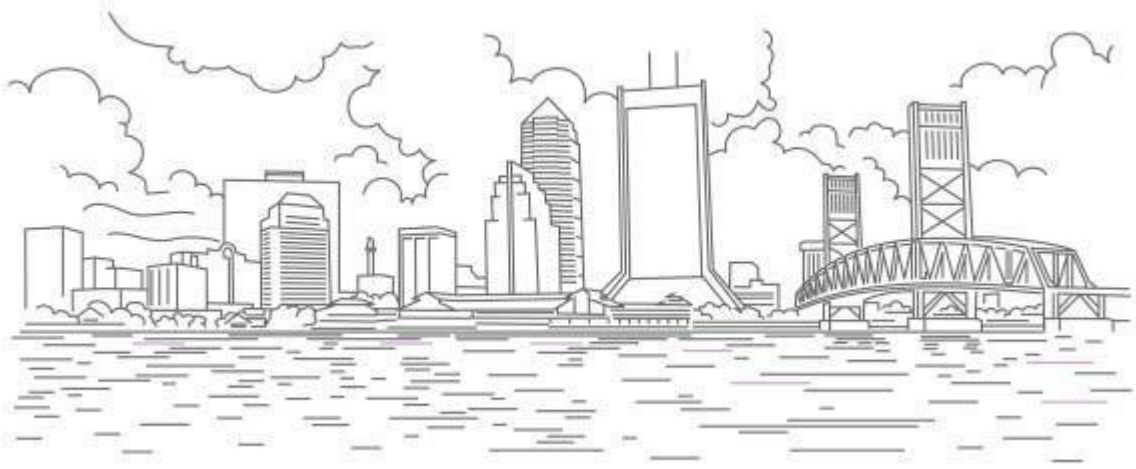
ONE CITY. ONE JACKSONVILLE.

LAND DEVELOPMENT PROCEDURES MANUAL



Revised October 13, 2022

LAND DEVELOPMENT PROCEDURES MANUAL

CITY OF JACKSONVILLE, FLORIDA

2022

Approved and Adopted in
Accordance with Provisions of
Chapter 654, Jacksonville Ordinance Code
(Code of Subdivision Regulations)

Revised October 13, 2022

Land Development Procedure Manual
Revisions

Revision Number	Sections Revised	Effective Date
28	All manual sections reorganized, all of Sections 1, 3, 4 and 7 revised, Appendix 1 Revised, Appendix 3 deleted	7/13/2021
29	Sections 1.7.1 and 7.1.5 revised	3/18/22
30	Sections 2.1 through 2.1.2 revised	10/13/22

For revision information prior to July of 2021 see Land Development Procedure Manual Addendum Sheet in Appendix 1

GENERAL STATEMENT
OF
LAND DEVELOPMENT PROCEDURES AND CRITERIA

The Land Development Procedures and Criteria have been produced by the Subdivision Standards and Policy Advisory Committee in conjunction with the Planning Department, the Department of Public Works, JEA, the Office of General Counsel and the Private Sector in order to assist in the development of land within the City of Jacksonville. In addition, hereto, certain criteria have been incorporated pursuant to various elements of the 2030 Comprehensive Plan, adopted per Chapter 650 of the Jacksonville Ordinance Code and Chapter 163, Part II, Florida Statutes.

These procedures and criteria, including the design specifications quoted, are adopted and approved as provided in Chapter 654 of the Jacksonville Ordinance Code to be used by the Regulatory Division of the Planning Department, the Engineering Division of the Department of Public Works, and JEA in review and approval of permit applications and site development plans.

It is intended for these Development Procedures to establish minimum site development requirements and guidelines for projects submitted to the Department of Planning and Development. The Development Procedures will apply to all development and construction projects, both public and private, within the jurisdiction of the Department of Planning and Development of the City of Jacksonville.

Under Special Conditions with specific applications the following policies and procedures may be modified to meet certain conditions that are beyond the control of the developer, provided such modifications from this Manual are acceptable to and approved by the Director of Planning and Development or his Designee.

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APPENDIX 1 – ATTACHMENTS

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SECTION 1.0 – LAND DEVELOPMENT PROCEDURES

1.1 REVIEW PROCEDURES FOR SUBDIVISIONS

Procedures for the review of subdivisions involve nine (9) steps as follows:

1. Informal Pre-Application Conference
2. Concurrency Review
3. Pre-Application Procedure for approval by the Planning Commission.
4. Procedure for Approval of Preliminary Site Development Plans, Concurrency Review and Final Site Development Plans required for Improvements
5. Review of the Preliminary Plat
6. Final Review / Conditional Approval of the Preliminary Plat
7. Procedures for Approval of Final Plat
8. Procedure for Recording of Final Plat
9. Acceptance of Subdivision

Estimates of the time required for each step in the process are listed in Attachment No. 1 (Estimated Time Requirements).

Authority for the review of subdivisions is set forth in Chapter 654 (Code of Subdivisions Regulations) of the Ordinance Code of the consolidated City of Jacksonville, as revised by Ordinance 91-58-147.

1.2 INFORMAL PRE-APPLICATION CONFERENCE

Although not specifically required by the Code of Subdivision Regulations, it is strongly recommended that developers submit subdivision proposals for an informal preliminary review with the Current Planning Division of the Planning and Development Department. In this phase the developer should also contact the Transportation Planning Division, Traffic Engineer, and other city, regional and state agencies to determine if any significant problems exist. Critical elements warranting early consideration include (but are not necessarily limited to) drainage, flood plain data, water and sewer services, traffic circulation, jurisdictional wetlands, and environmental issues.

It is intended that this informal review will assist the developer in preparing a preliminary site plan that will meet the requirements of the code of Subdivision Regulations.

To avoid name changes, it is suggested that the proposed names subdivisions be verified at this time with the Department of Public Works and proposed names of streets be verified with Planning and Development. Street names should be verified by the Addressing Section, Department of Planning and Development, and subdivision names should be verified by the Topographical/Survey Activity, Engineering and Construction Management Division, Department of Public Works.

Developers should be aware of the permit and design requirements of the Federal, State and Local Agencies listed on Attachment No. 21.

1.3 PRE-APPLICATION PROCEDURE

The Developer shall submit fifteen (15) copies of the preliminary site plan (1.3.1) on 24" x 36" and on 8½" x 11", along with fifteen (15) copies of a written statement (1.3.2) including a legal description generally describing conditions of the site to the Current Planning Division. Note that all plans shall be submitted in accordance with the Site Plan Review Application Form.

1.3.1 PRE-APPLICATION PRELIMINARY SITE PLAN

The preliminary site plan shall contain the following information:

1. Project or Development name (includes any former name if existing)
2. Name of Owner, Developer, Registered Professional, Surveyor, and Landscape Architect
3. Vicinity map showing a north arrow, map scale, and date of drawing
4. Data Summary to including
    a. Total site area
    b. Total acres provided for recreation area
    c. Number of lots and dwelling units
    d. Number of buildings with square footage
    e. Existing and proposed zoning
    f. Number of parking spaces per Section 656.604
    g. Percent of building coverage to lot area
5. All contiguous right-of-ways, easements, platted lots, all median openings within 200 feet of proposed project, all streets, right-of-way dimensions, pavement widths, and sidewalks per Section 654.133
6. Street layout, lots and blocks showing site dimensions for all lots and including either a 40 x 40 or a 50 x 50 pad on all single family detached lots of 6,000 Square feet or less
7. All "jurisdictional wetlands" within project, FEMA flood zones within project, and a complete vegetative and wildlife survey for projects over fifty (50) acres
8. Existing conditions and indicating existing improvements that will be undisturbed
9. A master plan of original development and proposed phasing and units including the PUD Ordinance and DRI Resolution Number in lower right corner
10. Right-of-ways proposed as a new road by either the Florida Department of Transportation, Jacksonville Transportation Authority, or City of Jacksonville
11. Type(s) of Fire Protection Service giving distances to location of nearest fire hydrants and showing all proposed hydrants
12. Locations and dimensions of signage
13. Locations for compactors, dumpster pads, and areas for securing bicycles.
14. Surrounding zoning of all adjacent parcels.

15. All existing and proposed sidewalks

16. A protected tree survey, mitigation plan, and buffer requirements

1.3.2 PRE-APPLICATION WRITTEN STATEMENT

The written statement (see Attachment No. 2) shall contain the following information:

1. Name of proposed subdivision

2. Name, telephone number, and address of the registered professional, surveyor, and developer of the proposed subdivision

3. Information describing the subdivision proposal including but not limited to the following: gross acreage, number of lots, typical lot dimensions, zoning, gross density per acre. If the development is to be phased, this information shall be submitted for each phase

4. The conditions of the site

5. Stages of development of the entire subdivision

6. Data on existing covenants

7. Soil characteristics

8. Legal description (metes and bounds); or, in lieu thereof, provide measurements to a known reference point (see Attachment No. 3)

9. Any request for variance should be requested at this time;

10. Name of provider of utility service

1.3.3 PRE-APPLICATION REVIEW

Upon receipt and inspection of the required number of preliminary site plans and accompanying written statements, the Current Planning Division will make distribution of this material to the various agencies required to review the plans by the Code of Subdivision Regulations. Upon receipt of comments and recommendations from the various agencies, the Regulatory Division will review the comments/recommendations received and notify the developer if any changes or additional information must be incorporated in the preliminary site plan or accompanying written statement prior to submission to the Land Development Committee of the Planning Commission.

After Review of the preliminary site plan and accompanying written statements by the Land Development Committee of the Planning Commission, the preliminary site plan and accompanying written statement with the recommendations of the Regulatory Division and Land Development Committee will be submitted to the Planning Commission for approval.

Also note that if the site is zoned PUD, the Preliminary Site plan must be verified by the Planning and Development Department for compliance with the approved site plan, accompanying written description of intended plan of development and conditions approved as a part of the PUD, prior to being placed on the agenda.

Note that the Planning Commission meets on the Thursday following the 2nd and 4th Tuesday of each month.

1.4 PROCEDURES FOR APPROVAL OF PRELIMINARY AND FINAL SITE DEVELOPMENT (10 SET) PLANS FOR REQUIRED IMPROVEMENTS

1.4.1 CONCURRENCY REVIEW AND CONCURRENCY RESERVATION CERTIFICATE (CRC)

The applicant shall submit site development plans, and other measuring documents to the Planning Department's Concurrency and Mobility Management Systems Office, 255-8330, for processing with other appropriate agencies for review and issuance of a Concurrency Reservation Certificate (CRC). Note: The applicant should familiarize himself in advance with the concurrency process so as to streamline the overall review and approval procedure and ascertain potential vested rights.

1.4.2 PRELIMINARY SITE DEVELOPMENT (10 SET) PLANS

Once the developer has preliminary site plan approval under the pre-application procedure of the Code of Subdivision Regulations, ten (10) complete sets of preliminary site development plans for streets, sidewalks, curb and gutters, water systems, sanitary sewer systems, storm drainage systems and other required public improvements to include Topographical data prepared in accordance with Minimum Technical Standards as called for by Chapter 61G17 of the Florida Administrative Code shall be submitted to Development Services, Department of Planning and Development. Separate review is required by JEA Water & Sewer.

The sheet size for all site development plans shall be 24 x 36 inches or, if legible, 11 x 17 inches, and the current City of Jacksonville standard cover sheet must be utilized. The standard cover sheet is available by calling Development Services at (904) 255-8310. All submittals must include a valid City Development Number (obtained from the Concurrency and Mobility Management Systems Office - 255-8330).

Once in receipt of the ten (10) sets of preliminary site development plans, Development Services will distribute two (2) sets of the plans each to the Traffic Engineering, Development Drainage Design and Landscape Section for review, and one (1) set each to the Development Services Field Office, Fire Marshal's Office and Current Planning.

After completing their respective reviews the above agencies may retain for record one (1) set of preliminary plans and return one (1) set of preliminary plans to Development Services whereby the developer or the developer's representative will be notified as to the disposition of the site development plans. In most cases, resubmittal of the preliminary plans may be required for final plan approval.

Note: All items requested on the checklist returned with the Pre-Application Review must be submitted with the preliminary plans prior to the start of this review process (see Attachment No. 25). Incomplete submittals will not be accepted for review.

The registered professional will be notified by telephone and/or letter by Development Services when the preliminary review has been completed.

1.4.3 FINAL SITE DEVELOPMENT (10 SET) PLANS

If the site development plans meet applicable standards, specifications, and details, ten (10) additional copies of the plans shall be submitted to Development Services. Two (2) sets of plans and the cover page, except for landscape/tree mitigation plan(s), on the remaining sets must be signed and sealed by the Registered Professional. The landscape/tree mitigation plan(s) shall be signed and sealed by a Professional Landscape Architect. The sheet size for all site development plans shall be 24 x 36 inches or, if legible, 11 x 17 inches.

If the site development plans do not meet applicable standards as may be required by the City, the plans shall be revised to show the required improvements including the proposed locations of all

stop signs and street name signs within the limits of the subdivision. At such time, ten (10) complete sets of revised plans, shall be submitted to Development Services for distribution to the various agencies. Two (2) sets of plans and the cover page on the remaining sets must be signed and sealed by the Registered Professional.

Note: Also at this time, the application for the CRC shall be completed and submitted along with other necessary documents to the CMSO. Denial of a public facility's ability to absorb the impact of the proposed development by a concurrency testing agency will result in a CRC denial and prevent the proposed development from continuing forward until the situation is resolved.

It should be noted that if significant changes occur subsequent to the review of the preliminary site development plans, a new preliminary site development plan submittal may be required. If the deviation is five percent (5%) or greater, then an additional CRC review shall be required for the difference. Simultaneously, it is recommended the developer submit the project to JEA for design of an electrical distribution system and provide the required plans, etc. in accordance with JEA's procedure.

Note: "Appropriate Registered Professional" or "Registered Professional" means, for the purposes of the LDPM, a professional registered in Florida with the necessary expertise in the field. Examples of registered professionals may include professional engineers licensed under Chapter 471 F.S., professional landscape architects licensed under Chapter 481 F.S., and professional geologists licensed under Chapter 492 F.S., who have the referenced skills.

1.4.4 DURATION OF APPROVAL OF SITE DEVELOPMENT PLANS

Approved plans that were still valid as of June 30, 2006 under the former duration rules (for single phase projects, two (2) years and for multi-phase projects, two (2) years for each phase with a maximum of five (5) years) shall be valid for five (5) years after the project's initial approval.

1.4.5 NOTES:

1. The City Engineer may grant variances on meeting new requirements where such would present an undue hardship on the developer.

2. JEA requires that all items listed in the JEA Development Install System Manual be provided before JEA will begin Preliminary Design. JEA will normally complete the Preliminary Design within 20 working days.

3. Changes to the development requiring changes to the JEA electric system design will require additional payments by the developer to JEA for the costs of redesign. Therefore, the developer is cautioned to provide the information referenced above only when changes to the development are not anticipated.

4. The required items shall be submitted to the appropriate JEA division to initiate preparation of the electrical distribution plans for the development in accordance with the JEA Development Install System Manual.

5. After final approval and before the start of construction, shop drawings shall be submitted in accordance with Attachment No. 4 and with consideration given to trade names as set forth in Attachment No. 5.

6. Prior to final plat approval any existing City right of way shown on a plat pursuant to a recorded plat in the Public Records of Duval County, Florida must be properly vacated or abandoned pursuant to Florida Statutes, Chapters 177 or 336, as applicable, and evidence must be provided by the Developer to the City of the same.

When the final site development plans for required improvements are approved, Development Services will so notify the developer and the Planning Department in writing of such action and return five (5) complete sets of the plans to the submitting party, appropriately stamped by the Development Services. One (1) set of plans will be retained by Development Services, and the remaining sets of plans will be distributed to the appropriate agencies within the City.

1.5 POTABLE WATER – DEVELOPER'S RESPONSIBILITIES

The developer shall be responsible for the design of adequate water production, transmission, and distribution facilities as necessary. The method of design and construction shall be according to the City Ordinance Code; the latest version of the JEA Water, Sewer, and Reuse Design Guidelines; the JEA Water and Sewer Standards Manual; this manual; and accepted engineering standards.

Web links to these JEA Standards:
Water, Sewer, and Reuse Design Guidelines: http://www.jea.com/business/services/devandbuild/wsrguide.asp Water and Sewer Standards Manual http://www.jea.com/business/services/contractor/standards.asp

A public water system shall be provided in each new development; however, JEA may find that conditions are such that a private water system is acceptable. It is the developer's responsibility to contact JEA for this determination. JEA shall advise the developer as to the proper procedures for permission to connect to the JEA-owned system. If it is determined that the developer may utilize a private water system, it shall be the developer's responsibility to coordinate with the private utility company for approval of the connection. Plans, specifications, and design calculations must be submitted to JEA for approval, whether the system is public or private.

1.6 WASTE WATER - GENERAL

1.6.1 DEVELOPER'S RESPONSIBILITIES

The Developer shall be responsible for the design of an adequate sewage collection system and/or treatment facility where necessary. The method of design and/or construction shall be according to accepted engineering standards; the current Land Development Procedures Manual; the latest version of the JEA Water, Sewer, and Reuse Design Guidelines; the JEA Water and Sewer Standards Manual; the latest edition of the Recommended Standards for Sewage Works (Ten State Standards) and all applicable Sections of the Florida Department of Environmental Regulation, latest edition.

Web links to these JEA Standards:
Water, Sewer, and Reuse Design Guidelines: http://www.jea.com/business/services/devandbuild/wsrguide.asp Water and Sewer Standards Manual http://www.jea.com/business/services/contractor/standards.asp

1.6.2 CONNECTION TO THE CITY OWNED SYSTEM

When a developer desires to connect to the JEA owned system, it shall be his responsibility to contact JEA. They shall then advise the Developer as to the proper coordination procedures.

1.6.3 CONNECTION TO PRIVATELY OWNED SYSTEMS

It shall be the Developer's responsibility to coordinate with the private utility company for approval of connection. A private utility company is one that has a current Certificate of Necessity and Public Convenience issued by the Florida Public Services Commission or other legal companies.

1.7 PROCEDURES FOR APPROVAL OF PRELIMINARY AND FINAL PLAT

1.7.1 PROCEDURES FOR PRELIMINARY REVIEW OF THE PLAT

Six (6) copies of the Preliminary Plat prepared by a surveyor in accordance with Section 654.109(d) of the Code of Subdivision Regulations shall be submitted to the Development Services Division of the Department of Planning and Development along with a receipt for the preliminary plat review fee in accordance with Section 654.138(a) of the Code of Subdivision Regulations. This submission must include both the plat map and the cover sheet with caption. This submittal should take place after the first review of the site development plans (subsection 1.1.4A) has been completed in order to assure that all easements and drainage facilities required are known and shown on the plat.

All items and information shown on Attachment No. 34 must be shown on the plat. The appropriate "Adoption and Dedication" and "Consent and Joinder" language from Attachments Nos. 24A, 24B, 24C and 24D shall be shown on the plat.

All stormwater management facility area locations must be shown on the plat in accordance with the requirements of Attachment No. 36. A general note language for unobstructed easements shall be included on the plat in accordance with the requirement shown on Attachment No. 37.

When the preliminary review of the Plat has been completed, comments noted on the plat, will be forwarded to the surveyor together with a letter indicating completion of the preliminary plat review. The surveyor shall submit a revised copy of the plat to the Development Services Division and include the prior copy of the plat marked by the Office of General Counsel in the submittal.

The Preliminary Plat shall be reviewed by the Development Services Division. and the Office of General Counsel within (15) business days of submittal thereof by the Developer.

1.7.2 PROCEDURES FOR FINAL APPROVAL OF THE PLAT

Final approval of the Plat may be requested once the final site development plans and Concurrency Reservation Certificate have been received and the preliminary review of the plat has been completed.

When requesting final approval of the Plat, six (6) copies of the Final Plat according to Section 654.109(e) of Code of Subdivision Regulations shall be submitted to Development Services along with a receipt for the final plat review fee and, provided the city is to perform the required inspection of the infrastructure improvements, a receipt for the construction inspection fee in accordance with Section 654.138(a) of the Code of Subdivision Regulations and an Opinion of Title Certification. One of the six (6) copies shall be submitted to the Office of General Counsel for review, along with the Opinion of Title Certification (in the form described below). The review shall be completed within fifteen (15) business days of submittal thereof by the Developer.

The original Opinion-of-Title Certification for the lands to be platted shall be submitted by the Developer with the Final Plat and shall indicate the date of the title search. The title opinion shall be, addressed to the City of Jacksonville and certified to a date within 30 days of submission. The title opinion shall indicate any mortgages, liens or other encumbrances of record affecting the lands, and a statement that all taxes due and payable have been paid. Taxes are due by the first day of November of each year and the City shall not approve any plat unless such taxes have been paid.

The Opinion-of-Title Certification shall be certified to the "City of Jacksonville, Florida, Department of Planning and Development" and issued by an attorney-at-law licensed in Florida or an abstractor or title company showing that apparent record title to the land as described and shown on the plat is in the name of the person, persons, or entity executing the dedication as it is shown on the plat.

The Opinion-of-Title Certification shall include copies of mortgages, liens and other encumbrances of record (e.g., covenants, restrictions and easements). All mortgagees of record as shown in the Opinion-of-Title Certification shall be required to execute a consent and joinder on the plat in the form provided in Attachment No. 24D. The City in its sole discretion may require the Developer, at its sole expense, to cure any title defects or satisfy or release any encumbrances of that are adverse to the use of the lands to be platted or the use of any lands to be dedicated to the City. The City may also require the Developer to provide evidence of good standing of its corporate existence and any signatory's authority to execute the plat on the Developer's behalf. Any such requirements by the City must be satisfied prior to or contemporaneously with the recording of the plat and on forms approved by the City. If any such approved satisfaction or release forms are recorded by the Developer prior to the recording of the final plat, the Developer shall provide the City with evidence of the same for review in the final plat recording package.

Prior to final plat approval any existing City right of way shown on a plat pursuant to a recorded plat in the Public Records of Duval County, Florida must be properly vacated or abandoned pursuant to Florida Statutes, Chapters 177 or 336, as applicable, and evidence must be provided by the Developer to the City of the same.

If the aforementioned items are found to be in accordance with the provisions of the Code of Subdivision Regulations, Development Services will approve the plat. A copy of the letter of approval and two copies of the approval plat are returned to the surveyor.

1.7.3 OWNERSHIP OF IMPROVEMENTS

Upon approval and recordation of the final plat and after the construction of required improvements has been inspected and approved by the city, JEA or other approving entity, ownership of the improvements shall vest in the city, except that:

(1) The title to the street lighting standards shall vest in the appropriate electric utility serving the area.

(2) The title to water and/or sewerage system improvements located within the territory covered by a certificate of public convenience and necessity issued by the state public service commission shall vest in the holder of the certificate.

(3) The title to water and/or sewerage system improvements in areas not covered by certificates of public convenience and necessity shall vest in the JEA where the continuing services are to be provided by the JEA, except where the interest in titles has been expressly denied by the JEA.

The public rights-of-way within the subdivision must be specifically accepted by the city for maintenance of the drainage collection system and roadways.

1.8 PROCEDURES FOR RECORDING OFF-SITE EASEMENTS

Prior to plat recordation or final plat acceptance, the Developer shall provide the following to Development Services for processing.

1. An original executed Grant of Off-Site Easement in the form prescribed in Attachment No. 23 herein.

2. Mylar and two (2) prints of drawing (Size of drawing must be 8 ½" x 11" or 8 ½" x 14" only)

3. Opinion-of-Title Certification (not over 30 calendar days old) in the same form required under Section 1.5.1 herein, and, if applicable, completed consent and joinder documentation for any mortgage holders in the form prescribed in Attachment No. 24D for easements.

4. Recording Fees in accordance with Attachment No. 8 Schedule of Fees

NOTE: for the purpose of calculating the recording fee, the Grant of Easement Documents, the easement drawings, and any consent of joinder documents are usually the documents recorded.

1.9 PROCEDURES FOR RECORDING THE FINAL PLAT

The Developer shall provide the following to Development Services for processing the final plat for recording.

1. Mylar: Original plat mylar and two (2) paper prints of the Final Plat.

2. Updated Opinion-of-Title Certification: An updated copy of the Opinion-of-Title Certification required under Section 1.5.2 herein. The title update shall not be less than 14 days old from the date that the plat is to be recorded. The state of the title of the lands to be platted as shown on the updated Opinion-of-Title Certification shall be in accordance with any requirements by the City in the Preliminary Plat Review, including but not limited to, the satisfaction or release of any encumbrances of record (e.g., liens, easements, and restrictions, etc.). The Developer shall provide the City with copies of any satisfactions or releases required to be obtained by the Developer in accordance with Section 1.5.2 herein.

3. JEA: A copy of Plat with each sheet stamped and signed (approved) by JEA.

4. Signs: A copy of the receipt(s) from the City Tax Collector as evidence of payment for street name and/or stop signs.

5. City Engineer: A letter from the City Engineer's Office certifying completion of required improvements or items 6 and 7 below.

6. Bond Amounts: An approved* copy of letter a from the registered professional or developer estimating the cost of remaining improvements in public space, including common area sidewalks, requesting approval of bond amounts. This letter should also include an estimate of the time required to complete the project along with copies of contract and payments (A.I.A. Form). (See Attachment No. 7).

   * The Bond Amounts letter must be submitted to and approved by Development Services prior to submittal of the plat for recording.

7. Plat Bond: A Plat Bond secured by Irrevocable Letter of Credit, Surety Bond or Cash covering the cost of required improvements in public space including off-site easements. This bond shall be for a period approved by the City Engineer's Office.

8. Recording Fee: A check made payable to the Clerk of the Circuit Court covering the cost of recording the plat and any other curative title documents in the Official Public Records of Duval County, Florida. (See Attachment No. 8 – Schedule of Fees).

9. A copy of JEA's Inter-Office Correspondence and/or a copy of the receipt from JEA as evidence of payment for underground electrical distribution and street light standards.

10. A copy of Concurrency and Mobility Management's approval vesting this project. VPAC or CRC Number (14 calendar days old Maximum).

11. Disk showing latest version ACAD drawing of plat.

Upon receipt of the listed items, Development Services will review the same and, if found to be in compliance with the provisions of the Code of Subdivision Regulations, will forward the plat through the Office of General Counsel, City Surveyor and City Engineer for review and approval within ten (10) business days thereafter. Upon those approvals, the Director of Public Works will sign the plat. Development Services will then forward the plat to the Clerk of the Circuit Court for recording.

1.10 PROCEDURES FOR TRAFFIC SIGN REQUESTS

It shall be the responsibility of the developer to pay for and provide the Traffic Engineer proper documentation and information in a timely manner in order to have signs erected at time of surface paving. Procedure is as follows:

Sixty days prior to anticipated paving date, the developer shall provide the Traffic Engineer with the following:

1. Receipt from City showing payment has been made.

2. JEA's electrical distribution plan showing street names and house numbers; in the case of other electrical providers such as Clay-Elect Co-op, street name and house numbering plan from the Building and Zoning Division.

3. Memo stating anticipated date pavement will be placed.

1.11 SUBDIVISION AND DEDICATION ACCEPTANCE

The following shall be submitted in a package to Development Services, 214 N. Hogan St., Ste. 2100, Jacksonville, Florida 32202.

1. Engineers Certificate of Compliance: The Registered Professional shall submit a Certificate in accordance with paragraph 654.136(c) Subdivision Regulations (sample Attachment No. 9 or 9A).

2. Surveyor Certificate: The Registered Land Surveyor shall submit a Certificate in accordance with paragraph 654.110 Subdivision Regulations (sample Attachment No. 10).

3. Owners Affidavit: The Certificate of construction completion shall be submitted by the owner or developer. The original will be forwarded by Development Services to JEA and a copy retained in the project file (sample Attachment No. 11).

4. Letter from Developer Covering the Following, (as designated by city's Project Engineer):
   a. Attachment No. 12 – Developer's Warranty, Indemnification and City of Jacksonville Acceptance Agreement
   b. Traffic Sign Installation: The Developer shall provide written notification of the scheduled completion date for the road construction for a development at least 30 days prior to such completion to the City Traffic Engineer at: Traffic Engineering Division, 1007 Superior Street, Jacksonville, Florida 32254. The following shall be included with the written notification:
      1. A copy of the entire subdivision master plan, which indicates the entire road, network for the development.
      2. A copy of the JEA underground electrical distribution plan showing the lot and block numbers and block numbers and street names and addresses for the development phase for which sign installation is requested.

3. Receipts evidencing payment had been made for all street and stop signs.

4. A copy of plans showing the location of sidewalks, paving, curbs and water and sewer lines (as-builts or partial as-builts, if available).

5. A return address, contact person and telephone number for the developer making the request.

6. Final Acceptance will not take place until all required signs are installed.

Upon receipt of all the above information, the street and stop signs will be installed by the Traffic Engineering Division to ready the development for final inspection. The developer shall be responsible for the repair, replacement or maintenance of any sign installed until the City has accepted such development phase for maintenance.

5. As-Built Drawings: As-builts for potable water mains, reclaimed water mains, sewage collection systems, force mains, and sewage lift stations, shall be submitted to JEA in accordance with JEA standards. Two (2) signed and sealed prints of as-builts for the paving and drainage shall be submitted to Development Services, 214 N. Hogan St., Ste. 2100, as required by paragraph 654.136(c), Subdivision Regulations. These as-builts shall be submitted to Development Services before the final inspection. As-built requirements are defined in Attachment No. 26.

   NOTE: All as-builts shall be stamped "as-built" with the information and certification included as shown on Attachment Nos. 18 or 19 and 19A.

6. Bill of Sale: Improvements other than subdivisions. This applies to dedications of water and sewer to the City as required by paragraph 750.704(e) of the Ordinance Code. (Sample Attachment No. 17).

7. Deed of Dedication: Deeds for rights-of-way and easements are either to be submitted with the 6-set approval or shortly thereafter. The city's Project Engineer will check to see that these have been recorded prior to writing the Acceptance Letter.

8. Letter of the Certification on Water Main Clearance: Department of Health and Rehabilitation Services Letter of Certification, along with copies of reports or samples, which are submitted to the city's Project Engineer, will be placed in the project file.

9. Two consecutive days of satisfactory bacteriological clearance from the Department of Health and Rehabilitation Services Duval County Public Health Unit on all water main sample points. Acceptable pressure test results for potable water, reclaimed water and sewer force mains.

   a. Satisfactory pump performance tests on pumping stations.

   b. Acceptable television inspection reports, tapes, and mandrel tests on gravity sewer lines.

10. Completion of final inspection punch list items.

11. Certificate of construction completion approved by the Department of Environmental Protection.

12. Approved As-Builts Pressure Test Certification: Pressure test results for both water and sewer force mains are to be in the project file.

13. TV Reports on Sewer Gravity Systems: Developer is to submit typewritten TV reports for review. (Copies of videotapes will be required.)

14. Pump Station “Start- up” Test”: the city's Project Engineer is to place a copy of the pump station “Start-Up Records Memo” in the project file.

15. Soil and Concrete Testing: Developer is to submit typewritten copies of soil and concrete testing performed during construction of subdivisions and other permitted work.

16. Prefinal Inspection Report: Prefinal inspection is optional upon request by the developer and not a requirement of the City.

17. Record of Final Inspection: The final inspection record shall indicate deficiencies noted and those persons in attendance. The original with the city's Project Engineer / Inspector's punch list items is retained in the file. The city's Project Engineer shall certify, by signature and date on the report, when the punch list items are completed.

18. A copy of the St. Johns Water Management Permit and a copy of the written notification to the District that project is complete and ready for inspection. (This notification can be the "Statement of Compliance" to the St. Johns River Water Management District.)

1.12 ADDITIONAL RESOURCES

1.12.1 ESTIMATED TIME REQUIREMENTS

ESTIMATED TIME REQUIREMENTS

ACTION	TIME (WORKING DAYS)
	Standard *
Informal Review by Concurrency and Mobility Management Systems Office	15 - 45
Pre-Application Procedure	19
Preliminary Site Development Plan Review	28
Final Site Development Plan Review	14
Preliminary Review - Preliminary Plat	15
Final Review- Preliminary Plat	15
Recording of Plat	10
TOTAL	115

* From day submitted until letter signed and mailed indicating completion/approval.

Notes: The Final Site Development Plan Review and Preliminary Plat Review may be processed simultaneously.

1.12.2 ADDITIONAL GOVERNMENT CONTACT INFO

ADDITIONAL CONTACTS

AGENCY	ADDRESS	TELEPHONE
Corps of Engineers	701 San Marco Blvd. Jacksonville, FL 32232-0019	232-2241
Florida Department of Environmental Regulation	7825 Baymeadows Way, Suite B200 Jacksonville, Florida 32256-7577	807-3300
Florida Department of Transportation	838 Ellis Road Jacksonville, FL 32205	1-800-207-8236
The St. Johns River Water Management District	7775 Baymeadows Way Jacksonville, FL 32216	730-6270
Public Service Commission	2540 Shumard Oak Blvd. Tallahassee, FL 32399-0850	1-850-413-6100
City of Jacksonville Traffic Engineering	1007 Superior Street Jacksonville, FL 32202	387-8861
Development Services	214 N. Hogan St., 2nd Floor Jacksonville, FL 32202	255-8310
JEA	21 West Church Street Jacksonville, Florida 32202	665-6000
Topographical/Survey Section	214 N. Hogan St., 10th Floor Jacksonville, FL 32202	255-8762
Planning Department	214 N. Hogan St., 3rd Floor Jacksonville, FL 32202	255-7800
Fire Marshall	214 N. Hogan St., 2nd Floor Jacksonville, FL 32202	255-8320

SECTION 2.0 – TRAFFIC ENGINEERING REQUIREMENTS

Pursuant to Resolution 2019-653-A, the City of Jacksonville (COJ) is committed to applying the guidelines of Complete Streets.

2.1 DRIVEWAY AND ACCESS CONTROL

It is the intent of the City to grant owners of property abutting City-owned and maintained streets and highways the right of safe and adequate access to such properties while providing sufficient roadway capacity, minimizing accident potential, and maintaining safe and comfortable bicycle facilities, sidewalks, and shared-use paths across driveways. Therefore, the City finds it necessary to limit the number, width, size, type and location of driveways, or to regulate the vehicular movements in and out of driveways, in order to serve the best interest of the general public. The design of streets and frequency of driveway access shall be related to the context of the surrounding development.

2.1.1 GENERAL REQUIREMENTS

Driveways shall be classified according to the type of development which they serve, the volume of traffic using the driveway, the speed and classification of the servicing roadway.

Class-I Driveways primarily serve residential developments with peak hour traffic volumes of 30 Vehicles per Hour (“VPH”) or less or with average daily traffic of 300 Vehicles per Day (“VPD”) or less and are intended for low-speed passenger vehicle use only. Class I driveways utilizing a flared design rather than a radial return so that the sidewalk maintains a flat surface (see Figure 2.1 below), shall be required in developments which include, but are not limited to, the following:

1. All single residential family dwellings
2. Townhomes
3. Multi-family developments of 30 units or less

Class II Driveways are intended for use when traffic volumes are 30 VPH or less, or with average daily traffic of 300 VPD or less, and are intended primarily for passenger vehicle use on roadways where the average posted speed is less than 40 mph. Class II driveways shall be required in developments which include, but are not limited to, the following:

1. Convenient stores without diesel facilities
2. Gas stations without diesel facilities
3. Daycare facilities 150 children or less
4. Professional offices 8000 square feet or less
5. Retail stores 8000 square feet or less
6. Mini-warehouses

Class III Driveways are intended for use when traffic volume exceeds 30 VPH or 300 VPD, the posted speed is greater than 40 mph, and the road is designed to serve all legal vehicle types. Class III driveways shall be required in developments which include, but are not limited to, the following:

1. Multifamily developments greater than 30 units with single family dwellings driveway
2. Mall entrances
3. Shopping center main entrances
4. School and church entrances
5. Office complex greater than 8000 square feet
6. Multi-unit commercial developments
7. Industrial warehouses
8. Business parks
9. All developments: general truck and tractor trailer traffic
10. All driveways within the limits of a signalized intersection

Driveway types shall also be selected based on the speed of the adjacent roadway.

2.1.2 DRIVEWAY DESIGN AND ROADWAY TYPES

It is important to design roadways using a context sensitive design to ensure that pedestrians and cyclists can be accommodated while safely providing for motorized users, including large vehicles.

There are two types of driveway designs: flared; and radial return. The design is based on whether the road is curbed or has a flushed shoulder, as well the driveway class, and the posted speed limit. An example of each design is shown in Figure 2.1.

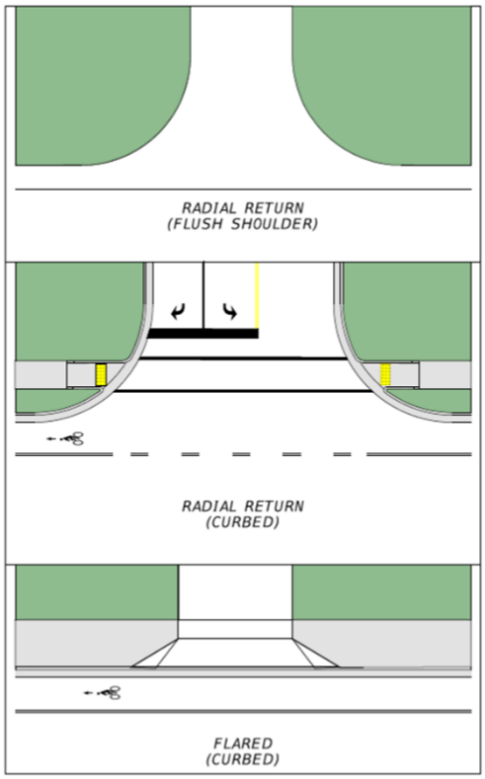


Figure 2.1: Flared and Radial Return Driveway Examples

Source: FDOT Design Manual, 2021

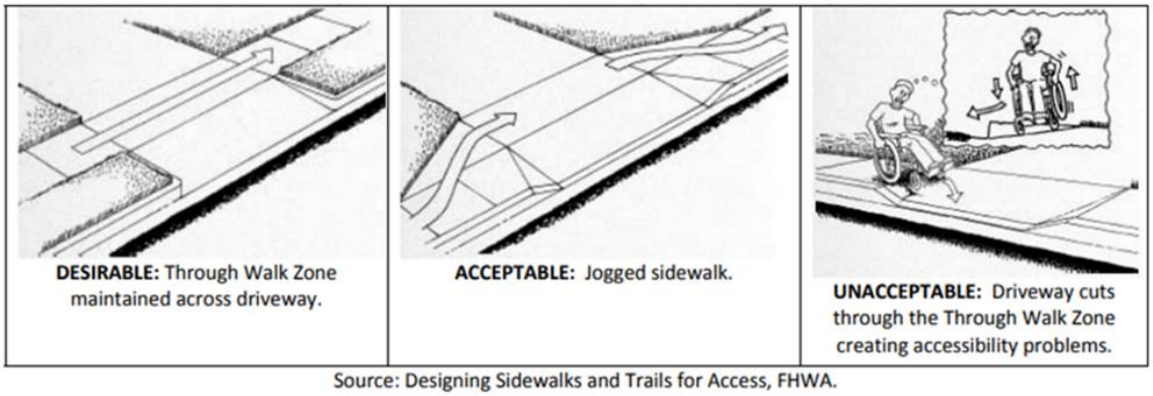
These designs impact vehicles entering and exiting sites, with larger radial return type allowing for higher speeds. Other considerations for driveway design are:

1. Context classification
2. Safety of drivers, pedestrians, and other wheeled units
3. Design speed of roadway
4. Driveway traffic volume
5. Entry and exit movements
6. Available right-of-way
7. Design vehicle

2.1.2.1 Radial Return Driveways (Flush Shoulder and Curbed)

Radial return driveways may only be used on high-speed roadways (40mph or higher) or in rural contexts, as per driveway classifications. Radial return driveways shall not be installed on curbed roadways with a speed limit of 35mph or less. The disadvantage of radial return driveways is that they may:

1. Disrupt continuous sidewalks and shared-use paths across driveways
2. Encourage higher speeds for vehicles
3. Decrease the safety and level-of-comfort for ADA passage across driveways
4. Prioritize vehicle movement over the safety and comfort of vulnerable roadway users



Source: Designing Sidewalks and Trails for Access, FHWA.

Figure 2.2

2.1.2.2 Flared Driveways

Flared driveways must be constructed on lower-speed roadways (posted speed limit 35 mph or less) in urban contexts, as per driveway classifications.

Flared driveways must be installed on curbed roadways with posted speeds of 35mph or less. The advantages of flared driveways are as follows:

1. Eliminate the use of curb ramps, providing a higher level of comfort for nonmotorized passage across driveways.
2. Encourage lower speeds for vehicles.
3. Increase the level-of-comfort for ADA passage across driveways.
4. Maintain the elevation of the sidewalk throughout the walk zone.
5. May utilize “jogged” sidewalks to maintain grade elevation of existing nonmotorized facilities where sidewalk widths or right-of-way alone is insufficient.
6. May maintain the grade elevation and width of existing shared-use paths through the walk zone.

Requirements for Flared Driveways (adjacent to curbed roadways with a posted speed of 35mph or less) shall include but not be limited to the following:

1. Driveways crossing sidewalks shall maintain the same grade and elevation as the adjacent sidewalk through the walk zone. The “walk zone” is the area where the projection of the sidewalk crosses the driveway.
2. The cross slope of the walk zone shall not exceed 2%.
3. The ramp portion of the driveway should be located within the furniture zone or utility strip when possible. The “furniture zone” or “utility strip” is the area between the face of the curb and the edge of the sidewalk.
4. The grades of the driveway must meet the grades shown in FDOT Index 522 “Concrete Flared Driveways”.
5. In constrained conditions or locations without a utility strip the sidewalk shall be “jogged” to maintain its normal elevation. If there is not enough Public Right-of-Way for the jogged sidewalk, then the

developer shall provide an easement to the City.

6. The walk zone may be reduced to 4’ in constrained conditions unless there is a shared-use path.
7. If a driveway crosses a shared-use path, then the walk zone shall be equal to the full width of the shared-use path.
8. Exceptions to these requirements may be granted in writing by the City Traffic Engineer

For curbed roadways with a posted speed limit of 40mph or over, all Class-1 Driveways shall be flared.

For curbed roadways with a posted speed limit of 40mph or over, for Class II or Class III, the developer shall select the driveway type based on the 2019 FDOT Access Management Guidebook.

2.1.3 DRIVEWAY SPACING REQUIREMENTS

Driveway location and spacing are carefully controlled for the purpose of minimizing conflict and to provide adequate site distance for entering and exiting traffic. Proper spacing helps identify which development and driveway serves and provides adequate spaces for utility pole and traffic signs.

Driveways shall not be located closer than ten (10) feet from the point of curve of a radius return or closer than four (4) feet from a stop bar of a signalized intersection. In no case shall a driveway or any portion of a driveway be located within a signalized intersection on the signal side of the stop bar unless this driveway is fully controlled by the traffic signal. At high volume intersections or at intersections which contain significant amounts of left turn volume, the Traffic Engineer may require driveways to be located as far as 250 feet from the intersection, such that turning movements into and out of the driveway will not take place within the left turn stacking or storage lane.

The recommended minimal spacing between driveways should be as follows:

Class	Spacing
Urban Class I	Zero
Urban Class II	17 feet
Urban Class III	75 feet
Rural Class I	Zero
Rural Class II	75 feet
Rural Class III	300 feet

Driveway spacing will be measured along the right-of-way lane from the edge of the driveway to edge of adjacent driveway and shall not include the width of driveway.

2.1.4 WIDTH AND NUMBER OF DRIVEWAYS PER DEVELOPMENT

The width and number of driveways for a parcel or development shall be determined by the type of development and the volume of traffic projected to use the driveway.

In general, each parcel or development will be permitted a single driveway or joint-use driveway providing access to a public street. As an exception, additional driveway(s) may be permitted for large developments when it is shown that the additional driveway(s) is essential to provide adequate access to the development and will not adversely effect the safety or level of service of the existing roadway. Driveways on corner lots shall be designed and located to discourage traffic using the driveway as a bypass to avoid the intersection and/or other obstacles within public right-of-way.

The width of driveways shall conform to the Landscape Ordinance Section 656.124(d) of the City Ordinance Code.

Class I driveways shall be a minimum of eight (8) feet wide and a maximum of 24 feet wide.

Class II and Class III driveways which do not contain a landscape isle shall have a minimal width of 24 feet and a maximum width of 36 feet.

The width of driveways will be measured perpendicular to the driveway at the right-of-way line and will not include the flares or transitions.

Class II and Class III driveways may contain a landscape island of 10 feet to 16 feet wide separating the two-way traffic. In such case, each travel way shall be a minimum of 16 feet wide and a maximum of 24 feet wide when measured from the inside edge of the island to the outside edge of the driveway. In no case shall the total width of a driveway containing a landscape island exceed 48 feet.

Landscaping located within an island shall be approved by the Traffic Engineering Division, Engineering Division or their designee. Landscaping shall not block sight distance or pose a traffic hazard. Landscaping restrictions also pertain to subdivisions and/or commercial signs.

When more than one driveway for a parcel or development is approved by the Traffic Engineer, the maximum combined width of all driveways through the perimeter landscape area shall be no more than 48 feet for properties with 100 feet or less of street frontage. For properties with more than 100 feet of street frontage, an additional 1 foot of driveway through the perimeter landscape area may be constructed for each 4 feet of street frontage in excess of 100 feet. In no event shall more than 50 percent of any street frontage be paved.

2.1.5 JOINT USE DRIVEWAYS AND INTERNAL CROSS EASEMENTS

Where a parcel or development does not contain adequate frontage to comply with the minimal spacing specified herein or when driveway locations may be restricted by the Traffic Engineer, joint use driveways may be required, whereby two or more parcels or developments will be served by the same driveway. The City encourages the use of cross easements and internal circulation roadways connecting adjacent developments when there are significant productions and attractions between adjacent developments to reduce the total number of trips on the public roadway.

Major developments such as shopping centers and office parks which contain outparcels which are adjacent to existing or proposed compatible developments will require provisions for internal access to such outparcels or internal connections to adjacent developments.

The developer shall be responsible for all arrangements and agreements with adjacent property owners when joint use driveways or internal cross easements are required by the City.

2.1.6 ACCESS TO THE PUBLIC RIGHT-OF-WAY

Access to commercial and office use parcels. When providing access to commercial and office use parcels, other than those within the commercial central business district (“CCBD”), or as accepted herein the following shall apply:

1. Where a commercial or office use development abuts or contains a designated collector or higher functionally classified roadway, a cross-access drive, lane or way (“cross-access”) shall be constructed to connect the properties adjacent to the collector or higher functionally classified roadway in order to provide for interconnectivity of traffic flow through and along parking lots and access roads leading to and from adjacent commercial or office use developments without the need to access the collector or higher classified roadway.

(a) If the adjacent site is developed and, in the opinion of the planning and development department, cross-access is feasible, the owner or developer shall design and build the appropriate cross-access to the property line of the adjacent parcel.
(b) if the adjacent site is developed, but in the opinion of the planning and development department, cross-access is not feasible at this time, the owner or developer shall design and designate on the site plan the location of future cross-access but will not be required to construct the cross-access at the time of initial site development. The owner shall commit, in writing, to construct and allow cross-access at such time as the city determines that cross-access is feasible and desirable.
(c) If the adjacent site is undeveloped, the owner or developer shall design and build the cross-access to the property line of the adjacent parcel in anticipation of future connection when that site is developed.
(d) The minimum width of a vehicular cross-access shall be 24 feet.
(e) existing commercial or office use developments in place on March 1, 2019 that do not contain the interconnectivity as required by this section, shall be brought into compliance with this requirement under the following conditions provided that a determination is made by the Director that such interconnectivity requirements do not impose an undue burden, as described below, on the affected property owners:

(i) When a new driveway connection permit is required for the existing development; or

(ii) When substantial enlargements or improvements to the existing development are undertaken. “substantial” means within any three-year period, when the total cumulative renovation of existing development is equal to at least 50 percent of the assessed value of the lot improvements (including structures and parking and exterior areas but not the value of the land) on the start of the three-year period, according to the property appraiser, or the total square footage of a structure is expanded to 50 percent or greater, as well as any cumulative square footage expansions totaling 50 percent; or

(iii) When a 25% or greater increase in vehicle trip generation is attributable to the new development, as compared to the existing development, is documented.

(f) Parcels zoned ccg-2 shall not be required to connect to parcels within a zoning district other than ccg-2, but they shall be required to interconnect with each other. Similarly, parcels within a zoning district other than ccg-2 are not required to connect to a parcel zoned as ccg-2.

2. The construction or erection of any barrier or obstacle which would prohibit access to the cross-access drive from a site's major parking area or prohibit sharing access drives for interconnectivity with adjacent properties shall be prohibited. This provision is not to conflict with or exempt a developer from complying with landscape and tree protection regulations.

3. Specific exemptions to, or abatement of, this provision may be granted by the Director, or his or her designee when one or more of the following conditions occur:
(a) physical or regulatory constraints on a currently developed property prohibit, as determined in consultation with the city engineer, the construction of a cross-access drive which meets the city's design and clear zone standards; or
(b) The parcel required to provide interconnectivity requests an abatement based upon the use of their property as particularly requiring security or privacy as a mandatory element of their business. When that use ceases, the requirement to provide the cross-access resumes, and the abatement ends; or
(c) The owner or developer can prove to the satisfaction of the Director that there was a lease, mortgage, or other agreement, related to the real estate parcel in question, in existence prior to April 4, 2018, that prohibits the developer or owner from providing the cross-access. For purposes of this abatement, the abatement ends at the conclusion of such an agreement’s full term.
(d) The Director determines that an affected property owner otherwise subject to the provisions of this section would currently be subject to an undue burden if required to provide the interconnectivity. An “undue burden” shall be determined as follows:

(i) In the opinion of the city’s traffic engineer, the connection will create undue traffic conflicts;

(ii) In the opinion of the Director, the connection will create undue harm to protected trees;

(iii) In the opinion of the city's engineer, the elevation change between sites creates an undue engineering burden, or creates undue utility conflicts;

(iv) Any other burden expressed in writing by the Director stating the undue burden and the rationale for declaring the burden undue.

2.1.7 MEDIAN CROSSOVERS

Driveways which are located on divided roadways shall be aligned with an existing median or shall be offset from the centerline of the median crossing by a distance of 75 feet or more. The Traffic Engineer may require the removal/relocation of existing medians opening or the construction of new median openings to align with proposed driveways when necessary for proper safety and traffic flow. All driveways located at median openings will require construction of adequate left-turn lanes unless such traffic movement is restricted or non-existent.

2.1.8 LEFT TURN STORAGE LANE

Left-turn storage lanes will be required at all driveways when the volume of left-turn traffic into the driveway and the volume of opposing through traffic is sufficient to affect the safety and capacity of the advancing traffic stream. Left-turn lanes may also be required by the Traffic Engineer when deemed necessary to provide adequate site distance or to align with opposing left-turn lanes.

In general, left-turn storage lanes shall be considered when the volume of left-turn traffic exceeds 30 vehicles per hour and the through traffic exceeds 200 vehicles per hour in either direction. However, local conditions may require modification of these thresholds depending on the type of development and existing traffic characteristics.

2.1.9 RESTRICTED DRIVEWAYS

The City Traffic Engineer may require new restrictions or one-way operation of a driveway when such operation is deemed necessary for safety and/or the present existing levels or service. The owner shall install and maintain all necessary traffic-control devices in a proper manner to assure the intended operation of restricted driveways.

2.1.10 PERMITS

A permit to work within the public right-of-way will be required for all driveways constructed on City-owned and maintained roadways.

Except for single-family dwelling units, all building plans submitted for permits shall show all existing and proposed driveways, including any required acceleration/deceleration or left-turn lanes. The City Traffic Engineer shall review all such building plans on both City and State roadways. A separate permit from FDOT will be required for all driveways on State roads.

Driveway permits will not be issued and access to a parcel will be denied unless a site plan showing the existing or proposed development is submitted or other documents submitted indicating the proposed usage of the driveway and parcel.

2.2 SIDEWALKS

2.2.1 RESIDENTIAL SUBDIVISION SIDEWALK OPTIONS

Option A: Provide five-foot (5') wide unobstructed sidewalks on both sides of all local streets, except as follows:

1. A cul-de-sac street with less than 15 lots-sidewalks are not required. (Note: corner lots shall be included in the lot count)
2. Cul-de-sac streets and minor roads that serve between fifteen (15) lots and thirty (30) lots. A five-foot (5') wide sidewalk required on one side.

Option B: Provide a six-foot (6') wide unobstructed sidewalk on one side of the street for all local streets, , as long as the sidewalk establishes good interconnections and is located on the side of the street that will serve the most residential lots.

The subdivision entrance road shall provide a six-foot (6') sidewalk on both sides of the collector or trunk road and the sidewalks shall connect to external sidewalks subject to staff review.

Notes:

1. Cul-de-sac bulb circumference area shall not require a sidewalk; however a separate ADA Standard curb ramp shall be provided regardless of available driveway aprons.
2. Cul-de-sacs that lead to parks or clubhouses shall have a sidewalk on at least one side of the street regardless of the number of lots.
3. Sidewalks may not be required within proposed subdivision right-of-way that directly abuts preserved wetlands and retention ponds unless a pedestrian connection is deemed necessary and if pedestrian movements are accommodated on the other side of the street.
4. Sidewalk construction must be consistent with the historical design prevalent on the blocks. New and reconstructed sidewalks are required to use hexagonal concrete pavers, hexagonal stamped concrete, or other historically unique materials and patterns specific to the block. If stamped concrete is used, it must be constructed in such a manner that it accurately reproduces the style of the original material and is consistent in its application throughout.

2.2.2 GENERAL SIDEWALK REQUIREMENTS

Below are the minimum sidewalk width requirements for new and reconstructed streets in each Development Area, unless other specified in 2.2.1 Residential Subdivision Sidewalk Options (Per Sec. 654.133). Refer to the Development Area map for boundaries.

Development Area	Sidewalk Location	Required Sidewalk Width (feet)
Downtown	Both sides of street	8
Urban Priority Area	Both sides of street	8
Urban Area	Both sides of street	6
Suburban Area	Both sides of street	6
Rural Area	Both sides of street	5

i. .

NOTES:

ii. When standard sidewalk width cannot be attained due to demonstrated right-of-way constraints, provide the greatest sidewalk width possible, but not less than five feet

iii. Safe and exclusive pedestrian access shall be provided between existing bus stops and identified future bus stops and individual building lots.

iv. ADA standard curb ramps, curb cuts, and detectable warnings are required at all intersections where one or more of the rights-of-way of the intersecting streets contain sidewalks.

Required sidewalk widths by Development Area, shall be provided within existing city or state road right-of-way for all proposed development and re-development of property fronting along city or state road right- of-way except as follows:

1. A sidewalk will not be required where a sidewalk already exists as long as it meets ADA Standards and General Sidewalk Requirements.
2. Installing sidewalks may not be required when construction of sidewalks by the City or State is funded and provided for in the Capital Improvements Program, Downtown Community Redevelopment Plan, JTA Mobility Works, or Better Jacksonville Plan, and when construction is scheduled to begin within two years. A sidewalk bond shall be posted in case the sidewalk construction is cancelled or delayed.
3. If the Developer is unable to construct sidewalks, a contribution to the In-Lieu Sidewalk Program Application, also referred to as the Sidewalk Construction Special Revenue Fund, may be paid in-lieu of constructing sidewalks. However, specific criteria shall be met in order to qualify for and contribute to the sidewalk fund. Specific criteria are outlined in Section 2.2.5 In-Lieu Sidewalk Program Application.
4. Sidewalks shall be required on new, reconstructed and existing streets adjacent to proposed developments when the development is within reasonable pedestrian access of public facilities (i.e., schools, parks, shopping centers, etc.), as determined by the Planning and Development Department or where an existing sidewalk could be joined. This requirement may only be waived by the Department when developers are approved to pay into the Sidewalk Construction Special Revenue Fund pursuant to Sec. 111.550.

Notes: When the Florida Department of Transportation constructs or reconstructs a new roadway, they are required to provide a shared-use path or a sidewalk with a buffered/protected bike lane or separate bike lane, if right-of-way is available. If right-of-way is unavailable, construction or reconstruction will be reviewed on a case-by-case basis as determined by Public Works and the Planning and Development Department.

2.2.3 SIDEWALK DESIGN REQUIREMENTS

Where buildings are located along-side of the right-of-way, sidewalk width shall be increased by (3) feet.

Permanent obstacles such as utility pole signs, mailboxes, drainage structures, etc., shall not be located within a sidewalk unless a minimum of four (4) feet clearance can be obtained within the sidewalk width.

When the projected volume of pedestrians on a sidewalk is unusually high, the Traffic Engineer may require an increase in sidewalk width.
To provide proper pedestrian/vehicle separation and adequate space for traffic signs, poles, utilities, etc., planting strips shall be located between the edge of pavement and sidewalk. For urban, suburban, and rural sections, the minimum width of a planting strip shall be five (5) feet, which measures from the back of the curb to the edge of the sidewalk. When trees will be located within the planting strip, the minimum width shall be increased to eight (8) feet. Sidewalk grades; cross slopes; and fencing or railings (where drop off hazards are present), shall be consistent with the current FDOT Design Manual.

For sidewalks on roadways without curb and gutter, a minimum clear zone between the edge of pavement and the sidewalk shall be provided in accordance with the clear zone requirements in the FDOT Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways.

2.2.4 PEDESTRIAN, SHARED-USE PATH, TRAIL, & BIKE CROSSINGS

Sidewalks, shared-use path, trails, and bike crossings shall be designed and located to minimize traffic conflicts and to provide adequate sight distance for all road users (i.e. pedestrians, bicyclist, and motorist).

ADA detectable curb ramps and detectable warnings shall be located at all pedestrian, shared-use path, and trail crossings.

Bike-crossings for two-way cycle tracks are similar to the markings of a high-emphasis pedestrian crosswalk. Green-colored pavement markings may be used when the need to enhance the conspicuity of bicycle-pedestrian-vehicular conflict areas is demonstrated. The FDOT Design Manual, where examples are provided, will be used as reference for green-colored pavement markings.

Active Warning Devices (Rectangular Rapid Flashing Beacons, HAWKs, etc.) at pedestrian crossings, shared-use path crossings, trail crossing, and bike crossings may be required per minimum levels of demand as determined by the City Traffic Engineer.

2.2.5 IN-LIEU SIDEWALK PROGRAM APPLICATION

The City of Jacksonville (COJ) is committed to applying the guidelines of complete streets per Resolution 2019-653-A. COJ requires that new development and redevelopment projects include adequate pedestrian access via the construction or reconstruction of sidewalk infrastructure. The goal of this policy is to ensure that all modes of transportation are taken into consideration when designing road improvements. Furthermore, it is ensuring that a complete sidewalk network is provided throughout the City, while also recognizing that sidewalks are not feasible in all circumstances due to unforeseen or uncontrollable situations.

EXPLORE ALTERNATIVES FIRST

Prior to applying for the In-Lieu Sidewalk Program, alternative options of accommodating sidewalks shall be considered and documented including, but not limited to:

- Meandering alignment
- Easement acquisition

CRITERIA FOR QUALIFICATION

In situations where the construction of a sidewalk is not feasible, select projects may qualify for the option of making an In-Lieu Sidewalk Program payment as an alternative to constructing a sidewalk. The In-Lieu Sidewalk Program is not to be used as an option to reduce project costs.

To qualify for the In-Lieu Sidewalk Program payment option a project must meet atleast one of the following criteria:

1. EXCEPTIONAL SPECIMEN TREE - Requires the removal of or will adversely impact the health of a significant tree or an exceptional specimen tree as defined by Section 656.1203 (bb) (3), Ordinance Code -Hardwood tree with a Diameter Breast Height (DBH) of 24 inches or greater.

2. RIGHT-OF-WAY (ROW) - Contains significant right-of-way constraints.
   a. If a project is constrained by the ROW, Applicant shall obtain an easement in order to install a sidewalk. The easement must be obtained prior to applying for the In-Lieu Sidewalk Program.

3. DRAINAGE - requires significant drainage modifications.
   a. A certain level of drainage improvements shall be expected when installing sidewalks. Installing drainage pipe is considered the minimum standard of making required site improvements. In some instances installing drainage pipe to replace a drainage ditch may be required and should be considered in the preliminary design. As such, installing drainage pipe to replace an existing drainage ditch does not qualify as a significant drainage modification.

4. REGULATORY HARDSHIP - A regulatory hardship means an official action issued, in writing, by a governmental agency that prevents the applicant from sidewalk installation requirements. Such official governmental action may include but is not limited to: a recommendation of denial of any permits or other required regulatory approvals such as building permits, environmental permits, administrative final orders, etc.

5. CAPITAL IMPROVEMENT PROGRAM, DOWNTOWN COMMUNITY REDEVELOPMENT PLAN, JTA MOBILITY WORKS, & BETTER JACKSONVILLE PLAN - When Included as part of these documents, installing sidewalks may not be required when construction of sidewalks is funded and provided in any of these lists and when construction is scheduled to begin within two years. Does not exempt from paying into the sidewalk program.

6. NO PEDESTRIAN ACCESS - Building the sidewalk, in a non-residential area, would not improve or add to any existing or future pedestrian access. The most common instance of this is a non-residential development located directly adjacent to the end of a permanent dead end street where building a sidewalk toward the dead end road does not provide pedestrian access to any building entrance, parking lot, or other activity area. In this case, sidewalk will not be required to be built between the permanent dead end of the street and proposed development site.

ECONOMIC HARDSHIP:
Consistent with Section 654.137 (a), Ordinance Code, an In-Lieu Sidewalk Program Application may not be granted solely on the basis of economic hardship or if it would have the effect of nullifying the intent and purpose of these regulations.

To apply to the In-Lieu Sidewalk Program, submit an application to the Bicycle and Pedestrian Coordinator in the Planning and Development Department. Application will be reviewed by the City Engineer, Bicycle and Pedestrian Coordinator, Development Services, Traffic Engineering, and ROW & Stormwater Maintenance,

2.3 STREETSIDE LANDSCAPING

2.3.1 STREETSIDE LANDSCAPING DEFINITION

Streetside landscaping shall include the installation of any tree, bush, shrubbery, groundcover (exceptsod or grass), irrigation system or any fixed object such as rocks, boulders, planters, fountains or soil mounds which are installed or planted in a median strip, utility strip or landscape island within the right-of-way of a city-owned and maintained roadway. This section shall not apply to existing natural vegetation within existing rights-of-way or to any protected trees or other items covered by the Landscape Ordinance 88-668-387.

2.3.2 STREETSIDE LANDSCAPING MAINTENANCE AND PERMITS

Except under special arrangements or in certain designated districts, the City does not maintain streetside landscaping. Maintenance shall be the responsibility of the developer, property owner, Home Owners' Association or others as indicated in the permit. Prior to installing or planting any streetside landscaping, a plan shall be submitted for approval and permitting showing the location, size, and type of plants, as well as any other landscaping features.

2.3.3 STREETSIDE LANDSCAPING DESIGN CRITERIA

All streetside landscaping shall be designed to provide adequate site distance for pedestrians, bicyclists, and vehicular drivers entering, exiting, or traveling within the right-of-way.

Urban sections shall contain no tree or other landscaping closer than four (4) feet from the face of the curb. For roadways containing no curb and gutter, landscaping shall not be placed within the recovery zone as specified in the FDOT Manual on Minimum Standards for Road Construction (Green Book).

All shrubbery, bushes, groundcover and landscape berms located within a median or landscape island

shall not be higher than two (2) feet from the pavement surface. Landscaping items located within the utility strip or adjacent to the outside edge of pavement shall not be greater than 2.5 feet in height when located within the line of sight required to maintain adequate sight distance at all intersections, horizontal curves, driveways and pedestrian crossings.

All trees used in streetside landscaping shall have a maximum trunk diameter of 4 inches and shall have an unobstructed clear height of seven (7) from the sidewalk or roadway surface to the bottom of the branches. Trees that have a drip line which protrudes over the roadway surface shall have an unobstructed clear height of 18 feet from the roadway surface to the bottom of the branches.

2.4 SUBDIVISION IDENTIFICATION SIGNS

2.4.1 SUBDIVISION IDENTIFICATION SIGNS – OUTSIDE OF CITY RIGHT-OF-WAY

Subdivision identification signs shall be governed and comply with Chapters 320, 326 and 656.416 of the City Sign Ordinance. In addition to the provisions of the above sections, all subdivision identificationsigns, movements, gates, fences, landscape furniture and any other fixed objects located within a City-owned and maintained right-of-way shall be designed and constructed to provide adequate sight distance for pedestrians, bicyclists and vehicular drivers.

2.4.2 SUBDIVISION IDENTIFICATION SIGNS – WITHIN CITY RIGHT-OF-WAY

1. Application for permit for a development identification sign shall be made to the Chief, Building and Zoning Inspection Division. Permit may be issued only to a licensed sign contractor who has posted the $5,000 bond required by Section 326.106 for sign installation and also the $5000.00 bond required for work in public space, as required by Section 744.110.

2. Applications for such permits shall have been reviewed and approved by the City Engineer, Traffic Engineer, and prior to issuance. Sign installation shall be inspected by representatives of both the Building and Zoning Inspection Division and City Engineer to assure compliance with terms of permit.

3. Sign shall conform to maximum area or height prescribed by Section 656.416 (Zoning Code) for the Zoning District in which it is located, except when a variance has been granted by the Planning Commission; however, notwithstanding the provisions of the Zoning Code or variances thereto, signs in public space shall not exceed 100 square feet in area. For this purpose, area shall mean face area of the entire structure upon which the sign is placed.

4. Sign shall be constructed of masonry, non-corrodible metal, pressure-treated wood, or other permanent materials. Signs located in street right-of-way or other public space shall not be illuminated, other than subdivision identification signs which may be indirect lighting only, as approved by Traffic Engineer.

5. Wording of sign shall be as approved by Director of Planning and Development and shall be limited to development identification only with no advertisement, corporate logos, or other information.

6. Sign shall be removed by owner in not more than 60 days upon notice by the Director of Public Works.

2.5 ROADWAY LIGHTING STANDARDS

2.5.1 ROADWAY LIGHTING STANDARDS - INTENT

To provide for the safety of vehicular and pedestrian traffic, it is the policy of the City of Jacksonville to require adequate street lighting for all new residential and commercial subdivision streets. The purpose of this section is to relate the design criteria and processing requirements to street lighting.

2.5.2 ROADWAY LIGHTING DESIGN CRITERIA

2.5.2.1 ILLUMINATION CRITERIA

Roadway Function	Average Maintenance fc	Uniformity Avg/Min	Uniformity Min/Max
Local	0.4	10:1	10:1
Collector	0.6	8:1	10:1
Arterial	1.0	6:1	10:1

2.5.2.2 LAYOUT AND SPACING

Streetlights shall be placed at all critical locations, such as intersections, curves of less than 35 mph design speed, pedestrian crossing, high-volume driveways (50 mph or greater) and at all areas of the roadway at which traffic hazards exist or at which lighting is necessary for vehicular, bicycle, or pedestrian safety. In addition to the above locations, streetlights shall be equally spaced between critical locations to obtain the required illumination criteria.

2.5.2.3 DESIGN RESPONSIBILITY

Unless indicated otherwise, the Traffic Engineering Division will be responsible for the layout of approved JEA fixtures to accomplish the specified illumination criteria. They will forward this layout to JEA for the electrical design.

However, the developer may elect to design the street lighting plan as a part of the development plans when the location of streetlights are critical to the development. In this case, the street lighting plan shall be submitted as a part of the two-set plan submittal and shall include the necessary calculations demonstrating compliance with the design criteria. Following approval, the Traffic Engineering Division will forward to JEA for electrical design. The street lighting plan and associated calculations shall be prepared by a registered Professional Engineer in the State of Florida with experience in the design of street lighting systems.

2.5.2.4 JEA EQUIPMENT STANDARDS

Fixture	Type	LED
STLLE001	70W HPS Equivalent Cobra-Head	40W
STLLE002	250W HPS Equivalent Cobra-Head	115W
STLLE003	400W HPS Equivalent Cobra-Head	275W
STLLE004	70W HPS Equivalent Decorative Post Top	40 W
STLLE005	320W MH Equivalent Shoebox	162W

2.5.2.5 SPECIAL STREETLIGHTING

In certain locations, the City may accept non-standard or special street lighting within the public right-of-way design; installation and maintenance including all operational cost are the responsibility of the developer/owner. Non-standard and special street lighting shall comply with the design criteria specified above.

2.5.3 ROADWAY LIGHTING AS-BUILT REQUIREMENTS

As-builts shall be submitted for review and approval (see Attachment Nos. 18 or 19 and 19A).

SECTION 3.0 – ROADWAY DESIGN REQUIREMENTS

3.1 GENERAL ROADWAY DESIGN REQUIREMENTS

The following standards and criteria have been established for a context sensitive approach to the construction of new, reconstructed, and resurfacing of City roadways and intersections. Portions have been excerpted from The American Association of State Highway and Transportation (AASHTO) guidelines ("A Policy on Geometric Design of Highways and Streets" – Guide for the Development of Bicycle Facilities), Florida Department of Transportation (FDOT) Standards (Manual of Uniform Minimum Standards for Design, Maintenance and Construction for Streets and Highways FDOT Design Manual), Institute of Transportation Engineers (Designing Walkable Urban Thoroughfares: A Context Sensitive Approach), and National Association of City Transportation Officials (NACTO) guides.

Where unusual and/or extraordinary conditions are encountered, a variance from the Standards may be granted by the City Engineer. Such a variance shall be obtained in writing and submitted with the plans for approval. Design of arterial and collector facilities will be reviewed on a case-by-case basis; however, minimum right-of-way requirements shall be a set forth in Chapter 654 Code of Subdivision Regulations. In no case shall a design be less than the minimum standards and criteria established by AASHTO.

3.1.1 DESIGN CLASSIFICATION

The Design Classification System is different than, but related to, the Functional Classification System. Functional Classification focuses on traffic movements, whereas Design Classification considers a roadway's land use context and incorporates all modes of transportation in designing a street or a road.

All new, reconstructed, and resurfaced roadways will be assigned a context sensitive Design Classification by the Planning and Development Department, Transportation Planning Division. In some situations, segments of the same road or street may be assigned different Design Classifications. The Design Classifications are in accordance with the engineering typical sections, Plates 114-129, at the end of this section.

Figure 3.1 below depicts how the existing Functional Classification System relates to the Design Classification System. Table 3.1 describes each Functional and Design classification. A roadway will have both a Functional Classification and a Design Classification. Road corridors and truck routes each have a classification that guides the lane configuration, the right of way, bike lanes, shared use paths, and sidewalks. Typical sections for each design classification, including bicycle facilities and truck routes, are shown on Plates 114 through 129.

Figure 3.1 Relationship between Functionally Classified Roadway Types and Design Classifications

City of Jacksonville Context Sensitive Street Design

Functional Classifications	Thoroughfare • Urban • Suburban • Rural	Boulevard • *Downtown* • Urban • Suburban • Rural	Avenue • *Downtown* • Urban • Suburban • Rural	*Limited Avenue • *Downtown* • Urban • Suburban • Rural	*Industrial • Urban • Suburban • Rural	Neighborhood Commercial Street • Urban • Suburban • Rural	*Business Park Street • Urban • Suburban • Rural	Neighborhood Residential Street • Urban • Suburban • Rural	Residential Subdivision • Urban • Suburban • Rural
Principal Arterial	■	■							
Minor Arterial		■	■	■	■				
Collector			■	■	■	■	■	■	
Local					■	■	■	■	■

- This table only applies to roads under the City of Jacksonville's jurisdiction.
- Nine context sensitive cross-sections were developed to account for the variation across the city.
- Downtown streets are located within Mobility Zone 10/Downtown DRI/CBD/CRA boundaries as amended
- The Limited Avenue typical roadway section should be used on a case-by-case basis to replace Neighborhood Commercial Streets, Boulevards, or Avenues where volumes traffic and right-of-way allows.
- If roadway is on the Truck Route, it shall conform to the design standards established in Section 3 of the Land Development Procedures Manual

Table 3.1 Functional and Design Classification Roadway Type and Descriptions

Functional Classification	**Description***
Principal Arterial	A highway that serves major through movements of traffic between activity centers and a substantial portion of trips entering and leaving the area. It also connects highways with major traffic generators. Service to abutting land is very subordinate to the function of moving through traffic.
Minor Arterial	A facility that connects and augments the Principal Arterial system. Although its main function is still traffic mobility, it performs at a lower level and places more emphasis on land access than does the Principal Arterial.
Collector	Surface street providing land access and traffic circulation within residential, commercial and industrial areas. Collector streets connect local roadway networks to the larger city-wide arterial road network.
Local Road	Roadway which provides direct access to residential, commercial and industrial properties.

*Pursuant to the 2030 Comp Plan

Design Classification	**Description****
Thoroughfare P-119	A higher speed multi-lane roadway designed to primarily carry though traffic. May serve as a high-ridership transit corridor.
Boulevard P-120	A medium speed roadway designed to carry both through and local traffic. May be multi-lane or two-lane and serve several transit routes.
Downtown Boulevard P-121	Any Boulevard located in Mobility Zone 10, shall be designated a Downtown Boulevard.
Avenue P-122	A low-to-medium speed roadway designed to serve as primary pedestrian and bicycle route and may serve local transit routes.
Downtown Avenue P-123	Any Avenue or Boulevard located in Mobility Zone 10, shall be designated a Downtown Avenue.
Limited Avenue P-124	Any Neighborhood Commercial Street, Boulevard, or Avenue with frequent curb cuts and where one travel lane in each direction provides sufficient capacity (typically less than 21,000 vehicles per day).
Neighborhood Commercial Street P-125	A low speed street designed to serve commercial and residential as well as a primary pedestrian and bicycle route and may serve local transit routes.
Neighborhood Residential Street P-126	A low speed street designed to serve as a primary pedestrian and bicycle route and may serve local transit routes.
Residential Local	A low speed street designed to serve as a primary pedestrian and bicycle route. A cul-de-sac, loop road, or a road that does not connect thoroughfares or serve major traffic

Subdivision Street P-127	generators.
Industrial P-128	A low speed street designed to serve local industrial traffic and located in an industrial park. These streets are not designated truck routes. The lanes are 12', there is no on-street parking, and they have sidewalks and multiuse paths on one or both sides of the road.
Business Park P-129	A low speed street designed to serve local business park traffic and located in a business park. These streets are not designated truck routes. The lanes are 11', there is no on-street parking, and there are bicycle lanes and sidewalks on both side of the roads.

** ITE *Manual of Transportation Engineering Studies* provides guidance in regard to travel speeds

Different typical section standards apply to designated truck routes (Plates 115-118). Truck routes were established by Sec. 804.1604, Ordinance Code, City of Jacksonville Regulated Truck Route System Map for Preferred Truck Routes (Blue) and Restricted Roads (Red). Gray refers to non-regulated truck route network. Refer to Appendix for engineering typical sections for use on new, resurfaced, and reconstructed truck routes.

3.2 ROADWAY DESIGN, DESIGN VEHICLES, AND CURB RADII REQUIREMNTS

3.2.1 ROADWAY DESIGN

All curb radii shall conform to current AASHTO requirements, based on the design vehicle assigned in Table 3.3. Curb radii greater than 30 feet are discouraged. Designing for the most vulnerable street user is necessary rather than the largest design vehicle. Infrequent challenges (i.e., emergency vehicles) must not dominate designing a safe street for pedestrians and bicyclists.

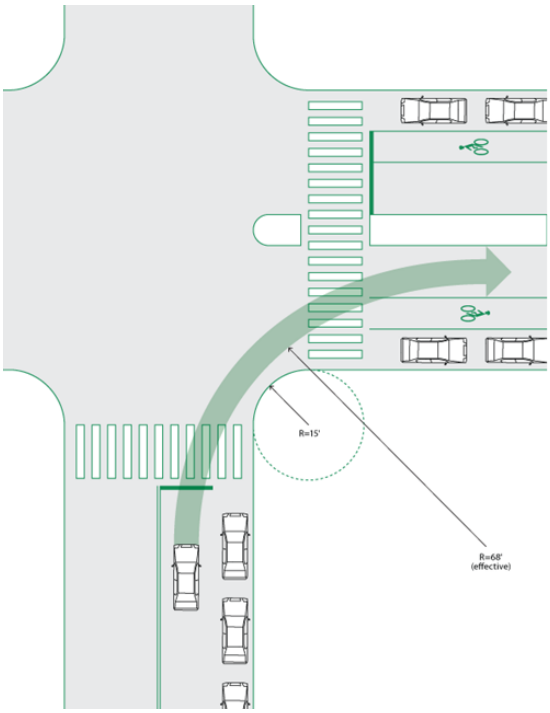
Table 3.2 below outlines the recommended physical curb radius based on a street's design classification. The lower number of the Intersection Physical Curb Radius Range (in feet) is the standard. Using a higher number in the range will need approval from the City Engineer. Curb radii lower than the range may also be considered and approved by the City Engineer.

The presence of or planned bicycle facilities and on-street parking, increases the effective turning radius which allows for a decrease in the physical curb radius. For an example of how the presence of on-street parking and bicycle lanes increases the effective turning radius refer to Figure 3.3.

Table 3.2 Roadway Design Requirements by Design Classification

Design Classification	Posted Speed	Design Vehicle*	Intersection Physical Curb Radius Range (ft) with approval from City Engineer
Thoroughfare	Greater than 35 mph	WB-40**	20-30
Boulevard	Greater than 35 mph	WB-40**	15-30
Downtown Boulevard	Less than 35 mph	SU-30**	15-30
Avenue	Greater than 35 mph	SU-30**	15-30
Downtown Avenue	Less than 35 mph	SU-30**	15-30
Neighborhood Commercial Street	Greater than 25 mph	P***	10-30
Neighborhood Residential Street	Less than 25 mph	P***	10-30
Residential Local Subdivision Street	Less than 25 mph	P***	10-30
Industrial	Less than 35 mph	WB-40**	15-30
Business Park	Less than 35 mph	WB-40**	15-30

* P Passenger Car
* SU-30: Single Unit Truck
* BU-30 Intercity Bus



* WB-40: Intermediate Semi-Trailer

Figure 3.2: Physical Curb Radius vs. Effective Turning Radius This is an example of how the presence of on-street parking and bicycle lanes increases the effective turning radius (NACTO Design Guides). Image does not show buffer between bike lane(s) and parking lane, therefore actual typical section design standard does not change.

3.2.2 STOPPING-SIGHT DISTANCE

Stopping-sight distance shall be based on height of eye of 3.50 feet and height of object 0.50 feet above road surface.

3.2.3 ROADWAY LEVEL OF SERVICE

Roadways should be designed for minimum level of service "D" based on projected 20-year ADT or minimum level of service "D" based on projected 20-year 30 HV, whichever is the more critical (restrictive). A traffic study may be required.

3.2.4 BRIDGES

Bridges shall be constructed of precast concrete, prestressed concrete, or cast-in-place concrete.

Bridge design shall conform to the design criteria of the latest edition, AASHTO Standard Specifications for Highway Bridges.

The design load shall be HS-20-44 (AASHTO) or the controlling axle configuration of the six (6) legal load limits in the State of Florida, whichever produce the greater stresses.

Materials and methods of construction shall conform to the FDOT Standard Specifications, latest edition.

All new or reconstructed bridges shall contain pedestrian facilities at a minimum in accordance with 654.133, *City Ordinance*. A shared-use path may be acceptable per Sec.654.133(d), *Ordinance Code*. For State and other entity owned roads, coordination will be required with the City of Jacksonville.

3.2.5 ROADWAY ALIGNMENT

3.2.5.1 ROADWAY TYPICAL SECTION

All roadway typical sections shall conform to the City Standard Details. Any deviations from these Standard Details will not be allowed without the approval of the City Engineer in coordination with the Planning and Development Department, Transportation Division. Such deviations must be requested with written justification.

3.2.5.2 MINIMUM RIGHT-OF-WAY WIDTHS AND PAVING WIDTHS

Right-of-way (ROW) width shall provide for adequate drainage facilities, utilities, required number of lanes for proper handling of vehicular traffic, and sidewalk, shared-use path, or two-way cycle track when required.

Refer to the end of this section for Typical Sections for all right-of-way widths. Other widths may be used when approved in writing by the City Engineer, with oversight and majority approval from CSSSC.

Table 3.3

Context Classification	**Min. ROW (in feet)**	**Min. Lane Width (in feet)**
Truck Route		
Rural	60’	11’
Suburban	60’	11’
Urban	60’	11’
Urban Priority	80’	11’
Thoroughfare	90’	11’
Boulevard	68’	11’
Downtown Boulevard	100’	11’
Limited Avenue	38	11’
Avenue	68’	11’
Downtown Avenue	82’	11’
Neighborhood Commercial Street	72’	11’
Neighborhood Residential Street	52’	11’
Residential Local Subdivision Street	44’	12’
Industrial	48’	12’
Business Park	50’	11’

Roadway sections proposed to be constructed without curb and gutter will require prior approval by the Planning and Development Department, Transportation Planning Division. The request for waiver should be made at the pre-application stage.

3.2.5.3 RETURN RADII REQUIREMENTS

All returns shall be a minimum 30-foot radius. However, radii of returns shall be based on AASHTO

requirements for the type of vehicle predominant to the type of roadway being considered.

Point of Measurement

1. Guttered Sections - back of curb or gutter (parkway side).
2. Non-guttered Sections - edge of pavement.

3.2.6 ROADWAY SHOULDERS

Rural local roadways should desirably have a 6-foot shoulder, and rural collectors should desirably have a 10-foot shoulder. Where right-of-way is limited, the shoulder widths may be reduced to a minimum of 2 feet for locals and 6 feet for collectors. Where significant bicycle and/or pedestrian traffic is expected, consideration should be given to adding a shared-use path (e.g., U.S. Bicycle Route, etc.).

When a bicycle facility, pursuant to 3.7, does not exist, paved shoulders shall be marked (with bike symbol markings) only when all the following are met:

1. Design speed ≤ 45mph,
2. Shoulder width ≥ 5-feet,
3. Shared-use path is not present along corridor

The standard shoulder cross slope shall be 0.06 foot/foot away from the traveled way. In the case of an adverse super elevated section, the maximum break in cross slope between shoulder and traveled way shall not exceed 0.08. A variance may be provided on a case-by-case basis when adding paved shoulders during a resurfacing project. The minimum shoulder cross slope shall be 0.02 foot/foot. On bridges, the shoulder cross slope shall match the cross slope of the adjacent lane. A minimum transition length of 50 feet should be provided for the shoulder cross slope approaching a bridge.

3.2.7 ROADWAY CLEAR ZONES

On rural local streets the clear zone shall be 6 feet, and on rural collectors the clear zone shall be 11 feet. Where hazards are within the clear zone, guardrail or barrier wall shall be provided at least 6 feet off the traveled way.

For urban sections the clear zone is 4 feet from face of curb. On urban local streets the clear zone may be reduced to 2.5 feet under unusual conditions.

3.2.8 ROADWAY VERTICAL ALIGNMENT

All streets shall have grades less than 8 percent. Streets with curb and gutter shall have grades equal to or greater than 0.3 percent. Design speed and safe stopping distance shall govern the design.

3.2.8.1 VERTICAL CURVES

Vertical curves will be required at changes in grade with an algebraic difference of 2% or more in relation to design speed as established in the FDOT Green Book. No vertical curve will be required for any change in grades with an algebraic difference less than 2%. Length of vertical curve shall provide for minimum safe stopping sight distance.

3.2.8.2 SUPERELEVATION

Minimum superelevation rates shall be as follows:

Functional Class	Maximum Rate, e
Rural Collector	.08 foot/foot
Urban Collector	.04 foot/foot
Rural Local	.08 foot/foot
Urban Local	.04 foot/foot

Where superelevated curves carry through intersections, the maximum superelevation rate shall be .04 foot/foot. In local subdivision-type streets, superelevation should not be used. Instead, curve radii and minimum design speeds should be utilized.

3.2.8.3 SUPERELEVATION TRANSITION

Minimum lengths of superelevation runoff shall be as established by AASHTO. The tangent should include 60 percent to 80 percent of the total transition length. These criteria will also control tangent lengths required between reverse curves.

3.2.9 HORIZONTAL CURVES

The minimum centerline radii for local residential subdivision roadways shall be 80 feet. All other roadways, including those that serve as a local residential collector shall meet the requirements contained in Chapter 3 of the latest edition of the FDOT Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways (Green Book).

3.3 ROADWAY SECTIONS

3.3.1 ROADWAY PAVEMENT REQUIREMENTS

The following criteria are considered the minimum acceptable standards and may not apply to all situations. The City Engineer may require greater pavement thickness when the existing conditions and/or future traffic demands warrant.

When, in the judgment of the City Engineer, conditions warrant additional testing to assure compliance with the specifications, the developer's registered professional will be advised in writing that additional tests will be required and the extent of such additional tests.

3.3.2 TWO-LIFT PAVEMENT SYSTEM REQUIREMENTS

A two-lift pavement system is required for all new local streets. The two-lift system shall include a base course (first lift) and a final wearing asphalt surface (second lift). A tack (prime) coat shall be required between each lift of asphalt. All infrastructure and the base course shall be constructed, as shown on an approved development plan, in accordance with applicable subdivision regulations The wearing surface course application, on local streets, shall be delayed in each phase of single and multi-family residential developments until either:

1. Eighty percent (80%) of the units in that phase have received a certificate of occupancy; or
2. Twenty-four (24) months have passed since the first certificate of occupancy was issued in that phase.

3.3.3 ROADWAY PAVEMENT SUB-BASE REQUIREMENTS

The sub-base for all roadways shall have a minimum depth of 12 inches and a minimum limerock bearing ratio in accordance with Section 104.2.3 of the City Standard Specifications.

Where the existing soils to be used in the roadway sub-base have the required bearing value, no additional

stabilizing material need be added; but the native material shall be mixed and compacted to 98 percent of maximum density as determined by the AASHTO T-180 compaction test.

1. Stabilizing Materials - The stabilizing material, if any is required, shall be high-bearing value soil, limerock, or other material which meets Section 104.2 of the City Standard Specifications and the approval of the City Engineer.

2. Construction - The construction of the sub-base, including compaction, shall conform to the City Standard Specifications, Section 104.3, latest edition.

3. Testing - Tests for the sub-base bearing capacity shall be located no more than 500 feet or for each different type of soil. Tests for compaction shall be located no more than 300 feet apart. Both tests shall be staggered to the left, right, and on the centerline of the roadway.

3.3.4 ROADWAY PAVEMENT BASE COURSE REQUIREMENTS

Type of Development	Minimum Thickness	Minimum Density
Residential	6 inches	100% Mod Proctor AASHTO T-180
Industrial	8 inches	100% Mod Proctor AASHTO T-180
Commercial	8 inches	100% Mod Proctor AASHTO T-180

3.3.4.1 ROADWAY PAVEMENT BASE COURSE MATERIALS AND CONSTRUCTION

Limerock, bituminous or crushed concrete material shall conform to the City Standard Specifications, Sections 104, 106, or 107, respectively, latest edition, for base course materials, including construction methods.

3.3.4.2 ROADWAY PAVEMENT PRIME AND TACK COAT REQUIREMENTS

All bases shall be primed in accordance with the City Standard Specifications, Section 110, latest edition. Tack coat material and construction methods shall conform to City Standard Specifications, Sections 110 through 115, latest edition.

3.3.4.3 ROADWAY BASE TESTING

Tests for base thickness and compaction shall be located no more than 300 feet apart and shall be staggered to the left, right and on the centerline of the roadway.

3.3.5 SURFACE COURSE FOR FLEXIBLE PAVEMENTS

Requirements - Surface courses for flexible pavements shall be Type S-I or Type III Asphaltic Concrete and shall meet the following minimum thickness requirements:

Type of Development	Minimum Surface Course Thickness for Type-S-1	Minimum Surface Course Thickness for Type III
Residential	1 1/4”	1 1/4”
Industrial	1 1/2”	2”
Commercial	1 1/2”	2”

3.3.5.1 FLEXIBLE PAVEMENT MATERIALS AND CONSTRUCTION

Asphaltic Concrete Type S-1 or Type III, including prime and tack coats, shall conform to the City Standard Specifications, Sections 113 and 114, latest edition, for materials and method of construction.

3.3.6 PORTLAND CEMENT CONCRETE PAVEMENT REQUIREMENTS

Sub-base requirements for Portland Cement concrete pavements shall be the same as those for flexible pavements. Minimum pavement thickness requirements are as follows:

Type of Development	Minimum Thickness
Residential	5”
Industrial	6”
Commercial	6”

3.3.6.1 PORTLAND CEMENT CONCRETE PAVEMENT MATERIALS AND CONSTRUCTION

Portland Cement concrete pavement, including joints, shall conform to the City Standard Specifications, Sections 130 and 135, latest edition, for materials and method of construction.

3.4 LEFT TURN, ACCELERATION/DECELERATION LANES

When left turn and/or acceleration/deceleration lanes are required, the entire area which encompasses the existing pavement, from the beginning of the taper to the end of the taper, shall be resurfaced in accordance with City Standards, unless otherwise waived by the City Engineer. The intersection shall also be restriped.

3.5 DETAILS

3.5.1 MEDIANS

The construction of unpaved medians within roadways requires approval of the City Engineer. Where constructed, they shall be surrounded by a suitable curb. Adequate drainage facilities shall be provided within the median to prevent erosion and protect the structural integrity of the adjacent pavement during the five-year design storm. Where landscaping is provided, the design must provide for adequate sight distance. Maintenance of landscaping shall be the responsibility of the Homeowners’ Association, abutting property owners, or other designated entity. The minimum median width shall be 12 feet unless otherwise approved by the City Engineer.

3.5.2 DRIVEWAYS

Driveways shall be constructed to the same standards as the adjacent roadway except that no stabilization shall be required under driveways. If concrete driveways are constructed, minimum thickness shall be 5 inches for residential driveways and 6 inches for industrial and commercial driveways. No wire or rebar reinforcement is allowed in driveways installed in the City Right-of-Way. Fiber reinforced concrete is acceptable, but not required.

3.5.3 SIDEWALKS

Sidewalks shall be constructed of 2500 psi Portland Cement Concrete. Materials and methods of construction shall conform to the City Standard Specifications, latest edition. Standard thickness for residential sidewalks shall be 4 inches, except at driveways, where the minimum thickness shall be 5 inches at residential driveways and 6 inches at industrial and commercial driveways. No wire or rebar reinforcement is allowed in sidewalks installed in the City Right-of-Way. Fiber reinforced concrete is acceptable, but not required.

Sidewalks shall be included along the roadway, when required by Section 654.133(c) of the "Subdivision Regulations", or as provided for in the City Standard Specifications and/or Details. Upon request by the person,

firm or corporation for acceptance of the subdivision unit for maintenance, the person, firm or corporation shall have:

1. Completed all sidewalk requirements; or

2. Furnished a good and sufficient performance bond from a bonding company acceptable to the City in the amount of 100 percent of the total cost of uncompleted sidewalk improvements.

3. Sidewalks for each lot shall be constructed at the time that the driveway is constructed.

4. Common area sidewalk must be constructed at the time roadway improvements are made.

3.5.4 CONCRETE CURB, GUTTER, WHEELCHAIR RAMPS AND SIDEWALKS

1. All details of concrete curb, gutter, curb and gutter, handicapped ramps and sidewalks shall conform to the applicable City Standard Details, latest edition. Any deviation from these Standard Details will not be allowed without written approval from the City Engineer.

2. Materials and installation shall conform to the applicable City Standard Specifications, latest edition.

3.5.5 SUBMITTAL DATA AND INSPECTION

1. Design analysis shall be required for flexible or rigid pavements that vary from the established City Standards.

2. Test reports prepared by a qualified independent testing laboratory shall be furnished prior to requesting City acceptance of streets for maintenance on the following:
   a. Limerock Bearing Ratio Tests on sub-base.
   b. Compacting test on sub-base and base.
   c. Compressive strength tests of concrete for Portland Cement concrete pavements.
   d. Asphalt shall be tested by the Marshall Stability Method.

3.5.6 CLEARING ROADWAY RIGHTS-OF-WAY

All roadway rights-of-way shall be cleared and grubbed in accordance with City Standard Specifications, Section 102, latest edition, and the Landscape and Tree Protection Regulations, unless plans for selective clearing and grubbing are submitted and approved by the City Engineer.

3.5.7 GRASSING AND MULCHING REQUIREMENTS

All roadway rights-of-way within the development, except those listed below, shall be grassed prior to final acceptance using one of the following methods.

1. One row of sod shall be placed behind the curb.
2. The disturbed areas from the back of the curb to the right-of-way line shall be seeded and/or mulched; or
3. Alternate stabilization measures may be installed subject to the approval of the Director of Public Works.

All areas disturbed by the Developer along the roadway rights-of-way outside of the development, except those listed below, shall be sodded, seeded and/or mulched prior to final acceptance.

Medians, landscape areas around entrance features and all other areas for which enhanced landscaping is proposed are not required to be grassed prior to final acceptance. In lieu thereof, such areas shall be delineated

and included in the Developer's Warranty, Indemnification and City of Jacksonville Acceptance Agreement in Section I. GRASS AND SOD AGREEMENT (ATTACHMENT NO. 12).

The owner of a lot (Developer, Builder or Homeowner) shall be responsible for maintaining stabilization on all lots/property owned by that party after final acceptance so as to ensure that the curb and streets remain free of silt and erosion.

3.5.8 ON-STREET PARKING

On-street parking means parking located within the public right of way. The appropriateness of on-street parking on a roadway varies based on context. **Table 3.8** and **Figures 3.1**, **3.2** and **3.3** below outline the minimum dimensions for on-street parking. Refer to Section 656.607 of the Ordinance Code for more details.

Table 3.8 Minimum dimensions for on-street parking

Parking Angle	Curb Width	Stall Depth	Stall Width	Stall Length	Car Parking Overhang	Step Out Zone
60° (angled – head-in or back-in)	9.8	20.0'	8.5'	22.0'	2.0' min.	N/A
0° (parallel)	22.0	7.0' minimum, 8.0' preferred on functionally classified roadways	7.0' minimum, 8.0' preferred on functionally classified roadways	22.0'	N/A	2.0'

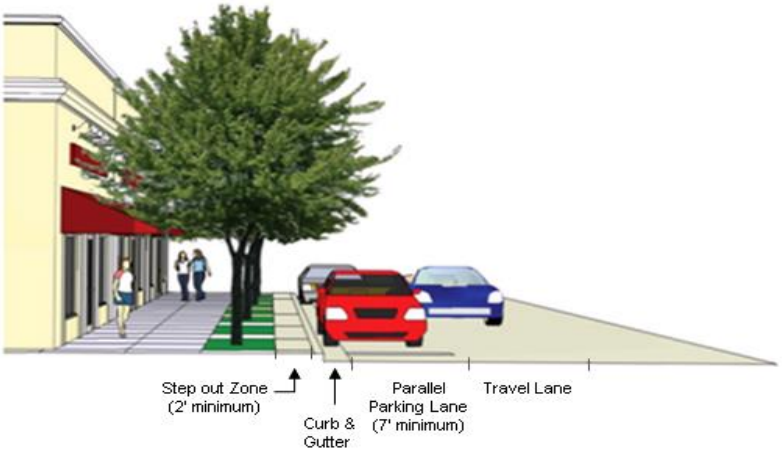


Figure 3.1 Parallel parking diagram
Source: Jacksonville Design Guidelines and Best Practices Handbook (Section 1: Commercial Development)

Figure 3.2 Angled parking diagram
Source: Jacksonville Design Guidelines and Best Practices Handbook (Section 1: Commercial Development)

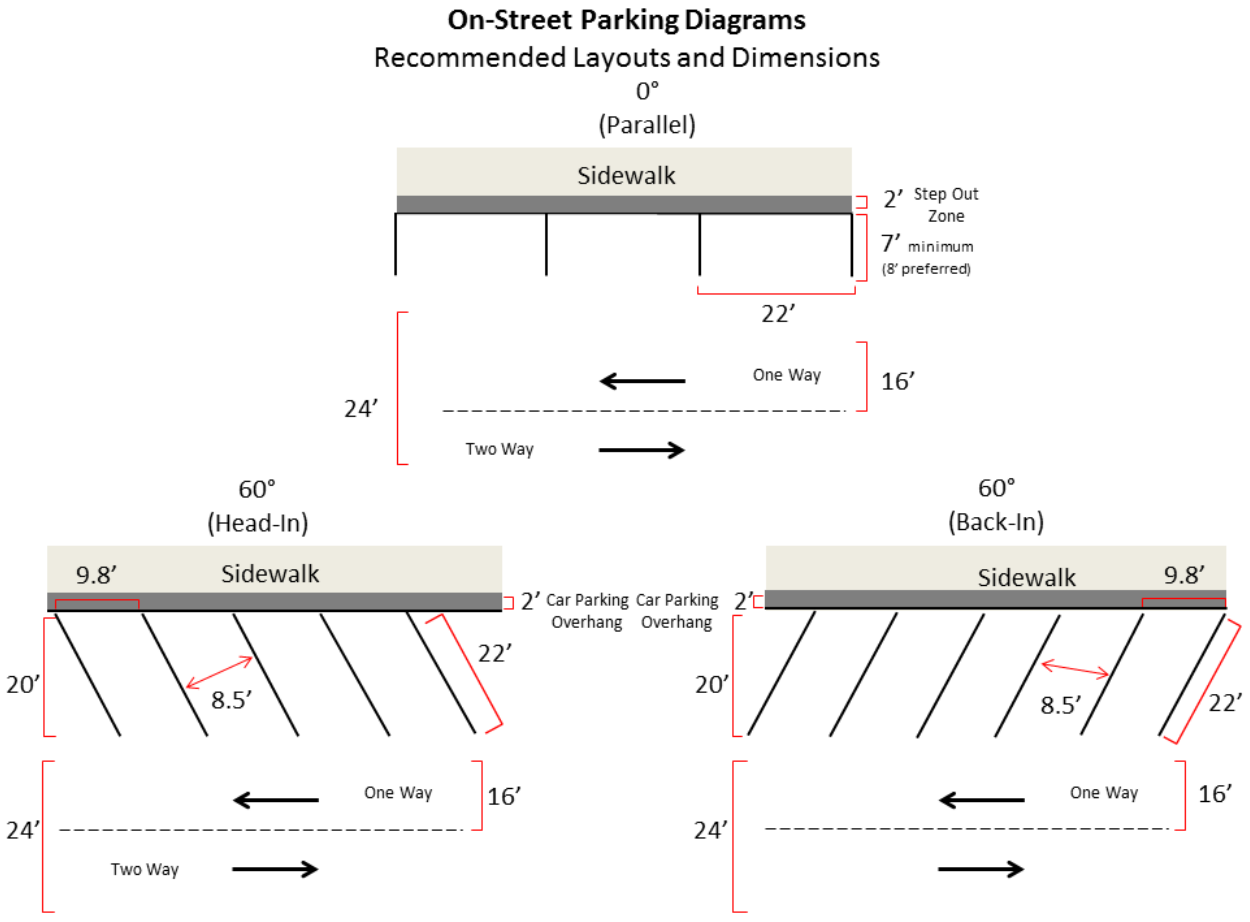


Figure 3.3 On-street parking diagrams

Definitions

Step Out Zone: A strip of land adjacent to a curb where parallel or angled on-street parking exists. It is designed to create a clear space for pedestrians to exit a vehicle without having to step into a planting strip.

Car Parking Overhang Zone: A strip of land adjacent to a curb where angled on-street parking is exists. It is designed to provide space for the front or rear of a vehicle to hang over the curb. This area should be clear of all obstructions.

Stall Depth: Distance from back of curb to end of parking stall stripe, measured perpendicular to the curb (see **Figure 3.4**)

Stall Width: Distance between the two stripes of a parking stall, measured perpendicular to the stripes (see **Figure 3.4**)
Stall Length: Distance from back of curb to end of parking stall stripe, measured parallel to parking stall stripe (see **Figure 3.4**)

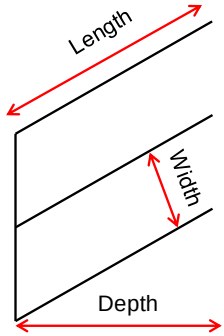


Figure 3.4 Dimension diagram

3.6 BICYCYLE PARKING STANDARDS

Bicycle parking should be convenient to users, secure from theft, safe for bicyclists and other road users, intuitively designed, and accommodating to a variety of bicycle types. The following standards describe location, design, placement, and installation of bicycle parking that will ensure these requirements are met consistently throughout the City of Jacksonville. These standards cover short-term parking solutions and long-term bicycle parking solutions in new office and housing developments in the form of lockers, shower facilities, and secure cages or bicycle rooms. Bike parking is required for all new developments and redevelopments (including additions, and renovations). A new or reconstructed parking garage is required to provide bicycle parking facilities for 5% of the number of vehicular parking spaces provided.

3.6.1 LOCATION

Bicycle parking should be located as close, or closer, to the entrance of the building it serves than the nearest car parking space. In general, multiple buildings should not be served by a large, distant bicycle parking area, but instead by smaller parking areas near active entrances. Locate bicycle parking within 50 feet of major destinations and transit stations. Bicycle parking areas should be well lit and visible from the sidewalk so that users can find them, to deter theft, and to ensure bicyclists' safety while locking/unlocking their bicycles. A clear zone should be provided around the bicycle parking area to avoid moving vehicles, parked car doors, transit vehicle boarding areas, and pedestrian right-of-way, and to allow for bicycle maneuverability between the parking area and any nearby landscaping, buildings, or street furniture. Bicycle parking should not impede pedestrian flow on the sidewalk and should not be placed directly in front of doors or disabled parking spaces.

3.6.2 DESIGN

There are a variety of styles of bicycle racks available; however, some designs do not provide the security from theft, ease of use, and prevention of bicycle damage as well as others. A bicycle rack should:

- Support the bicycle upright by its frame in two places
- Prevent the wheel of the bicycle from tipping over
- Enable the frame and one or both wheels to be secured by a lock
- Support different styles of bicycles
- Allow front-in and back-in parking: A U-lock (**Figure 3.5**) should be able to lock the frame and either the front or rear wheel to the rack
- Not require the user to lift the bicycle onto the rack
- Be located so that bicycles can reasonably be safeguarded from damage
- Resist being cut or detached using common hand tools
- Have a finish that requires minimal maintenance (e.g. galvanized steel)
- Include no sharp edges or moving parts
- Adhere to the Americans with Disabilities Act standard as follows: if the protruding edge of the rack is between 27 inches and 80 inches above the sidewalk surface, it may overhang a maximum of 4 inches. (This applies only to relatively tall racks designed to protrude horizontally from the base).

Figure 3.5 U-lock

The bicycle rack designs below are recommended best practice for racks in both the public and private right-of-way. “Artistic” designs may be allowed, subject to meeting the guidelines specified in Section 656.609 of the Zoning Code and subject to approval by the City of Jacksonville Bicycle/Pedestrian Coordinator.

Some bike rack designs that are approved by the Association of Pedestrian and Bicycle Professionals (APBP) are shown in **Figure 3.6**. Wave, schoolyard/comb, and wheel-well style bike racks are not recommended.

✓ **RECOMMENDED Bicycle Rack Designs**

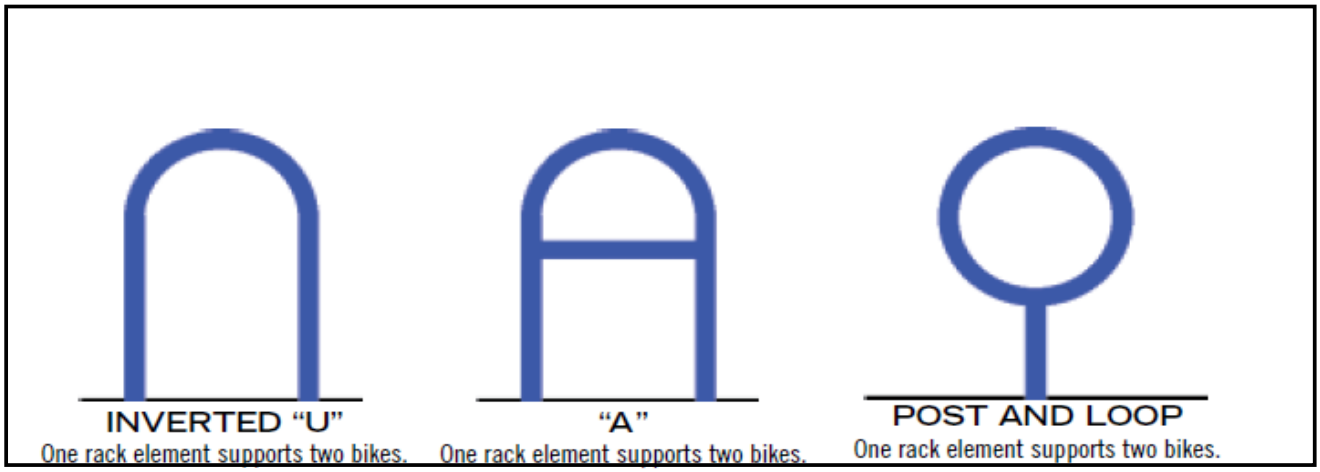


Figure 3.6 Bicycle rack designs approved by the Association of Pedestrian and Bicycle Professionals (APBP Bicycle Parking Guidelines, 1st edition, page 2, www.apbp.org, used with permission from the copyright holder)

3.6.2.1 LONG TERM BICYCLE PARKING STANDARDS AND SHOWER FACILITIES

Long-term bicycle parking. Long-term bicycle parking consists of individual bicycle lockers or racks contained in a locked room (such as a private room accessible from the sidewalk) that is meant for individuals (i.e. employees at a business) expecting to park for more than a few hours.

Bicycle lockers. A bicycle locker is a fully enclosed space for one bicycle, accessible only to the owner of the bicycle. A bicycle locker must be equipped with an internally mounted key-actuated or electronic locking mechanism, and not lockable with a user-provided lock. Groups of internal-lock bicycle lockers may share a common electronic access mechanism provided that each locker is accessible only to its assigned user. Bicycle lockers shall be constructed of molded plastic/fiberglass, solid metal or perforated metal and be at least 2 feet by 6 feet. Lockers shall be maintained by owner.

Restricted-access bicycle enclosure. A restricted-access bicycle enclosure is a covered or indoor locked area containing within it one bicycle rack space for each bicycle to be accommodated and accessible only to the owners of the bicycles parked within it.

Long-term bicycle parking facilities for tenant and occupant use shall be conveniently accessibly by pedestrians from the street and shall be at least as convenient and close to building entrances as the nearest non-disabled automobile parking space. Tenant and occupants shall not be charged for bicycle parking.

3.6.3 PLACEMENT

A bicycle footprint is generally 6 feet by 2 feet. Each rack should be placed so that no objects obstruct users from entering/exiting the parking area, locking/unlocking their bike, and unloading/loading any cargo. A sidewalk should be at least 9 feet wide for proper bicycle rack spacing, leaving at least 5 feet width of sidewalk clear of obstructions. Generally, bicycle racks should be installed in the furniture zone and parallel, perpendicular, or angled to the curb line. There should be at least 5 feet of clearance between any bicycle rack and a driveway or curb cut.

For racks installed parallel to the curb line, there should be at least 3 feet of space (4 feet when next to on-street parking) between the curb and the rack. Multiple racks should have at least 6 feet in between them (8 feet preferred), as measured from the center of each rack. See **Figure 3.7**.

For racks installed perpendicular to the curb line, there should be at least 5 feet of space between the curb and the center of the rack. Multiple racks should have at least 4 feet in between them (5 feet preferred). See **Figure 3.8**.

For racks installed angled to the curb line, there should be at least 3 feet of space (4 feet preferred) between the curb and the edge of the rack. Multiple racks should have at least 30 inches in between them by the nearest edges. Angle for the rack to a perpendicular line from the curb should be between 45 and 60 degrees. See **Figure 3.9**.

Bicycle racks may be placed outside the furniture zone in areas that do not obstruct the pedestrian through-zone, such as in an alcove of a building. Racks should be placed at least 2 feet from any objects (3 feet preferred). Multiple racks installed in this way should follow the spacing described above for end-to-end or side-by-side arrangements. See **Figure 3.10**.

In areas where demand for bicycle parking is greater than what can be accommodated by sidewalk racks or where sidewalk space is limited, bicycle corrals can be installed in an on-street parking space, typically providing parking for 8 to 12 bicycles. Bicycle corrals are typically intended to serve a nearby business with a high volume of bicycle traffic. Bicycle corrals consist of rows of racks surrounded by a painted or other type of boundary, with flexible delineators and a wheel stop at the end where vehicle may back into the adjacent spot. Racks within a bicycle corral may be installed perpendicular to or angled towards the curb. Angled installations may be more aesthetically pleasing but require more length to maintain the minimum recommended spacing between racks (36 inches). On the other hand, perpendicular installation leaves about one foot less of a buffer between the rack and the roadway. **Figure 3.11** is a diagram for installing bicycle corrals in a parallel parking layout. **Figure 3.12** is a diagram for installing bicycle corrals in an angled parking layout.

Figure 3.7 Bicycle rack spacing when installed in furniture zone parallel to curb (adapted from City of Portland Bicycle Rack Permit)

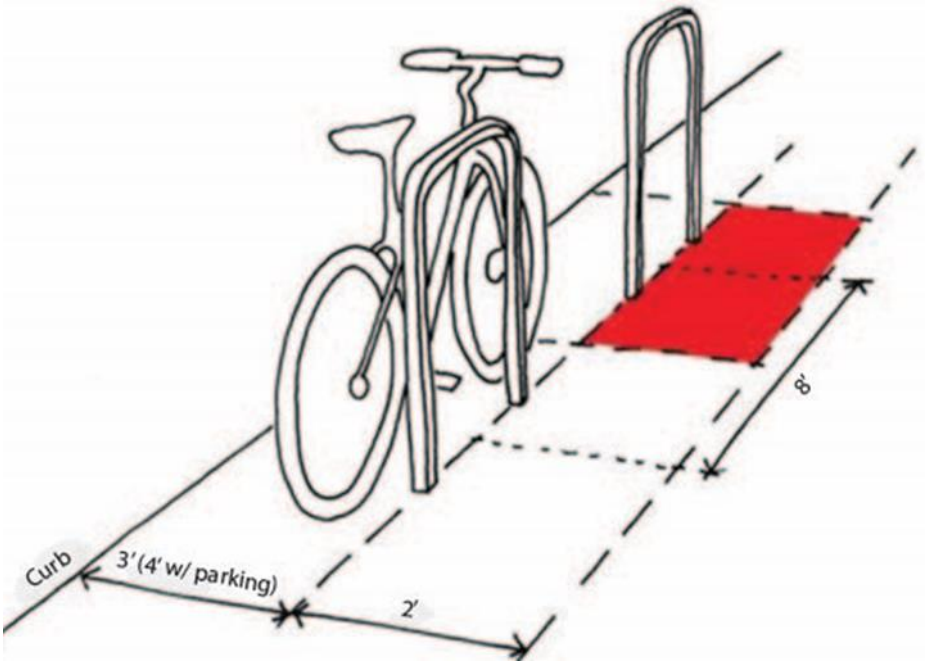


Figure 3.8 Bicycle rack spacing when installed in furniture zone perpendicular to curb (adapted from City of Portland Bicycle Rack Permit)

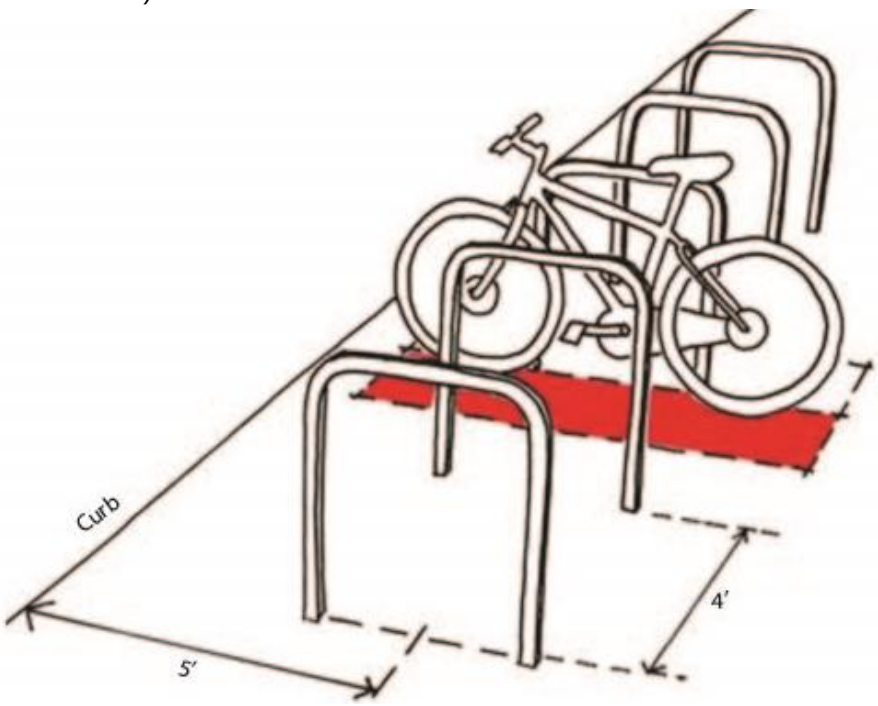


Figure 3.9 Bicycle rack spacing when installed in furniture zone at an angle to the curb (adapted from City of Portland Bicycle Rack Permit)

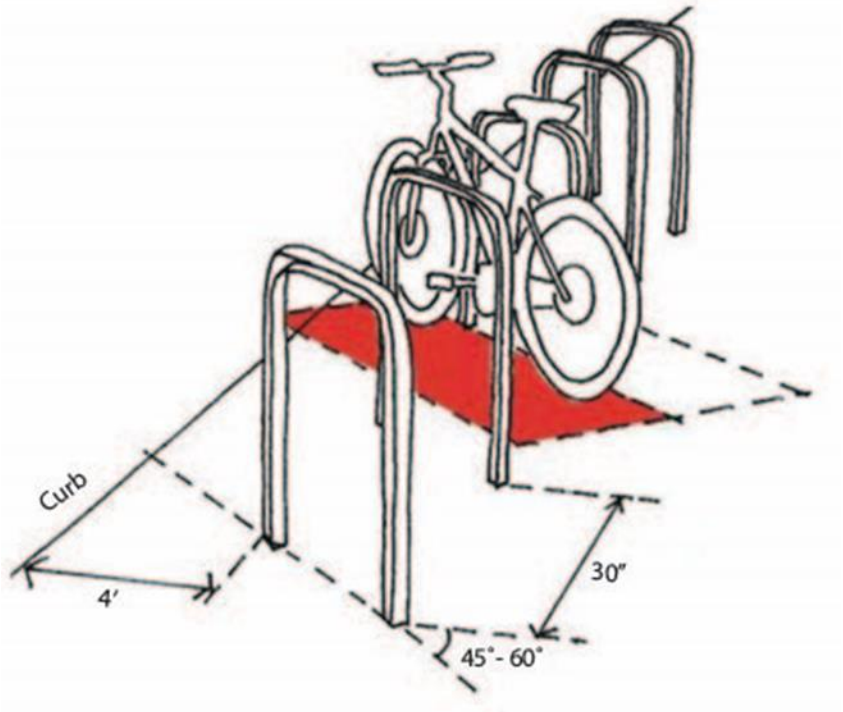


Figure 3.10 Bicycle rack spacing outside of furniture zone (adapted from APBP Essentials of Bike Parking, page 8, www.apbp.org, used with permission from the copyright holder)

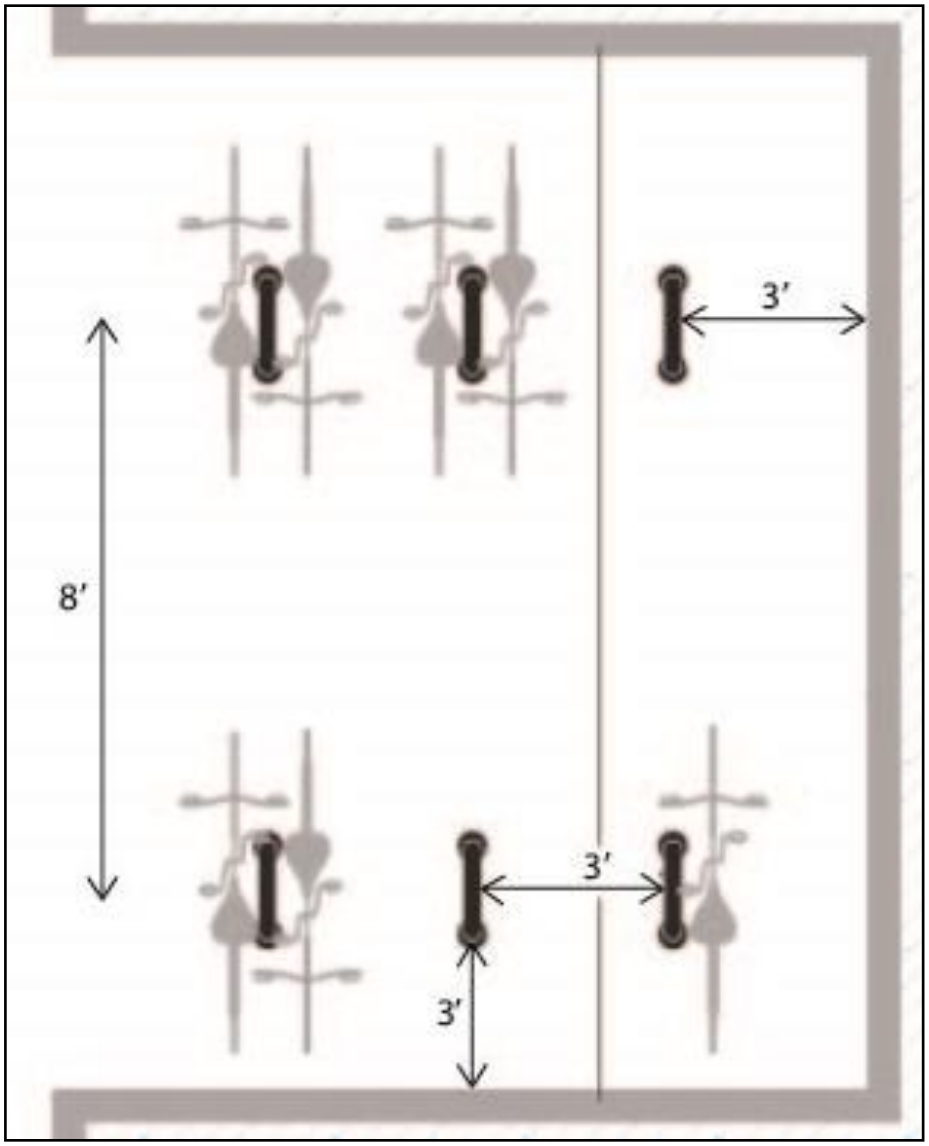
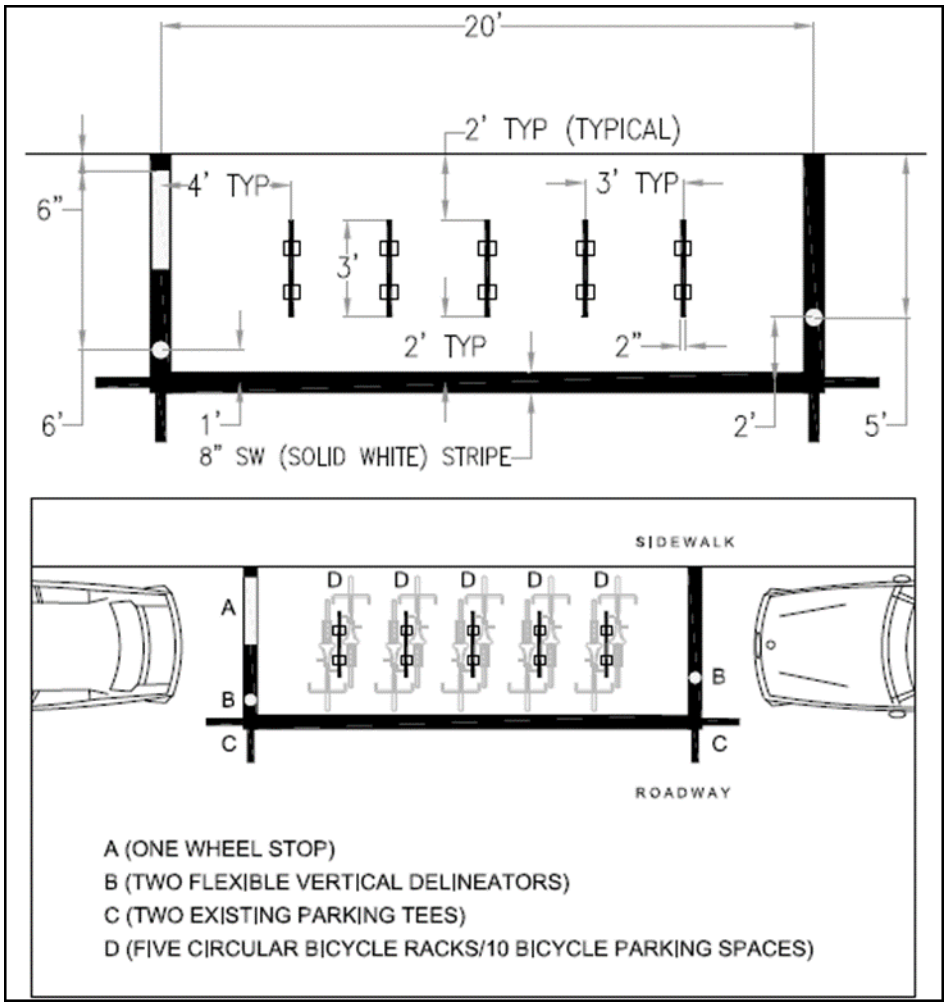


Figure 3.11 Bicycle corral diagram (from SFMTA Bicycle Parking Guidelines)



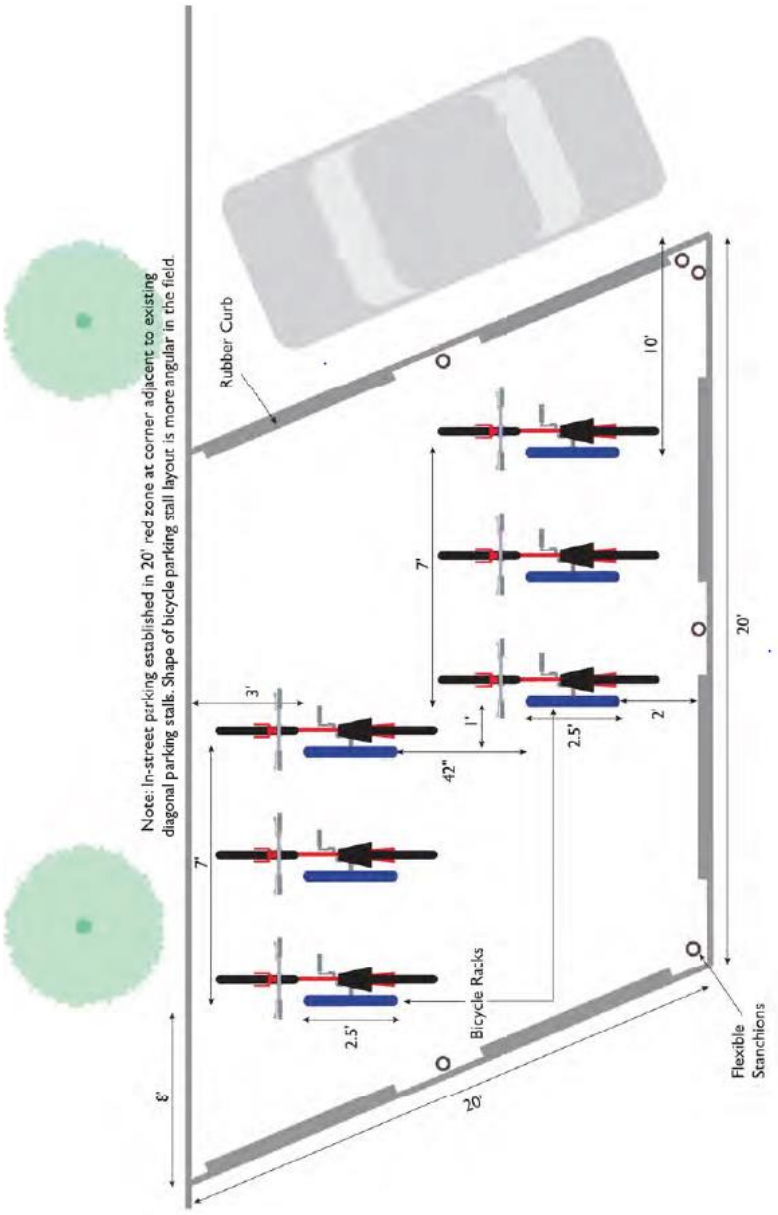


Figure 3.12 Bicycle corral diagram, angled parking layout (from APBP Bicycle Parking Guidelines, 2nd Edition page 52, www.apbp.org, used with permission from the copyright holder

3.6.4 INSTALLATION

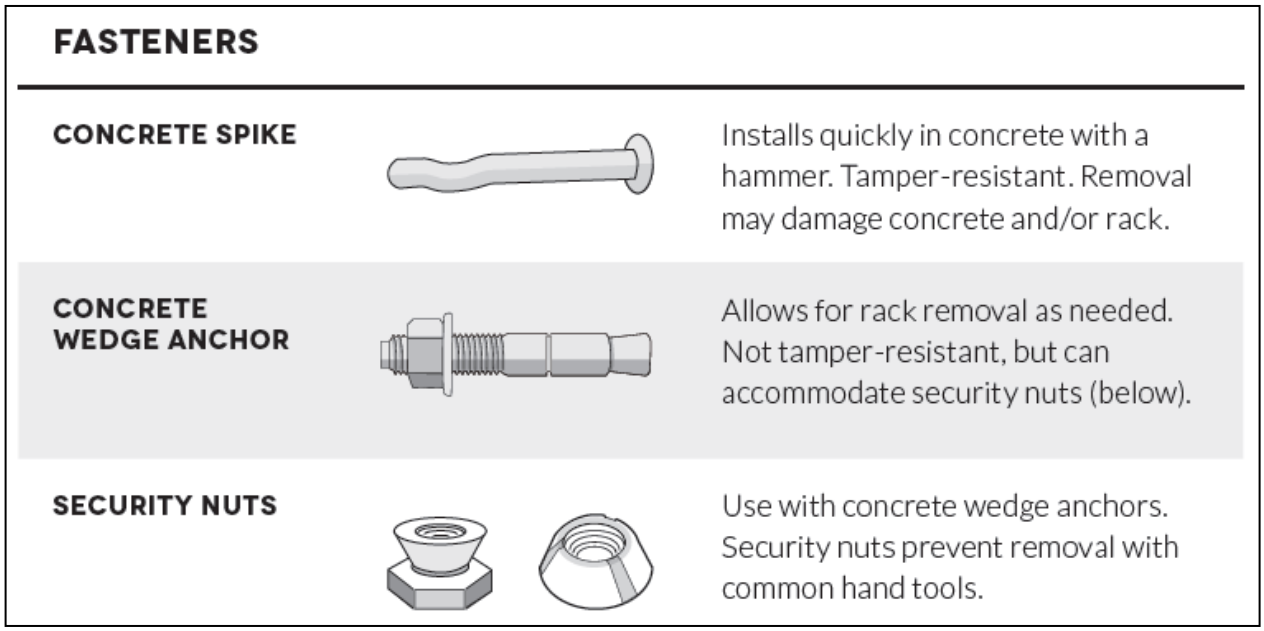
For security, bicycle racks should be installed in concrete. Asphalt is acceptable for bicycle corrals. There are two primary types of bicycle rack installation: surface mount and cast in place. Either is acceptable, but some rack models only allow for one type of installation.

Surface mount is used when racks are being installed onto an existing concrete slab. Anti-tampering bolts and other hardware should be used to prevent theft of the whole rack. Some locations where theft may be an issue can benefit from security fasteners such as concrete spikes or tamper-resistant nuts

on wedge anchors, which are shown in **Figure 3.13**. Drill any holes at least three inches from concrete edges or joints. If an asphalt substrate is all that is available in the rack location, concrete footings should be poured before surface mounting if possible. If concrete footings cannot be poured, use anchor techniques specific to asphalt.

Cast-in-place is the best option for security purposes but may be impossible if the rack installation location already has a slab poured or if the chosen rack type does not provide a cast-in-place option. Cast-in-place installation is appropriate for either asphalt or concrete.

Figure 3.13 Examples of concrete fasteners (from APBP Essentials of Bike Parking, page 8, www.apbp.org, used with permission from the copyright holder)



3.7 BICYCLE FACILITIES STANDARDS

Bicycle facilities are required on all new or reconstructed streets. Streets to be resurfaced will be assigned a Design Classification prior to resurfacing and shall include bicycle facilities in accordance with their Design Classification when existing pavement width is sufficient. If the pavement width is insufficient, the City of Jacksonville's Planning and Development Department, Transportation Division with the Public Works Department will determine the feasibility of a road diet or widening or reconstruction of the frontage zone to create space for bicycle facilities and/or a shared-use path.

In some instances, the available roadway width may require a bicycle facility other than what is recommended by its Design Classification. When providing the required bicycle facilities, the options in order of priority are:

1. Shared-use path
2. 7-foot buffered bicycle lane
3. 6-foot buffered bicycle lane
4. 5-foot bicycle lane

Two-way Cycle Track. The lane widths for separated bicycle facilities are as follows: 12 feet preferred; 10 foot minimum. Use wider lanes where higher volumes are expected. One-Way facilities: 7 feet preferred; 6 feet minimum. Where right-of-way is constrained, a two-way cycle track may have a reduced width only upon written approval from the Bicycle/Pedestrian Coordinator.

When roadway pavement is continuous to the face of guardrail or barrier, the minimum bicycle lane width is 5 feet. When a bicycle lane is placed between a through lane and the adjacent right turn lane, bus bay, or parking lane please refer to the 2020 FDOT Design Manual: 223 Bicycle Facilities, unless otherwise defined in Section 3.0 of this manual.

Five-foot bicycle lanes are the minimum, but 4-foot bike lanes may be allowed on low-speed streets and in constrained conditions, with approval from the Bicycle/Pedestrian Coordinator. Depending on the context of the street and land use, a bicycle boulevard with additional traffic calming features may be a better option.

Shared lane markings. The requirements for shared lane markings as referenced in typical standards shall be consistent with Section 223.3 of the FDOT Design Manual.

Colored pavement markings. Intersection bicycle box and two-stage bicycle turn box, will be used in accordance with to the current FDOT Design Manual: Bicycle Facilities and FHWA Interim Approval IA-20 Two-Stage Bicycle Turn Boxes and IA-18 Bicycle Boxes. NACTO may be used as a guide as long as it meets federal approval. In addition, all bike lanes, including cycle tracks, shall be considered for the application of green paint conforming to FHWA Interim Approval 1A-14.

Colored pavement markings will be considered and implemented in accordance with FHWA guidelines through the City of Jacksonville resurfacing program for bike lanes. High bicycle traffic volumes and crash data should support the design.

A shared use path may be substituted for a bicycle lane when the roadway design speed is greater than 35 mph and all the following conditions are met:

1. Separation can be maintained between bicycle and motorized traffic through intersections [and]
2. Conflict points are minimal and mitigated.

In some cases, it may be possible to fit a shared-use path into the same space required for a sidewalk and buffered bicycle lane. In other cases, additional width may be required. Refer to FDOT 2020 Design Manual: 224 Shared-use Path for design criteria, or unless otherwise determined in Section 3.0 of this manual. If a shared-used path is substituted for a bike lane, other safety design features shall be used such as, but not limited to, green paint, wayfinding route signage, and detectable warning pads. Consideration for specific traffic signalization for bicycle facilities and/or shared-use path shall be considered on a case-by-case context sensitive approach. Depending on the context of the road and land use, both a shared-use path and bicycle lane may be required.

Shared-use Paths. Widths range from a minimum 10 feet to 14 feet, with a standard width of 12-feet.

Refer to Section 3.6 for additional information on bicycle facility types and design standards and Appendix for typical sections.

3.8 NON-CONFORMING STANDARDS AND DETAILS

Proposed designs not in conformance with City Standard Specifications and Details may be submitted to the City Engineer for approval. If approved, hold harmless agreements and/or maintenance bonds may be required.

City of Jacksonville Typical Sections:

Design	Plate #
Bicycle Facility Typical Standards	P-114
Truck Route – Rural ROW	P-115
Truck Route – Suburban ROW	P-116
Truck Route – Urban ROW	P-117
Truck Route – Urban Priority ROW	P-118
Thoroughfare	P-119
Boulevard	P-120
Downtown Boulevard	P-121
Avenue	P-122
Downtown Avenue	P-123
Limited Avenue	P-124
Neighborhood Commercial Street	P-125
Neighborhood Residential Street	P-126
Residential Local Subdivision Street	P-127
Industrial	P-128
Business Park	P-129

SECTION 4.0 – TRADITIONAL NEIGHBORHOOD DESIGN

4.1 TRADITIONAL NEIGHBORHOOD DESIGN GENERAL

It is the intent of the City to grant owners of TNDZ property flexibility in developing their roadways consistent with the spirit and intent of the TND. Variances consistent with the intent of the TND shall be considered on a case-by-case basis and granted whenever reasonably possible by the City Engineer. Such variances must be obtained in writing and submitted with the plans for approval. Minimum and maximum right-of-way widths shall be in accordance with Appendix 3. No other criteria shall apply to the TND.

4.2 ROADWAY DESIGN

4.2.1 ROADWAY DESIGN SPEED

It is the intent of the TND to encourage slower vehicular travel speeds in deference to pedestrians and bicyclists. The posted speed limit within a TND shall be the minimum required by State Law. Design Speed shall be a maximum of 30 MPH, with the lower design speed in Alleys and on Local Street #2 and #3.

4.2.2 ROADWAY SIGHT STOPPING DISTANCE

The same as Section 3.2.2, except where the intent of the TND shall require a reasonable variance.

4.2.3 ROADWAY LEVEL OF SERVICE

In general, the TND shall conform to Section 3.2.3; however traffic is expected in the TND and congestion shall be considered generally desirable, especially on the Village Center Street. The application of restrictive criteria as is used in modern development shall not apply to the TND wherein the intent of the TND is compromised thereby.

4.2.4 TND BRIDGES

TND bridges shall be constructed on precast concrete, prestressed concrete, cast-in-place concrete, timber or steel suitable to serve the six (6) legal load limits in the State of Florida for TND Boulevards and Village Center Streets. Bridges on other TND street shall serve legal loads of vehicles less than 40’ in length.

4.3 ROADWAY ALIGNMENT

4.3.1 ROADWAY TYPICAL SECTION

Roadway Typical Sections are supplied on Attachment No. 38 herein and shall govern roadways within the TND. It is the intent of the TND to encourage slower vehicular travel speeds in deference to pedestrians and bicyclists. The posted speed limit within a TND shall be the minimum required by State Law. Design Speed shall be a maximum of 30 MPH, with the lower design speed in Alleys and on Local Street #2 and #3. Previous Section 3.2.6, 3.2.7, 3.2.8, 3.2.9, 3.2.10, 3.2.11shall apply strictly to TNDs.

4.4 ROADWAY SECTIONS

4.4.1 PAVEMENT REQUIREMENTS

In general, the TND requirements for sub-base, stabilizing materials, construction and testing shall be the same as those in Section 3.3. However, the TND is intended to provide the maximum flexibility to owners to develop neighborhoods that meet clients/residents desires. Thus, wherever reasonable variances to those standards are requested the City Engineer is to consider and grant such variances if possible.

4.4.2 LEFT TURN ACCELERATION / DECELERATION LANES

The TND requirements are the same as those shown Section 3.4.

4.5 DETAILS

4.5.1 MEDIANS

The TND requirements are the same as those shown Section 3.5.1.

4.5.2 DRIVEWAYS

The TND requirements are the same as those shown Section 3.5.2.

4.5.3 SIDEWALKS

In general, the TND sidewalks shall conform to Section 2.2; however, TND shall intend to exceed City Standards. Sidewalks in the TND may be constructed of materials other than concrete.

4.5.4 CONCRETE CURB, GUTTER, WHEELCHAIR RAMPS AND SIDEWALKS

In general, the TND shall conform to previous sections. TND items such as curb, gutter, wheelchair ramps and sidewalks may vary from the City Standard Details when variances provide adequate alternatives to City Standard Details (see Section 9.4.1 above [example]).

4.5.5 SUBMITTAL DATA AND INSPECTION

The TND requirements are the same as those shown Section 3.5.5 where similar materials are used.

4.5.6 CLEARING AND GRUBBING

All TND roadway right-of-ways shall be cleared and grubbed on a case-by-case basis. The intent of the TND is to exceed City standards for Clearing and Grubbing by giving specific consideration to existing site features, natural or manmade. In general, the TND shall conform to the City Standard Specifications, however, should a site feature or design intent support the intent of TND and a reasonable alternative to standards be proposed, such alternatives shall be allowed upon consideration by the City Engineer.

4.5.7 GRASSING AND MULCHING

The TND requirements are the same as those shown Section 3.5.7 except where the TND offers a reasonable alternative (see Section 9.5.6 above, sentence three [3]).

4.6 NON-CONFORMING STANDARDS AND DETAILS

4.6.1 PROPOSED DEVIATIONS

The TND requirements are the same as those shown Section 3.6.

4.7 GUIDELINES FOR PLANTING TREES IN CITY OF JACKSONVILLE RIGHT-OF-WAYS

4.7.1 PREPARING A STREET TREE PLAN

Submit a tree planting plan drawn to scale that clearly shows the proposed locations of new trees and any existing structures such as sidewalks, light poles, driveways and existing trees found in the right-of-way grass strip. Before a plan is developed, the particular site conditions must be known to choose a proper tree species and to select a suitable location for the street trees.

HOW TO CHOOSE THE RIGHT TREE FOR THE RIGHT LOCATION

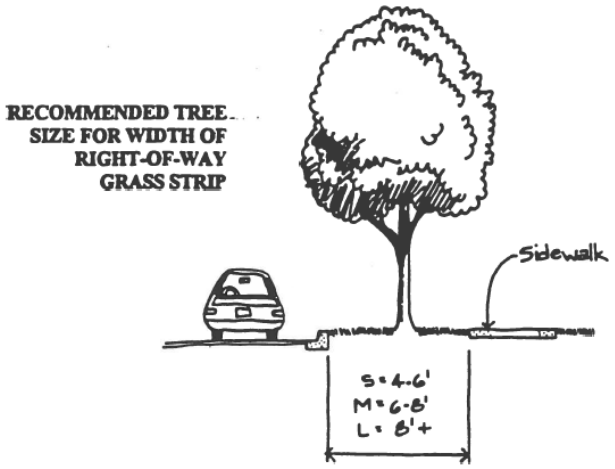
INVESTIGATE SITE CONDITIONS:

1. Trees must be located to avoid damage to shallow underground utilities when holes are dug for new trees.

2. Choose tree size based upon width of planting strip between the street and the sidewalk and height of overhead power lines:

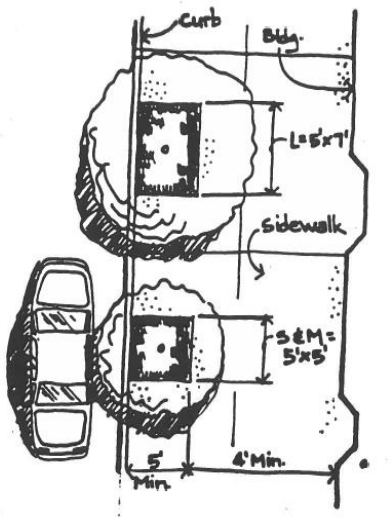
CONDITION	SMALL TREE (S)	MEDIUM TREE (M)	LARGE TREE (L)
•Planting width 4-6 ft.	0		
Planting width 6-8 ft.	0	0	
Planting width 8+ ft.	0	0	0

- Use upright growing tree.



3. Where the entire strip between the street and the property line is sidewalk, tree planting areas can be created by the removal of section of sidewalk to the following dimensions.

MININUMPLANTER SIZE	TREE SIZE
5 x 5Ft.	Small
5 x 5Ft.	Medium
5 x 7Ft.	Large

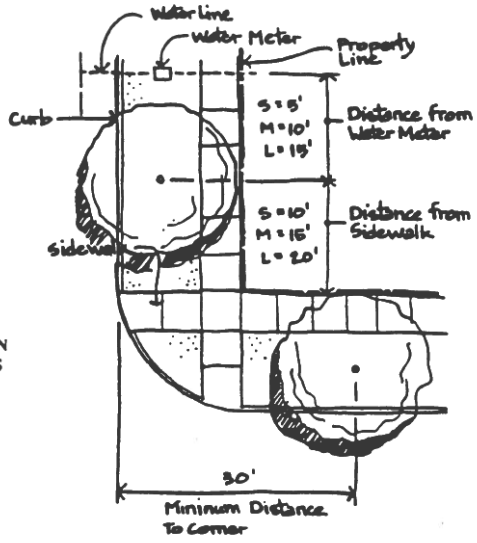


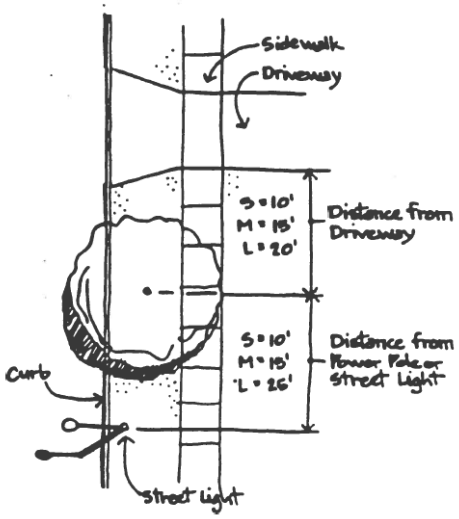
4. If the street is currently lined with trees all of the same type or of one dominate type, select a new tree of the same type to maintain the existing harmonious street canopy.

5. Keep trees away from power poles, street lights, street warning signs, water meters, driveways, and street intersections the following distances to minimize conflicts with existing physical improvements in the right of way and to insure that safe traffic visibility is maintained:

STRUCTURE	**MIN. DISTANCE IN FT. BET. TREE** & **STRUCTURE**		
	SMALL TREE	MEDIUM TREE	LARGE TREE
Power Pole	10	15	25
Street Light	10	15	25
Water Meter	5	10	15
Driveways, House Entry Walks	10	15	20
Street Intersections (measured to curb edge)	30	30	3

MININIUM DISTANCE BETEEEN
STREET TREE & STRUCTURES
IN STREET RIGHT OF WAY
GRASS STRIP





6. Check the soil. There are generally 2 broad soil conditions in Jacksonville. Very sandy, well drained soils occur on broad sand ridges; sandy loam, poorly drained soils occur in the flat lands. The remaining native vegetation is a good indication of the soil conditions. If you see numerous scrub oaks, pines, laurel oaks and live oaks in the area, the soil is well drained; if you see red maples, sweet gums and wax myrtles, the soil is poorly drained. Choose a tree that can handle the soil type. See the following table of recommended tree species that are suitable for your soil conditions.

4.7.2 USE RECOMMENDED TREE SPECIES : The following trees, which are reliable, reasonably pest and maintenance free, and have a upright form, are recommended for planting within the street right-of ways in Jacksonville.

STREET TREES

NAME	HEIGHT/ SPREAD	PLANT TYPE	SOIL TYPE	LOCATION	GENERAL NOTES
LARGE STREET TREES (Mature height 50'-l 00')					
Oak, Live	50-80'/	Evergreen (E)	Varied	Sun	
Oak Shumard	80-100'	Deciduous. (D)			
Sweet Gum	80-100/40-50"	D	Moist, Varied	Sun	
Tulip Tree	80-100'/30-40'	D	Organic	Sun	
Sycamore	80-100'/40-50'	D	Varied	Sun	
Red Maple	50-70'/25-35'		Moist, Organic	Sun/Partial Shade(PS)	Slow Growth
Bald Cypress	60-100'/40-50'	D	Varied	Sun	Very adaptable, drought tolerant
River Birch	50-60'/20-40'	D	Moist, Organic	Sun/PS	Short lived
MEDIUM STREET TREES (Mature height 30-45')					
Bradford Pear	30-50'/25-35'	D	Varied	Sun	White spring flowers, Short lived
American Holly	40-50'	E	Organic	Sun/PS	
SMALL STREET TREES Mature Height 15-30')					
Dogwood	20-25'/20-25'	D	Organic	PS	White spring flowers. Not good in sun
Crape Myrtle	15-20'/10-15'	D	Varied	Sun	Full summer blooms in variety of colors
Wax Myrtle	20-30'/20-30'	E	Moist, Organic	Sun, PS	Best shape if multi-trunked. Short lived. Needs wide planting strip.

RECOMMENDED FRONT YARD TREES: the following trees are attractive street side accents, but because of their irregular growth habits, lower limbs, and short life they should be planted in the front yards near the right-of-way line.

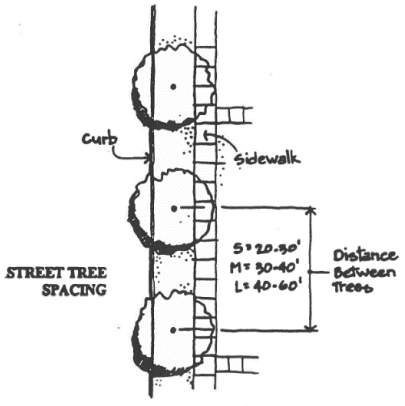
NAME	HEIGHT/ SPREAD	PLANT TYPE	SOIL TYPE	LOCATION	GENERAL NOTES
Golden Rain Tree	30-40'/20-30'	D	Varied but not wet	Sun	Yellow fall flowers followed by pink fruit. Poor shape when young
Redbud	20-30'/15-20'	D	Varied	Sun, PS	Early pink flowers, short lived
Fringe Tree	10-20'/l 0-15'	D	Organic	Sun, PS	Avoid hot dry sites
Chickasaw Plumb	15-25'/15-20'	D	Varied	Sun	Native, white spring flowers, drought tolerant

TREES TO AVOID USING AS STREET TREES

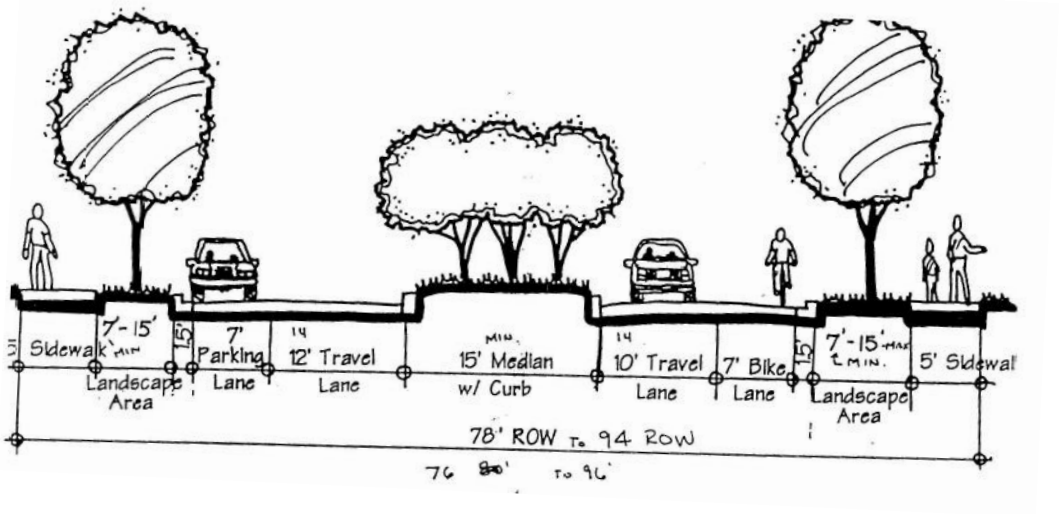
NAME	REMARKS
Weening Willow	Weak wood, invasive roots, weening low branches
Mimosa	Weak wood, sucker growth
Paper mulberry	Weak wood, suckers
Pecan	Weak wood, fruit drop
Chinaberry	Weak wood, sucker growth
Silver Maple	Weal wood, short lived, shallow roots
Southern Magnolia	Dense surface roots, messy leaves and fruit

TREE SPACING: Spacing of street trees will vary according to their height class and generally should be the following:

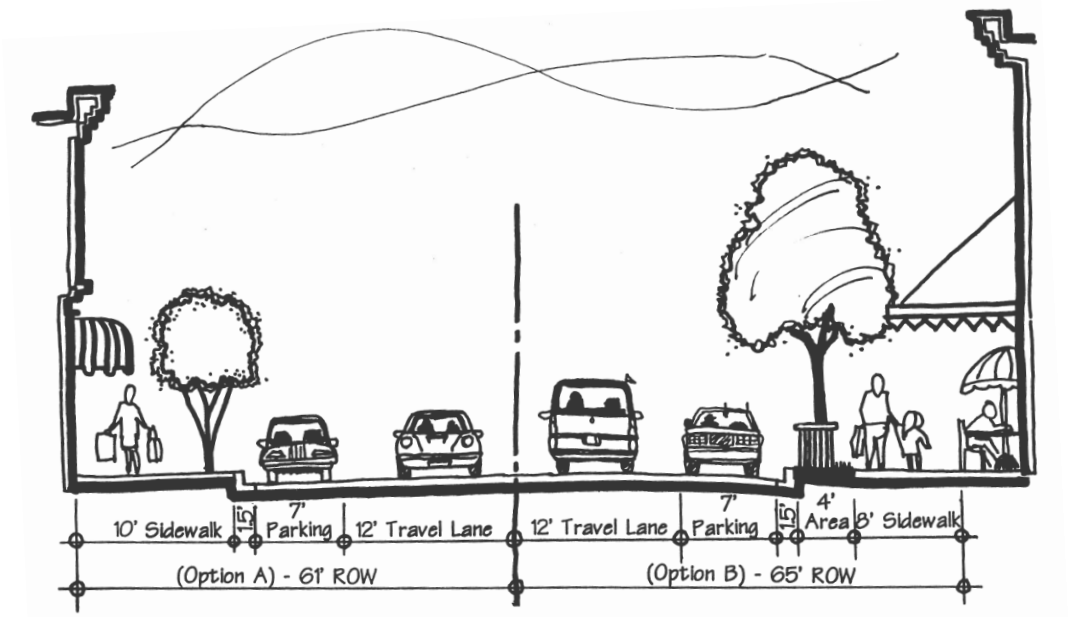
TREE SIZE	TREE SPACING (Center to Center)
Small	20-30'
Medium	30-40'
Large	40-60'



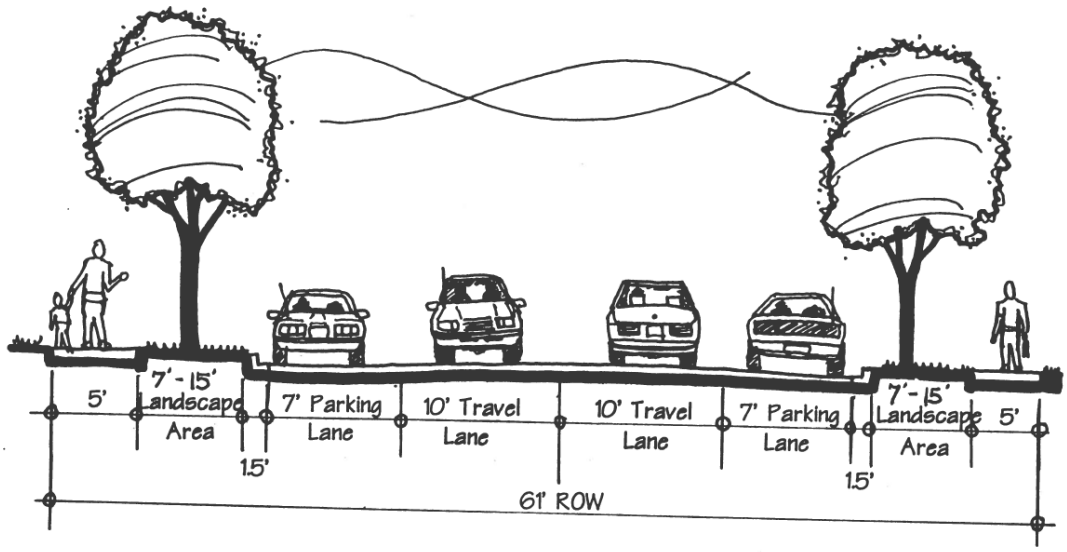
4.7.3 PROPOSED EXAMPLES



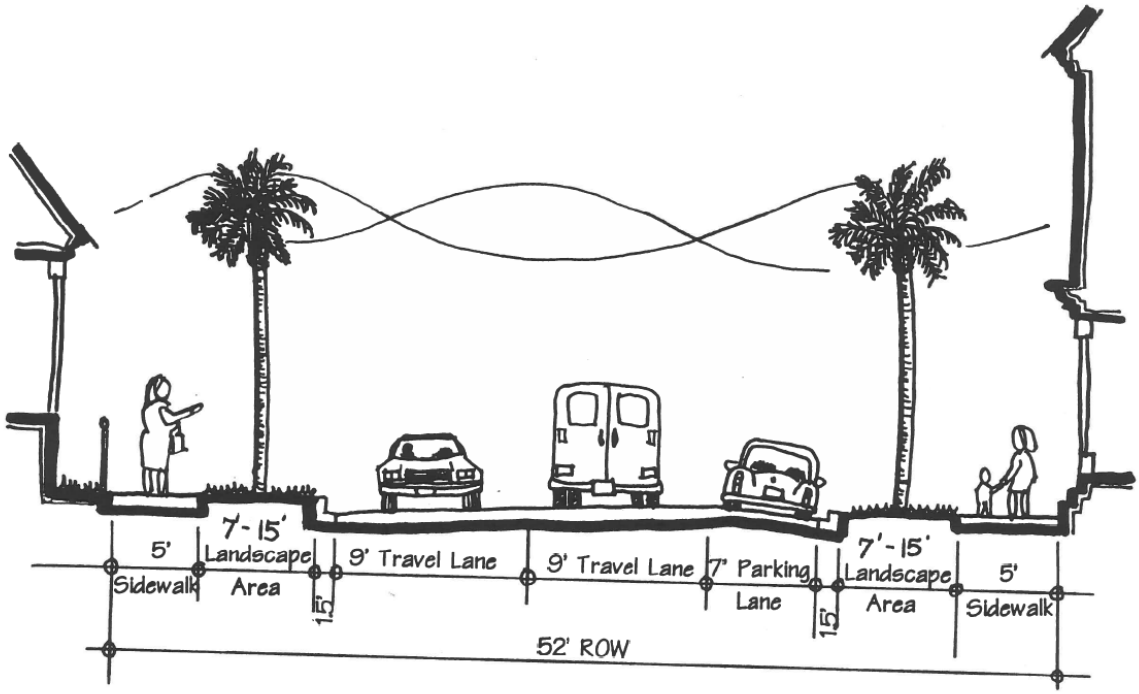
TND Boulevard



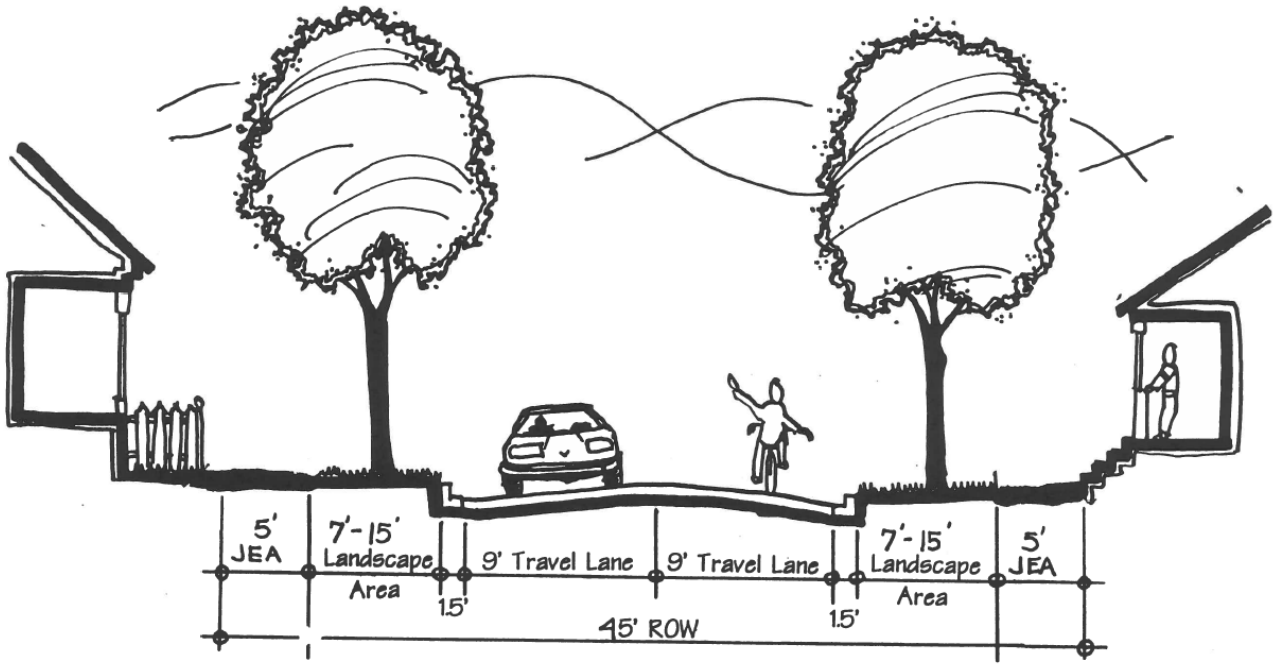
TND Village Center Street



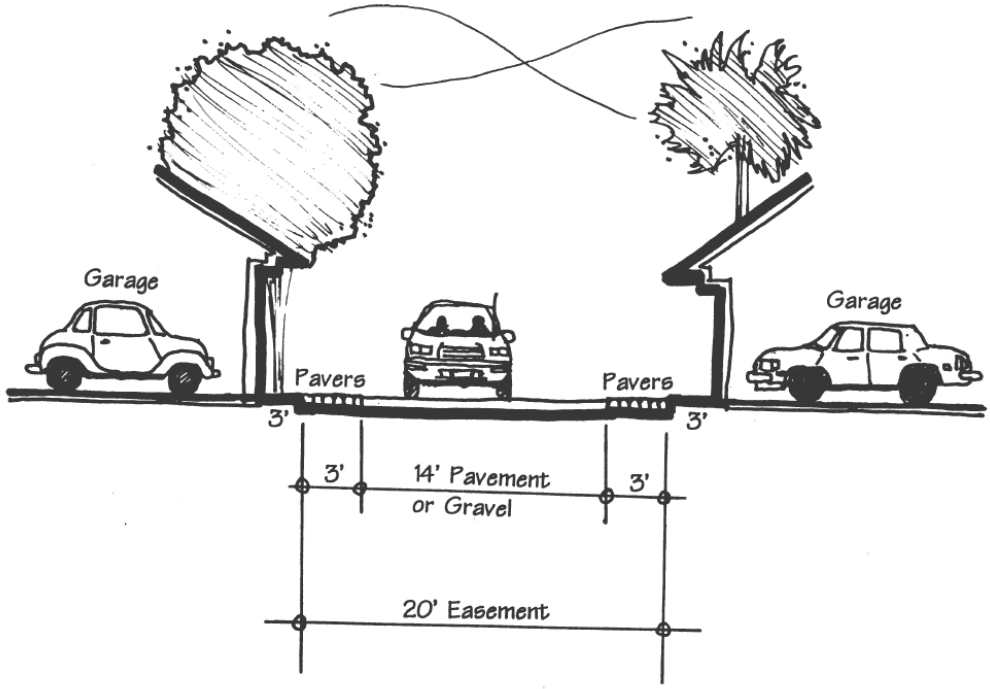
TND Local Street #1



TND Local Street #2



TND Local Street #3



TND Alley

SECTION 5.0 – DEVELOPMENT DRAINAGE REQUIREMENTS

5.1 GENERAL

5.1.1 DEVELOPERS RESPONSIBILITY

All storm runoff in the development must ultimately be disposed of in a manner which will not cause damage to upstream or downstream property owners. The developer shall respect the rights of adjacent property owners with regard to overloading the stream or creating an excessive rise in water level in the receiving body of water. The development will be under pre/post development discharge restriction unless an analysis (which may include existing studies, master plans or permitting rules criteria) of the existing receiving system is performed to prove no adverse impact.

Once a project begins (issuance of site permit or notification from the developer) a formal 6-month inspection report will be required to be submitted to the city. Formal inspection reports will be required to be submitted every 6-months until construction is complete.

All new developments shall provide for stormwater treatment. Treatment volume shall be based on current St. Johns River Water Management District (SJRWMD) rules or the Master Stormwater Management Plan (MSWMP) special basin criteria to achieve pollution loading targets. In those areas where no special basin criteria are adopted, the City reserves its right to participate in all SJRWMD permitting, administrative and judicial appellate procedures; however, a SJRWMD issued permit, which is administratively and judicially final, will be accepted as demonstrating compliance with SJRWMD rules.

Additional requirements apply to drainage basins with known ongoing drainage problems (restricted basins). Boundary maps of these basins can be found in Appendix 2. The restricted basins and their respective requirements are as follows:

1. Volumetric Pre/Post Basins (post development discharge volume must not exceed the pre-development discharge volume between the hours of 10 and 17 design storm event):
    a. Sandlewood Canal / Hogpen Creek
    b. Cedar River / Wills Branch
    c. Pablo Creek
2. Half CFS Basins (discharge within the basin is limited to 0.5 cfs per acre):
    a. Atlantic Boulevard at Girvin Road (northeast quadrant)
    b. Christopher Creek
    c. Doctors Branch
    d. Orange Picker Road and Mandarin Road
    e. Moncrief Creek

5.2 DRAINAGE INFORMATION REQUIRED

5.2.1 MASTER DRAINAGE MAP

The registered professional shall include in the site development plans a Master Drainage Map showing all existing and proposed features. The map is to be prepared on a 24-inch by 36-inch sheet on a scale not to exceed 1 inch = 200 feet unless otherwise approved by the City Engineer. Listed below are the features that are to be included on the drainage map:

1. Drainage Area
    a. All areas draining to or through the proposed development.
    b. All areas tributary to existing structures.
    c. All areas tributary to proposed structures.
2. High water data on existing structures upstream and downstream from the development.
3. Notes indicating sources of high water data.
4. Notes pertaining to existing standing water, areas of heavy seepage, or springs.
5. Vicinity and location map.
6. Limits of construction.
7. Existing ground contours drawn to a 1 foot interval or elevations based on NAVD datum (1988). Greater contour intervals may be approved where steeper slope dictates.
8. Existing drainage channels and structures with their size, elevations, and slopes.
9. Proposed drainage channels and structures with their size, elevations, and slopes.
10. Time of concentration paths.
11. Land use with the appropriate soil type and CN's or runoff coefficients.
12. Site topography shall extend a minimum of 100 feet beyond the boundaries of the development to the greatest extent possible. Existing City topographic contour maps, or other reliable sources, may be utilized to provide necessary topographic mapping to establish the entire drainage basin beyond 100 feet.
13. Location and size of existing and proposed easement and right-of-way.
14. Show the 100-year flood plain or flood-prone areas (current FIRM map).

5.2.2 LOT GRADING

5.2.2.1 LOT GRADING PLAN

The registered professional shall include in the site development plans a Lot Grading Plan including the following:

1. Elevation of each lot corner proposed and minimum proposed floor elevation based on NAVD datum (1988). Also, show proposed centerline pavement elevations (nearest 0.1 feet) in front of approximately every other lot corner and centerline intersections and center of cul-de-sacs.
    a. In cases where natural ground slopes equal or exceed 0.8%(*) and where filling or cutting is not required, specific rear lot corner elevations may be waived and directional flow arrows be used instead.
    b. In cases where drainage divides occur between the front and rear of lots, minimum typical standard swale slopes may be used to maintain integrity of drainage divides in lieu of specific elevations.

c. All residential subdivision lots to have a minimum continuous slope of 0.5%, and be compliant with the Florida Building Code.

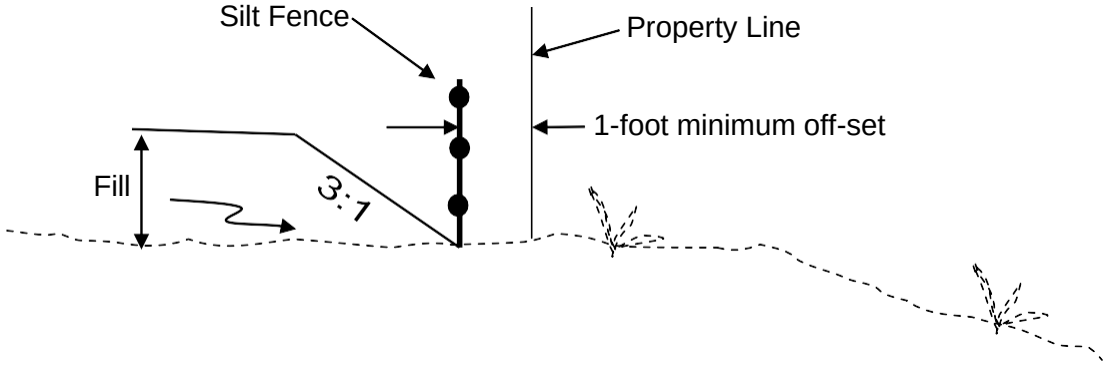
(*) May be reduced to a lesser value in Ortega and Kershaw Sands.

2. Proposed sidewalk location.

5.2.2.2 LOT FILLING

CASE “A” (Adjacent Property Not Owned By Developer):

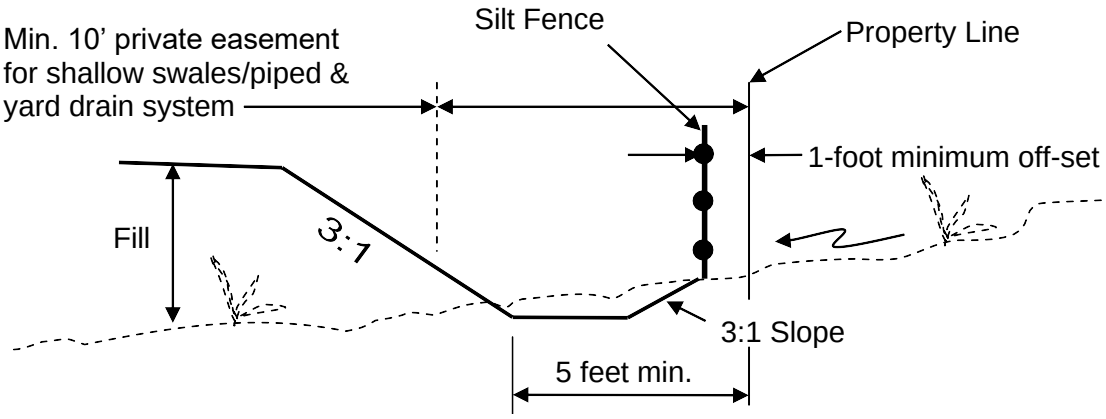
When filling & adjacent property draining away the minimum setback from the property line shall be 1 foot.



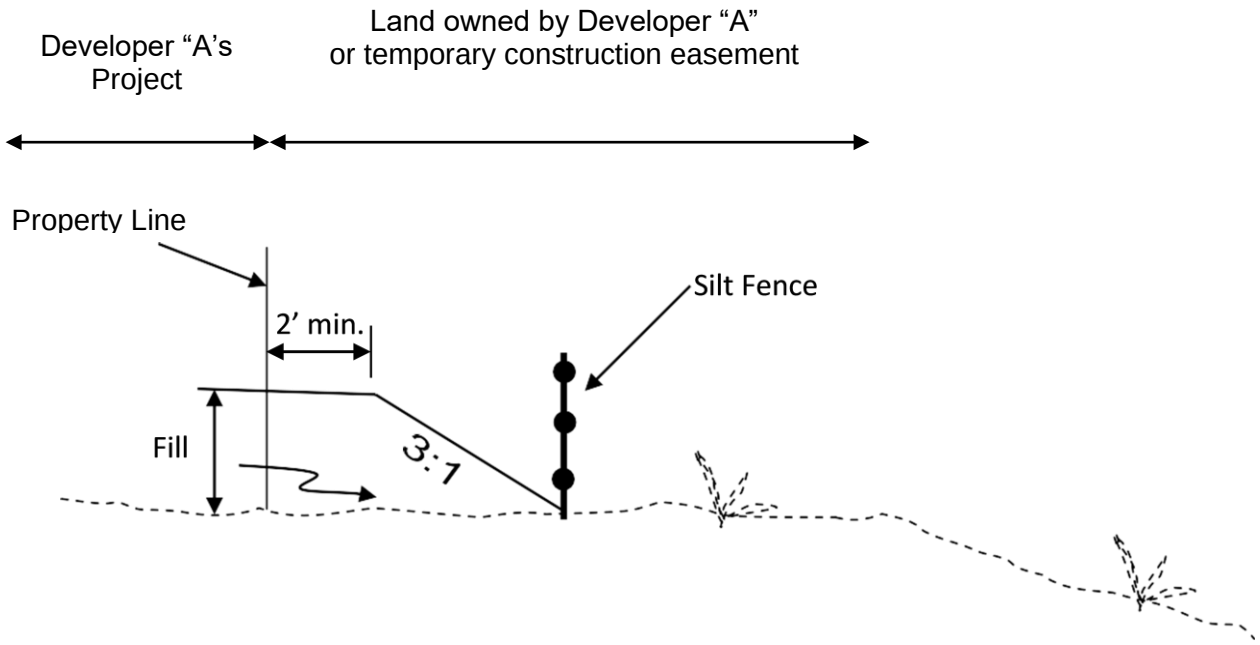
Note: This is one acceptable means to handle this condition, however other engineering options can be considered.

CASE “B” (Adjacent Property Not Owned By Developer):

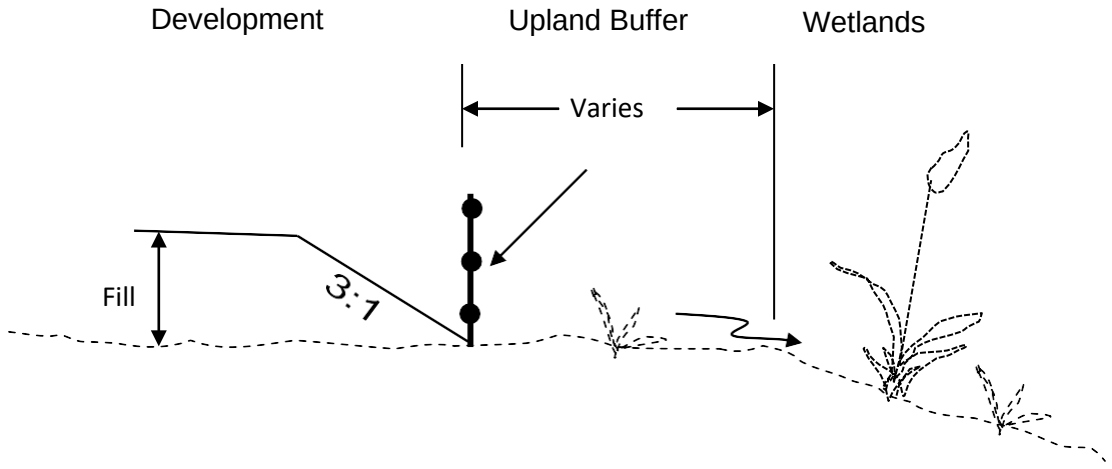
When filling 0-4 feet & adjacent property draining to site the minimum setback from the property line shall be 1 foot and a swale/yard drain system shall be constructed with a minimum swale slope of 0.3% and one drainage inlet placed every 3rd lot line unless approved otherwise.



CASE “C” (Adjacent Property Owned by Developer or Temporary Construction Easement):



CASE “D” (Adjacent Property Owned by Developer):



5.2.3 SOIL INVESTIGATION REQUIREMENTS

A soil investigation report shall be submitted with the site development plans and shall include:

1. Test borings to a depth (min. 4' below proposed edge of pavement) and spacing (max. 500' along centerline) showing existing water table and estimated water table during periods of normal rainfall and without drainage improvements that may lower the groundwater.

2. In special cases additional borings to determine the soil classifications predominant to the area may be required by the City Engineer.

3. Soil borings for pond designs shall be in accordance with 4.8.3.2(j).

5.2.4 OBSTRUCTION OF DRAINAGE

No obstruction to existing drainage will be permitted unless approved by the City Engineer. This includes flow in streams or ditches, overland flow, underground flow, flow in pipes, or flow in flood plains.

5.2.5 MAINTENANCE OF DRAINAGE PLAN

Plans submitted for review shall include a proposed “Maintenance of Drainage” plan which identifies the site-specific method to maintain stormwater drainage patterns during the construction phase of a project. A Plan Reviewer will examine all commercial and residential projects for compliance with the Maintenance of Drainage requirements. In addition, staff form the Development Services Division will also routinely inspect construction sites for compliance. Again, the city will not prescribe specific methods to achieve this objective and the individual method to achieve and maintain full compliance will be the responsibility of the owner or person in charge of the project.

5.2.6 FLOOD ZONE AND FLOOD-PRONE AREAS

1. Flood Zones

   i. Any site (including residential lots) adjacent to a stream or river must be evaluated to assure that no blockage occurs in the flood plain.

   ii. In the event a 100-year flood zone, as shown on current FIRM MAPS or delineated by the best available data, is to be filled, 1) adequate storage area must be provided to hold the same quantity of water that the flood area did prior to filling; 2) certain channel and improvements downstream must be made to compensate for any storage denial; or 3) a combination of No. 1 and 2 unless otherwise approved by the City Engineer.

2. Flood-Prone Areas

   i. Adequate drainage must be provided to accommodate storm water if flood-prone areas are filled. This could be in the form of alternate water storage areas, improvements, or combination of these or other basin changes.

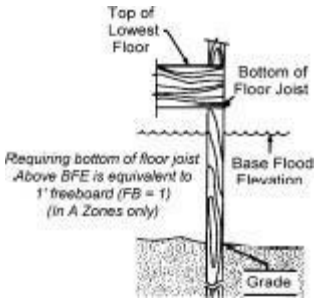
   ii. Approval from any local, State of Florida, or U. S. government agency is required and copies forwarded to the City within ten days after commencement of construction on the affected area.

   iii. All design must be in conformance with Chapter 652 of the Ordinance Code, "Damage Prevention Regulations".

5.2.6.1 FREEBOARD REQUIREMENT

Where base flood elevations have been established, residential construction (per 652.402 (1)) shall be elevated to or above the base flood elevation plus two (2) foot. Non-residential structures (per 652.404 (2)) must be elevated to or above the base flood elevation plus one (1) foot.

NOTE: In A Zones the lowest floor is measured from the top of the floor. In V Zones, the elevation requirement is measured from the bottom of the lowest horizontal structural member. If the illustration to the right were for a V-Zone building, the freeboard would be measured from the bottom of the floor joist.



Where base flood elevations have not been established, construction (per 652.406) shall be elevated to the depth number specified on the FIRM plus two (2) foot prior to the placement of fill. If no depth number is specified, the lowest floor including the basement, shall be elevated, at least three (3) feet above the highest adjacent natural grade prior to the placement of fill. This replaces the current requirement, of "shall be elevated to the depth number specified on the FIRM, in feet, above the highest adjacent natural grade prior to the placement of fill. If no depth number is specified, the lowest floor including the basement, shall be elevated, at least two (2) feet above the highest adjacent natural grade."

Where the Special Flood Hazard Area is immediately adjacent to a "floodway" a more stringent base flood elevation is shown in the Flood Insurance Study. Where flood studies have produced floodways that provide a flood elevation based upon the floodway encroachment, these elevations are listed in the "With Floodway" column in the Floodway Data Table in the community's flood insurance study. These higher elevations shall be used as the BFE for that area, and then the freeboard requirement stated above shall be applied.

5.2.7 DOWNSTREAM IMPROVEMENTS

The Public Works Department shall require that drainage systems downstream of a proposed development have the capacity or hydraulic gradient to accept the proposed developments discharge, or that the proposed development improves the downstream drainage system. Accordingly, the City Engineer may require the developer to analyze the downstream drainage system. Based on this analysis and easement requirements, the following criteria shall apply as applicable.

1. There is no peak discharge requirement for direct discharges to the St. Johns River or Intracoastal Waterway.

2. If there are no known* flooding problems, approval of off-site stormwater discharge shall be based on:

    a. Downstream off-site easements will not be required if the development provides a demonstration of no downstream flooding by maintaining existing peak discharge(s) and stage-discharge relationship(s) immediately downstream of the site discharge location(s) and demonstrate no upstream flooding by considering upstream inflow(s); or

    b. Maintenance of existing peak discharge(s) at the site discharge location(s) and route the design storms (5, 25, and 100-year, 24-hour) through a recorded easement or man-made channel obtained into publicly maintained rights-of-way or receiving waters defined as the following:

FEMA FIS extent of coverage, including flood profiles and/or FIRMS (least squares regression for interpolation);

The 25-year, 24-hour storm flood stage for wetlands; or

Natural streams (as identified on "Drainage Basins in Duval County, Florida," Stone and Largen, WRI 82-4069 USGS, 1983), or agreed to by the City Engineer.

3. If there are known* flooding problems, approval of off-site stormwater discharge shall be based on:

   a. Maintaining existing peak discharge(s) and stage-discharge relationship(s) at the site discharge location(s) as well as the timing, duration, and volume of existing off-site discharge(s) in volumetrically sensitive basin as defined by SJRWMD; or the City

   b. A demonstration that peak discharge(s) and volume release(s) from the site will not increase flood stages or velocities off-site; or

   c. Providing improvements along entire discharge path (in recorded easements, unless approved otherwise by the City Engineer) to the receiving waters as defined in B. 2.

*Known flooding problems are those which pose an imminent threat to public safety and/or property including loss of human life, blockage of evacuation and/or emergency vehicle routes, and/or flooding of homes, buildings, or roadways as evaluated by the following criteria:

1. Home/building flooding for any storm;

2. Roads being overtopped by flood stages based on the appropriate design event and over topping of the roadway of greater than one foot based on the 100 year, 24-hour event; or

3. Greater than one foot per 50 feet of head loss across a stormwater conveyance structure for the appropriate design events;

   i.e., 5 year for local roadways draining less than 40 acres; 25 year for local roadway draining 40 acres or more; 50 year for box culvert crossings; and 100 year for bridges and evacuation routes.

5.2.8 ADJACENT PROPERTY

5.2.8.1 DOWNSTREAM OWNER

Increased concentrated storm water runoff shall not be directed onto adjacent property without the written consent of that property owner. If any drainage structure is to be placed on the description describing the required easement and any restriction imposed by the agreement must also be submitted. Note: If proposed runoff is to be drained into state roads or railroad property, a letter from that agency indicating approval of such must be submitted prior to drainage approval.

Sheet drainage: Sheet drainage into public right-of-way is normally not acceptable. Increased sheet drainage onto adjacent private property is not acceptable without the owner’s permission.

5.2.8.2 UPLAND OWNER

All water must be accepted from all upland owners. Such water must be accepted according to then present land conditions. When the development constructs a drainage system to accept the private off- site upstream drainage, unless accepted by the City as part of a master plan, the property owner, the Homeowners Association or other acceptable entities as approved by the City Engineer, shall maintain the system.

5.2.9 DRAINAGE AT PROPERTY ENTRANCES

The following information is required:

1. All driveway entrances and exits to private property must be graded so as to prevent water entering from public streets.

2. Show all existing and proposed entrances and exits.

3. Show existing and proposed parking layouts.

5.2.10 VALLEY GUTTERS

The use of valley gutters is generally unacceptable. However, they will be acceptable across cul-de-sacs of no more than 150 feet in length or as approved by the City Engineer.

5.3 DESIGN METHODS AND EQUATIONS

5.3.1 DESIGN METHODS

The registered professional may use SCS method for determining runoff for any site — no acreage restriction. The rational method may be used only for sites that are 10 acres or less.

5.3.2 DESIGN STORM FREQUENCY

1. For rivers, the 100-year frequency storm shall be used.

2. Major outfalls - For canals, waterways, natural drainage streams and culverts of major outfalls, the 25-year frequency storm shall be used.

3. Subdivisions - For suburban, subdivision, or medium density areas, the 5-year frequency storm with a minimum time of concentration of 20 minutes shall be used.

4. Urban Areas - When utilizing the rational method for urban areas, the 5-year frequency storm with a minimum time of concentration of 10 minutes shall be used.

Note: The times of concentration above apply only to hydrology (pond design), not to hydraulics (pipe and ditch design) (FDOT Storm Tabs). In hydraulic calculations, a minimum time of concentration of 10 minutes shall be used.

5.3.3 COEFFICIENT OF RUNOFF

Coefficient of runoff used in the design of drainage facilities shall be in accordance with sound engineering practices. The following is a list of typical rational coefficients for various types of developments:

TYPE OF DEVELOPMENT	% RUNOFF
Swamps	10%
Low Hammocks	15%
Natural Ground	20%
Grassed Recreation Areas	30%
Subdivisions	40%
Gravel	50%
Apartments	60 to 70%
Industrial/Commercial Area	80 to 100%

5.3.4 RAINFALL INTENSITY

The rainfall intensity -i- in inches per hour for a given time of concentration. The chart entitled, "Jacksonville, Florida, Intensity, Duration and Frequency of Rainfall, U.S. Weather Bureau Gage Records, 1896-1953: 58 years, Revised 1974", shall be used to determine the factor -i-.

Rainfall intensity for time of concentration less than 120 min. shall be calculated by:

$$i = \frac{145}{(t + 20)^e}$$

Storm Frequency	E
1 year	1.000
2 year	0.969
5 year	0.930
10 year	0.900
15 year	0.884
25 year	0.863
50 year	0.837
100 year	0.799

For time of concentration greater than 120 min., FDOT intensity duration curves for Zone 4 shall be used.

5.4 DRAINAGE DESIGN CRITERIA

5.4.1 GENERAL DESIGN CRITERIA

The minimum acceptable pipe velocity is 2.5 fps flowing full. If this is a physical impossibility, an absolute minimum hydraulic velocity of 2.0 feet per second for full flow should be obtained. The maximum velocity shall be kept below 15 fps. The maximum allowable velocity at the point of discharge is 6 fps unless energy dissipation is provided. If the outfall discharges into a still body of water, submergence of the outfall by at least 2/3 of the diameter may be considered as energy dissipation.

5.4.2 PIPE AND OPEN CHANNEL DESIGN CRITERIA

Design of pipe and open channels shall be calculated by application of the Manning Formula and the Continuity Equation.

$$V = \frac{1.486}{n} R^{2/3} S^{1/2}$$

Q = AV

V = Velocity of flow in feet per second (fps)

A = Cross-section area of flow (square foot)

R = Hydraulic radius; area of flow divided by wetted perimeter in feet (a/WP)

S = Slope of hydraulic grade line (feet per foot)

Q = Rate of runoff in cubic feet per second cfs

n = Manning's coefficient of flow

The maximum allowable velocity for earth-lined ditches is 2.5 fps.

5.4.3 MANNING COEFFICIENTS

Type Culvert	"n"
15" to 30" RCP & Concrete Lined Pipe	0.013
36" to 48" RCP & Concrete Lined Pipe	0.012
54" and larger RCP (including concrete box culverts)	0.011
HDPE Pipe (all sizes)	0.012
CMP Asphalt Coated - 15" diameter	0.013
CMP Asphalt Coated - 18" diameter	0.014
CMP Asphalt Coated - 21" diameter	0.015
CMP Asphalt Coated - 24" diameter	0.016
CMP Asphalt Coated - 30" diameter	0.017
CMP Asphalt Coated - 36" diameter	0.019
CMP Asphalt Coated - 42" diameter	0.020
CMP Asphalt Coated - 48" diameter	0.020
CMP Asphalt Coated - 54" diameter	0.021
CMP Asphalt Coated - 60" diameter	0.022
CMP Asphalt Coated - 66" diameter	0.024
CMP Asphalt Coated - 72" diameter	0.026
CMP Asphalt Coated - 78" diameter and larger	0.027
Concrete Paved Open Channels	0.013
Earth Lined Open Channels-Good Condition	0.030
Earth Lined Open Channels-Average Condition (Design)	0.040
Earth Lined Open Channels-Poor Condition	0.045

5.4.4 PIPED DRAINAGE SYSTEM DESIGN

5.4.4.1 STORM SEWER TABULATION

The plan submittal shall contain FDOT storm sewer tabulations as shown on Attachment No. 32.

5.4.4.2 STORM SEWER ALIGNMENT

All storm sewer layouts shall avoid abrupt changes in directions or slope and shall maintain reasonable consistencies in flow velocity. Where abrupt changes in direction or slope are necessary, provisions shall be made to handle the resulting head loss and erosion.
The maximum vertical distance between inflow invert and outlet invert shall be 8 feet. The maximum deflection angle between inflow pipe and outlet pipe shall be 90 degrees. If conditions arise which make the above criteria impractical to utilize, the City Engineer may waive the standard, provided the registered professional submits a special structural design for the drainage structure.

5.4.4.3 MINIMUM STORM SEWER PIPE SIZE

The minimum pipe size shall be 15 inches round or 15 inches elliptical equivalent.

5.4.4.4 MAXIMUM STORM SEWER PIPE LENGTHS

The maximum length of pipe to be used without an access structure shall be:

PIPE SIZE	MAXIMUM LENGTH (FEET)
15" pipe	250
18”	300
24” THRU 36”	400
42” and larger pipe (including all box culverts)	500

5.4.4.5 STORM SEWER MAXIMUM HYDRAULIC SLOPE

The maximum hydraulic gradient shall be that slope which produces a velocity of 15 feet per second. When hydraulic calculations do not consider minor energy losses, the elevation of the hydraulic gradient for the design storm condition should be at least 1.0 feet below the gutter or ground elevation. As a general rule, minor losses should be considered when the hydraulic gradient velocity exceeds 6 feet per second or lower on critical systems. If all minor losses are calculated, it is usually acceptable for the hydraulic gradient to reach the gutter elevation.

For major drainage crossings, a maximum 1-foot rise in the hydraulic gradient shall be allowed at the entrance to the structure provided there are no adverse impacts to adjacent property. A maximum 0.1-foot rise shall be allowed 500 feet upstream of the structure.

5.4.4.6 MINIMUM PHYSICAL SLOPE

The minimum slope for all culverts shall be that which will produce a minimum velocity of 2.5 feet per second when the culvert is flowing full. Short (150 feet or less) equalizer pipes may be proposed flat.

5.4.4.7 MINIMUM PIPE COVER

The minimum cover on a culvert shall be no less than 12 inches. Beneath a vehicular travelway, the distance shall be measured from the outside bell of the culvert to the top of the base at any point.

5.4.5 STORM SEWER INLETS

5.4.5.1 STORM INLET CAPACITY

The capacity of City standard curb inlets shall be 4.0 cfs per throat unless otherwise approved by the City Engineer.

5.4.5.2 STORM INLET SPACING

The maximum distance surface water will be allowed to run in the gutter prior to discharge into an inlet shall be 500 feet.

5.4.5.3 STORM INLET LOCATIONS

1. Where inlets are located on returns, a return profile may be included in the site development plans.

2. Other than at intersections, inlets should be located as near as possible to common lot lines.

3. Inlets shall be recessed from the roadway as shown on Plate D-202.

4. Ditch Bottom or Grate Inlets.

5. Ditch bottom or grate inlets shall conform to the City Standard Details.

5.4.5.4 STORM DRAINAGE STRUCTURES

1. General - All structures shall be in accordance with City Standards.

2. Conflict Manholes - Where it is necessary to allow a sanitary line or other utility to pass through a manhole, inlet or junction box because of no reasonable alternative, the utility shall be cast iron, steel, or other suitable material and maintained in the upper half of the storm sewer opening.

5.4.6 DRAINAGE EASEMENTS

Easement width for pipe shall be 20-foot minimum for 4 feet of cut or less and 2 feet additional width for each additional foot of cut below 4 feet. The pipe shall be located in the center part of any easement. The City may require unobstructed easements or rights of way along rear or side lot lines where necessitated by maintenance requirements.

This criteria does not apply for private easements for shallow rear yard swales and/or yard drains with small/shallow pipes.

5.5 ROADSIDE DITCHES AND SWALES

Within 60-foot rights-of-way, roadside ditches are to be no more than 3 feet in depth or 10 feet in top width. The maximum allowable velocity shall be 2.5 feet per second. In rights-of-way greater than 60 feet, the depth may be greater than 3 feet as long as the roadside shoulder is increased to a minimum of 10 feet.

1. Shape
    a. Roadside ditches greater than 3 feet deep.
        (1) 2:1 maximum front slope
        (2) 2:1 maximum back slope

        or

    b. Roadside ditches 3 feet or less.
        (1) 2:1 maximum front and back slope

5.5.1 ROADSIDE DITCH AND SWALES GRASSING REQUIREMENTS

All ditches or swales shall be grassed and mulched in accordance with the latest City Specifications. Sod will be used at locations designated by the City Engineer.

5.5.2 ROADSIDE DITCH CROSSINGS

5.5.2.1 DRIVEWAY CROSSINGS

1. Placement - Driveway crossing pipe shall be placed in the ditch line of the proposed roadway ditch with an invert elevation equal to the proposed ditch grade.

2. Size Schedule - A schedule showing the size and type crossing needed to gain entrance to each site shall appear in the site development plans.

   a. This may be accomplished by a note as to type and size needed appearing in the profile portion of the plan and profile sheet. A driveway culvert that is 32 feet or more in length will require drainage design (sizing) calculations that have been

      signed and sealed by a registered professional and require installation by a licensed underground utility contractor.

   b. A check is to be made to insure that the proposed ditch section has adequate depth to insure minimum cover.

5.6 DRAINAGE OUTFALL DITCHES AND CANALS

5.6.1 DRAINAGE RIGHTS-OF-WAY WIDTHS

To determine the required right-of-way or easement width over a ditch; determine the width of the top of the ditch, add 5 feet to one side and 20 feet to the other side for equipment access and consider extra radius or extra width at sharp turns to allow equipment turning. The total equals the minimum width required. When the top width of a ditch exceeds 100 feet, 35 feet should be added to each side.

5.6.2 DRAINAGE DITCH SIZES

All ditches shall be sized using accepted engineering practices. In all cases sufficient engineering data giving drainage area, velocity, and depth of flow is to be included in the drainage analysis.

5.6.3 DRAINAGE DITCH VELOCITIES

Unless unstable or highly erosive soil conditions indicate a lower design velocity, the maximum allowable velocity shall be 2 feet per second. Erosion protection may be required when the velocity exceeds 2 feet per second or the ditch slope exceeds 2 percent.

5.6.4 DRAINAGE DITCH SLOPE

The minimum required to provide for design flow.

5.6.5 ANALYSIS OF EXISTING OUTFALLS

Where an existing outfall is being utilized and the capacity to handle any additional runoff is in question, data to support the design shall be included in the drainage analysis.

5.6.6 CROSS SECTION DESIGN CRITERIA

5.6.6.1 GRADING ADJACENT TO CROSS SECTION

Areas adjacent to the ditches and canals shall be graded in such a manner as to preclude the entrance of excessive runoff except at locations where erosion protection is provided. Such locations shall be piped.

5.6.6.2 CROSS SECTION MAXIMUM SIDE SLOPES

The maximum side slope allowed shall be 2:1 or as soil conditions allow with the top ditch bank rounded off.

5.6.7 DITCH PROTECTION

5.6.7.1 DITCH ALIGNMENT CHANGES

Appropriate erosion protection shall be provided at changes in either or both horizontal or vertical alignment.

5.6.7.2 GRASSING AND MULCHING OR SOD

All ditches and earth embankments are to be grassed and mulched per City Standard Specifications. Sod may be required in some extreme circumstances. The Contractor is responsible for grass until a good stand has been rooted. An asphalt membrane to hold grass and mulch material will be acceptable. Topsoil or a mulch blanket may be required.

5.6.8 UTILITY CROSSINGS

Where it is necessary for a utility to cross a drainage right-of-way, the following minimum requirements shall be adhered to:

1. Aerial crossing - minimum of 1.0-foot clearance above design high water.
2. Underground - minimum of a 2.5-foot clearance below the design invert of the canal.
3. Utilities shall be adequately permanently marked to protect against accidental damage during maintenance operation.
4. No supports for aerial crossings shall be allowed in the confines of the canal cut unless authorized by the City Engineer.
5. Conduit material for crossing shall be submitted for approval by the CityEngineer.

5.7 DEPENDENCE ON FUTURE DEVELOPMENT

When development is accomplished in phases, each individual unit constructed must provide the drainage improvements necessary for that unit. All runoff from each individual unit must be handled to a point of positive outfall. No design of an individual unit shall be dependent upon the ultimate installation of a future unit. When circumstances dictate, the developer must agree to accept the public water and provide temporary easements.

5.8 DETENTION / RETENTION BASINS (STORMWATER MANAGEMENT FACILITIES)

5.8.1 STORMWATER MANAGEMENT FACILITY GENERAL REQUIREMENTS

Detention/retention basins may be incorporated into a drainage system for the following reasons:

1. The outfall system is inadequate to handle post-development flows and revisions to the outfall are not practical.
2. Peak flow attenuation as required by state agencies.

3. Stormwater treatment facilities.

4. Amenity to the proposed development.

5.8.2 STORMWATER MANAGEMENT FACILITIES – TOTAL RETENTION

All detention/retention facilities must have a positive discharge except as approved by the City Engineer. If total retention is allowed, the basin must recover to its design low water stage within 72 hours. To provide the City with assurances, a double ring infiltrometer test must be performed at the same elevation as the bottom of the basin and a safety factor of 4 shall be applied to the design.

5.8.3 STORMWATER MANAGEMENT FACILITIES DESIGN CRITERIA

5.8.3.1 GENERAL DESIGN METHODOLOGIES

The registered professional may use SCS method for determining runoff for any site — no acreage restriction. Rational method may be used only for sites that are 10 acres or less.

5.8.3.2 DETENTION BASIN DESIGN CRITERIA

The site development plans must be accompanied by a complete detention analysis showing:

a. Overall drainage layout including all drainage areas contributing to the detention basin.

b. Calculations showing inflow, discharge, storage capacity, minimum and maximum design water depth and detention time, capacity of the receiving system, tailwater conditions at the outlet structure.

c. The drainage basin lag time shall be incorporated into the inflow hydrograph for drainage basins in excess of 40 acres.

d. The outflow hydrograph shall reflect the varying pond discharge from design low water to design high water.

e. Inflow

METHODOLOGY USED	DESIGN STORM (Developed Conditions)
Rational Method	
- Inflow	100-year storm
- Contributing pipe system	5-year storm
SCS Method	
- Inflow	25-year storm
- Contributing pipe system	3-year

f. Outflow

(1) The maximum allowable outflow rate shall be based on the runoff rate for existing conditions using the 100-year rational or 25-year SCS design storm

AND

(2) The outflow rate shall not exceed the capacity of the downstream drainage system

based on the appropriate inflow-outflow design storm for that system as defined herein.

(3) Examples:

Downstream Drainage System

(a) Subdivision - five-year Rational or 3-year SCS design storm. The outflow rate shall not exceed the capacity of the downstream system based on a 5-year design storm inflow into the detention pond.

(b) Major Outfalls - 25-year Storm(a) Subdivision - five-year Rational or 3-year SCS design storm. The outflow rate shall not exceed the capacity of the downstream system based on a 5-year design storm inflow into the detention pond.

The outflow rate shall not exceed the capacity of the downstream system based on a 25-year design storm inflow into the detention pond.

g. Storage Required

The storage required shall be that volume necessary to store the difference between the 100-year rational or 25-year SCS storm developed-condition runoff and the 100-year rational or 25-year SCS storm existing-condition runoff. Additional restrictions apply in certain restricted drainage basins, see Appendix 2.

h. Exceptions

When downstream conditions will not accept runoff from the appropriate storm-existing conditions or other special instances, the development will be required to provide a drainage system which will not increase flooding downstream.

i. Design storms for detention basin design:

(1) Rational Method

Duration (hrs. min)	100 Year Rainfall (in)	25 Year Rainfall (in)	5 Year Rainfall (in)
0- 5	0.850	0.720	0.60
0-15	2.116	1.686	1.30
0-30	3.183	2.700	2.10
0-40	3.778	3.050	2.35
1- 0	4.373	3.400	2.60
1-30	5.080	3.950	2.95
2- 0	5.593	4.500	3.30
3- 0	6.309	5.000	3.80
4- 0	6.821	5.500	4.03
6- 0	7.556	6.000	4.50
8- 0	8.091	6.330	4.83
12- 0	8.870	7.000	5.50
24- 0	10.310	8.500	6.50

See Attachment No. 35.

(2) SCS methods shall use the Type II Florida Modified Distributions with rainfall

amounts from the St. Johns River Water Management District Technical Publication SJ88-3.

j. Soil Investigation

(1) Soil borings shall be made to a depth which equal to the design low water, seasonal high water table, or the pond bottom if dry.

(2) Soil types, estimated seasonal high water table elevation to be included and illustrated as a part of the detailed storm water management facility construction plans.

(3) No less than 1 boring per acre or fraction thereof of storm water management facility water surface at design low water elevation, or as specified by the City Engineer.

(4) If the analysis of the basin utilizes infiltration to achieve either peak flow attenuation or recovery time, a double ring infiltrometer test shall be performed at the bottom of the proposed basin. A safety factor of 2 shall be used for design calculations.

k. Flooding of a private commercial site to satisfy attenuation requirements is allowed with Owner's (Client) permission. The limits of flooding shall be shown in the plans along with the following statement signed by the Owner (Client):

I (*type or print owner's name*) hereby acknowledge that the property to be developed is subject to flooding during the following design storm(s), to the limits shown shaded on these plans, and to the following elevations:

5 year (or 3 yr., as designed)elevation _____

100 year (or 25 yr., as designed) elevation _____

(Owner's Signature) _____

m. Small projects which satisfy the St. Johns River Water Management District's criteria (Chapter 40C-42 of the Florida Administrative Code) proposing less than 4,000 sq. ft. of vehicular use paving and less than 9,000 sq. ft. of impervious area total, and are not within a Restricted Drainage Basin, the following design criteria shall apply if the site discharges to a City right of way in the pre-development condition:

(1) Post development discharge must be to a City right-of-way or Water of the State.

(2) Attenuation (pre vs. post) requirement may be limited to the 3-year SCS or 5-year Rational method.

(3) There shall be no minimum freeboard required within the stormwater management facility.

(4) Innovative methods for attenuation shall be considered.

(5) The permeability rate in the Soils Survey of City of Jacksonville, Duval County, Florida, may be used to determine recovery time — the minimum rate must be used.

n. Previously Developed Sites Within Restricted Basins

(1) No credit for existing impervious surfaces shall be given for sites constructed within a drainage basin that is restricted to 0.5 cfs per acre discharge.

5.8.3.3 STORMWATER TREATMENT DESIGN CRITERIA

When basins are designed to provide stormwater treatment only, the design criteria shall be the same as a detention basin design with the following exceptions:

1. If the basin is constructed below adjacent land, a 5-year rational storm or a 3-year SCS storm may be used for the analysis.

2. If the basin is constructed above the adjacent land, then a 100-year rational or 25-year SCS storm shall be used.

5.8.3.4 OFFLINE DETENTION OF TREATMENT BASIN

If an offline basin is used to provide peak flow attenuation or stormwater treatment, the basin may be analyzed on the same design storm as the contributing system provided the basin is constructed below adjacent land and the project is less than 40 acres.

5.8.3.5 REAR LOT TREATMENT FACILITIES

When a swale is constructed to provide stormwater treatment at the rear property line, no analysis is required provided the top of berm is 2 feet wide and is set at an elevation 1/2 foot higher than the treatment volume. The maximum side slope for these swales shall be 3:1.

5.8.3.6 STORMWATER FACILITY BASIN GEOMETRY

It is intended the stormwater basin has a minimum V-shaped cross-section (minimum design low water depth of 8 feet) aligned along the line of flow from the point of entry to the storm water management facility to the point of exit. Larger storm water management facilities may require flat bottoms where appropriate transitions at the points of entrance and exit shall be designed.

Where the guidance produces a larger-than-required basin, individual design will be necessary. In all cases, the basin shall be located in such a manner as to cause the least amount of damage if the design storm is exceeded.

1. Sides

   a. Slope

      Side slopes are not to be steeper than a maximum of 4:1 and shall be used on all man-made basins. Where natural basins are existing, the criteria will be set on an individual basis. Side slopes steeper than 4:1 may be approved by the City Engineer provided permanent bank stabilization and fencing is constructed.

   b. Protection

      All exposed or disturbed soil is to be mulched and grassed to achieve a good stand of grass in accordance with current City Standard Specifications.

2. Depth

   Basins which will not drain dry within 72 hours after the design storm shall have a minimum depth below the design low water stage of 8 feet. Side slopes of 4:1 or flatter shall be used between the design low water and the basin bottom.

3. Illustrative Example Sketch

   A cross-sectional drawing to a scale of each and all storm water management facilities included in the overall drainage layout are to be part of the site development plans.

5.8.3.7 WATER ELEVATION AND OVERFLOW

1. Water elevation must be controlled by an appropriate concrete drainage structure.

2. The minimum difference in elevation between the design low water of the basin and the lowest contributing roadway inlet grate shall be 2 1/2 feet unless approved by the City Engineer. If a wet treatment system is utilized for water quality, the water elevation at 60 hours shall be utilized.

3. A 1-foot minimum freeboard is required at all points around a storm water management facility for all storm events, except for the 100-year rational or 25-year SCS storm events. However, if the basin is constructed higher than the adjacent land, the 1 foot minimum freeboard is required for all design storms.

4. All basins shall have an emergency overflow which will direct the water to a suitable drainage system.

5. The aerial extent of the basin shall be shown and labeled on all plans as top of basin. Where applicable, this shall include the area within the 1 foot of freeboard.

6. Pumps used in stormwater basins shall not be allowed except as authorized by the City Engineer. In cases where public waters are involved, the pumps shall be maintained by the property owner or Home Owners' Association.

7. The basin shall be designed to return to its low water elevation in accordance with criteria as set forth by the St. Johns River Water Management District.

5.8.3.8 OWNERSHIP OF STORMWATER MANAGEMENT FACILITIES

1. All stormwater management facilities are to be owned and maintained by either:

   a. The surrounding property owners or;

   b. other group as approved by theCity.

2. Rights-of-way or easements must continue through all storm water management facilities. Littoral zones and wetland mitigation areas shall not be located within City easements. Such rights-of-way or easements shall include a hold harmless agreement and a 15' minimum access easement to control structures via land. The area within the access easement shall have a maximum slope of 15:1.

3. Annual reports in compliance with the SJRWMD stormwater permits, are required from the maintenance entity of all stormwater treatment facilities.

4. All rear-lot drainage systems shall be included as a part of the ongoing development's stormwater management certification requirements. An access easement shall be dedicated to the City of Jacksonville and the appropriate State Agency for access to rear-lot drainage systems for inspection by the City of Jacksonville or such State Agency.

5.8.3.9 HOLD HARMLESS AGREEMENT

A "hold harmless" agreement must be executed and approved by the City General Counsel's office which will relieve the City of any responsibility for maintaining the storm water management facility and of any liability for any damage caused by flooding from the storm water management facility, including but not limited to blockage, dam failure, and excess flow; drowning or any other personal damages. The agreement shall be shown on the final plat. See Attachment No. 24.

5.9 SUBSURFACE DRAINAGE

5.9.1 GROUNDWATER

In accordance with the test boring data obtained pursuant to paragraph 2.3.1D and considering anticipated groundwater changes due to drainage improvements, underdrain shall be installed in accordance with City Standard Details in all cases where the groundwater table is closer than 20 inches below the lowest finished gutter or edge of pavement of any roadway. The "iron-oxide" lens in the soil may be used as an indicator of the usual high predevelopment groundwater elevation.

Should underdrain quantities be adjusted in the field during construction, as concurred therein by the City's on-site representative, the registered professional shall revise the site development plans accordingly and submit revised signed and sealed plans to the City Engineer for the record, with note on plans showing date of site meeting and the City's representative in attendance.

5.9.2 UNDERDRAIN SIZE

The size of the underdrain required shall be determined using accepted engineering practices. The minimum size acceptable is 6 inches in diameter.

5.9.3 UNDERDRAIN SLOPE

The minimum slope shall be 0.002 ft/ft.

5.9.4 UNDERDRAIN TYPE

Only Type I underdrain shall be used. Type II and Type III (partial wrap and no wrap) shall not be permitted.

5.9.5 UNDERDRAIN FABRIC

Underdrain fabric shall be a minimum of 6 ounces.

5.10 DRAINAGE MATERIALS CRITERIA

5.10.1 DRAINAGE MATERIALS - GENERAL

Reinforced concrete pipe is required under paved travel surfaces within City rights-of-way. Profile wall pipe 24” or less (Polypropylene 60” or less) is also allowed under paved travel surfaces within City rights- of-way. Other materials as listed below will be allowed within City rights-of-way other than under travel surfaces, pursuant to the following criteria and at the discretion of the City Engineer.

5.10.2 DRAINAGE STRUCTURES (MATERIALS)

Pipe, inlets, manholes, junction boxes, headwalls, etc., shall be constructed in accordance with the City Standard Specifications.

1. Materials

a. Reinforced Concrete Pipe - RCP

b. Corrugated Steel Pipe - CMP

c. Corrugated Aluminum Pipe – CAP

d. Structural Plate and Arch (Steel or Aluminum) – SPSP and SPAP

e. Aluminized Steel Type 2 Pipe - CASP

f. Fiber Reinforced Concrete Pipe - FRCP

g. Underdrains - UD

h. Spiral-Ribbed – SRSP, SRASP and/or SRAP

i. Profile Wall Pipe (Polyethylene) HDPE

j. Corrugated Polypropylene Dual Wall (smooth interior) – PP (ADS HP Storm)

2. Specifications

a. Reinforced Concrete Pipe - All reinforced concrete pipe used shall be Class III Wall "B" except where requirements under R/R, etc., call for otherwise. (Comply with ASTM C-76 Standard Specifications.)

b. Corrugated Steel Pipe - All steel pipe shall have a full bituminous coating and shall meet FDOT gauge requirements.

c. Corrugated Aluminum Pipe - Prior to the installation of corrugated aluminum pipe, the manufacturer, registered

professional, or developer shall furnish the City Engineer test reports on the soil pH with a certification that the material furnished will provide sufficient resistance to corrosion to maintain a normal useful life. The expected life shall be stated. FDOT Gauge requirements shall apply.

d. Steel or Aluminum Structural Plate and Arch - Same as b and c previous.

e. Aluminized Steel Type 2 Pipe – Shall be manufactured and tested in accordance with AASHTO M-36.

f. Fiber Reinforced Concrete Pipe - Class III use only meeting FDOT Standard Specifications for Road and Bridge Construction section 430, the same standard specification as Steel Reinforced Concrete Pipe and follow sections 125 and 430 of the Standard Specification for Roads and Bridges.

g. Underdrains - Materials used for underdrains shall meet the requirements of AASHTO M197 for aluminum pipe, ASTM C444 for concrete pipe, ASTM D3033 for PVC pipe or ASTM F949 for profiled wall PVC pipe, smooth interior, corrugated exterior, high density polyethylene pipe, meeting ASTM 252(S) and ASTM 294(S) pipe. All perforations shall meet the requirements of ASTM C508.

h. Spiral Ribbed – Shall be manufactured and tested in accordance with AASHTO M-36.

i. Profile Wall pipe (HDPE) - for use as storm sewer outside paved

travel surfaces (15” to 60” diameter). The manufacture of the pipe shall be certified to the requirements found in the current edition of AASHTO M294 for Type “S”. The pipe shall be installed and inspected in accordance with ASTM 2321.

Upon completion of installation, the pipe shall be evaluated to determine whether the internal diameter of the barrel has been reduced more than 5 percent. Pipe deflection shall not exceed 5 percent. Pipe shall be de-watered and checked for deflection using a mandrel or any other device approved by the City Engineer (or his designee). If a mandrel is used for the deflection test, it shall be a nine (or greater odd number) arm mandrel. Testing equipment and test supervision will be provided by the contractor.

Pipe sizes larger than 24” shall be dewatered and tested for deflection using a mandrel or other device approved by the City Engineer (or his designee). Mandrel testing is not mandatory in sizes less than or equal to 24 inches in diameter (including under pavement). If during visual inspection, should the City Engineer (or his designee) determine that pipe sizes 24” or less warrant mandrel testing, a mandrel test will be required.

If HDPE pipe is used in driveway culvert applications concrete or metal mitered end section must be used.

j. Corrugated Polypropylene Dual Wall (smooth interior) – PP (ADS HP Storm) – The manufacture of the pipe shall be certified to the requirements found in the current edition of AASHTO M330, ASTM F2881, and ASTM F2736 for the respective diameters. The pipe shall be installed in accordance with ASTM D2321.

For use as storm sewer outside and under paved travel surfaces (15” to 60” diameter).

Upon completion of installation, the pipe shall be evaluated to determine whether the internal diameter of the barrel has been reduced more than 5 percent. Pipe deflection shall not exceed 5 percent. Pipe shall be de-watered and checked for deflection using a mandrel or any other device approved by the City Engineer (or his designee). If a mandrel is used for the deflection test, it shall be a nine (or greater odd number) arm mandrel. Testing equipment and test supervision will be provided by the contractor.

Pipe sizes larger than 24” shall be dewatered and tested for deflection using a mandrel or other device approved by the City Engineer (or his designee). Mandrel testing is not mandatory in sizes less than or equal to 24 inches in diameter (including under pavement). If during visual inspection, should the City Engineer (or his designee) determine that pipe sizes 24” or less warrant mandrel testing, a mandrel test will be required.

If HP pipe is used in driveway culvert applications concrete or metal mitered end section must be used.

5.10.3 PIPE JOINTS

Joints and joint material for reinforced concrete pipe shall be "O-ring" for round pipe or "ram-nek" in conjunction with a 24 inch band of filter fabric (one foot on each side of joint) for elliptical pipe.

Connecting bands for steel CMP shall be "O-ring" or a gasketed band with corrugations designed to fit the pipe used.

Connecting bands for aluminum CMP may be the same as those specified for steel CMP. A suitable neoprene gasket shall be used with all other types of connecting bands.

Reinforced fiberglass pipe shall be jointed by a solvent weld.

Underdrains shall be jointed by an AASHTO-approved connector.

Joints for Polypropylene Pipe shall be joined with a gasketed integral bell and spigot joint meeting the requirements of AASHTO M330, ASTM F2881, and ASTM F2736 for the respective diameters. 15- through 60-inch (300 to 1500 mm) shall be water-tight in accordance with ASTM D3212 (10.8 psi lab test), ASTM F1417 (3.5 psi field test), and ASTM F2487 (infiltration / exfiltration test). Spigots shall have two (2) gaskets meeting the requirements of ASTM F477. Gaskets shall be installed by the pipe manufacturer and covered with a removable, protective wrap to ensure the gasket is free from debris. A joint lubricant available from the manufacturer shall be used on the gasket and bell during assembly. 15-through 60- inch (300 to 1500 mm) diameters shall have a reinforced bell with a polymer composite band installed by the manufacturer.

HDPE pipe soil tight joints shall have a bell and spigot design with an elastomeric gasket meeting the requirements of ASTM F477. HDPE watertight joints shall meet a laboratory test pressure of 10.8 psi per ASTM D3212 and shall have a bell and spigot or bell–bell design with an elastomeric gasket meeting the requirements of ASTM F477.

5.10.4 HEADWALLS

5.10.4.1 POURED IN PLACE HEADWALLS

Poured-in-place headwalls shall be constructed of 3000 PSI concrete in accordance with City Standards.

5.10.4.2 PRECAST HEADWALLS

The City has accepted Standard Precast headwalls in sizes for 15 inch through 42 inch pipe. Such walls are in accordance with poured-in-place walls regarding size. Steel has been added to accept the handling of loads imposed.

5.10.4.3 FLARED END SECTIONS

Flared end section may be used in place of headwalls as desired. They shall conform to City Standards.

5.10.4.4 SAND CEMENT (RIP RAP) HEADWALLS

Sand cement rip rap headwalls will be allowed on temporary pipes only. By temporary, it is meant those items which are expected to last no more than 10 years.

5.11 STORM DRAIN FACILITIES “AS-BUILT” DRAWINGS REQUIREMENTS

"As-built" drawings must be submitted and approved for all drainage work done (See Attachment Nos. 18 or 19, 19A and 29.)

5.12 EROSION AND SEDIMENT CONTROL

5.12.1 EROSION AND SEDIMENT CONTROL – GENERAL (C/CM-2.3.2)

1. Erosion during and immediately after construction is a major contributor to the siltation of drainage ways, wetlands, tributaries, and is a major factor in the degradation of water quality.

2. To minimize the impacts of erosion and sediment transport, an effective erosion control plan for all land-disturbing activities under the Department of Subdivisions must be submitted for approval by the Department of Public Works. All erosion control plans tobe submitted must be signed and approved prior to submittal by a person trained and certified in the Florida Department of Environmental Protection's Erosion and Sediment Control Designer and Reviewer manual as well as the Florida Department of Environmental Protection's Erosion and Sediment Control Inspector Training Manual.

3. The approved erosion plan will be sent by the Department of Public Works to the Environmental Quality Division for monitoring of the construction site to insure compliance with the plan.

4. Soil erosion and sediment control measures shall conform to the Florida Department of Environmental Protection's Erosion and Sediment Control Designer and Reviewer manual as well as the Florida Department of Environmental Protection's Erosion and Sediment Control Inspector Training Manual, which are hereby adopted and incorporated by reference, as well as the standards herein described, whichever is more stringent. The application of measures shall apply to all land-disturbing activities under the Department of Public Works jurisdiction, except single family residential building permits. These activities shall include, but not be limited to, roadway and drainage construction, utility installation, site dewatering and other temporary or permanent improvements.

5. To be successful, an erosion control plan must be a dynamic plan which can be implemented in stages and can be modified to suit different construction practices and site conditions. If, during construction, the contractor chooses to modify the approved erosion control plan, he must submit his plan to the Department of Public Works for approval prior to construction of the plan, except where emergency measures are required to control erosion.

5.12.2 EROSION AND SEDIMENT CONTROL – PRINCIPLES

1. The plan of development should fit the particular topography, soils, drainage patterns, and natural vegetation of the site.

2. Minimize the extent of the area exposed at one time and the duration of exposure.

3. Apply effective erosion control measures to prevent off-site damage.

4. Apply perimeter control practices to protect the disturbed area from off-site runoff and to prevent sedimentation damage to areas below the development site.

5. Runoff velocities should be kept low and should be detained on the site.

6. Stabilize disturbed areas immediately after final grade has been obtained.

7. Implement a thorough maintenance and compliance program.

5.12.3 EROSION AND SEDIMENT CONTROL – PRACTICES

To comply with the principles set forth above, the erosion control plan should utilize those practices set forth in the Florida Department of Environmental Protection's Erosion and Sediment Control Designer and Reviewer manual as well as the Florida Department of Environmental Protection's Erosion and Sediment Control Inspector Training Manual or the most effective combination of the following, whichever is more stringent:

1. Straw bale barrier: Straw bale barriers can be used below disturbed areas subject to sheet and rill erosion with the following limitations:
   a. Where the maximum slope behind the barrier is 33 percent.
   b. In minor swales or ditch lines where the maximum contributing drainage area is no greater than 2 acres.
   c. Where effectiveness is required for less than 3 months.
   d. Every effort should be made to limit the use of straw bale barriers constructed in live streams or in swales where there is the possibility of a washout. If necessary, measures shall be taken to properly anchor bales to insure againstwashout.

2. Filter fabric barrier: Filter fabric barriers can be used below disturbed areas subject to sheet and rill erosion with the following limitations:
   a. Where the maximum slope behind the barrier is 33 percent.
   b. In minor swales or ditch lines where the maximum contributing drainage area is no greater than 2 acres.

3. Brush barrier with filter fabric: Brush barrier maybe used below disturbed areas subject to sheet and rill erosion where enough residue material is available on site.

4. Temporary diversion dike: Temporary diversion dikes may be used to divert runoff through a sediment-trapping facility.

5. Temporary sediment trap: A sediment trap is usually installed in a drainageway at a storm drain inlet or at other points of discharge from a disturbed area with the following limitations:
   a. The sediment trap may be constructed either independently or in conjunction with a temporary diversion dike.

6. Outlet protection: Applicable to the outlets of all pipes and paved channel sections where the velocity of flow at design capacity of the outlet will exceed the permissible velocity of the receiving channel or area.

7. Level spreader: A level spreader may be used where sediment-free storm runoff is intercepted and diverted away from the graded areas onto undisturbed stabilized areas. This practice applies only in those situations where the spreader can be constructed on undisturbed soil and the area below the level lip is stabilized. The water should not be allowed to reconcentrate after release.

8. Surface Roughening: Surface roughening may be used to reduce erosion and provide sediment trapping for the following conditions:
   a. For slopes steeper than 3:1, surface roughening will consist of either stair-step grading, grooving, furrowing or tracking if they are to be stabilized with vegetation.
   b. Areas with grades less steep than 3:1 should have the soil surface lightly

roughened and loose to a depth of 2 to 4 inches.

c. Areas which have been graded and will not be stabilized immediately may be roughened to reduce runoff velocity until seeding takes place.

9. Stockpiling Material: No excavated material shall be stockpiled in such a manner as to direct runoff directly off the project site into any adjacent water body or stormwater collection facility.

10. Exposed Area Limitation: The surface area of open, raw, erodible soil exposed by clearing and grubbing operations or excavation and filling operations shall not exceed 10 acres. This requirement may be waived for large projects with an erosion control plan which demonstrates that opening of additional areas will not significantly affect off-site deposit of sediments.

11. Inlet Protection: Inlets and catch basins which discharge directly off-site shall be protected from sediment-laden storm runoff until the completion of all construction operations that may contribute sediment to the inlet.

12. Temporary Seeding: Areas opened by construction operations and that are not anticipated to be re-excavated or dressed and receive final grassing treatment within 30 days shall be seeded with a quick-growing grass species which will provide an early cover during the season in which it is planted and will not later compete with the permanent grassing.

13. Temporary Seeding and Mulching: Slopes steeper than 6:1 that fall within the category established in Paragraph 12 above shall additionally receive mulching of approximately 2 inches loose measure of mulch material cut into the soil of the seeded area adequate to prevent movement of seed and mulch.

14. Temporary Grassing: The seeded or seeded and mulched area(s) shall be rolled and watered or hydromulched or other suitable methods if required to assure optimum growing conditions for the establishment of a good grass cover.

15. Temporary Regrassing: If, after 14 days from seeding, the temporary grassed areas have not attained a minimum of 75 percent good grass cover, the area will be reworked and additional seed applied sufficient to establish the desired vegetative cover.

16. Maintenance: All features of the project designed and constructed to prevent erosion and sediment shall be maintained during the life of the construction so as to function as they were originally designed and constructed.

17. Permanent Erosion Control: The erosion control facilities of the project should be designed to minimize the impact on the off-site facilities. All stormwater discharge from the project limits shall be designed in accordance with Section 3 of the Land Development Procedures.

18. Permanent Seeding: All areas which have been disturbed by construction will, as a minimum, be seeded. The seeding mix must provide both long-term vegetation and rapid growth seasonal vegetation. Slopes steeper than 4:1 shall be seeded and mulched or sodded.

5.12.4 CONTRACTOR CERTIFICATION

1. Where required by Chapter 489 of the Florida Statutes, contractors shall be licensed as underground utility contractors.

2. All contractors conducting land-disturbing activities shall be certified Florida Department of Environmental Protection's Erosion and Sediment Control Designer and Reviewer manual as well

as the Florida Department of Environmental Protection's Erosion and Sediment Control Inspector Training Manual.

5.12.5 DRAINAGE SWALE CONSTRUCTION

Drainage swales across more than 1 lot and shown on the approved site development plans shall be constructed as a part of the subdivision improvements. The swales shall be inspected and approved prior to acceptance of the public improvements.

SECTION 6.0 – SOLID WASTE

6.1 SOLID WASTE - GENERAL

6.1.1 APPLICATION

This section applies to all commercial buildings and developments except single-family residences.

6.1.2 DEVELOPER'S RESPONSIBILITY

It shall be the developer's responsibility to provide adequate loading facilities for the proper handling of any and all solid waste generated by the development. Calculations shall be provided to show that the size and number of containers will accommodate all solid waste generated on the project at all times, to include that waste generated as a result of any single incidence, such as weekend parties, holidays, etc. There shall be no spillage of the solid waste from the containers.

6.2 SOLID WASTE CONTAINERS

6.2.1 TYPE OF CONTAINERS

Containers for solid waste collection shall be of the standard type used by the City of Jacksonville Sanitation Division or the type used by local contract collection agencies. These generally are the large volume containers, for either front or rear loading; or roll-on, roll-off, on-site compaction unit containers. The containers shall be leak-proof and totally enclosed. Doors of adequate size and design shall be provided so that users can open and close them with ease.

6.2.2 NUMBER OF CONTAINERS

There shall be a sufficient number of containers of adequate volume placed at convenient locations to handle the solid waste generated by the facilities to be served.

6.2.3 LOCATION OF CONTAINERS

Large volume containers shall be placed in such locations so as to avoid blockage of the containers by parked vehicles. The sites of containers should be such that the vehicles servicing them can reach the containers with a minimum of maneuvering. Careful consideration should be given to both horizontal and vertical obstructions. Special concern of horizontal and vertical obstructions should be considered when working inside a building. Adequate information shall be provided on the drawings to indicate the turning and loading parameters for both horizontal and vertical clearances.

In apartment-type complexes, containers should not be located further than 200 feet apart.

Solid waste containers placed to service buildings or developments constructed after August 13, 1974, shall not be on any part of publicly owned property.

6.2.4 PAVING UNDER CONTAINERS

All solid waste containers shall be placed on a concrete pad. The pad shall be designed in accordance with acceptable engineering practices, including steel reinforcing, etc. The pad shall extend at least two feet beyond the edges of the containers used and shall be enclosed by a 6-inch high header curb. The pad shall be shaped to drain to a common point within the curb.

Either concrete or asphalt may be utilized in the area to be used by the container service vehicles. It is suggested that the immediate area around the container on which the service vehicle will operate be concrete.

6.2.5 DRAINAGE REQUIREMENTS

In order to adhere to the city's NPDES permit and prevent potential illicit connections to the municipal storm drainage system, the pad on which a large volume garbage container (e.g., a dumpster) sits must either drain into a pre-treatment swale that is a minimum of six (6) inches deep and equal in area to that of the pad or drain directly into a sanitary sewer system.

6.2.6 ENCLOSURE

Enclosure of large volume containers shall be required if location and/or containers are allowed to overflow, thereby creating a public nuisance.

SECTION 7.0 –PLATTING AND CITY ACCEPTANCE REQUIREMENTS

7.1 PLATS MADE FOR RECORDING

7.1.1 NAMING REQUIREMENTS:

7.1.1.1 UNIQUE SUBDIVISION NAME: Every subdivision shall be given a name by which it shall be legally known. This name must be shown on all sheets. That name is the “primary name.” The primary name shall not be the same or in any way so similar to any name appearing on any recorded plat in the same county as to confuse the records or to mislead the public as to the identity of the subdivision. When the subdivision is further divided as an additional unit or section by the same developer or the developer’s successors in title the additional unit, section, or phase shall be given the primary name followed by the unit, section, or phase number. Every subdivision’s name shall have legible lettering of the same size and type, including the words “section,” “unit,” or “phase.” Any change in a plat, except as provided in F.S.177.141, shall be labeled a “replat,” If the word “replat” is not part of the primary name, then it may be of a different size and type. Words such as “the,” “replat,” or “a” may not be used as the first word of the primary name. The fact of its being a replat shall be stated as a subtitle under the name of the plat on each sheet included. The subtitle must state the name of the subdivision being replatted, and the appropriate recording reference. The unique Subdivision name must be given prior approval by the “Manager of Topographical Survey Section”.

7.1.1.2 SUBDIVISION LOCATION: The section, township, and range shall appear immediately under the name of the plat on each sheet included, along with the name of the city, town, village, county, and state in which the land being platted is situated.

7.1.1.3 STREET NAMING: A Street name plan must be approved by the Addressing Section prior to submittal of civil plans. All streets shall be appropriately labeled public or private as stated in the adoption and dedication.

7.1.2 COVER PAGE REQUIREMENTS:

COVER PAGE: The first sheet of all plats shall show the **caption, adoption and dedications (see attachment 7-2), hold harmless agreements, notary statements, approval for recording and required certifications.** In the event that more than one sheet is needed, the additional information must be shown on the next sheet. Size of lettering on plats for caption, adoption and dedications, notary statements, developer's certificate, director of public works approval, clerk of circuit court certificates, surveyor's certificate, bearings, distances and curve tables shall not be less than 0.08 inches or No. 80 Leroy lettering template size.

7.1.2.1 CAPTION: A complete legal description of the land to be subdivided, with boundary checked. The legal description shall be the same as that provided in the title certification required in Ordinance Code 654.110, and in F.S.177.091(11). The legal description shall be approved by the Office of General Counsel.

7.1.2.2 ADOPTION AND DEDICATION: Unless this requirement is waived by the Director or his or her designee, on the face of the plat an unreserved dedication to the public or to a private entity of streets, highways, alleys, parks, parkways, easements, common areas, or other public or private places included within the plat. The appropriate “Adoption and Dedication” language from attachment 7-2 use sample A, B, or C, including the HOA language if applicable (see 3 below) shall be shown on the plat. The primary name of the subdivision shall be shown in the dedication and shall coincide exactly with the subdivision name. The purpose of all areas dedicated must be clearly indicated or stated on the plat. If lakes, retention, infiltration systems etc. are part of the approved subdivision, the plat identification, adoption, and dedication are to make reference using the same language. The accurate outline of property which is to be

dedicated, reserved or proposed for public use, including easements, and property that may be reserved by covenants in deeds for the common use of the property owners in the subdivision must be, indicated on the plat.

7.1.2.3 HOME OWNERS ASSOCIATION LANGUAGE: When the property is subject to a Home Owners Association the Adoption and Dedication must contain the following language.

Upon failure of the Home Owners Association; the obligation of maintenance and any other matters pertaining to said lakes/stormwater management facilities as well as Tracts and Parcels for any use, the obligation would then fall equally on the lot owners as shown hereon said plat.

7.1.2.4 MORTGAGEE DEDICATION: When practicable, the mortgage dedication shall be combined with the dedication of the property owners.

7.1.2.5 CONSENT AND JOINDER: The appropriate consent and joinder language related to any mortgages held on the land and or off-site easements must be shown in the format below and notarized on the plat:

CONSENT AND JOINDER TO PLAT DEDICATION

The undersigned hereby certifies that it is the holder of the mortgage, lien or other encumbrance recorded in Official Records Book _____, Page _____, of the Public Records of Duval County, Florida ("Mortgage"), encumbering the lands described in the caption hereon. The undersigned hereby joins and consents to the dedications by the Owner of the lands described in the Adoption and Dedication section herein, and agrees that the Mortgage shall be subordinated to said dedications.

Signed in the presence of: _____

_____ By:_____
Print Name:_____ Print Name:_____
Its:_____

_____
Print Name:_____

7.1.2.6 OWNER CERTIFICATIONS: The developer's certificate shall be on the left-hand side of sheet one, when practical.

7.1.2.7 NOTARY'S STATEMENTS: The appropriate notary language must be included with the notarized signatures of the Owner(s) and Mortgagee(s), following the Owner(s) certification.

7.1.2.8 COJ CERTIFICATIONS: The appropriate certifications and acknowledgement from the Director of Public Works, the Clerk of the Circuit Court, and the City's Professional Land Surveyor must appear on page one, when practical. These certifications must contain the current name for each.

7.1.2.9 SURVEYOR'S CERTIFICATE: A certification by the surveyor attesting to the accuracy of the survey and the legal description and that the permanent reference monuments have been established according to law and these regulations. The surveyors name, mailing address, PLS Number, and telephone number must appear on the caption page (Attachment 7-11A).

7.1.2.10 STATEMENT: The plat shall include in a prominent place preferably on the first page or note number 1 in the notes section the following statements:

"NOTICE: This plat, as recorded in its graphic form, is the official depiction of the subdivided lands described herein and will in no circumstances be supplanted in authority by any other graphic or digital form of the plat. There may be additional restrictions that are not recorded on this plat that may be found in the public records of this county."

7.1.3 BASE PLAT LAYOUT AND SYMBOL REQUIREMENTS:

7.1.3.1 PLAT SIZE: 18 X 26 with 3 inch margins.

7.1.3.2 VICINITY MAP: A vicinity map must be provided on the first or second page of the plat.

7.1.3.3 KEY MAP: Plats with multiple lot sheets shall have a key map. When more than one sheet must be used to accurately portray the lands subdivided, an index or key map must be included and each sheet must show the particular number of that sheet and the total number of sheets included, as well as clearly labeled match lines to show where other sheets match or adjoin.

7.1.3.4 GENERAL NOTES AND LEGENDS: Notes and legends can either appear on one sheet of a multiple sheet plat, or on every sheet. If they appear on one sheet, then that sheet must be referenced on all other map sheets, underneath the page numbering.

a Legend: All symbols and abbreviations shall be shown in a legend.

b Notes:

1. Notice in section 7.1.2.10 above, should be the first note if not on cover page.
2. Give basis of bearings with referenced line shown on the plat with the bearing value stated.
3. Give basis of coordinates including the National Geodetic Survey Control Station.
4. All platted utility easements notes which shall provide that such easements also be easements for the construction, installation, maintenance, and operation of cable television services; provided, however, no such construction, installation, maintenance, and operation of cable television services shall interfere with the facilities and services of an electric, telephone, gas, or other public utility. In the event a cable television company damages the facilities of a public utility, it shall be solely responsible for the damages. This section shall not apply to those private easements granted to or obtained by a particular electric, telephone, gas, or other public utility. Such construction, installation, maintenance, and operation shall comply with the National Electrical Safety Code as adopted by the Florida Public Service Commission.
5. J.E.A. Easements are dedicated to the JEA and its successors for use in its underground distribution system (review "JEA Standard Plat Language" document).
6. Floodplain Management notes
7. Additional HOA related notes
8. Unobstructed/Access easements notes
9. Encumbrances notes
10. Any required Zoning notes
11. Airport related required notes

7.1.3.5 NORTH ARROW: A north arrow must be on all Map Sheets.

7.1.3.6 SCALES: A scale must be shown graphically, graphic scale and scale value stated on all map sheets. Plats may be drawn at scales of 1 inch = 10 feet, 20 feet, 30 feet, 40 feet, 50 feet and 60 feet; all other scales must have prior approval by the Chief, Topographical-Survey Branch.

7.1.3.7 PLAT BOOK & PAGE: A Plat book and Page box shall be on every page in the upper right corner.

7.1.3.8 SHEET NUMBERS: The sheet number and number of sheets shall be on every page in the upper right corner, underneath the Book & Page Box.

7.1.3.9 COJ REFERENCE NUMBERS: All applicable City of Jacksonville reference numbers including the PUD number, and City Development Number for the Civil Plan and Plat must appear on lower right corner of all pages, outside of sheet boundary.

7.1.4 GENERAL SURVEY REQUIREMENTS:

7.1.4.1 LINES AND CURVES:

a. LINES: Sufficient angles, bearings, or azimuth to show direction of all lines shall be shown, and all bearings, angles, or azimuth shall be shown to the nearest second of arc. The centerlines of all streets shall be shown as follows: Noncurved lines; distances together with either angles, bearings, or azimuths. Curved lines; arc distances, central angles, and radii, together with chord and chord bearing or azimuths. Curvilinear lot lines shall show the radii, arc distances, and central angles. Radial lines will be so designated. Direction of nonradial lines shall be indicated.

b. LINE AND CURVE TABLES: When it is not possible to show line or curve data information on the map, a tabular form may be used. The tabular data must appear on the sheet to which it applies. Tabular form shall be used only for curve data, lot area and jurisdictional lines.

7.1.4.2 PERTINENT REFERENCE MONUMENTS:

a. P.R.M.'s: Permanent Reference Monuments must be placed at each corner or change in direction on the boundary of the lands being platted and may not be more than 1,400 feet apart. Where such corners are in an inaccessible place, “P.R.M.s” shall be set on a nearby offset within the boundary of the plat and such offset shall be so noted on the plat. Where corners are found to coincide with a previously set “P.R.M.,” the Florida registration number of the professional surveyor and mapper in responsible charge or the certificate of authorization number of the legal entity on the previously set “P.R.M.” shall be shown on the new plat. If “P.R.M.” is unnumbered this should be stated on the plat. Permanent reference monuments shall be set before the recording of the plat. (F.S.177)

b. P.C.P.'s: Permanent control points shall be set on the centerline of the right-of-way at the intersection and terminus of all streets, at each change of direction, and no more than 1,000 feet apart. Such “P.C.P.s” shall be shown on the plat by an appropriate symbol or designation. “P.C.P.s” must be set prior to the expiration of the bond or other surety. If the professional surveyor and mapper or legal entity of record is no longer in practice or is not available due to

relocation, or when the contractual relationship between the subdivider and professional surveyor and mapper or legal entity has been terminated, the subdivider shall contract with a professional surveyor and mapper or legal entity in good standing to place the “P.C.P.s” within the time allotted. (F.S.177)

7.1.4.3 BOUNDARY LINES: When there is an irregular boundary on any portion of the boundary survey, show witness line with appropriate monumentation listing complete and suitable tie-in to real boundary data.

7.1.4.4 THE EXACT LAYOUT: Sufficient survey data shall be shown to positively describe the bounds of every lot, block, street, easement, and all other areas shown on the plat, including: street, alley, lot and rights-of-way lines; street bearings and widths (including widths along the lines of obliquely intersecting street); angles of streets shall not be less than 60 degrees; lengths of arcs, radii and points of curvature or chord lengths and bearings; points of tangency or non-tangency intersects; easements owned by or rights-of-way provided for public utilities; the exact names, location and width along the property lines of existing or recorded streets intersecting or paralleling the boundaries of the tract; when any lot or portion of the subdivision is bounded by an irregular line, the major portion of that lot or subdivision shall be enclosed by a witness line showing complete data, with distances along all lines extended beyond the enclosure to the irregular boundary shown with as much certainty as can be determined or as “more or less,” if variable; when lots and streets are extended beyond match lines, all bearings and distances shall be shown on both sheets; All interior excepted parcels as described in the description of the lands being subdivided shall be clearly indicated and labeled “Not a part of this plat.”; Partial lot and/or street data shown on only one sheet will not be acceptable; lot, block, street, and all other dimensions except to irregular boundaries, shall be shown to a minimum of hundredths of feet. All measurements shall refer to horizontal plane and in accordance with the definition of the U.S. Survey foot or meter adopted by the National Institute of Standards and Technology. All measurements shall use the $39.37 \div 12 = 3.28083333333$ equation for conversion from a U.S. foot to meters. Distances are to be accurate to hundredths of a foot and angles to the nearest ten seconds except where this is not feasible due to topographical boundaries.

7.1.4.5 REPLAT: If the subdivision platted is a part or the whole of a previously recorded subdivision, sufficient ties shall be shown to controlling lines appearing on the earlier plat to permit an overlay to be made. The fact of its being a replat shall be stated as a subtitle under the name of the plat on each sheet included. The subtitle must state the name of the subdivision being replatted and the appropriate recording reference.

7.1.4.6 STREET LOCATIONS AND WIDTHS: The location, width, and names of all streets, waterways, or other rights-of-way shall be shown, as applicable. Street widths will be shown in at least 2 places along the street route. The full right-of-way width of the street will be stated. If right-of-way varies it shall so be stated. All streets must be labeled public or private as applicable.

7.1.4.7 STREET NAMING: Street name plan must be approved by the Addressing Section of the Development Services Division during the civil plans review. All streets shall be appropriated labeled public or private as stated in the adoption and dedication.

7.1.4.8 SECTIONS: Location of the subdivision with respect to section lines or a tie to, point of record if section lines are not readily available. All section lines and quarter section lines occurring within the subdivision shall be indicated by lines drawn upon the map or plat, with appropriate words and figures.

7.1.4.9 CONTIGUOUS PROPERTIES: All contiguous properties shall be identified by subdivision title, plat book, and page, or, if unplatted, land shall be so designated. When referencing recorded subdivision plats of adjoining platted land, the adjacent portions may be shown

in outline form. When a distance and/or bearing differs from an abutting subdivision or deed, both shall be shown on the plat.

7.1.4.10 LOTS & BLOCKS: Lots and Blocks are to be numbered in accordance with F.S.177.091(18) All lots shall be numbered either by progressive numbers or, if in blocks, progressively numbered in each block, and the blocks progressively numbered or lettered, except that blocks in numbered additions bearing the same name may be numbered consecutively throughout the several additions.

7.1.4.11 EASEMENTS: Location and width of proposed easements and existing easements identified in the title opinion or property information report required by F.S.177.041(2) must be shown
on the plat or in the notes or legend, and their intended use shall be clearly stated. Where easements are not coincident with property lines, they must be labeled with bearings and distances and tied to the principal lot, tract, or right-of-way. Easements widths must be a Minimum 15' X 7.5' along boundary if future development is probable for contiguous lands.

7.1.4.12 OPEN SPACE, CONSERVATION & RECREATION: The required minimum open space or conservation, and any required active recreation space, shall be platted as a separate tract and designated as "open space," “buffer,” or “active recreation” on such plat. See Section 656.305(A)(II)(h), *Ordinance Code* for open space requirements for single family developments. See Section 656.1222 for buffer requirements for all residential subdivisions. Ponds are not considered open space and shall be depicted on separate tract or parcel. Open space, buffers and active recreation areas must be depicted on the plat graphically, labeled “Open Space,” “Buffer,” or “Active Recreation” and tabular calculations must be included, to total required space base on the “Open Space Acknowledgement” option (a) of Attachment 20.

7.1.5 FLOODPLAIN MANAGEMENT REQUIREMENTS:

Flood zone information on the plat must include one of the appropriate notes below. Use note number 1 when no portions of the plat are within the SFHA at the time of recording. If the land is not in a SFHA no reference to SFHA should appear on the plat. Use note number 2 when any portion of the plat is found to be in the SFHA.

1. This plat is not the source of Federal Emergency Management Agency (“FEMA”) information. Inquiries relating to FEMA information, Flood Insurance Rate Maps (“FIRM”), or other floodplain management documents should be made to the City of Jacksonville’s Department of Planning and Development, Development Services Division.

2. This plat is not the source of Federal Emergency Management Agency (“FEMA”) information. Inquiries relating to FEMA information, Flood Insurance Rate Maps (“FIRM”), or other floodplain management documents should be made to the City of Jacksonville’s Department of Planning and Development, Development Services Division.

   Note: At the time of recordation of this plat, all or portions of the platted lands herein were in a Special Flood Hazard Area (“SFHA”).

7.1.6 STORMWATER MANAGEMENT REQUIREMENTS:

All stormwater management facility area locations must be shown on the plat in accordance with the following requirements:

7.1.6.1 TIE DOWN & LABLING:

1. The approximate design high water elevation plus one (1) vertical foot of all Stormwater Management Facilities areas will be tied down by approximate (+/-) distance measured along appropriate lot lines and labeled as Top to Bank (TOB) to Top to Bank (TOB), or Approximate TOB to Approximate TOB on map sheets. The approximate design high water elevation plus one (1) vertical foot that are not coincident with a lot line can be tied down by alternate methods to sufficiently locate the Stormwater Management Facility, and labeled as TOB to TOB, or Approximate TOB to Approximate TOB on map sheets.

2. The area depicted as the Stormwater Management Facility will also be labeled as "Unobstructed Drainage Easement".

7.1.6.2 DEDICATED DRAINAGE EASEMENTS: All dedicated drainage easements will be labeled to as unobstructed drainage easements and referred to as such in the Adoption and Dedication and on the plat sheets.

7.1.6.3 GENERAL NOTE: A general note language for unobstructed easements shall be included on the plat in accordance with the following requirements:

*The easements shown hereon and designated as unobstructed easements shall remain totally unobstructed by any permanent improvements which may impede the use of said easement by the City of Jacksonville. The construction of driveways and the installation of fences, hedges and landscaping is permissible but **SUBJECT TO REMOVAL** by the City at the expense of each lot owner for the removal and/or replacement of such items.*

or

The easements shown hereon and designated as unobstructed/access easements, shall remain totally unobstructed by any improvements that may impede the use and access of said easement by the City of Jacksonville.

SAMPLE

GENERAL NOTE LANGUAGE FOR UNOBSTRUCTED EASEMENTS

The easements shown hereon and designated as unobstructed easements shall remain totally unobstructed by any permanent improvements which may impede the use of said easement by the City of Jacksonville. The construction of driveways and the installation of fences, hedges and landscaping is permissible but **SUBJECT TO REMOVAL** by the City at the expense of each lot owner for the removal and/or replacement of such items.

The easements shown hereon and designated as unobstructed/access easements, shall remain totally unobstructed by any improvements that may impede the use and access of said easement by the City of Jacksonville.

7.1.6.4 Floodplain compensation ponds must be clearly identified on the map sheets and identified in the Adoption and Dedication language.

7.1.6.5 When platting a development in phases all drainage requirements supporting the current phase must be a part of the current plat submittal, and in place prior to acceptance. The required drainage may be shown on the plat or designated on an Off-Site Easement.

7.2 PLAT SUBMITTAL REQUIREMENTS:

7.2.1 CITY DEVELOPMENT NUMBER: Prior to submittal obtain a Plat CDN from the Concurrency and Mobility Management System Office. Upload the Preliminary Plat with supporting document to the Electronic Civil Plan Review System.

If a paper plat is being submitted, submit 6 Sets of the Preliminary Plat and all applicable supporting documents as listed below.

7.2.2 A BOUNDARIES SURVEY: Every plat of a subdivision submitted must be accompanied by a boundary survey prepared by a Florida licensed professional surveyor and mapper, which shall be submitted with the initial plat.

7.2.3 UPDATED OPINION OF TITLE CERTIFICATION: The title certification required in Ordinance Code 654.110, and in F.S.177.091(11), The Title Certification must be current within 30 days. The title opinion must show any mortgages, liens or other encumbrances of record affecting the lands, and a statement that all taxes due and payable have been paid. Taxes are due by the first day of November of each year and the City shall not approve any plat unless such taxes have been paid. The Opinion-of-Title Certification shall be certified to the "City of Jacksonville, Florida, Department of Planning and Development" and issued by an attorney-at-law licensed in Florida or an abstractor or title company showing that apparent record title to the land as described and shown on the plat is in the name of the person, persons, or entity executing the dedication as it is shown on the plat. The City in its sole discretion may require the developer, at its sole expense, to cure any title defects or satisfy or release any encumbrances that are adverse to the use of the lands to be platted or the use of any lands to be dedicated to the City. The City may also require the developer to provide evidence of good standing of its corporate existence and any signatory's authority to execute the plat on the developer's behalf. Any such requirements by the City must be satisfied prior to or contemporaneously with the recording of the plat and on forms approved by the City.

7.2.4 OPEN SPACE & RECREATION DEDICATION/ FEE: Pursuant to Ordinance Code 656.420, the developer must acknowledge, that Developer will be required to pay recreation fees or dedicate in fee simple recreation land identified at the civil plan review and approval stage of the project. Any required payment must be received prior to plat recording.

7.2.5 CONSTRUCTION INSPECTION LETTER: Pursuant to Ordinance Code 654.126(b), the developer can elect to use the City inspectors to perform required inspection of construction. By doing so, it is understood and agreed that an inspection fee, calculated based on the current fee schedule, for this service will be required before the recordation of the plat. If the developer elects to use a private inspection company, upon completion of construction, The private inspection company shall provide a final inspection report, and the registered professional shall certify that the work has been entirely completed, and that it conforms in all respects, to the final plat and the plans for the paving, curb and gutter, drainage, water lines and sewer lines, where applicable; and to all specifications required by the laws and regulations of the City of Jacksonville. See Attachment 1-4A or 1-4B for a sample inspection letter.

7.2.6 CONCURRENCY RESERVATION CERTIFICATE (CRC): The CRC's for the Plat and the Civil Plan, showing the Civil Plan CDN matches the Plat CDN. This document is provided to the developer by the Concurrency and Mobility Management System Office and must reflect the units allowed to be developed. The plat has to match the civil plans. When the project is being developed in phases, this document must reflect the units allowed to be developed in the phase currently being platted. If the project is not being developed in phases a separate CRC is not required for the plat.

7.2.7 OFF-SITE EASEMENTS: When applicable submit a copy of the draft Grant of Off-Site Easement in the form prescribed in Attachment 7-8, the Off-Site Easement drawing (1 print if the submittal is paper), the Opinion-of-Title Certification, completed consent and joinder documentation for the off-site easement, including any mortgage holders in the form prescribed below for off-site easements.

CONSENT AND JOINDER (OFF-SITE EASEMENTS)

The undersigned hereby certifies that it is the holder of the mortgage, lien or other encumbrance recorded in Official Records Book _____, Page _____, of the Public Records of Duval County, Florida ("Mortgage"), encumbering the lands described in the easement, to which this Consent and Joinder is attached ("Easement") and hereby joins and consents to the Easement and subordinates its mortgage lien encumbering said lands to the Easement.

Signed in the presence of:

_____
Print Name:_____

_____
Print Name:_____

_____

By:_____
Print Name:_____
Its:_____

7.2.8 SATISFACTIONS AND RELEASE OF ENCUMBRANCES: If any approved satisfaction or release forms are recorded by the developer at any time during the review process and prior to the recording of the final plat, the developer shall provide the City with evidence of the same for review.

Note: All documents must be brought in with the paper submissions or uploaded as an attachment to the "Other (receipts, correspondence, invoices, etc.)" folder when submitting electronically. **If all required documents are not provided, the submittal will be returned for correction.**

7.3 PROCEDURES FOR APPROVAL OF PRELIMINARY PLAT

For electronic or paper submittals all correspondence will take place in the Electronic Civil Planning System. When the preliminary review of the plat has been completed, the Surveyor will receive an email notification. Comments will be noted on the plat, and under the routing tab of the E-Civil Plan System. The Surveyor will address all comments made by the Reviewer, upload and resubmit the plat for review. Once the Reviewer is satisfied with the Surveyors responses the plat will be preliminarily approved. This process may take place during several rounds of review. If the plat is in paper format the surveyor shall submit a revised plat to the Development Services Division and include the prior marked up plat, for each round of review.

7.4 PROCEDURES FOR RECORDING OFF-SITE EASEMENTS

Once the preliminary review is complete the Surveyor may record Off-Site Easements and any additional supporting documents that require recording prior to the plat being recorded. In this case prior to final plat recordation, the Developer shall provide the following to Development Services for processing.

1. An original executed Grant of Off-Site Easement in the form prescribed in Attachment 7-8 herein.

2. Mylar and two (2) prints of drawing (Size of drawing must be 8 ½" x 11" or 8 ½" x 14" only)

3. Opinion-of-Title Certification (not over 30 calendar days old) in the same form required under Section 1.3 herein, and, if applicable, completed consent and joinder documentation for any mortgage holders in the form prescribed above.

4. Recording Fees: for the purpose of calculating the recording fee, the Grant of Easement Documents, the easement drawings, and any consent of joinder documents are usually the documents recorded.

7.5 PROCEDURE FOR FINAL APPROVAL AND RECORDING OF THE PLAT

7.5.1 FINAL APPROVAL:

Final approval of the plat may be requested once all revisions are complete, all off-site easements have been approved, the final site development plan is in the final review process. Any revisions to the civil plans during the plating process may require plat revisions. The plat will not be final approved until all civil plan revisions affecting the plat are complete. The plat will not be recorded until the site development plan has been final approved and all bonding and warranty requirements have been met (see below).

7.5.2 RECORDING OF THE PLAT

The plat will be eligible for recording once the site development plan has been final approved; all bonding and warranty requirements have been met (see below); and the Final Platting Package is approved by DSD, OGC and Public Works.

7.5.3 FINAL PLATTING PACKAGE REQUIREMENTS

Once the plat has been approved in the E-Civil Plans System the applicant will be notified by email that the final payment is due and a letter will be sent to the applicant outlining the documents required to record the Plat. Below are the documents most often required to record the plat:

1. MYLAR: Original plat mylar and two (2) paper prints of the Final Plat.

2. UPDATED OPINION-OF-TITLE CERTIFICATION: An updated copy of the Opinion-of-Title Certification. The title update shall not be greater than 30 days old from the date that the plat is to be recorded. The state of the title of the lands to be platted as shown on the updated Opinion-of-Title Certification shall be in accordance with any requirements by the City in the Preliminary Plat Review, including but not limited to, the satisfaction or release of any encumbrances of record (e.g., liens, easements, and restrictions, etc.). The developer shall provide the City with copies of any satisfactions or releases required to be obtained by the developer.

3. OFF-SITE EASEMENTS: If the off-site easements have not been recorded prior to the submittal of the plating package submit an original executed Grant of Off-Site Easement, Mylar, 2 prints of the Off-Site Easement drawing (if the submittal is paper), the Opinion-of-Title Certification (not over 30 calendar days old), completed consent and joinder documentation for any mortgage holders.

4. CITY ENGINEER: A letter from the City Engineer's Office certifying completion Attachment 7-(12A or B) of required improvements and/or a plat bond.

5. PLAT BOND: A Plat Bond secured by Irrevocable Letter of Credit, Surety Bond or Cash Bond covering the cost of required improvements in public space including off-site easements. This bond shall be for a period of not less than one year or as approved by the City Engineer's Office.

   BOND AMOUNT: An approved* letter from the registered professional or developer estimating the cost of remaining improvements to public space, including common area and sidewalks requesting approval of the bond amount. This letter should also include an estimate of the time required to complete the project along with copies of contracts and payments A.I.A. Form and Attachment 7-9. The Bond Amounts letter must be submitted to and approved by Development Services prior to submittal of the plat for recording.

   Note: see section 7.6 FINAL PLAT APPROVAL BONDING AND WARRANT REQUIREMENTS below.

6. TRAFFIC SIGNS: A copy of the receipt(s) from the City Tax Collector as evidence of payment for street name and/or stop signs.

   Note: see section 7.7 PROCEDURES FOR TRAFFIC SIGN INSTALLATION REQUESTS below.

7. CONCURRENCY AND MOBILITY MANAGEMENT'S APPROVAL: vesting this project with a VPAC or CRC Number which is a maximum of 14 calendar days old.

8. JEA APPROVALS: A copy of plat with each sheet stamped and signed (approved) by JEA. A copy of JEA’s Inter-Office Correspondence and/or a copy of the receipt from JEA as evidence of payment for underground electrical distribution and street light standards.

9. AUTO CAD DISK: showing latest version ACAD drawing of plat.

a. Digital submittals of subdivisions are required for the final design submittals and must adhere to the following criteria:

   1. The record plat base drawing should be a DXF file (standard digital exchange format).

2. Plats must be in Florida State Plane Coordinate system using the NAD 83 Datum at a 1:1 drawing scale in US survey feet.

   Projected Coordinate System:
   NAD_1983_StatePlane_Florida_East_FIPS_0901_Feet
   Projection: Transverse_Mercator
   False_Easting: 656166.66666667
   False_Northing: 0.00000000
   Central_Meridian: -81.00000000
   Scale_Factor: 0.99994118
   Latitude_Of_Origin:24.33333333 Linear Unit: Foot_US (0.304801)
   Geographic Coordinate System: GCS_North_American_1983 Datum: D_North_American_1983 Prime Meridian: 0

3. All polygons must close

4. Adjoining/existing streets must be clearly shown and labeled.

b. The following matrix indicates the layers required for digital plat submission. The naming convention, color and line style must be adhered to in accordance with the following standards:

Description of Layers	Layer Names	Color	Line Style
Street Center Line	Street1	Dark Blue	Continuous
Street Right-of-way	Street2	Black	Continuous
Lot & Deed Parcel Boundaries	Prop1	Red	Continuous
Conservation Areas	Conserv1	Green	Continuous
Plat or Subdivision Boundaries	Bndy1	Yellow	Continuous
Waters Edge/ Waterway Centerline	hydro1	Light Blue	Continuous
Street Names*	Streetanno1	White	Standard (txt.shx)
Lot, Block, & Parcel Numbers**	Propanno1	Magenta	Standard (txt.shx)
Subdivision Names	Propanno2	Green	Italics (txt.shx) Obliquing Angle:30
Building Number	Propanno3	Black	Standard (txt.shx)

*Font Size for street annotation layer is 30
**Font Size for Lot is 16, Block is 25

10. FINAL SIGNATURE APPROVAL: Upon receipt of the above listed items, Development Services will review the plating package. The final plat and any supplemental material shall be held in escrow by the Director until the developer has fulfilled all requirements of Chapter 645, Code of Subdivision Regulations, and the Land Development Procedures Manual. Upon completion of all

    requirements to the satisfaction of the Director, or his designee, approval by the Director of the construction of all improvements, the posting of required security, the Director will forward the plat through the Office of General Counsel, City Surveyor and City Engineer for review and approval within ten (10) business days thereafter. Upon those approvals, the Director of Public Works will sign the plat.

11. RECORDING: The applicant will be notified to pick up the plat and have it recorded at the Clerk of the Circuit Court into the Official Public Records of Duval County, Florida.

7.6 FINAL PLAT APPROVAL BONDING AND WARRANT REQUIREMENTS

The Developer has two options to obtain plat approval during construction of a subdivision.

7.6.1 PLAT APPROVAL DURING CONSTRUCTION OPTION 1:

complete all improvements as indicated on the plat, except for the final wearing surface lift of asphalt on the local streets, as indicated on the plat, and construct one or more functioning units. The developer's engineer shall:

1. Upon completion of the entire work on one or more units of the subdivision, furnish the Director with a written certificate of the completion accompanied by the records and data required in the plat recording package.

2. The city shall automatically become vested with the right to enter upon the property to be platted for purposes of inspecting the construction of improvements during the progress of the construction.

3. If the Director finds that the completion of the required improvements complies with these regulations, the final plat shall be approved.

4. The post construction warranty (see below) is required upon completion of construction, prior to plat recording.

7.6.2 PLAT APPROVAL DURING CONSTRUCTION OPTION 2:

To have a plat approved prior to the required improvements being satisfactorily constructed, the developer shall assure that the required improvements as depicted on a proposed plat and related approved engineering plans will be completed by providing a guarantee to the city in one of the three (3) forms pursuant to subsection 654.110(e).

1. Cash deposit. The developer shall deposit with the city or place in an account subject to the control of the city cash in the form of a certified check or cashier's check. If the remaining estimated cost is $1,000 or less, the developer may provide a personal check.

   a. The developer shall be entitled to secure draws from the deposits or account as installation progresses at stages of construction established by the Director but not more frequently than monthly. A draw from the cash deposit or account may be made 30 days after the developer's engineer has certified to the city that the cost of

      improvements installed equals or exceeds the amount of the draw requested plus previous draws made and the Director has inspected the improvements and authorized the draw.

   b. The Director shall have the right to reduce the amount of a requested draw to an amount he feels is justified based upon his inspection of the improvements. The Director shall also have the right to refuse to approve a requested draw, if the developer fails to be in compliance with any of the terms and conditions of the final plat or final engineering plans and specifications for the improvements.

   c. The developer shall be entitled to receive interest earned on the deposit or account. The city, after 60 days' written notice to the developer, shall have the right to use the cash deposit or account for the completion of the improvements in the event of default by the developer or failure of the developer to complete the improvements within the time required by the Director.

2. Letter of credit. The developer shall furnish to the city an unconditional and irrevocable letter of credit issued by a state or national banking institution and in substantially similar form as approved by the office of general counsel.

    a. During the process of construction, the Director may reduce the dollar amount of the letter of credit based on work completed.

    b. The city, after 60 days' written notice to the developer, shall have the right to use any funds resulting from drafts on the letter of credit for the completion of the improvements in the event of default by the developer or failure of the developer to complete the improvements within the time required by the Director.

3. Surety bond. The developer shall furnish to the city a surety bond from a surety authorized to do business in the state, in a substantially similar form as approved by the office of general counsel. Guaranteeing that, within the time required by the Director from final plat approval, the required work will be completed in full accordance with the final plat and all conditions attached thereto within the time for completion as approved by the Director from final plat approval.

    a. Copies of the plat and all conditions shall be attached to and constitute a part of the bond agreement.

    b. During the process of construction, the Director may reduce the dollar amount of the bond based on the work completed.

    c. The city, after 60 days written notice to the developer, shall have the right to bring action or suit on the surety bond for the completion of the improvements in the event of default by the developer or failure of the developer to complete the improvements within the time required by the Director.

7.6.3 DETERMING THE AMOUNT OF REQUIRED PLAT BOND

The amount of the guarantee for the required improvements shall be equal to the total of the following:

1. One hundred percent (100%) of the total cost of the remaining required subdivision improvements.
2. The cost of placing Permanent Reference Monuments (“PRM’s”) and Permanent Control Points PCP, s as required, together with the survey costs incident to their proper placement; and

3. The costs to be secured by the post-construction warranty, pursuant to subsection 651.110(e).

Cost estimates for the required improvements shall be prepared, signed and sealed by a licensed Florida engineer and approved by the Director. The Director shall make a good faith effort to review and decide upon these cost estimates within fifteen (15) business days. The time for completion of the improvements must also be approved by the Director.

Note: All work conducted outside of the proposed plat as part of the proposed development, when located within the city’s right-of-way, shall be subject to the security and warranty requirements of Ordinance Code 744.110(c).

7.7 PROCEDURES FOR TRAFFIC SIGN INSTALLATION REQUESTS

It shall be the responsibility of the developer to pay for and provide the Traffic Engineer proper documentation and information in a timely manner to have signs erected at time of

paving.

7.7.1 TRAFFIC SIGN INSTALLATION: The Developer shall provide written notification of the scheduled completion date for the road construction for a development at least 60 days prior to such completion to the City Traffic Engineer at: Traffic Engineering Division, 1007 Superior Street, Jacksonville, Florida 32254. The following shall be included with the written notification:

1. Receipts evidencing payment had been made for all street and stop signs.
2. A copy of the entire subdivision master plan, which indicates the entire road, network for the development.
3. A copy of the JEA underground electrical distribution plan showing the lot and block numbers and block numbers and street names and addresses for the development for which sign installation is requested.
4. A copy of plans showing the location of sidewalks, paving, curbs and water and sewer lines (as-builts or partial as-builts, if available).
5. Memo stating anticipated date pavement will be placed.
6. A return address, contact person and telephone number for the developer making the request.
7. Final Acceptance will not take place until all required signs are installed.

Upon receipt of all the above information, the street and stop signs will be installed by the Traffic Engineering Division to ready the development for final inspection. The developer shall be responsible for the repair, replacement or maintenance of any sign installed until the City has accepted such development for maintenance.

7.8 POST-CONSTRUCTION WARRANTY AND SUBDIVISION ACCEPTANCE

7.8.1 POST-CONSTRUCTION WARRANTY

A secured warranty period after completion of the required improvements ("*post-construction warranty period*") and a warranty ("*post-construction warranty*") is required after completion of the required improvements, whether constructed prior to platting or secured by the guarantee.

7.8.1.1 Upon the installation of the first lift for local streets, a request may be made for ***acceptance or approval*** of the required improvements depicted on the approved engineering plans for public or private local streets. The request shall be made by the person, firm or corporation seeking such acceptance ("applicant"). The applicant must first furnish the post-construction warranty acceptable to the city. The amount shall be equal to fifteen percent (15%) of the total of all construction contracts issued for the required improvements, that the city will accepted for maintenance (or in the case of a private local street the improvements that the city approved, and a private entity will maintain), plus the cost to secure the application of the final wearing surface (final lift) as outlined in section 654.111(p). This security may either be an amendment to the original guarantee posted at time of platting, or may be a new certified or cashier's check, an unconditional and irrevocable letter of credit, a surety bond, or combination thereof. If a new security is posted, the security supporting the guarantee pursuant to sec. 654.110(d) (2-4) will be returned and/or released at the time of as-built drawing approval.

7.8.1.2 The post-construction warranty shall be furnished to secure, during the post-construction warranty period, at least the following: repair of the required improvements against faulty workmanship, construction and materials; damage done by agents of the applicant to curb and gutter, asphalt pavement, drainage piping, structures or sidewalks; the application of the final wearing surface, pursuant to subsection 654.111(p); and other required improvements as shown on the approved engineering plans. The security shall be submitted by the applicant, for both public and private subdivisions, to the city for approval and forwarding to the Director and shall remain in force until released as stipulated below.

7.8.1.3 If the applicant or their agent takes no action to address any deficiencies, after a 60 days' written notice from the City to the developer, the city may elect to repair and take remedial action to correct the deficiencies during the post-construction warranty period by drawing such cost from the security. The developer, owner, or assign shall provide evidence annually that the post-construction warranty continues in force until such time that the Director authorizes its release and return.

7.8.2 REDUCTION AND RELEASE OF POST-CONSTRUCTION WARRANTY

7.8.2.1 Upon satisfactory application of the second lift, the Director shall reduce the amount of the post construction warranty to 15% of the actual cost of the second lift (wearing course). The Director or designee shall make a good faith effort to review the application and inspect the second lift within fifteen (15) business days.

7.8.2.2 The post-construction warranty shall be released twelve (12) months after the second lift is satisfactorily applied pursuant to subsection 654.111(p), in the applicable phase of the subdivision.

7.8.2.3 For private local streets, re-inspection and release of the post construction warranty may be requested any time after the satisfactory installation of the final wearing surface course.

See figure 1 and figure 2 as follows for flow charts of the process for both public and private rights-of-way.

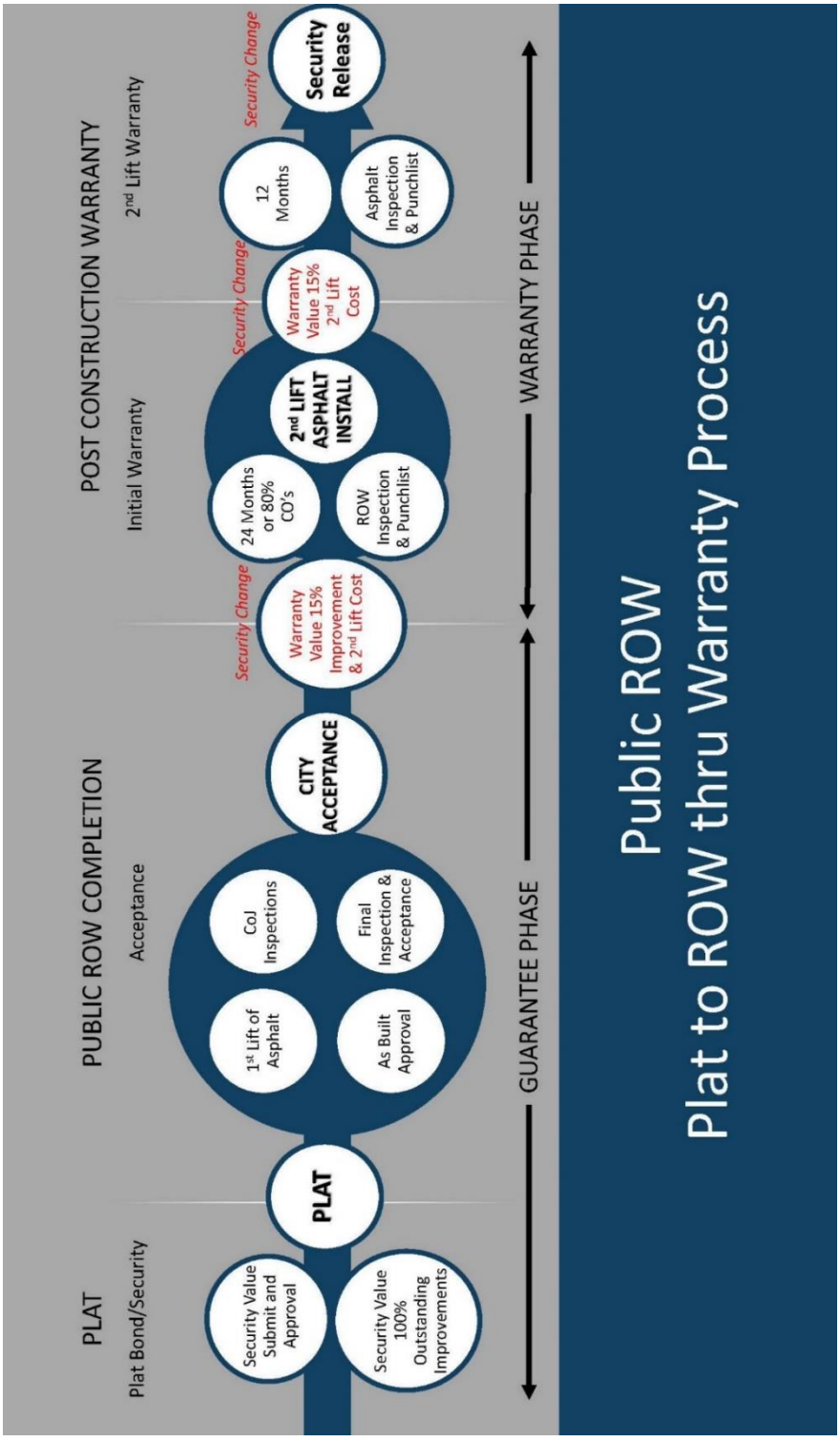


Figure 1- "public row: plat to row thru warranty process"

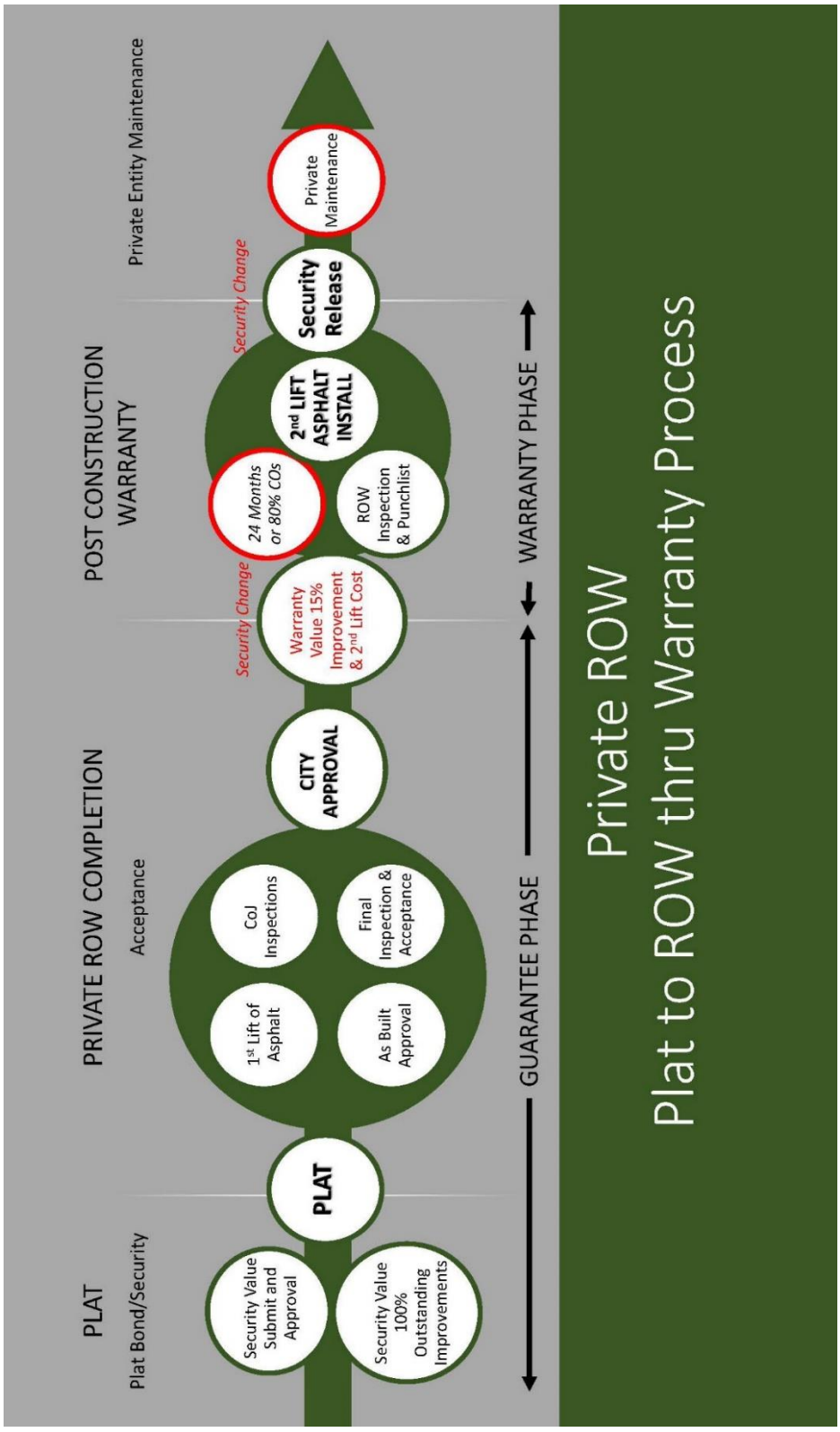


Figure 2- "private row: plat to row thru warranty process"

7.9 SUBDIVISION ACCEPTANCE WITH PUBLIC *(OR PRIVATE) ROADS*

All land presented to The City of Jacksonville for acceptance must be platted, deeded and dedicated to the City. The following shall be submitted in a package to Development Services, 214 N. Hogan St., Ste. 2100, Jacksonville, Florida 32202.

7.9.1 DEVELOPER'S WARRANTY: Letter of indemnification from the developer to the City of Jacksonville covering the Acceptance Agreement, which is to be signed by the developer and the City's Engineer (Attachment 7-16).

7.9.2 ENGINEERS CERTIFICATE OF COMPLIANCE: The Registered Professional shall submit a Certificate in accordance with Ordinance Code 654.136(c) Subdivision Regulations (Attachment 7-12 A OR B).

7.9.3 SURVEYOR CERTIFICATE: The Registered Land Surveyor shall submit a Certificate in accordance with Ordinance Code 654.110 Subdivision Regulations (Attachment 7-11B).

7.9.4 OWNERS AFFIDAVIT: The Certificate of construction completion shall be submitted by the owner or developer. (Attachment 7-13).

7.9.5 FINAL INSPECTION PUNCH LIST ITEMS: Record of Completion of final inspection punch list items provided by the city's Project Manager certifing by signature and date on the report, when the punch list items are completed. *On a privately inspected subdivisions a final inspection report must come from the private inspection company or the licensed Professional Engineer.* The final inspection record shall indicate deficiencies noted and those persons in attendance.

7.9.6 AS-BUILT/ACCEPTANCE LETTER: Signed and sealed prints of as-builts for the paving and drainage OR Disc shall be submitted to City's Project Manager for approval to receive the As-Built Approval letter. *On a private subdivision a sealed letter must come from a licensed Professional Engineer.* These as-builts shall be submitted to Development Services before the final inspection. All as-builts shall be stamped "as-built" with the information and certification included as shown on Attachment 1-9,1-10 and 1-11. As-built requirements are defined in Section 1 of this manual.

7.9.7 TRAFFIC SIGN INSTALLATION: The developer shall provide written notification from traffic that all signs have been completed if signage was a part of the project. *On a private subdivision a sealed letter must come from a licensed Professional Engineer stating that all signs have been installed according to the approved plans.*

7.9.8 JEA ACCEPTANCE LETTER: The developer must submit a JEA acceptance letter. As-builts for potable water mains, reclaimed water mains, sewage collection systems, force mains, and sewage lift stations, Pressure test results for both water and sewer force shall be submitted to JEA in accordance with JEA standards, to receive the approval letter.

7.9.9 ST. JOHNS WATER MANAGEMENT PERMIT: The developer must submit a copy of the written notification to the District that project is complete and ready for inspection, or the "Statement of Compliance" to the St. Johns River Water Management District.

7.9.10 DEPARTMENT OF ENVIRONMENTAL PROTECTION CERTIFICATION: The developer must submit the construction completion and approval letter from DEP, if DEP is involved with the project.

7.9.11 SOIL AND CONCRETE TESTING: Developer is to submit copies of soil and concrete testing performed during construction of subdivisions and other permitted work. These can be submitted in hardcopy or electronic format.

7.9.12 POST-CONSTRUCTION WARRANTY: The post construction warranty is required for all single or multi-family residential developments that have civil engineering plans submitted on or after May 1, 2019. The Warranty amount must be included with the Plat Bond Approval Letter and Bond document (Attachment 7-14 and 7-15)

7.9.13 BILL OF SALE: Rarely needed, only needed for improvements to infrastructure including equipment that will become property of the City see Attachment 7- 17).

7.9.14 DEED OF DEDICATION: Deed of dedication for rights-of-way and easements are to be submitted with the plat. When an unplatted right-of-way is to be accepted by the City, the developer must provide proof that it has been recorded prior to the Acceptance. If they have not been recorded the Director may require that the unplatted right-of-way follow the process outlined in 7.11 Procedure for ROW and Sidewalk Dedication Without Platting prior to Acceptance.

7.10 PROCEDURE FOR ROW AND SIDEWALK DEDICATION WITHOUT PLATTING

7.10.1 DEED OF DEDICATION AND MAP BOOK:

Prior to acceptance of right of way or sidewalk by the City of Jacksonville the developer must submit a deed of dedication and a map book created by a professional surveyor, clearly identifying the property to be dedicated and accepted by the City.

7.10.2 CONVEYANCE:

The dedication must be executed by all persons, corporations, or entities whose signature would be required to convey record fee simple title to the lands being dedicated in the same manner in which deeds are required to be executed. All mortgagees having a record interest in the lands subdivided shall execute, in the same manner in which deeds are required to be executed.

7.10.3 COJ APPROVAL/ACCEPTANCE:

Development Services Division will route the documentation to Office of General Council and the Public Works Department for review. Once approved the owner will have the map book recorded and submit the original deed of dedication to the City.

7.10.4 RECORDING

When a tract or parcel of land has been subdivided and the dedication executed by the owners of record and mortgagees having a record interest in the lands subdivided, and when the approval of the governing body has been secured and recorded, all streets, alleys, easements, rights-of-way, and public areas shown on the map book, unless otherwise stated, shall be deemed to have been dedicated to the public for the uses and purposes thereon stated. However, nothing herein shall be construed as creating an obligation upon any governing body to perform any act of construction or maintenance within such dedicated areas except when the obligation is voluntarily assumed by the governing body.

7.11 PLAT VACATION PROCEDURE AND SUBMISSION PROCESS (NOT A REPLAT)

7.11.1 PROCEDURE FOR THE PLAT VACATION

Prior to final plat approval any existing City right of way opened or unopened shown on a recorded plat in the Public Records of Duval County, Florida must be properly vacated or abandoned pursuant to F.S.177 or 336, as applicable, and evidence must be provided by the developer to the

City of the same. Plat may be vacated in whole or in part of subdivisions, returning the property covered by such plats either in whole or in part into acreage. Before such resolution of vacating any plat either in whole or in part may be recorded:

7.11.1.1 OWNER IDENTIFIED:

It must be shown that the persons making application for said vacation own the fee simple title to the whole or that part of the tract covered by the plat sought to be vacated. Proof of ownership of the lots being vacated, shall be in the form of a title certification addressed to the city.

7.11.1.2 LANDLOCKED PROVISION:

It must also be shown that the vacation will not affect the ownership or right of convenient access of persons owning other parts of the subdivision. Provide evidence that vacation of the plat will not leave someone landlocked in the form of a certificate from your surveyor, addressed to the city and sealed.

7.11.1.3 PUBLIC NOTICE PROVISION:

Persons making application for vacations of plats either in whole or in part shall give notice of their intention to apply to the City of Jacksonville to vacate said plat by publishing legal notice in a newspaper of general circulation the proof of such publication must be attach to the petition for vacation, the paper will provide you with proof of publication.

7.11.1.4 TAXES PAID CERTIFICATION:

Certificates from the tax collector showing that all state, county, and municipal taxes have been paid. The taxes shall be deemed to have been paid if, in addition to all partial payments have been made.

7.11.1.5 CASH BOND REQUIREMENTS:

The owner of the platted lands sought to be vacated shall post a cash bond, approved by the tax collector and by the Department of Revenue, conditioned to pay the full amount of any judgment including all costs, interest, and penalties. The circuit court shall fix the amount of said bond by order, after considering the reasonable timeframe for such litigation and all other relevant factors; and a certified copy of such approval, order, and cash bond shall be attached to the application.

7.11.1.6 LEGISLATION REQUIREMENTS:

Once the application is complete and approved by the Development Services Division, Public Works Department and OGC, OGC will prepare the legislation to vacate the plat or subdivision or parts thereof sought to be vacated, and the Real Estate Division will take the matter to the Mayor's Budget Review Committee (MBRC) for permission to file the legislation. Additionally, the applicant may have a Council Member to sponsor the legislation. In this case OGC will work with his or her aide to get the legislation filed and on its way through the legislative process.

Every such resolution by the governing body shall have the effect of vacating all streets and alleys which have not become highways necessary for use by the traveling public. Such vacation shall not become effective until a certified copy of such resolution has been filed in the offices of the circuit court clerk and duly recorded in the public records of said county.

7.11.2 PROCEDURE FOR SUBMISSION OF PLAT VACATIONS

This Plat Vacation shall be uploaded to the E-Civil Plan system, to allow the process to be recorded and invoiced. Submit all documents to the Civil system just as you would any other plat, in the comment section note: “Plat Vacation” and attach the following documents:

1. The plat map.

2. Proof of ownership of the lots being vacated, typically in the form of a title certification addressed to the city.

3. Evidence that vacation of the plat will not leave someone landlocked. This is typically provided to us in the form of a certificate from your surveyor, addressed to the city and sealed.

4. Proof of publication obtained from the local newspaper.

5. The tax collector’s certification that all taxes have been paid unless the title certification clearly identifies that all taxes have been paid.

6. Bond for any judgment liens on the property.

Once these documents are uploaded to the system an invoice will be generated. Once the fee is paid, the “Plat Vacation” will be routed to OGC for review and approval.

Plan on about 6 weeks after the legislation is filed for it to get adopted. After the resolution is adopted, the applicant will be responsible for recording it in the Public Records. Until it is recorded the vacation does not take effect.

Appendix 1

AVAILABLE

DOCUMENTS

A Sample Plat and the following documents are available on the City of Jacksonville webpage at the link below:

COJ.net - Development Services Division

Appendix 1

Available Sample Documents and Forms

#	TITLE
1-1	Standard Transmittal Letter
1-2	Written Statement For Pre-Application Procedure & Legal Description
1-3	Submittals Checklist For Construction Plans
1-4A	**City Construction Inspection Letter** *(resubmit with the plat)*
1-4B	**Private Construction Inspection Letter** *(resubmit with the plat)*
1-5	**Open Space Acknowledgement Form** *(resubmit with the plat)*
1-6	No Tree Verification Affidavit
1-7	Right-of Way Permit Application
1-8	Revocable Permit and Indemnification Agreement
1-9	As-Built Stamp – Registered Professional
1-10	As-Built Stamp – Surveyor
1-11	As-Built Stamp – Contractor
2-1	Traffic Signal Bond Approval Letter
2-2	Traffic Signal Bond-SAMPLE
3-1	Application In Lieu of Sidewalk Fee
5-1	Detention Basin Design Form
5-2	Storm Sewer Tabulation Form
7-1	Model Home Permits Prior to Plat Recording
7-2	Plat Adoption and Dedication Samples A, B, & C
7-3	Plat Approval Checklist
7-4	Warranty of Title
7-5	Warranty of Deed
7-6	Deed of Dedication ROW
7-7	Sidewalk Dediction- *Corporation*
7-8	Grant of Easement for Utilities
7-9	Plat Bond Approval Letter
7-10	Plat Bond-SAMPLE
7-11A	Surveyor's Certificate-**Platting**
7-11B	Surveyor's Certificate-**Acceptance**
7-12A	Registered Professional's Certificate of Completion-**Public**
7-12B	Registered Professional's Certificate of Completion-**Private**
7-13	Owner's Certificate of Construction Completion
7-14	Bill of Sale-*Required with any mechanical equipment the city is accepting-Very Rare*
7-15	Post Construction Warranty Bond Approval Letter
7-16	Post Construction Warranty Bond- SAMPLE
7-17	Developer's Warranty, Indemnification and Acceptance Agreement
7-18	Subdivision Dedication and Acceptance Checklist
	KEY:
	Blue = Civil Review
	Yellow =Plat Review
	Green = Acceptance
	Bolded= Documents needed during Civil and Plat Review
	Red= Documents which need to be Created

ATTACHMENTS CROSSWALK

Appendix 1 - Attachments	PHASE	New Attachment #
Attachment 40 Standard Transmittal Letter (PDF 34KB)	Civil Review	1-1
Attachment 2 Written Statement For Pre-Application Procedure (PDF 15KB)	Civil Review	1-2
Attachment 3 Legal Description PDF 11KB)	Civil Review	Incorp. into 1-2
Attachment 25 Checklist For Construction Plans (PDF 41KB)	Civil Review	1-3
Attachment 6A City Inspection Letter (PDF 25KB)	Civil Review	1-4A
Attachment 6B Private Inspection Letter PDF 16KB)	Civil Review	1-4B
Attachment 20 Open Space Acknowledgement	Civil Review	1-5
Attachment 38 No Tree Verification Affidavit (PDF 26KB)	Civil Review	1-6
Right of Way Permit	ROW Permitting	1-7
Attachment 15 Revocable Permit (PDF 45KB) Revocable Permit Instructions	ROW Permitting	1-8
Attachment 18 As-Built Stamp - Engineer (DOC 52KB)	Civil Review	1-9
Attachment 19 As-Built Stamp - Surveyor (DOC 53KB)	Civil Review	1-10
Attachment 19A As-Built Stamp - Contractor (DOC 52KB)	Civil Review	1-11
Traffic Signal Bond Approval Letter	Civil Review	2-1
Traffic Signal Bond	Civil Review	2-2
Attachment 33 Application In-Lieu Sidewalk Fee (PDF 178KB)	Civil Review	3-1
Attachment 35 Detention Basin Design Form (PDF 49KB)	Civil Review	5-1
Attachment 32 Storm Sewer Tabulation Form (XLS 23KB)	Civil Review	5-2
Attachment 22 Model Homes Restrictive Covenant	Plat Review	7-1
Attachment 24A Plat Adoption and Dedication (A&D) with Stormwater Management Facilities (PD	Plat Review	7-2
Attachment 24B Plat A&D without Stormwater Management Facilities (PDF 14KB)	Plat Review	7-2
Attachment 24C Plat A&D-Private (PDF 16KB)	Plat Review	7-2
Attachment 34 Checklist for Record Plats (PDF 17KB)	Plat Review	7-3
Attachment 23 Real Estate Forms Checklist for Document Review	Plat Review	7-3
Warranty of Tile	Plat Review	7-4
Warranty Deed	Plat Review	7-5
Deed of Dedication	Plat Review	7-6
Sidewalk Dedication	Plat Review	7-7
Grant of Easement	Plat Review	7-8
Attachment 7 Sample Plat Bond Approval Letter (PDF 18KB)	Plat Review	7-9
Plat Bond	Plat Review	7-10
Attachment 10 Surveyor's Certificate (PDF 9KB)	Acceptance Review	7-11A and 7-11B
Attachment 9 Engineer's Certificate of Completion (PDF 10KB)	Acceptance Review	7-12A and 7-12B
Attachment 11 Owner's Certificate of Construction Completion (PDF 17KB)	Acceptance Review	7-13
Post Construction Warranty Bond Approval Letter	Acceptance Review	7-14
Post Construction Warranty Bond	Acceptance Review	7-15
Attachment 12 Warranty, Indemnification and Acceptance Agreement (DOC 82KB)	Acceptance Review	7-16
Attachment 17 Bill of Sale (PDF 13KB)	Acceptance Review	7-17
Attachment 4 Shop Drawings (PDF 24KB)	Acceptance Review	Incorporate into 7-17
Attachment 5 Trade Names (PDF 11KB)	Acceptance Review	Incorporate into 7-17
Subdivision Dedication and Acceptance or Approval Checklist	Acceptance Review	7-18

DOCUMENTS INCORPORATED INTO THE TEXT	
Attachment 1 Estimated Time Requirements (PDF 9KB)	Incorporate into Sec 1
Attachment 21 Government Agencies (PDF 16KB)	Incorporate into Sec 1
Attachment 36 Stormwater Management Facility Locations (PDF 8KB)	Incorporate into Sec 1 and 7
Attachment 37 General Note for Unobstructed Easement (PDF 10KB)	Incorporate into Sec 7
Attachment 39 Flood Zone Notes (PDF 14KB)	Incorporate into Sec 7
Attachment 26 As-Built Requirements - Paving & Drainage (PDF 9KB)	Incorporate into Sec 1 and 5
Attachment 30 Driveway ClassificationD (PDF 100KB)	Incorporate into Sec 7
Attachment 24D Mortgage Company Consent and Joinder Statements (PDF 13KB)	Incorporate into Sec 7
Consent and Joinder (off site easement)	Incorporate into Sec 7
Attachment 29 Digital Subdivision Files ('911' Disk) (PDF 18KB)	Incorporate into Sec 7

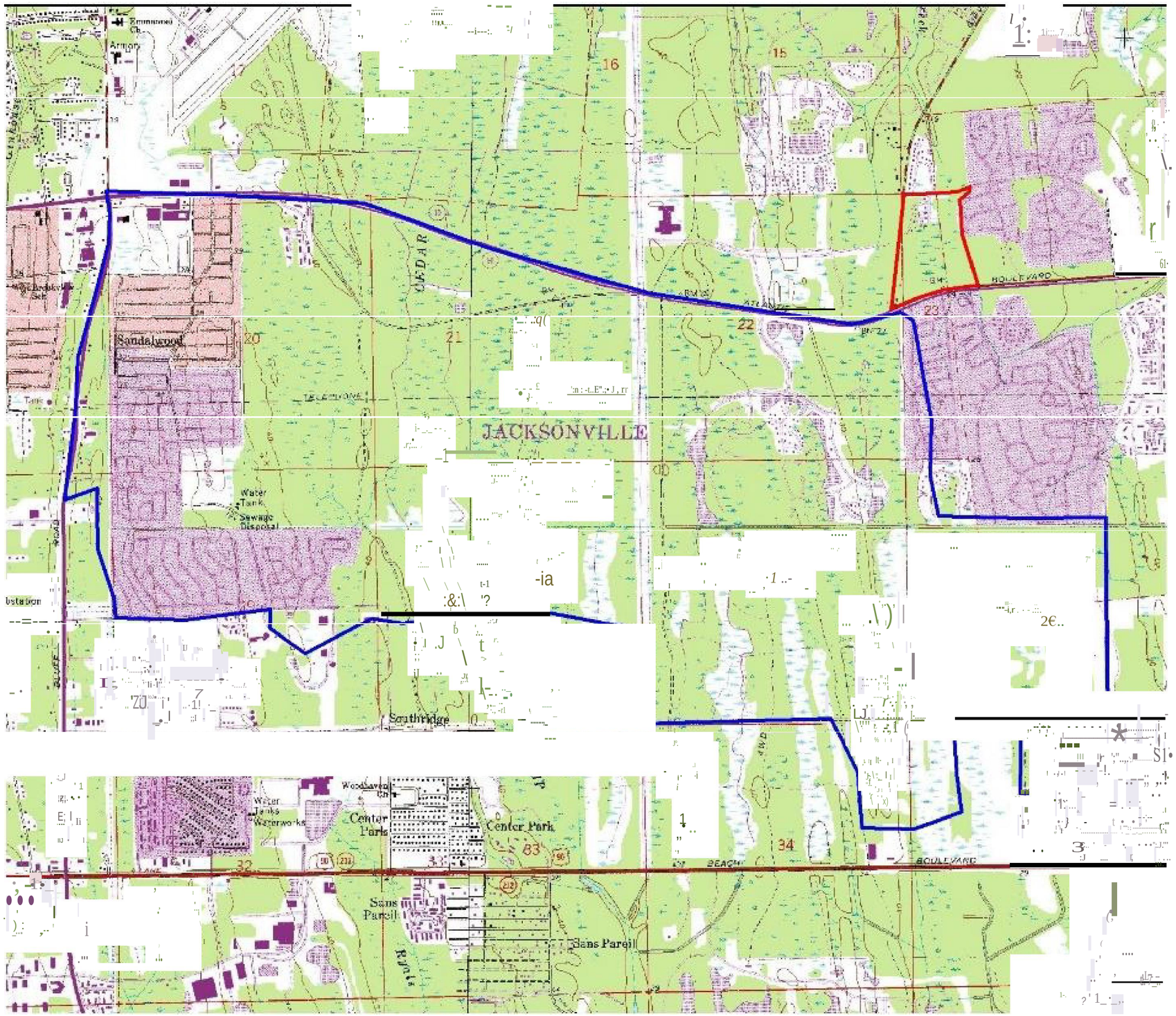
Land Development Procedure Manual
Addendum Sheet

Revision Number	Revision Date	Effective Date
1	May 20, 1993	6/24/1992
2	August 12, 1992	10/28/1992
3	December 18, 1992	12/18/1992
4	April 26, 1994	8/26/1994
5	September 6, 1994 – November 19, 1995	4/5/1996
6	January 2003	4/5/1996
7	September 2003	9/9/2003
8	July 2005	7/12/2005
9	March 2009	3/11/2009
10	May 2009	5/21/2009
11	July 2009	7/14/2009
12	April 2010	3/11/2009*
13	May 2010	5/11/2010
14	July 2010	7/13/2010
15	November 2010	11/9/2010
16	March 17, 2011	4/17/2011
17	October 13, 2011	10/13/2011
18	March 20, 2012	4/20/2012
19	November 13, 2012	11/13/2012
20	June 2013	June 2013
21	May 26, 2015	May 26, 2015
22	March 14, 2016	March 14, 2016
23	May 10, 2016	May 10, 2016
24	October 15, 2018	October 15, 2018
25	May 15, 2019	March 1, 2019
26	June 7, 2019	June 7, 2019
27	March 25, 2020	March 25, 2020
28	March 1, 2021	March 1, 2021

* - Minor revision adding section 4.8.3.2(n) adopted March 2009 but accidently left out of the published copies

Appendix 2

Restricted Drainage Areas



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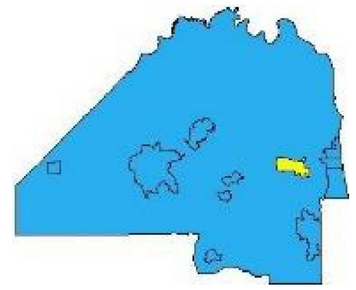

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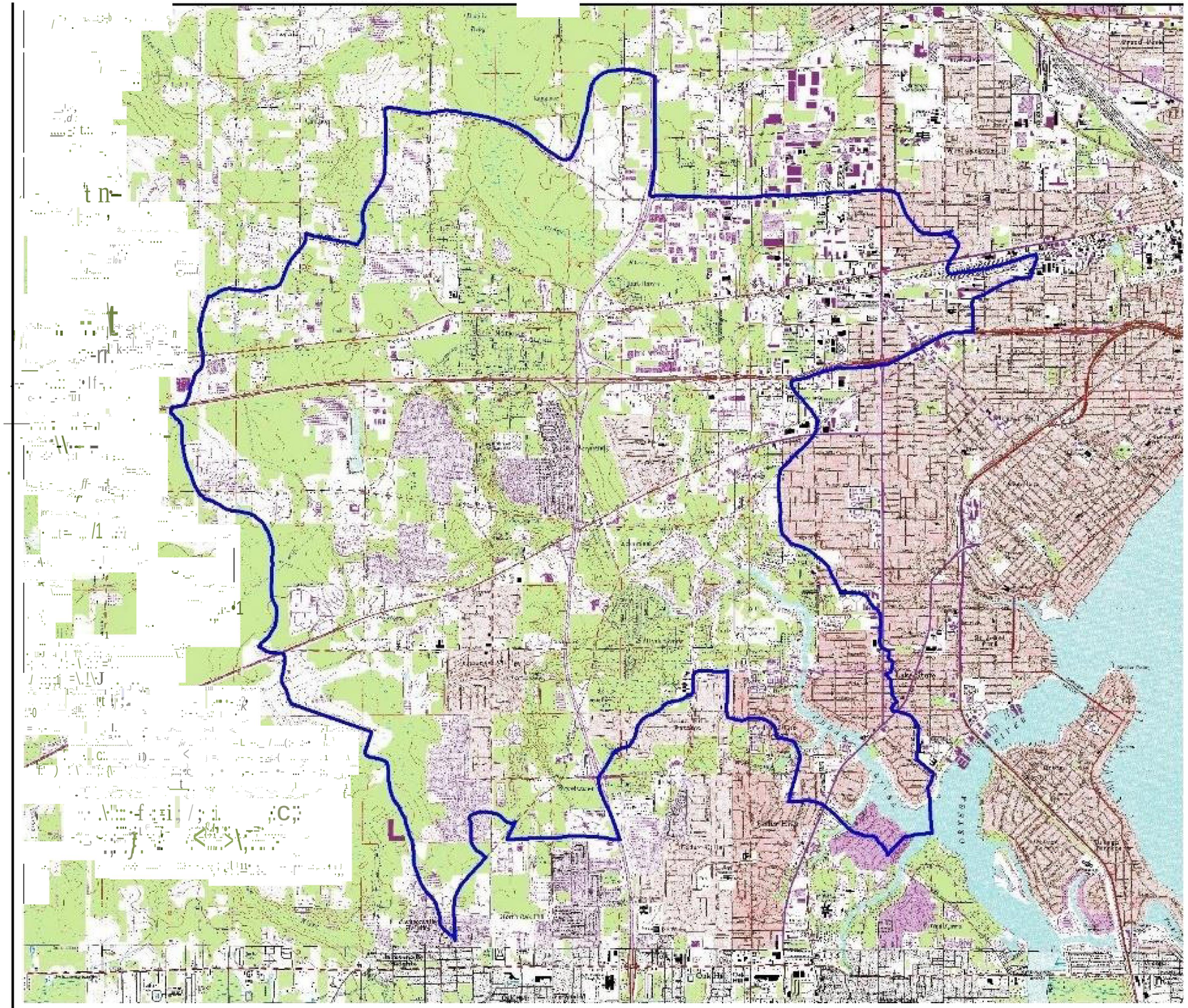

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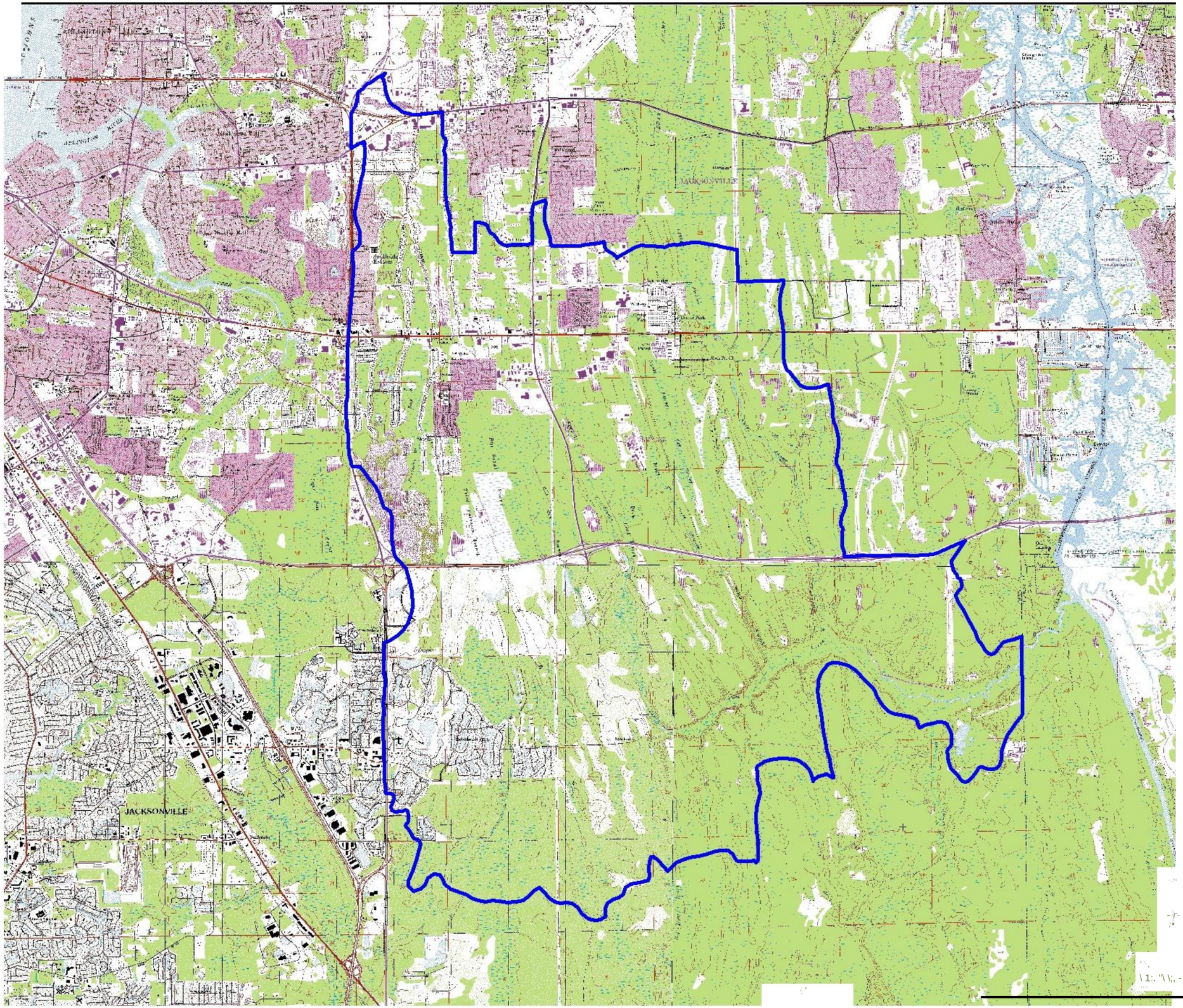

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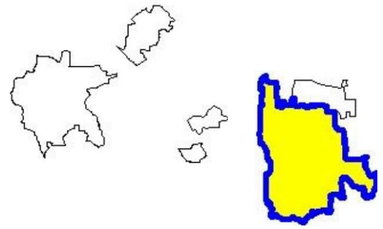

LEGEND

Rest ri cted Basi n Boundary
Pablo Creek

Basin Restri ction:

Pablo Creek Post- development discharge volume must not exceed the pre-development discharge volume between the hours of 10 and 17 design st orm.

Land Development Proceedure Manua

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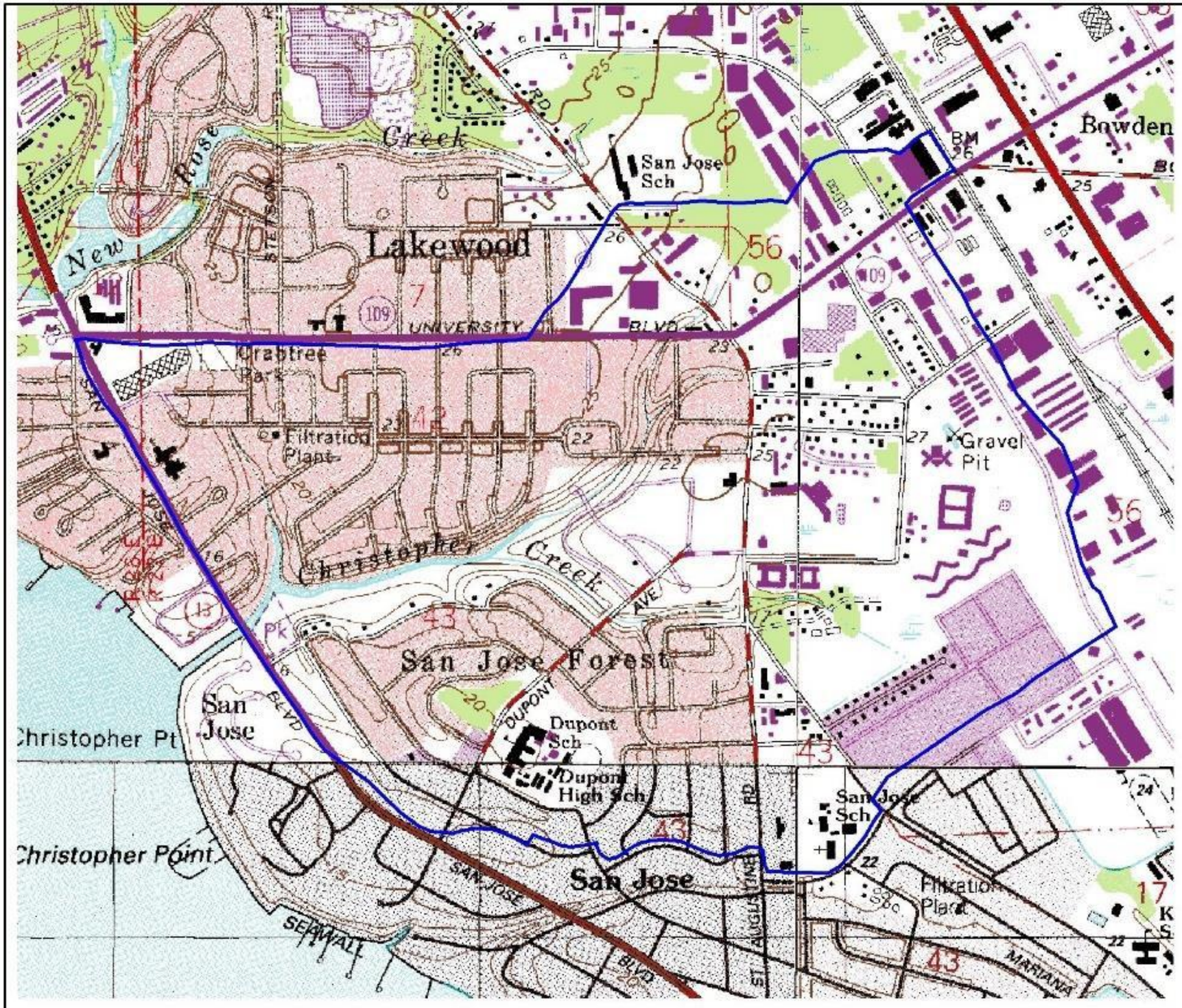

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Restricted Basin Boundary - Christopher Creek

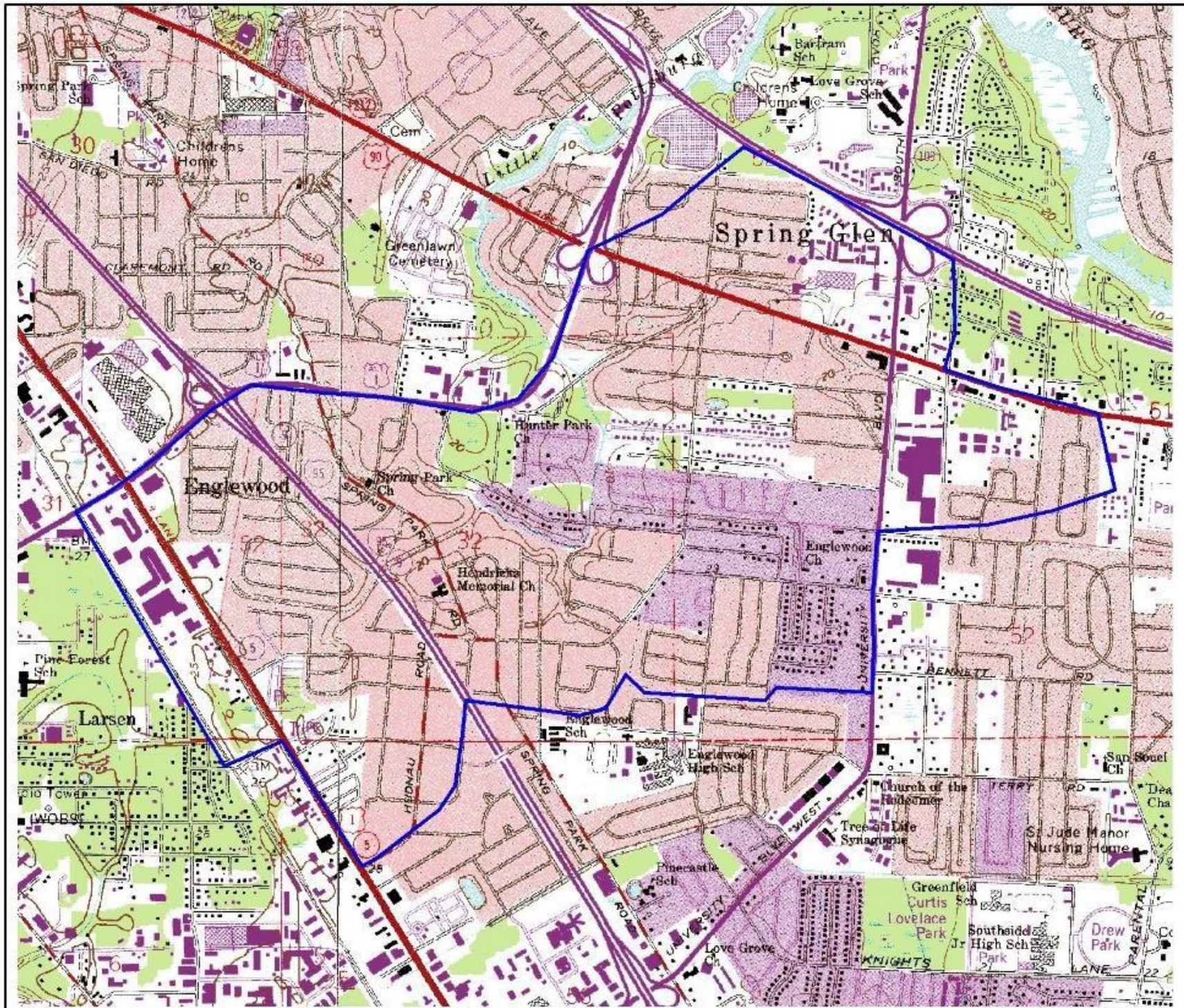
Basin Restriction:

Christopher Creek - Discharge is limited to 1/2 cfs per acre.

City of Jacksonville
Land Development Proceedure Manual

Christopher Creek

Figure
4



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LEGEND

Restricted Basin Boundary - Doctors Branch Upstream of Emerson Street

Basin Restriction:

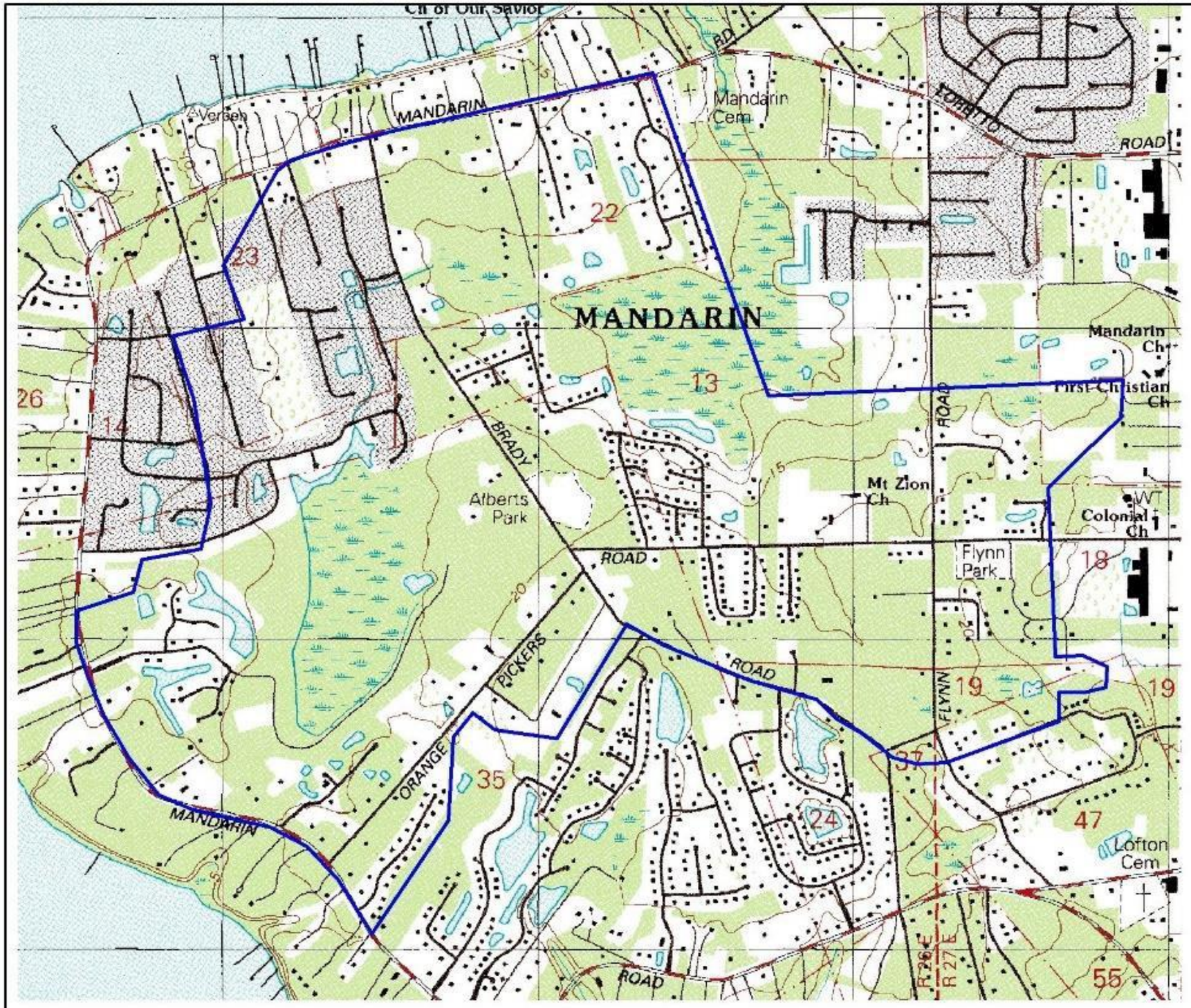
Doctors Branch - Discharge is limited to 1/2 cfs per acre.

City of Jacksonville
Land Development Proceedure Manual

Doctors Branch

Figure

5



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AREA OF DETAIL

LEGEND

Restricted Basin Boundary -
Orange Pickers Road & Mandarin Road

Basin Restriction:

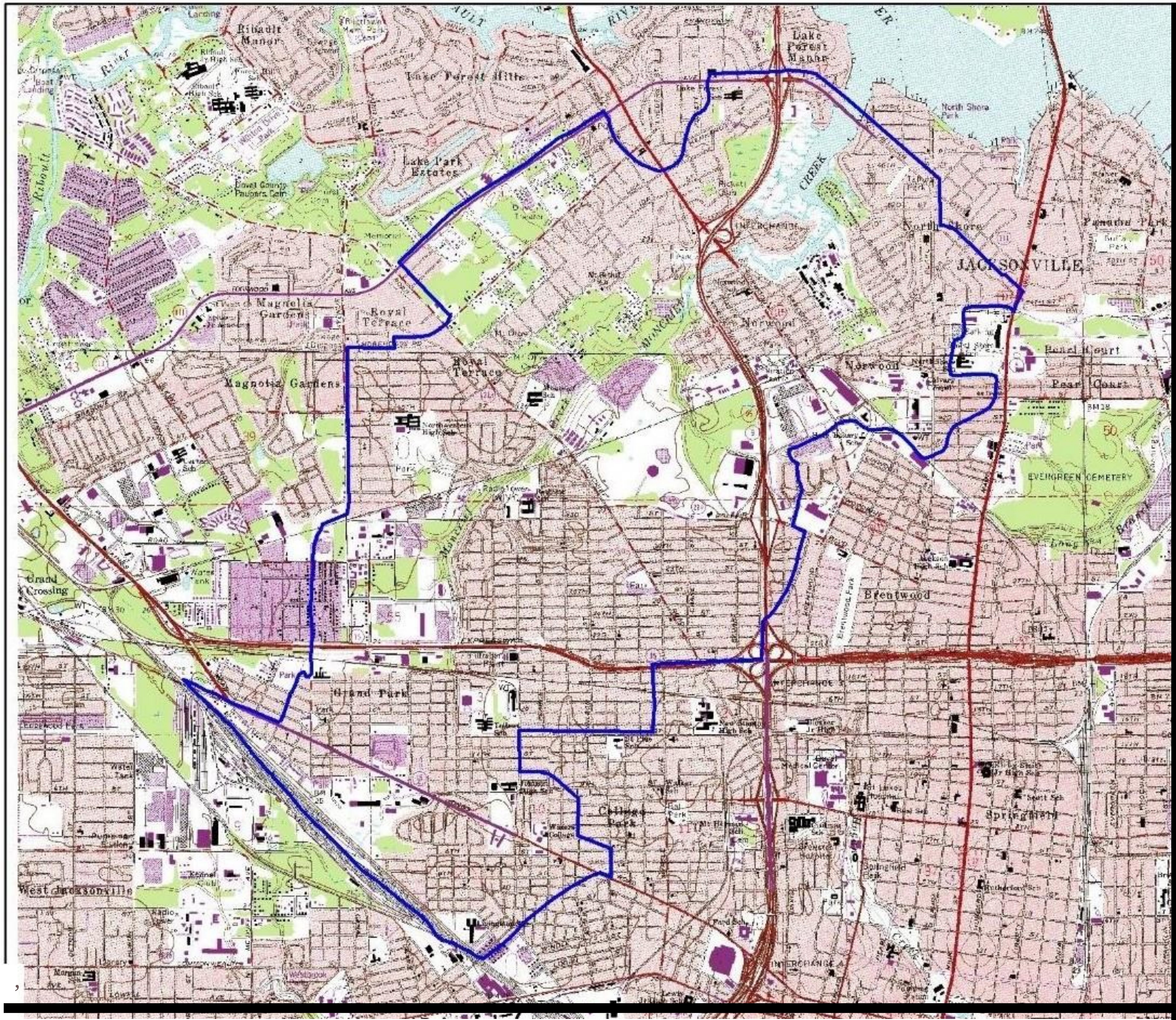
Orange Pickers Road &
Mandarin Road -
Discharge is limited to 1/2 cfs per acre.

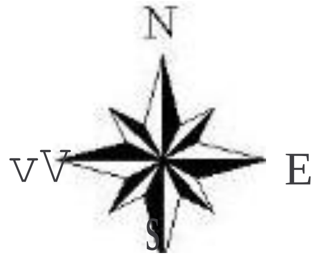
City of Jacksonville
Land Development Proceedure Manual

Orange Pickers Road & Mandarin Road

Figure

6





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City of Jacksonville
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Moncrief Creek

Figure

7