				4.46		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.60	4.10	3.40		3.68	4.18	3.48		2.30				2.38		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		30		25		35		27		90				78		
Capacity, c (veh/h)		140		388		139		200		746				736		
v/c Ratio		0.21		0.07		0.25		0.14		0.12				0.11		
95% Queue Length, Q_{95} (veh)		0.8		0.2		0.9		0.5		0.4				0.4		
Control Delay (s/veh)		37.4		14.9		39.4		25.9		10.5				10.5		
Level of Service (LOS)		E		B		E		D		B				B		
Approach Delay (s/veh)		27.1				33.5				1.1				0.9		
Approach LOS		D				D				A				A		

HCS Signalized Intersection Results Summary

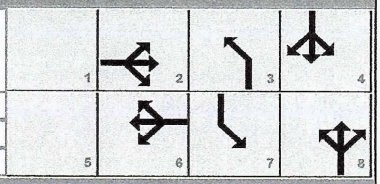
General Information				Intersection Information	
Agency	O'Rourke Engineering & Planning			Duration, h	0.250
Analyst	MM	Analysis Date	Sep 19, 2022	Area Type	Other
Jurisdiction	St. Lucie	Time Period	AM Peak Hour	PHF	0.91
Urban Street	Kings Hwy	Analysis Year	2025	Analysis Period	1> 7:00
Intersection	White Rd	File Name	Kings & White (WITHOUT PROJECT) - AM - 3.6....		
Project Description	Background - Without Project				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	27	1	22	32	4	21	82	668	42	71	658	100

Signal Information			
Cycle, s	140.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	44.0	14.0	64.0	0.0	0.0	0.0	
Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
Red	2.0	2.0	2.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6	3	8	7	4
Case Number		6.0		6.0	1.1	3.0	1.1	4.0
Phase Duration, s		50.0		50.0	20.0	70.0	20.0	70.0
Change Period, ($Y+R_c$), s		6.0		6.0	6.0	6.0	6.0	6.0
Max Allow Headway (*MAH*), s		0.0		0.0	3.1	3.1	3.1	3.1
Queue Clearance Time (g_s), s					6.0	27.0	5.8	30.6
Green Extension Time (g_e), s		0.0		0.0	0.1	3.9	0.1	3.8
Phase Call Probability					1.00	1.00	1.00	1.00
Max Out Probability					0.00	0.00	0.00	0.00

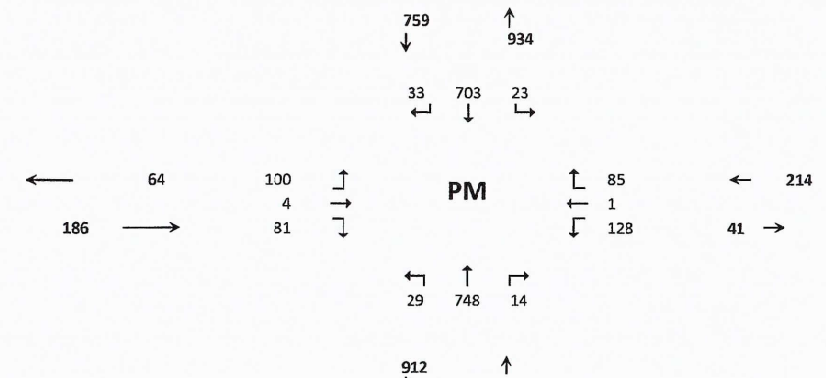
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	30	25		35	27		90	734	46	78	426	407
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1405	1330		1407	1238		1485	1484	1208	1358	1559	1487
Queue Service Time (g_s), s	2.1	1.9		2.5	2.2		4.0	25.0	3.0	3.8	28.6	28.6
Cycle Queue Clearance Time (g_c), s	4.3	1.9		4.4	2.2		4.0	25.0	3.0	3.8	28.6	28.6
Green Ratio (*g/C*)	0.31	0.31		0.31	0.31		0.56	0.46	0.46	0.56	0.46	0.46
Capacity (*c*), veh/h	471	418		475	389		331	1357	552	333	713	680
Volume-to-Capacity Ratio (*X*)	0.063	0.060		0.074	0.071		0.272	0.541	0.084	0.234	0.598	0.598
Back of Queue (*Q*), ft/ln (95 th percentile)	34.4	34		40.9	39.5		72.5	405	49	66.4	477	459.7
Back of Queue (*Q*), veh/ln (95 th percentile)	1.4	1.1		1.6	1.3		2.5	13.7	1.6	2.1	16.1	15.5
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	35.2	33.6		35.1	33.7		18.6	27.4	21.4	17.6	28.4	28.4
Incremental Delay (d_2), s/veh	0.3	0.3		0.3	0.4		0.2	0.2	0.0	0.1	1.0	1.0
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	35.4	33.8		35.4	34.0		18.8	27.6	21.5	17.7	29.4	29.4
Level of Service (LOS)	D	C		D	C		B	C	C	B	C	C
Approach Delay, s/veh / LOS	34.7	C		34.8	C		26.4	C		28.4	C	
Intersection Delay, s/veh / LOS	27.9						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.45	B	2.30	B	1.92	B	1.92	B
Bicycle LOS Score / LOS	0.58	A	0.59	A	1.21	A	1.24	A

TURNING MOVEMENT VOLUME COUNTS

N/S STREET: Kings Highway
E/W STREET: White Road
CONTROL: TWSC
FILENAME:
COUNT DATE: 2/12/2019
DAY:
CITY: Ft Pierce
REPORT DATE: 3/24/2022
ANALYSIS YEAR: 2025 Background
Without Project

15 Min Period	Northbound			Southbound			Eastbound			Westbound				ONE HOUR SUM
lanes	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EER	WBL	WBT	WBR	TOTAL	
4:00-4:15		88			89								177	813
4:15-4:30		116			111								227	847
4:30-4:45		95			103								198	810
4:45-5:00		85			126								211	802
5:00-5:15		102			109								211	730
5:15-5:30		91			99								190	
5:30-5:45		98			92								190	
5:45-6:00		71			68								139	



PM PEAK HOUR IS FROM: 4:15PM TO 5:15PM

Volumes	16 (1)	398	0	0	449	17 (1)	53 (1)	0	43 (1)	0	0	0	847	
Season Factor	16	398	0	0	449	17	53	0	43	0	0	0	976	
Growth	17	435	0	0	491	19	58	0	47	0	0	0	1067	
In/Out	-	-	-	-	-	-	-	-	-	-	-	-		
Percentage	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		
PROJECT	0	0	0	0	0	0	0	0	0	0	0	0	0	

Seasonal Factor: 1
Growth Rate: 1.015
Years Grown: 6
PHF: 0.93

	Trips In	Trips Out
	0	0

SUBPROJECTS

%		10%	15%	25%	15%					45.00%		30%				
In/Out	-	OUT	IN	IN	IN	-	-	-	-	OUT	-	OUT				
Volume	0	28	14	23	14	0	0	0	0	128	0	85	292	Kings Highway Commerce Park (Phase 1)	90	284
%		30.0%			30.0%											
In/Out		IN			OUT											
Volume	0	16	0	0	59	0	0	0	0	0	0	0	74	St Lucie Commerce Center (25%)	52	196
%		2.0%			2.0%											
In/Out		IN			OUT											
Volume	0	3	0	0	2	0	0	0	0	0	0	0	5	Whispering Oaks	172	94
%		2.0%			2.0%											
In/Out		IN			OUT											
Volume	0	4	0	0	2	0	0	0	0	0	0	0	5	Bent Creek (50%)	193	113
%		15.0%			15.0%											
In/Out		IN			OUT											
Volume	0	9	0	0	9	0	0	0	0	0	0	0	17	Wawa Kings	57	58
%		52.0%			52.0%											
In/Out		IN			OUT											
Volume	0	238	0	0	112	0	0	0	0	0	0	0	350	Kings Highway Warehouse	458	215
%		15.0%			15.0%											
In/Out		IN			OUT											
Volume	0	10	0	0	10	0	0	0	0	0	0	0	20	Stonemont	68	185
%		30.0%			30.0%											
In/Out		OUT			IN											
Volume	0	3	0	0	3	0	0	0	0	0	0	0	6	Walsh Crossroads	10	11
%	40%	0%	0%	0%	0%	30%	50%	5%	40%	0%	5%	0%				
In/Out	IN	-	-	-	-	IN	OUT	OUT	OUT	-	IN	-				
Volume	12	0	0	0	0	15	43	4	34	0	1	0	108	Project Hunt	29	85
%		2.0%			2.0%											
In/Out		IN			OUT											
Volume	0	2	0	0	1	0	0	0	0	0	0	0	3	Celebration Pointe (25%)	100	57
Subtotal	12	313	14	23	212	15	43	4	34	128	1	85	884	Effective Growth Rate: 12.24%		
Total	29	748	14	23	703	33	100	4	81	128	1	85	1551			

(1) Based on existing uses Trip Gen & 55%/45% N/S Split

HCS Two-Way Stop-Control Report

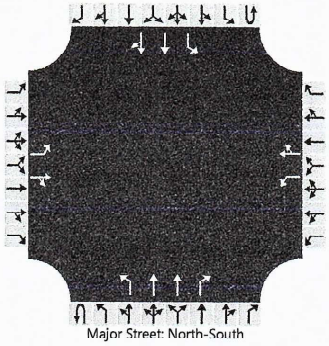
General Information

Analyst	James Kemp
Agency/Co.	O'Rourke Engineering
Date Performed	3/6/2023
Analysis Year	2025
Time Analyzed	PM Peak Hour
Intersection Orientation	North-South
Project Description	Background - without Project

Site Information

Intersection	Kings Hwy & White Rd
Jurisdiction	St. Lucie County
East/West Street	White Road
North/South Street	Kings Hwy
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	1	0		1	1	0	0	1	2	1	0	1	2	0
Configuration		L		TR		L		TR		L	T	R		L	T	TR
Volume (veh/h)		100	4	81		128	1	85	0	29	748	14	0	23	703	33
Percent Heavy Vehicles (%)		10	10	10		18	18	18	3	10			3	18		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized										No						
Median Type | Storage		Left Only								1						

Critical and Follow-up Headways

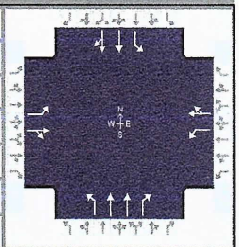
Base Critical Headway (sec)		7.5	6.5	6.9		7.5	6.5	6.9		4.1				4.1		
Critical Headway (sec)		7.70	6.70	7.10		7.86	6.86	7.26		4.30				4.46		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.60	4.10	3.40		3.68	4.18	3.48		2.30				2.38		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		108		91		138		92		31				25		
Capacity, c (veh/h)		194		445		176		514		775				710		
v/c Ratio		0.55		0.21		0.78		0.18		0.04				0.03		
95% Queue Length, Q_{95} (veh)		2.9		0.8		5.2		0.7		0.1				0.1		
Control Delay (s/veh)		44.4		15.2		73.9		13.5		9.8				10.3		
Level of Service (LOS)		E		C		F		B		A				B		
Approach Delay (s/veh)		31.0				49.6				0.4				0.3		
Approach LOS		D				E				A				A		

HCS Signalized Intersection Results Summary

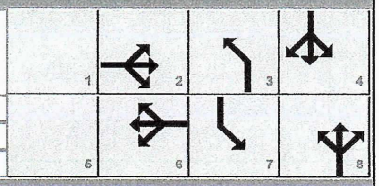
General Information				Intersection Information	
Agency	O'Rourke Engineering & Planning			Duration, h	0.250
Analyst	MM	Analysis Date	Sep 19, 2022	Area Type	Other
Jurisdiction	St. Lucie	Time Period	PM Peak Hour	PHF	0.93
Urban Street	Kings Hwy	Analysis Year	2025	Analysis Period	1> 7:00
Intersection	White Rd	File Name	Kings & White (WITHOUT PROJECT) - PM - 3.6....		
Project Description	Background - Without Project				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	100	4	81	128	1	85	29	748	14	23	703	33

Signal Information			
Cycle, s	140.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	44.0	14.0	64.0	0.0	0.0	0.0	
Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
Red	2.0	2.0	2.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6	3	8	7	4
Case Number		6.0		6.0	1.1	3.0	1.1	4.0
Phase Duration, s		50.0		50.0	20.0	70.0	20.0	70.0
Change Period, ($Y+R_c$), s		6.0		6.0	6.0	6.0	6.0	6.0
Max Allow Headway (*MAH*), s		0.0		0.0	3.1	3.0	3.1	3.0
Queue Clearance Time (g_s), s					3.3	30.2	3.2	28.1
Green Extension Time (g_e), s		0.0		0.0	0.0	3.8	0.0	3.8
Phase Call Probability					1.00	1.00	1.00	1.00
Max Out Probability					0.00	0.00	0.00	0.00

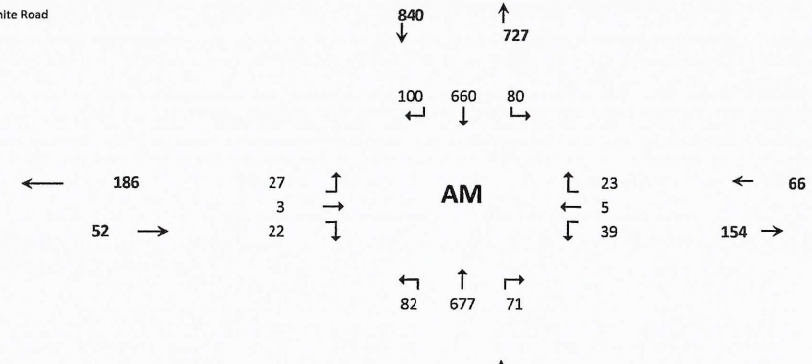
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	108	91		138	92		31	804	15	25	399	393
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1324	1331		1326	1210		1485	1484	1208	1358	1559	1534
Queue Service Time (g_s), s	9.2	7.1		11.9	7.9		1.3	28.2	1.0	1.2	26.1	26.1
Cycle Queue Clearance Time (g_c), s	17.1	7.1		19.0	7.9		1.3	28.2	1.0	1.2	26.1	26.1
Green Ratio (*g/C*)	0.31	0.31		0.31	0.31		0.56	0.46	0.46	0.56	0.46	0.46
Capacity (*c*), veh/h	393	418		401	380		346	1357	552	312	713	701
Volume-to-Capacity Ratio (*X*)	0.274	0.219		0.343	0.243		0.090	0.593	0.027	0.079	0.559	0.560
Back of Queue (*Q*), ft/ln (95 th percentile)	144.2	130.5		188	142.3		24	449.9	15.6	20.2	440.5	434.9
Back of Queue (*Q*), veh/ln (95 th percentile)	5.8	4.4		7.5	4.5		0.8	15.2	0.5	0.6	14.9	14.7
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	42.0	35.3		42.3	35.6		17.0	28.3	20.9	17.4	27.7	27.7
Incremental Delay (d_2), s/veh	1.7	1.2		2.3	1.5		0.0	0.5	0.0	0.0	0.6	0.6
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	43.7	36.5		44.7	37.1		17.1	28.8	20.9	17.5	28.3	28.3
Level of Service (LOS)	D	D		D	D		B	C	C	B	C	C
Approach Delay, s/veh / LOS	40.4	D		41.6	D		28.2	C		28.0	C	
Intersection Delay, s/veh / LOS	30.8						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.45	B	2.30	B	1.92	B	1.92	B
Bicycle LOS Score / LOS	0.82	A	0.87	A	1.19	A	1.16	A

TURNING MOVEMENT VOLUME COUNTS

N/S STREET: Kings Highway
EW STREET: White Road
CONTROL: TWSC
FILENAME:
COUNT DATE: 2/12/2019
DAY:
CITY: Ft Pierce
INTERSECTION: Kings Highway & White Road
REPORT DATE: 6/22/2022
ANALYSIS YEAR: 2025
With Project

15 Min Period	Northbound			Southbound			Eastbound			Westbound				ONE HOUR SUM
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	TOTAL	
7:00-7:15		91			81								172	701
7:15-7:30		81			76								157	708
7:30-7:45		100			101								201	730
7:45-8:00		90			81								171	672
8:00-8:15		86			93								179	642
8:15-8:30		88			91								179	
8:30-8:45		80			63								143	
8:45-9:00		50			91								141	



AM PEAK HOUR IS FROM: 7:30 AM TO 8:30AM

Volumes	44(1)	364	0	0	366	53(1)	17(1)	0	14(1)	0	0	0	730	
Season Factor	44	364	0	0	366	53	17	0	14	0	0	0	858	
Growth	48	398	0	0	400	58	19	0	15	0	0	0	938	
In/Out	-	IN	IN	IN	OUT	-	-	IN	-	OUT	OUT	OUT		
Percentage	0%	10%	33%	10%	10%	0%	0%	2%	0%	33%	2%	10%		
PROJECT	0	9	29	9	2	0	0	2	0	7	0	2	60	

Seasonal Factor: 1
Growth Rate: 1.015
Years Grown: 6
PHF: 0.91

SUBPROJECTS															Trips In	Trips Out
%	0%	10%	15%	25%	15%	0%	0%	0%	0%	45%	0%	30%				
In/Out	-	OUT	IN	IN	IN	-	-	-	-	OUT	-	OUT				
Volume	0	7	42	71	42	0	0	0	0	32	0	21	215	Kings Highway Commerce Park (Phase 1)	283	71
%		30.0%			30.0%											
In/Out		IN			OUT											
Volume	0	42	0	0	9	0	0	0	0	0	0	0	52	St Lucie Commerce Center (25%)	141	31
%		2.0%			2.0%											
In/Out		IN			OUT											
Volume	0	1	0	0	3	0	0	0	0	0	0	0	4	Whispering Oaks	45	167
%		2.0%			2.0%											
In/Out		IN			OUT											
Volume	0	1	0	0	4	0	0	0	0	0	0	0	5	Bent Creek (50%)	62	186
%		15.0%			15.0%											
In/Out		IN			OUT											
Volume	0	9	0	0	10	0	0	0	0	0	0	0	19	Wawa Kings	63	64
%		52.0%			52.0%											
In/Out		IN			OUT											
Volume	0	178	0	0	177	0	0	0	0	0	0	0	355	Kings Highway Warehouse	342	341
%		15.0%			15.0%											
In/Out		IN			OUT											
Volume	0	30	0	0	8	0	0	0	0	0	0	0	38	Stonemont	197	55
%		30.0%			30.0%											
In/Out		OUT			IN											
Volume	0	2	0	0	2	0	0	0	0	0	0	0	4	Walsh Crossroads	7	5
%	40%	0%	0%	0%	0%	50%	50%	5%	40%	0%	5%	0%				
In/Out	IN	-	-	-	-	IN	OUT	OUT	OUT	-	IN	-				
Volume	34	0	0	0	0	42	9	1	7	0	4	0	96	Project Hunt	84	17
%		2.0%			2.0%											
In/Out		IN			OUT											
Volume	0	1	0	0	2	0	0	0	0	0	0	0	3	Celebration Pointe (25%)	30	96
Subtotal	34	270	42	71	258	42	9	1	7	32	4	21	790	Effective Growth Rate: 12.38%		
Total	82	677	71	80	660	100	27	3	22	39	5	23	1788			

(1) Based on existing uses Trip Gen & 55%/45% N/S Split

HCS Two-Way Stop-Control Report

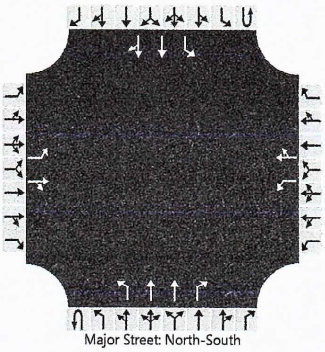
General Information

Analyst	James Kemp
Agency/Co.	O'Rourke Engineering
Date Performed	3/6/2023
Analysis Year	2025
Time Analyzed	AM Peak Hour
Intersection Orientation	North-South
Project Description	Buildout - with Project

Site Information

Intersection	Kings Hwy & White Rd
Jurisdiction	St. Lucie County
East/West Street	White Road
North/South Street	Kings Hwy
Peak Hour Factor	0.91
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	1	0		1	1	0	0	1	2	1	0	1	2	0
Configuration		L		TR		L		TR		L	T	R		L	T	TR
Volume (veh/h)		27	3	22		39	5	23	0	82	677	71	0	80	660	100
Percent Heavy Vehicles (%)		10	10	10		18	18	18	3	10			3	18		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized									No							
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

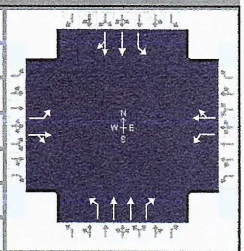
Base Critical Headway (sec)		7.5	6.5	6.9		7.5	6.5	6.9		4.1				4.1		
Critical Headway (sec)		7.70	6.70	7.10		7.86	6.86	7.26		4.30				4.46		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.60	4.10	3.40		3.68	4.18	3.48		2.30				2.38		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		30		27		43		31		90				88		
Capacity, c (veh/h)		127		233		128		176		745				708		
v/c Ratio		0.23		0.12		0.33		0.18		0.12				0.12		
95% Queue Length, Q_{95} (veh)		0.9		0.4		1.3		0.6		0.4				0.4		
Control Delay (s/veh)		41.8		22.5		46.7		29.8		10.5				10.8		
Level of Service (LOS)		E		C		E		D		B				B		
Approach Delay (s/veh)	32.5				39.6				1.0				1.0			
Approach LOS	D				E				A				A			

HCS Signalized Intersection Results Summary

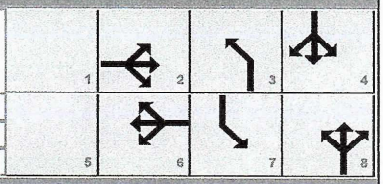
General Information				Intersection Information	
Agency	O'Rourke Engineering & Planning			Duration, h	0.250
Analyst	MM	Analysis Date	Sep 19, 2022	Area Type	Other
Jurisdiction	St. Lucie	Time Period	AM Peak Hour	PHF	0.91
Urban Street	Kings Hwy	Analysis Year	2025 with project	Analysis Period	1> 7:00
Intersection	White Rd	File Name	Kings & White (WITH PROJECT) - AM - 3.6.23.xus		
Project Description	Future Total - With Project				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	27	3	22	39	5	23	82	677	71	80	660	100

Signal Information			
Cycle, s	140.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	44.0	14.0	64.0	0.0	0.0	0.0	
Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
Red	2.0	2.0	2.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6	3	8	7	4
Case Number		6.0		6.0	1.1	3.0	1.1	4.0
Phase Duration, s		50.0		50.0	20.0	70.0	20.0	70.0
Change Period, ($Y+R_c$), s		6.0		6.0	6.0	6.0	6.0	6.0
Max Allow Headway (*MAH*), s		0.0		0.0	3.1	3.1	3.1	3.1
Queue Clearance Time (g_s), s					6.0	27.4	6.3	30.7
Green Extension Time (g_e), s		0.0		0.0	0.1	4.0	0.1	4.0
Phase Call Probability					1.00	1.00	1.00	1.00
Max Out Probability					0.00	0.00	0.00	0.00

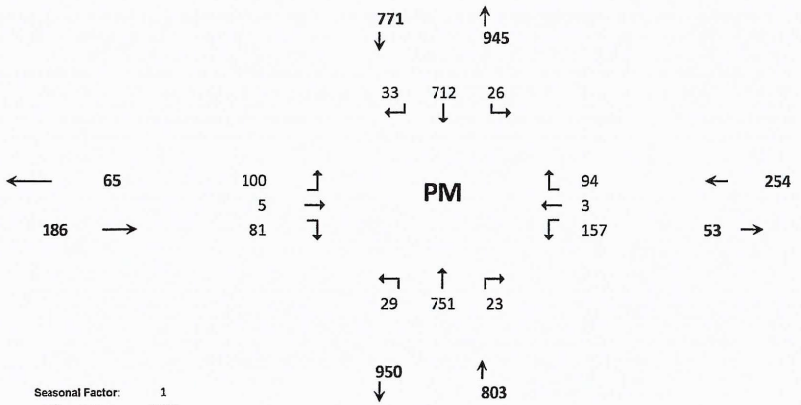
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	30	27		43	31		90	744	78	88	427	408
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1401	1346		1405	1242		1485	1484	1208	1358	1559	1487
Queue Service Time (g_s), s	2.1	2.0		3.1	2.4		4.0	25.4	5.2	4.3	28.7	28.7
Cycle Queue Clearance Time (g_c), s	4.6	2.0		5.1	2.4		4.0	25.4	5.2	4.3	28.7	28.7
Green Ratio (*g/C*)	0.31	0.31		0.31	0.31		0.56	0.46	0.46	0.56	0.46	0.46
Capacity (*c*), veh/h	467	423		473	390		330	1357	552	330	713	680
Volume-to-Capacity Ratio (*X*)	0.064	0.065		0.091	0.079		0.273	0.548	0.141	0.266	0.599	0.600
Back of Queue (Q), ft/ln (95 th percentile)	34.6	37		50.2	44.4		72.6	411.2	85.1	75.5	478.6	460.8
Back of Queue (Q), veh/ln (95 th percentile)	1.4	1.3		2.0	1.4		2.5	13.9	2.7	2.4	16.2	15.6
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	35.4	33.6		35.4	33.8		18.7	27.5	22.1	17.9	28.4	28.4
Incremental Delay (d_2), s/veh	0.3	0.3		0.4	0.4		0.2	0.3	0.0	0.2	1.0	1.0
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	35.6	33.9		35.8	34.1		18.8	27.8	22.1	18.0	29.4	29.5
Level of Service (LOS)	D	C		D	C		B	C	C	B	C	C
Approach Delay, s/veh / LOS	34.8	C		35.1	D		26.4	C		28.4	C	
Intersection Delay, s/veh / LOS	27.9						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.45	B	2.30	B	1.92	B	1.92	B
Bicycle LOS Score / LOS	0.58	A	0.61	A	1.24	A	1.25	A

TURNING MOVEMENT VOLUME COUNTS

N/S STREET: Kings Highway
E/W STREET: White Road
CONTROL: TWSC
FILENAME:
COUNT DATE: 2/12/2019
DAY:
CITY: Ft Pierce
REPORT DATE: 3/24/2022
ANALYSIS YEAR: 2025
With Project

15 Min Period lanes	Northbound			Southbound			Eastbound			Westbound				ONE HOUR SUM
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	TOTAL	
4:00-4:15		88			89								177	813
4:15-4:30		116			111								227	847
4:30-4:45		95			103								198	810
4:45-5:00		85			126								211	802
5:00-5:15		102			109								211	730
5:15-5:30		91			99								190	
5:30-5:45		98			92								190	
5:45-6:00		71			68								139	



PM PEAK HOUR IS FROM: 4:15PM TO 5:15PM

Volumes	16 [1]	398	0	0	449	17 [1]	53 [1]	0	43 [1]	0	0	0	847	
Season Factor	16	398	0	0	449	17	53	0	43	0	0	0	976	
Growth	17	435	0	0	491	19	58	0	47	0	0	0	1067	
In/Out	-	IN	IN	IN	OUT	-	-	IN	-	OUT	OUT	OUT		
Percentage	0%	10%	33%	10%	10%	0%	0%	2%	0%	33%	2%	10%		
PROJECT	0	3	9	3	9	0	0	1	0	29	2	9	62	

Seasonal Factor: 1
Growth Rate: 1.015
Years Grown: 6
PHF: 0.93

SUBPROJECTS														Trips In	Trips Out
%		10%	15%	25%	15%					45.00%		30%			
In/Out	-	OUT	IN	IN	IN	-	-	-	-	OUT	-	OUT			
Volume	0	28	14	23	14	0	0	0	0	128	0	85	292	Kings Highway Commerce Park (Phase 1)	90	284
%		30.0%			30.0%										
In/Out		IN			OUT										
Volume	0	16	0	0	59	0	0	0	0	0	0	0	74	St Lucie Commerce Center (25%)	52	196
%		2.0%			2.0%										
In/Out		IN			OUT										
Volume	0	3	0	0	2	0	0	0	0	0	0	0	5	Whispering Oaks	172	94
%		2.0%			2.0%										
In/Out		IN			OUT										
Volume	0	4	0	0	2	0	0	0	0	0	0	0	6	Bent Creek (50%)	193	113
%		15.0%			15.0%										
In/Out		IN			OUT										
Volume	0	9	0	0	9	0	0	0	0	0	0	0	17	Wawa Kings	57	58
%		52.0%			52.0%										
In/Out		IN			OUT										
Volume	0	238	0	0	112	0	0	0	0	0	0	0	350	Kings Highway Warehouse	458	216
%		15.0%			15.0%										
In/Out		IN			OUT										
Volume	0	10	0	0	10	0	0	0	0	0	0	0	20	Stonemont	68	186
%		30.0%			30.0%										
In/Out		OUT			IN										
Volume	0	3	0	0	3	0	0	0	0	0	0	0	6	Walsh Crossroads	10	11
%	40%	0%	0%	0%	0%	50%	50%	5%	40%	0%	5%	0%				
In/Out	IN	-	-	-	-	IN	OUT	OUT	OUT	-	IN	-				
Volume	12	0	0	0	0	15	43	4	34	0	1	0	108	Project Hunt	29	85
%		2.0%			2.0%										
In/Out		IN			OUT										
Volume	0	2	0	0	1	0	0	0	0	0	0	0	3	Celebration Pointe (25%)	100	57
Subtotal	12	313	14	23	212	15	43	4	34	128	1	85	884	Effective Growth Rate:	12.24%	
Total	29	751	23	26	712	33	100	5	81	157	3	94	2013			

(1) Based on existing uses Trip Gen & 55%/45% N/S Split

D-13

HCS Two-Way Stop-Control Report

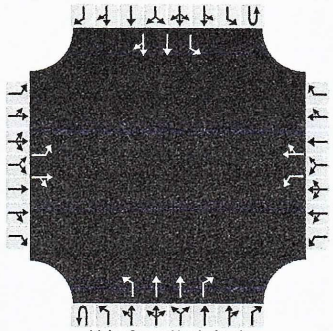
General Information

Analyst	James Kemp
Agency/Co.	O'Rourke Engineering
Date Performed	3/6/2023
Analysis Year	2025
Time Analyzed	PM Peak Hour
Intersection Orientation	North-South
Project Description	Buildout - with Project

Site Information

Intersection	Kings Hwy & White Rd
Jurisdiction	St. Lucie County
East/West Street	White Road
North/South Street	Kings Hwy
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	1	0		1	1	0	0	1	2	1	0	1	2	0
Configuration		L		TR		L		TR		L	T	R		L	T	TR
Volume (veh/h)		100	5	81		157	3	94	0	29	751	23	0	26	712	33
Percent Heavy Vehicles (%)		10	10	10		18	18	18	3	10			3	18		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized										No						
Median Type | Storage		Left Only								1						

Critical and Follow-up Headways

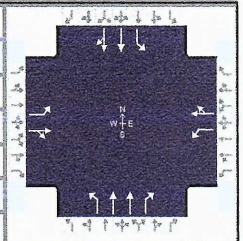
Base Critical Headway (sec)		7.5	6.5	6.9		7.5	6.5	6.9		4.1				4.1		
Critical Headway (sec)		7.70	6.70	7.10		7.86	6.86	7.26		4.30				4.46		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.60	4.10	3.40		3.68	4.18	3.48		2.30				2.38		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		108		92		169		104		31				28		
Capacity, c (veh/h)		183		413		172		454		768				701		
v/c Ratio		0.59		0.22		0.98		0.23		0.04				0.04		
95% Queue Length, Q_{95} (veh)		3.2		0.8		7.8		0.9		0.1				0.1		
Control Delay (s/veh)		49.4		16.2		118.2		15.3		9.9				10.3		
Level of Service (LOS)		E		C		F		C		A				B		
Approach Delay (s/veh)		34.1				78.9				0.4				0.3		
Approach LOS		D				F				A				A		

HCS Signalized Intersection Results Summary

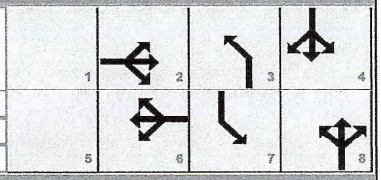
General Information				Intersection Information	
Agency	O'Rourke Engineering & Planning			Duration, h	0.250
Analyst	MM	Analysis Date	Sep 19, 2022	Area Type	Other
Jurisdiction	St. Lucie	Time Period	PM Peak Hour	PHF	0.93
Urban Street	Kings Hwy	Analysis Year	2025	Analysis Period	1> 7:00
Intersection	White Rd	File Name	Kings & White (WITH PROJECT) - PM - 3.6.23.xus		
Project Description	Future Total - With Project				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	100	5	81	157	3	94	29	751	23	26	712	33

Signal Information			
Cycle, s	140.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

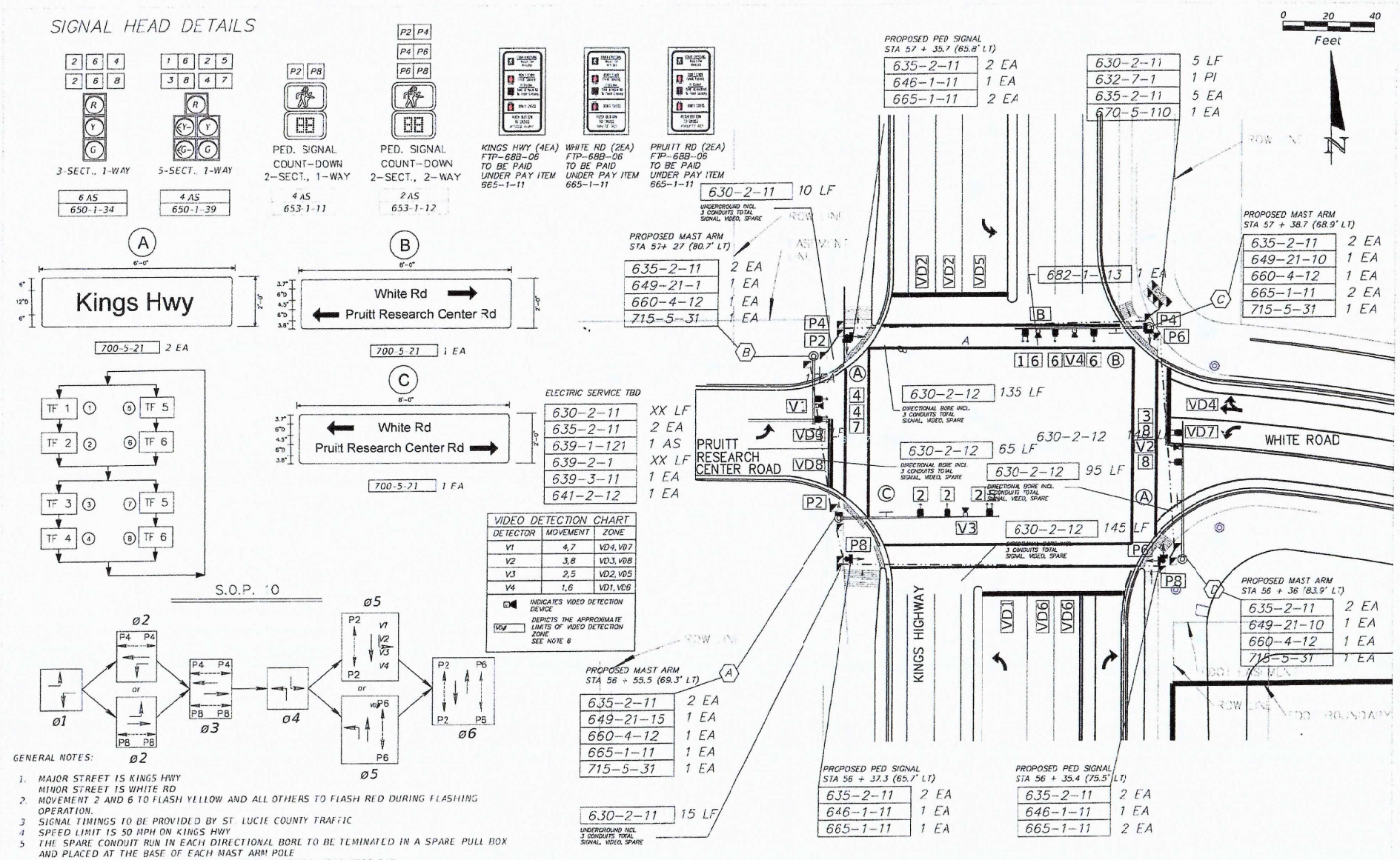
Green	44.0	14.0	64.0	0.0	0.0	0.0	
Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
Red	2.0	2.0	2.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6	3	8	7	4
Case Number		6.0		6.0	1.1	3.0	1.1	4.0
Phase Duration, s		50.0		50.0	20.0	70.0	20.0	70.0
Change Period, ($Y+R_c$), s		6.0		6.0	6.0	6.0	6.0	6.0
Max Allow Headway (*MAH*), s		0.0		0.0	3.1	3.0	3.1	3.0
Queue Clearance Time (g_s), s					3.3	30.4	3.3	28.6
Green Extension Time (g_e), s		0.0		0.0	0.0	3.9	0.0	3.9
Phase Call Probability					1.00	1.00	1.00	1.00
Max Out Probability					0.00	0.00	0.00	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	108	92		169	104		31	808	25	28	404	397
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1310	1333		1324	1214		1485	1484	1208	1358	1559	1534
Queue Service Time (g_s), s	9.4	7.2		15.1	9.0		1.3	28.4	1.6	1.3	26.5	26.6
Cycle Queue Clearance Time (g_c), s	18.4	7.2		22.2	9.0		1.3	28.4	1.6	1.3	26.5	26.6
Green Ratio (*g/C*)	0.31	0.31		0.31	0.31		0.56	0.46	0.46	0.56	0.46	0.46
Capacity (*c*), veh/h	379	419		400	382		343	1357	552	311	713	701
Volume-to-Capacity Ratio (*X*)	0.284	0.221		0.422	0.273		0.091	0.595	0.045	0.090	0.566	0.567
Back of Queue (Q), ft/ln (95 th percentile)	146.2	132.2		227	162.4		24	452.3	25.8	22.9	446.9	441.3
Back of Queue (Q), veh/ln (95 th percentile)	5.8	4.5		9.1	5.2		0.8	15.3	0.8	0.7	15.1	14.9
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	42.9	35.4		43.6	36.0		17.1	28.3	21.1	17.5	27.8	27.8
Incremental Delay (d_2), s/veh	1.9	1.2		3.2	1.8		0.0	0.5	0.0	0.0	0.7	0.7
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	44.8	36.6		46.8	37.8		17.1	28.8	21.1	17.6	28.5	28.5
Level of Service (LOS)	D	D		D	D		B	C	C	B	C	C
Approach Delay, s/veh / LOS	41.0	D		43.4	D		28.2	C		28.1	C	
Intersection Delay, s/veh / LOS	31.3						C					

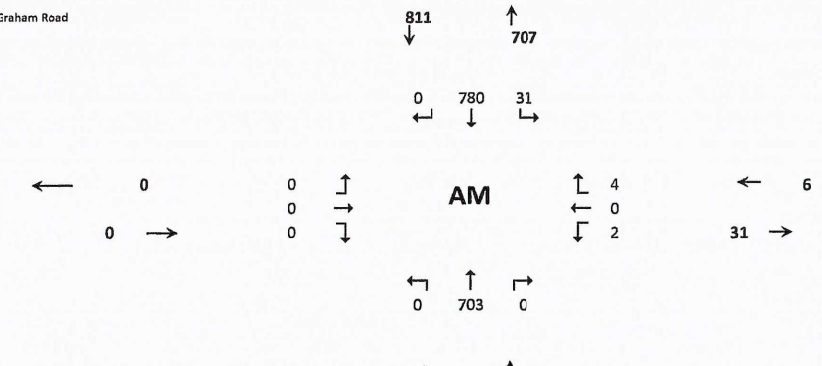
Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.45	B	2.30	B	1.92	B	1.92	B
Bicycle LOS Score / LOS	0.82	A	0.94	A	1.20	A	1.17	A


SIGNAL HEAD DETAILS
3-SECT., 1-WAY
6 AS
650-1-34
5-SECT., 1-WAY
4 AS
650-1-39
PED. SIGNAL COUNT-DOWN 2-SECT., 1-WAY
4 AS
653-1-11
PED. SIGNAL COUNT-DOWN 2-SECT., 2-WAY
2 AS
653-1-12
KINGS HWY (4EA) FTP-68B-06 TO BE PAID UNDER PAY ITEM 665-1-11
WHITE RD (2EA) FTP-68B-06 TO BE PAID UNDER PAY ITEM 665-1-11
PRUITT RD (2EA) FTP-68B-06 TO BE PAID UNDER PAY ITEM 665-1-11
Kings Hwy
700-5-21 2 EA
White Rd
Pruitt Research Center Rd
700-5-21 1 EA
White Rd
Pruitt Research Center Rd
700-5-21 1 EA
TF 1
TF 2
TF 3
TF 4
TF 5
TF 6
S.O.P. 10
ø1
ø2
ø3
ø4
ø5
ø6
VIDEO DETECTION CHART
DETECTOR | MOVEMENT | ZONE
V1 | 4,7 | VD4, VD7
V2 | 3,8 | VD3, VD8
V3 | 2,5 | VD2, VD5
V4 | 1,6 | VD1, VD6
INDICATES VIDEO DETECTION DEVICE
DEPICTS THE APPROXIMATE LIMITS OF VIDEO DETECTION ZONE SEE NOTE 6
ELECTRIC SERVICE TBD
630-2-11 XX LF
635-2-11 2 EA
639-1-121 1 AS
639-2-1 XX LF
639-3-11 1 EA
641-2-12 1 EA
PROPOSED MAST ARM STA 57+ 27 (80.7' LT)
635-2-11 2 EA
649-21-1 1 EA
660-4-12 1 EA
715-5-31 1 EA
630-2-11 10 LF
UNDERGROUND INCL. 3 CONDUITS TOTAL SIGNAL, VIDEO, SPARE
PROPOSED PED SIGNAL STA 57 + 35.7 (65.8' LT)
635-2-11 2 EA
646-1-11 1 EA
665-1-11 2 EA
630-2-11 5 LF
632-7-1 1 PI
635-2-11 5 EA
670-5-110 1 EA
682-1-13 1 EA
PROPOSED MAST ARM STA 57 + 38.7 (68.9' LT)
635-2-11 2 EA
649-21-10 1 EA
660-4-12 1 EA
665-1-11 2 EA
715-5-31 1 EA
630-2-12 135 LF
DIRECTIONAL BORE INCL. 3 CONDUITS TOTAL SIGNAL, VIDEO, SPARE
630-2-12 65 LF
630-2-12 95 LF
630-2-12 145 LF
630-2-12 148
PRUITT RESEARCH CENTER ROAD
WHITE ROAD
KINGS HIGHWAY
PROPOSED MAST ARM STA 56 + 36 (83.9' LT)
635-2-11 2 EA
649-21-10 1 EA
660-4-12 1 EA
715-5-31 1 EA
PROPOSED MAST ARM STA 56 + 55.5 (69.3' LT)
635-2-11 2 EA
649-21-15 1 EA
660-4-12 1 EA
665-1-11 1 EA
715-5-31 1 EA
630-2-11 15 LF
UNDERGROUND INCL. 3 CONDUITS TOTAL SIGNAL, VIDEO, SPARE
PROPOSED PED SIGNAL STA 56 + 37.3 (65.7' LT)
635-2-11 2 EA
646-1-11 1 EA
665-1-11 1 EA
PROPOSED PED SIGNAL STA 56 + 35.4 (75.5' LT)
635-2-11 2 EA
646-1-11 1 EA
665-1-11 2 EA
0 20 40
Feet
N
ROW LINE
GENERAL NOTES:
1. MAJOR STREET IS KINGS HWY
MINOR STREET IS WHITE RD
2. MOVEMENT 2 AND 6 TO FLASH YELLOW AND ALL OTHERS TO FLASH RED DURING FLASHING OPERATION.
3. SIGNAL TIMINGS TO BE PROVIDED BY ST. LUCIE COUNTY TRAFFIC
4. SPEED LIMIT IS 50 MPH ON KINGS HWY
5. THE SPARE CONDUIT RUN IN EACH DIRECTIONAL BORE TO BE TERMINATED IN A SPARE PULL BOX AND PLACED AT THE BASE OF EACH MAST ARM POLE
6. THE VIDEO DETECTION ZONE WILL BE SET 60 FEET FROM THE STOP BAR.
REVISIONS
DATE | DESCRIPTION | DATE | DESCRIPTION
Susan E. O'Rourke PE #42684
O'Rourke Engineering & Planning
22 SE Seminole Street
Stuart, FL 34994
772-781-7918
Cert of Auth: 26589
ST. LUCIE COUNTY, FL
TRAFFIC ENGINEERING DIVISION
SIGNALIZATION PLAN
SHEET NO.
T-4
ROAD NO. | COUNTY | FINANCIAL PROJECT ID

TURNING MOVEMENT VOLUME COUNTS

N/S STREET: Kings Highway
E/W STREET: Graham Road
CONTROL: TWSC
FILENAME:
COUNT DATE: 2/12/2019
DAY:
CITY: Ft Pierce
With Project
INTERSECTION: Kings Highway & Graham Road
REPORT DATE: 6/22/2022
ANALYSIS YEAR: 2025

15 Min Period	Northbound NBL	NBT	NBR	Southbound SBL	SBT	SBR	Eastbound EBL	EBT	EBR	Westbound WBL	WBT	WBR	TOTAL	ONE HOUR SUM
7:00-7:15		91			81								172	701
7:15-7:30		81			76								157	708
7:30-7:45		100			101								201	730
7:45-8:00		90			81								171	672
8:00-8:15		86			93								179	642
8:15-8:30		88			91								179	
8:30-8:45		80			63								143	
8:45-9:00		50			91								141	



AM PEAK HOUR IS FROM: 7:30 AM TO 8:30AM

Volumes	0	364	0	0	366	0	0	0	0	0	0	0	730		
Season Factor	0	364	0	0	366	0	0	0	0	0	0	0	730		
Growth	0	398	0	0	400	0	0	0	0	0	0	0	798		
In/Out	-	OUT	-	IN	IN	-	-	-	-	OUT	-	OUT			
Percentage	0%	25%	0%	35%	10%	0%	0%	0%	0%	10%	0%	20%			
PROJECT	0	5	0	31	9	0	0	0	0	2	0	4	51		
SUBPROJECTS															
%	0%	40%	0%	0%	40%	0%	0%	0%	0%	0%	0%	0%			
In/Out	-	OUT	-	-	IN	-	-	-	-	-	-	-			
Volume	0	28	0	0	113	0	0	0	0	0	0	0	142	Kings Highway Commerce Park	
%		30.0%			30.0%										
In/Out		IN			OUT										
Volume	0	42	0	0	9	0	0	0	0	0	0	0	52	St Lucie Commerce Center (25%)	
%		2.0%			2.0%										
In/Out		IN			OUT										
Volume	0	1	0	0	3	0	0	0	0	0	0	0	4	Whispering Oaks	
%		2.0%			2.0%										
In/Out		IN			OUT										
Volume	0	1	0	0	4	0	0	0	0	0	0	0	5	Bent Creek (50%)	
%		15.0%			15.0%										
In/Out		IN			OUT										
Volume	0	9	0	0	10	0	0	0	0	0	0	0	19	Wawa Kings	
%		52.0%			52.0%										
In/Out		IN			OUT										
Volume	0	178	0	0	177	0	0	0	0	0	0	0	355	Kings Highway Warehouse	
%		15.0%			15.0%										
In/Out		IN			OUT										
Volume	0	30	0	0	8	0	0	0	0	0	0	0	38	Stonemont	
%		30.0%			30.0%										
In/Out		OUT			IN										
Volume	0	2	0	0	2	0	0	0	0	0	0	0	4	Walsh Crossroads	
%	0%	50%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%			
In/Out	-	OUT	-	-	IN	-	-	-	-	-	-	-			
Volume	0	9	0	0	42	0	0	0	0	0	0	0	51	Project Hunt	
%		2.0%			2.0%										
In/Out		IN			OUT										
Volume	0	1	0	0	2	0	0	0	0	0	0	0	3	Celebration Pointe (25%)	
Subtotal	0	300	0	0	371	0	0	0	0	0	0	0	671		
Total	0	703	0	31	780	0	0	0	0	2	0	4	1520		

Seasonal Factor: 1
Growth Rate: 1.015
Years Grown: 6
PHF: 0.91

Effective Growth Rate: 12.36%

	Trips In	Trips Out
	89	20
Kings Highway Commerce Park	283	71
St Lucie Commerce Center (25%)	141	31
Whispering Oaks	45	167
Bent Creek (50%)	62	186
Wawa Kings	63	54
Kings Highway Warehouse	342	341
Stonemont	197	55
Walsh Crossroads	7	5
Project Hunt	84	17
Celebration Pointe (25%)	30	96

HCS Two-Way Stop-Control Report

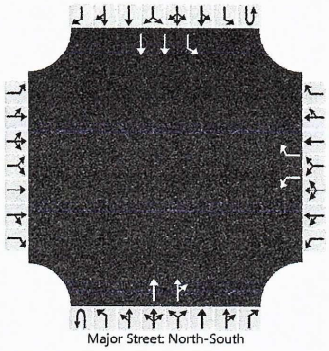
General Information

Analyst	James Kemp
Agency/Co.	O'Rourke Engineering
Date Performed	3/6/2023
Analysis Year	2025
Time Analyzed	AM Peak Hour
Intersection Orientation	North-South
Project Description	Buildout - with Project

Site Information

Intersection	Kings Hwy & Graham Rd
Jurisdiction	St. Lucie County
East/West Street	Graham Road
North/South Street	Kings Hwy
Peak Hour Factor	0.91
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	2	0	0	1	2	0
Configuration						L		R			T	TR		L	T	
Volume (veh/h)						2		4			703	0	0	31	780	
Percent Heavy Vehicles (%)						18		18					3	18		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized						No										
Median Type | Storage		Left Only								1						

Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.9						4.1		
Critical Headway (sec)						7.16		7.26						4.46		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.68		3.48						2.38		

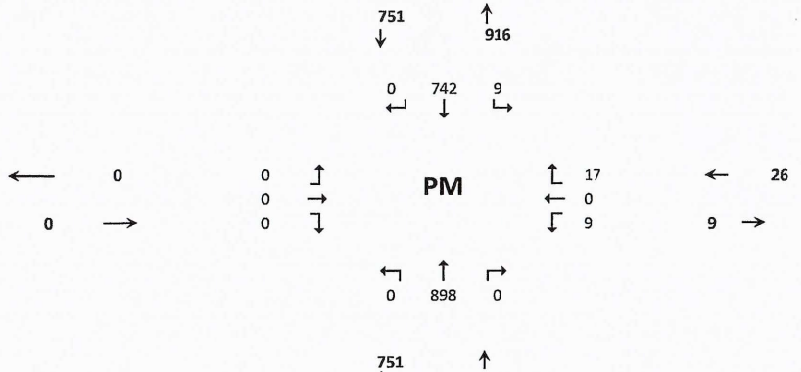
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						2		4						34		
Capacity, c (veh/h)						257		569						742		
v/c Ratio						0.01		0.01						0.05		
95% Queue Length, Q_{95} (veh)						0.0		0.0						0.1		
Control Delay (s/veh)						19.1		11.4						10.1		
Level of Service (LOS)						C		B						B		
Approach Delay (s/veh)						14.0								0.4		
Approach LOS						B								A		

TURNING MOVEMENT VOLUME COUNTS

N/S STREET: Kings Highway
E/W STREET: Graham Road
CONTROL: TWSC
FILENAME:
COUNT DATE: 2/12/2019
DAY:
CITY: Ft Pierce
REPORT DATE: 3/24/2022
ANALYSIS YEAR: 2025
With Project

15 Min Period lanes	Northbound			Southbound			Eastbound			Westbound				ONE HOUR SUM
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	TOTAL	
4:00-4:15		88			89								177	813
4:15-4:30		116			111								227	847
4:30-4:45		95			103								198	810
4:45-5:00		85			126								211	802
5:00-5:15		102			109								211	730
5:15-5:30		91			99								190	
5:30-5:45		98			92								190	
5:45-6:00		71			68								139	



PM PEAK HOUR IS FROM: 4:15PM TO 5:15PM

Volumes	0	398	0	0	449	0	0	0	0	0	0	0	847	
Season Factor	0	398	0	0	449	0	0	0	0	0	0	0	847	
Growth	0	435	0	0	491	0	0	0	0	0	0	0	926	
In/Out	-	OUT	-	IN	IN	-	-	-	-	OUT	-	OUT		
Percentage	0%	25%	0%	35%	10%	0%	0%	0%	0%	10%	0%	20%		
PROJECT	0	22	0	9	3	0	0	0	0	9	0	17	60	

Seasonal Factor: 1
Growth Rate: 1.015
Years Grown: 6
PHF: 0.93

	Trips In	Trips Out
	26	87

SUBPROJECTS

%	0%	40%	0%	0%	40%	0%	0%	0%	0%	0%	0%	0%				
In/Out	-	OUT	-	-	IN	-	-	-	-	-	-	-				
Volume	0	114	0	0	36	0	0	0	0	0	0	0	150	Kings Highway Commerce Park	90	284
%		30.0%			30.0%											
In/Out		IN			OUT											
Volume	0	16	0	0	59	0	0	0	0	0	0	0	74	St Lucie Commerce Center (25%)	52	196
%		2.0%			2.0%											
In/Out		IN			OUT											
Volume	0	3	0	0	2	0	0	0	0	0	0	0	5	Whispering Oaks	172	94
%		2.0%			2.0%											
In/Out		IN			OUT											
Volume	0	4	0	0	2	0	0	0	0	0	0	0	6	Bent Creek (50%)	193	113
%		15.0%			15.0%											
In/Out		IN			OUT											
Volume	0	9	0	0	9	0	0	0	0	0	0	0	17	Wawa Kings	57	58
%		52.0%			52.0%											
In/Out		IN			OUT											
Volume	0	238	0	0	112	0	0	0	0	0	0	0	350	Kings Highway Warehouse	458	216
%		15.0%			15.0%											
In/Out		IN			OUT											
Volume	0	10	0	0	10	0	0	0	0	0	0	0	20	Stonemont	68	186
%		30.0%			30.0%											
In/Out		OUT			IN											
Volume	0	3	0	0	3	0	0	0	0	0	0	0	6	Walsh Crossroads	10	11
%	0%	50%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%				
In/Out	-	OUT	-	-	IN	-	-	-	-	-	-	-				
Volume	0	43	0	0	15	0	0	0	0	0	0	0	57	Project Hunt	29	85
%		2.0%			2.0%											
In/Out		IN			OUT											
Volume	0	2	0	0	1	0	0	0	0	0	0	0	3	Celebration Pointe (25%)	100	57
Subtotal	0	441	0	0	249	0	0	0	0	0	0	0	690	Effective Growth Rate:	11.37%	
Total	0	898	0	9	742	0	0	0	0	9	0	17	1676			

HCS Two-Way Stop-Control Report

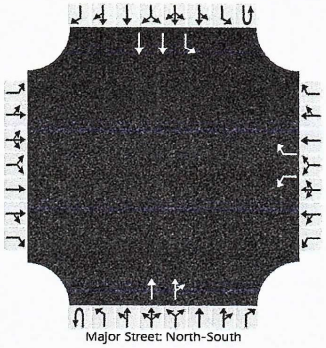
General Information

Analyst	James Kemp
Agency/Co.	O'Rourke Engineering
Date Performed	3/6/2023
Analysis Year	2025
Time Analyzed	PM Peak Hour
Intersection Orientation	North-South
Project Description	Buildout - with Project

Site Information

Intersection	Kings Hwy & Graham Rd
Jurisdiction	St. Lucie County
East/West Street	Graham Road
North/South Street	Kings Hwy
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	2	0	0	1	2	0
Configuration						L		R			T	TR		L	T	
Volume (veh/h)						9		17			898	0	0	9	742	
Percent Heavy Vehicles (%)						18		18					3	18		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized						No										
Median Type | Storage		Left Only								1						

Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.9						4.1		
Critical Headway (sec)						7.16		7.26						4.46		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.68		3.48						2.38		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						10		18						10		
Capacity, c (veh/h)						223		489						619		
v/c Ratio						0.04		0.04						0.02		
95% Queue Length, Q_{95} (veh)						0.1		0.1						0.0		
Control Delay (s/veh)						21.9		12.6						10.9		
Level of Service (LOS)						C		B						B		
Approach Delay (s/veh)						15.8								0.1		
Approach LOS						C								A		

JHI
Jeff H. Iravani, Inc.
Consulting Engineers
1934 Commerce Lane, Suite 5 Jupiter, FL 33458
Tel: (561) 575-6030 Fax: (561) 575-6088
Email: JHI@JHIinc.com Website: www.JHIinc.com

Fire Flow Calculations
For
Kings Highway Commerce Center

Fort Pierce, Florida

NFPA-1, 2018 edition

Table 18.4.5.2.1
Type-II construction
Fire Flow Area 390 ksf
Q = 6,000 gpm

18.4.5.3.3
Q = 6,000 (1-0.75) fire sprinkler reduction = 1,500 gpm
Q min = 1,500 gpm
Duration = 4 hr

Jeff H. Iravani, P.E.
Florida Registration #33155
COA #6986

Jeff H. Iravani, Inc.
Consulting Engineers
1934 Commerce Lane, Suite 5 Jupiter, Florida 33458
Tel: (561) 575-6030 Fax: (561) 575-6088
Email: JHI@JHIinc.com Website: www.JHIinc.com

April 15, 2024

City of Fort Pierce
Planning Department
100 North U.S 1
Fort Pierce, FL 34950

Attn: Vennis Gilmore

Re: Kings Highway Commerce Center
JHI Project No. 1402

Dear Vennis,

We are in receipt of your latest comments dated February 15, 2024, for the above noted project. Please consider the followings

Fort Pierce Planning Department

1. A completion certification by a landscape architect, cost estimate and landscape bond pursuant to City Code 123-6 shall be required before the Final Certificate of Occupancy is approved for the site.
   Response: Acknowledged.

2. Prior to the issuance of any site clearing permits, the applicant shall provide a Tree Mitigation Survey and coordinate with the City of Ft. Pierce Arborist for the required mitigation of the City regulated trees proposed to be removed as a result of this site's development/construction activity.
   Response: Acknowledged, a Vegetation disposition plan and Vegetation Assessment report shall be provided prior to the issuance of any site clearing permits.

3. A Unity of Title with the St. Lucie County Clerk of Courts and a Parcel Combination with the St. Lucie County Property Appraiser shall be conducted before the issuance of a Building Permit.
   Response: Acknowledged.

4. After completion of the Unity of Title and Lot Combination, please submit a General Address Request Form for the newly created Parcel ID and for each proposed building.
   Response: Acknowledged.

5. There appears to a few discrepancies in your Site Data:
   i) Parcel ID: 2313-333-0001-000-7 is approximately 294,117 sq ft and Parcel ID: 2313-331- 0000-000-4 is approximately 840,272.4 sq ft. The total square footage is 1,134,389.4 sq ft. The listed impervious area is 1,015,250 sq ft. City Code Section 125-207. (c) Open Space Standards – Commercial Parkway Zone (CP-1) requires:
   (1)A minimum of 20 percent of the gross area of land to be devoted to a commercial parkway development must be reserved for use as parks, recreation areas, marinas, open space, planting, or other public purposes other than rights-of-way, utility easements, and parking areas. At the request of the developer and subject to the approval of the city commission, use of recreational facilities may be offered to the general public. Areas that are natural or manmade floodways, lakes, and stormwater retention areas may be also be used to satisfy the total open space requirement.

   (2) All land dedicated for open space shall be under the legal control of the developer.
   ii) Per City Code Section 125-207. (2) Yards. – Commercial Parkway Zone (CP-1) states the
   following:

   a. The minimum depth of the front yard shall be 25 feet.

   b. The minimum depth of the rear yard shall be 20 feet.

   c. The minimum depth of the side yard shall be ten feet, except on corner lots the minimum side yard depth on a street side will be 20 feet.

   iii) The Site Data lists “Lakes”, however there is one (1) “Lake”.
   iv) The Site Data lists four (4) Parcel ID(s), however there are two (2) Parcel ID(s).
   v) Please review the site data and resubmit with valid corrections.
   vi) The Location Map depicts the original site plan location.
   Response: Please see revised site data on MSP-2;
   (i) Site data has been revised w/ open space @ 26%.
   (ii) The minimum setbacks have been revised.
   (iii) Site data now shows “Lake”.
   (iv) Parcel IDs have been revised.
   (v) Site data has been revised.
   (vi) Location map has been revised to show the current site plan.

6. Per City Code Section 125-317. – Sidewalks. Please provide labeled sidewalks and sidewalk linkages along the Graham Road and White Road Frontages.
   Response: Please see the revised site plan set with shading and callouts showing the sidewalks Sidewalk including the walks on the adjacent roads.

7. Per City Code Section 125-317. – Provide labeled sidewalk linkages to Kings Highway.
   Response: Please see the revised site plan set with shading and callouts showing the sidewalk connection to Kings Hwy.

8. Please consider EV Charging spaces within the Site Plan.
   Response: Please note that EV charging spaces will be considered by owner w/ building permit applications.

9. Please provide a color rendering of the landscape plan if possible.
   Response: A colored rendering of the landscape plan will be submitted prior to Public Presentation of the project.

10. Provide a detailed narrative description for the amended site plan application.
    Response: Please see attached narrative description.

11. Provide a detailed design review narrative description for the amended site plan application.
    Response: Please see attached design review narrative description.

12. Please adhere to City Code Section 125-314 (Design Review) and review the Design Review Checklist submitted for your review.
    Response: Thank you.

13. Per City Code Section 125-314 (Design Review) - Reverse the architectural elevations of the structures to ensure that the ramp bays are not as visible from the street view.
    Response: Please see attached revised site plan with Building-I orientation reversed. This orientation creates access difficulty for the truck access. Please see truck circulation TC-1.
    It is essential for this project marketability and function that the truck access bean easy and the shortest possible from the road, not have mixed circulation with employees and other vehicles.
    The original design w/ loading facing the White Road provides the best access for the trucks.
    Therefore, we have revised the original site plan w/loading facing White Road by providing a 6' wall along south Property line and placing landscaping on the outside of the wall facing the road. This provides an attractive view from the road which buffers the building rear elevation while maintaining a functional circulation for the trucks.

14. Per City Code Section 125-314 (Design Review) – Provide more detail and articulation on the elevations located where the ramp bays exist.
    Response: Please see attached rear building elevation.

15. Please adhere to City Code Section 123-37 (General Landscaping Requirements) and review the Checklist submitted for your review.
    Response: The landscape plans have been reviewed along with Article 123-37 for compliance. Specifications related to trees have been revised to reflect a min. 2.5" caliper per this section. The provided checklist has also been reviewed for compliance relative to the use of compatible scale materials, (24'ht Oaks and relocated large existing Oaks), as well as varied heights to provide interest and visual appeal to the landscape. All perimeter landscaping has been designed to provide appropriate visual screening, while providing access for maintenance of the site.

16. Per City Code Section 123-37 (General Landscaping Requirements) – A Dry Retention area cannot be calculated as part of the required landscape buffer.
    Response: Please note that a bioswale is located along White Road.
    There is also a 10' landscape buffer between the bioswale and south property line.

17. Incorporate the green walls shown on the elevation into the landscape plan.
    Response: The Landscape plans have been updated to reflect the green walls as shown on the elevation drawing.

18. There must be coordination between what's presented on the landscape plan and on the site plan.
    Response: Please see attached revised landscape plan.

19. Please specify the location of the refuse collection area and any trash receptacles.
    Response: The refuse collection shall be by compactor inside the building.

20. Include a buffer which includes fencing and planted material so as to provide a visual and noise buffer between the St. Lucie County Agricultural Residential Zone to the east of the property.
    Response: Please note that there are no residential buildings to our east, only tree groves and farms.

Engineering Comments:

1. Provide a minimum 15' setback as measured from the White Road ultimate R/W line and the proposed top of banks for detention area 4 and 5 as per the requirements specified in the City of Fort Pierce Code of Ordinances Section 119-9(c).
   Response: Please note that the there is a bioswale along White Road located 10' From the right-of-way. This bioswale location was previously approved by City Commission on Jan 17th, 2023 with the 35 ac version of this site plan.

2. The match lines on plan sheets SP-3 & SP-4 and SP-5 & SP-6 do not correspond with one another. Please provide updated plans.
   Response: Please see revised plans.

Advisory Comments:

1. An updated environmental assessment is required at DPCR.
   Response: An updated environmental assessment shall be submitted at DPCR

2. Please coordinate with St. Lucie County for work with Right of Way of White Road and Graham Road. Please coordinate with FDOT for work within Kings Highway Right of Way
   Response: The location of the driveways on both White & Graham Road was previously approved by St. Lucie County with the approved 35 ac version of this site plan.

3. NSLRWCD/SFWMD permits will be required prior to DPCR approval.
   Response: NSLRWCD/SFWMD permits shall be submitted prior to DPCR approval.

4. A Unity of Title is needed for the two parcels prior to DPCR approval.
   Response: A Unity of Title shall be submitted prior to DPCR approval.

5. Drainage was only conceptually reviewed; a full drainage review will be completed at DPCR submittal. Please specify that City Code Chapter 119-3 (e)(7) values were used for design elevations:

   Rainfall quantities to be used for stormwater management design and calculations shall be as follows:

   - *Ten-year-one-day storm = 6.00 inches (for minimum roadway/parking lot elevation)*
   - *Ten-year one – hour storm = 3.20 inches (for exfiltration trench design).*
   - *Twenty-five-year-three-day storm = 9.50 inches (for off-site discharge & min. perimeter elevation)*
   - *One-hundred-year-three-day storm = 12.23 inches (for minimum floor elevation).*

   Response: The above rainfall values are utilized in the stormwater management Report.

FPUA W/WW Engineering:

FPUA has both water and sewer available to serve this site. Please submit three complete sets of utility construction plans, along with a completed plan review application and a complete commercial service application, to the Water and Wastewater Engineering Department for review. The department is located at 1701 S 37th Street, Fort Pierce, Florida. For further information or inquiries, please contact John Biggs at 772-466-1600, extension 3474
Response: Thank you.

St. Lucie County Public Works Department:

Corrections:

1. South Kings Highway is an FDOT Right-of-Way. Please coordinate with FDOT for permitting improvements within the Right-of-Way or any required Right-of-Way dedications.
   Response: We have coordinated w/ FDOT and have obtained the pre-application letter as attached.

2. Graham road is identified on the County's Right -of-Way protection plan. A Right-of-Way dedication of 10 feet may be required.
   Response: Per our conversation at TRC, additional R/W would not be required.

3. A right-in turn lane may be required on Graham Road because of its proximity to the intersection.
   Response: The westerly driveway on Graham Road @ 595' from kings Hwy ultimate R/W exceeds FDOT requirement of 200' as indicated on pre-application letter.

4. A 6 FT sidewalk is required along adjacent road Right-of-Ways. The Board of County Commissioners may authorize the applicant to pay a Fee-in-Lieu of construction of the sidewalk.
   Response: 6' sidewalks are provided on both adjacent county roads along the project frontage.

5. Dimension the driveway width, radius of return, and setback from side property lines and adjacent driveways. Section 7.05.06 of the Land Development Code includes minimum setback requirements for driveways.
   Response: Please see revised site plan w/ width and setback shown. Both driveways exceed the 5' min setback from side P/L.

6. Provide a truck circulation plan depicting how the dumpster collection, fire department, and delivery trucks will safely maneuver onsite.
   Response: Please see WB-67 truck circulation. The site is designed for Tractor trailers which are longer and require wider turning radii than both fire and garbage trucks. The trash is compacted internally and hauled off to landfill.

7. Provide typical pavement sections for all vehicular use areas. Vehicular use or storage areas are required to be paved with asphalt or concrete.
   Response: Please see typical pavement sections are shown on civil plans sheet C-19.

8. The TIR will be reviewed by a third party. Written acceptance to reimburse the County for associated fees is required to initiate the review. If you are in a position to move forward as such, please provide written notice.
   Response: Please note that this project has been reviewed and approved. The new traffic study is updated to match the reduced square footages. An additional formal review should not be required. Rather a confirmation that indeed the new study reflects lower trips than the approved study.

Conditions:

9. A Site Development Permit is required prior to performing site improvement activities.
   Response: Acknowledged & agreed.

10. A Road Improvement Agreement and appropriate bond will be required for all permanent improvements within the Right-of-Way on White Road.
    Response: White Road improvements are to be completed by Kings Highway Commerce Park. Any white Road improvements from Kings Highway up to and including this project frontage shall be done by this project if required and bonded.

Vennis Gilmore
King Highway Commerce Center
April 15, 2024

St Lucie County Fire

1. Please submit a completed application for Development/Site Plan Review (St. Lucie County Fire District Development & Site Plan Review Application). This form is available on-line at https://www.slcfd.com.
   Response: A completed application for Development/Site Plan Review (St. Lucie County Fire District Development & Site Plan Review Application) upon approval of the site plan.

2. Fire District review fees are due at the time of submittal. An abbreviated fee schedule is included on the application form.
   Response: Acknowledged

3. Please provide an electronic revised copy of the site plan (pdf format).
   Response: An electronic revised copy of the site plan is attached.

4. Please provide written acknowledgement of the conditions/revisions provided.
5. **Response: Please see written acknowledgement of the conditions/revisions provided.**

6. A separate review and permit is required for Underground Fire Mains connected to standpipes or sprinkler systems.
   Response: Acknowledged.

7. Fire department access roads provided in accordance with 18.2.3 shall be provided at the start of a project and shall be maintained throughout construction. (NFPA 1 16.1.4). Surface. Fire department access roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be provided with an all weather driving surface. (NFPA 1.18.2.3.5.2).
   Response: All vehicular access areas in this project meets NFPA requirements for dimensions and loads.

8. Security gates must either be manned 24 hour/day or provide an access control key switch on the control panel to allow for Fire Department entry in an emergency. Security gates must maintain a clear width of 12 feet when open and provide a means to open the gates manually upon loss of power.
   Response: N/A

9. Per the St. Lucie County Fire District Fire Prevention Code Resolution 740-23. At Least 13 feet 6 inches nominal vertical clearance shall be provided and maintained over the full width of all means of access. Including, but not limited to trees, canopies, etc.
   Response: Acknowledged

10. The Fire District reserves the right for future comments at the site plan & building construction phase.
    Response: Acknowledged

11. FD access roads (shall be) are provided such that any portion of an un-sprinklered facility or exterior wall is located not more than 150’ from FD access roads as measured by an approved route around the exterior of the building or facility. (450’ for NFPA 13, 13D, 13R sprinklered protected buildings).
    Response: Both buildings are sprinkled.

12. Be advised: Dimensions of largest vehicle are as follows: 38 tons or 77,000 lbs, 47.5
    Response: Acknowledged

13. Minimum roadway pavement width (two-way traffic) shall be twenty (20) ft.
    Response: Minimum road widths exceed 20’

14. Minimum roadway pavement width (one-way traffic) shall be twelve (12) ft.
    Response: N/A

15. Dead end roadways serving commercial or residential occupancies must include a cul-de-sac when the roadway length exceeds one hundred-fifty (150) feet. "Y" or "T" type turnaround arrangements are permitted. The minimum length must be equal to the length of the longest fire apparatus.
    Response: N/A

16. 18.2.3.3 Multiple Access Roads. More than one fire department access road shall be provided when it is determined by the AHJ that access by a single road could be impaired by vehicle congestion, condition of terrain, climatic conditions, or other factors that could limit access.
    Response: Multiple Access Roads are provided

17. Fire hydrants (shall be) are provided for buildings other than detached one-and two-family dwellings IAW both of the following 1) The maximum distance to a fire hydrant from the closest point in the building shall not exceed 400 feet. 2) The maximum distance between fire hydrants shall not exceed 500 feet. NFPA 1:18.5.3. Please provide fire flow calculations for hydrants.
    Response: The proposed water/fire protection system meets/exceeds above requirements. Please see attached fire flow calculations.

18. An approved water supply capable of supplying the required fire flow for fire. protection (shall be) is identified to all premises upon which facilities, buildings, or portions of buildings which are to be constructed or moved into the jurisdiction. The approved water supply shall be in accordance with NFPA 1:18.4. See “Needed NFPA Fire Flow Calculator Spreadsheet”.
    Response: Acknowledged

19. Prior to the final occupancy of any building, the permitted water supply for fire protection, including fire hydrants and fire suppression systems, shall be installed, tested, and acceptable to the AHJ (SLCFD). NFPA 1141 Chapter 10.1.3.
    Response: Acknowledged.

20. Fire department connections shall be located on the street side of buildings and shall be located and arranged so that hose lines can be readily attached to the inlets without interference from any nearby objects, including buildings, fences, landscaping, or other fire department connections. The locations of connections shall be based upon the access requirements of the fire department.
    Response: The proposed fire protection system meets above requirements.

21. The distance allowed between the fire department connection and a fire hydrant shall be no more than one hundred fifty (150) feet as a vehicle travels.
    Response: The distance allowed between the fire department connection and a fire hydrant are less than one hundred fifty (150').

22. Minimum Size of Water Mains
    The minimum size of water mains for supplying water for firefighting purposes. shall be six (6) inches. b. The minimum size of water mains supplying hydrants on a dead end main shall be eight (8) inches. c. The maximum number of hydrants located on a dead end main shall be one (1). d. Grid or Tee systems shall be supplied. by a minimum of an eight (8) inch looped main. Exceptions may be granted based on the capacity of the water distribution system but in no case shall the main size be less than six (6) inches. e. The minimum size water main(s) shall be determined by the needed fire flow as established by the Fire Marshal and based on the current Insurance Service Office (ISO) requirements.
    Response: The proposed water/fire protection system meets/exceeds above requirements.

23. Two-Way Radio Enhancement Systems/BDAS shall be installed, inspected and operationally tested in accordance with the manufacturer's published requirements, by the local fire department, and comply with the most current edition of the Florida Fire Prevention Code and its incorporated standards and codes. Pre-surveys of radio signal strength shall be submitted to the Fire Marshal in the form of heat signature mapping, or a certification document of radio signal strength provided by a licensed engineer.
    Response: Acknowledged.

24. Hydrants shall be located no more than 12ft. from the curb of roadways or from the edge of payment. Clearances of three feet (3 ft.) shall be maintained around the circumference of hydrants. A clear space of not less than five feet (5ft.) shall be provided in front of each hydrant connection having a diameter greater than 2 ½ inches. The center of hose outlet shall be not less than 18 inches above final grade. (SLCFD Fire Prevention Code Resolution 740-23).
    Response: The proposed fire protection system meets/exceeds above requirements.

Vennis Gilmore
King Highway Commerce Center
April 15, 2024

St Lucie County Transportation Planning Organization

- Traffic Analysis: A reduced growth rate of 1.5 percent was used. However, the St. Lucie TPO has adopted the BEBR high growth rate for the historical growth rate which reflects the actual annual growth rate in the County since 1995. Therefore, The Traffic Analysis should be revised to include a growth rate of 2.5 percent.
  Please feel free to contact me should you have any questions.
  Response: The traffic study uses 1.5% "plus" committed traffic. The resultant growth in traffic is over the 2.5% that the TPO has referenced. In fact short term growth on Kings Highway is over 50% per year when considering committed traffic.

- Sidewalks/Pedestrian and Bicyclist Connectivity: The proposed development does not appear to include sidewalks or bicycle facilities connecting Kings Highway to the driveway at Graham Road along the north side, respectively, of the proposed development. Sidewalk, bicycle lane and pedestrian connectivity should be provided from King's highway to the driveway at Graham Road for pedestrian and bicyclist safety.
  Response: The connection between Kings Highway and this project is along the frontage of the parcel to the west, which is not part of this development, and would be responsible for its construction.

Thank you,

J H Iravani

Jeff H. Iravani, P.E.
President