

Planning and Zoning Commission Category:

Subdivision Design

Chapter 5

Section 5.5 Blocks

(1) Block Length and Character

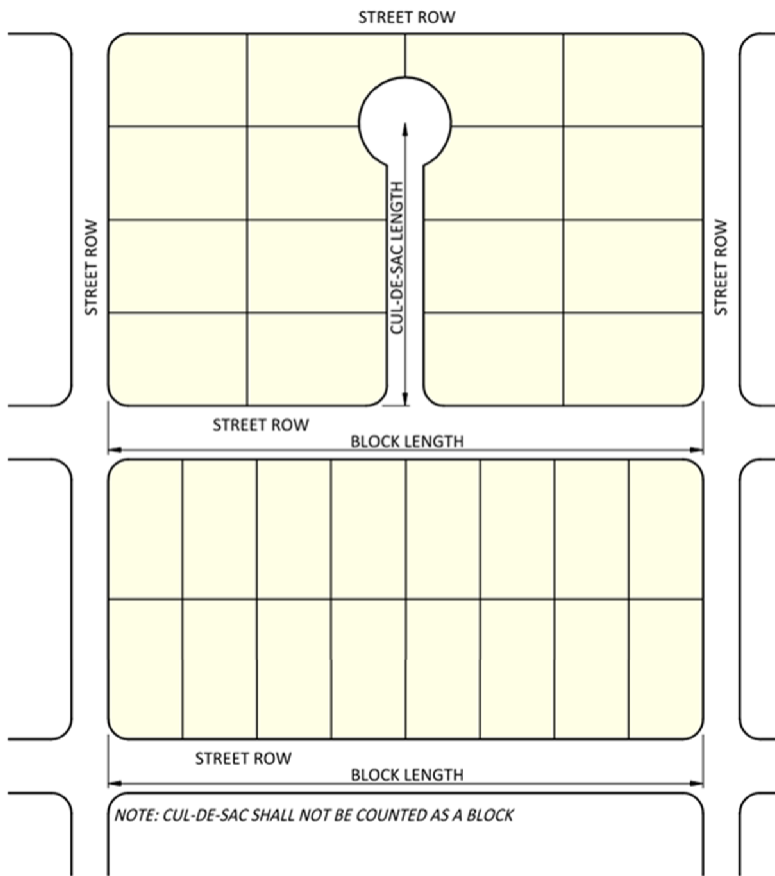
Table 5.2 Block Length and Character

Zoning District	Mixed Use Village	Neighborhood Commercial	Community Facilities	Logistics	Existing Residential	Neighborhood Residential	Rural Residential
Block Length	600' Maximum and no more than 400' without a midblock pedestrian connection	500' Maximum	1000' Maximum	1000' Maximum	Refer to individual Restriction Committees *See Note	800' Maximum	No Maximum
Block Character	Rectilinear and/or connected blocks	Rectilinear and/or connected blocks	Rectilinear and/or connected blocks	Rectilinear and/or connected blocks	Defer to individual Restriction Committees *See Note	Rectilinear or curvilinear connected blocks	Rectilinear or curvilinear blocks

* Note: Block Length and Block Character for the R1, R2, R3, and R4 districts are privately enforced through deed restrictions. The City does not enforce private deed restrictions or HOA regulations. The City does not enforce private deed restrictions or HOA regulations.

(2) **Width.** Blocks will be wide enough to accommodate two rows of lots, except where the lots back up to a major street with no access by the lots.

(3) In general, cul-de-sac streets may not exceed 750 feet in length and shall be designed with a minimum cul-de-sac turnaround of not less than a 100-foot diameter right-of-way and a minimum 96-foot diameter pavement surface in residential areas and not less than a 150-foot diameter right-of-way and a minimum 146-foot diameter pavement surface in commercial and industrial areas. Cul-de-sac streets over 750 feet in length may be acceptable upon approval of a policy variance by the City Council upon recommendation by the Planning and Zoning Commission. The Planning and Zoning Commission will make a recommendation to accept or reject a plan with longer cul-de-sac streets based on its merits after considering density, land use, safety and convenience.



BLOCK LENGTH AND CUL-DE-SAC LENGTH



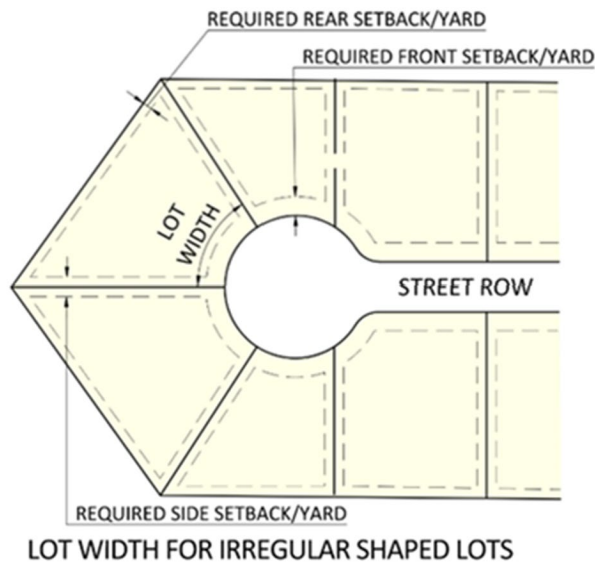


Figure 5.1 Block and lot illustrations

Section 5.6 Easements:

- (1) **Dedication Required.** Where necessary to adequately serve a subdivision with public utilities, the Subdivider will dedicate or grant easements for poles, wires, conduits, drainage channels, stormwater, water, wastewater, and other utilities. These easements shall be at least 15 feet wide for a single utility or 20 feet wide for multiple utilities, unless the city determines that a greater width is necessary additional width may be required by the city or the utility provider. All necessary on-site easements should be established during the platting process and establishment of easements by a separate instrument is discouraged.
- (2) **Location of Easements.** The easements required under this Section will be continuous for the entire length of the block. These easements will parallel as closely as possible the street line frontage of the block. Easements may not straddle but may cross property lines, and they may cross lots other than along lot boundary lines, if in the opinion of the City Manager (or designee), such locations are needed.
- (3) **Access to Easements.** Drainage easements are not permitted to be enclosed by a fence or gate, except to contain a basin or pond in accordance with TCEQ. All fences crossing an easement will have double swing gates to allow ready access to the easement. The minimum width of the opening will be no less than 12 feet.
- (4) **Additional Easements for Guy Wires.** Where aboveground utility easements or alleys are not straight within each block, or if they do not connect on a straight course with the utility easements or alleys of adjoining blocks, then additional easements will be provided for the placing of guy wires on lot division lines in order to support poles set on the curving or deviating easement lines or alley ROW.
- (5) Any dedication of land for a future street or alley will be consistent with state law provisions.
- (6) No structure, vegetation (other than ground cover), or equipment shall be placed within any easement dedicated pursuant to this UDC unless the person or entity wishing to place such structure or

equipment has first obtained written consent to encroach from all holders of the right to use said easement. A fence or screen shall be permitted over any utility easement only if approved by the City Manager or designee and provided that the easement remains fully accessible to the city for maintenance and repair purposes. A fence or screen shall be permitted over any drainage easement if the water flow within the easement is not adversely affected by the fence or screen. In addition to all other remedies provided by this Unified Development Code, the city may summarily remove any fence or screen erected in violation of this section, and the city shall not incur any liability or assume any duty to compensate the owner or replace the fence or screen.

- (7) Where utilities are not located in alleys, an overhang easement at least six (6) feet wide must be provided on the opposing side of the 15-foot easement strip, at a height at and above 10 feet. In all alleys, overhang easements at least six feet wide must be provided on each side of the alley for electric and telephone lines, at a height at and above 10 feet.

Chapter 9

Section 9.4 Streets

(2) Requirements and Design Standards

a. Design and Construction. All design and construction of streets, alleys, drainage facilities, and utilities must conform to the current amended *City of San Antonio Unified Development Code Article V*, unless otherwise specified in this Chapter, and to sound engineering principles to include the following:

- i. Traffic-Control and Street Name Signs. Traffic-control and street name signs will be installed by the Subdivider at all street intersections within or abutting the subdivision or as directed by the City. All such signs will be installed in accordance with standards of the Texas Manual on Uniform Traffic-Control Devices (TMUTCD). Street signs will match and utilize the City's existing standard template.
- ii. Surface Drainage. Surface drainage from private property will be taken to streets, alleys, or drainage courses as quickly as possible, and that drainage water from streets and alleys be taken to defined drainage courses as quickly as possible. Using streets and alleys as major drainage courses is not permitted.
- iii. Grades. Minimum grades of streets and alleys will be three-tenths of one percent (0.30%) and a maximum grade of ten percent (10%). Concrete or rock retards will be installed in ditch lines in conformity with the current, amended *City of San Antonio Unified Development Code Article V*, in areas where required by the City. Profiles of streets will be furnished, showing existing centerline elevations, both right-of-way line elevations and proposed centerline grade. At creek or other drainage crossings where consideration must be given to the proper handling of stormwater, a profile of the flow line of such creek, or other drain extending sufficient distance, both upstream and downstream to determine proper street grade and size of drainage structure at such crossing is required.
- iv. Drainage Structures. Drainage structures of permanent type will be provided at crossing of drainage courses with streets or alleys, in order that a minimum of inconvenience and hazard to the traveling public will occur, and in order to minimize damage to and excessive maintenance of public property. Such drainage

- structures will have minimum of thirty-six feet (36') clear roadway.
- v. Open Channels and Ditches. Open channels and ditches will be constructed to proper cross-section, grade, and alignment so as to function properly, and without permitting destructive velocities.
 - vi. Base. All street sections will be installed with a minimum of a ~~n-eight (8")~~ ten (10")-inch thick base, compacted flexible base material (Type A or D, and Grade 1-2 or 5). Base material used for streets will conform to the requirements of *Texas Department of Transportation Standard Specification for Construction of Highways, Streets and Bridges*, unless otherwise specified in this Chapter. The compacted base will extend a minimum of 12 inches behind the back of curb (where curb exists). All returns will have minimum radius of fifteen feet (15'). All curbs (where required) will be constructed in accordance with current specifications of the current, amended *City of San Antonio Unified Development Code Article V* unless otherwise specified in this Chapter.
 - vii. Pavement. The pavement will be compacted, in accordance with the *Texas Department of Transportation Standard Specification for Construction of Highways, Streets and Bridges*, unless otherwise specified in this Chapter. Pavement will be 2-inches (2") compacted hot-mix asphaltic concrete (HMAC), Type "D".
 - viii. Trees. Large or other desirable trees within the limits of the right-of-way and outside of the construction area will be left and protected.
 - ix. Alleys. Alleys will be paved at least ten feet (10') wide. The finished centerline grade of alleys will be low enough below the abutting property to provide proper drainage.
- a. Assumptions. The above specifications for construction of streets are based on the assumption that a flexible base with an asphalt pavement will be constructed in keeping with prevalent practice in the City of Fair Oaks Ranch. The materials, design, specification and procedure will conform to those of the *City of San Antonio Unified Development Code Article V, Sections 35-504, 35-505, and 35-506* for similar construction. This also applies if a concrete pavement is used instead of the flexible base with asphalt pavement. Base material used for streets will conform to the requirements of *Texas Department of Transportation Standard Specification for Construction of Highways, Streets and Bridges. Texas Department of Transportation Standard Specification for Construction of Highways, Streets and Bridges, Item 345, Grade #2 Asphalt Stabilized Base*, may be used in lieu of the #2 flexible base. Before placing any material, the contractor will furnish the City with reports of analysis of the proposed material made by an approved laboratory.

Planning and Zoning Commission Category:

Infrastructure

Chapter 8

Section 8.4. Water Quality Protection

(1) Water Quality Protection Requirements

The water quality protection requirements of this Code are applicable to all residential and non-residential development in those portions of the City of Fair Oak Ranch and pursuant to Local Government Code section 212.003, limited extension of City Regulation to the ETJ that are located within the Edwards or Trinity Aquifer recharge or contributing zones. Requirements will include the following:

- a. Review and Approval of Impervious Cover Percentages. The City will review and approve estimates of impervious cover percentage prior to determining the applicability of this Section to a proposed development.
- b. Requirements:
 - i. Water Conservation. Water conservation requirements are applicable in all portions of the City of Fair Oak Ranch. ~~and its ETJ.~~
 - ii. Drainage. Drainage criteria and requirements have many implications for environmental protection. Refer to the provisions in Chapter 9, Infrastructure and Public Improvements, of this Code for drainage-related requirements.

(2) Specifications and Standards

- a. Governing Document. The specifications and standards recommended in the most current Edition of the *City of San Antonio Storm Water Design Criteria Manual*, as amended from time to time, including later editions, except such portions that may be hereinafter amended, deleted, or modified by the City of Fair Oak Ranch will be the governing document in the design, development, and construction of all storm water quality related improvements within the city limits and extraterritorial jurisdiction of the City of Fair Oak Ranch.
- b. Applicability. A Stormwater Permit is required prior to any land disturbance within the city limits or the City's extraterritorial jurisdiction (ETJ) to ensure conformance to the stormwater management provisions and other applicable requirements of this Code. Issuance of a Site Development Permit or a Final Plat for a single-family residential subdivision within the city limits constitutes approval of a Stormwater Permit for that specific development.

(3) Edwards and Trinity Aquifer Recharge Zones Standards

Residential and non-residential development projects in the Edwards and Trinity Aquifer Recharge Zones will comply with the *City of San Antonio Storm Water Design Criteria Manual*, and any legal requirements of the TCEQ and / or Edwards Aquifer Authority.

(4) Standards for Development Outside the Edwards and Trinity Aquifer Recharge Zones

Residential and non-residential development projects in the City and extraterritorial jurisdiction and outside of the Edwards and Trinity Aquifer Recharge Zones will comply with the *City of San Antonio Storm Water Design Criteria*, or any other innovative management practice approved by the City Engineer. Standards will include the following:

- a. Pollutant Reduction. A water quality control must isolate and treat the water draining to the control from the contributing area and result in a 75 percent reduction in total suspended solids and total phosphorous resulting from the development activity. The required pollutant

reduction level is applied only to the incremental increase in pollutant load caused by development. If a sand filtration system is required, the minimum required capture volume is the first one-half inch of runoff, or the 2-yr storm runoff volume, whichever is greater.

- b. Water Quality Controls. Water quality controls must be situated to receive and treat all runoff from impervious surfaces in the development. Where this is not practicable, supporting documentation must be provided to demonstrate attainment of the necessary water quality treatment level. The location of a water quality control must be shown on the slope map, preliminary plan, site plan, or subdivision construction plan, as applicable; and may not be in located in a twenty-five (25) year floodplain.
- c. Management Practices. If the developer is proposing an innovative management practice, the applicant must substantiate the pollutant removal efficiency of the proposed control with refereed professional journals or a verifiable engineering study.
- d. Maintenance. The water quality control will be designed to minimize maintenance requirements. The Subdivider / Developer and City will provide for an extended inspection and maintenance program of all water quality controls as follows:
 - i. Non-Single Family Zoning Categories. For non-single-family zoning categories the Subdivider / Developer will maintain a required water quality control in accordance with the maintenance standards in the City of San Antonio Storm Water Design *Criteria Manual*. Documentation will be provided by the Subdivider / Developer of the facility to ensure that sufficient annual funding exists to properly maintain any water quality controls. The City or its designated representative will inspect each water quality control at least once in the first year following approval of completion of construction and at least once every three (3) years thereafter. If noncompliance is found during an inspection, the City will request in writing that the property owner comply. This notice will describe the measures to be taken. If, within thirty (30) days of notice, the maintenance required is not accomplished, the City may impose fines or assessments as established in Section 12.3, Penalties, of this Code, or bring action in a court of competent jurisdiction as provided in Section 12.4, Civil Remedies, of this Code to require the property owner to accomplish necessary maintenance. Necessary maintenance is that maintenance needed to bring the facility and/or improvement into compliance with this Chapter or technical manuals referenced herein or other ordinances, laws, or regulations. The City hereby declares that any failure to maintain a water quality control facility in accordance with City standards is a public nuisance subject to all remedies, legal and equitable, to abate that nuisance.
 - ii. Single-Family Residential Development. For a single-family residential development, the City will maintain a required water quality control, provided the water quality control has been accepted by the City. The Developer will make an estimation of the cost to conduct periodic inspections and maintenance of water quality controls, including one (1) year after the City's acceptance of completion of construction and every three (3) years thereafter for a total period of at least sixteen (16) years. The City will have authority to review and approve the estimated costs. The Developer will post surety for payment of the estimated costs consistent with the requirements specified in Section 12(5), Maintenance and Supervision, of this Code, or make a contribution for the full estimated cost of inspection and maintenance to the City prior to the City's approval of a final plat or issuance of a site

development permit.

- e. Documentation. Prior to the City's approval of a permit, a Final Plat, a Site Development Plan, the Developer will provide the City with complete copies of all plans and documents pertaining to the Edwards and Trinity Aquifers which are relevant to the proposed project. These plans and documents will include, but are not limited to, the following:
- i. Edwards and Trinity Aquifer Protection Plans
 - ii. Contributing Zone Plans
 - iii. Storm Water Pollution Prevention Plans
 - iv. Water Pollution Abatement Plans
 - v. Organized Sewage Collection System Plans
 - vi. Underground Storage Tank Facility Plans
 - vii. Above ground Storage Tank Facility Plans

(5) Exceptions

The requirements of this Section, as revised, are not applicable for the following:

- ~~a. Developments Not Located in a Recharge or Contributing Zone. Developments not located in the Edwards or Trinity Aquifer recharge or contributing zones with a total estimated impervious cover of twenty-five (25) percent or less~~
- a. Nonresidential Developments. Nonresidential developments with a total impervious cover area of five thousand (5,000) square feet or less;
- b. Small Developments. Developments involving construction of less than three (3) single-family residential structures.

(6) Onsite Wastewater Facility Permit

Prior to the approval of a final plat, the Developer will provide the City with complete copies of all applicable permit applications, plans and documents pertaining to the Onsite Sewage Facility (OSSF) Permit as required by the County(ies) in which the development is located. See Section 3.9(11).

Chapter 9

Section 9.1 Purpose and Intent

(1) Purpose

The purpose of this Chapter is to assure that residential and nonresidential development projects constructed within the City of Fair Oaks Ranch (City) and its extraterritorial jurisdiction (ETJ) are adequately furnished with necessary public infrastructure. These include streets, water, wastewater, stormwater drainage and roads, among others.

(2) Comprehensive Plan

Design and construction of infrastructure in the City and ETJ will be consistent with the policies and guidelines established in the most recent versions of the Fair Oaks Ranch Comprehensive Plan, the Fair Oaks Ranch Thoroughfare Master Plan (Thoroughfare Plan), Fair Oaks Ranch Master Drainage Plan (Drainage Plan), and the Fair Oaks Ranch Utility (Water/Wastewater) Master Plan (Utility Plan). Any interpretation of the requirements of this Section will be made in a manner consistent with these Plans (See Section 9.2 below).

~~(3) Annual Review~~

~~The Planning and Zoning Commission (Commission) and the City Engineer will have an annual review of amendments to the minimum design standards of the following and will make recommendations to the City Council regarding the adoption of such amendments:~~

- ~~a. Texas Commission on Environmental Quality (TCEQ),~~
- ~~b. Texas Department of Transportation (TxDOT) Standard Specification for Construction of Highways, Streets and Bridges~~
- ~~c. Texas Manual on Uniform Traffic Control Devices (TMUTCD)~~
- ~~d. Fair Oaks Ranch Utilities Water and Wastewater Capital Improvements Plan (WWCIP), San Antonio Water System Standard Specifications for Water and Sanitary Sewer Construction, City of San Antonio Unified Development Code Article V, Sections 35-504, 35-505, 35-506 pertaining to streets,~~
- ~~e. City of San Antonio LID Guidance Manual,~~
- ~~f. San Antonio River Authority (SARA): San Antonio River Basin Low Impact Development Technical Guidance Manual,~~
- ~~g. Greater Edwards Aquifer Alliance: Watershed Stewardship for the Edwards Aquifer Region, A Low Impact Development Manual,~~
- ~~h. City of New Braunfels Low Impact Development Design Manual,~~
- ~~i. City of San Antonio Storm Water Design Criteria Manual~~
- ~~j. San Antonio Water Systems Standard for Utility Construction Testing~~
- ~~k. City of San Antonio Appendix C: Bicycle Facility Design Guidance~~
- ~~l. City of San Antonio Sidewalk and Driveway Design and Construction Guidelines San Antonio Design Guidance Manual,~~
- ~~m. City of San Antonio Standard Specifications for Construction,~~
- ~~n. San Antonio Water System (SAWS) Specifications for Water and Sanitary Sewer Construction (Standard Details Manuals),~~
- ~~o. Building Codes with local amendments applicable to the City.~~

Section 9.2 General Standards**(1) Compliance with Standards**

Full compliance with the standards contained within this Code must be obtained before the issuance of a building repair, plumbing, or electrical permit for any structure on a lot within a subdivision within the jurisdiction of the City.

(2) Review, Permit and Enforcement

In fulfilling any responsibilities in this Section that require technical or other expertise, the City Manager (or designee) will rely on the assistance of the City Engineer or another designee for such expertise.

(3) Unapproved Final Plat or Site Development

City approvals, including building, repair, plumbing, or electrical permits, will not be issued and the City will not provide maintenance or services on a lot, parcel or development for which a Final Plat or Site Development Permit has not been approved and recorded.

(4) Grandfather Provisions

The provisions of this Section will not be construed to prohibit the issuance of permits for any lot or undivided tract or parcel of land upon which a residence exists that was in existence prior to the passage of this Code or any other amendments thereafter.

(5) Required Improvements

In the absence of any provision to the contrary, the Subdivider / Developer will provide the following improvements, as approved in the construction plans, in conformance with the standards, specifications, [city-issued permits](#), and requirements of this Code:

- a. Streets, if intended to be dedicated to the public by owner, including rights-of-way, alleys, sidewalks, bridges, and signalization;
- b. Water Systems including utility easements, water distribution lines, fire hydrants, valves, pumps, and water towers;
- c. Wastewater Systems including utility easements, wastewater lines, manholes, and lift stations;
- d. Drainage Systems including drainage easements, channels, storm sewer lines and inlets, basins, control structures, and landscaping;
- e. Protection of environmentally sensitive features
- f. Park Land and Improvements;
- g. Permanent Monument Markers;
- h. Utilities for electric and telephone service and associated utility easements installed in conformance with the terms and regulations of the provider of said utility;
- i. Gas, Fiber Optics and Other Telecommunications Services and Associated Utility Easements, when provided, installed in conformance with the terms and regulations of the provider of said utility.

(6) Improvement Continuity and Integration

All improvements must be designed and installed to provide for a logical system of utilities, drainage and streets and to create continuity of improvements for the development of adjacent properties. Pedestrian, vehicle, water, wastewater, and drainage improvements must be extended to the perimeter of a subdivision.

(7) Improvement Plans

- a. Registered Professional Engineer. Plans for the improvements required by this Chapter will be prepared and approved in accordance with the provisions contained herein and certified for accuracy and completeness by a Registered Professional Engineer licensed in the State of Texas.
- b. Record Drawings / As-Built Drawings. After completion of construction, the developer will deliver to the City as-built construction documents indicating all improvements, new construction, and upgrades. These documents will clearly indicate the location of all improvements including the location of public utilities and infrastructure. The documents will include a certification from a Registered Professional Engineer or that all construction required by this Code was performed in compliance with the standards and specifications required of this Code. The developer will also deliver a digital file of the approved and As-Built record drawing plans for each improvement in the following formats:
 1. File format: AutoCAD DWG, SHP- Layers to be determined by the City Engineer
 2. Coordinate System: NAD 1983 State Plane Texas South Central FIPS 4204 Feet

REF FRAME: NAD_83(2011)(EPOCH:2010.0000)

3. Vertical NAVD88 (Computed using GEOID12A)
4. Accuracy: Appurtenances will be located with a positional tolerance of 1:10,000+0.10'
5. A letter of certification by a registered Professional Engineer attesting to the As-Built digital files accuracy

(8) Acceptance of Improvements

- a. Inspections. During the course of installation and construction of the required improvements, the City Engineer or another designee of the City Manager will make periodic inspections of the work to ensure that all improvements comply with this Code and other municipal, county and state requirements.
- b. Record Drawings and Maintenance Bonds. Upon completion of installation and construction of all required improvements, the Developer may seek acceptance of all public improvements by the City, by submitting the required number of copies of record drawings and a Record Drawings and Maintenance Bonds. Upon completion of installation and construction of all required improvements, the Developer may seek acceptance of all public improvements by the City by submitting the required number of copies of record drawings and a maintenance bond ~~in an amount equal to 20% of the cost installation and construction of all required improvements; as required by section 12.5 or as required by a Development Agreement approved for the project. The length of the maintenance bond will be determined by the size and complexity of the development and will be stated in the Developer Agreement.~~
- c. Testing. All testing will be in accordance with *San Antonio Water Systems Standard for Utility Construction Testing*, unless otherwise specified in this Chapter. For the wastewater lines and all appurtenances associated therewith, at the Developer's expense, the Developer will provide for and submit reports from the TV inspection of the lines and all appurtenances associated therewith prior to any acceptance. In addition, the developer will provide a statement signed by a Registered Professional Engineer that all improvements have been installed and constructed in accordance with the submitted record drawings.

(9) Maintenance and Supervision

- a. Temporary Work Easement. Where required, for purposes of installation or maintenance of city, other public or private utilities, water or wastewater service, a temporary work easement shall be granted for the duration of the necessary work, including the right to move, store and remove equipment and supplies, and erect and remove temporary structures on the land and to perform any other work necessary and incident to the construction of the project.

(10) Development Manual(s) and Public Works Specification Manual(s)

- a. All Development Manuals shall contain development application forms, required application materials, fees, and application submittal deadlines. The Development Manual may be adopted and updated from time to time by Resolution approved by City Council. A copy of the current Development Manual shall be posted to the City's website. Any amendment to the Development Manual shall be published on the City's website within 30 calendar days from when the amendment is made in accordance with LGC Section 212.0081 or its successor statute.

- b. The Public Works Specification Manual(s) shall contain specifications necessary to complete public projects including but not limited to roadway design specifications, traffic impact requirements, utility easement specifications, and driveway requirements. The Public Works Specification Manual(s) may be adopted and updated from time to time by ordinance approved by the City Council. In accordance with LGC Sections 212.002 & 212.0021, prior to adopting or amending the Public Works Specification Manual(s) a public hearing is required and notice of the public hearing shall be published in a newspaper of general circulation in the city. A copy of the current Public Works Specification Manual(s) shall be available upon request.

(11) Design Standards

~~The Planning and Zoning Commission (Commission) and the City Engineer will have an annual review of amendments to the minimum design standards of the following and will make recommendations to the City Council regarding the adoption of such amendments:~~

~~All design standards listed below refer to the latest approved version of said design standard~~

- a. City of Fair Oaks Ranch Design Standards
- i. Fair Oaks Ranch Utilities Water and Wastewater Capital Improvements Plan (WWCIP), San Antonio Water System Standard Specifications for Water and Sanitary Sewer Construction, City of San Antonio Unified Development Code Article V, Sections 35-504, 35-505, 35-506 pertaining to streets,
 - ii. City of Fair Oaks Ranch Driveway Construction Guidelines
 - iii. City of Fair Oaks Ranch Construction Standard Specification for Water and Sanitary Sewer Construction.
- b. Other Design Standards
- i. Texas Commission on Environmental Quality (TCEQ),
 - ii. Texas Department of Transportation (TxDOT) Standard Specification for Construction of Highways, Streets and Bridges
 - iii. Texas Manual on Uniform Traffic-Control Devices (TMUTCD)
 - iv. City of San Antonio LID Guidance Manual,
 - v. San Antonio River Authority (SARA): San Antonio River Basin Low Impact Development Technical Guidance Manual,
 - vi. Greater Edwards Aquifer Alliance: Watershed Stewardship for the Edwards Aquifer Region, A Low Impact Development Manual,
 - vii. City of New Braunfels Low-Impact Development Design Manual,
 - viii. City of San Antonio Storm Water Design Criteria Manual
 - ix. San Antonio Water Systems Standard for Utility Construction Testing
 - x. City of San Antonio Appendix C: Bicycle Facility Design Guidance
 - xi. City of San Antonio Sidewalk and Driveway Design and Construction Guidelines San Antonio Design Guidance Manual,
 - xii. City of San Antonio Standard Specifications for Construction,
 - xiii. San Antonio Water System (SAWS) Specifications for Water and Sanitary Sewer Construction (Standard Details Manuals),
 - xiv. Building Codes with local amendments applicable to the City.

Section 9.3 Adequate Public Facilities (APF) Processing Procedures

(1) Facilities and Services

A final plat or replat or site development permit will not be approved unless the land proposed for subdivision or site development is adequately served by essential public facilities and services (see Section 9.2(5)). Adequately served is defined as having an approved construction plan that demonstrates that public facilities and services will be constructed. The final plat can be approved but not filed until such time as the public facilities and services have been accepted by the City Engineer and with a letter of acceptance being issued by the City Manager (or designee). Those services include the following:

- a. **Street Access and Parking:**
 - i. **Safe and Reliable Access.** A final plat, replat or site development permit will not be approved unless the proposed lot(s) have safe and reliable access for daily use and emergency purposes.
 - ii. **Direct Access to Improved Street.** A plat or replat will not be approved unless the proposed lot(s) have direct access to an improved public or private street, an approved public way, or an approved access easement in accordance with Section 7.4(1), Design Principles, of this Code, and connected to an improved public thoroughfare.
 - iii. **Two Means of Vehicular Access.** Except for lots that are provided access from an approved cul-de-sac, all subdivisions must have at least two means of vehicular access or approach on a paved public right-of-way. Where development phasing or constraints of the land prevent the provision of a second, separate means of access, the City may, in its sole discretion, accept a temporary street connection, or median divided street or entry to satisfy this requirement. Vehicular access must also be provided, where necessary, for maintenance of utilities.
 - iv. **Parking.** All parking facilities, including driveways, parking lots, parking garages, and all other facilities intended for the temporary storage of motorized vehicles, trailers, bicycles, and other transportation devices, will be designed in compliance with the requirements contained herein. It is the intent of this Code that parking facilities are constructed to provide adequate capacity and functionality to the uses they serve while preserving the health, safety, and welfare of the residents of the adjacent areas and the City overall.
- b. **Water.** The proposed lot(s) or development must be connected to the City's water system or a community water supply system acceptable to the City that is capable of providing adequate water for health and emergency purposes. All lots must be provided service connections from a looped water main providing water flow from two directions or sources, exceptions only where it is impracticable and demonstrated by developer's engineer. New developments or improvements of existing developments should consult the Utility Master Plan for compliance with that Plan. For residential or non-residential developments not being serviced by the City, a letter of service must be submitted from the water corporation indicating their intent to service.
- c. **Fire Protection.** Water service must be sufficient to meet the fire flow requirements of the proposed development, except where a suitable alternative means of fire protection is approved by the City Engineer. The City may require the phasing of development, and/or the construction of improvements to maintain adequate fire protection.
- d. **Wastewater.** The proposed lot(s) or site developments must be served by an approved means

of wastewater collection and treatment. The projected wastewater discharge of a proposed development will not exceed the proposed capacity of the proposed development's wastewater system. The City may require the phasing of development or improvements to the systems so as to maintain adequate wastewater capacity. New developments or improvements of existing developments should consult the Utility Master Plan.

- e. Drainage. Increased stormwater runoff attributable to new development must not exceed the capacity of the downstream drainage systems, or adversely affect adjoining property. Where the projected runoff would exceed capacity based on the standards specified in this Code, the City may require the phasing of development, the use of control methods such as retention or detention, and the construction of off-site drainage improvements as means of mitigation. New developments or improvements of existing developments should consult the City of Fair Oaks Ranch Drainage Master Plan for compliance with that Plan.
- f. Parks and Recreation. Adequate parks and recreational facilities that meet the requirements and standards specified in this Code must be provided. All residential developments, including commercial / mixed use developments, will be required to comply with these standards and requirements.
- g. Monumentation and Survey Control. Monument and ground control requirements of this Code must be met.

(2) Fiscal Surety and Assurance of Construction and Maintenance

A ~~final plat or replat~~ plat shall not be recorded nor a site development permit ~~will not~~ be approved unless the Developer has complied with all the requirements for Fiscal Surety relating to Construction and Maintenance as detailed in Chapter 12, Compliance and Enforcement.

Section 9.7 Drainage and Erosion Control Standards

(1) Facilities Required

The Developer will provide a storm drainage system to meet a level of service as defined in this section. A storm drainage system will be provided that is capable of conveying the peak discharge generated by the 100-yr storm. Note peak flows may be reduced by detention or other on-site storage. This conveyance may be enclosed or open, or a combination of both. The system will be integrated with the storm drainage system of the City, and the design of the system must be approved by the City Manager (or designee) in accordance with the requirements of this Code. The storm drainage system is any existing collection, conveyance, or storage stormwater infrastructure within the defined street right-of-way and/or existing platted easement, and drainage paths as defined by the City.

- a. Property not reserved or designed for conveying stormwater will be protected from frequent inundation of the 10-yr storm as follows:
 - i. When the total drainage area is less than 2 acres, protection may be provided by following good lot grading practices, such as
 - 1. Clearly defining areas of disturbance and grading to protect and preserve natural and hydrologic features (natural soils, vegetation, hillsides, conservation areas, karst features, existing natural watercourses, and wetlands), and
 - 2. Minimize site grading and areas of disturbance and isolating areas where construction activities will occur or by one of the conveyances described below in item 1b.
 - ii. When the total drainage area is 2 acres or more, one of the following conveyances must be

used to convey the 10-yr storm:

1. Pipe system conveying the design storm;
 2. Engineered open channel;
 3. A street gutter when the velocity of stormwater during a 10-yr storm is less than 10 cfs;
 4. A natural stream.
- b. Buildings will be protected from the 100-yr storm by:
- i. Providing a minimum of one (1) foot freeboard above the 100-yr storm stage, at any point along the drainage system, for openings in a building. For lakes and detention basins, the 100-yr storm stage will be the water surface of flow through the defined emergency spillway.
 - ii. Flood-proofing a building below the 100-yr stormwater surface elevation plus one (1) foot of freeboard in accordance with the current edition of the International Building Code or as required by the City.
 - iii. A completed Elevation Certificate with the necessary base flood elevations hydrological and hydraulic data as needed and a letter of No-Adverse-Impact, prepared by a professional engineer or surveyor, must be submitted when the structure is completed and ready for habitation for residential structures
- c. Street Crossings. Concentrated flow will be conveyed under streets (by roadway classification as detailed below in items i, ii, and iii). New and/or redevelopment of land that drains to a street crossing must evaluate the stormwater runoff impact to said crossing, and either improve the crossing to meet the standards set in this section or retain stormwater within the development site to pre-development conditions. These crossings may be bridges, culverts, or underground systems. Crossings will be designed to completely convey flood flows using streets as part of the stormwater conveyance system in accordance with the following criteria:
- iv. Street Classification = Arterial; Minimum Design Storm Capacity = 50-yr
 - v. Street Classification = Collector and **Connector**; Minimum Design Storm Capacity = 25-yr
 - vi. Street Classification = **Local and** Residential; Minimum Design Storm Capacity = 10-yr
 - vii. Overflow depths for the 100-yr storm at the low point in the roadway crossing will be limited to 7 inches measured at the high point in the roadway cross section.
- d. Downstream impacts of increased impervious area resulting from development will be mitigated through detention and/or green infrastructure. Peak runoff control will be provided for the 100-yr, 10-yr, and 2-yr storms and volumetric and/or extended detention control of the annual mean storm event will be provided. The maximum release rate from any development or redevelopment will be as follows:
- viii. 2-yr storm peak rate less than or equal to 0.5 cfs per site acre
 - ix. 10-yr storm peak rate less than or equal to 2.0 cfs per site acre
 - x. 100-yr storm peak rate less than or equal to 3.0 cfs per site acre
 - xi. Annual storm. 40-hour extended detention or other City approved green infrastructure.
- e. Private property will maintain positive grades of at least 2% away from habitable structures towards lot lines. Surface drainage from private property will be graded toward existing collection, conveyance, or storage stormwater infrastructure within the defined street right-of-way and/or existing platted easement, and drainage paths as defined by the City's most current hydrologic and hydraulic model. For the City to preserve natural drainage paths and ultimately protect the interests of private property owners, the following data is required on

plot plans submitted as part of the building permit application process: existing and proposed contours; existing point elevations at all lot corners; proposed point elevations at all lot corners; existing stormwater collection, conveyance, or storage infrastructure; street right-of-way; existing and/or proposed platted easement; drainage paths as defined by the City's most current hydrologic and hydraulic model; low opening elevations for structure.

(2) Purpose and Applicability

- a. Altered Natural Flow and Increased Flow Rates. Growth in and around the City of Fair Oaks Ranch and the associated development and construction of buildings, paved surfaces, roads and other improvements has altered and continues to alter the natural flow of surface waters on the land. New building construction and the attendant construction of gutters, culverts, drains and channels for the conveyance of surface waters has increased the quantity of stormwater runoff and amplified peak flow rates, thus leading to the potential for flooding of property and homes, dangerous flows within and over public roadways and streets, and soil and channel erosion.
- b. On-Site and Regional Stormwater Detention and Retention Facilities. It is the intention of the City Council to protect the health and safety of the citizens and visitors of the city and to prevent damage to private property and public facilities through the proper design and construction of both on-site and regional stormwater detention and retention facilities that prevent or adequately reduce increases in peak flow rates of runoff that may otherwise increase the risk of flooding and the associated risk of public endangerment, property damage and erosion.
- c. Erosion Control Practices. It is the intention of the City Council to protect the health and safety of the citizens of and visitors to the City and to prevent damage to private property and public facilities through the installation and use of temporary and permanent erosion control practices that prevent or adequately reduce increases in erosion and siltation that may otherwise increase the risk of flooding and the associated risk of public endangerment and property damage by clogging or partial filling of constructed or natural drainage ways as well as drainage structures and detention ponds.
- d. Applicability. The provisions of this Chapter are applicable to all drainage improvements located within the city limits and ETJ of the City of Fair Oaks Ranch. They are intended to be implemented for entire subdivisions at the time of platting and construction of street and drainage improvements.

(3) Compliance with Drainage Requirements

Compliance with Drainage Requirements may be accomplished as follows:

- a. On-Site Stormwater Detention Facilities. Design and construction by the Landowner or Developer of one or more on-site stormwater detention facilities which limits peak flood flow rates from the proposed development to existing or predevelopment peak flood flow rates from the subject tract;
- b. Off-Site Drainage Improvements. Construction of, or participation in the construction of, off-site drainage improvements, such as storm inlets, storm sewers, culverts, channel modifications, detention ponds, land filling, and/or other drainage facilities such that the peak flood flows for fully-developed watershed conditions from the watershed area in which the

proposed development is located will be sufficiently and safely passed without increasing the peak discharge rate or the likelihood of wing of adjacent and downstream property and roadways; and

- c. Construction of or financial participation in area-wide drainage improvements, administered by the City pursuant to a regional drainage study or the City of Fair Oaks Ranch Master Drainage Plan for city limits and ETJ, as may be specified in regulations or policies relating to impact fees for drainage improvements.

(4) Adoption of City of San Antonio Stormwater Design Criteria Manual

Adoption of City of San Antonio Stormwater Design Criteria Manual. Adoption of the latest version and subsequent updates of the City of San Antonio *Stormwater Design Criteria Manual*, which along with the City of San Antonio *Design Guidance Manual* and the City of San Antonio *Standard Specifications for Construction*, adopted in Section 9.7(3) above, is hereby adopted by the City of Fair Oaks Ranch for the purpose of establishing rules and regulations for the design, development, construction, alteration, enlargement, repair, conversion, improvement, use, and maintenance of stormwater and drainage facilities until such time that the City of Fair Oaks Ranch may create and adopt a Drainage Criteria Manual and/or Standard Details Manual or other such document regulating the design, construction, and modification of water and wastewater facilities.

(5) Drainage Study

- a. Drainage Study Information. The City of Fair Oaks Ranch may require the owner of real property to provide, at the Owner's expense, and as a condition for Preliminary Plan approval, a Drainage Study for the total area to be ultimately developed. The Drainage Study must be in accordance with the City of San Antonio *Stormwater Design Criteria Manual*. The drainage study will provide the following information, for both existing and fully developed conditions:
 - i. Drainage area maps as follows:
 - 1. Drainage Area Map (Onsite): 1 inch = 200 feet; Drainage Area Map (Entire Drainage Area): 1 inch = 1,000 feet
 - 2. Plan: 1 inch = 20 feet
 - 3. Profile (Vertical): 1 inch = 5 feet; Profiled (Horizontal): 1 inch = 20 feet;
 - ii. The drainage area(s) within the subdivision, depicted on a topographic map with both existing and proposed two-foot contour intervals. Identify and locate all existing and proposed drainage features. Show defined street right-of-way and/or existing platted easement, and drainage paths as defined by the City's most current hydrologic and hydraulic model;
 - iii. Composite runoff factors are based on the American Society of Civil Engineers (ASCE) compilation of average runoff coefficients utilizing the Rational Method for various surface conditions. Reference the City of San Antonio Stormwater Design Criteria Manual for relevant factors of pre- and post-development cases;
 - iv. Times of concentration, which is the time for the runoff from a catchment area to reach equilibrium under a steady rainfall. It is also defined as the longest travel time it takes the runoff to reach the discharge point of a catchment area. The travel time is a parameter most often used to characterize the response of a catchment area to rainfalls. This parameter is a function of length scale, average catchment slope, and the catchment surface conditions. The time of concentration is the sum of the overland flow time and the

- travel time in drainage channels along the flow route to the outlet;
- v. Related rainfall intensity factors are dependent on the rainfall duration and varies with the frequency of the rainfall event; the less frequent the storm is, the larger its intensity will be. Reference the City of San Antonio Stormwater Design Criteria Manual for relevant factors;
 - vi. Preliminary street grades sufficient to determine high points, low points, and direction of runoff flows;
 - vii. Proposed locations of inlets, storm sewers and culverts;
 - viii. Proposed routing of drainage ways; and
 - ix. All proposed drainage easements, including width of easement and configuration of channel.
 - x. Include on the plan set hydrologic table, hydraulic table, and storage and/or green infrastructure table that summarizes parameters and calculations.
- b. Narrative. The information will be supplemented with narrative text describing the watershed and the subdivision, the general soil conditions, downstream channel conditions, all weather access, and the presence of special flood hazard areas within the development. The study will be prepared by a Professional Engineer registered in the State of Texas. The drainage study, if required, will be submitted along with the Preliminary Plat. The City Engineer will review the submission, verify that all requirements of this Code have been met, and forward his / her recommendations to the City Manager (or designee).

(6) Flood Hazards

- a. General Policy. All subdivisions will conform to the latest version of the “Flood Disaster Protection Act of 1973,” Public Law 93-234, the City’s Flood Damage Prevention Ordinance (2009) as amended, and policies as dictated by the Federal Emergency Management Agency (FEMA).
- b. Floodplain Designations and General Restrictions. Federal floodplains are based on a 100-year frequency discharge and apply only in those areas where official FEMA maps have been prepared, or where 100-year water and surface profile studies are available for the City and its extraterritorial jurisdiction. Refer to the City’s Flood Damage Prevention Ordinance for information on the Flood Insurance Rate Maps (FIRM) and Flood Insurance Studies (FIS) used to establish the areas of special flood hazard within the City, and provisions for flood hazard reduction.
- c. General Requirements in Floodplains. The elevation of the lowest floor (including basements) in the 100-year floodplain will ~~be two feet above the 100-year floodplain a minimum of 12 inches above the base flood elevation conform to Chapter 3; Section 3.12 of the City Code of Ordinances~~. The limits of the 100-year floodplain and the limits of the floodway will be shown on the preliminary and final plats as applicable.

(7) Standards and Requirements for Drainage

- a. Standards and Requirements. The specifications and standards recommended in the most current version of the City of San Antonio *Stormwater Design Criteria Manual*, the City of San Antonio *Design Guidance Manual*, and the City of San Antonio *Standard Specifications for Construction*, as amended from time to time, including later editions, except such portions that may be hereinafter amended, deleted, or modified by the City of Fair Oaks Ranch will be the governing document in the design, development and construction of all improvements within the city limits and ETJ of the City of Fair Oaks Ranch. Where any provision of this Code conflicts

with a provision or requirement of the City of San Antonio *Stormwater Design Criteria Manual*, the City of San Antonio *Design Guidance Manual*, and the City of San Antonio *Standard Specifications for Construction*, the more stringent requirements will control.

- b. Computed Stormwater Runoff. Stormwater runoff will be computed on the basis of a fully developed contributing drainage area or watershed as determined under the City of San Antonio *Stormwater Design Criteria Manual*.
- c. Obstruction in a Watercourse. Unless authorized by an approved site plan, a person may not place, or cause to be placed, an obstruction in a watercourse. The person in control of real property traversed by a watercourse will keep the watercourse free from an obstruction that is not authorized by a site plan. Further, placement of fill material, or construction of impervious cover, or construction or placement of any other structure on a person's property, or performance of any excavation or grading in a manner which alters the flow of surface water across any adjacent property is prohibited.
- d. Approvals: A Final Plat, development construction plans, or Site Plan may be approved only after it can be demonstrated by the Developer of such property that the proposed development will:
 - i. Prevent any additional identifiable adverse flooding on other property;
 - ii. Preserve the natural and traditional character of the land and the watercourse to the greatest extent feasible; and that
 - iii. Meet all drainage requirements in this Code have been met.

(8) Standards and Requirements for Stormwater Detention

Unless otherwise specified herein, the design of all stormwater detention facilities will be in accordance with the minimum requirements of the current version of the City of San Antonio *Stormwater Design Criteria Manual*. Computation of detention requirements will be based on a fully developed drainage area, or watershed, in accordance with the minimum provisions of the City of San Antonio *Stormwater Design Criteria Manual*.

(9) Standards and Requirements for Erosion and Sedimentation Controls

- a. Erosion and Sedimentation Controls. Temporary erosion and sedimentation controls are required for all development until permanent re-vegetation has been established and must be removed after permanent re-vegetation has been established. Design and construction of temporary erosion and sedimentation controls will be performed in accordance with the City of San Antonio *Stormwater Design Criteria Manual*.
- b. Construction Phase Erosion and Sedimentation Control Plan. For all projects, the Applicant/Developer must provide a Construction Phase Erosion and Sedimentation Control Plan, acceptable to the City Engineer or another designee of the City Manager, which includes specification of control measures to be installed, a sequencing schedule specifying the dates of installation and removal of control facilities, and a maintenance schedule and commitment for the life of the erosion and sedimentation control facilities to be installed. The Developer will provide assurance of perpetual maintenance and operation of any and all facilities for stormwater detention and/or runoff management constructed under the requirements set forth herein, in a form and specification acceptable to the City. Such assurance may be specified in advance by the City and make take the form of a plat note, posting of financial surety, legal provisions of an automatic property owners association which are enforceable by the City, or a combination of these or other provisions.
- c. Permanent Re-vegetation. No development will be considered complete until permanent re-

vegetation is established, the City of Fair Oaks Ranch has received the engineer's concurrence

letter stipulating to this fact, and the City Engineer has inspected and accepted the vegetated area. Temporary or permanent re-vegetation of bare ground in order to stabilize disturbed soil will occur at the earliest practicable date.

- d. Field Modification of Plans by Inspection Personnel. City of Fair Oaks Ranch construction inspection personnel may modify an erosion control plan or construction sequencing plan in the field without notice to the permit holder if the modification is a minor change to upgrade erosion controls or reflect construction progress; and, after two business days written notice to the permit holder, if the inspector determines that an erosion control or the construction sequencing is inappropriate and the City Engineer has confirmed the inspector's findings in writing.
- e. On-Site Control of the Two-Year Peak Flow. No final subdivision plat, subdivision construction plan, site plan or building permit will be approved by the City unless the proposed development provides on-site control of the two year peak flow, as determined under the City of San Antonio *Stormwater Design Criteria Manual*. A proposed development may provide off-site control of the two-year peak if the off-site control will not cause an adverse water quality impact from increased in-stream peak flow, or stream bank erosion.
- f. Registered Professional Engineer. A Registered Professional Engineer, licensed in the State of Texas and qualified and experienced in the design and operation of stormwater detention ponds and related stormwater management facilities, will perform and certify the hydraulic and structural design of stormwater detention ponds and related stormwater management facilities, including the development of engineering and technical information required for evaluation by the City.

(10) Nuisance Provision.

- a. Discharge Exceptions. It will be unlawful and constitute a nuisance for any person to discharge or cause to be discharged or spilled into the storm drainage system or environment any substance other than naturally occurring stormwater runoff except for the following:
 - Return flows from irrigation,
 - Water from building foundation drainage,
 - Runoff from non-commercial car washing,
 - De-chlorinated water from swimming pools,
 - Reject water from water softening devices,
 - Water from fire hydrants including water used for firefighting,
 - Uncontaminated groundwater,
 - Springs,
 - Discharges from potable water sources,
 - Air conditioning condensation,
 - Uncontaminated condensation, and
 - Other waters determined to be non-contaminated and acceptable for return to the storm drainage system and receiving waters.
- b. Liability for Damages. Nothing contained herein will be construed to relieve any person discharging or causing to be discharged water into the storm drainage system from any liability for damage caused by the volume or quality of water discharged.

(11) Responsibility for Proper Drainage Design and Construction Resides with Owner

Acceptance of requests from the Landowner / Developer to meet the stormwater detention requirements through measures listed in Section 9.7(4) above is solely at the discretion of the City and will not relieve the Landowner / Developer of responsibility under civil law to adjacent and downstream properties.

Section 9.8 Monuments and Survey Control Point Markers

(1) Subdivisions and all lots submitted for plat approval must provide monuments and control points as follows:

- a. Licensed Registered Professional Land Surveyor (RPLS). All monuments and control points will be placed by a Licensed Registered Professional Land Surveyor (RPLS) and must be in place prior to the installation of any roadway improvements.
- b. Locations. To the extent it is practicable, monuments should be installed in locations that will prevent disturbance or destruction of the monument by construction activities. Any monuments disturbed or destroyed during roadway construction will be reestablished in conformance with the provisions of this Code by a Licensed Registered Professional Land Surveyor (RPLS).
- e. Corner Markers. Corner markers will be a one-half inch iron rod, or three-fourths inch pipe, two feet in length, and will be installed flush with the ground. Depending on the terrain, a six (6) inch bar may be permitted by the City if it is at a sufficient depth to retain a stable, distinctive location, and it's of sufficient size to withstand the deteriorating forces of nature. Corners of all lots, block corners, street right-of-way P.C.s and P.T.s will be marked with corner markers.

Planning and Zoning Commission Category:

Drive Through

Chapter 6

Section 6.6 Access and Circulation

- (1) **Purpose.** The purpose of this Section is to require that the parking and circulation aspects of all developments are well designed with regard to safety, efficiency and convenience for vehicles, golf carts, bicycles, and pedestrians, both within the development and to and from surrounding areas. The on-site pedestrian system must provide adequate directness, continuity, street crossings, and security as defined by the standards in this Section. Sidewalk or bikeway extensions off-site may be required based on needs created by the proposed development. This Section sets forth parking requirements and addresses the placement of drive-in facilities and loading zones.
- (2) **General Standards:**
- a. **New Roadways.** All new streets will be built in accordance with Section 9.4, Infrastructure and Public Improvements (Streets), of this Code, the Transportation Plan Element of the City of Fair Oaks Ranch Comprehensive Plan and the City's thoroughfare plan may be adopted by the City Council.
 - b. **Safety Considerations:**
 - i. **Pedestrian Separation.** To the maximum extent feasible, pedestrians will be separated from vehicles and bicycles. Where complete separation of pedestrians and vehicles and bicycles is not possible, potential hazards will be minimized by the use of techniques such as special paving, grade separations, pavement marking, signs or striping, bollards, median refuge areas, traffic calming features, landscaping, or other means to clearly delineate pedestrian areas, for both day and night use.

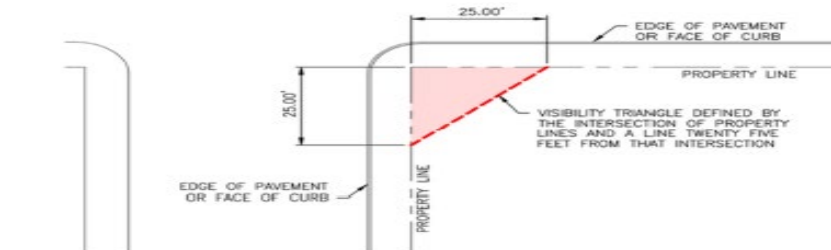


Figure. 6.1 Visibility Triangle

- ii. **Curb Cuts and Ramps.** Curb cuts and ramps will be located at convenient, safe locations for the physically disabled, for bicyclists and for pedestrians pushing strollers or carts. The location and design of curb cuts and ramps will meet the requirements of the International Building Code and the Americans with Disabilities Act ramp standards and will avoid crossing or funneling traffic through loading areas, drive-in lanes and outdoor trash storage/collection areas.
 - iii. **Corner Lot View Lines.** On a corner lot in any district, nothing will be erected, placed, planted, or allowed to grow in such a manner so as to materially impair vehicle drivers' vision at intersections, within a triangle defined by the property lines and a line joining two points located twenty-five (25) feet back from the intersection of the property lines;
- (3) **Drive-in Facilities.** Any drive-in facility for a bank, food service, or other such building, if permitted by the zoning district regulations set forth in Chapter 4, Zoning Districts and Use Regulations, will

be secondary in emphasis to any other building entry or access facility and must comply with the design standards in Chapter 7, Design Standards. Such facilities will be located in side or rear locations that do not interrupt direct pedestrian access along connecting pedestrian frontage. The design and layout of drive-in facilities for restaurants, banks, or other uses will:

- a. Avoid potential pedestrian / vehicle conflicts;
- b. Provide adequate stacking spaces for automobiles before and after use of the facility;
 - i. A stacking space shall be an area on a site measuring eight (8') feet by 20 feet with direct forward access to a service window or station of a drive through facility which does not constitute space for any other circulation driveway, parking space, or maneuvering area.
 - ii. For financial institutions with drive through facilities, and restaurants with drive through service, each teller window or station, human or mechanical, shall be provided with a minimum of five (5) stacking spaces.
 - iii. For retail operations, other than restaurants and kiosks, that provide drive-up service, including pharmacy and dry cleaners, a minimum of three (3) stacking spaces for each service window shall be provided.
 - iv. Each car wash bay (of any type), vacuum, or gas pump shall be provided with a minimum of four (4) stacking spaces, in addition to the bay or pump itself. One stacking space shall be provided at the exit end of each wash bay for window-drying and other detailing unless a separate area and shade structure is provided. The finish and drying area must be located out of circulation aisles, access easements, fire lanes and streets. Vehicle drying area shall not be in a yard along a Primary or Secondary Frontage.
 - v. For automobile quick-lube type facilities, a minimum of three (3) stacking spaces shall be provided for each service bay in addition to the service bay(s) itself.
 - vi. For use not listed above number of stacking spaces will be determined by the City Manager or his/her designee.
- c. Provide adequate directional signage to enhance a free flow through the facility; and/or
- d. Provide a walk-up service option as well as drive-in.
- e. Drive through windows and similar elements shall not be located in yards adjacent to residential zones or use. If a drive through is located adjacent to a residential use or zone, provide a twenty-five (25) foot landscaped buffer along the property line.
- f. Such facilities must meet all applicable screening and landscaping requirements of this Chapter.