# Leon County Infrastructure Engineering Standards and Guidelines

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# 1.0 Terms and Acronyms

| | |
|---|---|
| **AASHTO** | American Association of State Highway and Transportation Officials |
| **ADA** | Americans with Disabilities Act |
| **CIP** | Capital Improvement Program |
| **CMP** | Corrugated Metal Pipe |
| **EMP** | Environmental Management Permit |
| **EOR** | Engineer of Record |
| **ERP** | Environmental Resource Permit |
| **FDEP** | Florida Department of Environmental Protection |
| **FDM** | FDOT Design Manual |
| **FDOT** | Florida Department of Transportation |
| **FS** | Florida Statute |
| **HOA** | Homeowners Association |
| **LCPW** | Leon County Public Works Department |
| **LCDSEM** | Leon County Department of Development Support and Environmental Management |
| **LDC** | Leon County Code of Laws: Chapter 10 - Land Development Code |
| **LID** | Low Impact Development |
| **MOT** | Maintenance of Traffic |
| **MUTCD** | Manual on Uniform Traffic Control Devices |
| **NPDES** | National Pollutant Discharge Elimination System |
| **NWFWMD** | Northwest Florida Water Management District |
| **POA** | Property Owners Association |
| **PROWAG** | Public Right-of-Way Accessibility Guidelines |
| **PUV** | Permitted Use Verification Certificate |
| **RCP** | Steel reinforced concrete pipe |
| **SWMF** | Stormwater Management Facility |
| **USA** | Urban Services Area |
| **USPS** | United States Postal Service |

# 2.0 Introduction

## 2.1. General

The purpose of this document is to provide a summary of the construction standards and guidelines for all proposed infrastructure and/or improvements within Leon County right of way and/or lands to be owned, operated and/or maintained by Leon County. These standards and guidelines are imposed and enforced by the Leon County Public Works Department (LCPW), Division of Engineering Services.

In alignment with national best practices, including the principles of Vision Zero, Leon County is committed to designing and maintaining infrastructure that prioritizes the safety of all users, including drivers, pedestrians, bicyclists, and transit riders alike. Vision Zero recognizes that traffic-related fatalities and serious injuries are preventable through proactive planning, safe system design, and data-driven decision making. Accordingly, these standards and guidelines integrate design measures intended to reduce crash risk, moderate vehicle speeds, and create a transportation network where public health, safety, and accessibility remain paramount.

**Standards** are mandatory requirements that must be followed. They represent the minimum acceptable criteria established by Leon County to ensure safety, functionality, and regulatory compliance. All infrastructure projects subject to County review must fully adhere to these standards, unless a deviation to the standards is approved by LCPW.

**Guidelines**, while not strictly mandatory, reflect best practices and design preferences established by the LCPW based on experience with maintenance, safety, and long-term performance. Although some flexibility is allowed, guidelines are expected to be incorporated into project designs unless specific site constraints justify a deviation. Requests to depart from the guidelines must follow the formal deviation request process and be supported by sound engineering judgment. See **Section 4.0** of this document for an outline of the LCPW guidelines.

This document is intended to supplement, not replace, the requirements set forth in the Leon County Land Development Code (LDC). All engineering and design activities must comply with the applicable provisions of the LDC. The standards and guidelines outlined herein shall be used in conjunction with the LDC to inform project planning, design, and permitting. In the event of a conflict, the requirements of the LDC shall take precedence.

## 2.2. Public Works Development Authority

The **Leon County Code of Laws** provides the authority to the County Engineer to enforce the standards provided by the Code of Laws and to generally establish and impose the construction standards for all infrastructure and/or improvements. The Director of the Division of Engineering Services is the designated “County Engineer” as referred to in County Code and Florida Statutes. Accordingly, LCPW – specifically the Division of Engineering Services – is the agency that implements the direction of the County Engineer in this regard. In addition, the provisions set forth in Chapters 10, 16, and 18 of the Leon County Code of Laws, establish the guiding principles for the development and implementation of these standards.

The Leon County Code of Laws contains many specific required infrastructure standards. These standards are found in the Leon County Land Development Code, Chapter 10, Code of Laws. In other instances, the Code specifies standards that are more generic in nature and subject to engineering evaluation.

## 2.3. Clarifying the Difference with Environmental Permitting

LCPW maintains many facilities and large expanses of right of way across Leon County and must do so with limited equipment and staff. LCPW often relies on equipment that may be larger than that used for an individual private development. It is also imperative for LCPW to maintain consistency in accepted infrastructure to ensure operations staff can effectively perform maintenance and repair work from site to site. As a result of these factors, it is not uncommon for County infrastructure to require wider footprints for access and maintenance than might be acceptable to a private developer who would have greater flexibility in finding a maintenance contractor with specific equipment and trained staff to suit an individual site's needs.

LCDSEM Environmental Services Division enforces portions of the Leon County Code of Laws that implement the Environmental Management Act. These standards and requirements are set forth in County Code and constitute a set of conditions that must be met before environmental permits are issued.

LCPW imposes standards and guidelines that are necessary for the safe and efficient operation of the infrastructure being built using equipment, staff and resources readily available to LCPW.

LCDSEM may determine that a proposed plan provides the minimum facilities and infrastructure necessary to meet the requirements of the Leon County Code and to ensure that the environment is protected consistent with the Environmental Management Act; however, LCPW may find the same set of plans to be deficient in meeting the minimum standards necessary for the County to effectively operate and maintain the completed project. When these requirements are both met, the result is a development with new facilities and infrastructure consistent with the LDC, that also can be effectively owned, operated, and maintained by LCPW. This document outlines specific standards and guidelines to help ensure the construction of facilities that can be effectively maintained by the County.

## 2.4. Optimizing the Public Subdivision Review Process

LCPW's goal in the review and approval of proposed developments is to assist the developer in achieving their objectives as quickly as possible while maintaining compliance with County regulations and requirements. Staff are available for meetings, telephone conversations, site visits or any other means of communicating with developers and/or their design consultants to determine the best way to accomplish a project. Through past review experience, LCPW has found that the items below have been effective at optimizing the project review and approval process.

**Developer Participation.** The developer shall be actively involved in the review process because the proposed development design may evolve as comments are provided and improvements reevaluated. In many instances, originally proposed plans must be changed to meet County standards

and guidelines. Active developer participation ensures that the final plans are consistent with the developer's needs and expectations for a project.

**Communication.** Any time there is an exchange of information, there is a possibility for miscommunication. When the exchange is between County staff and the developer's consultant, and then relayed to the developer, the opportunity for miscommunication is magnified. The establishment of open communication and inclusion of the developer in communication is critical.

**Pre-Submittal Meeting.** Upon receipt of an approved Permitted Use Verification Certificate (PUV) from LCDSEM, developers, their consultants and/or authorized agents are encouraged to participate in a pre-submittal meeting early in the development process. During the pre-submittal process the developer supplies a conceptual plan showing the general project location and proposed improvements with a project narrative. The materials are circulated to representatives from various agencies for review (ex. LCPW, Environmental Services, Development Services, Planning, Utilities, Fire Dept, Public Health, etc.). The developer and representatives then meet and discuss findings from the agencies and discuss standards and processes that may apply to the development. These meetings are free of charge and coordinated through the LCDSEM office (850-606-1300).

**Complete Plans Submittal**. To support an efficient review process, it is important that a complete permit package with all necessary supporting documents and data, as well as a complete set of Plans is provided in the initial submittal. The required permit package includes items such as a complete Plan set with all the required sheets and information, detailed stormwater calculations, stormwater models, Geotechnical Reports and any other documents or calculations to support the design. If required materials are not supplied, applications will be considered incomplete, and the necessary information must be provided to continue the review process.

**Compliance with Standards and Guidelines.** It is expected that plans will be consistent with the standards and guidelines outlined within this document. In the event some project design elements are inconsistent with guidelines, the engineer of record must obtain approval through the deviation process as outlined in **Section 5.6** of this document.

**Acknowledge Review Comments.** After a review, County staff will issue a detailed list of comments including any changes that may need to be made to the plans to satisfy County requirements. These comments will provide the information necessary to revise the plans and/or supporting documents to receive final construction approval. Professional agents are encouraged to provide a response to comments briefly summarizing how comments were addressed and changes made to submitted materials to resolve identified issues. This helps the agents ensure that all comments have been addressed and LCPW staff to review resubmitted materials more efficiently. If a review comment is unclear or the engineer of record /developer believe the comment cannot be addressed for specific reasons, the LCPW reviewer shall be contacted to discuss the issue prior to resubmittal.

**Use Available County Resources.** As stated above, County staff is available and willing to meet with the developer and/or consultant to discuss a project at any stage. Staff can provide input at the earliest development stages or provide clarification of review comments during active review. Staff can also assist during construction if issues arise that are not addressed in the plans and can help coordinate activities for project closeout.

**Submittal Notification**. Applicants and agents are encouraged to provide notification via phone or e-mail directly to assigned LCPW review staff whenever electronic documents have been uploaded for review. This ensures staff is aware that new documents are ready for review.

# 3.0 Standards

The following are minimum standards which must be adhered to in the design of infrastructure and/or improvements subject to the discussion of this document.

## 3.1. Florida Greenbook

Leon County Code of Laws refers to the "Greenbook" as being the defined standard for construction of pavement and road base. In recognition that pavement design must also include drainage and other related infrastructure, LCPW staff considers the Greenbook to be the base standard for all infrastructure subject to its review.

The Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways (commonly known as the "Florida Greenbook"), is a document issued by the Florida Department of Transportation (FDOT) as required by the provisions of the Florida Statutes. It is a document intended to provide standards for roads that are not in the jurisdiction of FDOT, and more particularly may be part of a county road system. This manual also references other FDOT documents that set construction standards, as well as national standards such as those promulgated by the American Association of State Highway and Transportation Officials (AASHTO).

## 3.2. Design Manual

The FDOT Design Manual (FDM) sets forth geometric and other design criteria, as well as procedures, for all new construction, reconstruction, and resurfacing projects on the State Highway System and the National Highway System. The information contained within the FDM applies to the preparation of contract plans for roadways and structures. Leon County adopts the FDM criteria and procedures for application on County projects.

The criteria in the FDM represent requirements for the State Highway System which must be met for the design of FDOT projects unless approved Design Exceptions or Design Variations are obtained in accordance with procedures outlined in the manual. For County projects, "Design Exceptions" and "Design Variations" are replaced with "Deviation Requests" which can be obtained in accordance with Section 5.6 of this document. While the criteria contained in the FDM provide a basis for uniform design practice for typical roadway design situations, precise standards which would apply to individual situations must rely on good engineering practice and analyses.

## 3.3. Other Standards and Guidelines

While not an all-encompassing list of applicable standards to potential public infrastructure projects the following resources are commonly utilized:

- FDOT Standard Specifications for Road and Bridge Construction (latest edition)
- FDOT Standard Plans (latest edition)
- FDOT Intersection Control Evaluation Manual
- FDOT Intersection Design Guide
- FDOT Access Management Guidebook (latest edition)
- FDOT Drainage Manual (latest edition)
- Manual on Uniform Traffic Control Devices (MUTCD)
- Florida Building Code (ex. ADA accessibility)
- Public Right-of-Way Accessibility Guidelines (PROWAG)
- Florida Erosion Sediment Control Manual
- FDOT Greenbook – low speed residential design
- Leon County Driveway and Street Connection Guidelines and Procedures Manual
- FDOT Drainage Design Manual (latest edition)
- FDOT Roundabout Design Manual
- FDEP  Environmental Resource Permit Applicant's Handbook

# 4.0 Guidelines

## 4.1. General

Leon County construction projects can be divided into two categories: Capital Improvement Projects (CIP) and Developer-Driven Projects (DDP).

Leon County CIP shall be developed in accordance with the Florida Greenbook and all relevant federal, state, and local standards and regulations. For geometric design elements not covered by the Florida Greenbook, design according to the requirements established in the FDOT Design Manual (FDM).

For DDPs, Leon County has developed slightly different criteria that are described in this document. Therefore, the remainder of Section 4.0 does not apply to CIP; it applies only to DDPs.

Generally, DDPs shall be designed in accordance with the FDOT Design Manual and Greenbook. The remainder of Section 4.0 highlights requirements that are of importance to LCPW. The guidelines apply to improvements within existing and proposed County right of way, as well as for stormwater

management systems and other facilities located within easements dedicated to Leon County. The following documents are included within the Appendices and are referred to in these Guidelines:

**Appendix 6.1.** Typical Roadway Section – Curb and Gutter

**Appendix 6.2.** Typical Roadway Section – Open Drainage System

**Appendix 6.3.** Uniform Placement Guide for Utilities – Curb and Gutter

**Appendix 6.4.** Uniform Placement Guide for Utilities – Open Drainage System

**Appendix 6.5.** Final Plat Recording Checklist

**Appendix 6.6.** Leon County Rights-of-Way Manual

**Appendix 6.7.** Road Closure Policy 17-1

**Appendix 6.8.** Local Road Striping Policy

**Appendix 6.9.** Leon County Driveway and Street Connection Guidelines and Procedures Manual

**Appendix 6.10.** Sidewalk Details

**Appendix 6.11.** Traffic Calming Measures – Details and Illustrations

## 4.2. Plans Submittal Sheets

LPCW requires minimum information to be included on each sheet for improvements within existing and proposed County right of way, as well as for stormwater management systems or other facilities located within easements dedicated to Leon County.

Plan sheets are initially submitted electronically to LCDSEM to facilitate concurrent review by all reviewing entities. Once a project has received final permit approval, at least one hard copy plan set shall be submitted for Public Works Inspector use. Final plans must be 24”x36”; however, other sizes may be acceptable for certain projects. LCPW shall be contacted for approval prior to preparing plans that are not 24”x36”.  All information and notes on the plans shall be legible. All permit plan sets shall be signed and sealed by the Engineer of Record consistent with current Florida Board of Professional Engineer standards.

See **Appendix 6.12** for required plan sheet contents.

## 4.3. Roads and Right of Way

Consistent with Vision Zero principles, roadway and intersection designs shall incorporate features proven to reduce the frequency and severity of crashes. These may include narrower lane widths, traffic calming measures, enhanced pedestrian crossings, protected bicycle facilities, and context-sensitive speed limits. The intent is to design a transportation system that accommodates human error without resulting in serious injury or loss of life.

### 4.3.1. Typical Roadway Sections

Typical sections for new local roadways are provided for enclosed and open drainage systems in the **Appendices 6.1** and **6.2**. Where new roads or modifications to a higher functional classification road are proposed or required, typical sections will be reviewed on a case-by-case basis.

### 4.3.2. Lane Width

a. Leon County considers a 10-foot lane width to be the standard for a local road.

b. Based on the anticipated traffic volume and other characteristics the lane width may be adjusted through a Deviation Request.

c. All new streets shall be designed and built with geometric features to accommodate a design vehicle (BUS-40).

d. See also FDOT Greenbook.

### 4.3.3. Right of Way Width

a. Standard right of way widths are:

   i. 60 feet for roads with an open drainage system.

   ii. 45 feet for roads with a closed drainage system (ex. curb and gutter).

b. An additional 10-foot wide utility easement shall be provided beyond the right of way on both sides for the placement of meters, pedestals, etc.

c. For cul-de-sacs: A minimum 45-foot radius to edge of pavement and a minimum 60-foot radius to right of way are typically required. For sites necessitating smaller cul-de-sacs, an Autoturn analysis or comparable must be provided demonstrating that a fire truck (BUS-40) can complete a three-point turn within the cul-de-sac.

d. If on-street parking is provided, the right of way shall be expanded by the corresponding width.

### 4.3.4. Vehicular Use Area Surface

a. All streets, whether public or private, shall be paved within the USA and designed in accordance with the Greenbook standards for pavement and base specifications.

b. Outside USA, pervious pavement consistent with Land Development Code Low Impact Development requirements may be approved on a case-by-case basis with a Deviation Request and shall have a minimum porosity of 30%. Readily displaceable materials (ex. gravel) shall not be used within or abutting paved travel lanes of public roads. To meet Low Impact Development requirements, gravel must be dust-free and in a geogrid.

c. Pavement markings shall be consistent with latest MUTCD adopted by FDOT and the County's Local Road Striping Policy (See **Appendix 6.8**). All pavement markings shall be thermoplastic in the County right of way.

d. Compaction tests shall be conducted for street base materials consistent with FDOT guidelines and results supplied to LCPW as part of the closeout package.

### 4.3.5. Sidewalks

a. All developments that are within the USA shall provide frontage sidewalks.

b. Frontage sidewalks shall be constructed on both sides of arterial and collector streets and one side of all other streets.

c. Sidewalks must meet ADA, PROWAG, and FDOT standards and noted as such on plans.

d. Sidewalks shall be constructed using fiber reinforced concrete (6" thick through driveways and utility access areas).

e. The location of future driveways and potential sidewalk conflicts must be accounted for during the roadway and sidewalk design.

f. For sidewalks that must be placed outside of the right of way, a public sidewalk easement shall be dedicated for pubic use and maintenance. If the sidewalk easement is adjacent to the public right of way, the easement width shall include the width of the sidewalk and an additional three feet of unobstructed width. If the sidewalk easement is not adjacent to a public right of way the easement width shall be a minimum of 15'.

g. Potential mitigation issues (ex. stormwater, canopy road zone) shall be resolved during the site plan process even when sidewalk construction is deferred to a later date.

h. Typical sidewalk sections for open and closed drainage systems are provided in the appendices.

i. Sidewalk details are shown in **Appendix 6.10**.

### 4.3.6. Traffic Calming and Design Speed

In support of Vision Zero, all new residential and collector roads shall be designed for safe operating speeds, prioritizing human life over vehicular efficiency. Design elements such as horizontal curvature, raised intersections, and other traffic calming measures are encouraged where appropriate to naturally moderate speeds and improve safety for all modes of travel.

a. Roads must be designed to limit vehicular speeds to an appropriate design speed. Residential roads shall have a posted speed of 25 mph, but may be designed for up to 35 mph.

b. Acceptable traffic calming measures on new roads include, but are not limited to, on-street parking, chicanes, raised intersections, roadway curvature, traffic islands, and full-sized roundabouts. See **Appendix 6.11** for information related to chicanes, traffic islands, and raised intersections. For full-sized roundabouts, reference FDOT Roundabout Design Manual (latest edition). For on-street parking, reference FDOT Greenbook (latest edition).

c. The engineer of record shall provide a narrative with the permit application identifying specific measures implemented to ensure that the anticipated operating speed will be consistent with the design speed.

### 4.3.7. Parking Facilities, On-Street and Off-Street

a. Non-standard roadway configurations, including on-street parking, will be allowed but will require site specific review.

b. On-street parking shall follow applicable standards and guidance within the FDOT Greenbook (latest edition).

c. On-street and off-street parking dimensions shall be consistent with the off-street parking space standards outlined within the LDC. Alternative configurations for on-street parking may be considered with justification but must be approved through the Deviation Request process.

d. In areas where on-street parking is proposed:

   i. Additional pavement width must be provided leaving two full width travel lanes available where on-street parking may occur.

   ii. Right of way width shall be expanded to accommodate on-street parking.

   iii. Where possible, on-street parking shall be defined by curbing and bump-outs, but without pavement markings.

   iv. On-street parking shall be connected to the sidewalk system to the extent practicable.

   v. On-street parking space boundaries shall be established in accordance with the restrictions identified in F.S 316.1945, which restricts parking near driveways, intersections, crosswalks, railroad crossings, fire hydrants and fire stations.

   vi. Accessible parking spaces shall be included with on-street parking in accordance with the requirements of the 2006 Americans with Disabilities Act Standards for Transportation Facilities as required by the most current Federal and State guidelines.

e. Where off-street parking is proposed:

   i. Off-street parking in residential developments must be configured to preclude adverse impacts to surrounding properties. Adverse impacts include headlight intrusion into home windows, noise, drainage, and aesthetic impacts.

   ii. Low Impact Development is encouraged for parking areas outside of the public right of way.

f. Driveways in residential subdivisions shall provide a minimum of 25 linear feet of parking distance between the structure and the right of way or sidewalk, whichever is closer.

g. Parking surfaces shall comply with the standards outlined within the LDC and Section 4.3.4 of this document.

### 4.3.8. New Road Connections to Existing Roads

a. Pavement modifications (ex. turn lanes, etc.) require a full overlay of the affected area and 50 feet beyond the impact area.

b. Impacts to existing traffic control (ex. striping, etc.) require full mitigation to the extent of the impact.

c. Plans shall show the locations of existing driveways and roads within 300 feet on both sides of street of newly proposed connections. New connections shall be aligned with existing connections when feasible to minimize conflicting turning movements.

d. Sight distance triangles shall be provided at all new connections to evaluate conflicts.

e. New roadway connections to existing roads must be configured to minimize adverse impacts to residents of property on existing roads (i.e. light intrusion).

f. Major changes in use of an existing connection, such as converting a single home driveway to a roadway, will require driveway connection review, and shall comply with the Leon County Driveway and Street Connection Guidelines and Procedures Manual.

g. New roadway connections to canopy roads may require reduced right of way and special construction. If utility access to a property is available from other locations (non-canopy) the County will work with developers to reduce the right of way and consider alternative roadway designs. Additional Canopy Road Review Criteria for new connections can be found within the Leon County Driveway and Street Connection Guidelines and Procedures Manual (see **Appendix 6.9**).

### 4.3.9. Interconnections and Turnarounds

a. In the Urban Fringe and within the USA, any new dead-end street that exceeds one lot in depth will require construction of a turnaround. Cul-de-sacs or other turnarounds that facilitate a change in direction via a single continuous movement are preferred. Under no circumstances shall emergency vehicles (BUS-40) need to make more than a 3-point turn to navigate a turnaround.

b. For connections to future phases of development a temporary turnaround shall be provided. Temporary turnarounds shall be constructed of durable low maintenance material (ex. extension of road surface) and capable of supporting fire apparatus. The turnaround shall be located within public right of way or a public access easement.

### 4.3.10. Mass Transit Facilities

a. Bus stop facilities, such as shelters, paved areas for waiting riders or other amenities are allowed where a public entity or governmental agency has accepted responsibility for maintenance of the facilities, subject to site specific review by LCPW.

b. Public school bus stops may vary from year to year and construction of amenities such as widened sidewalks on public right of way will not be allowed unless the school or other entity accepts responsibility for maintenance.

### 4.3.11. Street Lighting

a. Leon County does not provide street lighting and will not accept responsibility for a street light system. If a subdivision or other groups of homeowners wish to have streetlights, they may do so by direct contract with the electric provider in that area. A license agreement with Leon County shall be required if the utility provider is not the maintenance entity.

b. Maintenance responsibility shall be identified on the site plan and shall not be LCPW.

c. LCPW must review and approve any proposed street lighting plans to be located within public right of way prior to installation.

d. Street light poles shall not be located within the roadside clear zone or interfere with sight distance.

### 4.3.12. Alleys

LCPW does not accept dedication and maintenance of alleys. Where developments intend to utilize alleys, LCPW will review such proposals for the following criteria:

a. Ownership and maintenance responsibility for the alley shall be clear.

b. Typical alley systems are one way and will require a reasonable circulation plan limiting the one-way travel distance.

c. Plans must demonstrate that the intended design vehicle to use the alleys can make the turning movements required.

d. Where alleys are employed but front yard garbage pickup is planned, plans must address the storage of receptacles and how they will be carried to the street.

### 4.3.13. Gates

Gates are not allowed on public roads. Gates proposed on accesses or drives adjacent to public roads and right of way shall meet the following criteria:

a. Any gate must be set back from the right of way a sufficient distance so that the largest anticipated vehicle can pull completely off the road to open the gate.

b. A turnaround may be required to allow vehicles that are not authorized to open the gate to re-enter the public right of way without backing directly into the right of way.

c. The Site Plan shall address gate access for emergency vehicles.

### 4.3.14. Street Landscaping

a. When street trees are proposed the tree species shall be selected using guidance from Tree Matrix in **Appendix 6.15**. Alternative species may be considered but will require approval from LCPW Operations Division and DSEM. During Construction, the contractor shall not substitute any tree without prior written approval from LCPW and DSEM. Native species are strongly encouraged for use and must comprise 75% of proposed species. The street tree selection shall account for the presence of overhead utilities, proposed planting strip width, proximity to structures and other hardscapes, and sight distance. The species shall also be appropriate for the planting site conditions such as soil, sunlight, and the planting area available as outlined in **Appendix 6.15**.

b. Street trees shall be planted to meet clear zone and lateral offset criteria as listed in the Florida Greenbook.

c. Sight distance triangles for all existing and proposed commercial driveways and intersections shall be shown on the proposed landscape plan for review. Commercial driveways shall include multifamily dwellings with over four dwelling units. Any trees proposed within existing or proposed sight distance triangles shall meet the spacing standards shown in **Appendix 6.15**. Trees planted within the sight distance triangle must be on the tree matrix as approved for use within the sight distance triangle. Alternate species may be considered but must be approved by LCPW Engineering Services and Operations. Trees planted within the sight distance triangle must be large enough to trim in accordance with Clear Sight Window Diagram in **Appendix 6.15** at the time of planting.

d. Street trees must not be planted where they will obscure the view of traffic signals, street signs, or utilities.

e. Minimum setbacks:

| | |
|---|---|
| **Fire Hydrant** | 20’ |
| **Water Meter, Valve Box, or Gas Meter** | 5’ |
| **Stormwater Structures** | 20’ |
| **Electric Pad Mounted Transformers and Terminating Cabinets** | |
| **Front** | 10’ |
| **Back and Sides** | 3’ |
| **Electric Pad Mounted Switch Gear/Metering Cabinet/Reclosures** | |
| **Doors** | 10’ |
| **Sides** | 3’ |
| **Electric Pedestals** | 3’ |

f. Proposed root barriers shall be shown and specified in the landscape plan and shall be a minimum of 24" deep. Root barriers shall be approved by LPCW. Root barriers shall be required when any street tree is proposed to be planted within 10' of any underground utility (water, sewer, stormwater pipe, gas, and electric) or hardscape (concrete, asphalt, and other surfaces) that could be damaged by root growth.

### 4.3.15. Mail Kiosks

a. Number of mail kiosks, locations, and configurations shall be approved by the USPS.
b. Mail kiosks shall be accessible by an ADA and FDOT compliant sidewalk route.
c. When kiosk parking is provided, at least one ADA compliant space shall be provided.
d. The kiosk structure shall be located outside of the County right of way.
e. The county will not be responsible for maintenance of the kiosk and HOA documents shall address the kiosks and maintenance responsibilities.

### 4.3.16. Off-Site Impacts and Mitigation

a. Driveway connection permits shall be obtained for proposed connections to existing public roads consistent with the Leon County Driveway and Street Connection Guidelines and Procedures Manual. As noted within the manual, roadway and driveway connections are classified based on expected traffic volume using the connection. The permitting criteria and the information needed to review a connection permit are dependent on the classification. The level of plan detail requirements will increase as the connection class increases. DSEM shall determine the classification of the connection. Depending on the scale of the development and projected traffic distribution, an associated operational analysis may be required and may extend beyond the roadway immediately adjacent to the property.
b. Structural Integrity of Existing Roads: For existing public roads where proposed development traffic will account for at least 50% of the anticipated total traffic on the road or significantly increase heavy vehicle traffic (ex. Semi-trailers), the developer will be required to evaluate the existing structural condition and surface treatment of the road and demonstrate that it is capable of sustaining the proposed traffic. Any improvements necessary to improve the road to meet estimated traffic demands shall be installed by and at the expense of the developer, except for those expressly agreed to in writing by the County.

## 4.4. Drainage Systems

The following subsections outline the guidelines for drainage system construction.

### 4.4.1. Drainage Pipe

a. No part of the stormwater pipe structure, including the bell, shall encroach any closer than 6 inches below roadway base.

b. Drainage pipe materials must be RCP or listed on FDOT's approved products list. Pipes shall be installed consistent with FDOT and manufacturer requirements.

c. All pipe joints shall be wrapped per FDOT specs.

d. Driveway culvert pipe materials pre-approved for construction include CMP, RCP or other pipe materials that meet FDOT Standard Specifications for Roadway and Bridge Construction.

e. The stormwater conveyance system must be flushed prior to final acceptance. All sediment removed shall be properly integrated into the project construction or disposed of off-site.

f. Stormwater pipes in the right of way shall be offset from adjacent properties a sufficient distance (based on pipe) to facilitate excavation and replacement without encroaching into or adversely impacting an adjacent parcel unless a public drainage easement is provided. See also Section 4.4.5 Drainage Easements of this document.

g. Prior to acceptance of infrastructure by LCPW, video inspection pursuant to FDOT standards shall be performed for all enclosed public pipe systems and be reviewed by the Engineer of Record with a copy supplied to LCPW. Results of the video inspection shall be addressed within the compliance report.

### 4.4.2. Open Drainage System (Roadside Swales or Ditches)

a. Cross drains must be a minimum of 24 inches in diameter reinforced concrete pipe (RCP).

b. Plans must indicate the size and invert elevations for driveway culverts for each lot.

c. The minimum pipe size for driveway culverts is 18 inches unless a Deviation Request is approved by the County Engineer. In no case shall the culvert pipe be less than 15 inches in a public right of way.

d. The entire public drainage system shall be located within public right of way and/or public drainage easement.

### 4.4.3. Enclosed Drainage System (Curb and Gutter)

a. Cross drains must be a minimum of 18 inches in diameter.

b. Curb inlet and manhole spacing must be less than or equal to 400 feet.

c. Curb inlets must not be located within any curb return.

d. Curb inlets must be located outside of vehicular travel paths (ex. access easements, SWMF access path, etc.).

e. The entire public drainage system shall be located within public right of way and/or public drainage easement.

### 4.4.4. Design Calculations

a. Spread analysis calculations must be provided to demonstrate level of service requirements per the Comprehensive Plan.

b. Design calculations for the interception rates of the inlets must be provided to verify the size of the inlet and slot opening. FDOT inlet capacities can be found in the FDOT Drainage Manual.

c. Calculations must be provided to show sufficient scour velocity (2.0 feet per second minimum) for storm sewer pipes, particularly where pipes are submerged.

d. Minimum Level of Service as required by the Comprehensive Plan shall be provided.

e. Stormwater calculations shall be consistent with FDOT Drainage Manual.

### 4.4.5. Drainage Easements

a. Drainage easements must be a minimum of 30 feet wide and configured for continuous unobstructed vehicular access into and out of the easement area. Turnarounds are required where dead-end situations may occur.

b. Pipes or swales shall be placed off center in the easement, where practical, such that a vehicle travel path is maintained while replacing a pipe or repairing a swale.

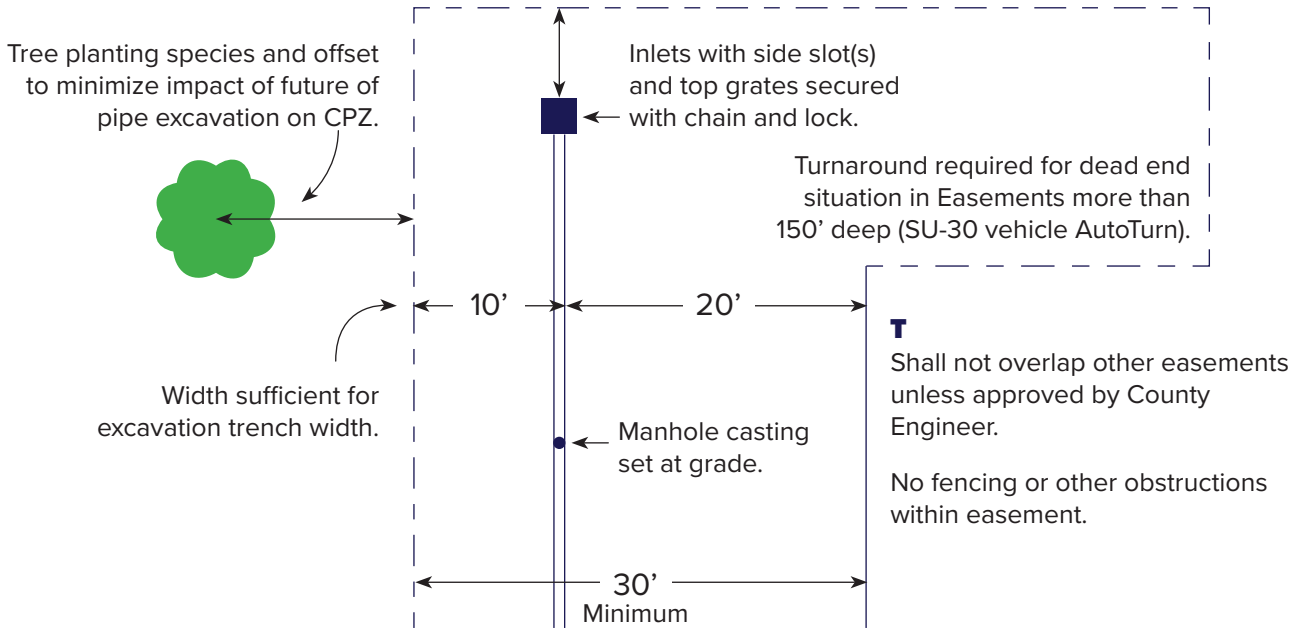
c. Drainage structures within easements shall be constructed so that vehicular access is not obstructed.

d. Drainage easements and conservation easements shall not overlap (no part of a conservation easement shall be identified as drainage easement).

e. Drainage easements shall not overlap utility easements. Any proposed easement overlap must demonstrate that utilities and storm sewer systems can be maintained or reconstructed without adversely impacting each other.

f. Drainage easements associated with public infrastructure shall not be placed within residential lots of new subdivisions.

**Drainage Easements**




## 4.5. Stormwater Management Facilities

### 4.5.1. Maintenance Access

a. The minimum design vehicle for maintenance shall be a loaded single-unit truck (SU-30) per AASHTO. The submittal must reflect the safe access to structures, including the toe of fill berms, to ensure that maintenance can be performed.

b. Proposed maintenance travel path shall be demonstrated to be accessible by a single unit truck (SU-30) using Autoturn templates or other acceptable simulation tools.

   i. Wheel paths shall have a minimum of 2 feet of clearance between the wheel path and any non-traversable slopes or objects.

   ii. Body paths shall have a minimum of 2 feet of clearance between the body and vertical obstructions (including parking spaces when present).

c. A minimum 20-foot-wide drainage easement shall be provided for access to SWMFs, assuming no infrastructure is contained within the easement.

d. A minimum 20-foot-wide maintenance berm shall be provided around the top of SWMFs.

e. SWMF perimeter access shall be as flat as possible. If a cross slope is necessary, the slope shall not exceed 20H:1V stabilized and a running slope of 10H:1V.

f. A minimum 10-foot-wide stabilized maintenance access path along the outside toe of slope of a SWMF shall be provided. Access along the toe of slope is not required if the toe can be maintained from the SWMF perimeter access [ex. vertical drop from perimeter access to toe is less than three (3) feet, slopes do not exceed 3H:1V, and the toe is not obstructed by fencing].

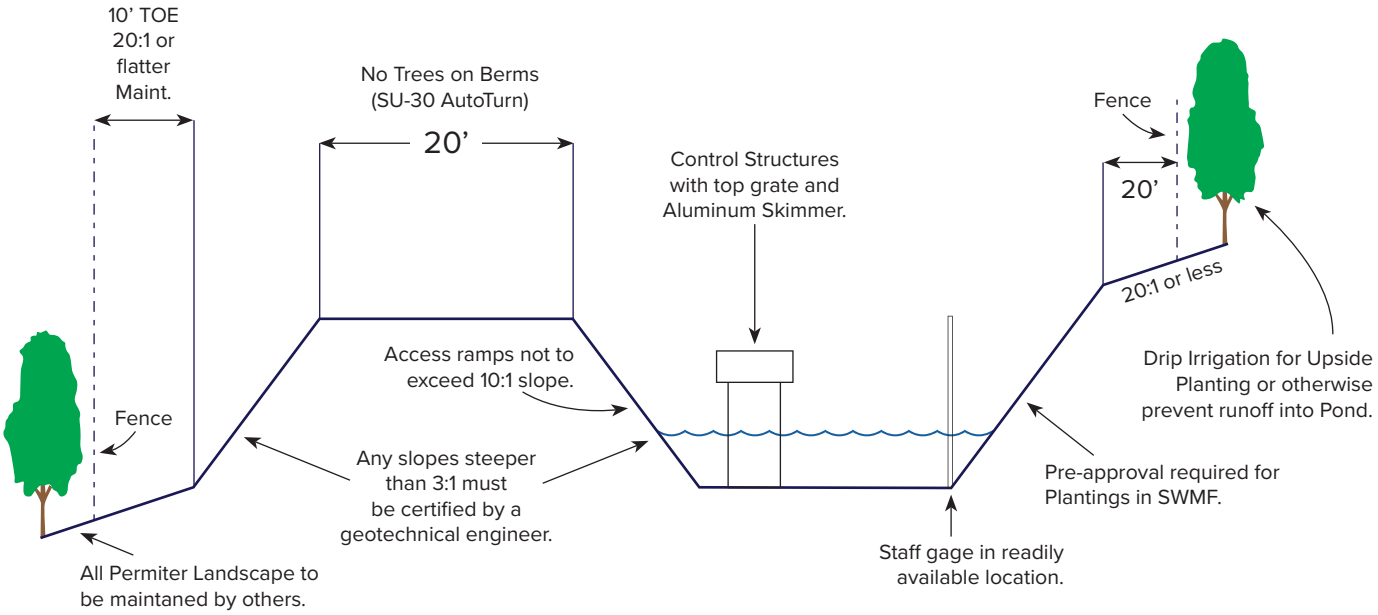
g. Manhole casings must be set at grade within vehicle travel paths. Manhole structure must be able to sustain the weight of a fully loaded dump truck.

h. Access ramps into “dry ponds” will be considered where perimeter access is limited.

   i. To be considered a “dry pond” the facility must recover completely from full condition within 30 days.

   ii. Ramps shall be a minimum of 20 feet in width, with a maximum slope of 10H:1V and level area at top.

   iii. Ramps shall be stabilized to support a loaded dump truck.



### 4.5.2. Stormwater Management Facility Landscaping

a. Landscaping within SWMF limits must be approved by LCPW.

b. No trees or shrubs are to be planted on fill material. Only understory tree species and shrubs will be allowed within in-situ soils near fill berms.

c. Trees and shrubs shall be planted in small clusters such that mature branch spread will not impede maintenance access to the facility floor or structures (typically no more than 3-4 trees per cluster).

d. Appropriate tree species may be planted at the bottom of the stormwater management facilities where there will be no obstruction to the pond function or maintenance.

e. Alternate non-invasive slope cover will be specified where shading will create adverse growing conditions for sod.

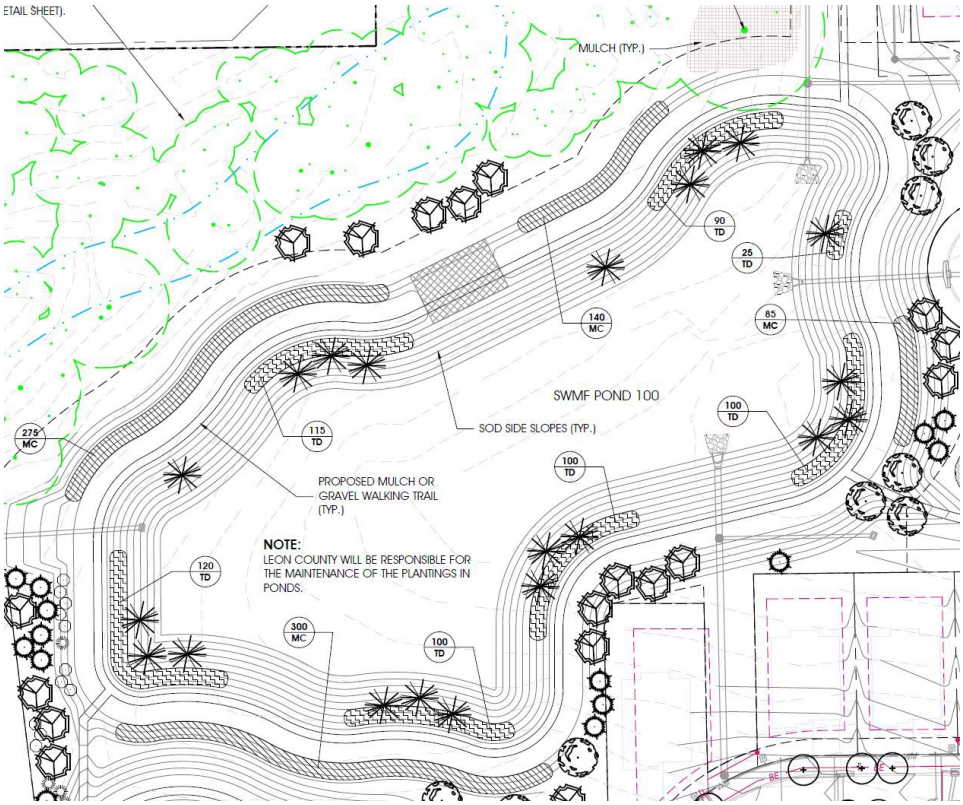
f. License agreements may also be necessary for third party maintenance of plantings not accepted by the County for maintenance.

### 4.5.3. Trash Screening/Rack

a. All control structures shall have a top grate.

b. Skimmers shall be designed consistent with FDOT standards and extend six (6) inches above and below the highest and lowest control elevations respectively. Skimmers shall be aluminum or approved equivalent (not wood).

c. Skimmer head-loss shall be evaluated consistent with the FDOT Drainage Design Guide (latest edition).



### 4.5.4. Retaining Walls

a. Free standing SWMF retaining walls are prohibited.

b. If maintenance access is in proximity to the top of the retaining wall, the wall design shall consider the weight from a fully loaded dump truck.

c. Environmental Management Permit Plans shall identify the following minimum information (a separate building permit from the Leon County Building Department may be required for the retaining wall):

   i. Retaining wall materials.

   ii. Top of wall and bottom of wall elevations.

   iii. Footprint of footers and tiebacks. Footers and tiebacks shall be located entirely within Leon County right of way or drainage easement(s) and shall not conflict with other structures or utilities.

   iv. Fall protection.

d. Post Construction certification by a duly qualified engineer shall be provided.

### 4.5.5. Stormwater Facilities with Sand Filter

a. The design water level must be indicated on the cross section of the sand filter.

b. Filter bottom must be a minimum of 1-foot above the seasonal high-water table.

c. Coarse aggregate used for the sand filter shall be granite.

d. Sand filter material exposed to sediment laden construction phase runoff must be replaced prior to final acceptance by LCPW.

e. Bottom bed filters must be designed so that maintenance vehicle trafffic does not cross the filter bed.

f. Side bank filters must be designed to accommodate a fully loaded dump truck on the berm without compromising berm stability or filter integrity.

g. Clean-outs shall be provided at pipe ends, pipe turns, and a minimum of every 100 feet.

### 4.5.6. Stormwater Facilities with Infiltration Trenches

a. Infiltration trenches shall be located near the toe of cut slopes when feasible to facilitate future maintenance from the SWMF bank without destabilizing fill berms.

b. Trenches must be located so that maintenance vehicle traffic does not cross the trench.

c. Trenches shall be mounded a minimum of six inches.

d. Trenches shall be covered with three inches of granite (no limerock) to dissipate horizontal flow velocities.

e. Trench material exposed to sediment laden construction phase runoff must be replaced prior to final acceptance by LCPW.

### 4.5.7. Outfall Control Structures

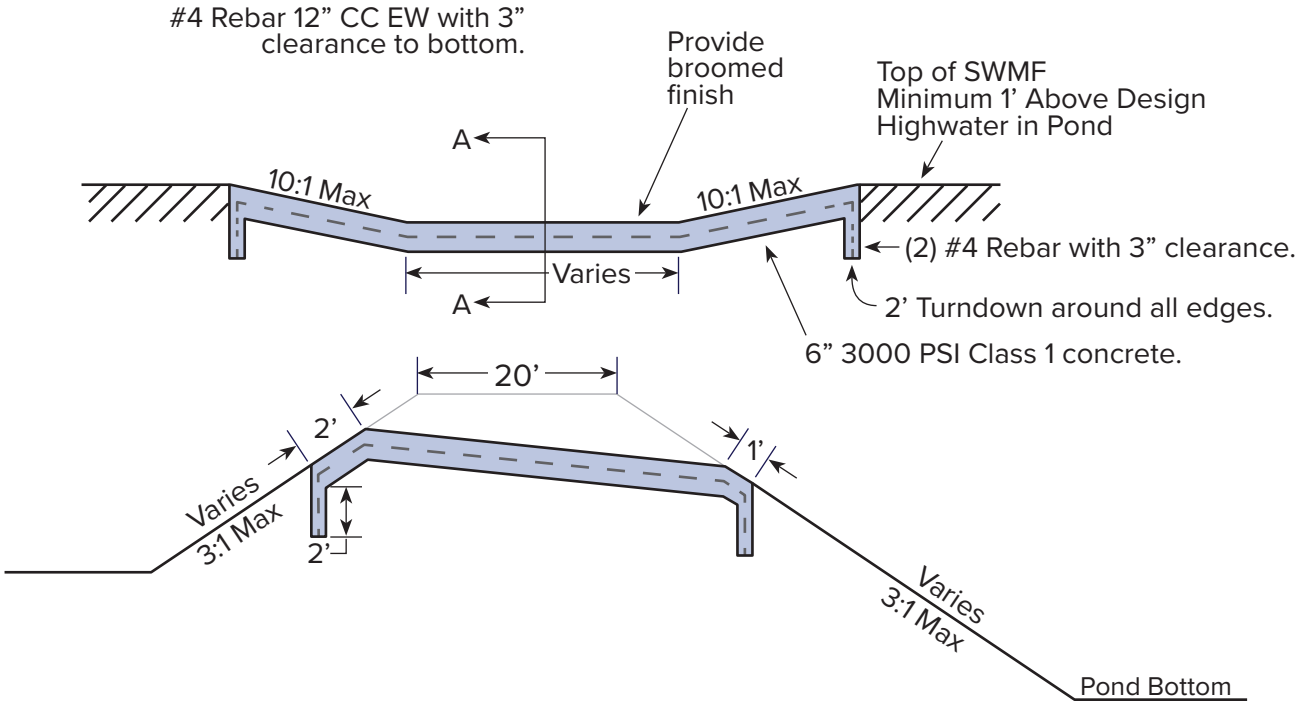
a. The SWMF emergency overflow weir structure must be traversable by a fully loaded single unit truck. Longitudinal Slopes shall not exceed 10H:1V.

b. Concrete splash pads with energy dissipaters or grouted in place rip rap must be used at stormwater discharge points. Loose rip rap is not allowed at any location. Rip rap shall be free from debris or metal objects with associated specifications included in the construction plans.

c. At locations where pipes cross berms, pipe installation must be able to sustain a fully loaded dump truck.

d. Manhole casings must be set at grade if within vehicle travel paths. Manhole structures must be able to sustain the weight of a fully loaded dump truck.

e. Any discharge from a Leon County-maintained stormwater management facility must discharge to an approved discharge point.



### 4.5.8. Fencing (Where Required)

a. A double 10-foot swing gate (20-foot wide total) will be required at each vehicular access point when the pond is fenced. Gates shall open such that conflicts with the maintenance vehicle or adjacent grades do not occur.

b. The fence shall be a minimum of 4-feet tall. The fence material shall be black, brown or green vinyl coated chain link fence. Alternative fence materials and fences taller than 4-feet must comply with Land Development Code requirements and be approved through a Deviation Request.

c. Gap space at the bottom of the fence and gate shall be minimized to the extent practicable and shall not exceed four (4) inches.

d. Fencing shall not impede maintenance of the facility.

### 4.5.9. Operating Permit

a. LCPW must review and approve the operating permit for any Leon County stormwater facility prior to submittal to DSEM.

b. LCPW will provide the standard operating maintenance schedule to be included in the operating permit.

c. When public subdivisions include improvements (ex. swales, trails, and landscaping) that are to be maintained by an entity other than Leon County (ex. the Homeowners Association), the operating permit(s) shall clearly distinguish operation and maintenance responsibilities with legal acknowledgment by the associated entity or entities.

### 4.5.10. Public Trails / Use Within SWMFs

a. Any trails or other public uses within the SWMF limits must be approved by LCPW.

b. Any readily degradable/displaceable materials are not acceptable for trail stabilization.

c. LCPW only provides mowing and maintenance consistent with the Department's routine maintenance schedule. Any increased maintenance will be the responsibility of an HOA or other suitable third party with maintenance responsibility clearly identified within the development site plan and associated HOA documents.

d. Prior to platting, a license agreement or restricted use permit will be needed to address maintenance liability and insurance associated with HOA use of SWMF areas (walking trails, etc.).

## 4.6. Utilities

### 4.6.1. Utility Placement Guide

Utilities shall be placed consistent with the applicable Leon County Utility Placement Guide (with or without Curb and Gutter) unless otherwise approved through the deviation process. This information is to be included in the final construction plans, usually with the typical road sections, as it applies to the specific project. See **Appendices 6.3 and 6.4** for Recommended Guide for Utility Placement.

### 4.6.2. Cul-de-Sac Installations

Ductile iron shall be used for water lines that run under cul-de-sacs.

### 4.6.3. Utility Easement

a. Utility Easements shall be dedicated to the “Public Utilities.”

b. Utility Easements shall be located outside of existing or proposed right of way.

c. Water service connections are not allowed under pavement.

## 4.7. Miscellaneous

### 4.7.1. Irrigation Systems

A license agreement is required to address maintenance, repair, liability and insurance associated with the use and eventual removal/abandonment of the permanent irrigation system if within right of way or public easement area. Construction plans shall address the following:

a. A suitable third-party entity shall be designated to maintain the system (ex. HOA).

b. Irrigation systems shall be located outside of vehicular travel ways and/or intense maintenance areas.

c. Irrigation systems are limited to outside slope areas.

d. Irrigation systems shall not be attached to the fence.

e. Irrigation plans shall document location of a system cut-off valve adjacent to the road right of way.

f. Irrigation heads must be placed above the 100-year design elevation for the stormwater facility.

g. Irrigation systems shall include a rain sensor to prevent unnecessary irrigation.

h. Temporary irrigation systems for plant establishment must be clearly marked.

### 4.7.2. Private Improvements in the Right of Way

No private signs or other private improvements, such as fences and other such structures of any kind, shall be allowed on, in, or under any right of way (see **Appendix 6.13**, Article 13.2 of Real Estate Policy – Policy 16-5). Footers and tiebacks of retaining walls located outside of the public right of way shall be located entirely outside of the right of way.

# 5.0 Permits and Approvals Issued by LCPW

## 5.1. Facilities Construction Permit

A Facilities Construction Permit is required when adding capacity to existing water or sewer systems, extending water lines or sanitary sewer collection systems, or when expanding or constructing treatment facilities. The City of Tallahassee is not required to obtain Facilities Construction Permits; however, all other water and sewer facility providers are. **See Section 5.3 of this document for additional available resources.** For projects undergoing site plan review, the Right of Way Placement or Facilities Construction Permit shall be obtained prior to the pre-construction conference for the project.

## 5.2. Construction Plans Approval

Any construction within the County's right of way or publicly maintained subdivisions will require Construction Plans Approval. LCPW approves construction plans for public subdivisions as part of the EMP process through LCDSEM and the Environmental Services Division. LCPW reviews the EMP and signs-off on plans prior to final approval and issuance. The type of EMP required is dependent upon the scope of work. Types of applications and permits can be found through the LCDSEM online application portal. Any questions on the type of permit required and applications shall be directed to Environmental Services staff at 850-606-1300.

## 5.3. Right-of-Way Placement Permit

Utility construction activities within the County right of way are required to have a Right of Way Placement Permit. The County's Rights of Way Manual, available through the County's LCPW Engineering Services webpage, provides additional information regarding rules, regulations, policies and procedures for the placement, construction and maintenance of Utilities and Communication Facilities within the Leon County right of way. Right of Way permit applications are also available online. Any questions on the type of permit required and applications shall be directed to LCPW staff at 850-606-1500.

## 5.4. Road/Lane Closure Approval

Road Closure Approval is required any time a Leon County road or travel lane needs to be closed, either fully or partially, for construction. Road and lane closures shall be consistent with the "*Public Notification of Road Closing and Road Closure Request Procedure (Policy No 17-1)*" as adopted by the Board of County Commissioners on February 7, 2017 (**see Appendix 6.7**).

## 5.5. Driveway Connection Permit (LCDSEM)

A Driveway Connection Permit is required of any driveway connecting to a County road. Driveway Connection Permits are processed by the Environmental Services Division within LCDSEM simultaneously with an EMP application or as a stand-alone permit application with LCPW review. Driveway Connection Permit applications can be found through the LCDSEM online application portal. Any questions on the application shall be directed to Environmental Services staff at 850-606-1300.

## 5.6. Deviation Requests

In the event some project design elements are inconsistent with the guidelines and standards outlined or referenced within this document, the Engineer of Record shall submit a deviation request to the County Engineer or designee for consideration. Such requests shall be made as outlined in the following subsections

### 5.6.1. Examples of Deviation Requests

Below is a list of example items that could be eligible for a deviation. This list is not exhaustive, and each request must include adequate justification to be considered for approval.

a. Right-of-way width
b. Travel lane width
c. Sidewalk width
d. SWMF layout/ access
e. Landscaping
f. On-street parking configuration
g. Driveway culvert sizes
h. Fence height/ material
i. Utility placement
j. Pervious pavement

### 5.6.2. Deviation Justification

Sufficient detail and explanation must be provided to justify approval. The Engineer of Record shall develop a detailed justification showing good engineering judgement when allowing a design element to remain that does not meet the standards and guidelines. At some point, this justification may be used to defend design decisions made by the Engineer of Record. All deviations from a standard or guideline must be uniquely identified, located, and justified; no blanket approvals will be given.

The following justification criteria shall be met for approval of a deviation to the guidelines and standards contained in this document:

a. The applicant demonstrates that strict compliance with the standard would result in a practical difficulty or unusual hardship due to site-specific constraints such as topography, existing infrastructure, or environmental features.

b. The requested deviation is consistent with the public interest and does not compromise the health, safety, or welfare of the community.

c. The deviation does not result in any detrimental impacts to adjacent properties, public infrastructure, or environmental resources.

d. Approval of the deviation will not set a precedent that undermines the overall objectives of the applicable standards or encourage a pattern of similar requests.

e. The applicant provides an alternative design or approach that achieves the intent of the standard and maintains consistency with the County's engineering principles and development goals.

f. The deviation accounts for and responds to existing physical constraints such as structures, easements, utilities, or rights-of-way that cannot be reasonably altered.

g. The hardship necessitating the deviation was not self-created by the applicant or the result of actions taken after the adoption of the current standard.

h. The proposed deviation is compatible with existing and planned surrounding development in terms of design, function, and infrastructure capacity.

**NOTE**: Cost savings or economic benefit alone is not sufficient justification unless accompanied by a demonstrated public benefit or performance-based equivalence.

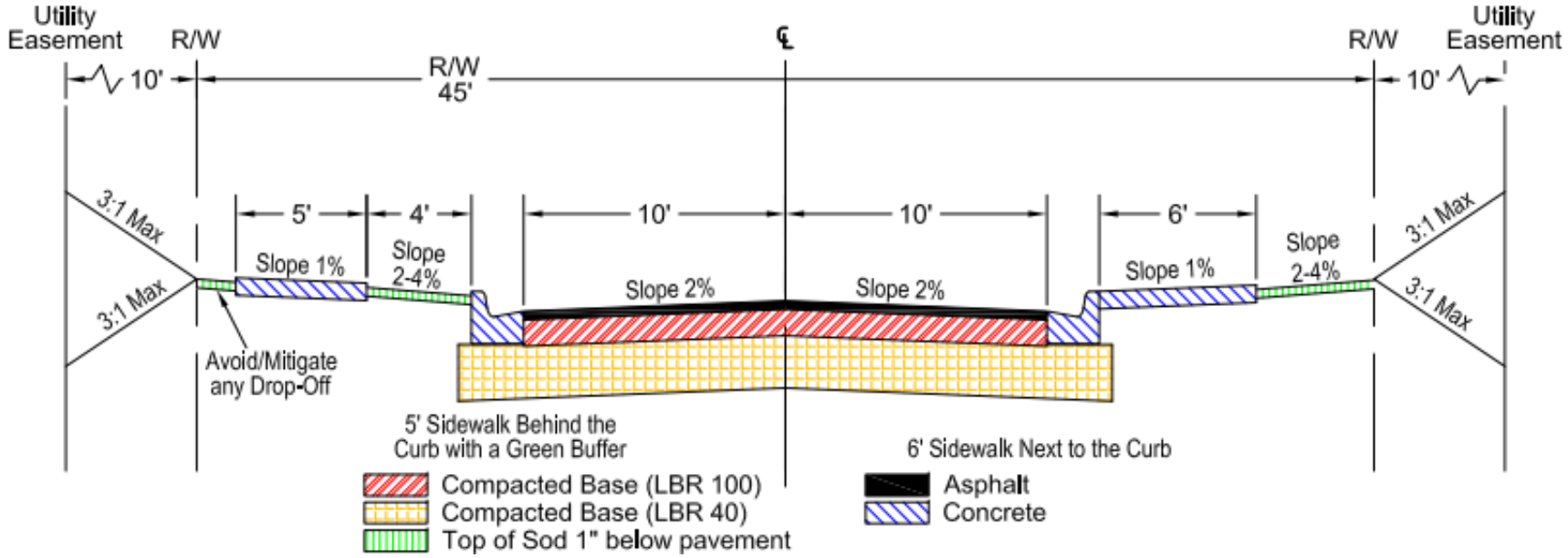
### 5.6.3. Deviation Documentation and Process

The Engineer of Record shall submit a deviation request to the County Engineer or designee for consideration by completing a Deviation Request Memorandum (See **Appendix 6.14**). The request shall identify the specific guideline(s) or standard(s) for which the deviation is requested and the reason for the request, which includes an explanation why it is necessary. Any alternative standards being met by the proposed design shall be identified. The request shall be properly signed and sealed by the engineer of record. The County Engineer or designee shall provide a written determination as to whether the requested deviation is acceptable within 10 working days of receipt of a complete request.

APPENDIX 6.1

# Typical Roadway Section: Curb and Gutter (45’)

## Typical Subdivision Local Road (Curb & Gutter - 45 ft R/W)




General Notes:

1. 45’ Minimum dedicated Right-of-Way (R/W) limits for Curb and Gutter sections with an additional 10’ of Utility Easement on each side. When pavement width is widened (ex. to accommodate on-street parking) the R/W shall be widened by the same distance. Utility easements are not required in areas where pedestals and utility services are not anticipated.
2. Standard Travel Lane Width is 10’. Gutter spread calculations shall be conducted consistent with FDOT standards and demonstrate at least one travel lane width remains clear during the 4”/hr design storm.
3. Total of 2” of Structural Course is required for Asphalt Pavement. Type of asphalt, installation means and methods, and lift thicknesses shall be consistent with FDOT standards.
4. 6” Limerock Base LBR 100, compacted @ 98% of maximum density AASHTO T180.
5. 12” Constructed and Stabilized Sub-Base with minimum LBR 40 and compacted to 98% of maximum density AASHTO T180.
6. The associated geotechnical report supporting the proposed road construction shall be provided and identified within the permit plans.
7. Compaction of Base and Sub-Base shall be verified at least every 250 feet and the reports summarized in a testing report.
8. Standard curb is 2’ FDOT Type “F” Curb and Gutter. Plans shall address transitions to drainage inlets and driveways as applicable.
9. The Design Speed shall be 25 mph and identified beneath the typical section.
10. Sidewalk Notes:
    a. Sidewalk shall be provided on at least one side of local roads if inside the Urban Services Area.
    b. The Sidewalk construction must meet ADA and FDOT requirements. The Engineer of Record shall certify compliance within the post-construction engineering compliance statement.

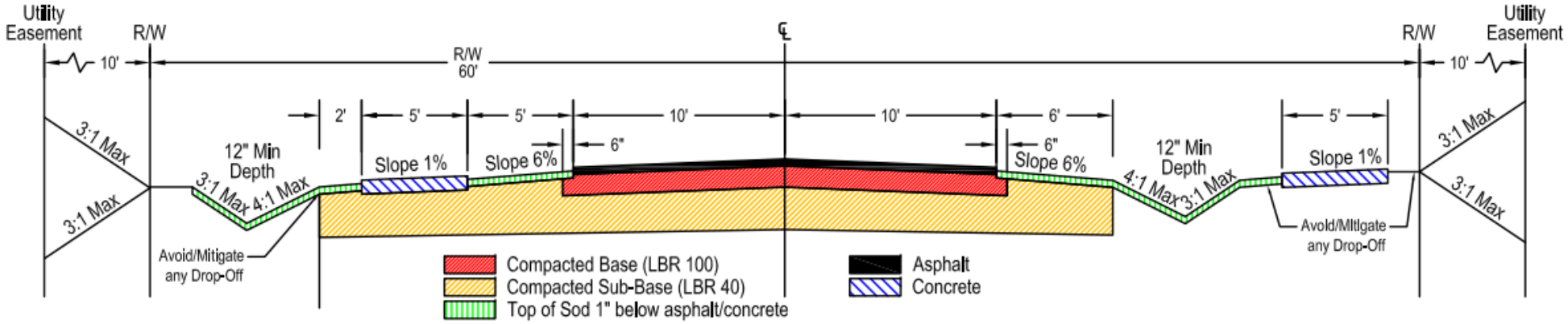
c. Sidewalk Width:
    i. Minimum Width is 5’ with a 4’ buffer between the Sidewalk and Curb.
    ii. Sidewalk directly behind the Curb shall be a Minimum of 6’ wide.
d. Sidewalk Thickness and Material:
    i. Sidewalk shall be composed of 3000 PSI Fiber Reinforced concrete.
    ii. Concrete shall be a Minimum 4” thick.
    iii. Concrete shall be a Minimum of 6” thick for turnouts, driveways, curb returns and when Overhead Utilities are present.
e. The running slope of the sidewalk should not exceed 5%. Any running slopes that exceed 5% must be no steeper than the public road slope and be justified by the Engineer of Record. Level landings may be required adjacent to the sidewalk in areas that exceed a 5% running slope.
f. The Shoulder and any disturbed area within the proposed Right-Of-Way shall be stabilized with Sod. Top of Sod should be 1” ±1/2” below adjacent paved surfaces at a slope of 6%.
g. Root barrier shall be placed between the sidewalk edge and any trees within 10’ of the sidewalk.

11. Evaluate and Mitigate Drop-Off Hazards:
    a. Areas adjacent to sidewalks shall be graded to prevent Drop-Off Hazards (as defined by FDOT) to the extent practicable to avoid the necessity of shielding such as Handrail. If Handrail is required, potential conflicts with sight distance from driveways and road connections in the vicinity shall be evaluated and mitigated.
    b. When a drop-off is greater than 10” that is closer than two feet from a Pedestrian or Bicyclist pathway or Edge of Sidewalk shielding such as a Handrail will be required for safety.
    c. When the Slope is steeper than 2:1 (Horizontal:Vertical) that begins closer than 2’ from a Pedestrian or Bicyclist pathway or Edge of Sidewalk and the Total drop-off is greater than 60” shielding such as a Handrail will be required.
12. Any disturbed area within the R/W shall be stabilized with sod. Top of Sod must be 1” ±½ below adjacent surfaces other than Concrete Ditch Pavement.
13. When the Construction Limit is different from the Right-Of-Way Limit both Limits need to be called out in the Typical Section.
14. If there are different Typical Sections for the entire Subdivision each Typical Section needs to be called out with stations.
15. Road Profile Elevations shall reference top of sod or any type of Surface Stabilization Materials.
16. Engineer of Record shall certify compliance within the post-construction engineering compliance statement.

APPENDIX 6.2

# Typical Roadway Section: Open Drainage System (60’)

## Typical Subdivision Local Road (Open Ditch - 60 ft ROW)




General Notes:

1. 60’ Minimum dedicated Right-of-Way (R/W) limits for Open Ditch sections with an additional 10’ of Utility Easement on each side. When pavement width is widened (ex. to accommodate on-street parking) the R/W shall be widened by the same distance. Utility easements are not required in areas where pedestals and utility services are not anticipated.
2. Standard Travel Lane Width is 10’.
3. Total of 2” of Structural Course is required for Asphalt Pavement. Type of asphalt, installation means and methods, and lift thicknesses shall be consistent with FDOT standards.
4. 6” Limerock Base LBR 100, compacted @ 98% of maximum density AASHTO T180.
5. 12” Constructed and Stabilized Sub-Base with minimum LBR 40 and compacted to 98% of maximum density AASHTO T180. Sub-Base shall extend at least 6’ beyond the pavement edge to provide stabilized shoulders. Sub-Base shall also extend under the sidewalk if it is abutting the stabilized shoulder.
6. The associated geotechnical report supporting the proposed road construction shall be provided and identified within the permit plans.
7. Compaction of Base and Sub-Base shall be verified at least every 250 feet and the reports summarized in a testing report.
8. The Design Speed shall be 25 mph and identified beneath the typical section.
9. Sidewalk Notes:
    a. Sidewalk shall be provided on at least one side of local roads if inside the Urban Services Area.
    b. The Sidewalk construction must meet ADA and FDOT requirements. The Engineer of Record shall certify compliance within the post-construction engineering compliance statement.
    c. Sidewalk Minimum Width is 5’ with a 5’ buffer between the Sidewalk and road edge.
    d. Sidewalk Thickness and Material:
        i. Sidewalk shall be composed of 3000 PSI Fiber Reinforced concrete.

ii. Concrete shall be a Minimum 4” thick.

iii. Concrete shall be a Minimum of 6” thick for turnouts, driveways and when Overhead Utilities are present.

e. The running slope of the sidewalk should not exceed 5%. Any running slopes that exceed 5% must be no steeper than the public road slope and be justified by the Engineer of Record. Level landings may be required adjacent to the sidewalk in areas that exceed a 5% running slope.

f. Root barrier shall be placed between the sidewalk edge and any trees within 10’ of the sidewalk.

10. Evaluate and Mitigate Drop-Off Hazards:

    a. Areas adjacent to sidewalks shall be graded to prevent Drop-Off Hazards (as defined by FDOT) to the extent practicable to avoid the necessity of shielding such as Handrail. If Handrail is required, potential conflicts with sight distance from driveways and road connections in the vicinity shall be evaluated and mitigated.

    b. When a drop-off is greater than 10” that is closer than two feet from a Pedestrian or Bicyclist pathway or Edge of Sidewalk shielding such as a Handrail will be required for safety.

    c. When the Slope is steeper than 2:1 (Horizontal:Vertical) that begins closer than 2’ from a Pedestrian or Bicyclist pathway or Edge of Sidewalk and the Total drop-off is greater than 60” shielding such as a Handrail will be required.

11. When an Open Roadside Drainage System is designed, Surface Stabilization of the Ditch or Swale with Sod, Geotextile, Concrete Ditch Pavement or any other reinforcement based on the hydraulic calculations will be required. Top of Sod must be 1” ±½ below adjacent surfaces other than Concrete Ditch Pavement.

12. Open Ditch:

    a. Must be located no closer than 6’ from road edge or 2’ from Sidewalk.

    b. Slopes shall not exceed 3:1.

    c. A Recoverable Slope no steeper than 4:1 shall be provided within the Clear Zone of the road. Ditch slopes closer than 6’ from road edge must be pre-approved by the County Engineer.

    d. Ditches shall have a minimum depth of 12 inches to minimize impacts of accumulated debris and sediment within the ditch and reduce required frequency of ditch cleaning.

    e. The entire flow area of the ditch shall be within the R/W or public drainage easement.

    f. Any fill berms that support one side of the ditch must be at least 2’ wide at the top to reduce potential for berm failure.

13. Any disturbed area within the R/W shall be stabilized with sod. Top of Sod must be 1” ±½ below adjacent surfaces other than Concrete Ditch Pavement.

14. When the Construction Limit is different from the Right-Of-Way Limit both Limits need to be called out in the Typical Section.

15. If there are different Typical Sections for the entire Subdivision each Typical Section needs to be called out with stations.

16. Road Profile Elevations shall reference top of sod or any type of Surface Stabilization Materials.

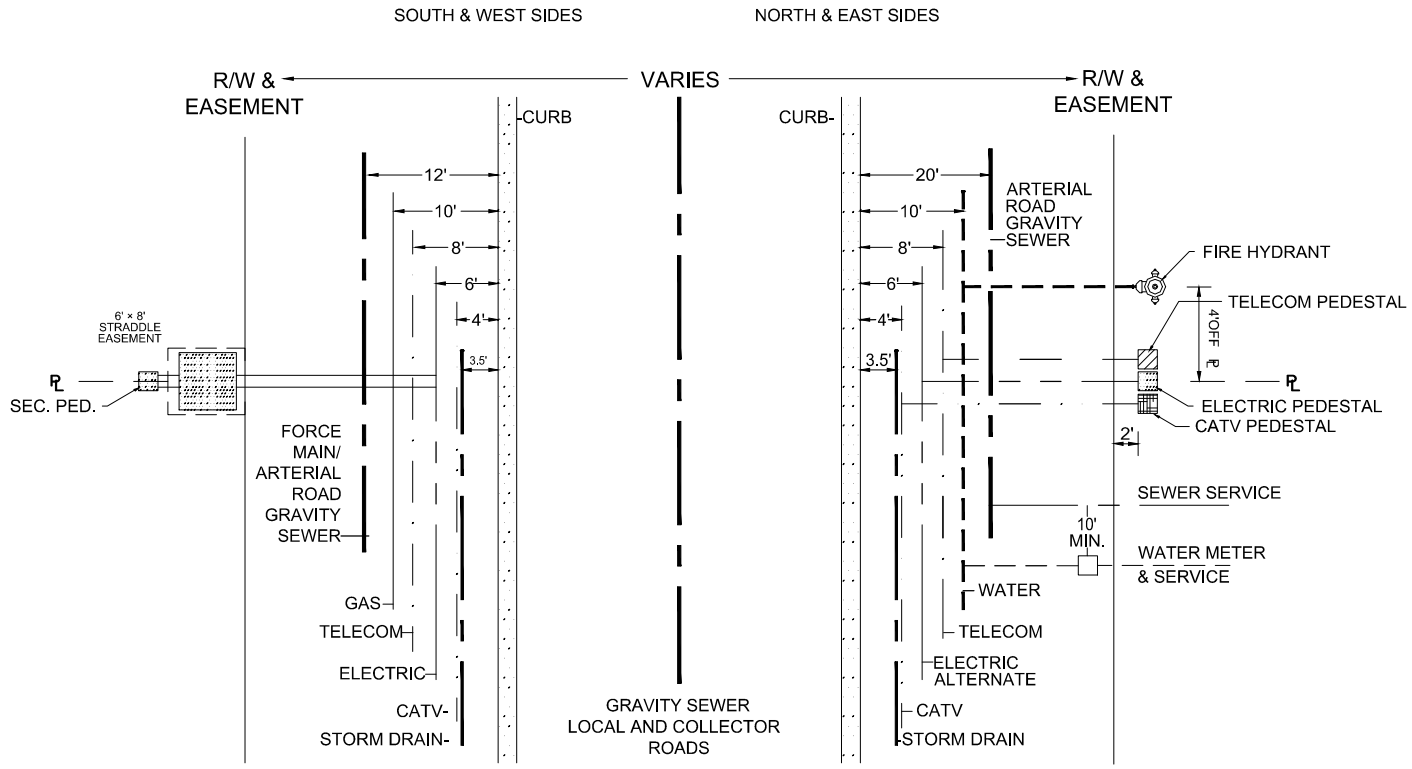
17. Engineer of Record shall certify compliance within the post-construction engineering compliance statement.

APPENDIX 6.3

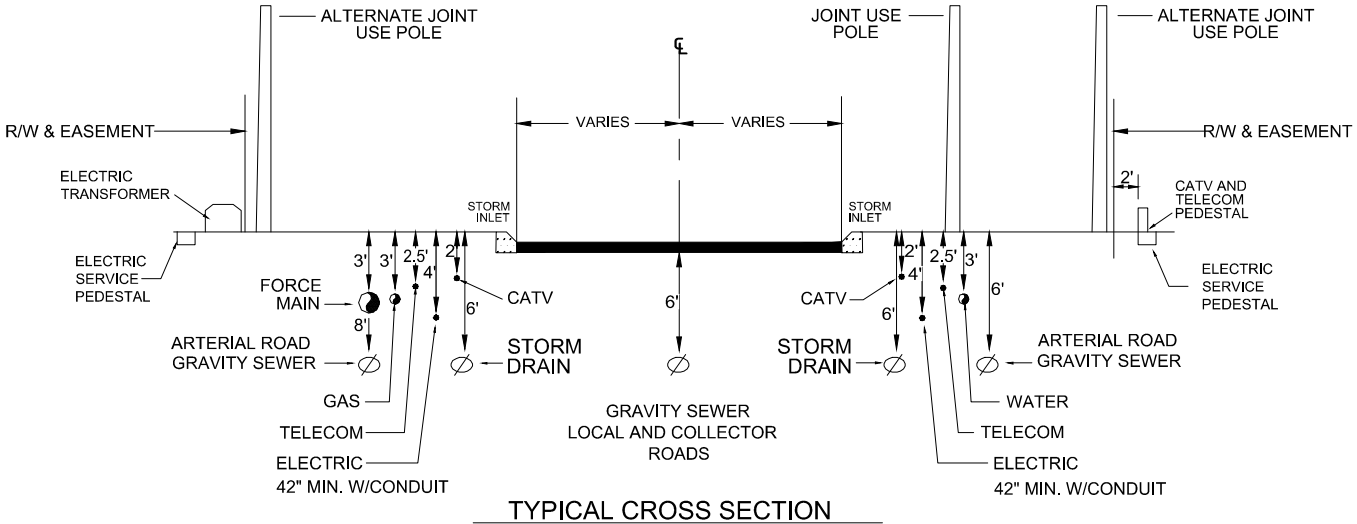
# Uniform Placement Guide for Utilities: Curb and Gutter

# RECOMMENDED GUIDE FOR UTILITY PLACEMENT

## RIGHT-OF-WAY AND EASEMENT WITH CURB AND GUTTER




TYPICAL PLAN




TYPICAL CROSS SECTION

NOTE:

THESE PLANS APPLY TO ALL STREET R/W AND EASEMENT WIDTHS EXCEPT WHERE ADEQUATE SPACE BETWEEN EDGE OF PAVEMENT AND R/W IS NOT AVAILABLE OR OTHER FED. OR STATE REGS. APPLY.

ALL DEPTHS ARE MINIMUM BELOW FINISHED GRADES.

FIG. 6.1

DRAWINGS NOT TO SCALE


LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 * FAX (850) 606-1501


| | |
|---|---|
| Drawn By: | TB |
| Date: | 5/29/2018 |
| Scale: | Custom |

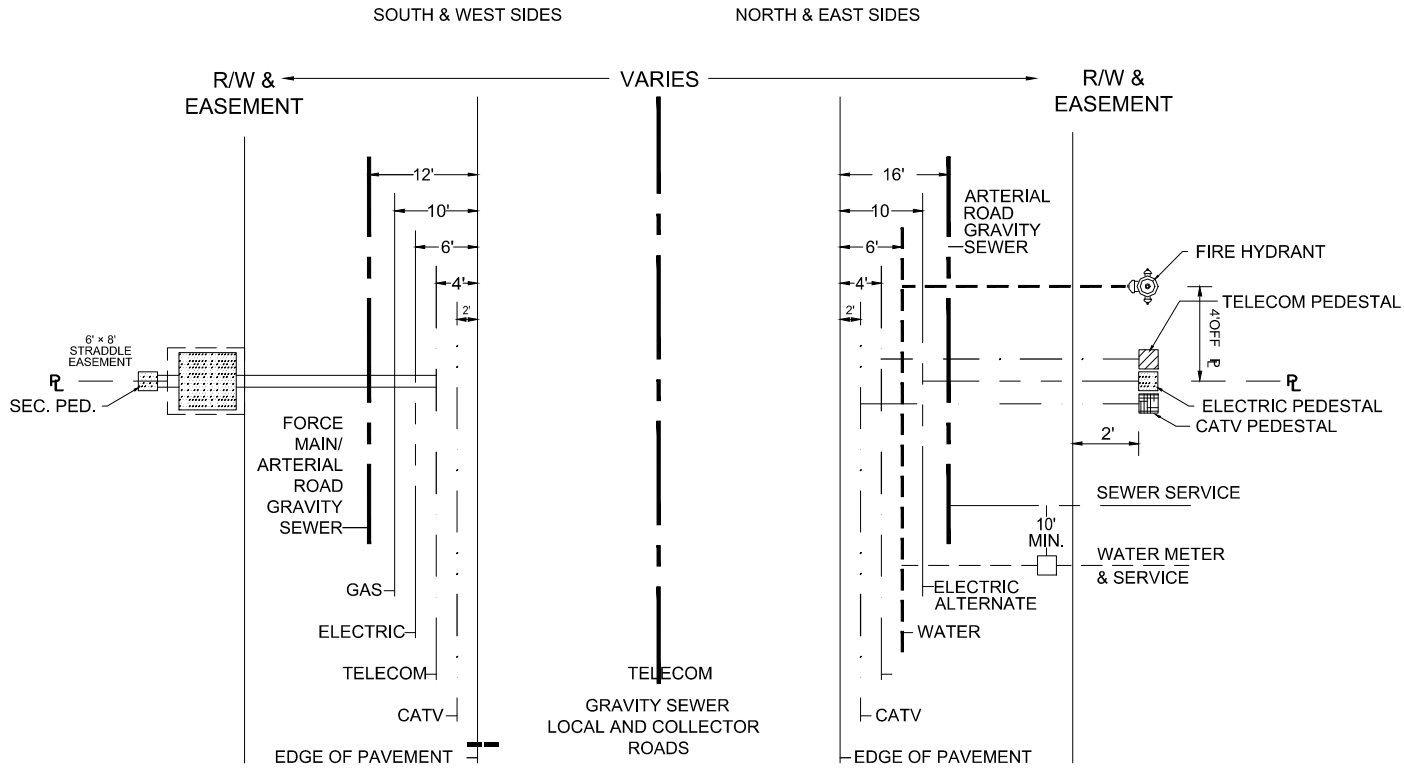
Utility Placement Guide
Paved Roadway with Curb

APPENDIX 6.4

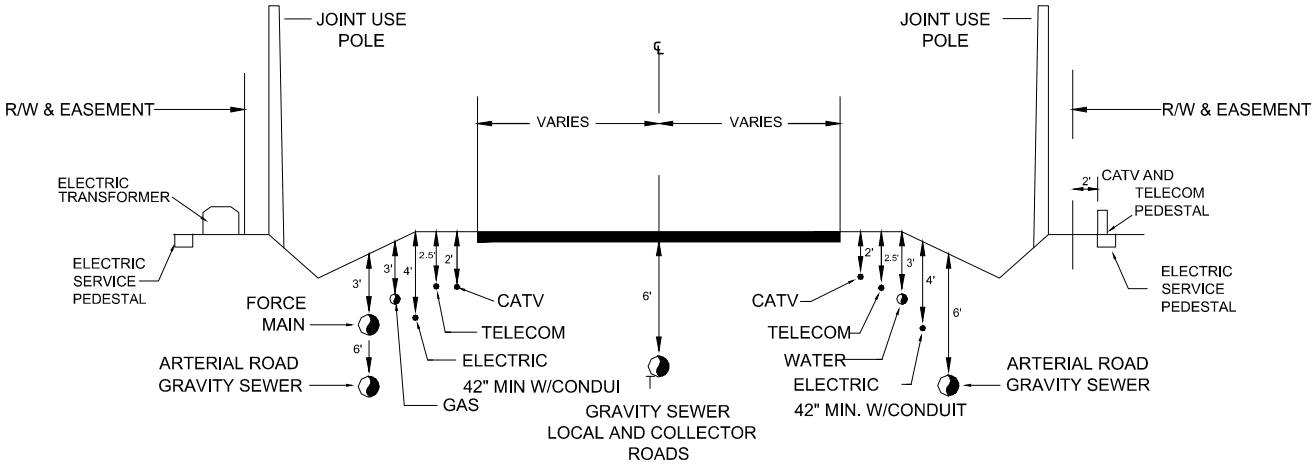
# Uniform Placement Guide for Utilities: Open Drainage System

# RECOMMENDED GUIDE FOR UTILITY PLACEMENT

## RIGHT-OF-WAY AND EASEMENT WITHOUT CURB AND GUTTER




TYPICAL PLAN




TYPICAL CROSS SECTION

NOTE:

THESE PLANS APPLY TO ALL STREET R/W AND EASEMENT WIDTHS EXCEPT WHERE ADEQUATE SPACE BETWEEN EDGE OF PAVEMENT AND R/W IS NOT AVAILABLE OR OTHER FED. OR STATE REGS. APPLY.

ALL DEPTHS ARE MINIMUM BELOW FINISHED GRADES.

FIG. 6.2

DRAWINGS NOT TO SCALE

LEON COUNTY DEPARTMENT OF PUBLIC WORKS
2280 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
PHONE (850) 606-1500 * FAX (850) 606-1501

| | |
|---|---|
| Drawn By: | TB |
| Date: | 5/29/2018 |
| Scale: | Custom |

Utility Placement Guide
Paved Roadway

APPENDIX 6.5

# Final Plat Recording Checklist

# Leon County - Final Plat Recording Check List

**Required Items for ALL Plat Submittals**

- ☐ 1. Copy of Development Review Committee (DRC) letter indicating site and development plan approval
- ☐ 2. Copies of Plat (NOTE: Please review for compliance with Chapter 177 of Florida Statutes BEFORE submitting these copies. If too many obvious deficiencies of Chapter 177 requirements are observed the plat will be returned.)
- ☐ 3. Boundary Survey **(2)** (GPS tie if feasible)
- ☐ 4. Current Title Opinion Covering Plat Area (Update just prior to plat recording)
- ☐ 5. Sign Plan (For cost estimating)
- ☐ 6. Home Owners Association (HOA) Articles of Incorporation
- ☐ 7. HOA or POA Restrictive Covenants and By-laws. Include engineer's estimate of expected maintenance costs as per Section 10-7.610 1. (g), Leon County Code
- ☐ 8. Recorded Joinders in Dedication **(If applicable)**
- ☐ 9. Conservation Easements **(If applicable)**
- ☐ 10. Drainage Easements with Legal Description, Parcel Sketch and Title Opinion for all Off-Site Drainage Easements **(If applicable)**

*Complete Applicable Checklist Below – If combined Private & Public complete both checklists that apply.*

| **Public – Infrastructure Incomplete** | **Public – Infrastructure Complete** | **Private – Infrastructure Complete** |
|---|---|---|
| ☐ A. Performance Agreement<br>☐ B. Performance Bond or Letter of Credit (110% of Certified Engineers Construction Cost Estimate)<br>☐ C. Certified Engineer's Construction Cost Estimate for outstanding infrastructure (Based upon current FDOT unit cost records). | ☐ A. Maintenance Agreement<br>☐ B. Maintenance Bond or Letter of Credit (10% of Overall Construction Cost)<br>☐ C. Amount of Overall Construction Cost (Based upon current FDOT unit cost records).<br>☐ D. Approved Certified Record Drawing<br>☐ E. Engineer's Certified Compliance Report<br>☐ F. Verification from the County Engineer or his/her designee that all infrastructure is complete<br>☐ G. Operating Permit<br>☐ H. Documentation that all permits have been closed out (Local, State, Federal) | ☐ I. Copy of DSEM Approved and Permitted Construction Plans<br>☐ II. Approved Certified Record Drawing<br>☐ III. Engineer's Certified Compliance Report<br>☐ IV. Approved Final Inspection Documentation from DSEM<br>☐ V. Verification from the County Engineer or his/her designee that all infrastructure is completed based on Record Drawings received and certified by a Professional Engineer – This will a part of the staff review<br>☐ VI. Operating Permit<br>☐ VII. Documentation that all permits have been closed out (Local, State, Federal) |

| | | |
|---|---|---|
| **After Review and Approval** | ☐ Recording Fees ($30 for 1st Sheet, $15 each additional sheet)<br>☐ Subdivision Fees - Residential: $360 plus $6 per dwelling unit<br>Commercial: $360 plus $60 per acre | ☐ Sign Cost for Street Signs<br>☐ Proof that taxes are paid up to date (Required by Clerk at recording)<br>☐ Original Mylar (Permanent Ink or photographic process) |

Last Revision Date: 7/1/2025 KAW

## APPENDIX 6.6

# Leon County Right of Way Manual

Leon County Right of Way Manual - This document can be viewed from Leon County website at https://cms.leoncountyfl.gov/Portals/0/DeptFiles/EngSvc/Docs/rowappforms/row_manual.pdf

## APPENDIX 6.7

# Road Closure Policy 17-1

**Road Closure Policy #17-1** - This document can be viewed from Leon County website at **https://cms.leoncountyfl.gov/Portals/0/DeptFiles/Admin/Policies/15-08.pdf**.

APPENDIX 6.8

# Local Road Striping Policy

Back Print FIND

# Board of County Commissioners
# Agenda Request 17

Date of Meeting: January 9, 2001
Date Submitted: January 4, 2001

To: Honorable Chairman and Members of the Board
From: Parwez Alam, County Administrator
Michael C. Willett, Director of Public Works
Subject: Pavement Striping Procedure

---

**Statement of Issue:**
This item seeks Board approval of a proposed Pavement Striping Procedure (Attachment #1) to address issues raised by citizens of Leon County in regard to pavement striping within subdivisions.

**Background:**
Leon County Operations performs pavement striping on the County=s paved road system as part of its roadway maintenance practices. Until recently, Leon County arterial and collector roads were striped on an annual basis and certain local roads on a bi-annual basis.

On occasion, complaints have been received from citizens regarding pavement striping within their subdivisions. Although the actual number of complaints received annually are few, one or two per year, most complainants have felt that the striping was unnecessary or that it distracted from the aesthetics of the subdivision. As a result of the most recent complaint, the Board has directed staff to develop a process to address this issue.

**Analysis:**
The Federal Highway Administration=s Manual on Uniform Traffic Control Devices (MUTCD) sets forth the requirements and guidelines to be used by government entities in the application of pavement striping. Using these criteria, staff has developed a Pavement Striping Procedure (Attachment #1).

The newly developed procedure has three primary objectives. The first objective is to ensure that Leon County=s Pavement Striping Program provides for the safety of the motoring public. The second objective is to ensure that all pavement striping performed by Leon County is in compliance with the MUTCD. The final objective is to address citizen complaints regarding pavement striping within subdivisions. Staff believes that the attached Pavement Striping Procedure meets all three of these objectives.

**Options:**

1. Approve the Pavement Striping Procedure.

2. Amend the Pavement Striping Procedure and direct staff to make modifications.

3. Board Direction.

**Recommendation:**

Option #1.

Attachments:

1. Pavement Striping Procedure.

Back Print FIND

# Board of County Commissioners

**Leon County, Florida**

**Policy No.**

| | |
|---|---|
| Title: | Pavement Striping |
| Date Adopted: | |
| Effective Date: | |
| Reference: | n/a |
| Policy Superseded: | n/a |

---

It shall be the policy of the Board of County Commissioners of Leon County, Florida, that:

A. **Arterial and Collector Roads:**

1. All Leon County paved roads functionally classified by F.D.O.T. as arterial or collector shall have reflective pavement striping applied at the time of construction and resurfacing.

2. All Leon County arterial and collector paved roads shall be re-stripped on an annual basis in order to maintain proper visibility and reflectivity levels of the pavement striping.

3. The maximum width of pavement striping on Leon County arterial and collector roads shall be as follows:

   a. Four inches on all roadways with a lane width of 11 ft. or less.

   b. Six inches on roadways with a lane width of 12 ft. or greater. Unless an engineering judgement indicates otherwise.

4. Pavement striping on all Leon County arterial and collector roads shall consist of both center lines and edge lines.

5. All pavement striping applied on Leon County arterial and collector roads shall be performed in accordance with the Federal Highway Administration's Manual on Uniform Traffic Control Devices (MUTCD).

B. **Local Roads:**

1. Leon County paved roads with the functional classification of local roads shall not receive pavement striping except under the following conditions:

   a. When the (ADT) Average Daily Traffic Volume is 3000 vehicles or greater.

   b. When designated bicycle lanes are installed on the roadway.

   c. When deemed appropriate by the Director of Engineering Services, based upon an engineering judgement.

2. When pavement striping is installed on Leon County local roads, the following shall apply:

   a. Edge lines may be excluded when based upon an engineering judgement where the travel way is delineated by curbs or other markings.

   B. Edge lines may be installed with or without the center line markings when based upon an engineering judgement.

3. All pavement striping applied on Leon County local roads shall be performed in accordance with the Federal Highway Administration's Manual on Uniform Traffic Control Devices.

OFF. REC. 120 PAGE 717

BOARD OF COUNTY COMMISSIONER
LEON COUNTY, FLORIDA
REGULAR MEETING
JANUARY 9, 2001

The Board of County Commissioners of Leon County, Florida, met in regular session with Chairman Maloy presiding. Those in attendance were Commissioners Winchester, Thaell, Sauls, Rackleff, Proctor, and Grippa. Also in attendance were County Attorney Herb Thiele, County Administrator Parwez Alam, Clerk of the Circuit Court Bob Inzer, Deputy Clerk Bill Bogan, Jr., and Secretary Sandra C. O'Neal. The meeting convened at 5:05 p.m.

Invocation was provided by Commissioner Sauls followed by the Pledge of Allegiance to the Flag.

AWARDS AND PRESENTATIONS

a. Chairman Maloy presented a five-year service pin to Commissioner Thaell.

b. A representative from the Federal Emergency Management Agency made a presentation and thanked Leon County for supporting the City of Tallahassee's effort in participating in a training program entitle "Integrated Emergency Management" course. He extended an invitation to the Board to attend the upcoming training session in Mt. Weather, Virginia to be held March 26-30, 2001. Commissioners that are interested in attending should advise the County Administrator.

c. Ms. Janet Olin, Assistant Supervisor of Elections, informed the Board of the volume of Public Records Requests that they have received since the November 7, 2000 election and explained procedures for producing the records for the public requests. She advised that she is appearing here today, at the request of Commissioner Grippa, regarding a newspaper article that appeared on Saturday. She stated that the most arduous request is to view each and every one of the votes cast on November 7 which involves 103,418 ballots. Ms. Olin explained that approximately eight civic organizations and news agencies are making the request. Utilizing the Supervisor of Elections' staff, it would take approximately 48 weeks for the ballots to be viewed and the cost is approximately $1,000 to $1,400 per day (for three days per week), totaling approximately $151,000 - $200,000. Further, Ms. Olin advised, on January 18, 2001 at 2:30 p.m., the 176 images of ballots that did not reflect a ballot vote in the presidential

17. APPROVAL OF PROPOSED PAVEMENT STRIPING PROCEDURE

This item seeks Board approval of a proposed Pavement Striping Procedure to address issues raised by citizens of Leon County in regard to pavement striping within subdivisions. (On occasion, complaints have been received from citizens regarding pavement striping within their subdivisions. Some felt that the striping was unnecessary or that it distracted from the aesthetics of the subdivision. As a result, staff has developed a Pavement Striping Procedure.

Commissioner Thaell moved, duly seconded by Commissioner Sauls and carried unanimously (Commissioner Proctor was not present), to approve Option 1: Approve the Pavement Striping Procedure.

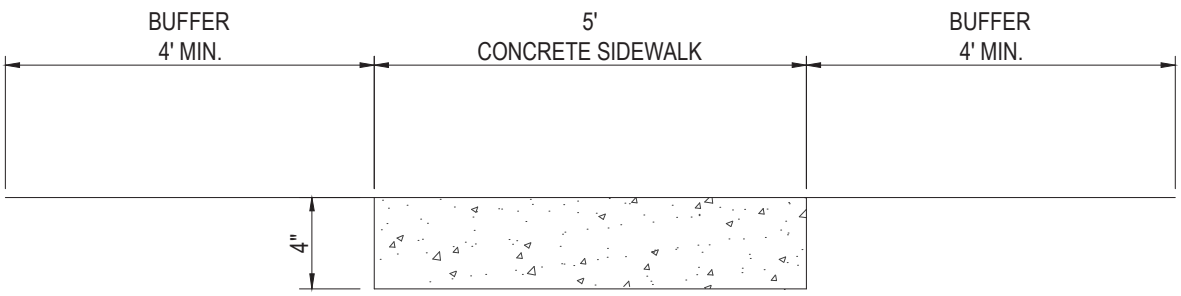
## APPENDIX 6.9

# Leon County Driveway and Street Connection Guidelines and Procedures Manual

Leon County Driveway and Street Connection Guidelines and Procedures Manual - This document can be viewed from Leon County website at https://cms.leoncountyfl.gov/Portals/0/DeptFiles/DSEM/Environmental/Driveway%20Manual%20Rev%2010-31-22.pdf.

APPENDIX 6.10

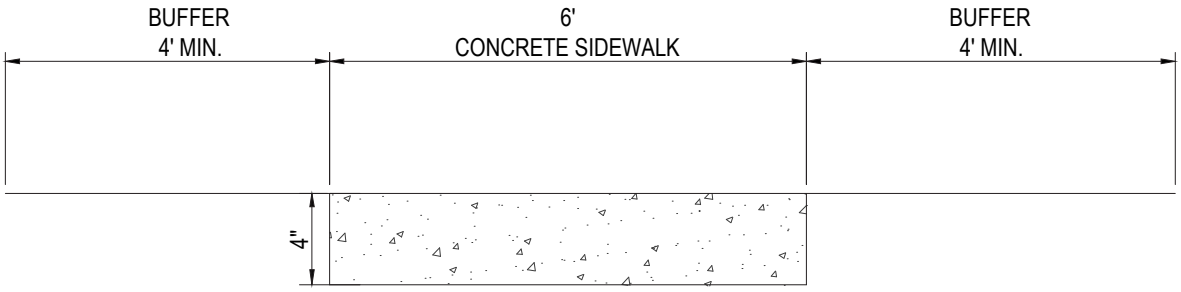
# Sidewalk Detail




1. SIDEWALKS TO BE CONSTRUCTED OF 4" THICK 3000 PSI CONCRETE WITH MAXIMUM SLUMP OF 5”.
2. SIDEWALKS TO BE SCORED AT 6' INTERVAL MAXIMUM.
3. EXPANSION JOINTS SHALL BE PROVIDED AT 125' INTERVAL MAXIMUM.
4. RAMPS SHALL BE CONSTRUCTED AT SIDEWALKS INTERSECTION WITH CURBED ROADWAYS PER FDOT STANDARD PLANS INDEX 522-002.
5. SIDEWALK TO BE BROOM FINISHED.

# 5' CONCRETE SIDEWALK DETAIL

NOT TO SCALE




1. SIDEWALKS TO BE CONSTRUCTED OF 4" THICK 3000 PSI CONCRETE WITH MAXIMUM SLUMP OF 5”.
2. SIDEWALKS TO BE SCORED AT 6' INTERVAL MAXIMUM.
3. EXPANSION JOINTS SHALL BE PROVIDED AT 125' INTERVAL MAXIMUM.
4. RAMPS SHALL BE CONSTRUCTED AT SIDEWALKS INTERSECTION WITH CURBED ROADWAYS PER FDOT STANDARD PLANS INDEX 522-002.
5. SIDEWALK TO BE BROOM FINISHED.

# 6' CONCRETE SIDEWALK DETAIL

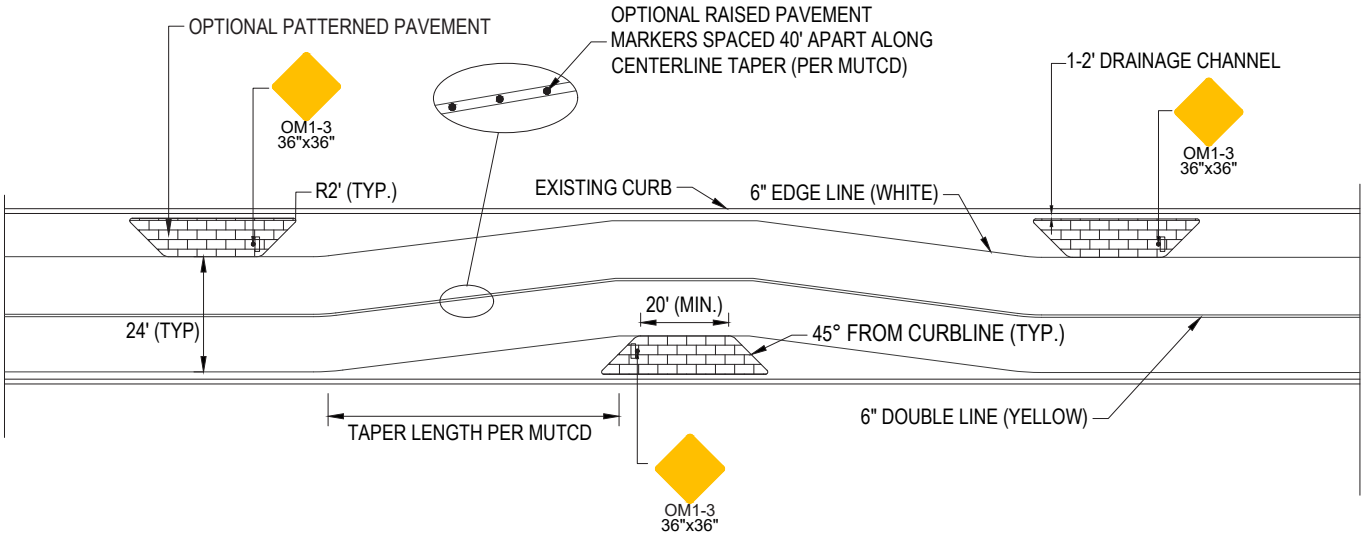
NOT TO SCALE

APPENDIX 6.11

# Traffic Calming Measures Details and Illustrations


| | |
|---|---|
| Chicanes | 56 |
| Traffic Islands | 57 |
| Raised Intersections | 58 |

## TYPICAL CHICANE

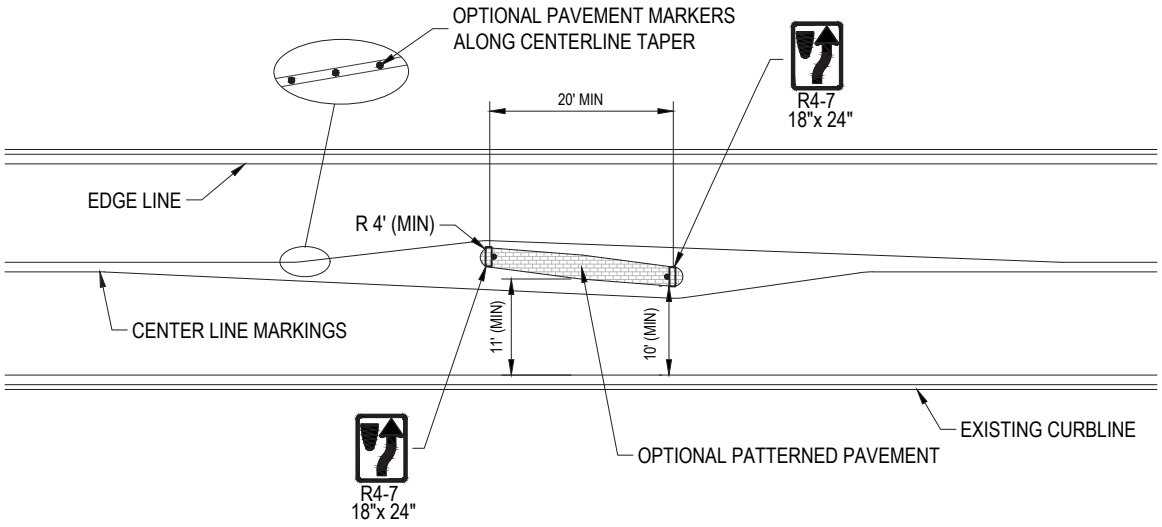



PLAN VIEW

NOTE:

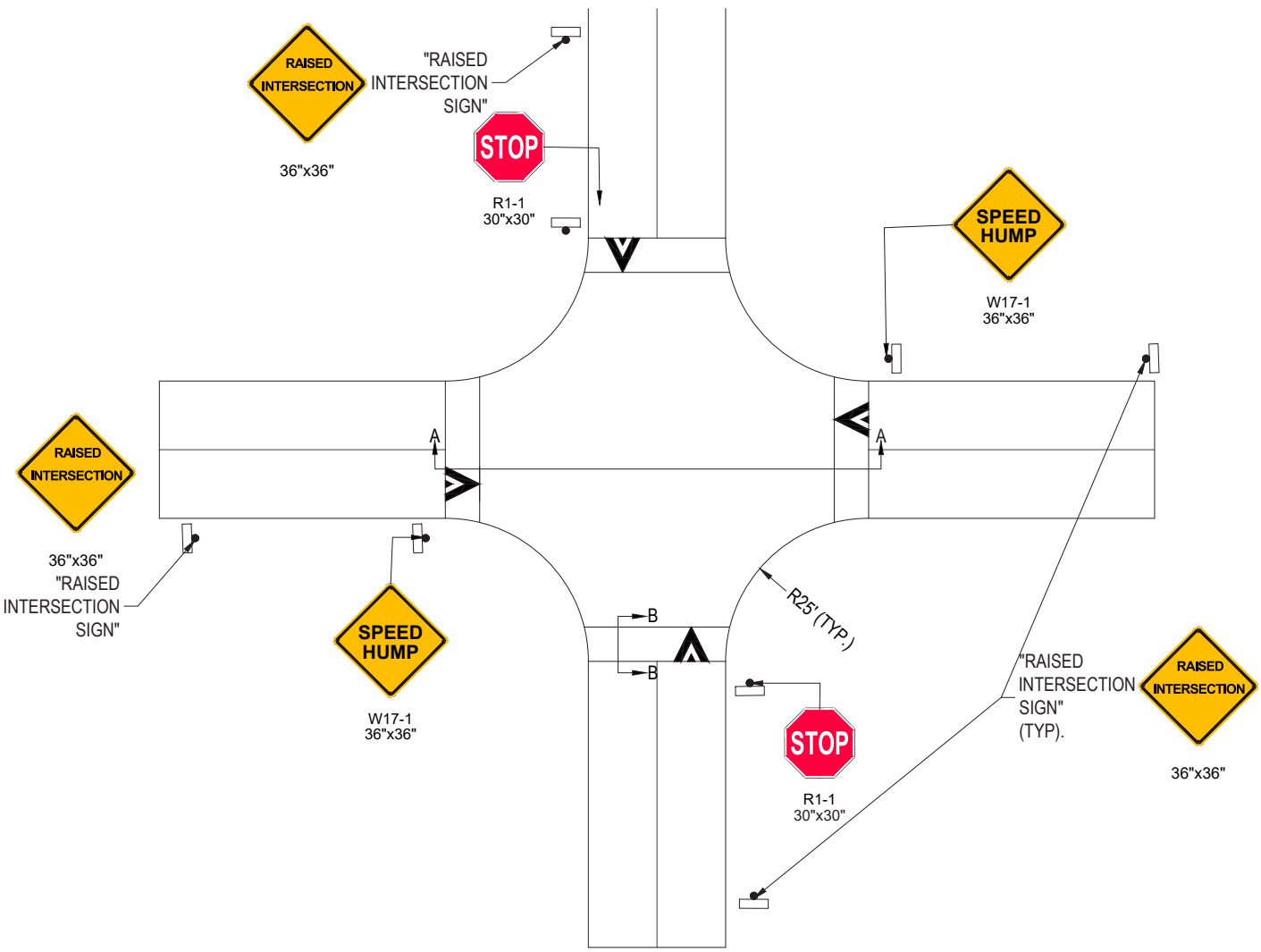
1. ALL SIGNING AND STRIPING SHALL CONFORM TO THE LATEST EDITION OF THE MUTCD..

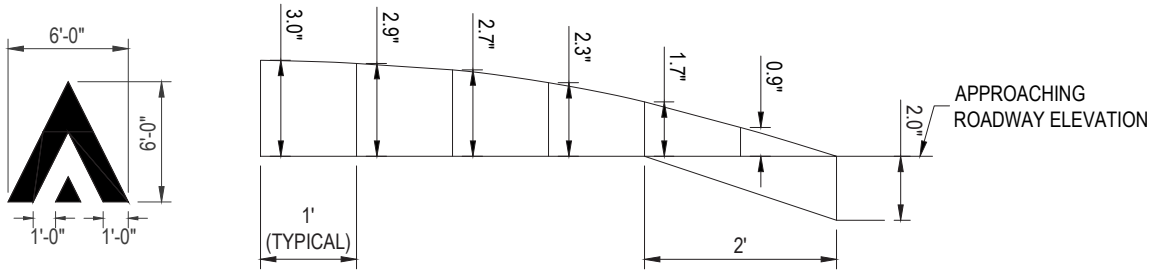
## TYPICAL TRAFFIC ISLAND



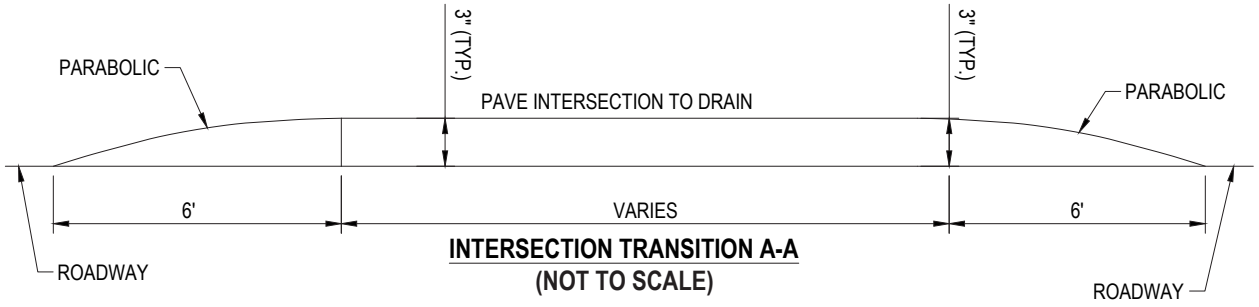

NOTES:
ALL SIGNING AND STRIPING SHALL CONFORM TO THE LATEST EDITION OF THE MUTCD.

TYPICAL RAISED INTERSECTION




**RAISED INTERSECTION ENTRANCE B-B**
**(NOT TO SCALE)**




**INTERSECTION TRANSITION A-A**
**(NOT TO SCALE)**

APPENDIX 6.12

# Plan Sheet Requirements

## 6.12. Plans Sheet Requirements

### 6.12.1. Existing Conditions Sheets

The following is the minimum information that shall be included on the Existing Conditions Sheet. Additional information may be necessary for some projects.

a. Survey Benchmarks
b. Parcel Boundaries
c. Parcel ID#s and Acreage
d. Easements with dimensions, type, dedication and recording information
e. Elevation Contours
f. Structures
g. Utilities
h. Other existing Improvements (ex., wells, septic, fences, roads/drives, etc.)
i. Protected Trees as defined by the Leon County Land Development Code
j. Environmental Features (ex. floodplain, wetlands, protected trees, etc.)
k. Any property encroachments shall be addressed.

### 6.12.2. Demolition and Erosion Control Sheets

a. Identify existing structures to be removed or relocated
b. Type of structures to be removed (buildings, pavements, utilities)
c. Methods of demolition (mechanical, manual, implosion, etc.)
d. Identification and removal procedures for asbestos, lead paint, fuel tanks, etc.
e. Coordination with environmental or abatement specialists
f. Equipment restrictions, working hours, and monitoring protocols
g. On-site signage, fencing, and pedestrian or vehicular detours if necessary
h. Pre- and post-demolition conditions affecting runoff flow
i. Silt fence location and other erosion control measures necessary
j. Protection of inlets, swales, and adjacent water bodies.
k. Temporary or permanent ground cover, hydroseeding, or matting

### 6.12.3. Grading Plan Sheets

The following is the minimum information that shall be included on the Grading Plan Sheets. Additional information may be necessary for some projects.

a. Proposed elevation contours with elevation labels (include spot shots as needed)
b. Existing elevation contours (less prominent than proposed)
c. Pipe alignment, material, size and invert elevations
d. Drop structures, inlets and other drainage structures
e. Retaining walls (including footers and tiebacks)
f. Footprint of other proposed improvements
g. Floodplains (delineated with elevation labeled)
h. Drainage Maps (can be included in stormwater report or plans)
    i. Drainage basin maps must be shown to the extent of the basin impacts to the project.
    ii. Major features affecting the proposed drainage system design to be shown include relevant natural features, existing and proposed drainage structures, proposed diversion swales/berms, and proposed stormwater facility locations.

### 6.12.4. Roadway Plan and Profile Sheets

Roadway Plan and Profile Sheets shall be included in EMP Construction Plans for Developer-Driven Projects or roads associated with commercial developments, but not in the associated Site Plans. The following is the minimum information that shall be included on each Roadway Plan and Profile Sheet. Additional information may be necessary for some projects.

a. All drainage, water, sewer, gas, and other utilities (existing to remain and proposed).
b. Clearly denote and detail stormwater pipe materials, inside diameters, and utility conflict points within 5 feet.
c. Identify and label right of way limits and easements.
d. Survey benchmarks.
e. Survey Horizontal Control Reference Points.
f. See also FDOT Design Manual.

### 6.12.5. Roadway Cross Sections Sheets

Roadway Cross Sections Sheets shall be included in EMP Construction Plans for Developer-Driven Projects but not in the associated Site Plans. The following is the minimum information that shall be included on each Roadway Cross Section. Additional information may be necessary for some projects.

a. Right of way limits (existing and proposed)
b. Easements (existing and proposed including temporary construction or access easements)

c. All pipes, underground utilities, and conduits (existing and proposed)

d. Section at all side streets and cross culverts

e. Tie in to existing grade. If proposed contours tie into existing grade beyond the ROW, extend the cross section to the connection point.

f. 100-foot intervals (or smaller intervals when required) and at critical points as follows:

   i. Slope tie-in at right-of-way edge

   ii. Utility conflicts

   iii. Curves, geometry of roadway

   iv. Cul de sac less than 500’

g. Sidewalks

h. See also FDOT Design Manual

### 6.12.6. Detail Sheets

All details shall be included within construction plans. Applicants shall refer to the site plan application checklists to identify details required within site plans. Typical details include:

a. Utility conflicts and proposed resolutions

b. Tabulation of stormwater structures to include hydraulic data (when needed)

c. Design notes are to be separated from General and Construction notes.

d. Sidewalk, curb and pavement typical sections

e. Stormwater structures including spillways

f. Gates and other structures within right of way or public access paths

g. Details for sediment control measures necessary to prevent the tracking or direct flow of mud and sediments onto public or private streets or stormwater ditches

### 6.12.7. Stormwater Management Facilities (SWMF) Sheets

A separate SWMF sheet for each proposed SWMF shall be included within the EMP construction plans. The following is the minimum information that shall be included on the SWMF Sheet. Additional information may be necessary for some projects.

a. Each stormwater management facility and its associated maintenance access shall be illustrated on a single plan view of appropriate scale.

b. The plan view shall extend to 20 feet beyond proposed clearing and grading for the facility and access, indicating existing and proposed vegetation, maintenance vehicle path, and drainage structures.

c. Any encroachments within the critical root protection zone of trees to remain shall be identified and mitigated as required.

d. Provide cross-sections at SWMF centers and at all influent/effluent structures including design high water

e. Pond maintenance entity

f. See also FDOT Design Manual

### 6.12.8. Signage and Pavement Markings

The following is the minimum information that shall be included on the Signage and Pavement Marking Sheet. Additional information may be necessary for some projects.

a. See also MUTCD, latest edition adopted by FDOT.

b. See also FDOT Design Manual and Standard Plans, latest edition.

c. See also FDOT Standard Specifications for Roadway and Bridge Construction, latest edition.

d. All pavement markings shall be thermoplastic.

e. A note shall be included on plans that states "All Signage and striping will be installed by Leon County at the Developer's expense," for public and private subdivisions. See also Local Road Striping Policy in **Appendix 6.8**.

### 6.12.9. Circulation Sheet

The following is the minimum information that shall be included on the circulation sheets. Additional information may be necessary for some projects.

a. Distinguish between wheel and body path.

b. Demonstrate maintenance vehicles (typ. SU-30) can navigate through SWMF perimeter and public drainage easements. Wheel paths shall have a minimum of 2 feet of clearance between the wheel path and any non-traversable slopes or objects. Body paths shall have a minimum of 2 feet of clearance between the body and vertical obstructions (including parking spaces if present).

c. Landscaping, signage, and other improvements shall be included to ensure conflicts do not exist in areas of circulation.

d. For proposed development sites, demonstrate via Autoturn (or comparable) that emergency vehicles and refuse vehicles can maneuver through the site without encroaching into parking spaces, oncoming travel lanes or loading zones. The design vehicle of BUS-40 is recommended by the fire department and waste collection providers.

e. Pedestrian circulation.

### 6.12.10. Preliminary Plat

The following is the minimum information that shall be included on Preliminary Plat Sheets. Additional information may be necessary for some projects.

a. Include all typical plat information per FS Chapter 177.

b. Any lots and blocks must be shown, dimensioned to the nearest foot, and consecutively numbered. Please note that a block is created whenever there is a break in lots, for example by a roadway or common area.

c. Dedication and maintenance responsibility information must be provided for easements, common areas, right of way, etc.

d. All areas not in lots or right of way must be identified, including underlying ownership, i.e. open space, drainage easements, etc. and appropriately dimensioned and limits of all must be clearly delineated.

e. All easements must be clearly dimensioned, including the type of easement and dedication information.

### 6.12.11. Landscape Plan Sheets

When landscaping is proposed that, when mature, would be located within or extend into public ROW or easements (ex. roots, leaves/branches, etc.) Landscape Plan Sheets shall be provided and show the information below. See also Section 5.3.14 Street Landscaping.

a. Locations of all proposed plantings with size and species identified.

b. Right of way and property boundaries.

c. Easement types, dedications and locations.

d. Proposed structural improvements (ex. pavement, curb, sidewalk, streetlights, etc.).

e. All drainage improvements including pipes, inlets, and ditches.

f. Driveway connections shall be shown for proposed lots with narrow (60 feet or less) street frontage where driveway placement will be restricted by street tree, curb inlets and/or utility services.

g. Sight Triangles for Street Intersections and Commercial Driveways.

h. Location of proposed/required irrigation (see also Section 4.7.1 Irrigation Systems). Final irrigation plans shall be provided prior to construction.

i. Provide note(s) that specifically address maintenance entity of landscaping and any associated irrigation.

j. Provide a note stating that LCPW may remove, without replacement, any landscaping in the right of way that becomes a nuisance or hazard. If plantings are required to meet environmental standards, notes shall also address replanting by a suitable third party (ex. HOA).

k. When street trees are proposed, add a note that street trees will be periodically inspected and maintained to ensure that that limbs/branches/leaves do not extend within 3 feet of the travel lane from the pavement surface through a height of 16 feet and within the sight window as defined by FDOT. Also note that dead and broken limbs that may pose a hazard to vehicles or pedestrians shall be removed. Sight triangles on designated canopy roads may be exempt from FDOT sight triangle standards, but shall conform to the Canopy Road Sight Distance Requirements in the Leon County Driveway and Street Connection Guidelines and Procedures Manual.

### 6.12.12. Utility Sheets

The following is the minimum information that shall be included on the Utility Sheet.

a. Parcel Boundaries, with parcel id # and Acreage
b. Easements with dedication, type and dedication information. Recording information if "existing"
c. Existing utilities
d. Proposed utilities and provider
e. Baseline and/or centerline of survey
f. Stationing
g. Edge of pavement or curb and gutter
h. Drainage Structures (existing and proposed)
i. Proposed improvements, I.e. sidewalks, street lights, street trees, etc.
j. Right of way lines
k. Lot lines

## APPENDIX 6.13

# Real Estate Policy 16-5

Real Estate Policy #16-5 (Ref. Article 13.2) - This document can be viewed from Leon County website at https://cms.leoncountyfl.gov/Portals/0/DeptFiles/Admin/Policies/02-01-1.pdf.

APPENDIX 6.14

# Request for Deviation (Application Form)

# Deviation Request Application

(One Deviation Request Per Form)

*This application is only to be used for requests to deviate from the* ***Leon County Infrastructure Engineering Standards and Guidelines****.*

---

Project Name: _____ Date: _____

Applicant Information:

Company: _____ Phone: _____

Email Address: _____ Name: _____

Email Address: _____

Leon County CIP Contract Number (if applicable): _____

---

Deviation Type:

- ☐ Right of Way Width
- ☐ Travel Lane Width
- ☐ Sidewalk Width
- ☐ SWMF Layout/Access
- ☐ Landscaping
- ☐ On-Street Parking Configuration
- ☐ Driveway Culvert Sizes
- ☐ Fence Height/Material
- ☐ Utility Placement
- ☐ Pervious Pavement
- ☐ Other _____

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Leon County Infrastructure Engineering Standards and Guidelines Reference (i.e. Sec. 4.3.2. - Lane Width): _____

---

If associated with a roadway:

Design Speed: _____ Posted Speed: _____ Context Class.: _____

Roadway Name and/or Number: _____

Latitude: _____ Longitude: _____

**Deviation Request Application**
(One Deviation Request Per Form)

Detailed Description of Deviation Request (attach additional sheets if needed):

---

***Provide justification to address each of the below deviation criteria (attach additional sheets if needed). Note that cost savings or economic benefit alone is not sufficient justification unless accompanied by a demonstrated public benefit or performance-based equivalence.***

a. The applicant demonstrates that strict compliance with the standard would result in a practical difficulty or substantial hardship due to site-specific constraints such as topography, existing infrastructure, or environmental features.

b. The requested deviation is consistent with the public interest and does not compromise the health, safety, or welfare of the community.

c. The deviation does not result in any detrimental impacts to adjacent properties, public infrastructure, or environmental resources.

d. Approval of the deviation will not set a precedent that undermines the overall objectives of the applicable standards or encourage a pattern of similar requests.

e. The applicant provides an alternative design or approach that achieves the intent of the standard and maintains consistency with the County's engineering principles and development goals.

f. The deviation accounts for and responds to existing physical constraints such as structures, easements, utilities, or rights-of-way that cannot be reasonably altered.

g. The hardship necessitating the deviation was not self-created by the applicant or the result of actions taken after the adoption of the current standard.

_____

_____

_____

_____

_____

h. The proposed deviation is compatible with existing and planned surrounding development in terms of design, function, and infrastructure capacity.

_____

_____

_____

_____

_____

***Applications should be submitted as an attachment with Site Plan or EMP applications, through the Leon County Development Support and Environmental Services (DSEM) application portal.***

***Please complete a separate application for each additional deviation request.***

**Recommended by (Professional):**

_____ _____

Signature of Responsible Professional Engineer or Landscape Architect (Landscape-Only Projects) Date

_____ (Seal)

Printed Name

LEON COUNTY PUBLIC WORKS DEPARTMENT USE ONLY

Approved by: _____ Application #: _____

Date: _____

## APPENDIX 6.15

# Street Tree Information


| | |
|---|---|
| Street Tree Matrix | 73 |
| Street Tree Spacing Diagram for Intersection Sight Distance | 81 |
| Clear Sight Window Diagram | 82 |

| "SCIENTIFIC NAME" | COMMON NAME | FLORIDA NATIVE | DECIDUOUS, EVERGREEN, ORNAMENTAL | UNDER POWER LINES | STREET TREE | PLANTING STRIP/ MIN. WIDTH | SIGHT DISTANCE TRIANGLE | PARKING LOT | SHADE OR CANOPY TREE | MATURE SPREAD | MATURE HEIGHT | GROWTH RATE | WIND RESISTANCE | CANOPY SQUARE FOOTAGE | SOIL AREA* (W/3' DEPTH) | SIZE CLASS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Acer palmatum var. "Bloodgood" | Japanese Maple | | D | x | | | | | | 15'-25' | 15'-25' | SLOW | MED-HIGH | 400 | 300 | S |
| Aesculus pavia | Red Buckeye | x | D,O | x | | | | | | 15'-25' | 15'-20' | MOD | n/a | 400 | 300 | S |
| Acer rubrum | Swamp Red Maple | x | D | | | | | | x | 25'-30' | 50'-70' | FAST | MED-LOW | 1600 | 2400 | L |
| Acer saccharum flordanum | Florida Sugar Maple | x | D | | | | | | x | 35'-50' | 50'-60' | MOD | MED-HIGH | 1600 | 2400 | L |
| Alnus serrulata | Hazel alder | x | D, O | | | | | | | 8'-15' | 10'-20' | MOD | n/a | 400 | 300 | S |
| Amelanchier arborea | Downy Serviceberry | x | D,O | | | | | | | 15'-20' | 25'-35' | SLOW | n/a | 400 | 300 | S |
| Amelanchier laevis | Allegheny Serviceberry | | D,O | | | | | | | 15'-20' | 15'-30' | SLOW | n/a | 400 | 300 | S |
| Aralia spinosa | Devil's Walking Stick | x | D | | | | | | | 6'-10' | 10'-15' | MOD | n/a | 400 | 300 | S |
| Asimina triloba | Paw Paw | x | D | | | | | | | 15'-20' | 15'-20' | MOD | n/a | 400 | 300 | S |
| Betula nigra | River Birch | x | D | | Single stem pruned for clearance | 4' | x | x | x | 25'-35' | 40'-50' | FAST | MED-HIGH | 900 | 1200 | M |
| Sideroxylon languinosa | Buckthorn | x | D | | | | | | x | 25'-35' | 40'-50' | MOD | n/a | 900 | 1200 | M |
| Carpinus caroliniana | American Hornbeam (Iron- wood) | x | D | | Single stem pruned for clearance | 4' | | | x | 20'-30' | 20'-35' | SLOW | MED-HIGH | 400 | 300 | S |
| Carya floridana | Florida Scrub Hickory | x | D | | | | | | | 10'-30' | 15'-30' | MOD | HIGH | 400 | 300 | S |
| Carya glabra | Pignut Hickory | x | D | | | | | | x | 30'-40' | 50'-65' | MOD | MED-HIGH | 1600 | 2400 | L |
| Carya illinoensis | Pecan | x | D | | | | | | x | 40'-70' | 70'-100' | MOD | LOW | 1600 | 2400 | XL |
| Carya tomentosa | Mockernut Hickory | x | D | | | | | | x | 40'-60' | 60'-80' | MOD | MED-HIGH | 1600 | 2400 | XL |
| Castanea moliisima | Chinese Chinquapin | | D | | | | | | x | 40'-50' | 35'-40' | MOD | n/a | 900 | 1200 | M |
| Catalpa bignonioides | Southern Catalpa | x | D,O | | | | | | x | 40'-50' | 50'-60' | FAST | n/a | 1600 | | |
| Cedrus deodara | Deodar Cedar | | E | | | | | | x | 20'-30' | 40'-60' | FAST | n/a | 1600 | | |
| Celtis laevigata | Sugar Berry | x | D | | x | 6' | | | x | 50'-60' | 50'-70' | FAST | MED-LOW | 1600 | 2400 | L |

| "SCIENTIFIC NAME" | COMMON NAME | FLORIDA NATIVE | DECIDUOUS, EVERGREEN, ORNAMENTAL | UNDER POWER LINES | STREET TREE | PLANTING STRIP/ MIN. WIDTH | SIGHT DISTANCE TRIANGLE | PARKING LOT | SHADE OR CANOPY TREE | MATURE SPREAD | MATURE HEIGHT | GROWTH RATE | WIND RESISTANCE | CANOPY SQUARE FOOTAGE | SOIL AREA* (W/3' DEPTH) | SIZE CLASS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Celtis occidentalis | Hackberry | x | D | | x | 6' | | | x | 40'-60' | 45'-80' | FAST | MED-LOW | 1600 | 2400 | L |
| Cercis canadensis | Redbud | x | D,O | | Single stem pruned for clearance | 4' | | x | | 15'-25' | 20'-30' | FAST | MED-HIGH | 400 | 300 | S |
| Chionanthus retusus | Chinese Fringe Tree | | D,O | x | Single stem pruned for clearance | 4' | | x | | 10'-15' | 15'-20' | SLOW | n/a | 400 | 300 | S |
| Chionanthus virginicus | Fringe Tree | x | D,O | x | Single stem pruned for clearance | 4' | | x | | 10'-15' | 12'-20' | SLOW | MED-HIGH | 400 | 300 | S |
| Cladrastis kentukea | American Yellowwood | x | D,O | | | | | x | x | 40'-50' | 30'-50' | MOD | n/a | 900 | 1200 | M |
| Cliftonia monophylla | Buckwheat-tree Black titi | x | E, O | | | | | | | 6'-10' | 30' | MOD | n/a | 400 | 300 | S |
| Continus coggygria | Smoke Tree | x | D,O | | Single stem pruned for clearance | 4' | | | | 10'-15' | 10'-18' | SLOW | n/a | 400 | 300 | S |
| Cornus florida | Dogwood | x | D,O | | | | | | | 25'-30' | 20'-30' | MOD | HIGH | 400 | 300 | S |
| Cornus sp. | Dogwood, native species | x | D, O | Dependant on mature size | | | | | | varies | varies | | | | | S |
| Crataegus aestivalis | Mayhaw | x | D,O | x | | | | | | 35'-40' | 20'-30' | | n/a | 400 | 300 | S |
| Crataegus marshallii | Parsley Haw | x | D, O | x | x | 4' | | | | 20'-35' | 20'-30' | | n/a | 400 | 300 | S |
| Crataegus phaenopyrum | Washington Hawthorne | x | D,O | | | | | | | 20'-35' | 20'-35' | | n/a | 400 | 300 | S |
| Crataegus sp. | Hawthorn - tree form | x | D, O | Dependant on mature size | | | | | | varies | | | | | | |
| Cunninghamia lanceolata | Chinese Fir | | E | | | | | | x | 15'-30' | 50'-75' | | n/a | 1600 | 2400 | L |
| Cyrilla racemiflora | Titi, Leatherwood | x | D, O | | | | | | | 10'-20' | 20'-30' | | n/a | 700 | 300 | S |
| Diospyros virginiana | Common Persimmon | x | D | | | | | | x | 20'-35' | 40'-60' | | MED-HIGH | 900 | 1200 | M |
| Diospyros texana | Texas Persimmon | | D | | | | | | | 15'-25' | 20'-40' | | n/a | 900 | 1200 | M |
| Fagus grandiflora | American Beech | x | D | | x | 10' | | x | x | 40'-60' | 50'-75' | | n/a | 1600 | 2400 | L |
| Forestiera segregata | Florida Swamp Privet | x | D | | | | | | | 5'-10' | 5'-15' | | n/a | 400 | 300 | S |
| Fraxinus americana | White Ash | x | D | | x | 6' | | x | x | 40'-60' | 50'-80' | | MED-HIGH | 1600 | 2400 | L |

| "SCIENTIFIC NAME" | COMMON NAME | FLORIDA NATIVE | DECIDUOUS, EVERGREEN, ORNAMENTAL | UNDER POWER LINES | STREET TREE | PLANTING STRIP/ MIN. WIDTH | SIGHT DISTANCE TRIANGLE | PARKING LOT | SHADE OR CANOPY TREE | MATURE SPREAD | MATURE HEIGHT | GROWTH RATE | WIND RESISTANCE | CANOPY SQUARE FOOTAGE | SOIL AREA* (W/3' DEPTH) | SIZE CLASS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fraxinus pennsylvanica | Green Ash | x | D | | x | 6' | | x | x | 45'-50' | 60'-70' | | MED-LOW | 1600 | 2400 | L |
| Ginkgo Biloba (male only) | Ginkgo (male only) | | | | x | 6' | | x | x | 50'-60' | 50'-75' | | ME-HIGH | 1600 | 2400 | L |
| Gordonia lasianthus | Loblolly Bay | x | E | | Single stem pruned for clearance | 4' | | x | | 10'-15' | 35'-60' | | n/a | 900 | 1200 | M |
| Halesia carolina | Silverbell | x | D,O | | Single stem pruned for clearance | 4' | | | x | 15'-30' | 40'-60' | | n/a | 900 | 1200 | M |
| Hamamelis virginiana | Witch hazel | x | D,O | x | | | | | | 15'-25' | 20'-30' | | n/a | 400 | 300 | S |
| Ilex sp. | Tree form Holly species | | | Dependant on mature size | | | | | | varies | 15' + | | n/a | | | varies |
| "Ilex x. attenuata ""east Palatka"" " | East Palatka' Holly | x | E | | Single stem pruned for clearance | 4' | | x | | 10'-15' | 30'-45' | | HIGH | 900 | 1200 | M |
| Ilex x. attenuata "Foster" | Foster's Holly | | E | x | Single stem pruned for clearance | 4' | | x | | 8'-12' | 15'-25' | | HIGH | 400 | 300 | S |
| Ilex x. attenuata "Savannah" | Savannah Holly | | E | | Single stem pruned for clearance | 4' | | x | | 6'-10' | 30'-45' | | HIGH | 900 | 1200 | M |
| Ilex cassine | Dahoon holly | x | E | | Single stem pruned for clearance | 4' | | | | 8'-12' | 20'-30' | | HIGH | 400 | 300 | S |
| Ilex cornuta 'Burfordii' | Burford Holly | | E | x | | | | | | 15' | 15'-25' | | n/a | 400 | 300 | S |
| Ilex decidua | Possum Haw | x | D | x | | | | | | 10'-15' | 10'-15' | | n/a | 400 | 300 | S |
| Ilex myrtifolia | Myrtle-leaved Holly | x | E | x | | | | | | 15'-20' | 20'-40' | | n/a | 900 | 1200 | M |
| Ilex x 'Nellie R Stevens' | Nellie R. Stevens Holly | | E | | Single stem pruned for clearance | 4' | | | | 10'-15' | 20'-30' | | n/a | 400 | 300 | S |
| Ilex opaca | American Holly | x | E | | Single stem pruned for clearance | 4' | | x | x | 15'-35' | 35'-50' | | HIGH | 900 | 1200 | M |
| Ilex verticillata | Winterberry | x | E | | | | | | | 5'-10' | 6'-10' | | n/a | | | |
| Ilex vomitoria | Yaupon Holly | x | E | x | Single stem pruned for clearance | 4' | | | | 15'-20' | 15'-25' | | HIGH | 400 | 300 | S |
| Jugulans nigra | Black Walnut | x | D | | | | | | x | 50'-70' | 60'-70' | | n/a | 1600 | 2400 | XL |
| Juniperus silicicola | Southern Red Cedar | x | E | | | | | | x | 20'-30' | 30'-45' | | LOW | 900 | 1200 | M |
| Juniperus virginiana | Eastern Red Cedar | x | E | | | | | x | x | 20'-30' | 40'-50' | | n/a | 900 | 1200 | M |

| "SCIENTIFIC NAME" | COMMON NAME | FLORIDA NATIVE | DECIDUOUS, EVERGREEN, ORNAMENTAL | UNDER POWER LINES | STREET TREE | PLANTING STRIP/ MIN. WIDTH | SIGHT DISTANCE TRIANGLE | PARKING LOT | SHADE OR CANOPY TREE | MATURE SPREAD | MATURE HEIGHT | GROWTH RATE | WIND RESISTANCE | CANOPY SQUARE FOOTAGE | SOIL AREA* (W/3' DEPTH) | SIZE CLASS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kalmia latifolia | Mountain Laurel | x | D | | | | | | | 5'-8' | 7'-15' | | MED-HIGH | | | |
| Lagerstroemia fauriei 'Acoma" | Japanese Crepe Myrtle Acoma | | D,O | x | x | 4' | | x | | 12'-15' | 8'-12' | | HIGH | 400 | 300 | S |
| Lagerstroemia fauriei 'Catawba' | Japanese Crepe Myrtle Catawba | | D,O | x | x | 4' | | x | | 15'-20' | | | HIGH | 400 | 300 | S |
| Lagerstroemia fauriei 'Sioux' | Japanese Crepe Myrtle Sioux | | D,O | x | x | 4' | | x | | 15'-20' | | | HIGH | 400 | 300 | S |
| Lagerstroemia indica 'Miami' | Miami Crepe Myrtle | | D,O | | x | 4' | | x | | 20'-35' | 30'-35' | | HIGH | 400 | 300 | S |
| Lagerstroemia indica 'Muskogee" | Muskogee Crepe Myrtle | | D,O | | x | 4' | | x | | 30'-40' | 30'-40' | | HIGH | 400 | 300 | S |
| Lagerstroemia indica 'Natchez" | Natchez Crepe Myrtle | | D,O | | x | 4' | | x | | 25'-35' | 30'-35' | | HIGH | 400 | 300 | S |
| Lagerstroemia indica 'Tuscarora' | Tuscarora Crepe Myrtle | | D,O | | x | 4' | | x | | 20'-35' | | | HIGH | 400 | 300 | S |
| Liquidambar styraciflua | Sweet Gum | x | D | | | | | | x | 35'-60' | 60'-75' | | MED-HIGH | 1600 | 2400 | L |
| Lindera benzoin | Spicebush | x | D | | | | | | | 6'-12' | 6'-10' | | n/a | 400 | 300 | S |
| Liriodendron tulipifera | Tulip Poplar | x | D | | x | 10' | | x | x | 30'-50' | 80'-100' | | LOW | 1600 | 2400 | XL |
| Magnolia macrophylla var. ashei | Ashe Magnolia | x | D,O | | | | | x | | 20'-30' | 20'-30' | | n/a | 400 | 300 | S |
| Magnolia grandiflora | Southern Magnolia | x | E, O | | x | 6' | | x | x | 30'-40' | 60'-80' | | HIGH | 1600 | 2400 | L |
| Magnolia grandiflora "Little Gem" | Little Gem Magnolia | | E, O | | Single stem pruned for clearance | 4' | | | | 8'-12' | 30'-35' | | HIGH | 400 | 300 | S |
| Magnolia pyramidata | Pyramid Magnolia | x | D, O | x | | | | | | 5'-10' | 10'-20' | | n/a | 400 | 300 | S |
| Magnolia Kobus var stellata | Star Magnolia | | D, O | x | | | | | | 10'-15' | 15'-20' | | n/a | 400 | 300 | S |
| Magnolia x soulangiana | Saucer Magnolia | | D, O | | | | | | | 20'-30' | 20'-25' | | MED-HIGH | 400 | 300 | S |
| Magnolia virginiana 'Bracken's' | Bracken's | | E | | Single stem pruned for clearance | 4' | | | | 35' | 25' | | n/a | 400 | 300 | S |
| Magnolia virginiana 'D.D.Blanchard' | D.D. Blanchard | | E | | Single stem pruned for clearance | 6' | | x | x | 25' - 30' | 50'-60' | | n/a | 1600 | 2400 | L |
| Magnolia virginiana | Sweetbay Magnolia | x | E, O | | Single stem pruned for clarance | 4' | x | | x | 15'-25' | 40'-50' | | MED-HIGH | 1600 | 1200 | M |

| "SCIENTIFIC NAME" | COMMON NAME | FLORIDA NATIVE | DECIDUOUS, EVERGREEN, ORNAMENTAL | UNDER POWER LINES | STREET TREE | PLANTING STRIP/ MIN. WIDTH | SIGHT DISTANCE TRIANGLE | PARKING LOT | SHADE OR CANOPY TREE | MATURE SPREAD | MATURE HEIGHT | GROWTH RATE | WIND RESISTANCE | CANOPY SQUARE FOOTAGE | SOIL AREA* (W/3' DEPTH) | SIZE CLASS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Malus angustifolia | Southern Flowering Crabapple | x | D, O | x | Single stem pruned for clarance | 4' | | | | 15'-20' | 25'-30' | | n/a | 400 | 300 | S |
| Morus rubra | Red Mulberry | x | D | | | | | | | 15'-40' | 15'-40' | | MED-LOW | 400 | 300 | S |
| Myrica cerifera | Wax Myrtle | x | E | x | | | | | | 20'-25' | 15'-25' | | MED-LOW | 400 | 300 | S |
| Nyssa Aquatica | Water Tupelo | x | E | | | | | | x | 25'-50' | 50'-80' | | MED-HIGH | 1600 | 2400 | L |
| Nyssa sylvatica | Black Tupelo | x | E | | x | 6' | | | x | 25'-35' | 65'-75' | | MED-HIGH | 1600 | 2400 | L |
| Osmanthus americanus | Wild-olive or Devilwood | x | E, O | x | | 4' | | | x | 10'-15' | 15'-25' | | n/a | 400 | 300 | S |
| Osmanthus fragrans | Tea Olive | | D,O | x | | 4' | | | | 15'-20' | 15'-30' | | n/a | 400 | 300 | S |
| Ostrya virginiana | American Hophornbeam | x | D | | Single stem pruned for clarance | 4' | | | x | 25'-30' | 30'-40' | | MED-HIGH | 900 | 1200 | M |
| Oxydendrom arboreum | Sourwood | x | D,O | | Single stem pruned for clarance | 4' | | | x | 25'-30' | 40'-60' | | n/a | 900 | 1200 | M |
| Persea borbonia | Redbay | x | E | | | | | | x | 30'-50' | 30'-50' | | MED-LOW | 900 | 1200 | M |
| Pinckneya pubens | Pinckneya / Fever Tree | x | D | | | | | | | 12'-18' | 15'-20' | | n/a | 400 | 300 | S |
| Pinus clausa | Sand Pine | x | E | | | | | | | 15'-25' | 20'-40' | | LOW | 900 | 1200 | M |
| Pinus echinata | Shortleaf Pine | x | E | | | | | | x | 20'-30' | 50'-60' | | n/a | 1600 | 2400 | L |
| Pinus elliottii | Slash Pine | x | E | | | | | | x | 35'-50' | 75'-100' | | MED-LOW | 2500 | 2400 | XL |
| Pinus glabra | Spruce Pine | x | E | | | | | | x | 25'-40' | 30'-60' | | LOW | 1600 | 2400 | L |
| Pinus serotina | Pond Pine | x | E | | | | | | x | | 70' | | n/a | 1600 | 2400 | L |
| Pinus taeda | Loblolly Pine | x | E | | x | 10' | | x | x | 30'-35' | 50'-80' | | MED-LOW | 1600 | 2400 | L |
| Pinus palustris | Longleaf Pine | x | E | | May be best planted at smaller sizes | 10' | | x | x | 30'-40' | 60'-80' | | MED-LOW | 1600 | 2400 | XL |
| Pistacia chinensis | Chinese Pistache | | E | | x | 4' | | | x | 25'-35' | 25'-35' | | MEE-LOW | 400 | 300 | S |
| Platanus occidentalis | American Sycamore | x | D | | x | 10' | | x | x | 50'-70' | 75'-90' | | MED-LOW | 1600 | 2400 | XL |

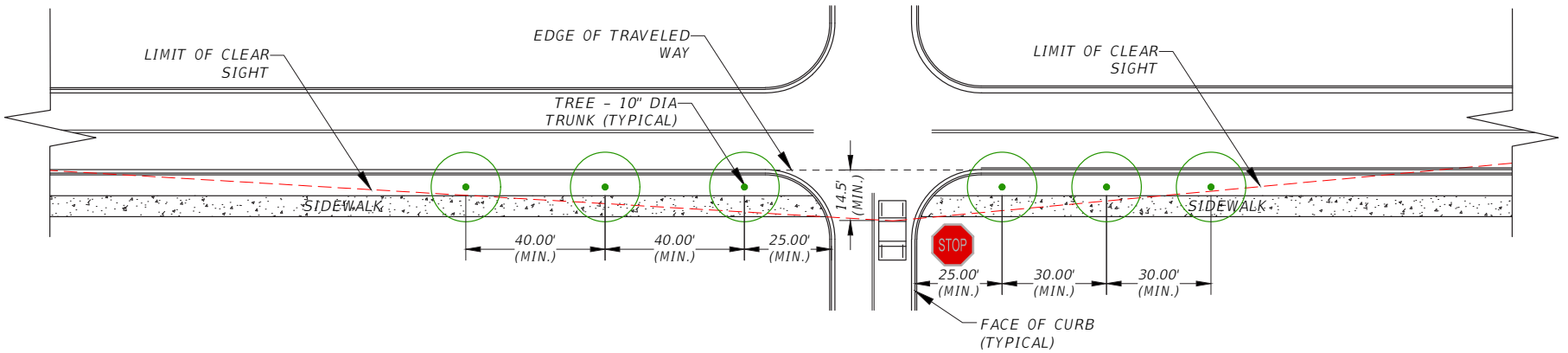
| "SCIENTIFIC NAME" | COMMON NAME | FLORIDA NATIVE | DECIDUOUS, EVERGREEN, ORNAMENTAL | UNDER POWER LINES | STREET TREE | PLANTING STRIP/ MIN. WIDTH | SIGHT DISTANCE TRIANGLE | PARKING LOT | SHADE OR CANOPY TREE | MATURE SPREAD | MATURE HEIGHT | GROWTH RATE | WIND RESISTANCE | CANOPY SQUARE FOOTAGE | SOIL AREA* (W/3' DEPTH) | SIZE CLASS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Planera aquatica | Water Elm Planer tree | x | | | | | | | x | 30'-40' | 15'-50' | | n/a | 900 | 1200 | M |
| Populus heterophylla | Swamp Cottonwood | x | | | | | | | x | 35'-60' | 15'-80' | | n/a | 1600 | 2400 | L |
| Populus deltoides | Eastern Cottonwood | x | D | | | | | | x | 35'-60' | 15'-80' | | n/a | 1600 | 2400 | XL |
| Prunus americana | American Plum | x | D,O | x | | | | | | 15'-25' | 15'-25' | | n/a | 400 | 300 | S |
| Prunus angustifolia | Chickasaw Plum | x | D,O | x | x | 4' | | | | 15'-20' | 12'-20' | | MED-HIGH | 400 | 300 | S |
| Prunus cerasifera | Purple Leaf Plum | | D,O | x | | | | | | 15'-25' | 15'-25' | | n/a | 400 | 300 | S |
| Prunus x.incamp | Okame' Cherry | | D,O | | x | 4' | | | | 15'-20' | 15'-20' | | n/a | 400 | 300 | S |
| Prunus campanulata | Taiwan Cherry | | D,O | | x | 4' | | | | 15'-25' | 12'-20' | | n/a | 400 | 300 | S |
| Prunus serotina | Black Cherry | x | D | | | | | | x | 35'-50' | 60'-90' | | MED-LOW | 1600 | 2400 | L |
| Prunus umbellata | Flatwoods Plum | x | D,O | | x | 4' | | | | 12'-20' | 12'-20' | | n/a | 400 | 300 | S |
| Quercus alba | White Oak | x | D | | | 10' | | x | x | 60'-80' | 60'-100' | | MED-LOW | 1600 | 2400 | XL |
| Quercus bicolor | Swamp White Oak | x | D | | | 10' | | x | x | 50'-70' | 50'-70' | | n/a | 1600 | 2400 | XL |
| Quercus coccinea | Scarlet Oak | | D | | | 10' | | x | x | 45'-60' | 60'-75' | | n/a | 1600 | 2400 | XL |
| Quercus falcata | Southern Red Oak | x | D | | | 10' | | x | x | 60'-70' | 60'-80' | | LOW | 1600 | 2400 | XL |
| Quercus geminata | Sand Live Oak | x | D | | | | | x | | 10'-15' | 20'-50' | | HIGH | 900 | 1200 | M |
| Quercus hemlsphaerica or laurifolia | Laurel Oak | x | D | | | | | x | x | 35'-45' | 60'-70' | | LOW | 1600 | 2400 | L |
| Quercus laevis | Turkey Oak | x | D | | | | | x | | 10'-15' | 30'-40' | | HIGH | 900 | 1200 | M |
| Quercus michuaxii | Swamp Chestnut Oak | x | D | | | 10' | | x | x | 30'-50' | 40'-60' | | MED-HIGH | 1600 | 2400 | L |
| Quercus myrtifolia | Myrtle Oak | x | E | | | | | x | | 8'-10' | 15'-20' | | HIGH | 400 | 300 | S |
| Quercus nuttallii | Nuttal Oak | | D | | | 10' | | x | x | 35'-50' | 60'-80 | | n/a | 1600 | 2400 | L |

| "SCIENTIFIC NAME" | COMMON NAME | FLORIDA NATIVE | DECIDUOUS, EVERGREEN, ORNAMENTAL | UNDER POWER LINES | STREET TREE | PLANTING STRIP/ MIN. WIDTH | SIGHT DISTANCE TRIANGLE | PARKING LOT | SHADE OR CANOPY TREE | MATURE SPREAD | MATURE HEIGHT | GROWTH RATE | WIND RESISTANCE | CANOPY SQUARE FOOTAGE | SOIL AREA* (W/3' DEPTH) | SIZE CLASS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Quercus nigra | Water Oak | x | D | | | | | | x | 60'-70' | 50'-60' | | LOW | 1600 | 2400 | L |
| Quercus phellos | Willow Oak | x | D | | | 10' | | x | x | 40'-50' | 60'-75' | | MED-LOW | 1600 | 2400 | L |
| Quercus prinus | Chestnut Oak | x | D | | | 10' | | x | x | 40'-60' | 50'-60' | | n/a | 1600 | 2400 | L |
| Quercus shumardii | Shumard Oak | x | D | | | 10' | | x | x | 40'-50' | 55'-80' | | MED-HIGH | 1600 | 2400 | L |
| Quercus stellata | Post Oak | x | D | | | 10' | | x | x | 35'-50' | 40'-50' | | MED-HIGH | 900 | 1200 | M |
| Quercus virginiana | Live Oak | x | E | | | 12' | | x | x | 60'-120' | 60'-80' | | HIGH | 1600 | 2400 | XL |
| Rhamnus caroliniana | Carolina buckthorn | x | D | | | | | | | 10'-15' | 12'-15' | | n/a | 400 | 300 | S |
| Sassafras albidium | Sassafras | x | D | | | | | | x | 25'-40' | 30'-60' | | n/a | 900 | 1200 | M |
| Salix babilonicaa | Weeping Willow | | D | | | | | x | x | 45'-70' | 45'-70' | | MED-LOW | 1600 | 2400 | L |
| Symplocos tinctoria | Horse sugar | x | D,O | | | | | | | 15'-20' | 15'-35' | | n/a | 400 | 300 | S |
| Taxodium ascendens | Pond Cypress | x | D | | | | | | | 10'-15' | 50'-60' | | HIGH | 1600 | 2400 | L |
| Taxodium distichum | Bald Cypress | x | D | | | 10' | | | x | 25'-35' | 60'-80' | | HIGH | 1600 | 2400 | L |
| Tilia americana | American Basswood | x | D | | | 10' | | | x | 35'-50' | 50'-80' | | n/a | 1600 | 2400 | L |
| Tilia caroliniana | Florida Basswood | x | D | | | 10' | | | x | 35'-50' | 40'-60' | | n/a | 1600 | 2400 | L |
| Ulmus alata | Winged Elm | x | D | | x | 6' | | | x | 30'-40' | 45'-70' | | MED-HIGH | 1600 | 2400 | L |
| Ulmus americana | American Elm | x | D | | x | 6' | | | x | 50'-70' | 70'-90' | | MED-LOW | 1600 | 2400 | XL |
| Vaccinium arboreum | Sparkleberry | x | D,O | x | x | 4' | | | | 10'-15' | 6'-25' | | HIGH | 400 | 300 | S |
| Viburnum rufidulum | Rusty Blackhaw | x | D,O | | Single stem pruned for clearance | 4' | | | | 20'-25' | 20'-25' | | n/a | 400 | 300 | S |
| Vitex agnus-castus | Chaste Tree | | | x | x | 4' | | | | 15'-20' | 10'-15' | | ME-LOW | 400 | 300 | S |
| Zelkova serrata 'green vase' | Japanese Zelkova | | D | | x | 4' | | | x | 50'-75' | 55'-80' | | n/a | 1600 | 2400 | L |

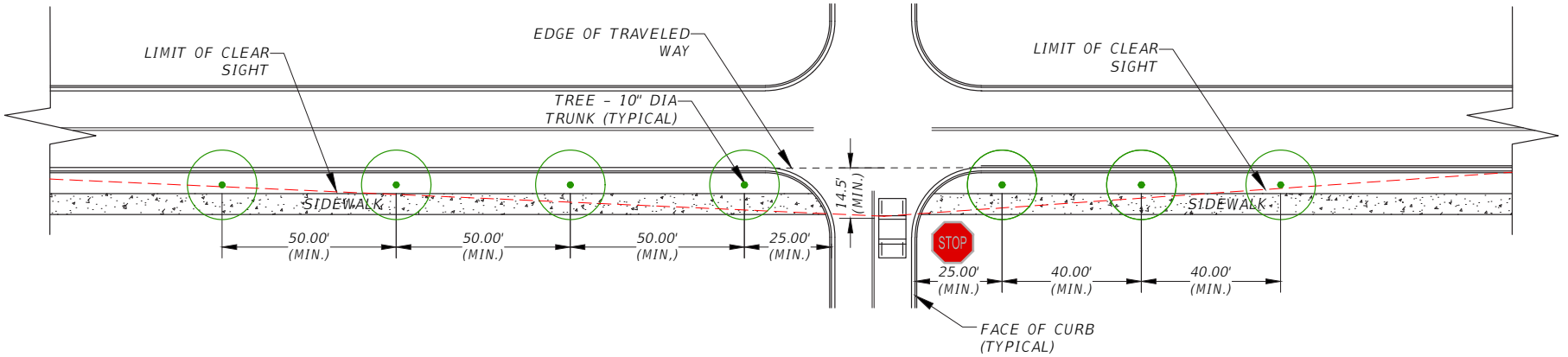
| "SCIENTIFIC NAME" | COMMON NAME | FLORIDA NATIVE | DECIDUOUS, EVERGREEN, ORNAMENTAL | UNDER POWER LINES | STREET TREE | PLANTING STRIP/ MIN. WIDTH | SIGHT DISTANCE TRIANGLE | PARKING LOT | SHADE OR CANOPY TREE | MATURE SPREAD | MATURE HEIGHT | GROWTH RATE | WIND RESISTANCE | CANOPY SQUARE FOOTAGE | SOIL AREA* (W/3' DEPTH) | SIZE CLASS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PALMS** | | | | | | | | | | | | | | | | |
| Butia odorata | Pindo Palm | | E | | | | | x | | 15'-20' | 15'-20' | | HIGH | 400 | 300 | S |
| Phoenix canariensis | Canary Island Date Palm | | E | | | | | x | | 20'-35' | 40'-50' | MOD. | HIGH | 900 | 300 | M |
| Phoenix dactylifera | Date Palm | | E | | | | | x | | 30'-45' | 50'-80' | MOD. | HIGH | 1600 | 300 | L |
| Phoenix sylvestris | Sylvester Palm | | | | | | | x | | 20' | 50' | MOD. | HIGH | 900 | 300 | M |
| Sabal plametto | Cabbage Palm | x | E | | x | 4' | x | x | | 15'-25' | 40'-50' | MOD. | HIGH | 900 | 300 | M |

** Soil volume can be halved for trees sharing space*

| SIZE CLASSES | | SOIL VOLUME | CANOPY SQUARE FOOTAGE |
|---|---|---|---|
| Extra Large | 65'+ ht. | 2400 | 1600 |
| Large | 50'-65' ht. | 2400 | 1600 |
| Medium | 35'-50' ht. | 1200 | 900 |
| Small | 15'-35' ht. | 300 | 400 |




DESIGN SPEED 30 MPH AND UNDER

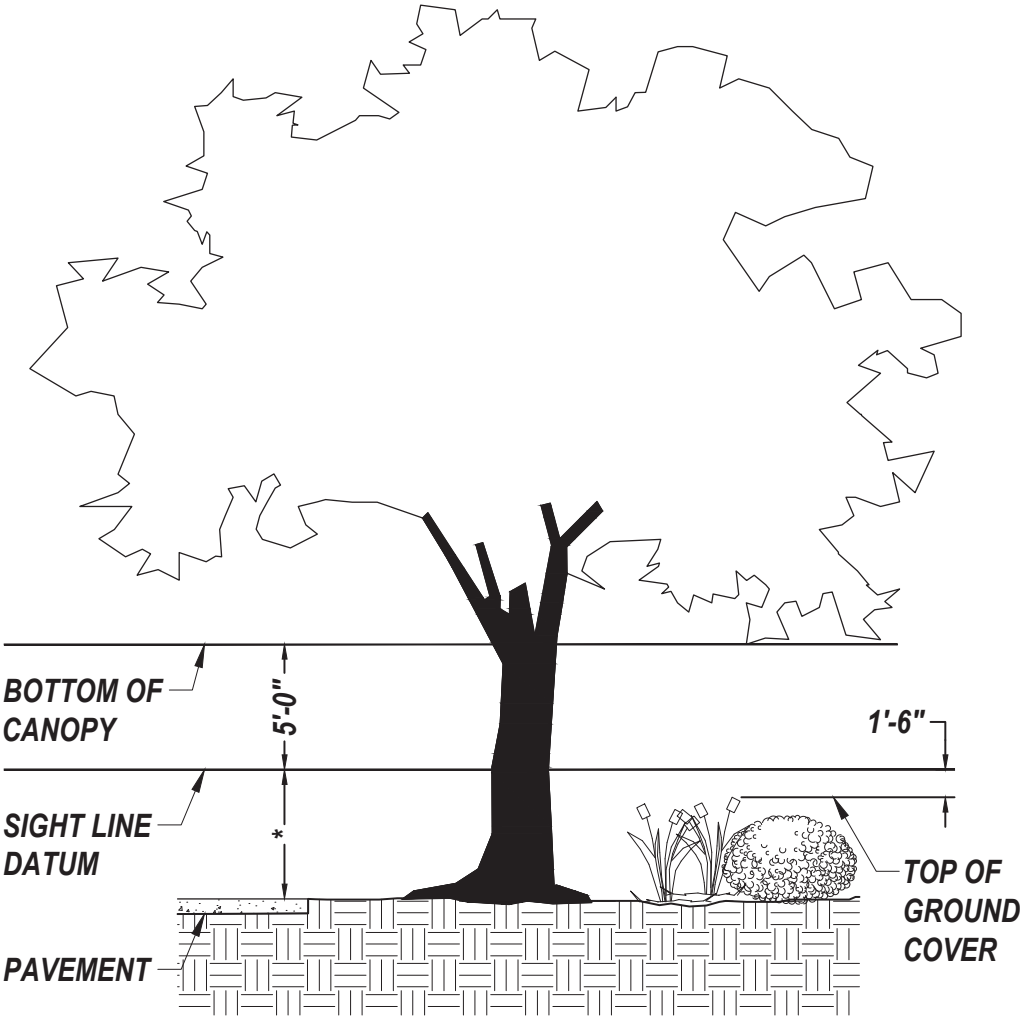



DESIGN SPEED 35-40 MPH

PREPARED BY

EXHIBIT B

STREET TREE SPACING DIAGRAM FOR INTERSECTION SIGHT DISTANCE




* *SINCE OBSERVATIONS ARE MADE IN BOTH DIRECTIONS, THE LINE OF SIGHT DATUM BETWEEN ROADWAYS IS 3.5 FEET ABOVE BOTH PAVEMENTS.*

*THE HORIZONTAL LIMITS OF THE WINDOW ARE DEFINED BY CLEAR SIGHT TRIANGLES. WITHIN THE LIMITS OF CLEAR SIGHT TRIANGLES, THE FOLLOWING RESTRICTIONS APPLY:*

- *CANOPY OF TREES AND TRUNKED PLANTS MUST BE AT LEAST 5 FEET ABOVE THE SIGHT LINE DATUM.*
- *THE TOP OF THE GROUND COVER PLANTS MUST BE AT LEAST 1.5 FEET BELOW THE SIGHT LINE DATUM.*

PREPARED BY

EXHIBIT C

CLEAR SIGHT WINDOW DIAGRAM