

## **APPENDIX A**

- **Application**
- **Project Narrative**
- **Variance Justification**



APPLICATION FOR GENERAL SITE PLAN REVIEW  
BY THE ST. LEO TOWN COMMISSION

NOTE: All applications are to be filled out completely and correctly, and submitted in person (no fax or deliveries) to the Town Clerk. The applicant, by filling this application agrees he/she will comply with all requirements of the Town of St. Leo Land Development Code (LDC). General Site Plan Review is typically a staff review. However, if a variance to the LDC is required, then a variance public hearing will be scheduled. It is necessary for the applicant or the applicant's representative to be present at the public hearing meeting. No revisions to the General Site Plan application will be processed no later than 14 days prior to the scheduled town Commission meeting. The Public Hearing will be conducted pursuant to Quasi-Judicial Proceedings.

NOTE: it is incumbent upon the applicant to submit correct information. Any misleading, deceptive, incomplete or incorrect information may invalidate your approval.

Application Date 01.16.14  
Applicant (Title Holder(s)) Saint Leo University  
Address 33701 State Road 52, Saint Leo, Florida Zip 33574 Phone/Fax 352.500.0215/352.588.0511  
Representative (Owner Authorization Affidavit is required) N.A.  
Address N.A. Zip \_\_\_\_\_ Phone/Fax \_\_\_\_\_  
Architect/Engineer Lunz Prebor Fowler Architects  
Address 58 Lake Morton Dr., Lakeland, Florida Zip 33801 Phone/Fax 863.682.1882/863.687.6346  
When Property Title Obtained In process  
Legal Description See attached Boundary Survey  
PIN Number(s) [County] 01-25-20-0000-01800-0010, 01-25-20-0000-02200-0000, 01-25-20-0020-00200-0090  
General Location (Address) 33701 State Road 52, Saint Leo, Florida

- Pursuant to the LDC, included with this application must be:
- a written narrative describing the proposed use and development, including any variances and identification of impact to established visual corridors
  - a property survey, including topographic vertical contours no greater than five-foot contour intervals and identification of soils
  - a letter of authorization/affidavit from the property owner should a representative be acting on the owner's behalf

Upon determination of completeness, two sets the application and proposed general site plans/building elevations are to be submitted. Please note: If trees are proposed to be removed, then a tree survey for all trees over 3" d.b.h on site may be required if deemed applicable by staff.

FEES: The applicant will be billed for the actual expenses related to the Town of St. Leo's Planning Consultant or other Town of St. Leo staff review of the application. This may include, but not be limited to, time spent reviewing the application for completeness, site inspection, preparing a report to the Town Commission, telephone conversations and/or written correspondence to the applicant, attending any meeting with the applicant and attending public hearings. The Town Commission may request an advanced partial payment based on an estimate of the Planning Consultant's fees and expenses.

Signature Jeanette Pleurick  
Title Holder(s)/Owner(s)

Request: (Explain proposal in detail); use additional sheets if necessary See attached.

Plant Operations Relocation  
Amended Site Plan Review Narrative  
05.12.14 rev.

The University's Plant Operations Department has been in an old and inadequately sized building for several years due to the consistent and substantial expansion of the school. Recall the previous expansion plans for the Plant Operations department to create a new facility wrapping around the Chiller Building.

Because it was felt that the proposed relocation at the Chiller Building, due to its "hemmed in" nature, would prove inadequate in a short time, the university did not proceed with that concept.

With this latest acquisition of the additional property sufficient expansion area is now available, and the university plans to erect a new Plant Operations facility at the west side of the property, off Pompanic Drive. This new facility will provide space for the bulk storage of materials needed by the University, and will allow greater savings due to bulk purchasing. The office portion of the facility will allow proper space for the current staff of six, but with room to expand the office to accommodate six more.

Parking will be provided at the new facility for visitors, including accessible parking spaces, and for office staff only. The remainder and bulk of the Plant Operation staff will park their personal vehicles at the existing campus garage and using golf carts, lawn maintenance equipment, or service vehicles, which are parked nightly at the garage, will proceed to their work assignments throughout the campus; most of which are not related to the Plant Operations building. This logistical approach will therefore create a minimal, marginal traffic impact on the adjacent public roadways (see companion traffic study and specific summary findings below).

Most deliveries to the new facility will be made via panel trucks or other small or medium-sized delivery vehicles; larger delivery trucks typically are limited to two or three deliveries per week, contrary to speculative reports or conjecture. The University has documented the historic traffic at the existing facility to support this request. In any event, Pompanic Street is a public right-of-way, and is officially classified by the City of San Antonio as a "general access" public roadway, with no limitation of type, weight or class of commercial vehicles (per the express provisions of the City's adopted LDC Section 58.2.). The Town of St. Leo also has no vehicle type, class or weight limitation adopted for Pompanic Street, and has no limiting Level of Service (LOS) classification for Pompanic Street that precludes the proposed use of Pompanic as a public right-of-way to access the site. Thus there is no legitimate, adopted regulatory basis to limit such access via Pompanic Street.

The building is set back from SR 52 approximately 300 feet, and it is located down the gentle slope of the property resulting in a floor elevation

approximately 15 feet lower than that of SR 52. Both of these elements will serve to minimize, if not eliminate, any visual impact to the SR 52 view corridor. Traveling towards the east from San Antonio, the facility will have limited, if any, visibility due to existing residential structures and mature trees. Traveling west on SR 52, the visibility of the facility will be very minimal due to its distance from the road and the substantially lower elevation of the facility, as compared to the public roadway.

Likewise, the building is over 1,000 feet from the lake, resulting in a minimal visual impact from that direction. In addition, the smaller end of the building, at 80 feet wide, is facing the lake, as opposed to the longer 200 foot length at the opposite end. The landscape buffer will serve to further minimize any visual impact.

A minimal and reasonable variance request accompanies this Site Plan Review. Pursuant to the Land Development Code, the landscape buffer along McMullen Drive is a Type C Buffer, which requires a solid fence or wall. The purpose is to provide a visual separation between residential and business zoned property.

To provide a more aesthetically pleasing interface to the San Antonio community and adjacent properties, the University proposes to install a decorative fence matching that, which was approved by the Town of St. Leo and installed at the University's main campus along SR 52. The buffer also includes a 20-foot landscape strip planted with a combination of canopy trees, understory trees, and shrubs. Renderings are attached showing how it might look.

Over the years the University has been improving and modifying its campus-wide landscaping to present a pleasing resort-like aesthetic. This improvement can be seen along SR 52 and the University would like to extend this to its new borders.

Vehicular access for deliveries and office staff will be off Pompanic Street as specifically permitted by City of San Antonio LDC 58.2, and not prohibited by the Town of St. Leo in its ordinances. As previously stated, all other Plant Operations employees will park in the parking garage and utilize existing entrances to campus. As referenced above, to objectively assess the impact of the facility to not only Pompanic Street, but also the intersection of Pompanic Street and SR 52, the University commissioned Raysor Transportation Consulting, LLC to complete a traffic study. Their full report is appended to this application and made a part hereof.

Approximately one-half of the public right-of-way for Pompanic Street is within the City of San Antonio; the other one-half is in the Town of St. Leo. San Antonio City's Land Development Code classifies it as a "General Access" street without size, type, or weight limitations (Sec. 58-2 (b)).

The Town of Saint Leo classifies Pompanic Street as "Local 2-Lane Undivided" street with an adopted LOS Standard D in the Comprehensive Plan table (although elsewhere in the Comprehensive Plan text it states that there is no established LOS limitation for any "local streets"). At any rate here is the analysis for LOS Level D compliance (if applicable):

FDOT Capacity Values for Level D Roads are:

- Daily two-way capacity: 8938 vehicles per day
- Peak hour two-way capacity: 806 vehicles per hour

Actual observed traffic volumes for Pompanic are:

- Daily two-way volume: 600 to 700 vehicles per day
- Peak hour two-way volume: 50 to 70 vehicles per hour

Additional trips generated by the new Plant Operations facility:

- Daily two-way volume: 26 vehicles per day or .3% of capacity.

The traffic analysis found that Pompanic Street currently operates at about 5.8% to 8.5% of its LOS D capacity, and upon relocation of the Plant Operations Building it is anticipated to operate at about 6.5% to 9.2% of its LOS D capacity. Consequently there is no legitimate traffic impact objection to this request.

The intersection of Pompanic Street at SR 52 also was found to operate acceptably at Level of Service "D" or better for all analysis scenarios, and any impacts at the intersection as a result of the relocation of the SLU Plant Operations Building would be insignificant, and not material to the operation of the intersection (See the Raysor traffic analysis).

The study's findings indicate that the transportation standards as documented in the Town of St. Leo Comprehensive Plan are currently met, and are anticipated to continue to be met upon relocation of the SLU Plant Operations Building.

Water will be provided from the City of San Antonio's municipal system. The water line runs along the west side of Pompanic Street, and there is a fire hydrant at the corner of Pompanic Street and McMullen Drive.

Electrical service will be from TECO from their lines running alongside SR 52.

There is not a municipal sanitary system available for the project. The University, through its construction manager, is comparing pricing for a septic system or a small force main that would tie into the University's owned system located on the Monastery property on the south side of SR 52.

A SWFWMD permit for storm water has been issued for this project for the previous proposed location. The revisions required for the new location will be submitted for approval. The design concept whereby storm water will be

captured by a retention pond remains the same; the pond will be moved to the northeast.

Likewise, a building permit from the Town of Saint Leo has been issued. Revisions required for this new location will be submitted for approval. The only change is the fire department access since McMullen Drive will no longer be used. Design of the building and parking remains the same.

Please see the survey accompanying the Planned Unit Development Major Modification No. 2 for legal description, elevation contours, and tree identification, within the project area. The only protected tree is a 45 DBH Oak, for which there is an accompanying Tree Removal Permit Application. Removal of this tree was not required in the original site plan, but is now in the way of the new building location which addresses concerns expressed at the February 2014 Town Commission meeting. The only other trees in the project area are Cabbage Palms, which are not protected. Those palms in the way of the building will be removed.



APPLICATION FOR VARIANCE  
BY THE ST. LEO TOWN COMMISSION

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Fee for each related Variance: \$ 25.00 (See Note A below)

Staff Use Only

APPLICATION NO. \_\_\_\_\_ Date Rec'd \_\_\_\_\_ Date Sufficiency Determined \_\_\_\_\_  
Public Hearing Date \_\_\_\_\_

APPLICANT (Title Holder(s)) Saint Leo University

Address 33701 State Road 52, Saint Leo, Florida Zip 33574 Phone 352-588-8215

Representative Arthur F. Kirk, President

Address 33701 State Road 52, Saint Leo, Florida Zip 33574 Phone 352-588-8215

Architect/Engineer Junz Prebor Fowler Architects

Address 58 Lake Morton Drive, Lakeland, Florida Zip 33801 Phone 863-682-1882

When Property Title Obtained April 25, 2014

Legal Description Refer to Plant Operations Site Plan Review Submittal

PIN Number(s) [County] 01-25-20-0000-02200-0000

General Location (Address) 33701 State Road 52, Saint Leo, Florida

Applicant acknowledges that a Certificate of Occupancy (CO) will not be granted until all required inspections are completed and fees paid.

Signature [Signature] Date 5/12/14  
Title Holder(s)/Owner(s)

List all requested Variances here:

1) For the Type C buffer along McAllen Road, we request a variance to install a decorative fence in lieu of a solid fence or wall as called for in the Land Development Code.

The applicant must also submit with the application, a Variance Justification Statement addressing the attached criteria. The applicant is required to submit a site plan and/or drawings or photographs to illustrate the requested variance.

NOTE A

In addition to the application fee, the applicant will be billed for the actual expenses related to the Town of St. Leo's Planning Consultant review of the application. This may include, but not be limited to, time spent reviewing the application for completeness, preparing a report to the Town Commission, telephone conversations and/or written correspondence to the applicant and attending any meetings with the applicant, including the public hearing meeting. The Town Commission may request an advanced partial payment based on an estimate of the Planning Consultant's fees and expenses.

PAID 5/22/14  
\$25.00  
Plant Ops  
Landscape  
Buffer

Saint Leo University  
Plant Operations Relocation Landscape Buffer  
Variance Justification Statement

1. State the special conditions and/or circumstances applying to the building or other structure or land for which such variance is sought.

Pursuant to the Land Development Code, the Landscape Buffer along McMullen Road is a Type C Buffer which requires a solid fence or wall. The purpose is to provide a visual separation between residential and business zoned property.

To provide a more aesthetically pleasing interface to the San Antonio community and adjacent properties, the University proposes to install a decorative fence matching that, which was approved by the Town of St. Leo and installed on the university's main campus along SR 52. The buffer also includes a 20-foot landscape strip planted with a combination of canopy trees, understory trees, and shrubs as called for in the Land Development Code.

Over the years the University has been improving and modifying its campus-wide landscaping to present a pleasing resort-like aesthetic. This improvement can be seen along SR 52 and the University would like to extend this to its new borders.

2. Are the special conditions and/or circumstances peculiar to the property, structures, or buildings, and do not apply generally to neighboring lands, structures, or buildings in the same zoning district.

The special circumstance is unique to this specific location because of the University's desire to present their campus in an aesthetically pleasing manner over and above what the Land Development Code allows.

3. Are the existing conditions and/or circumstances such that:
  - a. The strict application of the provisions of the Chapter would deprive the applicant of reasonable use of said land, building, or structure.  

No.
  - b. The peculiar conditions and circumstances pertaining to the variance request are not the results of the actions by the applicant.  

Correct.

4. The variance request is in harmony with and serves the general intent and purpose of this Chapter and the Comprehensive Plan.

Correct.

5. That the variance, if allowed, will not substantially interfere with or injure the rights of others whose property would be affected by allowance of the variance.

This variance does not interfere in any way with the adjacent property usage or rights.

6. That allowing the variance will result in substantial justice being done, considering both the public benefits intended to be secured by this Chapter and the individual hardships that will be suffered by a failure of the Town Commission to grant a variance.

Correct.

**APPENDIX B**  
**Lincks & Associates, Inc. Traffic Analysis**



**LINCKS & ASSOCIATES, INC.**

August 6, 2014

Mr. Richard Christmas, Mayor  
Town of St. Leo  
c/o Jan Norsoph  
[jnorsoph@tampabay.rr.com](mailto:jnorsoph@tampabay.rr.com)

Re: St. Leo University  
Lincks Project No. 14084

Dear Mr. Norsoph,

The purpose of this letter is to provide the following as outlined in our proposal to Mr. Richard Christmas dated July 3, 2014.

- Peer Review of Plant Operations Building Traffic Impact Study
- Truck Turn Evaluation
- Pavement Evaluation
- SR 52 and Pompanic Street Intersection Assessment
- Pompanic Street and Project Access Assessment

The following provides a review of the above:

#### **TRAFFIC IMPACT STUDY (TIS)**

A TIS was conducted by Raysor Transportation Consulting, LLC dated April 23, 2014, for the proposed relocation of the St. Leo University Plant Operations Building. The following provides our review of the TIS:

#### Plant Operations Building Description

- A. The report states the proposed Plant Operations Building is to be 16,000 square feet with approximately 1/3 for offices and 2/3 for storage/warehouse. The office component is to be staffed by 4 to 5 full time employees.
- B. The report states that other employees will access the building via motorized carts internal to the campus. The site plan for the project that was provided, shows a 16 foot stabilized gravel road. It is assumed this road will extend internally to the University.

5023 West Laurel Street  
Tampa, Florida 33607  
813 289 0039 Telephone  
813 287 0674 Telefax  
[www.lincks.com](http://www.lincks.com) Website

- C. The site plan shows 15 parking spaces. This seems high if there are only 4 to 5 employees at the building.
- D. The truck traffic will access the proposed facility via one (1) access to Pompanic Street.

### Trip Generation

- A. The report breaks down the trip generation into three (3) categories:
  - a) Trips generated by the employees that will utilize SR 52/Pompanic Street to access the building.
  - b) Trips generation by deliveries to the building that will utilize SR 52/Pompanic Street.
  - c) Trips that will occur between the building and the remainder of the campus, which will be wholly internal to the campus.
- B. The report assumes all trips to and from the campus will be via the 16 foot gravel road. Therefore, these trips were not included in the analysis.
- C. The trips associated with the employees were based on an estimate of the number of full time employees at the facility and based on trip generation rates contained in the Institute of Transportation Engineers (ITE) Trip Generation, 9<sup>th</sup> Edition, 2012. The ITE Trip Generation provides a more realistic estimate of the traffic associated with the building.
- D. The truck traffic was estimated based on counts provided by St. Leo staff at the existing Plant Operations Building. The traffic for the warehouse was also based on the trip generation contained in the ITE Trip Generation, 9<sup>th</sup> Edition, 2012.
- E. In the analysis, the "worst case" scenario was based on the ITE trip generation rates for office and warehouse plus the truck traffic. The analysis assumed all the traffic was inbound during the AM peak hour and outbound during the PM peak hour. This is different than the traffic provided in the appendix, but should not impact the results of the analysis.

#### Existing Traffic

- A. AM and PM peak hour turning movement counts were conducted at the intersection of SR 52 and Pompanic Street on Wednesday, April 2, 2014.
- B. 24-hour machine counts were conducted along Pompanic Street north of SR 52 and north of Pennsylvania Avenue.
- C. The turning movement counts and the machine counts were not seasonally adjusted. The seasonal adjustment factor is 1.01. The seasonal adjustment factor would not have a significant effect on the volume or results of the analysis.
- D. There were no buildout analysis conducted.
- E. The FDOT 2012 Quality/Level of Services Handbook was utilized to estimate the capacity of Pompanic Street. The capacity was based on a Non-State Signalized Roadway with adjustments as outlined in the publication. Pompanic Street is a local residential street; therefore, the methodology utilized to determine the capacity of Pompanic Street likely over estimates the capacity of the roadway.

#### Intersection Operational Analysis

- A. An analysis was conducted for the intersection of SR 52 and Pompanic Street for the AM and PM peak hours based on the following scenarios:
  - Existing Traffic
  - Existing Traffic Plus SLU Expected Traffic
  - Existing Traffic Plus SLU Worst Case Traffic
- B. Due to the unusual geometry at the intersection of SR 52 and Pompanic Street, typical HCM and SYNCHRO analysis was not able to be conducted. Therefore, a SIM-Traffic model was prepared for the intersection.
- C. The report indicates that all movements within the intersection will operate at an acceptable level of service during all of the above scenarios based on the SIM-Traffic model.
- D. Lincks & Associates, Inc. also developed a SIM traffic model for the intersection with the worst case volumes and it provided the same results.

### Conclusion

Based on our review of the traffic analysis, we offer the following:

1. The worst case trip generation appears to provide a more realistic estimate of the potential traffic for the facility based on the size of the facility and allocation of office/warehouse square footage.
2. Given the volumes and geometry at the intersection of SR 52 and Pompanic Street, it is likely the southbound approach may experience delays greater than what SIM traffic provides.
3. Pompanic Street is a local residential street; therefore, the methodology utilized to determine the capacity of Pompanic Street likely over estimates the capacity of the roadway.
4. Lincks & Associates, Inc. also developed a SIM traffic model for the intersection with the worst case volumes and it provided the same results as the Raysor report.

### **TRUCK TURN EVALUATION**

Figures 1 and 2 provide the truck turns into and out of the proposed project access. It is our understanding the University and Town of St. Leo are to widen Pompanic Street to 24 feet. With the widening of the roadway and the accesses as shown, the trucks should be able to access the facility without off tracking. The access could be designed with the existing roadways to accommodate the trucks without off tracking. However, with eighteen (18) feet it would be difficult for two-way traffic along the roadway with large trucks.

### **PAVEMENT EVALUATION**

The following provides our evaluation of the existing pavement within Pompanic Street.

#### Existing Pavement

Lincks & Associates, Inc. retained Mortensen Engineering, Inc. (MEI) to conduct core samples within Pompanic Street to determine the existing pavement structure. A copy of the MEI report is included in the Appendix of this letter. According to the MEI report, the existing asphalt is between 1 ¾ and 3 inches thick. The limerock base is between 2 and 3 ½ inches thick. There does not appear to be any stabilized subgrade.

### Existing Structural Number

Based on the FDOT Flexible Pavement Design Manual, the existing structural number for the pavement ranges from 1.40 to 1.68. Table 1 provides the calculation of the structural number for the existing pavement.

### Required Structural Number

The required structural number for Pompanic Street was calculated based on the following:

1. Traffic data contained in the Transportation Analysis prepared for rezoning was utilized to calculate the ESAL for Pompanic Street. Table 2 provides the ESAL for the roadway.
2. Based on Table A.3A from the FDOT Flexible Pavement Design Manual, the structural number for the roadway should be approximately 2.70.
3. According to the Pasco County Land Development Code (LDC), the structural number for the roadway should range between 2.34 and 3.50.

### Conclusion

Based on the preliminary pavement assessment, it does not appear the existing pavement is adequate to accommodate the projected traffic for the roadway.

A detailed pavement design should be provided as a part of the widening of the roadway to bring it to a standard roadway.

### Cost Estimate

Table 3 provides an estimate of the cost to widen Pompanic Street from SR 52 to McMullen Road from the existing eighteen (18) feet to twenty-four (24) feet. It should be noted that the cost estimate was prepared without the benefit of a survey, detailed geotechnical evaluation and design. In addition, the cost estimate assumes the existing roadway and base would be replaced.

## **SR 52 AND POMPANIC STREET INTERSECTION ASSESSMENT**

Lincks & Associates, Inc. conducted an assessment of the existing pavement for Pompanic Street. This assessment included the following:

TABLE 1  
EXISTING STRUCTURAL NUMBER

<u>Core Boring</u>	<u>Roadway Type</u>	<u>Thickness</u>	<u>Structural/ Inch</u>	<u>Structural Number</u>
PC-1	Asphalt	1 3/4"	0.44	0.77
	Limerock Base	3 1/2"	0.18	<u>0.63</u>
				1.40
PC-2	Asphalt	3"	0.44	1.32
	Limerock Base	2"	0.18	<u>0.36</u>
				1.68



TABLE 2  
POMPANIC STREET ESAL CALCULATION

<u>Year</u>	<u>Daily Traffic</u>	<u>Project Traffic</u>	<u>AADT</u>	<u>T</u>	<u>Df</u>	<u>Lf</u>	<u>E18</u>	<u>ESAL</u>	<u>Accumulated ESAL</u>
2014	689	0	689	10%	0.5	1.000	0.96	12,071	12,071
2015	696	110	806	10%	0.5	1.000	0.96	14,121	26,192
2016	703	110	813	10%	0.5	1.000	0.96	14,244	40,436
2017	710	110	820	10%	0.5	1.000	0.96	14,366	54,802
2018	717	110	827	10%	0.5	1.000	0.96	14,489	69,291
2019	724	110	834	10%	0.5	1.000	0.96	14,612	83,903
2020	731	110	841	10%	0.5	1.000	0.96	14,734	98,637
2021	738	110	848	10%	0.5	1.000	0.96	14,857	113,494
2022	745	110	855	10%	0.5	1.000	0.96	14,980	128,474
2023	752	110	862	10%	0.5	1.000	0.96	15,102	143,576
2024	760	110	870	10%	0.5	1.000	0.96	15,242	158,818
2025	768	110	878	10%	0.5	1.000	0.96	15,383	174,201
2026	776	110	886	10%	0.5	1.000	0.96	15,523	189,724
2027	784	110	894	10%	0.5	1.000	0.96	15,663	205,387
2028	792	110	902	10%	0.5	1.000	0.96	15,803	221,190
2029	800	110	910	10%	0.5	1.000	0.96	15,943	237,133
2030	808	110	918	10%	0.5	1.000	0.96	16,083	253,216
2031	816	110	926	10%	0.5	1.000	0.96	16,224	269,440
2032	824	110	934	10%	0.5	1.000	0.96	16,364	285,804
2033	832	110	942	10%	0.5	1.000	0.96	16,504	302,308
2034	840	110	950	10%	0.5	1.000	0.96	16,644	318,952



TABLE 3

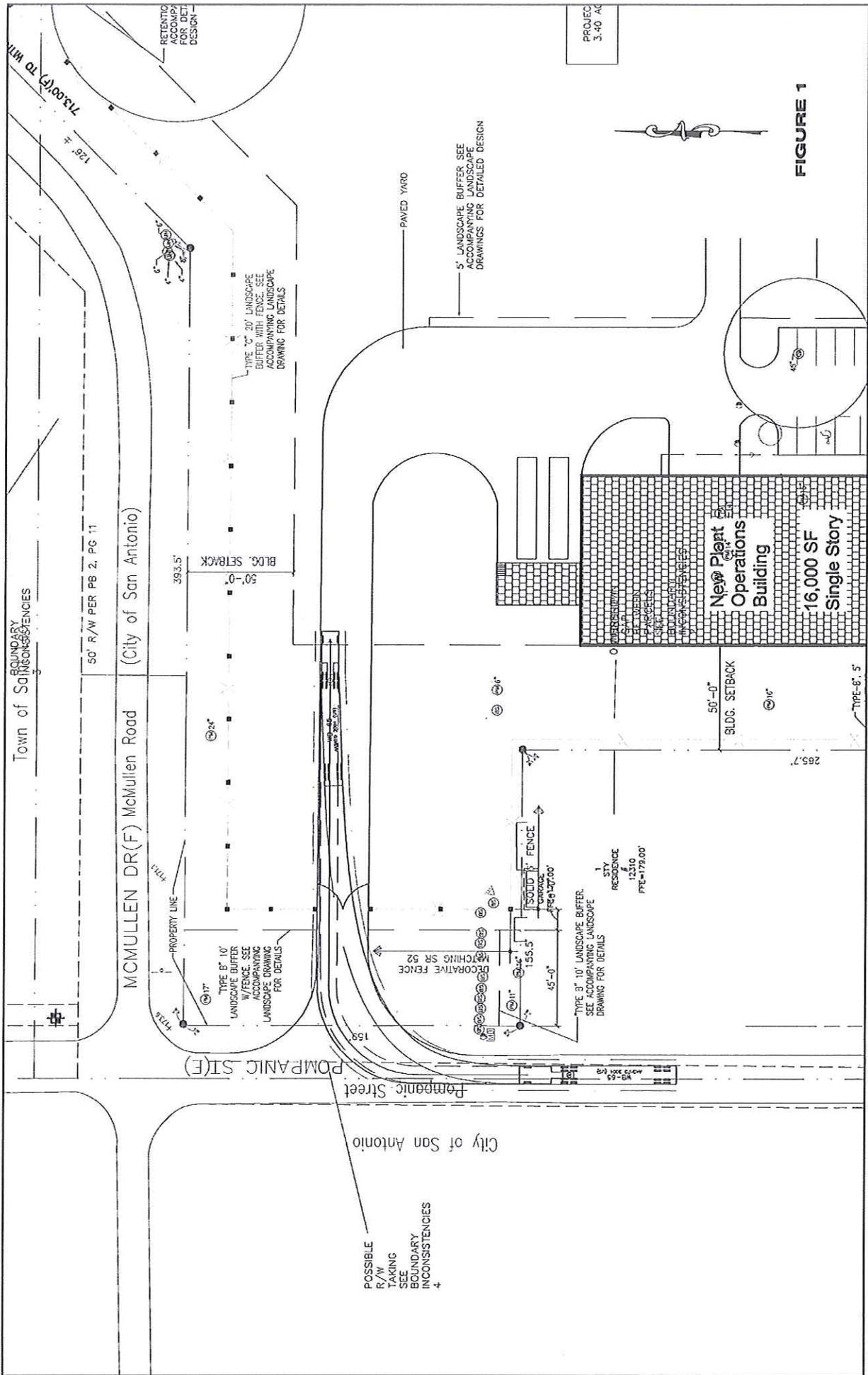
POMPANIC STREET - CONSTRUCTION COST ESTIMATE

<u>Item</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>Total</u>
Clear & Grubbing	1	LS	\$10,000.00	\$10,000.00
Maintenance of Traffic	1	LS	\$10,000.00	\$10,000.00
Demolish Existing Asphalt/Base	1	LS	\$20,000.00	\$20,000.00
Demolish Sidewalk	20	LF	\$2.00	\$40.00
Survey/Stakeout	1	LS	\$5,000.00	\$5,000.00
Relocate/Adjust Utilities	1	LS	\$20,000.00	\$20,000.00
Adjust Driveways	5	EA	\$500.00	\$2,500.00
Relocate/Adjust Drainage Inlet	1	EA	\$5,000.00	\$5,000.00
Grading/Sod	1	LS	\$15,000.00	\$15,000.00
12" Stabilized Subbase (24' x 600 x 1/9)	1,600	SY	\$5.00	\$8,000.00
6" Limerock Base (LBR100)	1,600	SY	\$10.00	\$16,000.00
Asphalt - New (2.5" SP)	1,600	SY	\$15.00	\$24,000.00
Pavement Marking	1	LS	\$3,000.00	\$3,000.00
Engineering/Survey/Geotech	1	LS	\$35,000.00	<u>\$35,000.00</u>
			Sub-Total	\$173,540.00
			Contingency (15%)	<u>\$26,031.00</u>
			Total	\$199,571.00

Pavement Section SN = 3.10

2.5" SP - 9.5:	2.5" x .44 = 1.06
6" Limerock:	6" x .18 = 1.08
12" Subbase:	12" x .08 = <u>0.96</u>
	3.10





PROJECT  
3-40 AC

FIGURE 1

Town of San Antonio  
BOUNDARY INCONSISTENCIES

50' R/W PER PB 2, PG 11

MC MULLEN DR(F) McMullen Road  
(City of San Antonio)

353.5'  
50'-0"  
BLDG. SETBACK

TYPE 2" 30' LANDSCAPE  
BUFFER WITH FENCE. SEE  
ACCOMPANYING LANDSCAPE  
DRAWING FOR DETAILS

PAVED YARD  
5' LANDSCAPE BUFFER SEE  
ACCOMPANYING LANDSCAPE  
DRAWINGS FOR DETAILED DESIGN

NEW PLANT  
OPERATIONS  
BUILDING  
16,000 SF  
SINGLE STORY

50'-0"  
BLDG. SETBACK  
16'  
TYPE-8", 5'

PROPERTY LINE  
TYPE B' 10'  
LANDSCAPE BUFFER  
W/FENCE. SEE  
ACCOMPANYING  
LANDSCAPE DRAWING  
FOR DETAILS

TYPE 3' 10' LANDSCAPE BUFFER.  
SEE ACCOMPANYING LANDSCAPE  
DRAWING FOR DETAILS

STY  
RESIDENCE  
12310  
PFE=178.00'

POMPANIC ST(IE)  
Pompanic Street  
City of San Antonio

POSSIBLE  
R/W  
TAKING  
SEE  
BOUNDARY  
INCONSISTENCIES  
4



Mr. Jan Norsoph  
August 6, 2014  
Page 6

- A. There is a significant offset for the northbound and southbound approaches at the intersection. Due to the right of way constraints, there does not appear to be any reasonable improvements that can be constructed at the intersection to reduce the offset.
- B. The subject project would add a small amount of traffic to the intersection. However, the intersection should be monitored as future development occurs along Pompanic Street.
- C. There does appear to be some rutting along the radius of the westbound right turn on SR 52 to Pompanic Street. In addition, there is a drainage grate within the radius.
- D. Figure 3 provides the truck turn template at the intersection. As shown, improvements to the radius of the intersection will be required to allow trucks to turn from SR 54 on to Pompanic Street.

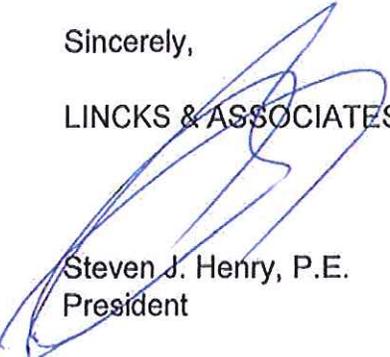
#### **POMPANIC STREET/PROJECT ACCESS ASSESSMENT**

As requested, Lincks & Associates, Inc. has reviewed the project access to evaluate the option to restrict the right-out movement from the project access on to Pompanic Street. Figure 4 provides an option to channelize the access to direct traffic exiting the site to the south

If you have any questions, please do not hesitate to call.

Sincerely,

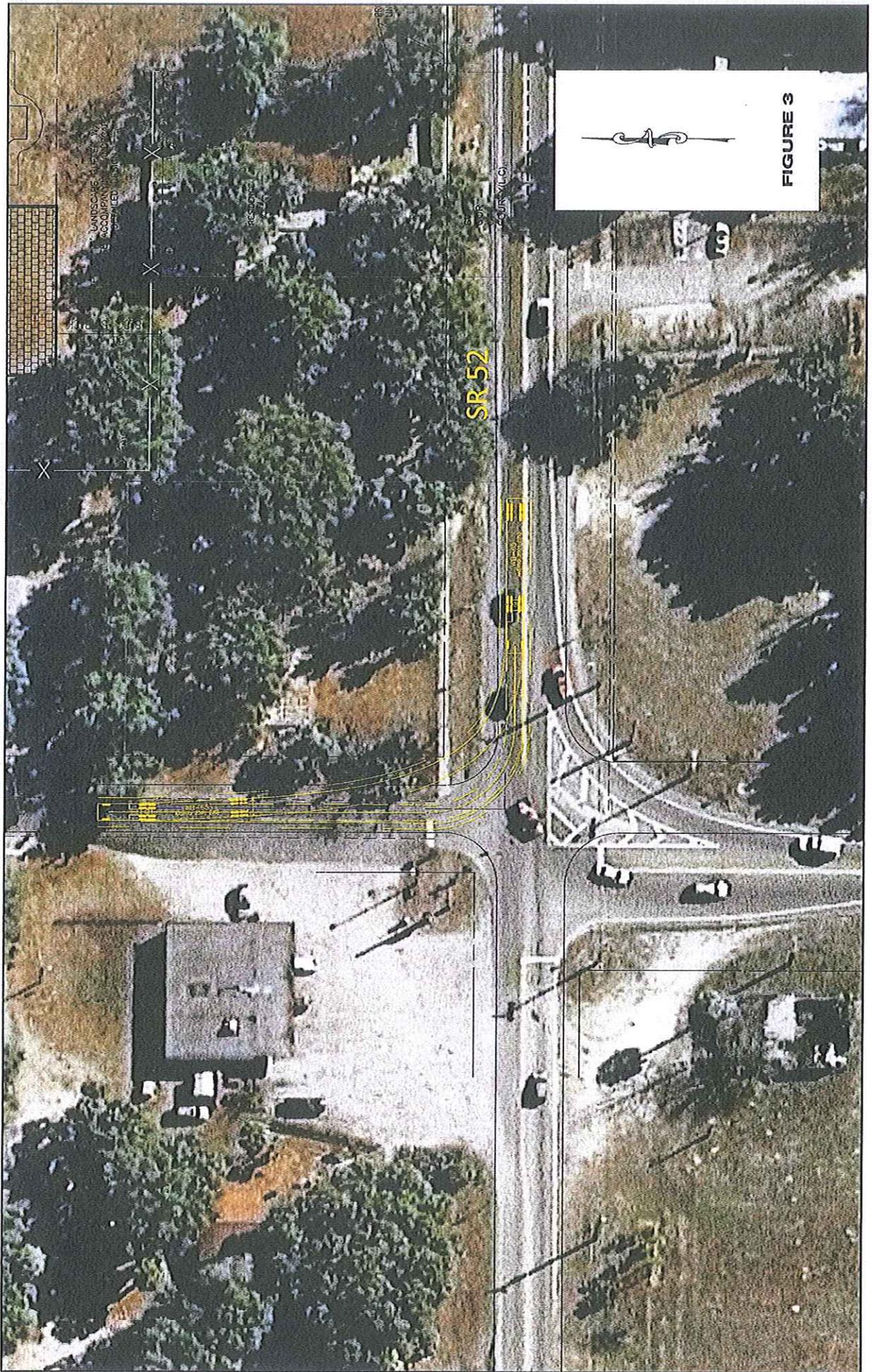
LINCKS & ASSOCIATES, INC.

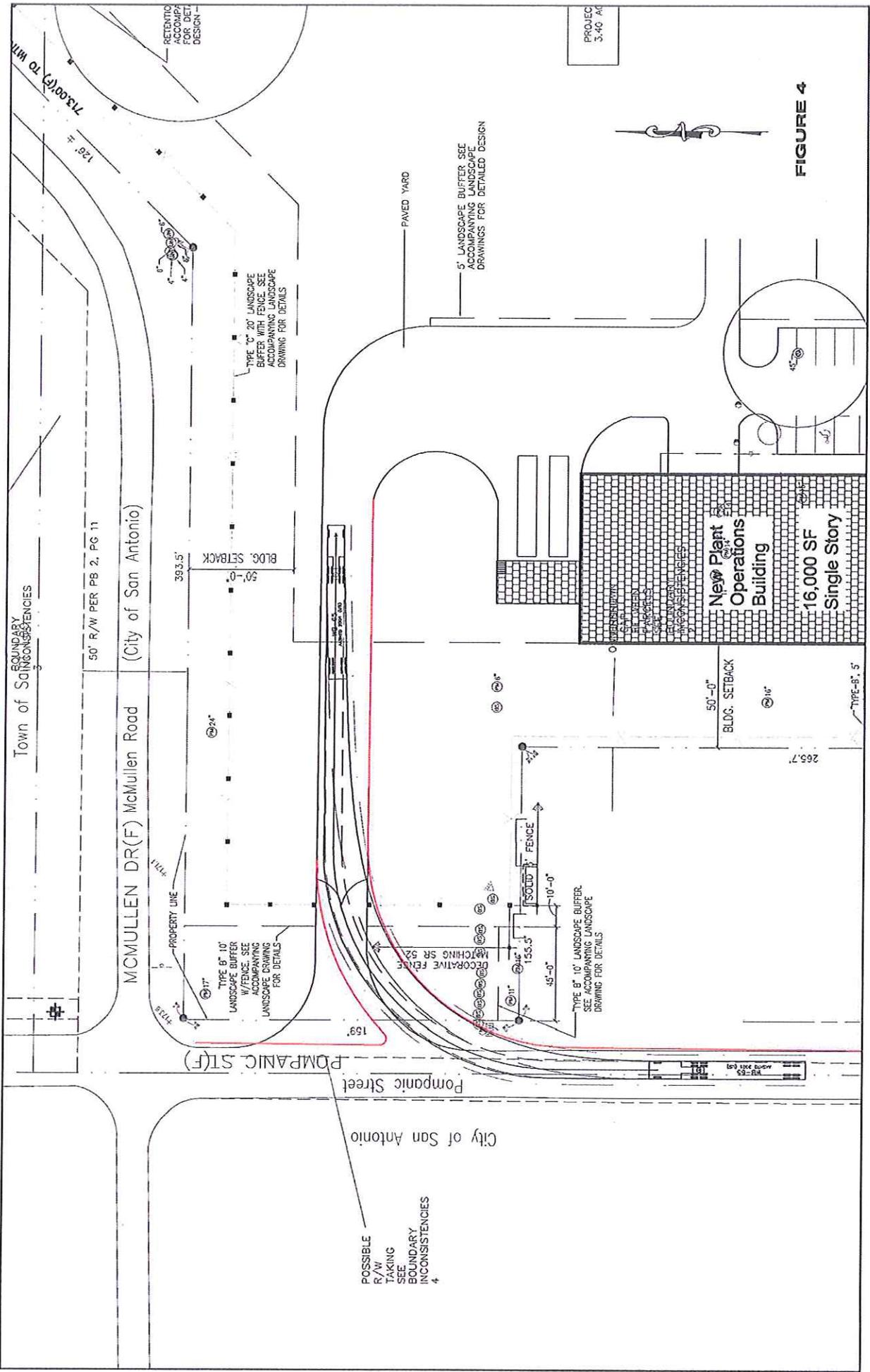


Steven J. Henry, P.E.  
President

SJH/cvc

Enclosures





RETENTIVE  
ACCOMPA  
FOR DET  
DESIGN -

73.00(7) TO WH

126'

Town of San Antonio  
BOUNDARY  
INCONSISTENCIES

50' R/W PER PB 2, PG 11

MCMULLEN DR(F) McMullen Road  
(City of San Antonio)

PROPERTY LINE

393.5'

50'-0" BLDG. SETBACK

TYPE "C" 20' LANDSCAPE BUFFER WITH FENCE. SEE ACCOMPANYING LANDSCAPE DRAWING FOR DETAILS

PAVED YARD

5' LANDSCAPE BUFFER. SEE ACCOMPANYING LANDSCAPE DRAWINGS FOR DETAILED DESIGN

PROJECT 3-40 AC

FIGURE 4

TYPE "B" 10' LANDSCAPE BUFFER W/FENCE. SEE ACCOMPANYING LANDSCAPE DRAWING FOR DETAILS

159'

RECREATIVE FENCE MATCHING SR 52

10'-0" SOLID FENCE

TYPE "B" 10' LANDSCAPE BUFFER. SEE ACCOMPANYING LANDSCAPE DRAWING FOR DETAILS

50'-0" BLDG. SETBACK

TYPE "B" 5'

263.7'

155.5'

45'-0"

10'-0"

10'-0"

10'-0"

10'-0"

Pompanic Street

City of San Antonio

POSSIBLE R/W TAKING SEE BOUNDARY INCONSISTENCIES

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APPENDIX



MORTENSEN ENGINEERING, INC. (MEI) REPORT





July 17, 2014  
Project No. 14-10-08006

**TO:** Lincks & Associates, Inc.  
5023 West Laurel Street  
Tampa, Florida 33607

**Attention:** Mr. Steve Henry, P.E.

**SUBJECT:** *Limited Geotechnical Services*  
*Existing Pavement Coring*  
**Pompanic Street**  
**St. Leo, Pasco County, Florida**

---

As you requested in your email dated 7/11/14, we have completed the requested limited geotechnical services for the above referenced roadway improvement project, in eastern Pasco County, Florida. The following report summarizes the results of our limited field and laboratory testing.

#### Fieldwork and Results

Our pavement coring work herein on Pompanic Street was performed at your two (2) selected locations between College Avenue/SR 52 and McMullen Drive. The approximate pavement coring locations are approximately indicated (and designated) on Plate 1. Two (2) 4-inch diameter pavement cores (designated PC-1 and PC-2), through the existing asphalt and base materials were collected at selected locations along Pompanic Street, of the existing typically 2-lane rural roadway section.

At each pavement core location, we estimated the approximate asphalt structural course thickness, and the approximate number of asphalt lifts; and the base course material type and approximate thickness. Based solely on our visual observations, the existing roadway subgrade soils, beneath the limerock base materials appeared to be a sand/clayey sand fill material to varying depths below the bottom of the limerock base.

The results of our pavement coring are included on the attached summary table. To check the shallow soil material types beneath the pavement section, hand auger borings were performed at each pavement core location (PC-1 and PC-2), each to a depth of 2 feet (+/-). The results of our hand auger borings are included as drafted soil profiles on Plate 2. A soils legend is also included on Plate 2. A photograph of the asphalt cores is attached. No existing asphalt quality testing work, no existing base material quality testing work, and no existing subgrade quality testing work was performed, as this type of testing was not requested.

**Closing**

If you have any questions about this report, please give us a call. Thank you for this opportunity to be of service to you.

Sincerely,  
**MORTENSEN ENGINEERING, INC.**  
*Florida Certificate of Authorization No. 56*

Michael T. Sagne, P.E.  
Vice-President  
P.E. License No. 63006  
Mainfile/405/08006.dwg

- Attachments: Plates 1 and 2  
Coring Results Table  
Core Photographs

*RAM*

Richard A. Mortensen, P.E.  
President  
P.E. License No. 34604



**LEGEND**

● Approximate Pavement Core location



**REDUCED**



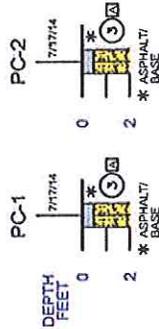
LIMITED GEOTECHNICAL SERVICES  
 EXISTING PAVEMENT CORING  
 POMPANIC STREET  
 PASCO COUNTY, FLORIDA

**TEST LOCATION PLAN**

CREATED BY: DNH  
 CHECKED BY: MTG  
 DATE: JUL 2014  
 PROJECT NO: 14-10-08006

PLATE 1

# LEGEND



- ① Gray to dark gray fine SAND to slightly silty fine SAND, trace organics (SP/SP-SM)
- ② White to light brown fine SAND to silty fine SAND (SP/SP-SM/SM)
- ③ Brown or gray fine SAND to silty fine SAND (SP/SP-SM/SM)
- ☒ Clayey Sand Seams
- SP Unified Soil Classification group symbol as determined by visual review
- N SPT "N" value in blows/foot
- 7/17/14 Date of field work

The test boring results herein are representative of the soil conditions at the approximate boring location, only for the field depth, and only on the soil as tested. Local materials of the region should be anticipated at approximately 10 feet below the boring. The soil profile and the other field data herein are for informational purposes only. The determinations between different soil profiles types herein represent our interpretation of the information provided. The permitted soil boring locations, only on the date drilled.

The geotechnical test data shown herein are for the soil boring profile segment shown. The test data is not to be used for any other purpose, nor is it to be used as a basis for any design or construction. The test data is not to be used for any other purpose, nor is it to be used as a basis for any design or construction. The test data is not to be used for any other purpose, nor is it to be used as a basis for any design or construction.

REDUCED

<b>MEI</b> MOOREHEAD ENGINEERING, INC.	<b>LIMITED GEOTECHNICAL SERVICES</b> EXISTING PAVEMENT CORING POMPANIC STREET PASCO COUNTY, FLORIDA	<b>AUGER BORING SOIL PROFILES AND SOILS LEGEND</b>
CREATED BY: DNH CHECKED BY: MTG		DATE: JUL 2014 PROJECT NO: 14-10-08006
		PLATE 2

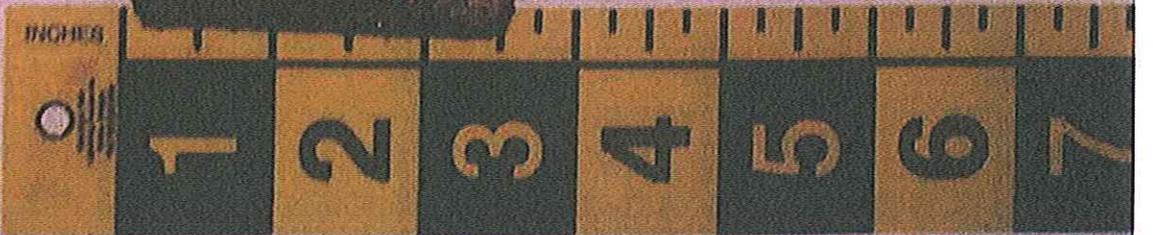
**POMPANIC STREET  
EXISTING PAVEMENT CORING RESULTS**

CORE LOCATION	GENERAL LOCATION	APPROXIMATE ASPHALT THICKNESS (IN)	APPROXIMATE NO. ASPHALT LIFTS*	APPROXIMATE BASE THICKNESS (IN)	APPARENT BASE TYPE*
PC-1	CENTER OF NORTHBOUND LANE	1-3/4	2	3-1/2	LIMEROCK
PC-2	CENTER OF SOUTHBOUND LANE	3	3	2	LIMEROCK

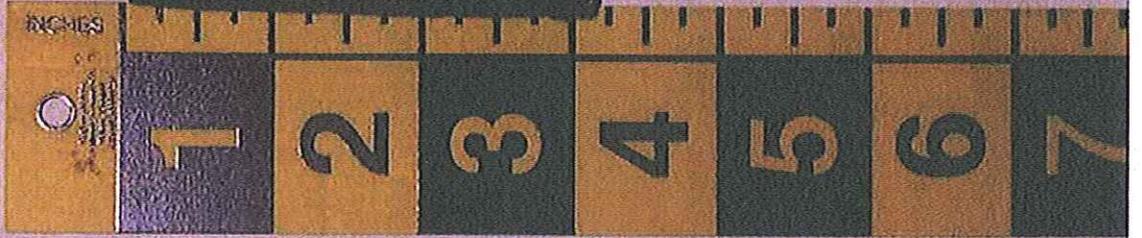
\*BASED ON VISUAL OBSERVATIONS



PC-1



PC-2



FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT)  
FLEXIBLE PAVEMENT DESIGN MANUAL



# FLEXIBLE PAVEMENT DESIGN MANUAL



PUBLISHED BY  
FLORIDA DEPARTMENT OF TRANSPORTATION  
PAVEMENT MANAGEMENT OFFICE  
605 SUWANNEE STREET, M.S. 32  
TALLAHASSEE, FLORIDA 32399-0450

DOCUMENT NO. 625-010-002-g

MARCH 2008

## D.2 BASIC EQUATION

The  $ESAL_D$  required for pavement design purposes can be computed using the following equation:

$$ESAL_D = \sum_{y=1}^{y=x} (AADT \times T_{24} \times D_F \times L_F \times E_{18} \times 365)$$

where:

$ESAL_D$  = Number of accumulated 18-kip Equivalent Single Axle Loads in the design lane for the design period.

$y$  = The year that the calculation is made for.

When  $y=1$ , all the variables apply to year 1.

Most of the variables are constant except AADT which may change from year to year. Others may change when changes in the system occur. Such changes include parallel roads, shopping centers, truck terminals, etc.

$x$  = The Design Year.

AADT = Average Annual Daily Traffic.

$T_{24}$  = Percent Heavy Trucks during a 24 hour period. Trucks with 6 tires or more are considered in the calculations.

$D_F$  = Directional Distribution Factor. Use 1.0 if one way traffic is counted or 0.5 for two way traffic. This value is not to be confused with the Directional Factor use for planning capacity computations.

$L_F$  = Lane Factor converts directional trucks to the design lane trucks. Lane factors can be adjusted to account for unique features known to the designer such as roadways with designated truck lanes.  $L_F$  values can be determined from Table D.2.

$E_{18}$  = Equivalency factor which is the damage caused by one average heavy truck measured in 18 kip Equivalent Single Axle Loads. These factors will be periodically updated based on Weigh-In-Motion (WIM) data.  $E_{18}$  values can be determined from Table D.3.

TABLE D.2

LANE FACTORS ( $L_F$ ) FOR DIFFERENT TYPES OF FACILITIES

Number of Lanes In One Direction

Total AADT	Two Lanes $L_F$	Three Lanes $L_F$
4 000	0.94	0.82
8 000	0.88	0.76
12 000	0.85	0.72
16 000	0.82	0.70
20 000	0.81	0.68
30 000	0.77	0.65
40 000	0.75	0.63
50 000	0.73	0.61
60 000	0.72	0.59
70 000	0.70	0.58
80 000	0.69	0.57
100 000	0.67	0.55
120 000	0.66	0.53
140 000	-	0.52
160 000	-	0.51
200 000	-	0.49

The equation that best defines this Lane Factor ( $L_F$ ) information is:

$$L_F = (1.567 - 0.0826 \times \ln(\text{One Way AADT}) - 0.12368 \times LV)$$

where:

$L_F$  = Proportion of all one directional trucks in the design lane.

LV = 0 if the number of lanes in one direction is 2. LV = 1 if the number of lanes in one direction is 3 or more.

Ln = Natural Logarithm.

Source - National Cooperative Highway Research Program  
 Report 277, Portland Cement Concrete Pavement  
 Evaluation System (COPES), Transportation Research  
 Board, September 1986

TABLE D.3

EQUIVALENCY FACTORS  $E_{18}$  ( $E_{80}$ ) FOR DIFFERENT TYPES OF  
 FACILITIES

	<u>Flexible Pavement</u>	<u>Rigid Pavement</u>
Freeways		
Rural	1.05	1.60
Urban	0.90	1.27
Arterials and Collectors		
Rural	0.96	1.35
Urban	0.89	1.22

TABLE A.3A

REQUIRED STRUCTURAL NUMBER (SN<sub>R</sub>)  
 85% RELIABILITY (%R)  
 RESILIENT MODULUS (M<sub>R</sub>) RANGE 4000 PSI TO 18000 PSI

RESILIENT MODULUS (M<sub>R</sub>), (PSI × 1000)

ESAL <sub>0</sub>	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
100 000	2.90	2.66	2.48	2.33	2.22	2.12	2.03	1.96	1.89	1.83	1.78	1.73	1.68	1.64	1.60
150 000	3.10	2.84	2.65	2.50	2.37	2.27	2.18	2.10	2.03	1.96	1.91	1.85	1.81	1.76	1.72
200 000	3.25	2.98	2.78	2.62	2.49	2.38	2.28	2.20	2.13	2.06	2.00	1.95	1.90	1.85	1.81
250 000	3.37	3.10	2.89	2.72	2.58	2.47	2.37	2.28	2.21	2.14	2.08	2.02	1.97	1.93	1.88
300 000	3.47	3.19	2.97	2.80	2.66	2.54	2.44	2.35	2.28	2.21	2.14	2.09	2.03	1.99	1.94
350 000	3.56	3.27	3.05	2.88	2.73	2.61	2.51	2.42	2.34	2.26	2.20	2.14	2.09	2.04	1.99
400 000	3.64	3.35	3.12	2.94	2.79	2.67	2.56	2.47	2.39	2.32	2.25	2.19	2.14	2.09	2.04
450 000	3.71	3.41	3.18	3.00	2.85	2.72	2.61	2.52	2.44	2.36	2.29	2.23	2.18	2.13	2.08
500 000	3.77	3.47	3.24	3.05	2.90	2.77	2.66	2.56	2.48	2.40	2.34	2.27	2.22	2.17	2.12
600 000	3.89	3.58	3.34	3.14	2.99	2.85	2.74	2.64	2.55	2.48	2.41	2.34	2.29	2.23	2.18
700 000	3.98	3.67	3.42	3.23	3.06	2.93	2.81	2.71	2.62	2.54	2.47	2.40	2.35	2.29	2.24
800 000	4.07	3.75	3.50	3.30	3.13	2.99	2.88	2.77	2.68	2.60	2.53	2.46	2.40	2.34	2.29
900 000	4.14	3.82	3.56	3.36	3.19	3.05	2.93	2.83	2.73	2.65	2.58	2.51	2.45	2.39	2.34
1 000 000	4.21	3.88	3.63	3.42	3.25	3.11	2.98	2.88	2.78	2.70	2.62	2.55	2.49	2.43	2.38
1 500 000	4.48	4.14	3.87	3.65	3.47	3.32	3.19	3.08	2.98	2.88	2.80	2.73	2.66	2.60	2.54
2 000 000	4.68	4.33	4.05	3.83	3.64	3.48	3.35	3.23	3.12	3.03	2.94	2.86	2.79	2.73	2.67
2 500 000	4.83	4.47	4.19	3.97	3.78	3.61	3.47	3.35	3.24	3.14	3.05	2.97	2.90	2.83	2.77
3 000 000	4.96	4.60	4.31	4.08	3.89	3.72	3.58	3.45	3.34	3.24	3.15	3.06	2.99	2.92	2.86
3 500 000	5.07	4.70	4.42	4.18	3.98	3.81	3.67	3.54	3.42	3.32	3.23	3.14	3.07	2.99	2.93
4 000 000	5.17	4.80	4.51	4.27	4.07	3.90	3.75	3.61	3.50	3.39	3.30	3.21	3.13	3.06	2.99
4 500 000	5.25	4.88	4.59	4.35	4.14	3.97	3.82	3.68	3.57	3.46	3.36	3.28	3.20	3.12	3.05
5 000 000	5.33	4.95	4.66	4.42	4.21	4.04	3.88	3.75	3.63	3.52	3.42	3.33	3.25	3.18	3.11
6 000 000	5.47	5.08	4.78	4.54	4.33	4.15	4.00	3.86	3.74	3.63	3.53	3.43	3.35	3.27	3.20
7 000 000	5.58	5.20	4.89	4.64	4.43	4.25	4.09	3.95	3.83	3.72	3.61	3.52	3.44	3.36	3.29
8 000 000	5.68	5.29	4.99	4.74	4.52	4.34	4.18	4.04	3.91	3.80	3.69	3.60	3.51	3.43	3.36
9 000 000	5.77	5.38	5.07	4.82	4.60	4.42	4.26	4.11	3.99	3.87	3.76	3.67	3.58	3.50	3.42
10 000 000	5.86	5.46	5.15	4.89	4.68	4.49	4.33	4.18	4.05	3.94	3.83	3.73	3.64	3.56	3.48
15 000 000	6.18	5.77	5.45	5.18	4.96	4.77	4.60	4.45	4.31	4.19	4.08	3.98	3.89	3.80	3.72
20 000 000	6.42	5.99	5.67	5.39	5.17	4.97	4.80	4.64	4.51	4.38	4.27	4.16	4.07	3.98	3.90
25 000 000	6.60	6.17	5.84	5.56	5.33	5.13	4.96	4.80	4.66	4.53	4.42	4.31	4.21	4.12	4.04
30 000 000	6.76	6.32	5.98	5.70	5.47	5.26	5.09	4.93	4.79	4.66	4.54	4.43	4.33	4.24	4.15
35 000 000	6.89	6.45	6.10	5.82	5.58	5.38	5.20	5.04	4.89	4.76	4.64	4.54	4.43	4.34	4.25
40 000 000	7.01	6.56	6.21	5.93	5.68	5.48	5.30	5.13	4.99	4.86	4.74	4.63	4.52	4.43	4.34
45 000 000	7.11	6.66	6.31	6.02	5.78	5.57	5.38	5.22	5.07	4.94	4.82	4.71	4.60	4.51	4.42
50 000 000	7.21	6.75	6.39	6.10	5.86	5.65	5.46	5.30	5.15	5.02	4.89	4.78	4.68	4.58	4.49
60 000 000	7.37	6.91	6.55	6.25	6.00	5.79	5.60	5.43	5.28	5.15	5.02	4.91	4.80	4.71	4.61
70 000 000	7.52	7.05	6.68	6.38	6.12	5.91	5.72	5.55	5.40	5.26	5.13	5.02	4.91	4.81	4.72
80 000 000	7.64	7.17	6.79	6.49	6.23	6.01	5.82	5.65	5.50	5.36	5.23	5.11	5.01	4.91	4.81
90 000 000	7.75	7.27	6.89	6.59	6.33	6.11	5.91	5.74	5.59	5.45	5.32	5.20	5.09	4.99	4.90
100 000 000	7.86	7.37	6.99	6.68	6.42	6.19	6.00	5.82	5.67	5.52	5.40	5.28	5.17	5.07	4.97

PASCO COUNTY  
LAND DEVELOPMENT CODE (LDC)



Street Type	Urban Pavement Width/Lanes	Rural Pavement Width/Lanes
4 with parking on one side	27/2	28/2
4 with parking on both sides	34/2	36/2
5 without parking	14/1	N/A

In general, pavement widths for rural streets shall be one (1) foot wider to allow for edge protection.

MRS accessways shall consist of a twelve (12) foot paved cross section with 1.5 feet of stabilized shoulders. This exception only applies where interconnection is not required. LFLD accessways shall consist of twelve (12) foot paved or unpaved stabilized sections with 1.5 feet of stabilized shoulders.

All accessways in excess of 500 feet shall provide a 10' X 38' turnout. The exact location of the turnout shall be determined by the Fire Marshal or designee. Additional turnouts may be required by the Fire Marshal or designee. (Figure 901.6.A: Accessway with Turnout)

Parking lanes shall be a minimum of eight (8) feet in width on Type 1B streets and a minimum of seven (7) feet in width on Types 2, 3, and 4 streets. On-street parking is not allowed on a Type 1A street, unless an alternative standard is approved in accordance with this Code, Section 407.5.

3. **Pavement Cross-Slope.** If approved by the County Engineer, the selection of pavement cross-slope may be a compromise between meeting the drainage requirements and providing for smooth vehicle operation.

The recommended pavement cross-slope for a crowned pavement is 0.02 feet per foot. The pavement cross-slope shall not be less than 0.015 foot per foot or greater than 0.04 feet per foot. The change in cross-slope between adjacent through-travel lanes shall not exceed 0.04 feet per foot.

Inverted crown may only be used for Type 5 streets.

Where inverted crown is used, the centerline of the invert shall contain a minimum two (2) foot modified valley gutter.

4. **Pavement Structure and Road Design.** The pavement structure required shall be based on the street classification and the number of lots proposed, cumulative with the number of lots that can reasonably be anticipated to use the street.

The pavement structure required shall be based on a structural number obtained by multiplying the structural layer coefficient by the thickness of each type of material, then adding the resultant in accordance with the FDOT, *Flexible Pavement Design Manual*. Each layer shall adhere to the minimum thickness required by the FDOT.

The minimum pavement structure required for residential subdivisions (Note: this does not include Limited Family Lot Divisions) and for subdivision collectors, shall be as follows:

Land Use Classification	Number of Proposed Lots	Structural Number
AG (Agricultural)	Less than 16	2.04
AG (Agricultural)	16 or greater	2.34
AG/R (Agricultural/Rural)	Less than 16	2.04
AG/R (Agricultural/Rural)	16 or greater	2.34
RES-1 (Residential - 1 du/ga)	Less than or equal to 10	2.04
RES-1 (Residential - 1 du/ga)	Greater than 10	2.34
RES-3 (Residential - 3 du/ga)	N/A	2.34

Where minimum structural numbers of 2.04 or 2.34 are required, the pavement structure shall contain a minimum of one and one-half (1½) inch of Type SP asphaltic-concrete surface course.

Where a subdivision collector is required, a pavement design shall be submitted with the construction plans to determine the minimum pavement structure required. However, in no case, shall a structural number less than 3.5 with a minimum of three (3) inches of Type SP asphaltic-concrete surface course be provided.

Construction of a subdivision collector may be completed in stages with 2¼ inches of SP 12.5 or S-1 asphaltic-concrete surface course along with the required pavement markings installed at the time of the initial construction and ¾ inches of SP 9.5 or S-3 asphaltic-concrete surface course installed along with any required thermoplastic stripes, prior to release of the assurance of maintenance of improvements surety.

Where a connection is made to a street functionally classified as a Major County Road, then the minimum structural number required within the right-of-way of the functionally classified street shall be based on a minimum pavement design, but in no case less than:

- a. Major Collector: 3.70 with a minimum of three (3) inches of Type SP asphaltic-concrete surface course.

- b. Arterial: 4.00 with a minimum of three (3) inches of Type SP asphaltic-concrete surface course.

A minimum structural number of 4.00 is required on local, major collector, and subdivision collector roadways if heavy vehicles are ten (10) percent or more of the total daily driveway trips.

For commercial and industrial subdivisions, a pavement design shall be submitted with the construction plans to determine the minimum pavement structure required. However, in no case shall a structural number less than 3.5 (with a minimum of three [3] inches of Type S asphaltic-concrete surface course) be allowed.

For all roads below the stabilized subgrade, a minimum of two (2) feet of select material consisting of A-3 (SP) soil and/or A-2-4 with a maximum fifteen (15) percent passing number 200 sieve, shall be provided. The project engineer responsible for the project shall certify to the County Engineer that the select material meets these standards prior to installation of the base. Certification shall strictly comply with the subgrade certification form available in the Engineering Services Department's *A Procedural Guide for the Preparation of Assurances of Completion and Maintenance*.

For major collector, arterial, and subdivision collector roads, a minimum of twelve (12) inch stabilized subgrade (Type B) LBR 40 minimum shall be provided under all bases except for soil cement, which shall be constructed on a stable, nonyielding subgrade of LBR 20. The layer coefficient for LBR 20 shall be 0.04 and shall be limited to a maximum depth of twelve (12) inches.

The minimum separation between the bottom of the base to the design seasonal high water table (SHWT) shall be no less than two (2) feet where a limerock base is provided. Where soil cement, ABC-3 asphaltic concrete, or crushed concrete base material is used, the minimum separation between the bottom of the base to the design SHWT shall be no less than one (1) foot.

Design SHWT is the elevation to which the ground or surface water can be expected to rise due to the worst wet season within a ten (10) year period. The project engineer shall make a recommendation as to the SHWT elevation based on the assessment of historical records or other available data. This recommendation shall be reviewed for approval by the County Engineer or designee.

When required, either by the geotechnical report or as determined by the County Engineer, underdrains shall consist of aggregate, pipe, and filter fabric as indicated in the FDOT Index Drawing No. 286 and as referenced in any other FDOT index drawings and standard specifications. Underdrain inverts shall be located a minimum of two