

TRAFFIC IMPACT ANALYSIS

For

VITAS - TRADITION

Prepared By: Deanna Foriere, E.I.

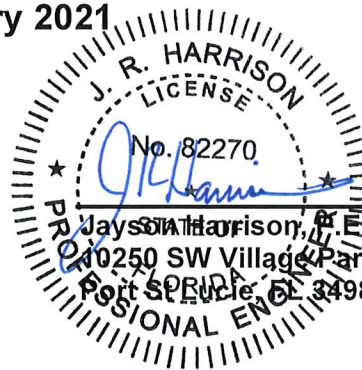
Engineering Design & Construction, Inc.

10250 SW Village Parkway, Suite 201

Port St. Lucie, FL 34987

Board of Professional Engineers Certificate of Authorization Number 9935

February 2021



2/22/21

Jayson Harrison, P.E. Date
10250 SW Village Parkway, Suite 201
Port St. Lucie, FL 34987 (772) 462-2455

Background:

Engineering Design & Construction has completed a traffic statement and impact analysis for the proposed Hospice Center Vitas, located in Tradition on the corner of SW Community Blvd and Tradition Pkwy. Vitas will consist of 20,816 sf of hospice facility and 2,910 sf of community area, creating an overall 23,726 sf facility, access to this development is through a shared right in right out access proposed for Barron Shoppes on Tradition Parkway. Tradition Parkway is a 4-lane divided arterial road with a posted speed limit of 35 mph.

The purpose of this study is to determine the proposed project’s impact on the surrounding traffic and the warrant of a right turn lane on Tradition Parkway. This analysis follows the guidelines set forth in the Standard Traffic Impact Studies (TIS) Methodology and Procedures created by St. Lucie TPO, along with the City of Port St. Lucie, Public Works Department Policy #19-01.

Trip Generation:

VITAS TRADITION: TRIP GENERATION									
Institute of Transportation Engineers: Trip Generation, 10th Edition									
WEEKDAY: DAILY AVERAGE									
Land Use	ITE Code	Intensity	Units	Trip Generation Rate	Directional Split		Gross Trips		
					IN	OUT	IN	OUT	TOTAL
Nursing Home	620	23.7	S.F.	$\ln(T)=0.83\ln(x)+2.51$	50	50	85	85	170
WEEKDAY: A.M. PEAK HOUR TRIPS									
Land Use	ITE Code	Intensity	Units	Trip Generation Rate	Directional Split		Gross Trips		
					IN	OUT	IN	OUT	TOTAL
Nursing Home	620	23.7	S.F.	$\ln(T)=0.83\ln(x)+0.18$	63	37	11	6	17
WEEKDAY: P.M. PEAK HOUR TRIPS									
Land Use	ITE Code	Intensity	Units	Trip Generation Rate	Directional Split		Gross Trips		
					IN	OUT	IN	OUT	TOTAL
Nursing Home	620	23.7	S.F.	$\ln(T)=0.87\ln(x)+0.28$	43	57	9	12	21

ITE Trip Generation does not report Weekend Trips, but the facility is open on weekends. Due to this the highest peak hour trips from weekday (P.M. Peak Hour [21]) will be assumed for weekend peak hour trips.

Traffic Distribution:

Traffic Distribution is based on engineering judgement from the surrounding area. In respect to the development’s location, the projected distribution is 90% from the east and 10% from the west. Please find the attached distribution map for a more in depth breakdown. The additional trips are added with the existing road density, to verify that the capacity of the road and Level of Service(LOS) is adequate for the future development, as shown in the below table the Vitas development does not exceed any current limits.

Trip Distribution

ROW Segment	From	To	LOS Service Capacity	Peak Hr Service Capacity	Peak Hr Project Volume	% project of LOS Capacity	Exist Peak Hr Peak Direction	Adopted LOS Currently Exceeded?	Total Peak Hr Volume	(5%) Impacts to LOS Exceeded?	Adopted LOS to be Exceeded
Tradition Pkwy	Community Blvd	Village Pkwy	D	1,710	2	0.12%	1144	No	1146	No	No
Tradition Pkwy	I-95	Village Pkwy	C	3,170	19	0.60%	1,924	No	1943	No	No

Right Turn Lane Warrant:

Access to this site is through a shared right in right out driveway heading east on Tradition Parkway. The driveway will be developed with the Baron Shoppes development, for accurate calculations the combined traffic from both Baron Shoppes and Vitas sites are used to determine the right turn warrant. Barron Shoppe’s projected traffic can be seen in the below Trip Generation from Bowman Consulting Traffic analysis generated on September 1, 2020.

September 1, 2020
Baron Shoppes – Traffic Assessment

Table 1 - ITE Site Trip Generation Analysis⁽¹⁾

Land Use	Land Use Size Units	Code	Weekday ⁽¹⁾							Saturday ⁽¹⁾						Sunday ⁽¹⁾						
			AM Peak Hour			PM Peak Hour			Daily Trips	Saturday Peak Hour			Saturday daily			Sunday Peak Hour			Sunday Daily			
			In	Out	Total	In	Out	Total		In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Stancalone Restaurant w/Drive Thru (Land Use 934) (3,300 GSF)	3,300	GSF	934	69	67	136	58	53	111	1597	95	91	186	1044	1045	2089	90	97	187	801	801	1602
Chipotle Restaurant w/Drive Thru (Land Use 934) (2,000 GSF)	2,400	GSF	934	49	47	96	40	38	78	1130	67	65	132	739	740	1479	63	69	132	567	567	1134
Subway (Fast Food Restaurant) (Land Use 933) (1,543 GSF) (2)	1,843	GSF	933	23	16	39	22	22	44	533	41	43	84	538	538	1072	41	43	84	385	385	770
Paradise Car Wash (Land Use 949) (6,434 GSF) (3)	6,434	GSF	949	35	20	55	42	45	87	1004	42	45	87	502	502	1004	42	45	87	502	502	1004
Office (Land Use 712) (3,000 GSF)	3,400	GSF	712	5	2	7	2	6	8	55	1	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bagel Shop (Land Use 936) (2,400 GSF) (4)	2,000	GSF	936	103	99	202	36	37	73	1609	58	60	118	673	674	1347	79	77	156	422	422	844
TOTAL				284	251	535	206	201	401	5,628	304	304	608	3,404	3,497	6,901	315	331	646	2,677	2,677	5,354

Notes: (1) Based on the Institute of Transportation Engineers Trip Generation, 10th Edition.
 (2) For planning purposes, the Sunday peak hour trips are assumed to be the same as Saturday peak hour trips. The ITE does not report Sunday peak hour trips.
 (3) For planning purposes, the pm peak hour and daily trips were used to populate information for Saturday and Sunday. The ITE does not report Saturday or Sunday peak hour trips.
 (4) For planning purposes, Land Use 936 - Coffee/Conut Shop without Drive-Thru was used instead of the Bagel Shop LU 936 since LU 936 had available data for Saturday and Sunday

Table 1. Baron Shoppes Trip Generation.

From Baron Shoppes Traffic Analysis, the right lane turn warrant was determined for their highest peak hour trips, Sunday. As mentions above Vitas does not generate ITE trips on Sunday, therefore the highest peak hour trips for Sunday, will be estimated using information from the weekday analysis. Vitas will have an assumed 21 trip peak hour.

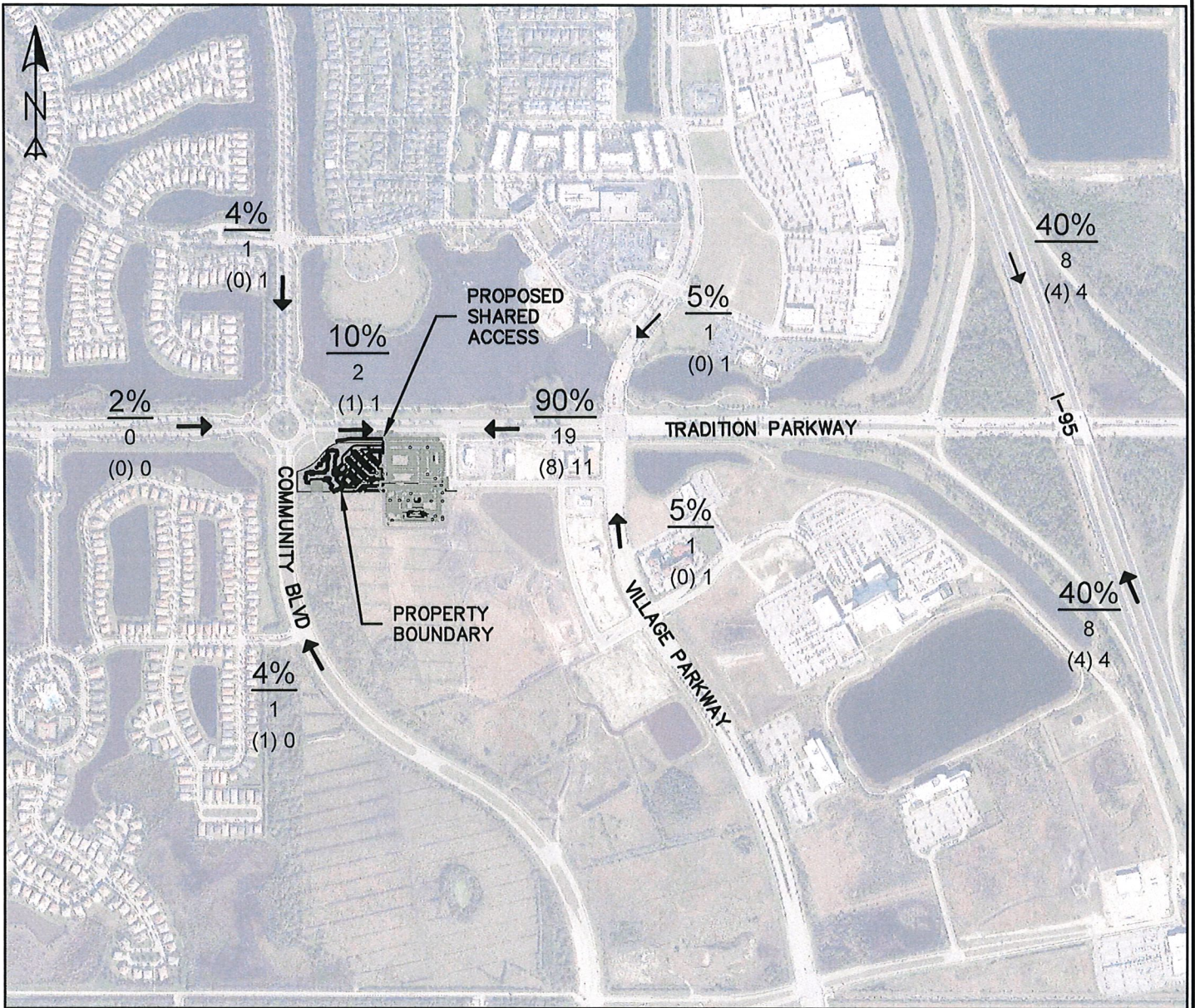
The combined total Sunday peak hour trips is **336** [315 + 21]. Using the distribution breakdown 10% of the total trips would be making a right turn into the development resulting in **34** right turns. As previously stated, Tradition Parkway is a 35mph road. Using FDOT’s requirements for a right turn lane from their access management techniques report, a right turn lane is not required.

Roadway Posted Speed Limit	Number of Right Turns Per Hour
45 mph or less	80 – 125 ¹
Over 45 mph	35 – 55 ²
<small>Note: A posted speed limit of 45 mph may be used with these thresholds if the operating speeds are known to be over 45 mph during the time of peak right turn demand.</small>	
<small>Note on traffic projections: Projecting turning volumes is, at best, a knowledgeable estimate. Keep this in mind especially if the projections of right turns are close to meeting the guidelines. In that case, consider requiring the turn lane.</small>	
<small>¹ The lower threshold of 80 right-turn vehicles per hour would be most used for higher volume (greater than 600 vehicles per hour, per lane in one direction on the major roadway) or two-lane roads where lateral movement is restricted. The 125 right-turn vehicles per hour upper threshold would be most appropriate on lower volume roadways, multilane highways, or driveways with a large entry radius (50 feet or greater).</small>	
<small>² The lower threshold of 35 right-turn vehicles per hour would be most appropriately used on higher volume two-lane roadways where lateral movement is restricted. The 55 right-turn vehicles per hour upper threshold would be most appropriate on lower volume roadways, multilane highways, or driveways with large entry radius (50 feet or greater).</small>	

Source: [NCHRP Report 420 \(Impacts of Access Management Techniques\)](#)

Conclusion:



From the above Traffic Impact Analysis, it is EDC's opinion that the Vitas proposed development on Tradition Parkway does not warrant a right turn lane in accordance with FDOT Access Management Report, that states if a roadway is 45mph or less it must meet at least 80-125 proposed right turns/hour. This analysis accounted for both developments, Baron Shoppes and Vitas, that will be utilizing the access driveway off of Tradition Parkway a 35mph road. The developments combined created a proposed 34 right turns, which is well below the required threshold, for this reason a right turn lane will not be proposed.



PM PEAK HOUR TRIPS: 21
 (IN): 43% = 9 OUT: 57% = 12

DISTRIBUTION MAP

SCALE: 1"=1000'

20-288	 ENGINEERS & SURVEYORS ENVIRONMENTAL	VITAS - TRADITION TRAFFIC DISTRIBUTION MAP		 <small> PORT SAINT LUCIE OFFICE 10250 SW VILLAGE PKWY - SUITE 201 PORT SAINT LUCIE, FL 34987 (888) 660-6418 WWW.ES-11C.COM </small>				
1 OF 1	<small>10250 SW VILLAGE PKWY - SUITE 201 PORT SAINT LUCIE, FL 772-462-2455</small>	<small>PORT ST. LUCIE FLORIDA</small>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%;">DATE</th> <th style="width: 50%;">REVISION COMMENTS</th> </tr> <tr> <td> </td> <td> </td> </tr> </table>	DATE	REVISION COMMENTS			<small> F.B.P.E. CERTIFICATE OF AUTHORIZATION 6935 L.B. CERTIFICATE OF AUTHORIZATION 6008 </small>
DATE	REVISION COMMENTS							

J.E. HARRISON, P.E. (DATE)
 62270
 1025 VILLAGE PARKWAY
 PORT ST. LUCIE, FL 34987
 888-288-2488
 www.jeharrison.com

ENGINEERS & SURVEYORS ENVIRONMENTAL

U.S. DEPARTMENT OF AGRICULTURE
 NATIONAL CENTER FOR CONSERVATION AND FORESTRY

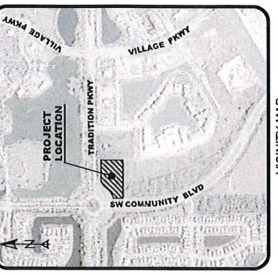
20-288

1 OF 2

VITAS - TRADITION

SITE PLAN

PORT ST. LUCIE
 FLORIDA



VICINITY MAP

CONSERVATION
 WITHIN 1000 FEET OF THE PROJECT SITE:
 1. DOWNTOWN TRADITION
 2. DOWNTOWN TRADITION
 3. DOWNTOWN TRADITION
 4. DOWNTOWN TRADITION

CONSTRUCTION
 WITHIN 1000 FEET OF THE PROJECT SITE:
 1. DOWNTOWN TRADITION
 2. DOWNTOWN TRADITION
 3. DOWNTOWN TRADITION
 4. DOWNTOWN TRADITION

NEAREST FIRE HYDRANT LOCATED WITHIN 1,000 FT.
 1. DOWNTOWN TRADITION
 2. DOWNTOWN TRADITION
 3. DOWNTOWN TRADITION
 4. DOWNTOWN TRADITION

LEGAL DESCRIPTION
 SOUTHERN ORANGE PLAT NO. 31 1/4 SW QUARTER 1, 12.88 AC. - 17.88 AC.

WATER AND SEWERAGE SERVICE
 WATER AND SEWERAGE SERVICE WILL BE UTILIZED TO SERVE THE PROPOSED BUILDING. PROPOSED CONNECTION TO EXISTING WATER AND SEWER SERVICE THROUGH EXISTING MAINS.

HAZARDOUS WASTE
 PROPOSED HAZARDOUS WASTE STORAGE AND TREATMENT SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS.

WELL FIELD PROTECTION
 ALL PROPOSED WELLS SHALL BE LOCATED WITHIN 1000 FEET OF A PUBLIC WATER SUPPLY WELL.

MECHANICAL
 MECHANICAL SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS.

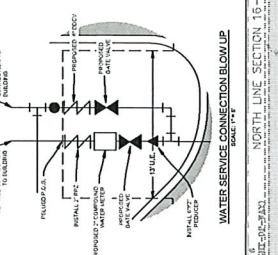
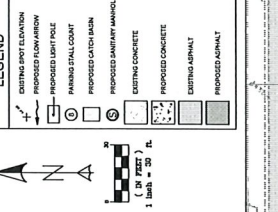
LANDSCAPE
 LANDSCAPE DESIGN SHALL BE PROVIDED BY OTHERS.

ACCESSIBILITY AND ADA COMPLIANCE
 ALL STRUCTURES AND WALKWAYS SHALL MEET ADA REQUIREMENTS.

ENVIRONMENTAL
 THE PROJECT SHALL BE SUBJECT TO ENVIRONMENTAL ASSESSMENT COMPLETED BY GPC INC. ON 05/14/2020.

ENVIRONMENTAL SITE ASSESSMENT TABLE	NOISE	QUALITY AIR	WATER RESOURCES	WETLANDS	WATER QUALITY	WATER QUANTITY	WATER QUALITY	WATER QUANTITY	WATER QUALITY	WATER QUANTITY
NOISE	100	100	100	100	100	100	100	100	100	100
QUALITY AIR	100	100	100	100	100	100	100	100	100	100
WATER RESOURCES	100	100	100	100	100	100	100	100	100	100
WETLANDS	100	100	100	100	100	100	100	100	100	100
WATER QUALITY	100	100	100	100	100	100	100	100	100	100
WATER QUANTITY	100	100	100	100	100	100	100	100	100	100
WATER QUALITY	100	100	100	100	100	100	100	100	100	100
WATER QUANTITY	100	100	100	100	100	100	100	100	100	100
WATER QUALITY	100	100	100	100	100	100	100	100	100	100
WATER QUANTITY	100	100	100	100	100	100	100	100	100	100

NOTE: THE PROPERTY OWNER, CONTRACTOR AND ARCHITECT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PORT ST. LUCIE AND THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP).

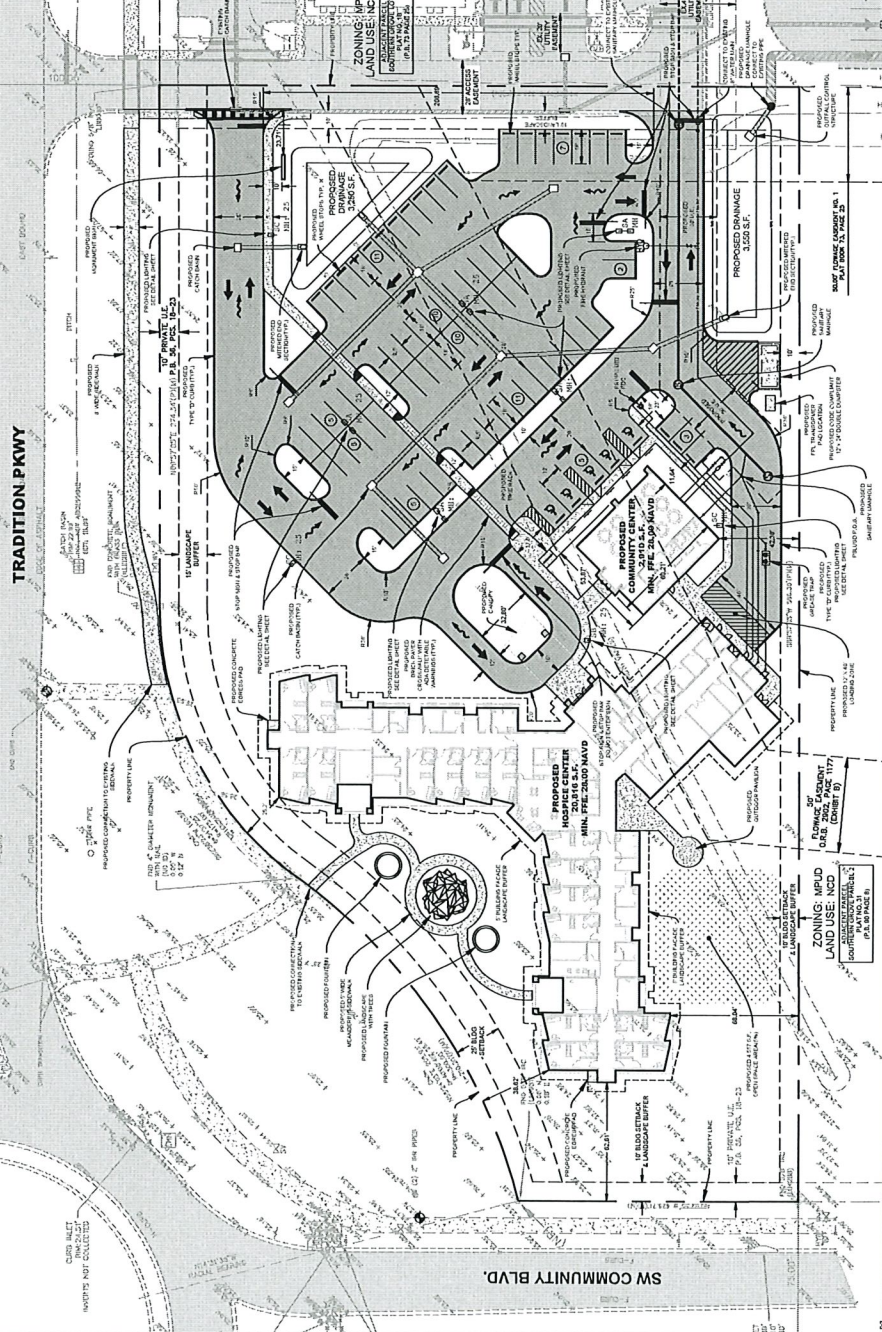


LAND USE BREAKDOWN

PARCEL SIZE	179,480 S.F.	188,000 S.F.
IMPERVIOUS:	31,736 S.F.	31,736 S.F.
PERMEABLE:	147,744 S.F.	156,264 S.F.
TOTAL IMPROVEMENT:	179,480 S.F.	188,000 S.F.

BUILDING DATA:
 TOTAL BUILDING FOOTPRINT: 232,824 S.F.
 PROPOSED FACILITY: 232,824 S.F.

PARKING INFORMATION:
 PROPOSED PARKING SPACES: 100
 PROPOSED SIDEWALK: 100
 PROPOSED DRIVEWAY: 100



STANDARD PERMITS (TYPICAL)

PERMITS:
 1. PLUMBING
 2. ELECTRICAL
 3. MECHANICAL
 4. CONCRETE
 5. ASPHALT
 6. LANDSCAPE

LANDSCAPE BUFFER
 MIN. 10' BUFFER (SEE PLAN)
 MIN. 15' BUFFER (SEE PLAN)
 MIN. 20' BUFFER (SEE PLAN)

PROPOSED COMMUNITY CENTER
 MIN. 20' BUFFER (SEE PLAN)

PROPOSED HOSPICE CENTER
 MIN. 20' BUFFER (SEE PLAN)

10255 VILLAGE PARKWAY
PORT ST. LUCIE, FL 34887
888-772-4625
772-462-2465
www.jrh.com

DATE: 11/12/2021

PROJECT: 20-288

CLIENT: PORT ST. LUCIE

LOCATION: 10255 VILLAGE PARKWAY

SCALE: AS SHOWN

DATE: 11/12/2021

PROJECT: 20-288

CLIENT: PORT ST. LUCIE

LOCATION: 10255 VILLAGE PARKWAY

SCALE: AS SHOWN

VITAS - TRADITION

SITE PLAN

PORT ST. LUCIE
FLORIDA

J.R. HARRISON, P.E. (DATE)
888270

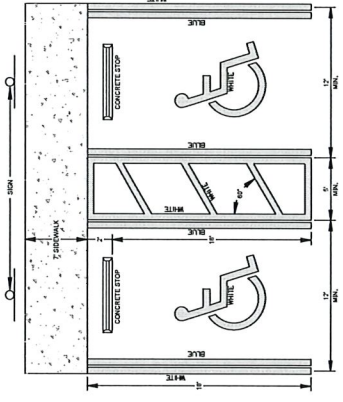
10255 VILLAGE PARKWAY - SUITE 201
PORT ST. LUCIE, FL 34887
772-462-2465

20-288

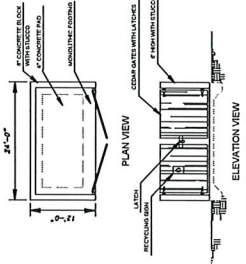
2 OF 2



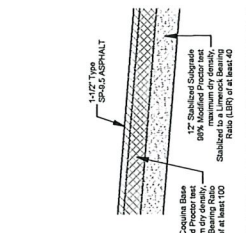
- NOTES:
- FTP 20-06 TOP PORTION SHALL HAVE A FLUORESCENT BORDER. BOTTOM PORTION SHALL HAVE A FLUORESCENT CENTER. ALL OTHER PORTIONS SHALL BE WHITE.
 - FTP 22-06 SHALL BE WHITE WITH FLUORESCENT CENTER AND BORDER. BACKGROUND SHALL BE BLACK WITH FLUORESCENT CENTER AND BORDER.
 - FTP 20-06 AND 22-06 SHALL BE SUPPLEMENTAL SIGNS FOR THE FTP SIGN & PIP.
 - HIGHT SHALL BE FEET MEASURED FROM THE GROUND OR TO THE BOTTOM OF THE SIGN. SEE SIGN AND PIP DETAILS FOR SIGN HEIGHT AND PIP DETAIL.
 - SEE SIGN AND PIP DETAILS FOR SIGN HEIGHT AND PIP DETAIL.
 - SEE SIGN AND PIP DETAILS FOR SIGN HEIGHT AND PIP DETAIL.



HANDICAPPED SPACE DETAIL



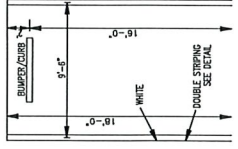
DUMPSTER DETAIL



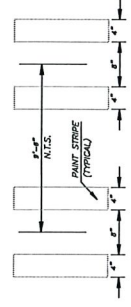
TYPICAL PAVEMENT SECTION

Symbol	Qty	Label	Arrangement	L/F	Description
1	5	SA	D180	0.900	Ragmi Lighting TEKK-M-64J-10S-4-T5-UNV-TP/LT-XX
2	1	SB	SINGLE	0.900	Ragmi Lighting TEKK-M-64J-10S-4-T5-UNV-TP/LT-XX
3	3	SC	SINGLE	0.900	Ragmi Lighting TEKK-M-64J-10S-4-T5-UNV-TP/LT-XX

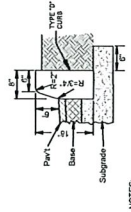
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Parking Lot	Illuminance	FC	3.36	8.2	1.0	3.36	8.20
Property Line	Illuminance	FC	0.14	0.5	0.0	N.A.	N.A.



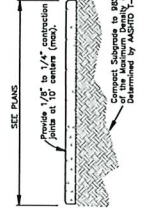
18' PARKING STALL DETAIL



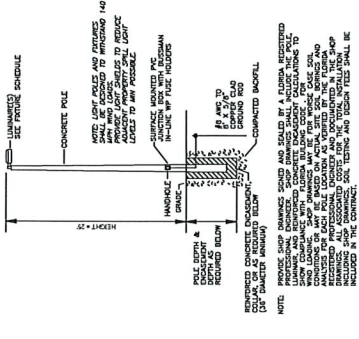
DOUBLE STRIPING DETAIL



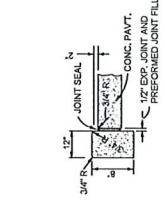
TYPE "D" CURB



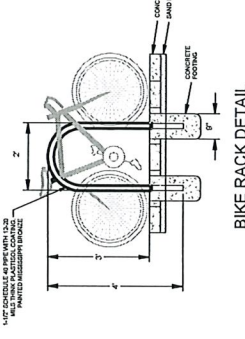
4" THICK SIDEWALK DETAIL



POLE MOUNTING DETAIL



FLUSH HEADER CURB



BIKE RACK DETAIL

Traffic Counts and Level of Service Report
Fall/Winter 2019/2020

Roadway Name	Location	STATION ID	AADT	Last Count Year	Pk Hr Service Capacity	AM Pk Hr Pk Dir			PM Pk Hr Pk Dir		
						Volume	LOS	V/C	Volume	LOS	V/C
ST LUCIE WEST BLVD	CASHMERE BLVD to BAYSHORE BLVD	316	46,000	2019	3,170	2,446	C	0.792	2,308	C	0.747
SUNRISE BLVD	MIDWAY RD to BELL AVE	155	3,590	2016	540	249	C	0.922	233	C	0.863
SUNRISE BLVD	BELL AVE to EDWARDS RD	153	3,814	2016	750	253	C	0.684	286	C	0.773
SUNRISE BLVD	EDWARDS RD to CORTEZ BLVD	511	7,300	2020	600	647	F	1.011	515	D	0.858
SUNRISE BLVD	CORTEZ BLVD to VIRGINIA AVE	511	7,300	2020	750	647	D	0.863	515	D	0.687
SUNRISE BLVD	VIRGINIA AVE to OLEANDER AVE	509	5,300	2020	750	417	D	0.556	411	D	0.548
SUNRISE BLVD	OLEANDER AVE to 7TH ST	708	3,900	2017	1,540	243	C	0.352	282	C	0.409
SUNRISE BLVD	7TH ST to US 1	708	3,900	2017	1,710	243	C	0.316	282	C	0.366
TIFFANY AVE	US 1 to HILLMOOR DR	322	15,000	2019	2,100	855	C	0.425	862	C	0.429
TIFFANY AVE	HILLMOOR DR to VILLAGE GREEN DR	322	15,000	2019	2,100	855	C	0.425	862	C	0.429
TIFFANY AVE	VILLAGE GREEN DR to LENNARD RD	320	4,666	2017	2,100	242	C	0.120	261	C	0.130
TORINO PKWY	CASHMERE BLVD to CALIFORNIA BLVD	709	7,800	2018	630	404	C	0.673	443	C	0.738
TORINO PKWY	CALIFORNIA BLVD to EAST TORINO PKWY	238	4,314	2018	630	255	C	0.425	223	C	0.372
TRADITION PKWY	COMMUNITY BLVD to VILLAGE PKWY	711	8,367	2018	1,710	996	D	0.582	1,144	D	0.669
TRADITION PKWY	VILLAGE PKWY to W OF I-95	712	36,500	2019	3,170	2,021	C	0.654	1,924	C	0.623
TULIP BLVD	DARWIN BLVD to PORT ST LUCIE BLVD	713	8,200	2019	790	524	D	0.663	456	D	0.577
TULIP BLVD	PORT ST LUCIE BLVD to PAAR DR	714	9,133	2018	790	639	D	0.809	493	D	0.624
TULIP BLVD	PAAR DR to DARWIN BLVD	714	9,133	2018	790	639	D	0.809	493	D	0.624
TURNPIKE FEEDER RD	TURNPIKE FEEDER RD SB RAMP to US 1	940078	4,989	2015	660	653	C	0.989	653	C	0.989
TURNPIKE FEEDER RD	INDIAN PINES BLVD to TURNPIKE FEEDER RD SB R...	940269	10,253	2017	870	676	C	0.777	620	C	0.713
TURNPIKE FEEDER RD	INDRIO RD to INDIAN PINES BLVD	940745	12,876	2017	870	696	C	0.800	732	C	0.841
US 1	MARTIN C.L. to LENNARD RD	945071	41,817	2017	4,240	1,904	C	0.457	2,239	C	0.537
US 1	LENNARD RD to PORT ST LUCIE BLVD	945071	41,817	2017	4,040	1,904	C	0.480	2,239	C	0.564
US 1	PORT ST LUCIE BLVD to JENNINGS RD	945070	31,458	2017	3,020	1,510	C	0.514	1,603	C	0.545
US 1	JENNINGS RD to TIFFANY AVE	945070	31,458	2017	3,020	1,510	C	0.514	1,603	C	0.545

* Note: A six digit number in the "STATION ID" column identifies segment counted by FDOT

* Volumes shown were adjusted using FDOT Seasonal Factors

* AADT = Annual Average Daily Traffic (volumes for both directions where applicable)

* Counts with an ID format of 6 digits have data extracted from FDOT count stations.