ARTICLE VIII

DESIGN AND IMPROVEMENT STANDARDS

Sec. 8-1. INTENT

The intent of this Article is to establish design and improvement standards for all development in the county in order to implement the goals, objectives, and policies of the Comprehensive Plan and protect the health, safety, and welfare of the citizens of the county.

Sec. 8-2. APPLICABILITY

The requirements set forth in this Article shall be applicable to all residential and non-residential development, and all development proposing the construction of any public or private road.

Sec. 8-3. GENERAL DESIGN CRITERIA

(1) **Preservation of Natural Features** – To the fullest extent, developments shall be designed to conform to and take advantage of the topographic and other natural features of the land, including the preservation of existing trees and watercourses.

(2) **Zoning Compliance** – All proposed developments shall comply with the existing zoning regulations applicable to the land, and no parcel or lot shall be created, either by inclusion within or exclusion from a proposed development, residential or non-residential, which cannot be properly utilized for a permitted use under such regulations.

(3) **Private Roadways** – All private roadways approved shall be designed and constructed in accordance with the provisions established in this Article. Private roadways shall be permitted only in developments where provisions have been made for the roadways to remain under common ownership of a property owner's association.

(4) **Conformance with Standards and Specifications** – All construction and paving shall be in accordance with approved design and construction plans that equal or exceed the design criteria established herein. Deviations will be allowed only with written approval of the County Engineer. The design specifications, unless otherwise noted, shall comply with current applicable federal and state standards unless otherwise approved by the County Engineer. Applicable governing documents and standards include, but not limited to, the latest editions of the Federal Highway Administration (FHWA), the American Association of State Highway and Transportation Officials (AASHTO) and the Florida Department of Transportation (FDOT):

- FHWA Manual on Uniform Traffic Control Devices for Streets and Highways
- AASHTO A Policy on Geometric Design of Highways and Streets (Green Book)
- AASHTO Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT = 400)
- AASHTO Roadside Design Guide
- AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities
- AASHTO Guide for the Design of Pavement Structures
- AASHTO Empirical Pavement Design Guide
- AASHTO Highway Safety Manual

- FDOT Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways (Florida Green Book)
- FDOT Design Standards for Construction Operations on the State Highway System
- FDOT Standard Specifications for Road and Bridge Construction
- ADA Standards for Accessible Design

(5) **Future Developments** – Within developments that are proposed to occur in phases, signs graphically depicting future phases shall be posted conspicuously at locations specified by the County Engineer. Such locations shall generally be identified so as to ensure optimum exposure. The signs shall be no larger than four feet by eight feet, shall be professionally prepared, constructed, installed, and maintained for indefinite duration.

Sec. 8-4. ROADWAY CLASSIFICATION SYSTEM

(1) **Purpose of Classification** – Roadways in the county shall be classified and mapped according to function served in order to allow for regulation of access, roadway and right-of-way widths, circulation patterns, design speed, and construction standards.

(2) **Classifying Roadways** – Roadways in the county are classified in a hierarchy system with design tailored to function.

(3) **Continuation of Classified Roadways** – The classification of an existing roadway that previously terminated outside of a development, or will be continued beyond a development in the future shall be based upon the roadway at full buildout.

(4) **Functional Classifications** – The roadway functional classifications for the unincorporated area of the county are as follow:

(a) Local Roadways and Alleys – Local roadways and alleys are the lowest order roadways in the county. They provide direct access to abutting properties and are designed to carry no more traffic than is generated on the roadway itself.

1. Local – Local roadways are primarily suited to providing direct access to individual residential structures, but may give access to limited non-residential uses. Average Daily Traffic (ADT) volume typically does not exceed sixteen hundred vehicles per day.

2. Alley – A private right-of-way is designed to provide access to the side or rear of those properties whose principal frontage is on some other street.

(b) Collector and Access Roadways – Collector and access roadways provide access to non-residential uses and connect lower order roadways to arterial roadways. Collector and access roadway ADT volumes will be higher than the lower order roadways. The following are the three classifications of collector roadways in the county:

1. Residential Collector – The residential collector is the lowest order roadway that can be classified as a collector. This classification provides direct access to

individual residential structures, but may give access to limited non-residential uses. For a development that exceeds fifty lots for all phases a primary external access road shall be classified as a residential collector. The County Engineer may designate any road as a residential collector if it is deemed to be the roadway bearing the bulk of the traffic.

2. Minor Collector – The minor collector connects residential developments to major collector roadways and arterial roadways. This classification of roadway provides direct access to limited commercial and industrial uses but does not provide direct access to individual dwelling units.

3. Major Collector – The major collector is the highest order roadway that can be classified as a collector. This classification of roadway connects major thoroughfares to concentrations of land uses such as the primary connection to a community, large residential development, neighborhood shopping center, or a public facility serving a local audience. Major collectors normally take access from other major collectors, minor arterials, and major arterials and give access to minor collectors and residential collectors. This classification of roadway provides direct access to commercial and industrial uses and does not provide direct access to individual dwelling units.

4. Access Roadway – An access roadway is a roadway parallel and adjacent to a collector or higher-level roadway, which provides access to abutting properties and separation from through traffic. It may be designed at the level of a local roadway with anticipated traffic volumes dictating its design.

(c) Arterial Roadways – Arterial roadways are signalized roadways that serve primarily through traffic and secondarily abutting properties. The following are the three classifications of arterial roadways in the county:

1. Minor Arterial – The minor arterial links community districts to state highways and may also give direct access to regionally significant land uses. The minor arterial normally takes access from other arterials or freeways and gives access to collector roadways.

2. Principal Arterial – The principal arterials are major highways providing links between communities. These roadways may take access from other arterials or freeways and may give access to any lower order non-residential roadway classification.

3. Freeways – Freeways are roadways that provide links between lower order roadways or with other freeways. Access to individual land uses is not permitted. These roadways may take and give access to other arterials or freeways.

Sec. 8-5. CIRCULATION DESIGN

(1) **Relation to Existing or Proposed Roadway System** – Where roadway extensions into adjacent undeveloped lands of a development are necessary to ensure a coordinated roadway system, provision for such future roadways shall be made as herein provided. Such provision shall also be encouraged with respect to adjacent undeveloped lands under separate ownership. Where a development abuts or contains an existing or proposed arterial or collector roadway, special treatment shall be required to provide separation of vehicular traffic from adjacent lots with such treatment including provision for marginal access roadways or additional lot depth and landscape buffering.

(2) **Arrangement of Continuing Roadways** – The arrangement of roadways within a development shall provide for the continuation of roadways classified as residential collectors at a minimum between adjacent properties when such continuation is necessary for the convenient movement of traffic, effective fire protection, efficient provision of utilities, or if such continuation is in accordance with the Future Transportation Functional Classification Map. Such roadways shall be extended to the boundary lines of the tract to be developed unless prevented by topography or other physical conditions or unless such extension is not necessary or desirable for the coordination of the design of the development, as determined by the Planning Director.

(3) **Interconnectivity of Developments** – To provide for inter-neighborhood traffic flow, all new developments shall provide for interconnectivity of the proposed transportation system with existing transportation systems. All proposed developments shall be designed in a manner that provides for access to existing developments. The design of a development shall allow for through streets at least every 2,000 feet along the periphery. Averaging may be utilized to provide flexibility in administering this standard. The through street spacing requirement shall be relaxed when the presence of an existing wetland or an existing development would prevent the placement of the connection at that location. In that event, the connection shall be placed outside the wetland boundary, or if the configuration of the wetland area or existing development practically prohibits through streets, then that connection may be eliminated. All street stubs shall be provided with a cul-de-sac that reaches the adjoining property line and is constructed at the same time that the other roads are constructed for a particular project or phase of a project. The restoration and extension of the street shall be the responsibility of any future developer of the abutting land unless physical constraints of the land prevent such connection.

(4) **Access to All Developments** – All developments shall have continuous paved access to a paved roadway that is maintained by the county or the State of Florida and shall not create a landlocked parcel, tract or lot. Where a proposed development does not immediately adjoin such a roadway, the developer shall be required to provide paved access from the development to a paved roadway that is maintained by the county or the State of Florida unless permitted otherwise by the Board.

(5) **Relation to the Comprehensive Plan** – All roadways shall be properly integrated with and related to existing and future population densities, land uses and transportation systems as depicted on the FLU Map and the Future Transportation Functional Classification Map.

Sec. 8-6. LOT LAYOUT

Lot arrangement and design shall be such that all lots provide satisfactory building sites appropriate for the type of development and use contemplated.

(1) **Frontage** – All lots shall front on a public or approved private roadway meeting the requirements of this Article. Where nonresidential lots have frontage upon or abut an arterial roadway, acceptable arrangements through the use of access roadways or double frontage lots shall be made to control ingress and egress. Developments proposing the creation of lots having double frontage shall be avoided except where essential for controlling and minimizing access between residential development and an arterial or collector roadway and/or railroad tracks.

The County may require non-access easements for lots having double frontage. Access points to parcels with frontage along two or more roadways shall be located on the roadway of lower functional classification unless it can be demonstrated in a traffic study submitted to the County that such access restrictions would present a safety hazard, would cause undue congestion or delay on adjacent road facilities, would cause environmental degradation, or would hinder adequate traffic circulation.

(2) **Lot Lines** – Where possible, lot lines shall intersect roadway rights-of-way and each other at right angles and in no case shall a lot have an interior angle of less than thirty degrees.

(3) **Remnants** – All odd pieces of land, lots or tracts shall be incorporated into adjoining full lots. If the development has an approved property owners' association, the property may be depicted as parkland or conservation area and shall be owned and maintained by the property owners" association.

(4) **Numbering** – Lot numbering shall be of a consecutive sequencing that follows a logical pattern.

(5) **Municipal Boundaries** – Lots shall not be designed in a manner that results in the division of a lot by a municipal or county boundary.

(6) **Adequate Building Area** – Each lot shall contain a building area outside the limits of any easement, right-of-way, setback, side yard, rear yard and front yard as defined in Article III of this code. In addition, each site shall provide for adequate drainage that will not impede or adversely impact the drainage of adjoining lots.

(7) **Lot Grading** – All lots shall be graded by the site contractor to within 0.5 feet of proposed grades. Side lot line slopes shall not be less than 1.0%.

(8) **Residential Driveways** –Single-family and duplex residential development driveway connections shall be limited to residential collectors and local roadways. Developments shall incorporate the design of the development into existing roadway systems to prevent residential driveway connections onto arterials and minor and major collector roadways.

Sec. 8-7. ROADWAY NAMES AND NUMBERING

(1) **Roadway Naming** – A new roadway that is an extension of an existing roadway shall bear the same name or number as the existing roadway. All street addressing shall be assigned exclusively by the county. The county shall have the authority to approve or reject any proposed roadway names. In no case shall a proposed roadway name duplicate or closely approximate an existing roadway name.

(2) **Roadway Identification Signs** – Roadway identification signs shall be erected prior to issuance of a final certificate of occupancy for a non-residential development and prior to a final inspection.

Sec. 8-8. SUBDIVISION NAMES

The county shall have the authority to approve or reject any proposed subdivision names. In no case shall a proposed subdivision name duplicate or closely approximate an existing subdivision name, of an existing unrecorded subdivision known to the engineering department, include an individual's full legal name or include a geographic or hydrologic reference to a known area located within the county. After the recording of a subdivision plat a development name can only be changed through replatting and recording under the new name.

Sec. 8-9. RIGHTS-OF-WAY AND EASEMENTS

The depiction of roadways, existing and proposed, on the Future Transportation Map of the Comprehensive Plan is imperative to the development of a county wide transportation system and the distribution of necessary underground services. To facilitate the creation of a transportation system and to provide for adequate land area for utilities, sidewalks, and/or pedestrian/bike paths, the following right-of-way dedication provisions shall apply to all developments.

(1) **Right-of-Way Width** – The minimum width of right-of-way for roadways, measured from lot line to lot line, shall be as set forth in this subsection, based upon the classification of the roadway as shown on the Future Transportation Map. If a roadway is not shown on the map, the right-of-way requirement shall be in accordance with the classification of the proposed roadway and the corresponding right-of-way width listed below. In cases where topography or other physical conditions make a roadway of the minimum required width impracticable, the County Engineer may require the modification, by not more than ten percent of the right-of-way requirement for a particular roadway. In no case shall the roadway widths be modified solely for the purpose of increasing the area of marketable land, or to accommodate a land use that might not otherwise be permitted.

Table 1. Right-of-Way Widths

Roadway Classification	R-O-W Width with Curb and Gutter	R-O-W Width without Curb and Gutter
Alley within Traditional Neighborhood Developments only (One Way)	24 feet	24 feet
Alley within Traditional Neighborhood Developments only (Two Way)	24 feet	24 feet
Local roadway	60 feet with 3' easements both sides	70 feet
Access roadway	60 feet with 3' easements both sides	70 feet
Residential collector	70 feet with 3' easements both sides	80 feet
Minor collector	100 feet	100 feet
Major collector	110 feet	110 feet
Minor arterial	100 feet	100 feet
Principal arterial	120 feet	120 feet
Freeway	400 feet	400 feet

Additional Right of Way may be required depending on the applicable design criteria (i.e. design speed/clear zones, landscaping, shared use path, drainage, excessive fill).

(2) Protection and Use of Right-of-Way and Easements

(a) Encroachment – No encroachment shall be permitted into an existing right-of-way or county easement except for temporary use and only upon authorization by the county.

(b) Utilities and Services Utilization – Use of the right-of-way and easements for public or private utilities, including, but not limited to, wastewater sewer, potable water, reclaimed water, storm water, telephone, cable television, gas lines, or electric lines, shall be allowed in accordance with applicable county policy and the adopted construction and technical specifications.

(3) Abandonment of Rights-of-Way and Easements – The board shall not be required to vacate or abandon any right-of-way or county easement. An application to vacate or abandon a right-of-way or county easement may be approved by the Board based upon a finding that the abandonment or release in no way affects the County's or any utility's rights, interests, or use.

Sec. 8-10. ACCESS MANAGEMENT

(1) Applicability – This section shall be applicable to all developments, but not to individual residential lots unless otherwise specifically provided.

(2) Site Impact Study – To ensure a development does not impose a safety hazard upon the existing transportation system or the traveling public, certain developments may be required to submit a site impact study prepared by an engineer registered in the State of Florida or an

individual certified through the American Institute of Certified Planners. The determination of the requirement for a site impact study will be made during the development review process.

(3) General Access Provisions

(a) Authority – The County shall have the authority to establish, control, and limit points of ingress and egress from county roadways to ensure the safety and efficiency of its roadway system. These standards are intended to implement Florida law. No facilities for ingress or egress to county roadways shall be constructed unless they comply with the standards set forth in this section unless otherwise authorized by the County Engineer.

(b) Non-Residential – Non-residential roadways and other access routes shall be planned in connection with the grouping of buildings, location of rail facilities, and the provision for loading and maneuvering areas, sidewalks and parking areas, to minimize conflicts of movement between the various types of traffic, including pedestrian traffic. Roadways providing access to non-residential developments shall be designed in a manner that does not create adverse impacts on existing or future residential developments. All points of access shall meet the minimum requirements of this section.

(c) Residential – All residential developments shall have at least one point of access onto a paved public roadway. Minor subdivisions may access paved or unpaved streets if the County Engineer or his/her designee determines that the infrastructure is sufficient to accommodate the new development. All existing but undeveloped lots shall require a permit for access connection. Existing undeveloped lots may be permitted on paved or unpaved streets. If the proposed access connection requires a drainage structure in order to obtain access to the property, a permit shall be required and the requirements of that permit shall be further identified in this Article. If a driveway connection is off an urban or curbed roadway, the Department of Development Services shall exempt the applicant from the permit requirements. If an access connection exists on the property, the Department of Development Services shall issue an existing driveway permit. The Department of Engineering and Public Works shall evaluate the existing driveway to determine whether or not a safety or drainage upgrade will be required. If it is determined that the existing driveway does not meet acceptable standards, the applicant shall be required to submit a full driveway permit for evaluation.

(4) Driveway Design

(a) Grades – Driveway grades shall conform to the applicable requirements set forth in the FDOT's "Roadway and Traffic Design Standards".

(b) Approaches – Driveway approaches must be designed and located to provide an existing vehicle with an unobstructed view. Proposed connections shall have no fences, walls, hedges, or other obstacles that will obstruct vision between a height of

two and one half feet and ten feet above the centerline grade of the intersecting driveway. Clear sight triangles must conform with the requirements in Article I.

(c) Accessing into Auxiliary Lanes – Construction of driveways within auxiliary lanes and tapers shall be prohibited except by approval of the County Engineer, and only after submission of a site impact study pursuant to the requirements of subsection (2) that clearly justifies the need for the driveway at the proposed location.

(d) Width, Flare or Radius – Driveway width, flare and radius shall be adequate to serve the volume of traffic and provide for rapid movement of vehicles entering and exiting the roadway, but shall not be so excessive as to pose safety hazards for pedestrians, bicycles, or other vehicles. The following standards shall be applicable to all developments in the unincorporated area of the county:

1. Driveway Width – All driveway widths shall be in accordance with the following requirements:

   a. All one-way driveways shall have a minimum width of sixteen feet and shall have appropriate signage designating the driveway as a one-way connection.
   b. All two-way driveways shall have a minimum width of twelve feet per lane.
   c. Driveways that access onto designated arterials or minor and major collectors at traffic signals shall have a minimum width of three lanes. The design of the three lanes shall be such that two of the lanes are outbound, one for each turning direction with a minimum width of twenty-four feet, and the third lane is inbound with a minimum width of twelve feet.

2. All flares shall have a minimum width of ten feet on urban sections.

3. All return radii shall be a minimum of thirty feet and shall not exceed seventy-five feet for all roadway types.

4. All divisional driveway islands shall be a minimum of four feet in width.

5. The length of driveways or "Throat Length" as used in the table below shall be designed in accordance with the anticipated storage length for entering and exiting vehicles to prevent vehicles from backing into the flow of traffic on the public street or causing unsafe conflicts with on-site circulation. All non-residential developments in excess of thirty thousand square feet of gross floor area, and all multifamily developments, shall be required to have a minimum of one driveway storage lane that does not permit parking and does not allow direct access onto any part of the required length. Additional driveway storage lanes and applicable throat lengths shall be determined and located on the site impact study required for the development, which study shall consider the number of driveway access sites and the anticipated trip distribution to the site.

All development shall comply with the following storage lane requirements:

Table 2. Throat Lengths

Gross Square Footage	Throat Length
30,000 to 49,999	60 feet
50,000 to 74,999	90 feet
75,000 to 99,999	120 feet
100,000 or greater	15 feet for every 10,000 square feet of space

(e) Number of Driveway Connections and Spacing – Driveway widths, spacing, radii, and minimum angles for residential and commercial driveways shall be based on the following guidelines:

1. The maximum number of driveways allowed for projects other than single family residential units shall be as follows:

   a. Non-residential property and multifamily with two hundred feet of frontage or less shall have one driveway.
   b. Non-residential property and multifamily with more than two hundred feet of frontage shall have two driveways. Developments shall not be allowed more than two driveways on a single frontage without a site impact study that demonstrates the necessity for additional driveways and the approval of the County Engineer. Two one-way driveways shall equate to one driveway for the purposes of this requirement.

2. Single-family residential units shall generally be limited to one driveway. Circular driveways with two connections shall be permitted with a minimum 100-foot of frontage. Single-family residential driveway connections shall be restricted to local roads unless otherwise approved by the County Engineer. Planned developments shall incorporate design of the roadway systems to alleviate residential driveway connections to arterials and major and minor collectors.

3. Where driveways are constructed within the limits of existing curb and gutter construction, the existing curb and gutter shall be removed either to the nearest joints or to the extent that no remaining section is less than five feet long. If the curb is not removed to the nearest joint, the curb will be cleanly cut with a concrete saw. Driveway material type should conform to the original construction on a section unless otherwise specifically approved on the permit.

(f) Alignment / Offset

1. Non-residential (including commercial, office, industrial and multi-family residential) driveway connections shall align with other driveways on the opposite side of undivided roadways classified as local roads or minor

collectors, or shall be offset a minimum of 150 feet. Offset requirements may be increased where auxiliary lanes are required.

2. The location of non-residential driveways should be compatible with the internal movement of traffic and the planned parking layout. The location of the driveway connection shall never allow vehicles to back across the throat of a driveway or back into the "through" travel lane.

(g) Corner Clearance

1. Standard – Corner clearance for all non-residential driveway connections shall be a minimum of 200 feet from all roadway intersections measured from the right-of-way line to the centerline of the driveway. Where widening, relocation, or other improvement to a road are depicted on the Future Transportation Functional Classification Map and required funds have been allocated in the five-year Capital Improvements Plan or the five-year FDOT Work Program, the projected future right-of-way of an intersecting road shall be used in measuring corner clearance. Residential connections shall be set ten feet beyond the point of curve from the intersection curve-out.

2. Intersections – New connections shall not be permitted within the functional area of an intersection or interchange as defined by the connection spacing standards of this code.

3. Exception – Where no other reasonable access to the property is available and it is demonstrated that suitable joint access driveways or cross access driveway easements cannot be obtained, the county may allow construction of a driveway along the property line farthest from the intersection if justified under a site impact study submitted pursuant to the requirements of subsection 2 above. The site impact study must indicate conclusively that the driveway shall not create a safety or operational hazard or dysfunction. If the driveway is permitted, the County Engineer shall have the authority to limit the same to a directional connection such as right-in/right-out, right-in only or right-out only.

All developments shall be required to comply with the minimum connection spacing requirements as specified in the following table:

Table 3. Minimum Connection Spacing Requirements

Functional Class	Medians	Connection Spacing (feet)		Median Opening Spacing (feet)		Signal Spacing (feet)
		>45 mph	<45 mph	Directional	Full	
Arterials	Restrictive	660	440	1,320	2,640	2,640
	Non-Restrictive	660	440	NA	NA	2,640
Collectors	Restrictive	440	245	660	2,640/ 1,320	1,320
	Non-Restrictive	440	245	NA	NA	1,320

Table Terms: As used in Table 3, the term "Restrictive" shall describe a median that physically prevents vehicle crossings and "Non-Restrictive" shall describe a median that allows vehicle turns at any point.

(h) Residential Non-Curbed Driveway Requirements - In addition to the requirements within this Article a residential non-curbed driveway shall include a drainage pipe or structure compliant with this Article and the FDOT Standards and shall be subject to the following:

1. The elevations, diameter and material of the pipe shall be determined by the Department of Engineering and Public Works, consistent with the specifications outlined in this Article.
2. All access culvert pipes shall terminate with a mitered end section and concrete poured in place collars and turndowns meeting FDOT Design Standards, Index Detail 272.
3. The Department of Engineering and Public Works shall inspect the access connection for conformity with the regulations defined herein and shall re-inspect the conditions as warranted to ensure compliance. A fee, as determined by the BCC, shall be paid for each inspection.
4. The Department of Engineering and Public Works may authorize a tolerance for elevations if it is determined that the exiting or proposed elevation will be acceptable for drainage and will not impact any downstream activities.
5. Fees for driveway and connection permits shall be set by the BCC in a separate fee resolution. The applicant shall, at a minimum, pay an initial fee for the permit and any subsequent inspection.
6. If the access is off a paved roadway, the applicant shall pave the proposed driveway, at a minimum, from the edge of the paved surface to the right-of-way line.

7. If pavement markings or signage is required, they shall conform to the Manual of Uniform Traffic Control Devices (MUTCD), latest edition.
8. As of June 12, 2018, once the driveway has been permitted inspected and approved by Clay County, Clay County will assume maintenance responsibility for the drainage pipe or structure installed under the driveway in the right of way; however, the property owner shall remain responsible for all maintenance obligations for upkeep and replacement of the driveway. Replacement shall constitute a new application for a driveway permit.

(i) Non-Residential Driveways - All Major and Minor developments shall have the access permitted during the development review process outlined in Article II of the Clay County Land Development Code. The size, installation, type and other requirements shall be in accordance with this Article. In the event that a commercial property is undeveloped, but requires access, the applicant shall apply for a permit. If the access connection is located on an urbanized (curbed) section of roadway, the driveway design shall be in accordance with this Article and FDOT Standards. If the access connection is located on a rural (ditch) designed roadway a permit shall be required in accordance with this Article and FDOT Standards and subject to the following:

1. The elevations, diameter, and material of the pipe shall be determined by a licensed professional engineer and by the Engineering Division.
2. All access culvert pipes shall terminate with a mitered end section and concrete poured in place collar with turndown meeting FDOT Standard Index Detail 272.
3. The Engineering Division shall inspect the access connection for conformity with the regulations defined herein and shall re-inspect the conditions as warranted to ensure compliance. A fee, as determined by the BCC, shall be paid for each inspection.
4. The Engineering Division may authorize a tolerance for elevations if it is determined that the exiting or proposed elevation will be acceptable for drainage and will not impact any downstream activities.
5. Fees for driveway and connection permits shall be set by the BCC in a separate fee resolution. The applicant shall, at a minimum, pay an initial fee for the permit and any subsequent inspection.
6. If the access is off a paved roadway, the applicant shall pave the proposed driveway, at a minimum, from the edge of the paved surface to the right-of way line.
7. If pavement markings or signage is required, they shall conform to the Manual of Uniform Traffic Control Devices (MUTCD), latest edition.
8. As of June 12, 2018, once the driveway has been permitted inspected and approved by Clay County, Clay County will assume maintenance responsibility for the drainage pipe or structure installed under the driveway in the right of way; however, the property owner shall remain responsible

for all maintenance obligations for upkeep and replacement of the driveway. Replacement shall constitute a new application for a driveway permit.

(j) Driveway Upgrades- For both residential and non-residential properties, if it is determined when a new building permit is required for the reconstruction of a primary residential dwelling or a change in use, site modification, minor development review, or major development review for nonresidential, the applicant/ owner shall be responsible for modifying or replacing the existing driveway to meet the standards within this Article and the FDOT Standards. A permit shall be required and follow the procedures as outlined in Section 4 (h)(i) of this Article. Any permit for accessory buildings or building additions that do not exceed 50% of the size of the current structure for residential properties shall not require a driveway upgrade. Any non-residential permit that does not exceed a cost of $25,000.00 shall also be exempted.

(5) Median Access Points – Median access points on arterial roadways shall be allowed only at intersections of other arterial roadways, collector roadways or any other roadway for which a site impact study provides a compelling justification. Auxiliary lanes may be required by the County Engineer if reasonably necessary to promote safety or to preserve and promote the function of the roadway.

(6) Nonconforming Access Connections

(a) Permitted access connections in place on the date of adoption of this code that do not conform with the standards established herein shall be deemed nonconforming and shall be brought into compliance with the applicable standards of this section under the following conditions:

1. When a new driveway connection permit is requested for the related development;
2. When substantial enlargements or improvements to the related development are undertaken; or,
3. When significant changes in trip generations attributable to the related development are documented.
4. If the principal activity on property with any nonconforming access driveways is discontinued for a consecutive period of 365 days.

Sec. 8-11. ROADWAY DESIGN AND IMPROVEMENTS

The design policies of AASHTO shall be applied in the design of all roadways unless superseded by the FDOT or otherwise approved by the County Engineer. Paving standards and requirements are established under this section for the purpose of ensuring that suitable roadway improvements are provided to adequately serve developments and developing areas. All developments utilizing or abutting unpaved roadways shall be required to provide for paving of such, as specified in this section.

(1) Unpaved Public or Private Roadway Access – All proposed developments for which access

shall be provided by an unpaved public or private roadway, shall cause the paving of such roadways from the point of access to the nearest paved public roadway, unless exempted herein.

(2) **Paved Access Exemption** – Upon request, the County Engineer shall review a proposed development to determine if it may be exempted from the requirements established in this Article for paved access. In order for a development to be exempted from the paved access requirements, the developer shall submit sufficient plans and documentation certifying that the criteria established in this section is and will continue to be satisfied throughout the use and operation of the development. A non-residential development may be exempted from the paving requirements of this section if either of the following criteria are satisfied:

(a) The proposed development is either an accessory use to an existing use or a modification of an existing use;

(b) The proposed access is existing or is legally recorded through easement, deed, or tract prior to the adoption of this Article. This exemption shall only apply to the creation of three or less lots from a parent tract of land or a subdivision plat.

(3) **Proposed Roadways** – Every major development, planned development, and development of regional impact shall be required to construct all proposed roadways depicted on its approved plan of development. The roadways shall be constructed in accordance with the provisions established in this Article.

(4) **Temporary Cul-de-sacs** – If the property adjacent to a development is undeveloped and a planned roadway is to be continued when the adjacent property is developed or a roadway is part of a phased development and completion is not planned in an approved phase, the roadway shall be terminated with a temporary cul-de-sac with the right-of-way being extended to the property line of the approved phase. A temporary cul-de-sac shall have a minimum diameter of eighty feet and shall be paved. Upon initiation of development of property that adjoins a temporary cul-de-sac, it shall be the responsibility of the development accessing the existing temporary cul-de-sac to remove it and redesign and construct the roadway to the adopted standard.

(5) **Cul-de-sac** – Where a roadway is not proposed for extension beyond the boundary of a development and its continuation is not required for access to adjoining property, the roadway shall terminate with a cul-de-sac at least twenty feet from the development's boundary. A cul-de-sac shall terminate a dead end roadway with right-of-way of a minimum diameter of 100 feet and a paved turn around with a minimum diameter of 80 feet. If a proposed development has a dead-end roadway longer than 1,500 feet, a cul-de-sac having a right-of-way with a minimum diameter of 118 feet and a minimum paved diameter of one hundred feet shall be required.

(6) **Block** – Block configuration within a development is essentially determined by roadway layout; hence, it must provide safe and efficient vehicular and pedestrian circulation.

(a) Length – Blocks shall not be less than three hundred feet or more than fifteen hundred

feet in length, measured centerline to centerline of a roadway except that cul-de-sac blocks may be not more than fifteen hundred feet in length. For blocks exceeding 750 feet in length, a ten-foot pedestrian crossing to allow pedestrian access to existing or proposed schools, local shopping centers, and parks may be required.

(b) Width – Blocks shall be wide enough to allow two rows of lots, except where lots abut directly upon a property line, expressway, arterial or collector roadway, lake, waterway, or a land use other than residential. In instances of double frontage, one frontage shall be restricted by a non-access easement to prohibit motor vehicle access. In no instance will double frontage lots be permitted to have access from both frontages.

(c) Numbering – All blocks shall be numbered in consecutive order. Block numbering in subsequent units of the development shall be a continuation of the previously established numbering system, if practical.

(7) Intersections

(a) Angles – All roadways shall be laid out so as to intersect, as nearly as possible, at right angles with each other. An intersection at an angle of less than seventy-five degrees shall not be permitted. An oblique roadway shall be curved approaching an intersection and shall be at a right angle for at least one hundred feet, measured from edge of pavement or back of curb, prior to the intersection. No more than two roadways shall intersect at any one point.

(b) Grades – Intersections shall be designed with a flat grade wherever practical. In hilly or rolling areas, at the approach to an intersection, a leveling area shall be provided.

(c) Radius – Right-of-way radii at roadway intersections involving arterial or collector roadways shall not be less than fifty feet with all other intersections having a right-of-way radii of not less than thirty feet. Alley intersections and abrupt changes in alignment within a block shall have the corners cut off in accordance with accepted engineering practice to permit safe vehicular movement. The minimum radii for edge of pavement, or equivalent three-center curves, at intersections shall be:

Table 4. Right-of-Way Radii Requirements

Interior Angle	Local/Residential	Collector
90 degrees	30 feet	50 feet
105 degrees	35 feet	60 feet
120 degrees	45 feet	70 feet
135 degrees	60 feet	90 feet
150 degrees	120 feet	150 feet

Right-of-way at intersections of traditional neighborhood developments shall be rounded and correlate with the reduced pavement radii where additional design elements have been included to ensure the safety of pedestrians and the accessibility of fire and other service vehicles.

(d) Minimum Curb Return Radii at Intersections – Minimum edge of pavement radius of returns shall be based on the "Manual of Uniform Minimum Standards for Design, Construction, and Maintenance for Street and Highways" requirement for the type vehicle predominant to the industry considered. The point of measurement for these radii shall be the back of the curb for gutter sections and the edge of the pavement for the non-guttered sections. The following are minimum requirements:

Table 5. Minimum Curb Return Radii at Intersections Requirements

Roadway Classification	Minimum Radii[1]
Local road or alley within Traditional Neighborhood Developments only	15-30 feet[2]
Local roadway	30 feet
Access roadway	30 feet
Residential collector	35 feet
Minor or major collector	40 feet
Minor or principal arterial	50 feet

[1]Minimum edge of pavement radius of returns shall be based on American Association of State Highway and Transportation Officials (AASHTO) requirement for the type vehicle predominant to the industry considered.

[2]Less than 30 feet shall require additional design elements that ensure the safety of pedestrians and the accessibility of fire and other service vehicles.

(8) Divided Roadways – For the purpose of protecting environmental features or avoiding excessive grading, the county may allow or can require that a proposed roadway be divided. Minimum land widths shall be in accordance with this Article.

(9) Reserve Strips – Reserve strips controlling access to roadways or utility easements shall be prohibited.

(10) Auxiliary Lanes

(a) Auxiliary turn lanes shall be required where safety and capacity considerations warrant their use for vehicle deceleration and storage. The provision of auxiliary lanes shall be required under the following conditions unless a site impact study can demonstrate that safety hazards or capacity deficiencies will not exist. Auxiliary turn lanes shall be required at connections to all major and minor collectors under the following criteria:

1. Collector roads with posted speed limits of thirty-five mph or greater:

a. Right Turn Lane*

i. Development will generate 250 vehicles per day (vpd) on the intersecting roadway or driveway connection; or,

ii. Gross floor area of non-residential development is 25,000 square feet; or,
iii. Development will generate five semi trailer truck (WB-40 or larger) trips per day.

b. Left Turn Lane
i. Development will generate five hundred vpd on the intersecting roadway or driveway connection; or,
ii. Gross floor area of non-residential development is fifty-thousand square feet; or,
iii. Development will generate ten semi trailer truck (WB40 or larger) trips per day.

2. Collector roads with posted speed limits of thirty mph or less:

a. Right Turn Lane*
i. Development will generate five hundred vpd on the intersecting roadway or driveway connection; or,
ii. Gross floor area of non-residential is fifty-thousand square feet; or,
iii. Development will generate five semi trailer truck (WB40 or larger) trips per day.

b. Left Turn Lane
i. Development will generate one-thousand vpd on the intersecting roadway or driveway connection; or,
ii. Gross floor area of non-residential development is 100,000 square feet; or,
iii. Development will generate ten semi trailer truck (WB40 or larger) trips per day.

*In lieu of a right turn lane, the County Engineer may authorize the use of an increased turning radius.

(b) The geometric design of the auxiliary lanes shall be in accordance with FDOT's "Manual of Uniform Standards for Design, Construction and Maintenance for Streets and Highways". The construction of auxiliary lanes shall meet other provisions of this Article. Pavement design requirements of the auxiliary lanes, including stabilized subbase, base course, and surface course, shall be the same as the requirements of the adjacent roadway travel lane. The entire width of the road surface must be overlaid for the total length of the auxiliary lanes with a surface course of similar type as the adjacent roadway sections.

(11) **Minimum Lane Widths and Number of Lanes** – Except within the Branan Field Corridor and the Greater Lake Asbury District, the following minimum lane widths and number of lanes shall be required for all roadways, public or private, in the county:

Table 6. Minimum Lane Widths and Number of Lane Requirements

Roadway Classification	Outside Lane (Urban)	Outside Lane (Rural)	All Others Lanes	Number of Lanes
Alley within Traditional Neighborhood Developments only (One Way)	12 feet	-	-	1 maximum
Alley within Traditional Neighborhood Developments only (Two Way)	18 feet	-	-	2 maximum
Local under 1,500 ADT or Access roadway	12 feet	12 feet	12 feet	2 maximum
Local over 1,500 ADT	15 feet	15 feet	12 feet	3 maximum
Residential collector	16 feet [1,2]	16 feet [1,3]	12 feet	3 maximum
Minor collector	16 feet [1,2]	17 feet [1,3]	12 feet	2 minimum
Major collector	16 feet [1,2]	17 feet [1,3]	12 feet	4 minimum
Minor arterial	16 feet [1,2]	17 feet [1,3]	12 feet	2 minimum
Principal arterial	16 feet [1,2]	17 feet [1,3]	12 feet	4 minimum
Freeway	12 feet	12 feet	12 feet	4 minimum

[1]In areas where right-of-way width constraints are presented, consideration shall be given to reducing travel lane widths to eleven feet to still allow for the designated bicycle lanes. The lack of adequate right-of-way width and the cost associated with its acquisition in built up areas may not allow provision of the additional width for bicyclists on all projects. The inclusion of designated bicycle lanes in roadway improvements shall be reviewed on a case-by-case basis and only under extreme right-of-way width constraints should designated bicycle lanes be excluded from a project.

[2]In an urban profile, the outside lanes of major arterial, minor arterial and collector roadways shall include four foot wide designated bicycle lanes.

[3]In a rural profile, the outside lanes of major arterial, minor and collector roadways shall include five foot wide designated bicycle lanes.

(12) **Public and Private Roadways** – All roadways, public or private, shall be designed and constructed in accordance with the requirements. All public roadways shall be dedicated to the county upon completion, inspection and acceptance by the county. Private roadways shall be permitted only in planned developments where provisions have been made for the roadways to remain under common ownership of a property owners' association within the development that has the responsibility for maintenance of the roadways and the power to levy mandatory assessments to fund the cost thereof.

(13) **Urban (Guttered)** –Roadways in the county shall be designed as an urban section unless another roadway design is specifically authorized by the County Engineer or as provided in paragraphs (14) and (15) below.

(a) Roadway Gradient – The minimum longitudinal gradient for an urban section of roadway shall be 0.4%.

(b) Graded Right-of-Way – The roadway right-of-way for an urban section of roadway shall be graded to accommodate sidewalks and driveways in conformance with the adopted standard details.

(c) Concrete Construction Details – All details of curb, gutter and sidewalks shall conform to FDOT Design Standards. Any deviation from the adopted details and specifications will be allowed only with written approval from the County Engineer. All materials and installation shall conform to FDOT's "Standard Specifications for Road and Bridge Construction."

(d) Storm Sewer – Storm sewers shall be constructed according to FDOT's "Standard Specifications for Road and Bridge Construction." The only approved material used for storm sewer within the right-of-way shall be reinforced concrete or polypropylene pipe.

(e) Sod in Medians – All medians are to be sodded.

(14) **Rural** – Rural section roadways shall be permitted only outside the CWSSA and only, in the case of residential development, if the same has a minimum lot size that is larger than .5 acres. If a development proposes the use of rural section roadways, a geotechnical and water table certification report shall be required to determine the extent of required subsurface improvements and the removal of any unsuitable materials. All right-of-way other than paved areas shall be sodded. A paved shoulder a minimum of four feet in width shall be required on each side of the roadway.

(15) **Suburban** – Suburban section roadways shall be permitted in the Lake Asbury Master Plan (LAMP) on those roads designated as Dashed Line Roads on the LAMP Future Land Use Map (Exhibit M to the Clay County Comprehensive Plan) and for which a future four lane improvement is identified by the County. Said suburban sections shall be designed for the ultimate four lane section and may be constructed as two lanes in the initial phase and shall include a curbed median in the initial phase.

(a) Graded Right-of-Way – The roadway right-of-way for a suburban section of roadway shall be graded to accommodate sidewalks and driveways in conformance with the adopted standard details.

(b) Concrete Construction Details – All details of curb and gutter and sidewalks shall conform to FDOT Design Standards. Any deviation from the adopted details and

specifications will be allowed only with written approval from the County Engineer. All materials and installation shall conform to FDOT's "Standard Specifications for Road and Bridge Construction."

(c) Drainage – Drainage shall be provided within the right of way, with typical slope of 1:6 and a maximum slope of 1:4. Design shall be governed by paragraph (10) Roadway Ditches of Section 8-15 of this article.

(d) Sod in Medians –Medians are to be sodded.

(e) All right-of-way other than paved areas shall be sodded.

(f) A paved shoulder a minimum of four feet in width shall be required on each side of the roadway.

(16) **Roadway Grades** – Grades on arterial and major collector roadways shall not exceed six percent and grades on all other roadways shall not exceed twelve percent.

(17) **Vertical and Horizontal Alignment** – The following provisions for vertical and horizontal alignment shall be applicable to all roadways, public or private:

(a) Vertical Alignment

1. Change in Grade – Vertical curves shall be required where the algebraic difference in vertical intersection grades equals or exceeds one percent.

2. Vertical Curves – All vertical curves, sag and crest, shall be of sufficient length to provide a safe sight distance compatible with the design speed of the roadway and in no case shall be less than one hundred feet, except in an area where traffic is required to stop.

(b) Horizontal Alignment – Where a deflection angle occurs in the alignment of a roadway, a horizontal curve shall be provided based on the roadway classification and shall meet minimum requirements of the applicable national and/or state standards.

(18) **Concrete Requirements**

(a) Portland Cement Concrete

1. Minimum Requirements – Use concrete composed of a mixture of portland cement, aggregate, water, and, where specified, admixtures, pozzolan and ground granulated blast furnace slag. Deliver the Portland cement concrete to the site of placement in a freshly mixed, unhardened state. All materials, placement, testing and finishing shall comply with the latest FDOT standards.

2. Curing – Cure all non-prestressed concrete as required herein for minimum duration of 72 hours. If forms are loosened or removed before the 72 hour curing

period is complete, expand the curing to cover these surfaces by either coating with curing compound or extending the continuous moist cure area.

3. Repairs

   a. Curbing – Damaged curb shall be removed and replaced at a minimum of 5 foot sections unless otherwise approved by the County.
   b. Sidewalk – Damaged sidewalk shall be removed and replaced from joint to joint unless approved by the County.

(19) <u>Asphalt Pavement Requirements</u>

(b) Subbase

1. Minimum requirement – All roadway subbases shall be firm and unyielding and shall have, at a minimum, a compacted stabilized depth of twelve inches, and a Limerock Bearing Ratio (LBR) of forty with no undertolerance. The subbase shall be road mixed with a roadway mixer and compacted to a minimum of ninety-eight percent density modified proctor. Where the existing soils are to be used in the roadway and the subbase has the required bearing value, no additional stabilizing material need be added or mixed in.

2. Stabilizing Materials – The stabilizing materials, if any is required, shall be high-bearing value soil, sand, clay, limerock, or other material approved by the County Engineer.

3. Testing – Tests for the subbase bearing capacity and compaction shall be taken no greater than two hundred feet apart and shall be staggered to the left, right, and on the centerline of the roadway. When, in the judgment of the County Engineer, conditions warrant additional testing to assure compliance with the specifications, additional testing may be required at no additional cost to the county.

4. All unsuitable material shall be removed a minimum of two feet, below the finished subbase and two feet beyond the back of curb and replaced with A-3 free-draining material.

(b) <u>Base Course</u>

1. Requirements – Structural base course material and construction practices shall conform to FDOT Standards unless otherwise approved by the County Engineer. The base course shall meet the following depths based upon roadway classification:

   a. Major Collectors ..... FDOT Optional Base Group 9
   b. Minor and Residential Collectors ..... FDOT Optional Base Group 6
   c. All others ..... FDOT Optional Base Group 4

2. Materials and Construction – Limerock and sand-clay, with a plastic index (P.I.) of less than six or liquid limit (L.L.) of less than ten, shall conform to FDOT's "Standard Specifications for Road and Bridge Construction", latest edition, for base course materials, including and shall be installed using the construction methods prescribed therein, or other materials approved by the County Engineer. Alternative base course materials may be substituted for limerock with the approval of the County Engineer if such materials meet the same standards as are provided herein.

3. Prime and Tack Coats – All bases shall be primed in accordance with FDOT's "Standard Specifications for Road and Bridge Construction", latest edition. Tack coat will not be required on primed bases except on areas that have become excessively dirty and cannot be cleaned, or in areas where the prime has cured and lost all bonding effect. All tack and primecoat material and construction methods shall conform to FDOT's "Standard Specifications for Road and Bridge Construction", latest edition.

4. Testing – Tests for base thickness and compaction shall be taken not greater than two hundred feet apart and shall be staggered to the left, right, and on the centerline of the roadway. When, in the judgment of the County Engineer, conditions warrant additional testing to assure compliance with the specifications, additional testing will be provided by the developer at no additional cost to the county.

(c) Structural Courses for Flexible Pavements

1. Requirements – Structural course materials and construction practices shall conform to FDOT Standard Specifications. The structural course shall meet the following depths based upon roadway classifications:

   a. Minor and Residential Collectors ..... 2.5 inches
   b. All Other Roadway Classifications ..... 2 inches*

   *Placed in two, separate 1-inch lifts

   For Arterials and Major Collectors roadway classifications, a pavement design shall be provided by a licensed professional engineer for the specific roadway segment under design.

2. A friction course will be placed on all roads with a design speed of 35 mph or higher, except for low volume two lane roads having a five year projected Average Annual Daily Traffic (AADT) from the opening year of 3000 vehicles per day or less.

3. Materials and Construction – Asphaltic concrete mixes and prime and tack coats

shall conform to FDOT's "Standard Specifications for Road and Bridge Construction", latest edition, for materials and methods of construction. All asphalt is to be laid one-quarter inch above the lip of the curb in urban section. Asphalt shall be furnished by an FDOT certified plant.

4. For residential developments, the County requires a two-lift pavement system with regard to application of the Wearing Surface. This requirement is to prevent unnecessary damage on newly constructed roadways. Temporary access for construction traffic shall be provided to each phase of a development project in such a manner as to prohibit construction traffic on any phase until after the application of the second lift of asphalt has been completed in all phases.

(20) **Installation of Traffic Control Devices** – The developer shall install all necessary roadway signs and traffic signalization as may be required by the county, based upon county or state traffic standards. At least two roadway name signs shall be placed at each four-way road intersection, and one at each "T" intersection. The County Engineer shall have the authority to modify this requirement in order to optimize visibility and minimize clutter.

(21) **Design of Traffic Control Devices** – The design of traffic control devices shall be in conformance with the "Manual of Uniform Traffic Control Devices," the latest edition of the FDOT Supplemental Specifications to the "Standard Specifications for Road and Bridge Construction", FDOT's "Roadway and Traffic Design Standards", current edition and the latest edition of the "Manual of Uniform Standards for Design, Construction and Maintenance for Streets and Highways."

(22) **Traffic Signs and Pavement Markings** – All traffic signs and pavement markings shall comply with the FDOT standards for sign face reflectivity and shall comply with the standard specifications of the Clay County Traffic Operations Division. All signs and pavement marking shall conform with the requirements of the "Manual on Uniform Traffic Control Devices" with respect to site, materials, construction and location; provided, if not addressed therein, that the County Engineer shall establish the requirement.

(23) **Benchmark Placement**

All public and private roadways within the county shall have benchmarks placed every one thousand feet to facilitate the surveying of lots. Benchmark locations shall be identified with location information on as-built survey.

Sec. 8-12. PARKING REQUIREMENTS

(1) **Intent** – The intent of this section is to ensure that an adequate number of parking spaces are provided for all uses. The provision of adequate parking creates a benefit to the private property owner by providing a stable, secure area for customer and/or visitor parking, and helps prevent vehicular encroachments and trespass onto adjacent properties.

(2) **Applicability –** Parking facilities shall be provided and maintained for all developments within the county pursuant to the requirements of this section. These standards shall apply to all new

developments, and to modifications and additions to existing developments.

(3) General Provisions

(a) Except as provided herein, all required parking spaces and the use they are intended to serve shall be located on the same parcel.

(b) For multiple use buildings, each use shall be considered separately when calculating required parking.

(c) For mixed-use developments, a shared parking approach to the provision of parking may be permitted. Minimum parking requirements will be reduced to a percentage that is equivalent to the percentage reduction in single group use. For example, when calculating required parking for a development that is 75% weekday peak uses and 25% evening peak uses, minimum parking requirements for the weekday peak uses would be 75% of the normal required minimum, and minimum parking for the evening peak uses would be 25% of the normal required minimum. Parking areas may not be separated from uses by roads with a higher classification than minor collector, and a clear system of pedestrian corridors and directional signage shall connect parking areas with uses. Eligible uses are described in the following table.

Weekday Peak Uses	Evening Peak Uses	Weekend Uses
Banks	Restaurants *	Places of worship
Schools	Theaters	Retail and service uses *
Distribution facilities	Bars and nightclubs	
Industrial uses	Lodges and clubs	
Medical clinics and offices		
Professional offices		
Professional services		

* parking reduction may not exceed half of the maximum allowable reduction.

(d) All parking areas shall be paved unless specifically exempted elsewhere in this code and shall be oriented to and within a reasonable walking distance of the buildings or facilities they are designed to serve. Alternative parking area improvement standards may be accepted if it is demonstrated that such standards better reflect local development conditions and use as approved by the County Engineer.

(e) All developments with drive-through windows shall provide adequate vehicle storage area for queuing outside the road right-of-way.

(f) Access to parking areas shall be designed in a manner that does not obstruct free flow of traffic. Adequate provisions for ingress and egress from all parking spaces shall be provided to ensure ease of mobility, ample clearance, and safety of vehicles and pedestrians.

(g) Parking space shall be measured from the edge of the pavement to the top of the space

on the same angle as the stripe. The width of the space shall be measured from the center of a stripe to the center of the next stripe. The measurement shall be taken perpendicular to the stripes.

(h) Requirements for parking and loading for uses not specifically mentioned in this Article shall be the same as provided for the use most similar to the one sought, it being the intent of this Article to require all uses to provide parking and loading areas.

(4) Existing Uses

(a) Conforming buildings and uses existing as of the adoption of this Article may be modernized, altered or repaired without providing additional paved parking or loading facilities if there is no change in use and/or increase in area or capacity.

(b) Where a conforming building or use existed as of the adoption of this Article and the building or use is enlarged in floor area, volume, capacity or space occupied, parking or loading spaces shall be provided as specified in this Article based on the additional floor area, volume, capacity or space so created or used. All parking or loading spaces actually existing on site as of the adoption of this Article shall be maintained and additional required spaces shall be provided for the enlargement, except where the total of the existing spaces and new spaces exceeds the number which are required in this Article for the existing building or use and the enlargement combined.

(c) A change in the use of a conforming or nonconforming building shall be required to comply with the paved loading requirements of this section.

(5) Parking Standards

(a) Computation of Required Parking and Loading – Parking space requirements for each development shall be computed by applying the rate established for the proposed use in this section to the gross floor area of all buildings for the overall development unless otherwise specified herein.

1. Fractional Space – When a determination of the number of required parking spaces results in a fractional space, the fraction shall be rounded up to the next whole number.

2. Multiple Uses – When multiple uses in discrete building units are proposed in a development, the parking requirement shall be the sum of the parking required for the discrete units or areas.

3. Gross Floor Area – Gross floor area shall be the sum of the gross horizontal area of all floors or a building measured from the exterior faces of the exterior walls.

(b) Parking spaces shall be provided in accordance with Appendix A.

(c) Off-Street Parking – Unless on-street parking is permitted by the Code, all developments shall provide off-street parking. The following general design criteria apply to off-street parking:

1. A combination of one-car garage (or carport) and driveway shall count as two off-street parking spaces, provided the driveway measures a minimum of twenty-five feet in length between the face of the garage or carport door and the lot line or any access easement boundary. A combination of two-car garage (or carport) and driveway shall count as two off-street parking spaces, provided the minimum width of the driveway is twenty feet and its minimum length is as specified above for a one-car garage or carport.

2. No non-residential or non-fee simple multifamily use will be permitted to have parking spaces that require vehicles to back directly onto a public roadway.

3. Pedestrian circulation facilities, roadways, driveways, and off-street parking and loading facilities shall be designed to be safe and convenient.

4. Buildings, parking, and loading areas, landscaping, and open spaces shall be designed so that pedestrians moving from parking areas to buildings and between buildings to have limited exposure to vehicular traffic.

5. Parking areas shall have no driveway aisle(s) with dead ends.

6. Each off-street parking space shall open directly onto an aisle or driveway that, except for single-family and two-family residences, is not a public street.

7. All parking areas shall be designed in conjunction with the interior circulation pattern to promote orderly flow of all traffic without encroachment of vehicles into pedestrian areas, landscape areas, or traffic circulation areas. This shall be accomplished by use of any one or combination, of the following: mountable, or non-mountable curbing, landscape islands, tire stops of concrete, recycled materials sold for the purpose of use as tire stops, other barriers of metal, or approved permanent materials.

8. Access to parking areas shall not obstruct the free flow of traffic. Improvements shall be provided as necessary to prevent ingress and egress to parking areas at any point other than designated driveways.

9. If passenger-loading zones are provided, then at least one passenger-loading zone shall have an access aisle of at least five feet by twenty feet that is adjacent to and parallel to the vehicle pull-up space.

10. The design of the parking area and traffic circulation pattern shall provide circulation drives as needed which shall be protected from encroachment by or conflict with parked vehicles.

11. Parking spaces at the perimeter of parking lots shall be provided with curbing,

wheel stops, or other similar physical barrier to ensure that parking vehicles do not come into contact with sidewalks, landscaping, walls, fences, or buildings. If a raised sidewalk is located immediately adjacent to the front overhang of the parking spaces, the parking space depths may be decreased by two feet provided the sidewalk width is increased by the corresponding two feet.

12. The following provision shall apply to all space widths and depths and all aisle widths except for ADA accessible parking spaces.

Table 7. Parking Area Design Requirements

Angle	Space Width	Space Depth to Wall	Space Depth to Interlock	Aisle Width (feet)	
				1 Way	2 Way
45	9'	19'	17'	12'	22'
60	9'	20'	18'	18'	22'
75	9'	20'	19'	20'	24'
90	9'	18'	18'	24'	24'
Parallel	9'	N/A	23'	16'	24'

(d) On-Street Parking – On-street parking is generally only appropriate in an urban setting along roadways with classifications of minor collector or less. The presence of on-street parking slows passing vehicular traffic and provides an added buffer for pedestrians on adjacent sidewalk. The following shall apply to on-street parking:

1. On-street parking shall be permitted in mixed-use, pedestrian oriented business districts within DRIs, Sector Plans or Master Plan areas and within residential traditional neighborhood developments.

2. On-street parking shall be paved, appropriately marked with space striping and, where necessary, include signs that indicate time limits.

3. On-street parking lanes shall not be closer than twenty-five feet to intersections measured from the intersecting property lines.

4. Neckdowns shall be required at intersections where on-street parking is provided.

5. On-street parking spaces must be located on the same side of the street as the use that they serve.

6. All parallel parking shall have a minimum width of eight feet and be at least twenty-two feet in length. Angled parking spaces shall meet the dimensional requirements in subparagraph (c).

7. There shall be provided a minimum of one accessible parking space within one

hundred feet of each intersection. Such parking shall have a clear unobstructed space five feet from the curb side, measured toward the lot line and shall be the full length of the parking space.

8. In the event that the county or state removes any such on-street parking that was allowed to count toward the minimum required, the existing use will not be required to make up the difference and the use will not be made non-conforming.

9. All parking spaces shall have a drop curb separating the space from the drive isle.

10. All on-street spaces shall be maintained by the developer or its assignee and shall clearly state the maintenance responsibilities on any Plat or maintenance acceptance documents.

(e) ADA Accessible Parking – Accessible parking spaces shall be required for new uses or changes in use exclusive of single-family and duplex/triplex residential units.

1. General Requirements

   a. Accessible parking spaces shall be located on the shortest accessible route of travel to an accessible facility entrance. Where buildings have multiple accessible entrances with adjacent parking, the accessible parking spaces must be dispersed and located closest to the accessible entrances.
   b. An accessible route must be provided from the accessible parking to the accessible entrance. Ramps and/or sidewalks shall have a minimum width of five feet, slip-resistant, detectable warning surface and a slope no greater than 1:12 in the direction of travel.

2. Accessible Parking for Cars

   a. Each parking space so designated shall have a minimum width of not less than twelve feet and be accompanied by an access aisle that is at least five feet wide, level (1:50 maximum slope in all directions), the same length as the adjacent parking space(s) and connects to an accessible route to the building.
   b. Each parking space shall include a sign with the international symbol of accessibility mounted high enough so it can be seen while a vehicle is parked in the space.
   c. Each parking space shall be conspicuously painted white outlined in blue paint.
   d. Each access aisle may be a squared or curved shape and shall be marked.
   e. If the accessible route is located in front of the space, wheelstops shall be installed to keep vehicles from reducing the accessible route width

below three feet.

3. Accessible Parking for Vans

   a. Each parking space so designated shall have a minimum width of not less than twelve feet and be accompanied by an access aisle that is at least eight feet wide, level (1:50 maximum slope in all directions), the same length as the adjacent parking space(s) and connects to an accessible route to the building.
   b. Each parking space shall include a sign with "van accessible" and the international symbol of accessibility mounted high enough so it can be seen while a vehicle is parked in the space.
   c. Each parking space shall be conspicuously painted white outlined in blue paint.
   d. A minimum ninety-eight inch high clearance shall be required for each van parking space, access aisle and vehicular route to and from the van space.
   e. If the accessible route is located in front of the space, wheelstops shall be installed to keep vehicles from reducing the accessible route width below three feet.

4. Quantity Required – The number of accessible parking spaces shall be provided as required in the following table.

Table 8. ADA Accessible Parking Space Quantity Requirements

Total Number of Parking Spaces Provided	(Column A) Total Minimum Number of Accessible Parking Spaces	Van-Accessible Parking Spaces with minimum 96" wide access aisle
1 to 25	1	1
26 to 50	2	1
51 to 75	3	1
76 to 100	4	1
101 to 150	5	1
151 to 200	6	1
201 to 300	7	1
301 to 400	8	1
401 to 500	9	2
501 to 1,000	2% of total	1 of every 8 spaces required in Column A
Over 1,000	20 plus 1 for each 100 over 1,000	1 of every 8 spaces required

		in Column A

(f) Loading Spaces

1. Every off-street loading and unloading space shall have direct access to a public street or alley. Any development required to have loading facilities may be permitted to have a driveway of a width adequate to handle the size of the delivery vehicles.

2. Service alleys or driveways shall have minimum width of twenty feet.

3. Off-street loading facilities and maneuvering areas shall be separated from required off-street parking areas; however, access aisles may serve both parking and loading facilities. All loading facilities shall be designed with adequate maneuvering area for the expected size of truck using the loading facility.

4. The standard off-street loading space shall be fourteen feet wide, thirty feet long and provide a vertical clearance of fifteen feet, plus each space shall have an additional 250 square feet of loading or maneuvering area immediately contiguous to the space. Each loading space shall be designed to provide adequate area for ingress, maneuvering, and egress. The length of one or more of the loading spaces may be increased up to fifty-five feet if full-length tractor-trailers must be accommodated. The size of the loading space may be increased, but the number of spaces shall not be reduced on that account.

5. A minimum number of loading spaces shall be provided and maintained in accordance with the following provisions:

   a. Office and Professional Uses – All office and professional uses having more than forty thousand square feet of gross floor area shall be required to have one loading space for each forty thousand square feet of gross floor area unless the building is designed in manner that provides each use access to a rear service area. For all office and professional uses under forty thousand square feet, the county reserves the right to require one loading space based upon the type and intensity of the use proposed.
   b. Commercial Uses – All commercial uses having more than forty thousand square feet of gross floor area shall be required to have one loading space for each forty thousand square feet of gross floor area unless the building is designed in manner that provides each use access to a rear service area. For all commercial uses under forty thousand square feet, the county reserves the right to require one loading space based upon the type and intensity of the use proposed.
   c. Industrial, Wholesale and Warehouse Uses – All industrial, wholesale and warehouse uses having more than thirty thousand square feet of gross floor area shall be required to provide one loading space for each thirty thousand square feet of gross floor area with a maximum of four

spaces being required. For all industrial, wholesale and warehouse uses under thirty thousand square feet, the county reserves the right to require one loading space based upon the type and intensity of the use proposed.

d. All other uses – None required however, the county reserves the right to require them based upon the intensity and type of use proposed.

(g) Vehicle Stops and Pedestrian Movement – The following requirements shall be observed for wheel provisions pertaining to vehicle stops and the movement of pedestrians within a parking area: shall apply.

1. Separation of vehicular and pedestrian traffic, parking and loading areas, as well as driveways and other vehicular circulation areas, shall be clearly identified and separated from principal pedestrian routes along buildings and at pedestrian crossings through the use of curbs, pavement markings, planting areas, fences or similar features designed to promote pedestrian safety.

2. Where sidewalks occur in parking areas, parked vehicles shall not overhang the sidewalk unless such overhang allows for a clear pedestrian path a minimum of three feet in width.

3. Up to three feet of a parking space depth may consist of open, landscaped area when spaces are designed to have bumpers overhang into a landscaped area. Landscape materials shall not conflict with the overhang area, nor shall the overhang area conflict with adequate provisions for meeting landscaping requirements. The landscape area comprising a portion of the space depth shall not be credited toward satisfying any minimum landscape area or open space requirement.

(6) Alternative Parking Regulations

(a) Co-Use Parking Areas – A site may utilize parking spaces of an abutting property provided that the abutting property has excess parking spaces as compared to the applicable standards set forth in this section and the site being developed provides a minimum of fifty percent of its required parking spaces.

1. A cross access easement agreement must be executed by all parties having a legal interest in the property(s) covered. Said agreement shall be provided at the time of site plan application for the properties affected.

2. The easement agreement shall provide for perpetual access and use of the abutting property's parking spaces and driving aisles.

3. The county must approve the easement agreement as to substance.

4. The easement agreement must be approved as to legal form and sufficiency by the county attorney's office.

(b) Grassed Overflow Parking – Fully sodden or otherwise stabilized parking may be permitted for certain areas needed for occasional parking (approximately one to two times per week) or for areas designated by the water management district as high recharge to the Floridan Aquifer upon review and approval by the Director of Planning and Zoning. Where grassed overflow parking is approved, the parking spaces shall be fully sown with grass and identified by concrete bumpers, railroad ties, or other equivalent material as approved the county.

1. The following shall be submitted to evaluate the use and adequacy of the unpaved "infrequent use" parking surface.

   a. A topographic survey of the development site;
   b. The intended use of the site including frequency of parking and type of vehicle(s) anticipated to use the site;
   c. The location of the ground water table during the wettest season of the year;
   d. A soil profile to at least a depth of six feet taken at a minimum of two locations;
   e. The location of all trees intended for tree points under the requirements of Article VI;
   f. A maintenance program outlined for the parking area;
   g. A typical section of the parking lot area, which depicts solid sod or other proposed cover material on a stable load bearing type subbase; and,
   h. A drainage plan for the site.

2. The following standards shall be satisfied prior to the approval of non-paved parking spaces.

   a. The materials cross-section and load-bearing capabilities in relation to the intended use.
   b. Where used in conjunction with paved spaces, the non-paved spaces shall be located so that use is less often than the paved parking spaces.
   c. For all uses except infrequent uses, non-paved parking spaces shall be directly accessed from a paved driving aisle.

(c) Reduction of Required Parking Spaces

1. Retail Uses – Within all retail developments a reduction in required parking of ten percent, maximum, shall be permitted where the parking space requirement is twenty spaces or more and the development proposes an increase over the required amount of paved area landscaping by five percent.

2. Mixed Use or Joint Use – The Director of Planning and Zoning may authorize a reduction in the total number of required parking spaces for two or more uses jointly providing parking when their respective hours of need of maximum

parking do not normally overlap. Reduction of parking requirements because of joint use shall be approved if the following conditions can be met:

a. The developer submits sufficient data to demonstrate that hours of maximum demand for parking at the respective uses do not normally overlap.
b. The developer submits a legal agreement approved by the county attorney guaranteeing the joint use of parking spaces as long as the uses requiring parking are in existence or until the required parking is provided elsewhere in accordance with the provisions of this code.

3. The zoning director shall be authorized to approve variances from certain development standards in order to protect six inch caliper and greater trees consistent with the requirements of Article VI, Tree Protection and Landscaping Standards.

(d) Historic Preservation Exemption – The preservation of any property that has been placed on the local register of historic places, or that is located in a historical district and contributes to the historic character of the district, shall be grounds for a grant by the Director of Planning and Zoning of a reduction in, or complete exemption from the required number of parking spaces. The reduction or exemption needed to allow a viable use of a historic district structure shall be granted unless severe parking shortage or severe traffic congestion will result.

(e) Change in Use – A change in use will require review of existing parking spaces to ensure that parking requirements are met.

(f) Alternative Parking Calculation - In the event that an applicant believes that the parking code requires a number of on-site parking spaces in excess of that necessary to accommodate a development, the applicant may submit alternative parking calculations for the County's consideration.

The data submitted should include the parking space count for existing businesses which are as similar as possible in nature to the proposed use. The existing businesses in the data set must also be located in sites comparable to the future site of the proposed use.

Based upon a review of the data, the Planning and Zoning Director may authorize an alternative parking calculation upon a determination that the submitted data supports the proposed site plan. The number of comparable sites to be submitted shall be determined by the Planning and Zoning Director, but in no case shall be less than three other sites. It is recommended that the applicant discuss potential comparable sites with Staff prior to submittal of the data to the County.

(7) **Construction Standards** – Off-street parking areas shall be constructed of one of the following pavement types, at a minimum, however truck loading areas may require a higher

standard:

(a) Minimum Requirements – All parking area subbases shall be firm and unyielding and shall have, at a minimum, a compacted stabilized depth of twelve inches, and a Limerock Bearing Ratio (LBR) of forty with no undertolerance. The subbase shall be road mixed with a roadway mixer and compacted to a minimum of ninety-eight percent density modified proctor. Where the existing soils are to be used in the parking area and the subbase has the required bearing value, no additional stabilizing material need be added or mixed in.

(b) Stabilizing Materials – The stabilizing materials, if any is required, shall be high-bearing value soil, sand, clay, limerock, or other material approved by the County Engineer.

(c) A minimum compacted one and one-half inch thick asphaltic concrete surface course.

(d) Rigid (concrete) pavement consisting of the following:

1. A six-inch thick subbase stabilized to a LBR of fifty minimum and compacted to a minimum of one hundred percent maximum density using AASHTO T-180.

2. For non-industrial use, a four and one-half inch thick non-reinforced concrete pavement. For industrial and frequent truck use, a minimum six inches thick non-reinforced concrete pavement. Design thickness for heavy equipment use shall be in accordance with the Portland cement association recommendations. Calculations shall be submitted to engineering director with the request for rigid pavement design showing the structural adequacy of the design and the design life of the development. All concrete to be three thousand psi in twenty-eight days. All materials, longitudinal, transverse and construction joint location, material placement, and finishing shall be as recommended by the Portland cement association and the Concrete Promotional Council of Florida and approved by a Florida professional engineer. Slump shall be two to four inches.

(e) Driveway aprons constructed in the county right-of-way where a paved county road exists and connects developments proposed for site plan approval shall be of the flexible pavement or rigid pavement design.

Sec. 8-13. BRIDGES

(1) Construction

(a) Materials and methods of construction shall conform to FDOT's "Standard Specifications for Road and Bridge Construction", latest edition.

(b) Bridges shall be constructed of precast concrete, pre-stressed concrete, cast-in-place

concrete, composite concrete and steel, steel, or wood.

(2) Design

(a) Bridge design shall conform to the design criteria of FDOT's standards and procedures.

(b) Prior to design of bridges, the developer's engineer shall submit design load criteria to the County Engineer for approval, a minimum HS-20 loading.

Sec. 8-14. NON-MOTORIZED ACCESS PATHS

(1) Separation of Vehicular Traffic and Non motorized Access Paths – Parking and loading areas, as well as driveways and other vehicular circulation areas, shall be clearly identified and separated from sidewalks and pedestrian/bicycle paths through the use of curbs, pavement markings, planting areas, fences or similar features designed to promote non-motorized access safety.

(2) Sidewalks

(a) Minimum Requirements – The placement of sidewalks in the county shall be in accordance with the minimum requirements herein. All sidewalks must be constructed in compliance with the current American Disability Act (ADA) and/or the Florida Accessibility Code.

1. Sidewalks shall be provided along one side of all local roadways and both sides of all residential collector roadways, which shall be installed by the builder, from lot line to lot line.

2. Sidewalks shall be provided on both sides of all minor collectors, major collectors, and arterial roadways.

3. Sidewalks shall be required within commercial or service oriented developments having more than two hundred total parking spaces.

4. Sidewalks or crosswalks shall be required where deemed necessary to provide circulation or access to schools, playgrounds, shopping centers, or other community facilities.

5. The design and construction of sidewalks shall conform to the requirements of the FDOT Standards, including provisions for access by physically disabled persons.

(b) Location – All sidewalks shall be constructed within the right-of-way or within an easement along the entire frontage of a development so that the outer edge of the sidewalk corresponds to the right-of-way line. In the event that inadequate right-of-way width exists, the sidewalk shall then be constructed in an easement that is dedicated to the county prior to the approval of a final plat or issuance of a certificate of

occupancy. Within Traditional Neighborhood development, sidewalks and/or integrated pedestrian paths shall be constructed along both sides of all roads, within the road right-of-way, located within the boundaries of the Traditional Neighborhood Development.

(c) Size – Sidewalks shall be a minimum of five feet in width along all roadways except that they may be reduced to 42" wide, with the approval of the County Engineer, where necessary to preserve trees on the adjacent lot or grass strip.

(d) Installation –Installation shall not be required until a dwelling, other approved permanent building, or structure is constructed unless no such structure is intended for construction upon the lot or parcel. All sidewalks shall be installed from lot line to lot line.

(3) Pedestrian/Bicycle Paths

(a) Minimum Requirements – The placement of pedestrian/bicycle paths in the county shall be in accordance with the following requirements:

1. Pedestrian/bicycle paths may be required by the county in lieu of, or in addition to, sidewalks along one side of a minor or major collector, or an arterial roadway.

2. Residential developments adjacent to or in the immediate vicinity of an activity center comprised of commercial, office, service, or recreation activities may be required to provide pedestrian/bicycle paths from the development to the activity center.

3. All proposed developments, shall be required to incorporate pedestrian/bicycle paths into the development when adjoining a development with an existing pedestrian/bicycle path.

(b) Location – Pedestrian/bicycle paths shall be constructed within the right-of-way or within an easement. In no instance will a pedestrian/bicycle path be any closer than two and one-half feet from the back of a curb and five feet from the nearest edge of a rural section of roadway. In the event that inadequate right-of-way width exists for such location or the path will be located on a private lot, the path shall be located on an easement owned by an owners association.

(c) Size – Pedestrian/bicycle paths shall be five feet in width.

(d) Installation – With respect to the installation of any pedestrian/bicycle path, installation shall be the responsibility of the developer and shall occur prior to the release of any maintenance bond.

(4) Specifications – The construction of sidewalks and pedestrian/bicycle paths shall conform to the county adopted specification and construction requirements. Where any of the

requirements or specifications specified in this section is deemed impractical or impossible to implement based on location, topography or traffic, an alternate means, provided approval is granted by the county, and the overall intent of the sidewalk or path is accomplished.

Sec. 8-15. STORMWATER MANAGEMENT

(1) **Stormwater Disposal** – All storm run-off collected from a development shall, ultimately, be disposed of in a manner which shall not cause damage to or increase the quantity or damage the quality of runoff to downstream property owners. The conveyance selected must be capable of handling the required storm run-off without creating objectionable backwaters in the development. The developer shall not overload the adjacent or receiving stream or creating an excessive rise in water level in the receiving body of water.

(2) **Roadway Sodding –** All residential subdivison construction or work around a public or private roadway shall include a minimum of a two foot strip of sod at the back of the curb or edge of pavement. All other developments shall sod, from lot line to lot line, the back of the curb or edge of pavement to the right-of-way line. Additionally, the sodding of all ditches swales, or surface depressions that are utilized to transport runoff, stormwater etc. shall be required to be sodded unless otherwise directed by the County Engineer. Any corner lot shall be sodded on the side in which there is no driveway connection at the time of the final inspection.

(3) **Flood Zone and Flood Prone Areas**

(a) Any site adjacent to a stream or river must be evaluated to assure that no blockage occurs in the floodplain.

(b) In the event a one hundred-year flood zone, as shown on current FIRM MAPS, is to be filled, an appropriate agency approval/permit shall be required and the following must occur:

1. Compensating storage area must be provided to hold the same quantity of water that the flood area did prior to filling. Calculations must be submitted, along with drawings substantiating the design, to the engineer. All calculation methods and/or software utilized must be approved by F.E.M.A; with the approved methodologies/software being available to the county upon request; or,

2. Channel and improvements downstream must be made to compensate for any storage denial. Documentation/calculations for improvement shall be according to number one above; or,

3. Any combination of 1 and 2.

(c) A one-hundred year flood zone boundary or zone shall be determined on all developments that are adjacent to any waterway, river, stream, creek, or waters of the state. All developments that incorporate a stormwater facility that impounds runoff, stormwater, or water shall show a one hundred year flood zone boundary or zone. All methodologies or software utilized to compute the one hundred year flood elevation line

shall be approved by F.E.M.A. and upon request shall show such documentation. All calculations, printouts, and input data used to compute the one hundred-year elevation shall be presented to the County Engineer at time of development submission.

(4) **Downstream Improvements** – All drainage systems downstream of proposed development shall have either the capacity or hydraulic gradient to accept the proposed developments' discharge, or the proposed development shall include improvements for the downstream systems to adequately convey the proposed discharge without flooding and based on the storm event as set forth in these regulations for that type of downstream system. Calculations, drawings, maps, etc. shall be provided to the County Engineer prior to development approval. Increased concentrated stormwater runoff shall not be directed onto adjacent property without written consent of that property owner.

(5) **Best Management Practices (BMP)** – The Florida DEP's Best Management Practices and the provisions herein, shall be utilized and incorporated into all development design and construction. All construction plans shall have a sheet dedicated to showing the location of all BMPs incorporated into the construction or shall have the BMPs shown and called out on the site grading plan.

(6) **Drainage Calculations** – All calculations, methodologies, and software utilized to provide drainage design shall be approved by the County Engineer. All methodologies, data input, printouts, calculations, and/or substantiating documentation for the design shall be submitted to the County Engineer at time of development submission.

(7) **Design Criteria**

(a) Design Frequency – All rainfall data is to be obtained using the FDOT Zone 5 rainfall curves. All drainage design criteria, submittals and guidelines shall be according to the F.D.O.T. Drainage Manual, latest edition, except as noted in this section or as determined by the County Engineer. All stormwater treatment/retention/detention/attenuation shall be according to the water management district guidelines and these regulations unless approved by the County Engineer. The design frequency shall be as listed below:

Table 7. Storm Drainage Design Standards

Drainage Facility	Design Frequency
Crossdrains for major watersheds	50 years 24 hours
Detention/Retention/Attenuation Basins[1]	25 year 24 hour with protection to a 100 year, 24 hour rainfall
Bridges and Bridge Culverts	50 years
Crossdrains for minor watersheds	25 years
Crossdrains and ditches for internal drainage	25 years
Sidedrains for roadway ditches	10 years
Storm Sewers [2`]	5 years

[1] If no positive outfall exists, the design storm is to be calculated at the 100 year, 24-hour storm holding 100% of the site runoff.

[2]Unless conditions prevail that indicate a lower control elevation desirable; the optimum hydraulic grade control shall be one foot below the invert of the gutter at the upstream end.

(b) Velocity of Run-off and Time of Concentration – The velocity of run-off used in determining the time of concentration shall conform to accepted engineering practices. The FDOT run-off curve will govern unless adequate engineering data is submitted to prove otherwise.

(c) Coefficient of Run-off – Coefficients of run-off used in the design of drainage facilities shall be in accordance with the F.D.O.T. Drainage Manual, latest edition.

(8) Culvert Design

(a) Mannings Coefficient

1.	18" to 30" RCP (Culvert)	0.013
2.	36" to 48" RCP (Culvert)	0.012
3.	54" and larger RCP (including concrete box culverts)	0.011
4.	Corrugated metal pipe	0.024
5.	HDPE	0.009

(b) Minimum Pipe Size

1.	Cross drains	18" or equivalent
2.	Side drains	18" or equivalent

(c) Pipe Size Increment – Pipe sizes above eighteen inches shall be based on six-inch increments. Low profile pipe of equivalent capacity may be substituted for round pipe sizes.

(d) Length – The maximum length of pipe to be used without an access structure shall be:

1.	18"- 36"	400 feet
2.	42" and larger	Discretion of the County Engineer, based on sound engineering practice.

(e) Velocity – The maximum allowable outlet velocity for all storm sewers or pipe culverts shall be ten feet per second with appropriate erosion protection for soil conditions at the outlet. The minimum acceptable pipe velocity shall be 2.5 feet per second.

(f) Headwalls or Flared End Sections – Headwalls or flared end sections shall be required. Concrete and precast headwalls shall conform to FDOT Design Standards.

(g) Minimum Clearance – Unless otherwise authorized by the County Engineer, the minimum clearance for all pipe culverts shall be:

1.	Bottom Roadway Base	12" to Outside Top of Pipe
2.	Utility Crossing	6" to Shell of Pipe

(h) Wrapping – All installed joints shall be wrapped with D3 filter fabric in accordance with FDOT standards with an approved securing device.

(i) 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. A minimum of one-foot clearance between the shell of the utility and invert of a culvert, entrance, of discharge point shall be provided. There shall also be a minimum of two feet of horizontal clearance between the shell of the utility and the conflict structure wall on both sides.

(9) Storm Sewer Design

(a) Storm Sewer Computations – Construction plans shall include a tabulation of storm sewer and drainage computations that conform to the requirements set forth in the FDOT Drainage Manual, latest edition.

(b) Pipe Size, Inlets, Manholes, and Junction Boxes – All pipe sizes, inlets, manholes, and junction boxes shall conform to FDOT Design Standards.

(c) Storm Sewer Alignment – All storm sewer plans shall avoid abrupt changes in direction or slope, and shall maintain reasonable consistency in flow velocity. Where abrupt changes in direction or slope are encountered, provisions shall be made to compensate for the resulting headloss.

(d) Maximum Hydraulic Slope – The maximum hydraulic slope allowed will be that which will produce a velocity of:

1. O Ring RCP ..... 15 feet per second
2. Diaper Joint RCP ..... 12 feet per second
3. Standard CMP ..... 8 feet per second
4. CMP ..... 12 feet per second
5. HDPE ..... 12 feet per second

(e) Inlet Capacity – The maximum capacity of the inlets shall be five cubic feet per second per throat. If inlets other than the type approved by the County Engineer are used, it will be necessary to submit an inlet capacity analysis with the construction plans.

(f) Hydraulic Spacing of Inlets – The maximum distance in which surface water will be allowed to run in the gutter shall be six hundred feet. In no case shall the run be so great as to allow the spread of flow to exceed 6 feet from the face of curb. Calculations shall be supplied to the County Engineer supporting gutter flow/capacity.

(g) Ditch Bottom, Grate Inlets, or Curb Inlets – Ditch bottom, grate inlets, and curb inlets shall conform to FDOT Design Standards. All ditch bottom inlets shall include a grate top with an adequate depth slot located on the upstream side of the inlet. Calculations shall be supplied to the County Engineer supporting inlet capacity.

(h) Storm Sewer Easement – All storm sewer easements shall be a minimum of 20 feet wide. An increase in easement size shall be required where the depth and size of pipe shall have an effect on the maintenance and accessibility of the system. A drainage easement shall be capable provide the width for reconstructing a pipe by standard practices. This practice shall have a trench with a 1 foot width on both sides of the pipe, and minimum vertical trench of four feet, and an angle of repose above the vertical trench that shall not exceed a 2:1 ratio.

(10) Roadway Ditches

(a) Design – Roadway ditches shall be sized using the format specified in the FDOT Drainage Manual.

(b) Allowable Velocity – Unstable and highly erosive soil conditions prevalent in the county indicate that design velocity is critical. The maximum allowable velocity shall be in conformance with the values stated in the FDOT Drainage Manual, but not in excess of five feet per second.

(c) Gradient – The minimum gradient shall be 0.1% or the minimum required to provide for the design flow. The maximum gradients shall be determined from soil characteristics. In unstable and highly erosive soil conditions, the maximum allowable gradient shall be that which will produce allowable velocities consistent with the provisions of the FDOT Drainage Manual.

(d) Protection – Unless otherwise required by the County Engineer, the following provisions shall apply to the protection of all ditches. The materials and installation of side ditch protection shall conform to the FDOT Standard Specifications Drainage Manual, latest edition.

Table 8. Permitted Velocity by Soil Type

Soil Type		Allowable Velocity (fps)
1.	Silt or Fine Sand	1.50
2.	Sandy Loam	1.75
3.	Silt Loam	2.00
4.	Firm Loam	2.50
5.	Stiff Clay	3.75
6.	Hardpans	5.00

(e) Depth of Ditches – The minimum depth of all roadway side ditches shall be two feet (one foot for shoulder "Vee" swale) with the maximum depth being three and one-half feet below the natural ground.

(f) Side Drains – All side drain ditches shall have adequate depth to insure minimum over side drains and shall comply with the following provisions:

1. Side drainpipes shall be placed in the ditch line of the proposed roadway ditch with an invert elevation of 0.1 feet below the proposed ditch grade.

2. All side drain or cross drainpipes located under asphalt pavement shall meet current FDOT Drainage Manual, latest edition.

3. Minimum pipe size for side drainpipes shall be fifteen inches in diameter or equivalent.

(11) Outfall Ditches

(a) Drainage Right-of-way or Easement – All trenches and ditches shall have sufficient drainage right-of-way or easement provided to allow for the installation of the ditch plus a minimum of one twenty-foot maintenance berm along one side and one five foot berm on the other side.

(b) Grading Adjacent to Ditches – Areas adjacent to the ditches shall be graded and protected in such a manner as to preclude the entrance of excessive run-off, except at designed and protected locations.

(c) Dependence of 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.

(d) Grassing – Unless noted otherwise in these regulations or authorized by the County Engineer, all drainage right-of-way, and easements shall be sodded.

(e) Utilities Crossing Drainage Right-of-way – Where it is necessary for a utility to cross a drainage right-of-way, the following minimum requirements shall be complied with:

1. A minimum of a two-foot clearance above design high water shall be complied with for aerial crossings.

2. A minimum of a two and one-half foot clearance below the invert of the channel shall be complied with for underground crossings.

3. Utilities shall be adequately permanently marked to protect against accidental damage during maintenance operations.

4. No aerial supports shall be allowed in the confines of the channel cut unless authorized by the County Engineer.

5. All sleeves or crossings shall be cast iron, steel, or other suitable material.

6. Conduit material for crossings shall be submitted for the approval of the County Engineer, i.e., product specifications.

(f) Design – The policies and procedures set forth in the FDOT Drainage Manual shall govern drainage design unless otherwise superseded by these regulations, "regulatory agency" or the County Engineer. The most stringent regulations shall take precedence.

1. Canals – No canals shall be permitted.

2. Analysis of Existing Outfalls – Where an existing outfall is being utilized and the capacity to handle any additional run-off is in question; data to support the design shall be included in the drainage analysis.

3. Size – All ditches shall be sized using accepted engineering practices. In all cases, sufficient engineering data giving drainage area, velocity, watershed basins, watershed boundaries and depth of flow as well as all calculations, exhibits, etc., necessary to document velocities, time of concentration, rainfall event, slope of terrain, soils, etc., is to be included in the drainage analysis.

4. Side-slopes – Maximum side slope for swales shall be four foot horizontal to one foot vertical with sod. Maximum side slope for ditches shall be two foot horizontal to one foot vertical with staked/pegged sod. No side slopes greater than the above will be allowed.

5. Velocity – Design velocity shall be consistent with soil conditions and erosion protection supplied, but shall not exceed two and one-half feet per second.

(12) Detention/Retention Basins – All detention and retention basins in the county shall be in accordance with the following provisions.

(a) Use of Detention/Retention Basins – Detention/retention basins may be required to 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 and local agencies and/or government.

3. Stormwater treatment facilities.

4. Amenity to the proposed development.

(b) Discharge – All detention/retention facilities must have a legal positive discharge except as approved by the County Engineer. If total retention is allowed, the basin must recover to its design low water state within seventy-two hours. If percolation is used for calculating recovery, provide the county 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 four shall be applied to the design. In addition, all developments shall be required to comply the FDOT, DEP, water management district with the most stringent regulations shall take precedence.

(c) Location – In all cases, the basin shall be located and designed in such a manner as to minimize or eliminate damage when the design storm is exceeded and is easily accessible for maintenance.

(d) Right-of-way and Easements

1. Ingress/Egress – Sufficient right-of-way or easement shall be set aside to allow for ingress and egress.

2. Placement – A right-of-way or easement shall continue through all Detention/Retention/Attenuation Littoral zones and wetland mitigation areas but shall not be located within county easements or right-of-way. Such right-of-way or easements shall include a hold harmless agreement and a twenty-foot minimum access easement to control structures via land.

(e) Bank Stabilization – All detention and retention basins shall be constructed to final grade and sodded with grass within thirty days of construction commencement. This time may be extended by the County Engineer if a detailed construction schedule is submitted and approved.

(f) Hold Harmless Agreement – A "hold harmless" agreement must be executed and approved by the county attorney which will relieve the county of any responsibility for maintaining the lake and of any liability for any damage caused by flooding from the lake, 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.

(g) Ownership

1. Residential Developments – All stormwater Detention/Retention/Attenuation facilities shall be owned and maintained by an association of the surrounding property owners, or

2. Non-Residential Developments – All non-residential stormwater Detention/ Retention/Attenuation facilities shall be owned and maintained by one entity, an association of the surrounding property owners or a group approved by the County Engineer.

(h) Design – The retention basin shall be designed according to these regulations and applicable water management district guidelines with the most stringent taking precedence.

1. General Design – The design method used for detention basin design shall be determined by the area of the development size and all contributing areas in

accordance with the SCS method.

2. Maximum Outflow – The maximum allowable outflow rate shall be based on the runoff rate for existing conditions using the 25 Yr/24 Hr event design storm, or as approved by the County Engineer with the outflow rate not exceeding the capacity of the downstream drainage system based on the appropriate inflow-outflow design storm for that system as defined herein.

3. Water Elevation and Overflow

   a. Water elevation must be controlled by an appropriate concrete drainage structure.
   b. The minimum difference in elevation between the design low water of the basin and the lowest contributing roadway grate shall be two and one-half feet unless approved by the County Engineer.
   c. All basins shall have an emergency overflow that will direct the water to a suitable drainage system.
   d. The aerial extent of the basin mean high water shall be shown and labeled on all plans as top of basin.
   e. Pumps used in stormwater basins shall not be allowed except as authorized by the County Engineer.
   f. The basin shall be designed to return to its low water elevation in accordance with criteria as set forth by the water management district or applicable regulatory agency.

(i) Exemptions – A site modification to an existing improved site that does not have an existing water management district permit, shall be exempt for the following conditions.

1. The total impervious area of the improvements does not exceed 9,000 s.f.

2. The total building area does not exceed 9,000 s.f.

3. The total impervious area of the parking and sidewalks does not exceed 4,000 s.f.

(13) <u>Subsurface Drainage</u>

(a) <u>Groundwater</u>

1. A soil investigation report shall be submitted with the site development and shall include test boring to a depth (min., 4'/ below proposed edge of pavement) and spacing (max. 300'/ along centerline) showing existing water table and estimated water table during periods of normal rainfall and without drainage improvement that may lower the groundwater.

2. In accordance with the test boring data obtained and considering anticipated

groundwater changes due to drainage improvements, underdrains shall be installed in accordance with F.D.O.T. standards in all cases where the groundwater table is closer than eighteen inches below the sub-base 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. Smooth walled pipe shall be required.

3. All underdrain shall be shown in the as-built drawings.

(b) Design

1. Size – The size of the underdrains shall be determined using accepted engineering practices. The minimum size acceptable is six inches in diameter.

2. Slope – The minimum slope shall be 0.002 ft/ft.

Sec. 8-16. EROSION AND SEDIMENT CONTROL

The principal effect that land development activities have on the natural or geologic erosion consists of exposing disturbed soils to precipitation and to surface storm runoff. Uncontrolled erosion and sediment from these areas often cause considerable economic damage to individuals and to society in general. Surface water pollution, channel and reservoir siltation, and damage to public facilities, as well as to private property, are some of many examples of problems caused by uncontrolled erosion and sedimentation. The following are those requirements, which have been set forth for the purpose of controlling erosion and sedimentation caused by soil disturbance:

(1) **General Criteria** – The general criteria are minimum requirements for controlling erosion and sedimentation. These general criteria do not replace the requirement for individually developed erosion and sediment control plans; however, they do establish minimum standards of soil conservation practice, which apply to all land disturbing projects. Nothing in the general criteria shall limit the County Engineer's authority to impose additional or more stringent standards for controlling erosion and sedimentation.

(a) Stabilization of Denuded Areas and Soil Stockpiles

1. Permanent or temporary soil stabilization must be applied to denuded areas within fifteen days after final grade is reached on any portion of the site. Soil stabilization must also be applied within fifteen days to denuded areas, which may not be at final grade but will remain dormant (undisturbed) for longer than sixty days.

2. Soil stabilization refers to measures, which protect soil from the erosive forces of raindrop impact and flowing water. Applicable practices include vegetative establishment, mulching, and the early application of gravel base on areas to be paved. Soil stabilization measures shall be selected to be appropriate for the time of year, site conditions and estimated duration of use.

3. Soil stockpiles must be stabilized or protected with sediment trapping measures to prevent soil loss.

4. Throughout the implementation phase of any approved plan dust production from all activities shall be strictly controlled. The person responsible for implementing the approved plan shall institute those dust control measures necessary to assure that adjacent properties are not adversely affected by dust.

(b) Establishment of Permanent Vegetation – A permanent vegetative cover shall be established on denuded areas not otherwise permanently stabilized. Permanent vegetation shall not be considered established until a ground cover is achieved which is mature enough to control soil erosion satisfactorily and to survive severe weather conditions.

(c) Protection of Adjacent Properties – Properties adjacent to the site of a land disturbance shall be protected from sediment deposition. This may be accomplished by preserving a well-vegetated buffer strip around the lower perimeter of the land disturbance, by installing perimeter controls such as sediment barriers, filters or dikes, or sediment basins, or by a combination of such measures. Vegetated buffer strips may be used alone only where runoff in sheet flow is expected. Buffer strips shall be at least twenty feet in width. If at any time it is found that a vegetated buffer strip alone is ineffective in stopping sediment movement onto adjacent property, additional perimeter controls must be provided.

(d) Timing and Stabilization of Sediment Trapping Measures – Sediment basins and traps, perimeter dikes, sediment barriers and other measures intended to trap sediment on-site must be constructed as a first step in grading and be made functional before upslope land disturbance takes place. All disturbed areas must be seeded and mulched within fifteen days of disturbance.

(e) Sediment Basins – Stormwater runoff from drainage areas with five acres or greater disturbed area must pass through a sediment basin or other suitable sediment trapping facility with equivalent or greater storage capacity. The County Engineer may require sediment basins or traps for smaller disturbed areas where deemed necessary. This sediment basin requirement may also be waived, by variance, if the County Engineer determines that site conditions do not warrant its construction.

(f) Cut and Fill Slopes – Cut and fill slopes must be designed and constructed in a manner, which will minimize erosion. Consideration must be given to the length and steepness of the slope, the soil type, upslope drainage area, groundwater conditions and other applicable factors. Slopes, which are found to be eroding excessively within one year of construction, must be provided with additional slope stabilizing measures until the problem is corrected.

(g) Stabilization of Waterways and Outlets – All on-site stormwater conveyance channels shall be designed and constructed to withstand the expected velocity of flow from a two-year frequency storm without erosion. Stabilization adequate to prevent erosion

must also be provided at the outlets of all pipes and paved channels.

(h) Storm Sewer Inlet Protection – All storm sewer inlets, which are made operable during construction, shall be protected so that sediment-laden water will not enter the conveyance system without first being filtered or otherwise treated to remove sediment.

(i) Construction Access Routes – Wherever construction vehicle access routes intersect paved public roads, provisions must be made to minimize the transport of sediment (mud) by runoff or vehicle tracking onto the paved surface. Where sediment is transported onto a public road surface, the roads shall be cleaned thoroughly at the end of each day. Sediment shall be removed from roads by shoveling or sweeping and be transported to a sediment controlled disposal area. Street washing shall be allowed only after sediment is removed in this manner.

(j) Disposition of Temporary Measures – All temporary erosion and sediment control measures shall be disposed of within thirty days after final site stabilization is achieved or after the temporary measures are no longer needed, unless otherwise authorized by the local program administrator. Trapped sediment and other disturbed soil areas resulting from the disposition of temporary measures shall be permanently stabilized to prevent further erosion and sedimentation.

(k) Maintenance – All temporary and permanent erosion and sediment control practices must be maintained and repaired as needed to assure continued performance of their intended function. Any repairs requested by the county must by completed within twenty-four hours.

(2) Erosion Control Measures – Erosion control measures, which may be used singly or in combination, are indicated below together with brief statements of their site adaptation or limitations.

(a) Vegetative Protection – Suitable for all soils capable of supporting plant growth. Vegetation alone will not provide adequate protection on soils that are unstable because of their structure, texture, internal water movement, or excessively steep slopes. Vegetation protection is divided into:

1. Short term seeding to protect areas for twelve months or less.

2. Permanent Seeding or Sodding for areas to be protected longer than one year.

(b) Grassed Waterway – This type of control is a vegetative lined channel designed to carry concentrated storm water. Such runoff may be flow, which has collected in natural depressions or from diversions, or from other site features. Grassed waterways shall not be used for long duration base flows.

(c) Diversions – A diversion consists of a channel or a channel with supporting ridge constructed across a sloping land surface on the contour or with predetermined grades to intercept and divert surface runoff before it gains sufficient volume or velocity to

create harmful erosion. It shall have capacity to carry storm runoff and may or may not have a vegetative lining, depending upon the velocities anticipated and the soil materials in the channel. Flow from a diversion must be discharged into a protected area or a grassed waterway.

(d) Grade Stabilization Structures – These structures are used to reduce grade and to dissipate the energy of flowing water by dropping it in a relatively short horizontal distance. By using these, the grades and velocities in grassed waterways or bare channels can be reduced to non-eroding limits. This measure includes drop structures made of concrete, corrugated metal pipe, and other suitable materials.

(e) Debris Basins – These basins consist of an earth fill type dam and spillway in a drainageway downstream from a construction area for the purpose of trapping sediment and debris. The basin must have an adequate capacity for all sediment or arrangements made to remove it mechanically as the basin becomes filled. The whole structure may be removed after the construction area has become stable or may be retained to enhance the area.

(f) Land Grading – Re-shaping the ground surface by grading to planned grades and conformation that will be conducive to preventing excessive erosion.

(g) Drain – This measure controls erosion by reducing the surface runoff, or lowering a high water table, through underground conduits or filter drains.

(h) Dike – A temporary means of trapping and storing sediment from eroding areas under construction in order to protect properties or stream channels below the installation from damage by excessive sedimentation and debris.

(i) Urban Stream Bank Protection – The control of bank erosion in main stream channels can be accomplished in various ways. Methods commonly used in urban areas include concrete, sod, riprap, gabions, and flexible fabric forms filled with mortar. The purpose of bank control measures is to install a barrier that will withstand the erosive forces exerted by flowing water.

(j) Urban Gutter Drain Sediment Barrier – These temporary barriers are used to prevent sediment from entering storm sewer systems prior to the establishment of protective soil cover. The barriers are removed after the area under development is permanently protected against erosion by vegetative or mechanical means.

(3) Inspections – The County shall have the right to conduct periodic inspections of the development or land disturbing activity to ensure compliance with the provision of this Article. It is expected that the contractor will maintain due diligence over the project as well.

(4) Violations and Enforcement – If the county determines that a development does not have an approved erosion and sediment control plan or the approved plan is not being complied with, the county shall issue a stop work order, and notify the landowner or permittee in writing of what must occur to continue with the development or land disturbance activity. Such notice

shall set forth specifically the noted deficiencies, the corrections measures required and the time within which such measures shall be completed.

Sec. 8-17. UTILITY PLACEMENT

(1) For residential developments, standard service utility cabinets shall be located outside of the right of way and shall not interfere with sight visibility. Large utility cabinets (banks or major junctions) shall be located within a separate parcel or tract dedicated to the home owners or maintenance association.

(2) All developments located within the Centralized Water and Sewer Service Area (CWSSA) shall be required to install all minor distribution and service utility lines, including but not limited to water, sewer, reuse, electric, telephone and cable, underground. The minor distribution and service lines shall be the lines that are installed or extended to service a specific development, residential or commercial.

Sec. 8-18. WATER SERVICES

(1) Centralized Water and Sewer Service Area (CWSSA)

(a) Inside the CWSSA – All proposed developments located within the CWSSA shall be required to be served by a central water service, public or private.

(b) Outside the CWSSA – The extension of central water, public or private shall be limited to the CWSSA and shall only be extended outside of the CWSSA for one of the following reasons:

1. Public Health – Extension may occur when the absence of the services will result in a threat to the public health or safety of an existing development.

2. Existing Plants – In the instance of existing private central water service outside of the CWSSA, the plant shall be permitted to serve only the lots or area for which it was originally designed and approved.

(2) Central Water Plant Location – Central water service plants, public or private, may be located outside of the CWSSA, however the plant shall service only those lots located within the CWSSA.

(3) Individual Water Wells – All developments proposing the use of individual water well shall be required to comply with the provisions established by the Clay County Health Department and the State of Florida.

Sec. 8-19. WASTEWATER SERVICES

(1) CWSSAs

(a) Inside the CWSSA – All proposed developments meeting one of the following criteria that are located within the CWSSA shall be required to access central wastewater service, private or public:

1. The development consist of more than fifty lots; or,

2. The development is a multifamily residential or non-residential development that is within fifteen hundred feet of central wastewater service, public or private; or,

3. The development is within fifty feet of a central wastewater service, public or private.

(b) Outside the CWSSA – The extension of central wastewater services, public or private outside the CWSSA shall only be permitted when the absence of the services will result in a threat to the public health or safety of an existing development.

(2) Central Wastewater Plant Location – Central wastewater treatment plants shall be permitted to locate outside of the CWSSA, however the plant's service area shall be limited to the area identified in the section.

(3) Individual Wastewater Systems – All developments proposing the use of an individual waste water system shall be required to comply with the provisions established by the Clay County Health Department and the State of Florida. Each lot proposing the use of an individual wastewater disposal system shall also be required to comply with the minimum lot sizes as specified in Article III of this code.

Sec. 8-20. FIRE PROTECTION

Fire protection shall be consistent with the requirements of: 1) the current adopted edition of the Florida Fire Prevention Code per Chapter 633, Florida Statutes; and 2) the NFPA 1141 Standard for Fire Protection Infrastructure for Land Development in Wildland, Rural, and Suburban Areas (2017 ed.) except for Subsections 8.1.2 and 8.3.

Sec. 8-21. LEGAL STATUS OF THIS ARTICLE

To the extent of any conflict with the other regulations of the county, and except as herein specifically provided, this Article supersedes any other regulations with respect to the subject matter hereof.

Sec. 8-22. ADMINISTRATION

This Article shall be enforced by the special magistrate and the Department of Development Services.

Sec. 8-23. ENFORCEMENT

(1) **Jurisdiction** – The Code Enforcement Board shall exercise jurisdiction to enforce the provisions of this Article consistent with the power and authority conferred upon it by general Florida law and applicable ordinance of the Board.

(2) **Violations** – It shall be unlawful to knowingly provide false or fraudulent information to any official of the county charged with the implementation and enforcement of this Article for the purposes of inducing the official to take or refrain from taking any particular action or making any particular determination under its terms and provisions. A person violating the provisions of this subsection shall be guilty of an offense that, pursuant to Section 125.69, Florida Statutes, and any successor thereto, shall be prosecuted in the same manner as misdemeanors are prosecuted, and upon conviction, shall be punished by a fine not to exceed five hundred dollars or by imprisonment in the county jail, not to exceed sixty days, or by both such fine and imprisonment.

Sec. 8-24. APPEALS

Any person adversely affected by a decision of any county official or employee in the interpretation of this Article may appeal such decision to the Board of Adjustment in accordance with Article XII.

Appendix A. Parking Space Requirements

Residential Uses:	
Land Use	**Automobile Spaces**
Single Family (1, 2 and 3 BR)	2 spaces
Duplex	2 spaces per dwelling unit
Community Residential Homes (Rehabilitation Center or Retreat)	1 space per 15 beds (for doctors) + 1 space per 10 beds + 1 space per 2.5 employees (not including doctors)
Multifamily - Studio	1 space per unit
Multifamily – 1 BR	1.5 spaces per unit
Multifamily - 2 BR +	2 spaces per unit
Mobile Home Park	2 space home + 1 space per 200 square feet of office, laundry, recreation
Convent and Monastery	1 space per 4 lodgings
Rooming, Boarding Houses or Dormitories	1 space per rented room + 2 spaces per owners/employees
Fraternity and Sorority	1 space per two residents

Residential Support Uses:	
Land Use	**Automobile Spaces**
Churches, Temples or other Places of Worship	1 space per 100 square feet of gfa of main sanctuary or chapel area
Day Care / Care Center	1 space per 200 square feet + 1 space per company vehicle
Private Kindergarten, Elementary and Junior High Schools	2 spaces per classroom, office, kitchen, gym and auditorium
Private Senior High Schools	5 spaces per classroom, office, kitchen, gym and auditorium
Private Vocational, Trade and Business Schools	1 space per 300 square feet of gross floor area
Private Colleges / Universities	1 space per employee + .3 spaces per student
Public Kindergarten, Elementary, Junior and Senior High Schools, Vocational Schools and Community Colleges	Per state requirements

Retail Uses:	
Land Use	**Automobile Spaces**
Convenience Store (no gas sales)	1 space per 250 square feet + 1 space per employee
Convenience Store - (gas sales, general retail and/or fast food included)	1 space per fueling station + 1 space per 250 square feet retail + 1 space per 100 square feet of fast food
Flea Market	1.5 spaces + 1 loading space per booth
Food or grocery, drug and sundry, department store, general retail stores, private postal service and similar neighborhood use	1 space per 250 square feet of gfa
General Commercial	1 space per 200 square feet of gfa + 1 space per 1,000 square feet of lot or ground area used for outdoor sales or display
Lumberyard	1 space per 250 square feet interior area + 1 space per 500 square feet outside area
Membership Warehouse	1 space per 500 square feet
Mobile Home Dealership	1 space per 500 square feet interior area + 1 space per 2,500 square feet outside area
Nursery (Plant, retail)	8 spaces per first acre and 1 space per 2 acres after, up to 10 acres; then 1 space per 5 acres
Rental Business (Equipment or Vehicles)	3 space per 1,000 square feet gfa (inside and outside)
Shopping Center	1 space per 150 square feet non-storage gfa
Vehicle Dealership (Automobile, Recreational Vehicle, Motorcycle or Watercraft)	1 space per 500 square feet interior area + 1 space per 2,500 outside area

Wholesale Uses:	
Land Use	**Automobile Spaces**
Nursery (Plant, wholesale)	4 spaces per first acre and 1 space per 5 acres after, up to 20 acres; 1 space per 10 acres over 20 acres
Wholesale, Warehouse or Storage Use	1 space per 1,000 square feet warehouse up to 20,000 + other uses; 1 space per 2,000 square feet for 2nd 20,000; 1 space per 4,000 over 40,000 square feet

General Services:	
Land Use	**Automobile Spaces**
Animal Hospital / Vet Clinic or Animal Grooming	1 space per 300 square feet building (not including run area)
Auto Repair/Service	2 spaces + 4 spaces per service bay

General Services (continued):	
Bank	1 space per 250 square feet gfa + 100 feet queuing area per drive in lane
Barber or Beauty Shop	1 space per 200 square feet or 3 spaces per station whichever is greater + 1.5 spaces per nail, tan, or facial booths
Bed and Breakfast Establishment	2 spaces + 1.2 spaces per lodging unit
Car Wash (Self-serve and Automated)	2 sp per self serve + 2 spaces per vehicle stacking; 1 space per employee + 5 vehicle stacking for automated
Contractor's Office (permanent)	1 space per 300 square feet office + 1 space per 1,000 square feet storage + 1 space per vehicle
Dry Cleaners	1 sp per 250 square feet gfa
Exterminator	1 space per 300 square feet + 1 space per vehicle + 1 space per employee
Food Catering	1 space per 250 square feet gfa
Funeral Home, Mortuary, Crematorium	1 space per 100 square feet gfa in room for services
General Business or Personal Service Establishments	1 space per 200 square feet gfa
Hotels and Motels	1 space per room or suite + 1 space per every three employees on the largest work shift + 75 percent of the requirement for other uses associated with the establishment
Interior Cleaning Service	1 space per 1,000 square feet gfa
Lawn Care / Landscaping	1 space per 300 square feet office + 1 space per storage area + 1 space per company vehicle
Locksmith	1 space per 250 square feet gfa
Mini-Warehouse	1 space per 50 units + 2 spaces per manager or security
Night Clubs, Bars or Taverns	1 space per 50 square feet + 1 space per 200 square feet kitchen/storage + 1 space per 75 square feet of outdoor area
Offices, Professional and Business	1 space per 250 square feet
Photography Studio	1 space per 250 square feet gfa
Publishing and Printing	1 space per 250 square feet gfa
Repair Services (bicycle, furniture, shoe, no vehicle)	1 space per 250 square feet gfa
Restaurants	1 space per 60 square feet of dining area + 1 space per 200 square feet of remaining area + 1 space per 75 square feet of outdoor area
Restaurants, takeout	1 space per 200 sf

General Services (continued):	
Sign Painting Service	1 space per 250 sf
Storage, Dry Boat	1 space per 12 dry boat spaces

Health Services:	
Land Use	**Automobile Spaces**
Hospital	3 spaces per bed
Hospital Guest House	1.1 space per guest room
Office or Clinic, Medical and Dental	1 space per 200 square feet gfa
Sanitarium, Rest Home, Nursing Home, Convalescent Home and Home for the Aged	1 space per 4 beds + 1 space per employee
Research Laboratory	1 space per 2 employees + 1 space per company vehicle + 2 spaces for patrons

Cultural Uses:	
Land Use	**Automobile Spaces**
Art Gallery, Library or Museum	1 space per 500 square feet of gra
Auditorium	1 space per 40 square feet + 1 space per employee
Live Performance Theaters	1 space per 70 square feet + 1 space per employee

Entertainment and Recreational Uses:	
Land Use	**Automobile Spaces**
Archery Fields and other Outdoor Shooting Ranges	1 space per 1.5 target practice stall
Athletic Fields	1 space per 4 seats or 30 spaces per field; whichever is greater
Bicycle Motocross or BMX Tracks	1 space per 4 seats
Billiard Parlors	1 space per 200 square feet
Boat Ramp	10 spaces per ramp (10" x 40") + 4 spaces per ramp for vehicles
Bowling Alleys	5 spaces per lane + other uses
Campgrounds	1 space per campsite + 1 space per employee
Clubs or Lodges, Private	1 space per 300 square feet gfa
Community Centers, Meeting Rooms, Recreation Center	1 space per 200 square feet gfa or 1 space per 3 seats; whichever is greater
Courts, Tennis, Racquetball, Volleyball or Handball	public: 3 spaces per court; private: 2 spaces per court; with spectators: 2 spaces per court + 1 space per 3 seats

Entertainment and Recreational Uses (continued):	
Dance, Art and Music Studios, Karate, Aerobics Schools and Health/Exercise Studios	1 space per 300 square feet
Golf Courses	Private: 3 spaces per hole (executive); 4 spaces per hole (championship). Public: 4 spaces per hole (executive); 5 spaces per hole (championship) + other uses
Golf Driving Range	1 space for each tee plus required parking for other ancillary uses on site
Indoor Shooting Range	1 space per 250 square feet
Miniature Golf	2 spaces per hole for first 18 holes; 1 space per hole for each additional + 1 space per 200 square feet interior
Park, Public or Private (passive)	5 spaces per acre of open area + 1 space per picnic area
Playground, Community	15 spaces per acre
Shuffleboard Courts	4 spaces per 5 courts
Skating Rinks	1 space per 200 square feet gfa
Stables, Riding Academies, Public	1 space per 5 stalls
Stadiums and Arenas	1 space for each four seats
Swimming Pools, Hot Tubs/Spas	1 space per 50 square feet up to 2,000 square feet + 1 space ea additional 200 square feet
Theaters, Cinema	15 spaces for the first 100 seats + 1 space for each additional 3 seats

Industrial Uses:	
Land Use	**Automobile Spaces**
Industrial, General	1 space per 500 square feet or 1 space per employee of peak shift; office/retail 1 space per 275 sf
Manufacturing, Processing and Assembly	1 space per 750 square feet up to 20,000 + other uses; 1 space per 2,000 square feet for second 20,000; 1 space per 4,000 over 40,000 square feet
Packing Plant	up to 30,000: 1 space per 500 square feet; 1 space per 1,000 square feet over 30,000; truck: 1 space per 2,000 square feet; 1 space per 250 square feet retail; 1 space per 300 square feet office

Open Land Uses:	
Land Use	**Automobile Spaces**
Cemetery	1 space per employee
Landfills	1 space per employee
Open Storage	1 space per employee of peak shift

Public Facilities:	
Land Use	**Automobile Spaces**
Correctional Facility	1 space per employee + 1 space per 25 inmates
Electronic Telephone Switching Stations	1 space per station
Power Generation Facility	1 space per employee
Public Buildings	1 space per 200 square feet + 2 spaces per employee on peak shift
Wastewater Treatment Plant and Resource Recovery Fac.	1 space per employee

Miscellaneous Uses:	
Land Use	**Automobile Spaces**
Airport / Landing Strip	See Director
Bus Terminal	1 space per 200 square feet; minimum 6 spaces
Bus, Railroad or Other Transportation Terminals	1 space per 200 square feet; minimum 6 spaces
Dry Cleaning Plant	1 space per employee on peak shift + 1 space per facility vehicle
Heliports and Helipads	See Director of Planning and Zoning
Marinas	1 space per slip + 1 space per 2 employees + 1 space for each live-aboard
Model Home	4 spaces per first unit + 1.5 spaces per additional unit
Motion Picture Studio	1 space per 1,000 square feet gfa
Radio and Television Transmitting and Receiving Facility	1 space per employee; minimum 1
Radio or Television Broadcasting Office or Studio	1 space per employee on peak shift or 1 space per 400 square feet; whichever greater; + 3 visitor spaces

Sec. 8-25. CLAY HILL OVERLAY GUIDELINES

See Appendix B.

CLAY HILL NEIGHBORHOOD OVERLAY DISTRICT DESIGN GUIDELINES

Clay County Board of County Commissioners

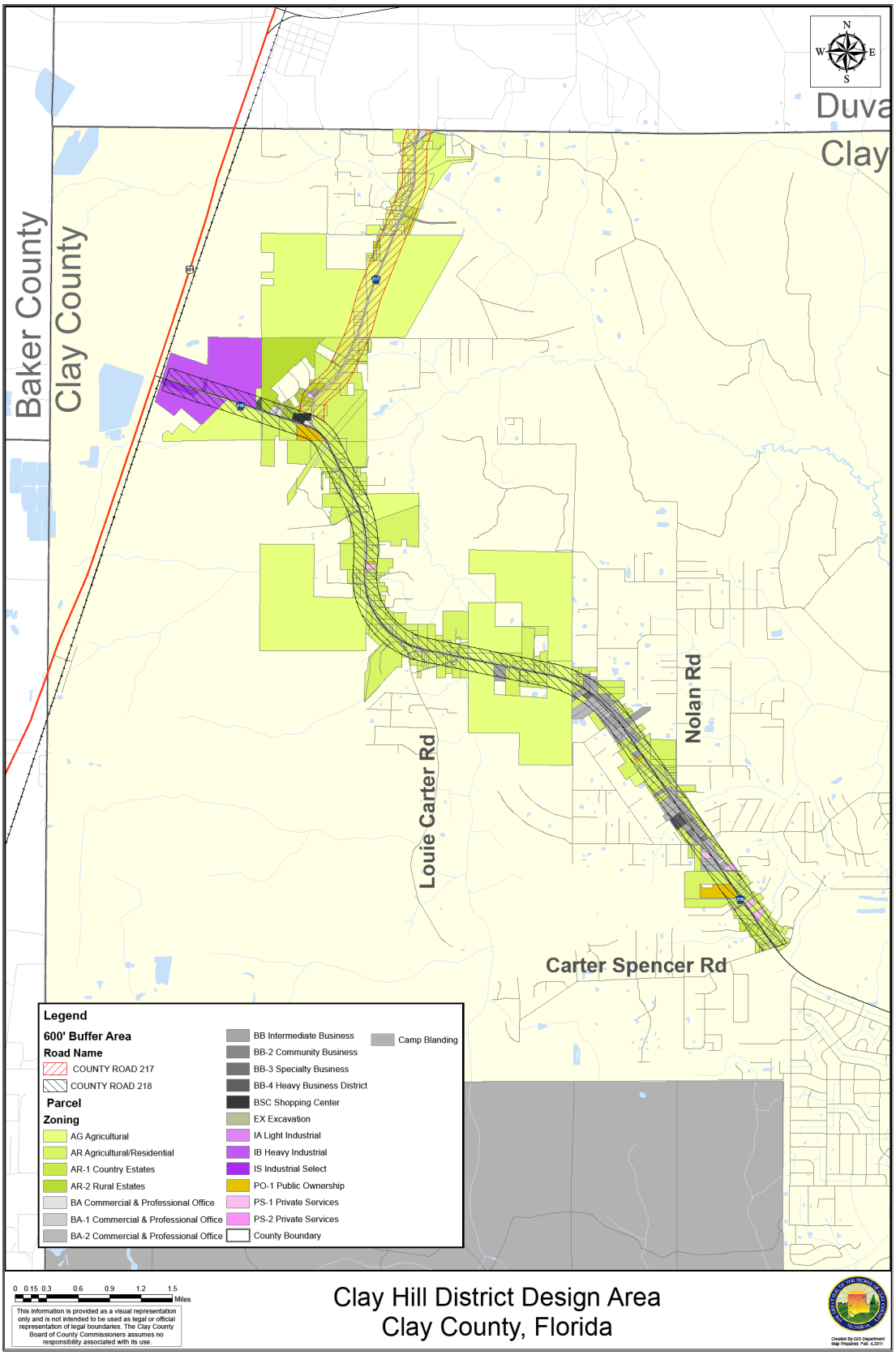
2011

Adopted May 10, 2011

Table of Contents

Subject Area

The Subject Area is County Road 218 from Carter Spencer Road to US 301 and CR 217 from CR 218 to the Duval County line, as shown below. The portion of all parcels, within 600 feet of these rights-of-way, is proposed for application of the overlay district. Properties within Residential, Agriculture and the Public Ownership zoning districts are not subject to following design guidelines. However, developers of any publically held property are encouraged to provide a courtesy review to the Clay Hill Community Association as early in the design process as possible.


Baker County
Clay County
Duva
Clay
Louie Carter Rd
Nolan Rd
Carter Spencer Rd
Legend
600' Buffer Area
Road Name
COUNTY ROAD 217
COUNTY ROAD 218
Parcel
Zoning
AG Agricultural
AR Agricultural/Residential
AR-1 Country Estates
AR-2 Rural Estates
BA Commercial & Professional Office
BA-1 Commercial & Professional Office
BA-2 Commercial & Professional Office
BB Intermediate Business
BB-2 Community Business
BB-3 Specialty Business
BB-4 Heavy Business District
BSC Shopping Center
EX Excavation
IA Light Industrial
IB Heavy Industrial
IS Industrial Select
PO-1 Public Ownership
PS-1 Private Services
PS-2 Private Services
County Boundary
Camp Blanding
0 0.15 0.3 0.6 0.9 1.2 1.5
Miles
This information is provided as a visual representation only and is not intended to be used as legal or official representation of legal boundaries. The Clay County Board of County Commissioners assumes no responsibility associated with its use.
Clay Hill District Design Area
Clay County, Florida

Purpose

To establish design standards for the visual and functional development of non-residential zoned property within the Clay Hill unincorporated area of Clay County, Florida.

Intent

The Clay Hill Community Association has expressed the desire that the commercial areas in the unincorporated community of Clay Hill, located in northwestern Clay County, retain the rural character by encouraging a "rustic, Florida vernacular or cracker theme" in the design of new construction and expansion of retail, office, industrial and other non-residential developments in the overlay district. These architectural design standards are intended to maintain the character of the Clay Hill Community by addressing issues of style, scale, massing, building articulation, roof pitch, doors, windows and building orientation. They are intended to strengthen the identity of the Clay Hill neighborhood by reinforcing the rustic, rural character of the Clay Hill Community utilizing the Florida Vernacular Wooden Cracker Style and its successors, Key West and Greek Revival as the dominant style of the community. Additional strategies include standards for lighting, and signage. The adoption of such standards will improve the health, safety and welfare of the Clay Hill Neighborhood by providing a cohesive neighborhood design and streetscape.

Status Review

Clay Hill is comprised of two rural areas, Clay Hill, located between Long Horn Road and US 301 and Duck Pond located between Carter Spencer Road and Long Horn Road. Jennings National Forest provides a natural break between the two communities. In both areas the primary historic activity has been lumber and turpentine. Wilkinson Elementary and Junior High Schools and Clay Hill Elementary School are located along CR 218 within the study area. Currently property along CR 218 is generally divided into smaller parcels. Neither area historically had a town center but there were at least two grocery store/gas stations, such as the Jim-Budd Store shown on the cover. This history suggests that a rustic/cracker/Florida vernacular style would be appropriate for infill commercial development and redevelopment in order to provide a more unified look to the community.

There has been increasing non-residential development of the area extending from unincorporated Middleburg. The character of the newer development has included warehouses and industrial uses, large gas station/convenience stores. The newer development has not enhanced the "rural community character" of Clay Hill. Some commercial sites are vacant and in disrepair, whereas others include scattered outdoor storage uses. This pattern is not consistent with a community that is generally formed around its three schools and places of religious assembly. Continued development along this pattern may result in typical "strip" development, with each independent parcel adopting a different design pattern and site layout, with out-of-scale signage and lighting.

Such strip development does not give visual clues that the area is a rural residential community and often results in dangerous visual clutter to the driver, making the area unsafe for the residents and school children. CR 218 is currently a 2-lane major collector, linking the eastern part of the County to US 301. Within ten years, CR 218 is expected to become a 4-lane facility, including sidewalks. This is the appropriate time to address the additional pressures on the Clay Hill neighborhood in order to encourage the needed growth in employment opportunities and the availability of goods and services, while preserving the health, safety and welfare and the rural community character of the neighborhood.

Definitions

For the purpose of these guidelines the definitions of the Clay County Land Development Code shall apply and additionally the following words and terms are defined as follows:

(a) Cornice—a horizontal molded projection that crowns or completes a building or wall. The cornice is the uppermost part of an entablature.

(b) Dog-trot—the separation of additional rooms by an open-air corridor providing access to additions in the rear or to the side.

(c) Double Pen—is two room cracker building.

(d) Entablature—assemblage of horizontal moldings and bands supported by the columns of classical buildings. The entablature is usually divided into three main sections: the lowest band, or architrave, which originally took the form of a beam running from support to support; the central band, or frieze, consisting of an unmolded strip with or without ornament; and the top band, or cornice, constructed from a series of moldings, that project from the edge of the frieze. Most entablatures correspond to or are derived from the Doric, Ionic or Corinthian order.

(e) Espalier—fruit tree or shrub that is trimmed to grow flat against a wall or on a trellis.

(e) Expression line—a horizontal linear element extending across a façade evidenced as a noticeable difference of projection or recess, change of color or material, or identified as a clear architectural feature of ornamentation such as a cornice. The line is objective, its expression may vary significantly from building to building and in accordance with different architectural styles.

(f) Pilaster—is a rectangular support that resembles a flat column. The pilaster projects only slightly from the wall, and has a base, a shaft, and a capital. Greek Revival buildings often have pilasters.

(g) Saddlebag—additional rooms at the rear of the building with a side orientation for the porch.

(h) String course—a projecting horizontal band on the exterior of a building marking the separation between floors or levels, also called belt course or horizontal course.

(i) Snipe sign (bandit sign)—means any sign tacked, nailed, posted, pasted, glued or otherwise attached to trees, poles, stakes, or fences, with the message appearing thereon not applicable to the present use of the premises upon which the sign is located.

(j) Transom—a shallow, rectangular window sash (fixed or hinged at top or bottom) located immediately above a door.

Implementation

Developers within the Clay Hill Overlay District shall seek a pre-application conference with the Clay Hill Community Association for comment on proposed building elevations and design schemes as early in the process as possible. This review will provide the Community Association and residents the opportunity to ask questions and resolve issues with the developer prior to final design of the project. It will also allow the Clay Hill Neighborhood Association to be knowledgeable about the implementation of these design guidelines and enable evaluation and assessment. The proposed building elevations and design schemes, shall also be submitted to the County Department of Development Services.

The design review shall be incorporated into the Clay County Development Review Process. A copy of the application shall be forwarded to the Clay Hill Community for comment and Planning Staff shall consider CHCA's review comments. Elevations addressing and identifying the requirements of these guidelines, (front, rear and sides) shall be required for concept, preliminary and final plan review. Applications shall include building elevations drawn to scale and labeled. Sign elevations and placement shall also be included. For all development plans providing exterior lighting, the plan shall be certified by a registered architect or engineer, or lighting professional holding a current LC (lighting certification) from the National Council on Qualifications for the Lighting Profession (NCQLP). Plans shall indicate the location, height and types of lights (manufacturer's catalog cut, including make and model numbers and glare reduction/control devices), footcandle grid to illustrate light levels required, uniformity ratio, lamp wattage, shades, deflectors, beam direction, luminous area for each source of light and a statement of the proposed hours when the luminaries will be on and when they will be extinguished.

Existing developed uses within the overlay district shall comply with the requirements of the overlay district when the structure is expanded, or remodeled or renovated in excess of 50% of the structure's tax-assessed value. Any new building and site expansion areas involving non-residential use of new buildings, exterior lighting or signage shall be subject to these regulations and other applicable standards of the land development code.

To the extent this overlay district may conflict or may not be consistent with other applicable County laws, ordinances, rules or regulations, this overlay district shall govern and control. When the overlay district is silent on an issue that would otherwise be governed by other codes of the

County, those codes shall prevail. To the extent that there is internal conflict, the stricter provisions shall prevail.

Questions of interpretation which do not involve specific and measurable standards may be appealed to the Planning Commission and Board of County Commissioners. Such an appeal may be filed within 45 days of the written issuance of interpretation by the Director of Planning and Zoning. The Director of Planning must schedule a public hearing within 21 days from receipt of the appeal. The appeal hearing shall be a quasi-judicial, de novo hearing and shall allow expert testimony. Public notice shall be no less than two columns by ten inches (1/8) page in size and shall be advertized in a newspaper of general circulation at least seven days prior to the hearing.

Any proposed major or substantial change in the approved project which affects the intent of the development or the application of these guidelines shall be reviewed by the staff consistent with the submittal requirements of the land development code and this overlay district. Minor changes in the building elevations consistent with the guidelines may be approved by the Director of Planning and Zoning.

A landowner may apply to the Board of Adjustment for a variance in accordance with the procedures and standards provided generally for variances under the Zoning Code. This procedure shall be allowed only for specific and measurable standards that the applicant contends to cause a hardship due to unique site characteristics.

Florida Vernacular Architectural Style

Florida Vernacular architectural style is an unpretentious style found on farms and in rural communities, generally of wood construction. Commercial structures of the same era also included stone, brick and masonry. These buildings have a simple grace and beauty, and are particularly suited to the Florida climate. There are four vernacular styles that stand out in Florida: wooden Cracker; wooden Caribbean; masonry and stucco Mediterranean Revival; and masonry and stucco Modern. Among the four, the wooden Cracker style is the dominant in Clay Hill and is also chosen by the Clay Hill Community Association as a main style for the community characteristics.

A Cracker house is a wooden shelter built by the early Florida and Georgia settlers. Abundant supplies of cedar and cypress caused those usages as major building materials. Rocks or bricks made of oyster shell and lime served as pilings to keep the shelters off the ground. A wide shade porch, which is often wrapping around the entire house, provided relief from the Florida sun. Metal roofs were utilized. Since Georgian settlers started, the 'Cracker' style may include some of 'Georgian' and 'Greek Revival' style, which Georgian borrowed from the North. Later, the 'Cracker' style influenced Florida 'Key West' style. The Cracker, Key West and Greek Revival styles lacks arches, and is characterized by an uninterrupted eave line.

Modern interpretation of the Vernacular Style will therefore include Cracker style and a few altered materials of 'Georgian', 'Greek Revival', and 'Key West' styles.

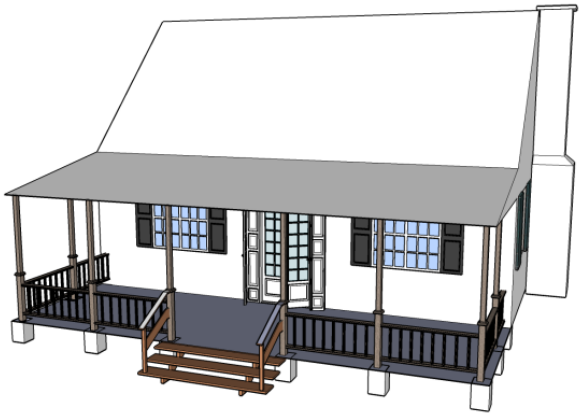
Non-residential Architectural Design Standards

All non-residential buildings and those accessory buildings shall meet the following architectural styles and requirements. Architectural elevations shall be submitted with minor and major development plans clearly depicting and labeling the architectural features required herein.

(a) Architectural Style:

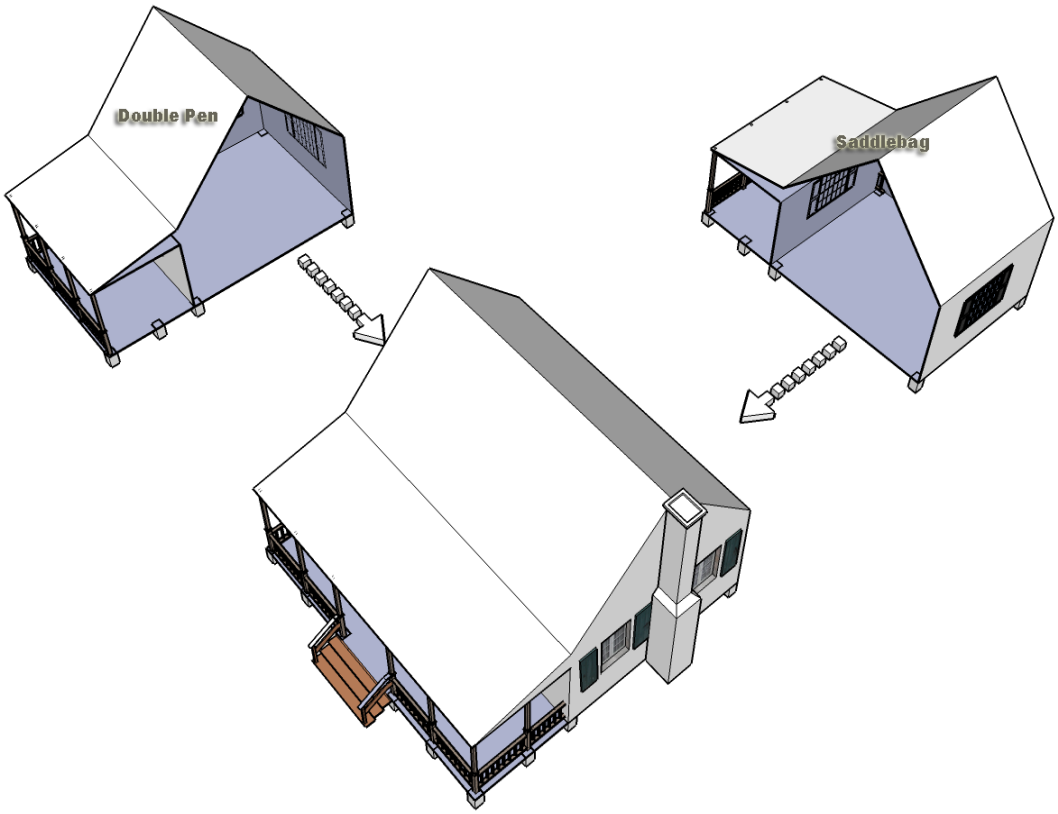
(1) Cracker Style shall be utilized for Non-Residential Buildings under 5,000 square feet.

(i) Cracker Style is characterized by high pitch roofs, raised floors, and large porch areas and it is required to meet the basic characteristics. If steps are not included, the first floor elevation should be raised 6 to 24 inches relative to public sidewalk elevation by site grading.

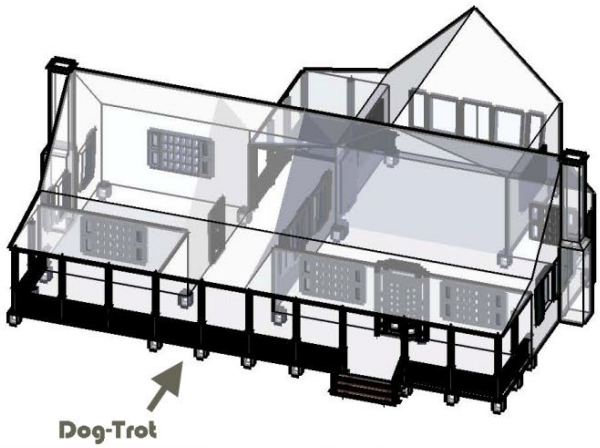


(ii) Building mass shall be generally symmetrical. Of particular concern is the massing of the building as it presents to the public street.

a. When buildings are larger than fifty (50) feet in width, they shall be indented or projected from the plane of the building at each increment of fifty feet by a minimum of twelve (12) inches. Double Pen, Saddlebag or those combinations shall be utilized.



b. When buildings are larger than one-hundred (100) feet in width, they shall have a plane of the building interrupted by a dog-trot or an indented doorway feature that mimics a dog-trot.



c. Blank wall areas shall not exceed ten (10) feet in vertical direction nor ten (10) feet in horizontal directions of any building façade, unless the County approves the use of landscaping as an alternative to the inclusion of wall area architectural design elements. The use of vines (whether

espalier or on trellis/lattice), and hanging potted flowers or other ornamental plants is strongly encouraged for this purpose.

Interpretation of Dog-Trot

(iii) Required Articulation:

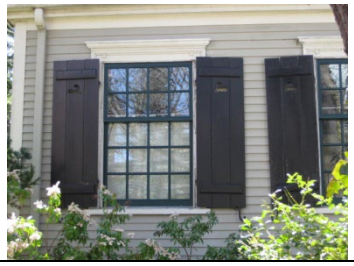
a. Porch balustrade of wooden spindles or board or similar materials in quality and durability to the materials previously mentioned; or

b. Covered porch with wood, stucco, brick or stone supports or similar materials in quality and durability to the materials previously mentioned; and

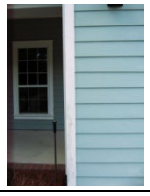
c. Artistic shutter design: louvered, stencils, or cut-outs; or

d. painted window and corner trim, when accompanied by clapboard, board and batten or wood shingle exterior.

Articulation as applied to each building shall be consistent with the Florida Vernacular Style.

		
Porch Balustrade of Wooden Spindles	Covered Porch	Louvered Shutters
		
Raised Floor	Shutters with Cut-out Design	Painted Window and Corner Trim

(iv) Exterior Siding Materials:
Exterior materials shall be horizontal clapboard, vertical board and batten wood siding, brick, stucco, stone or similar materials in appearance and durability to the materials previously named. Glass walls, unfinished concrete block, split face block, untextured tilt-up concrete panels and metal siding shall not be permitted.

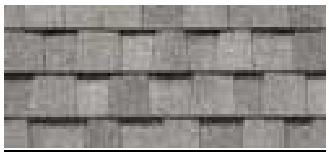
		
Horizontal Clapboard	Shake Materials	Board and Batten

		
Brick	Stucco	Stone (example)

(v) Roof Design and Materials:

a. Roof style shall be primarily gable or hip, with a minimum slope of 4:12.

b. Pitched roof materials shall be Shingles (architectural style,) shake, or metal. If metal roof is utilized, metal (painted or gavalume) 5 V or 16 inch pattern narrow standing seam, or shake materials shall be incorporated. Roof colors shall be consistent with these district regulations.

		
Hip Roof	Pitched Roof	Gable
		
Architectural Shingles	Standing Seam	Shake Materials

(vi) Gutters:

Gutters and downspouts shall have a metal finish or painted finish to be compatible with the roof or building.

(vii) Doors and Entrances:

Doors, entrances, and windows shall be proportioned to reflect the height of an average person and to encourage interest at the street level. Entrances

shall feature ground floor covered entries with roof overhangs. Doors and entrances shall be consistent and symmetrical with gables above. Door and railing systems around porches shall not have a metal appearance or color. The porches shall be supported by wooden posts or brick or stone columns, or a good simulation of natural materials. Doors shall face the street, or be located at street-front corner of buildings, when coupled with a wrap-around porch.

(viii) Windows:

a. Windows shall appear as double hung or single-hung and vertically proportioned, with a minimum of 1.5 feet of vertical height for every one foot of horizontal width. Secondary windows situated on the sides or rear of the building or in a clerestory, gables or dormers may be square. Windows should be separated from corners by one-window width. Windows shall have shutters that shall be appropriately scaled to the window so as to appear operable. Windows shall be framed with wood or good quality materials simulating wood. Windows shall not be reflective nor have dark tinting and aluminum or anodized aluminum metal framing.

b. Store-front windows:

1. Storefronts shall have a bulk-head of wood, brick, stucco, stone or good simulation of natural materials and shall have a minimum height of 2 feet. No glass shall be butt-joined. Window systems shall not appear aluminum. No commercial frontage shall be entirely glass.

2. The street level of each commercial façade shall provide windows between the height of 2 feet and 8 feet in height from the raised porch. Retail uses shall have no less than 50% of the horizontal length of the building façade for each store as window area.

(ix) Building Height

Maximum building height shall be 35 feet, measured to the highest eave. The first floor elevation may be 16 feet, floor to ceiling. The Cracker building type is typically a one-story structure. Multiple stories will include Key West or Greek Revival features, described below.

(x) Colors

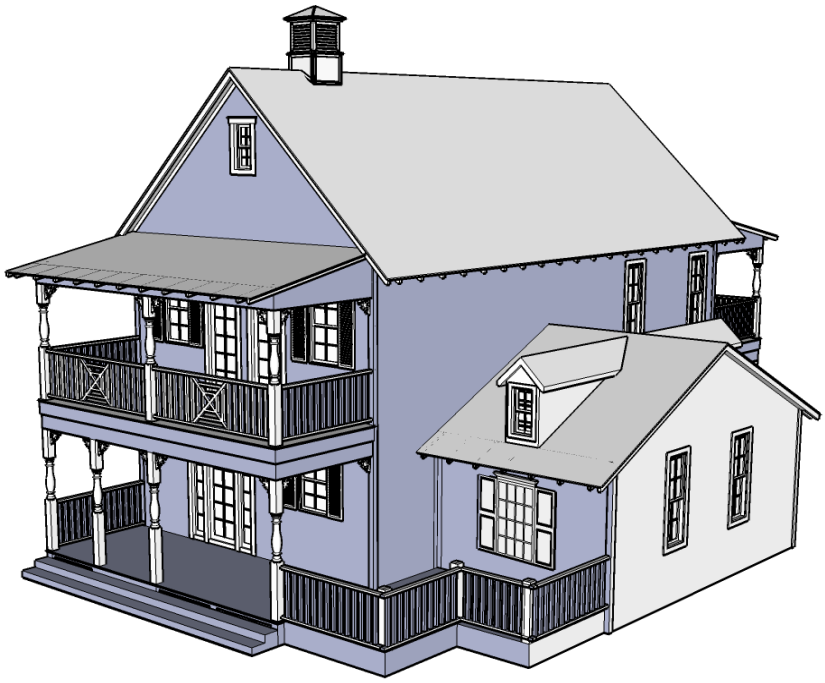
Natural earth-tone, neutral, muted colors and traditional colors such as white, light blues, browns, tans and grays shall be used. Prohibited colors include black as a predominance exterior building color and no monochromatic color schemes. Building trim and detail colors must be harmonious. Exterior painting not reflect non-architectural patterns such as, but not limited to, camouflage, animals, or sports teams.

(2) Cracker and Key West styles shall be utilized for Commercial and Office Buildings over 5,000 square feet and under 40,000 square feet.

(i) All requirements for 'Non-Residential Buildings under 5,000 square feet' shall be met except the first-floor porch balustrades and raised floors.

(ii) Additional Requirements in Building Articulation:

a. Additional architectural treatments from the Key West style, especially dormers and cupolas shall be provided where gable/hip roof or a simulated gable/hip roof is utilized.



b. Options to replace dormers or cupolas include a roof, with louvered "clipped gables"; fish-scale wooden siding or cedar shake siding, particularly on roof gables; and a wrap-around porch area. Dormer proportions shall be 2 to 2-1/2 times taller than they are wide. Dormers shall have symmetrical gables, hips or shed roofs. Dormers generally have more informal eave detail. Dormers may be setback within the roof mass or partially engaged with an exterior wall. Dormers should only be as big as the openings they allow.

c. Articulation as applied to each building shall be consistent with the Florida Vernacular Style.

		
Dormers	Cupola	Clipped Gable

		
Fish Scale Shingles	Cedar Shake Siding	Wrap-Around Porch
		
Colonnade	Bracket supported balcony	Key West Style Kiosk

(iii) Flat roofs may be permitted with the following requirements:

a. All facades which are clearly visible from areas within the property accessible to the public, from adjacent properties, and from public rights of way shall appear to have pitched roof elements that simulate a hip roof. Pitched roof elements shall have a minimum depth of 10 percent of the building depth.

b. Combination of pitched and flat roofs as needed to enclose roof-top equipment.

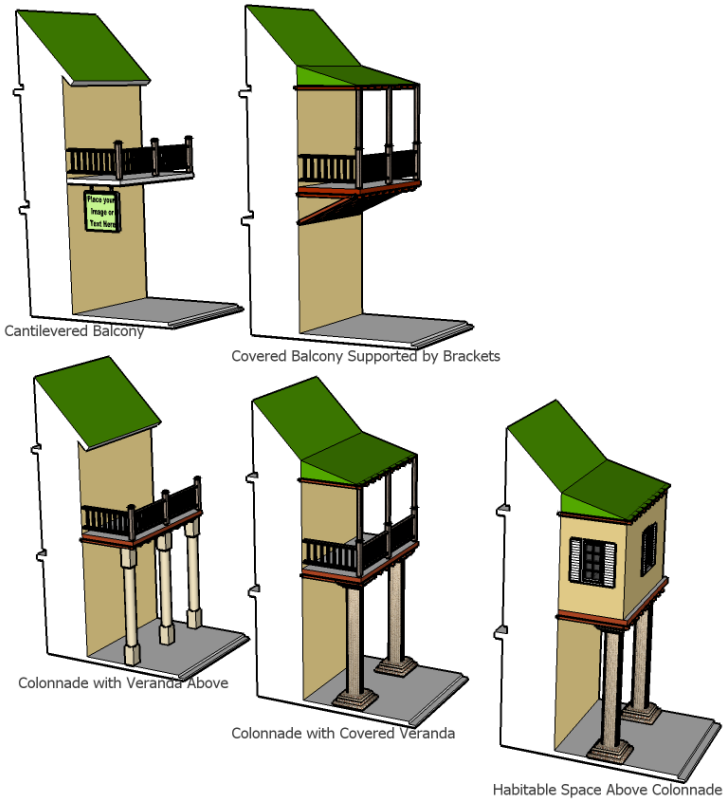
c. Minimum 6 inch high cornice treatments or exposed functional or non-functional rafters with overhangs are required.

(iv) Colonnades and balconies are encouraged on multistory buildings. They can provide both visual rhythm on the front of buildings and protection from the weather for windows and doors below. Balconies shall not be enclosed with screening, but may be roofed. Balconies shall have the following minimum proportions:

Depth: 6 ft. minimum for 2nd floor balcony above colonnade.
Depth: 3 ft. minimum for bracket-supported or cantilevered balcony.

Height:10 ft. minimum clear from the first floor elevation to the balcony.

Length: 50% to 100 % of Building Front, or 25% if corner balcony provided.



(v) Building Height

Maximum building height shall be 35 feet, measured to the highest eave. The first floor elevation may be 16 feet, floor to ceiling. An expression line or string course shall be used to differentiate each floor, except where awnings, balconies or colonnades provide that articulation. The expression lines shall be a molding or jog in the surface of the plane of the building wall greater than 4 inches.

(vi) Colors

In addition to natural earth-tone, neutral, muted colors and traditional colors such as white, light blues, browns, tans, and grays are to be used. No bright, electric or florescent colors shall be used. Prohibited colors include black as a predominant exterior building color and monochromatic color schemes. Building trim and detail colors must be harmonious. Exterior painting shall not reflect non-architectural patterns such as, but not limited to, camouflage, animals, or sports teams.

(3) Cracker, Key West, and Greek Revival styles shall be utilized for Commercial and Office Buildings over 40,000 square feet.

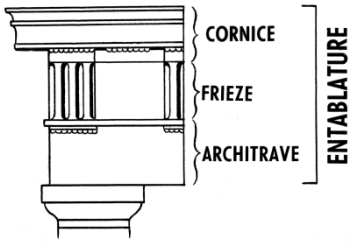
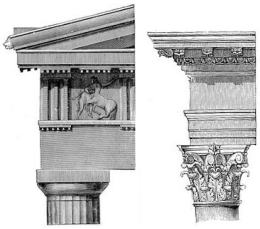
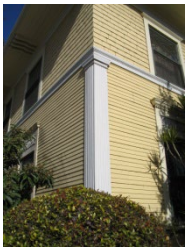
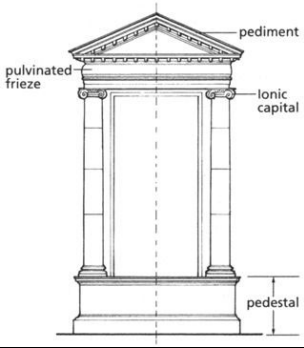
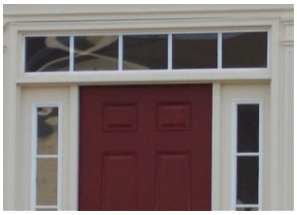
(i) Structures over 40,000 square feet in size, regardless of the number of tenants or users, shall be designed to maintain a human scale.

(ii) All requirements for Commercial and Office Buildings over 5,000 square feet and under 40,000 square feet shall be met.

(iii) Additional Requirements in Building Articulation:

Additional architectural treatments from the Greek Revival style shall be added: classical entablature; pilasters or paneled trim at the building corners; flat-roofed entry porches supported by round or square columns; and door surrounds that include a rectangular transom and sidelights shall be added.

Greek Revival, Green Cove Springs

		
Classical Entablature	Entablature (examples)	Building Corner Trim
		
Roofed-Entry Porch	Rectangular Transom	Modest Greek Revival
		
Bracket Supported Roofed Entry	Pediment with Cornice and Cornice Molding	Flat Roof and Pitched Roof Combination

		
Greek Revival	Key West Interpretation	Greek Revival Interpretation (with Solar Panels)

(iv) Required Building Mass:

a. Building mass shall vary by height and width so that it appears to be divided into distinct massing elements, as follows:

1. Building shall have a minimum of one indention or projection in the plane of building per façade length that is visible from areas within the property accessible by the public, from adjacent properties, and from the public rights-of-way.

2. The average length between indentions or projections shall be 75 feet, or 100 feet along arcaded facades.

3. Indentions or projections shall have a minimum depth of five percent of the façade length. For example, a structure that is 100 ft. long shall have offsets that are a minimum of 5 feet in depth.

4. Pilasters, columns and enclosed downspouts shall not be considered offsets for the purposes of this subsection unless they meet the minimum depth requirements as listed above.

b. All customer entrances shall have awnings, covered porches or arcades to protect customers entering and exiting from inclement weather. Multi-tenant buildings or buildings with more than one entrance shall have a continuous arcade or colonnade connecting each entrance. The arcade shall be functional, without interruptions, and shall have a minimum depth of 10 feet. Canopies and awnings shall be rectangular in shape and attain a slope consistent with the roof structure. Barrel or rounded canopies or awnings shall not be permitted. Awnings and canopies shall be a minimum of 10 feet above the sidewalk.

c. Exterior features shall be used which create the impression of a pedestrian friendly streetscape. Such features shall serve to keep the focus of the pedestrian more or less at eye level by creating a human-scale visual frame. This shall be accomplished by visually separating the ground floor/story from the upper portions of the building, regardless of the actual number of stories. Such features may include a combination of awnings, colonnades or arcades, and a change in material, color, and/or window placement between the ground floor and upper floors, separated by an expression line or string course. The building wall shall be completed with a cornice of significant three-dimensional relief.

d. Developments of this size shall have Liner Buildings or out parcel development along the frontage along US 301, CR 218 and CR 217 at the front setback line. These smaller buildings are intended to obscure the parking requirements and size of the dominant use. Such liner buildings or out parcels shall be developed as part of the 40,000 square ft. development, but maintain the massing dimensions in paragraph (1) a through c of this section, as well as the other requirements of this overlay district, so that the street frontage is consistent with the smaller development pattern of the neighborhood.

(4) Industrial Building Structures over 5,000 square feet

(i) Metal building design for industrial buildings can be attractive and fit in within the context of its surroundings if building form is well articulated and surfaces are judiciously mixed in with other materials, or textures, and colors.

a. For buildings that are visible from ROWs, building features such as columns, intentional deep reveals at construction joints or other details shall be incorporated into building design to add interest into the architectural design.

b. Windows shall particularly be incorporated along the street front elevation(s), which is visible from, to help metal buildings incorporate human scale design elements that address the building to the street. Windows shall incorporate changes in building plane by either recessing or projecting them as integral parts of the overall design. Details required around windows including change in relief, color, pattern, and/or materials.

c. Unless downspouts are a legitimate part of the architectural design and details, they shall be concealed, or if they are part of the design, they shall be coated to be compatible with the wall color. Freestanding outbuildings shall use forms, shapes and materials that are consistent with the main structure.

d. Entries shall incorporate overhangs, recessed openings, canopies or other features to emphasize the entrance area. Utility doors, fire system standpipes and valves, loading docks, etc. shall be concealed or blended in with the architectural design. Canopies and awnings shall be rectangular in shape and attain a slope consistent with the roof structure. Barrel or rounded canopies or awnings shall not be permitted. Awnings and canopies shall be a minimum of 10 feet above the sidewalk.

e. Overall the design shall appreciate Florida Vernacular Style.

(ii) Exterior Siding Materials:

a. In industrial zoning districts, however, structures may have exposed metal for 100 percent of side and rear elevations and 25 percent of the front elevation.

1. Long, stark, and uninterrupted panels used for metal buildings or use of panels with continuous vertical seams shall be avoided.

2. Other building materials or metals that simulate other materials shall be incorporated into structural design to add contrast, variety, and visual interest in building form.

3. Wall systems shall use techniques that hide or disguise wall fastening systems and seams.

(b) General Requirements

(1) All storage shall be located within fully enclosed structures. In those zoning districts that allow outdoor storage or display, such outdoor storage and display shall be screened. (See Landscape Requirements in the LDR)

(2) The following shall be located in rear or side yards, not facing streets, and shall be screened by landscaping from view from any street:

(i) Window and wall air conditioners
(ii) Electric Utility Meters

(iii) Air Conditioning Compressors, and
(iv) Irrigation pumps, pool pumps, back-flow preventers

(3) The following shall be located in rear yards only:

(i) Antennas
(ii) Permanent Barbeques

(4) The following shall not be permitted:

(i) Vending machine visible from any property line;
(ii) Reflective or bronze tinted glass;
(iii) Backlit or glossy finished awnings.

(5) Where handicapped ramps are necessary they should be of the same materials and colors of other porch features, and placed on the site in a manner to compliment porches and principal entrance stairways.

(6) Dumpsters and recycling bins shall be screened by a 6 foot opaque fence or wall, and landscaped with shrubbery, having a minimum height of 25 inches at installation. Dumpster enclosures and any other accessory buildings shall be painted to match the principal structure. Dumpster enclosures shall be oriented on the site so that the open side does not face CR 218 or CR 217 or any pedestrian traffic. If gates are provided, they shall be kept closed. Dumpsters shall be screened from any adjacent residential use.

(c) Additional Requirements
Motor Fuel and Service Station Canopies

(1) This paragraph is intended to insure that canopies associated with convenience stores and motor fuel service stations are designed in a manner that does not visually dominate the site as compared to the principal structure. Such canopies shall meet the following design criteria:

(i) Architectural design shall be consistent with the principal structure in terms of style, roofline, colors, materials and finishes.

(ii) The columns must be of sufficient width so as to appear structural in proportion to the canopy, as consistent with the design of the principal structure.

(iii) Bollards must be painted to match or be compatible with the color of the canopy and the principal structure.

(iv) Signage on the pump island canopy shall be prohibited, including striping with corporate brand colors. In addition, panels removed from signs on existing canopies cannot be replaced.

(v) The maximum clearance between the pavement and the canopy ceiling shall be 14.5 feet.

(vi) The maximum height of the canopy shall be no greater than that of the principal structure.

(vii) The maximum total canopy area shall not be more than 25% greater than that of the principal structure.

(2) Open Bays or Outside Service Area:

Structures that feature open bays or service areas, such as car washes, motor vehicle service stations, and office/warehouses, shall be oriented on a site in such a fashion that the open bays do not face US 301, CR 218 or CR 217. Facility site design shall utilize landscaping to help screen open bays from local public rights-of-way. Service areas that are not inside an enclosed building shall be screened through similar means.

(3) Drive-through facilities:

(i) Drive-through facilities shall be defined to include banking facilities, payment windows, car-service restaurants, food pick up windows, dry cleaning, express mail services and other services that are extended mechanically or personally to customers who do not exit their vehicles. The following uses are not considered drive-throughs: auto fuel pumps and depositories which involve no immediate exchange or dispersal to the customer, such as mail boxes, library book depositories, and recycling facilities.

(ii) The following review standards shall apply to drive-throughs:

a. Maximization of pedestrian and bicycle safety and convenience;
b. Adequate queuing space for vehicles such that there is no back-up of traffic onto adjacent roadways;
c. Provision of by-pass lane or sufficient driveway area around the drive-thought lanes to assist internal vehicular circulation;
d. Minimization of the visibility of the drive-through lanes on street frontage areas.
e. Design of access points and ingress/egress directional flows to minimize impacts on the roadway and non-motorized traffic.

Illumination

(a) All exterior lights and illuminated signs shall be designed, located, installed and directed in such a manner as to prevent objectionable light trespass and glare across the property lines and/or disability glare at any location on or off the property. The "maintained horizontal luminance recommendation" set by the Illuminating Engineers Society of North America (IESNA) shall be observed. See "Lighting Table" below:

Lighting Tables

	General Parking Lot and Pedestrian Lighting		
Levels of Activity	Average Light Level--not to exceed Foot-candles)	Minimum Light Level (foot-candles)	Uniformity Ratio
High	3.6	0.9	4:1
Medium	2.4	0.6	4:1
Low	0.8	0.2	4:1

High –Civic/Recreational Fields, Fast Food, Gas/Convenience Stores
Medium—Shopping Centers, Office Parks, Hospital Parking, Transportation Parking, Residential Complex Parking
Low –Industrial Employee Parking, Storage Parking

(b) Foot-candle Intensities: Foot-candle (f.c.) intensities specified in this article shall be maintained values calculated using a maintenance factor (m.f.) not lower than 72% of the original intensity.

(c) Light Fixture Types: All light fixtures, including security lighting, shall be full cut-off fixtures, and shall be incorporated as an integral design element that complements the design of the building or project through style, material or color.

(d) Building Lighting: Lighting of or on buildings shall be limited to wall-washer type fixtures, which do not produce spill light or glare. A cut-off fixture shall not have more than one percent (1%) of lamp lumens above horizontal. Sag lenses, convex lenses, drop lenses shall be prohibited. Lighting at a building or project shall not be comprised in whole or part by of any floodlights, except floodlights may be permitted with a non-commercial industrial use, provided the floodlights are shielded to meet cut-off standards.

(e) Illumination Levels: Illumination levels at the property line of the building or project is located next to any residential use, and shall not be more than 0.5 f.c. at any point on the lot line when the building or project is located next to any residential use, and shall not be more than 1.0 f.c. when located next to any other use. To avoid glare or spill light from encroaching onto adjacent properties, illumination shall be installed with house side shields

and reflectors, and shall be maintained in such a manner as to confine light rays to the premises of the building or project.

(f) Time Controls: Non-residential lighting shall be installed with time controls so that light levels are reduced not later than one hour after the close of operations to the minimum levels needed under the IESNA to ensure safety and security (approximately a 50% reduction).

(g) Upgrade or Replacement: When fifty percent (50%) or more of any component (e.g.) luminaries, poles) of the exterior lighting system at a building or project is upgraded or changed or replaced (not including regular maintenance), such component for the remainder of the exterior lighting shall be brought into substantial compliance with the requirements of this article.

(h) Height: Light fixtures shall not exceed 30 feet in height in parking areas and other parts of the site. Along sidewalks and parking lot pedestrian corridors light fixtures may not exceed 12 feet in height, unless otherwise required by FDOT.

(i) Lighting of Gas Station/Convenience Store Aprons and Canopies: All of the above standards shall apply for gas stations/convenience stores, as well as the following standards:

(1) Lighting levels on gas station/convenience store aprons and under canopies shall be adequate to facilitate the activities taking place in such locations. Lighting of such areas shall not be used to attract attention to the businesses;

(2) Areas on the apron away from the gasoline pump islands used for parking or vehicle storage shall be illuminated in accordance with the requirements for parking areas set forth elsewhere in this section. If no gasoline pumps are provided, the entire apron shall be treated as a parking area;

(3) Areas around the pump islands and under canopies shall be illuminated in accordance with the lighting table; and

(4) Light fixtures mounted on canopies shall be recessed so that the lens cover is recessed or flush with the bottom surface (ceiling) of the canopy and/or shielded by the fixture or the edge of the canopy so that light is restrained to no more than 85 degrees from vertical.

(j) Temporary Lighting. Temporary (3 months) Holiday lighting during the months of November, December and January shall be exempt from the provisions of this section, provided that such lighting does not create dangerous glare on adjacent streets or properties.

Signs

(a) Shopping Center Signs

Monument signs shall be allowed at each entrance to shopping centers. Allowable sign size shall be 50 square feet, exceeding this figure when a calculation of one square feet per 1,000 square feet of building area allows. Sign size shall not exceed 150 square feet, and sign height shall not exceed 8 feet, with architectural features of the sign not to exceed 12 feet in height. Pole and pylon signs are prohibited. Monument signs may be externally illuminated and shall be designed such that all means of support are concealed. Street numbers shall be placed on signs at a minimum letter height of 3 ½ inches or 10% of sign face height.

(b) Awning Signs:

One awning sign per occupancy may be permitted subject to the following:

(1) The area of copy shall not exceed one square foot per linear foot of, awning front and sides or a maximum of 75 square feet, front and sides.
(2) No awning sign shall be less than nine feet above the ground immediately below it.
(3) Copy may be installed above or on the face of the awning, provided that the copy area of a sign installed above or on the awning be computed on the total of the sign face and awning apron.
(4) Signs attached to the underside of an awning shall have a copy area no greater than six square feet.

(c) Projecting signs: Retail uses may also have projecting signs on buildings. Such signs shall not project more than four feet from the wall and shall not be more than three feet high. Such signs shall be mounted on second floor facades, or if there is no second floor, at least 10 feet above the sidewalk, located above awnings.

(d) Freestanding Retail, Office and Industrial Signs: Monument signs are allowed. Allowable sign size is fifty (50) square feet, exceeding this figure when a calculation of one square foot per five linear feet of lot frontage allows. Such signs shall be a maximum of seventy-five (75) square feet and a maximum height of ten (10) feet. Signs shall be located in an area that is between five (5) and twenty (20) feet from the right-of-way. One freestanding sign per parcel is allowed for the primary street frontage, as indicated by the orientation of the main entrance of the building.

(e) Office/Industrial Park/Complex Uses: Freestanding monument signs are allowed. Size of signs is calculated at a rate of one square foot per 1,000 square feet of building area, beyond a base of 50 square feet. Maximum sign size is 150 feet and maximum sign size is 150 feet and maximum height is 15 feet.

(f) Sign Illumination: Any external above-ground light source shall be located and hidden within a planter bed. Light sources located outside the planter bed shall be in a burial fixture. Sign lights shall focused, directed and so arranged as to prevent glare or direct illumination or traffic hazard from said lights onto residential districts or onto the abutting roadways. No flashing or pulsating or electronic message lights shall be permitted on any sign.

(g) Wall Signs: Wall signs are allowed for commercial, office and industrial buildings. Maximum sign area shall be determined by multiplying the occupancy front foot (linear footage) by 1.5 feet. The maximum sign vertical dimension shall not exceed twenty (20) percent of the building height. In the case of multi-use buildings with individual frontages, these standards shall apply to each portion of the building occupied by a use. Total wall sign size may not exceed 325 square feet.

(h) Prohibited Signs:

(1) Pole or Pylon signs
(2) Billboards and off-premises signs.
(3) Flashing or revolving signs, except for barber poles;
(4) Roof signs;
(5) Snipe signs (bandit signs);
(6) Any sign suspended between poles and illuminated by a series of lights. Any sign erected on a tree or utility pole, or painted or drawn on a rock or other natural feature,
(7) Any sign suspended between poles which is either a pennant or a spinner;
(8) Signs which contain, include, or are illuminated by any flashing, intermittent, or moving light or lights except for those giving public service information such as time, date, temperature, weather or similar information.

(i) Sign landscaping:

All monument signs shall include a minimum 36 inch wide landscape strip around the base (foundation) of the sign. The landscape strip shall be planted with materials that attain a minimum height of 15 inches and maximum height of 30 inches above the finished grade.

Screening and Fencing

(a) If chain-link fencing or stockade fencing or concrete block wall is used along a street edge, a continuous hedge, attaining the same height and minimum 75% opacity, shall also be planted on the outside of the fence.

(b) When a screening is required, a hedge or landscaped berm shall be a minimum 3 ft. in height at the time of planting and shall attain a height of 6 feet within 3 years. Hedge and berm plant material shall have opacity of minimum 85%.

Outdoor Storage, Display and Activity

Large objects such as utility sheds, boats, large equipment, building and construction materials, rock, sand, stone and mulch shall be screened from adjacent rights-of-way and properties using the following standards:

(a) The landscaped buffer area shall be at least 15 feet wide.

(b) Three (3) canopy trees and three (3) understory trees shall be planted to achieve tree canopy along streets for each 100 linear feet of fraction thereof, and arranged so that the trees are distributed along the distance. Tree size and species shall be consistent with the Landscape and Tree Protection Ordinance, Article VI. Where canopy trees would conflict with overheard utilities, two understory trees shall be required in lieu of each required canopy tree, and shall be distributed along the distance.

(c) A 6 foot hedge that is maintained between 30-48 inches in height above grade shall be planted. Hedge material shall be a minimum of 24 inches in height at the time of planting, and spaced no more than 36 inches on center and maintained so as to form a continuous visual screen.

Utilities

New development shall place utilities underground.