Chapter 332 Infrastructure and Site Improvements

Article 1 Streets and Sidewalks

Section 332-1 Street Classification and Right-of-Way Requirements

(A) Street Classification.

(1) Streets are classified into a street hierarchy system based on road function and traffic volumes. Streets are classified into the following categories as shown on the City of Valdosta Street Classification Map:

(a) Interstate principal arterials.

(b) Principal arterials.

(c) Minor arterials.

(d) Collector streets.

(e) Local streets.

(2) The application for approval of a preliminary plat, site development plan, or building permit that will require the Applicant to construct new public streets or make improvements to existing public streets shall determine the design of the street based on projected traffic volumes and use the right-of-way and lane widths as noted in the "Table of Minimum Right-of-Way and Lane Widths." The final determination regarding the classification of any existing or proposed street shall be made by the City Engineer.

(B) Right-of-Way and Lane Widths.

(1) Minimum widths for new streets shall be as shown in "Table of Minimum Right-of-Way and Lane Widths." See City of Valdosta Standards and Specifications for detailed dimensions. Total width of streets includes lane width plus curb and gutter (back to back of curb). Local streets will use an 18" or 24" curb and gutter. Other road/street classifications (GDOT) will use a 30" curb and gutter. If an existing street is used for lot access, the Developer may conform to the existing street width and curb and gutter.

(2) Minimum widths of right-of-way and lanes shall be as shown in the Table of Right-of-Way and Lane Widths.

Table of Minimum Right-Of-Way and Lane Widths

Street Category	Lanes	Minimum R-O-W	Lane Width*
Principal Arterial			
20-foot median	4	120 feet	12 feet
Undivided	5	100 feet	12 feet
Minor Arterial	4	100 feet	12 feet
Collector Street	3	80 feet	12 feet Standard; 11 feet Minimum
Local Street			
Residential	2	50 feet	11 feet *
Commercial	2	60 feet	12 feet Standard ; 11 feet Minimum
Industrial	2	60 feet	14 feet Minimum
Cul-de-sac			
Commercial / Industrial		65 feet radius	50 feet radius
Residential		50 feet radius	40 feet radius

Notes:

**Lane widths include only pavement width. Example: 2 lanes @ 11 feet with 2 feet C&G would be 26 feet back to back of curb.*

10-foot lanes are allowed for some streets in the Traditional Neighborhood Development District, See Section 206-11.

Lane widths on collector streets and other local (non-subdivision) streets will be based on design speed and traffic volumes.

Street categories based on the current Georgia Department of Transportation (GDOT) Functional Classification System for the City of Valdosta.

Typical section details are shown in the Standards and Specifications.

(C) Right-of-Way Dedication.

(1) The minimum width of right-of-way shall be dedicated based upon the street classification, as provided in this section and approved by the City Engineer.

(2) On any existing street abutting a proposed development that fronts only one side of the street, one-half of the required width of right-of-way shall be dedicated, at no cost to the City of Valdosta, as measured from the centerline of the roadway along the entire property frontage. Right-of-way widths for existing streets shall be based on the current classification as determined by the City Engineer.

(3) Additional right-of-way may be required at intersections or other locations fronting the property where turning lanes, storage lanes, medians, re-alignments or other traffic safety improvements are required.

(4) If a new street or thoroughfare is proposed by the City of Valdosta or the State of Georgia to adjoin or traverse the property, the proposed road shall be accommodated into the development plans of the property in accordance with the LDR. These right-of-way requirements shall govern except where there exist clearly defined plans of the Georgia Department of Transportation (GDOT) or the City of Valdosta that require additional right-of-way. In that case, the greater right-of-way requirements shall govern.

(D) Clear Zone Requirements. All new roads/streets should utilize the concepts, designs, and philosophies in the Federal Highway Administration (FHWA) Roadside Design Guide, where practical and feasible to use the latest state-of-the-practice in roadside safety. New roads/streets should also use context-sensitive design concepts in the applications of clear zone. Context-sensitive design concepts are also on the GDOT web site (www.dot.state.ga.us). The application of clear zone concepts on existing roads/streets needs to be used where the greatest safety benefit can be realized. Crash reports, site investigations, and maintenance records offer starting points for identifying these locations.

(E) Guardrails. Georgia Department of Transportation approved guardrails are required on proposed roads that have insufficient clear zones or vehicular recovery zones. Guardrails may be required in areas with steep topography or stream crossings to provide vehicular and pedestrian safety benefits. Where guardrails are provided sidewalks shall be provided on the outside of the guardrail.

(F) Standard Design and Construction Details. Installation of streets, curbs, sidewalks and related right of way improvements shall be consistent with the City of Valdosta Standards and Specifications.

(G) Public Right-of-way Maintenance. It shall be the responsibility of landowners to maintain the portion of public right-of-way which is adjacent to their property, between the right-of-way line (their property line) and the street curb or edge of pavement. Grassed areas shall be kept mowed and

maintained in accordance with the same standards required for private property maintenance prescribed by the City of Valdosta Code of Ordinances.

Section 332-2 Access Management

(A) Applicability. Land subdivision and development that takes its primary access from a state or federal highway or a thoroughfare classified as a collector, principal arterial or minor arterial in the latest GDOT Functional Classification System for the City of Valdosta shall comply with these standards. These standards shall apply unless a more restrictive standard is required by the GDOT.

(B) Entrances of new streets or driveways that directly connect with a state or federal highway shall be reviewed by GDOT.

(C) Joint and Cross Access.

(1) Adjacent commercial or office properties on collector, principal arterial or minor arterials shall provide a cross access drive and pedestrian access to allow circulation between sites.

(2) Joint driveways and cross access easements shall be established for multi-parcel commercial, office or industrial development, wherever feasible, along collector, principal arterial or minor arterial corridors. The building site shall incorporate the following:

(a) Continuous service drives or cross access corridor connecting adjacent parcels along the thoroughfare.

(b) Design speed of 15 mph and a two-way travel aisle width of 24 feet to accommodate automobiles, service vehicles and loading vehicles.

(c) Driveway aprons, stub-outs and other design features to allow abutting properties to be connected and provide cross access via a service drive.

(3) The City Engineer may reduce the required separation distance of access points where they prove impractical, provided all of the following requirements are met:

(a) Joint access driveways and cross access easements are provided wherever feasible in accordance with this section.

(b) The site plan incorporates a unified access and circulation system for vehicles and pedestrians in accordance with this section.

(D) Minimum Driveway Setbacks from Street Intersections.

(1) Driveway connections shall not be permitted within the functional area of the intersection, of two public streets. The functional area includes the longitudinal limits of auxiliary or turning lanes.

(2) Minimum Standards. No driveway access shall be allowed within 150 feet of the centerline of an intersecting minor arterial or principal arterial street, or within 100 feet of any collector street. The City Engineer may reduce these required distances where they prove impractical due to lot frontages of less than 150 feet.

(E) Minimum Access Requirements.

(1) All developments shall have one or more driveways or entrances to a public right-of-way.

(2) Unless otherwise specified by applicable zoning or overlay district standards, the number of such access points shall be as shown in “Table of Minimum Number of Access Points.”

Table of Minimum Number of Access Points

Type of Development	Minimum Number of Driveway Access Points	Minimum Type of Primary Access
Residential, less than 25 units	1	Local Street or Collector Street
Residential, 25 - 200 units	2	Local Street or Collector Street
Residential, more than 200 units	3	One Collector
Non-Residential, less than 50 required parking spaces	1	Local Street or Collector
Non-Residential, 50-300 required parking spaces	2	One Collector
Non-Residential, 301 – 1,000 required parking spaces	3	One Minor Arterial
Non-Residential, more than 1,000 required parking spaces	4 or more	Two Minor Arterials

(F) Separation of Access Points.

(1) Residential Subdivisions located along existing arterial streets shall be required to provide reverse frontage lots or parallel frontage roads where feasible.

(2) Along state or federal highways, no more than one point of vehicular access from a property shall be permitted for each 300 feet of lot frontage, or fraction thereof, although requirements of the GDOT shall apply whenever more restrictive.

(3) Along arterial or collector roads other than state or federal highways, no more than two points of vehicular access from a property to each abutting public street shall be permitted for each 300 feet of lot frontage, or fraction thereof; provided, however, that lots with less than 200 feet of frontage shall have no more than one point of access to any one public street. The City Engineer shall determine whether the points of access may be unrestricted or will have to be designed for right-in, right-out traffic flow. To make this determination the City Engineer may require a traffic impact study to be performed by the owner.

(4) No point of access shall be allowed within 35 feet of the right-of-way line of any street intersection for single-family and two-family residential lots and within 50 feet for multi-family and non-residential properties.

(5) Corner lot access shall be located as far from the intersection as reasonably possible to reduce turning movement conflicts and to promote proper traffic circulation.

(6) Unless otherwise specified by applicable zoning district or overlay district standards, the separation of access points on any street shall be determined by the established speed limit of the street, with the following minimum spacing requirements as provided in “Table of Minimum Driveway Spacing.”

Table of Minimum Driveway Spacing*

Speed Limit	Minimum Driveway Spacing
25	125 feet
30	125 feet
35	150 feet
40	185 feet
45	230 feet
50	275 feet
55	350 feet
60	450 feet
65	550 feet

* The City Engineer may reduce the minimum spacing when the required distance is impractical due to lot frontages of less than 125 feet.

(7) The distance between access points shall be measured from the centerline of the proposed driveway to the centerline of the nearest adjacent driveway or street.

(8) Driveways shall be located so that the radius return is a minimum of 4 feet from a property line that intersects the right-of-way line.

(9) The requirements of this Section are not intended to eliminate all access to a parcel of land that was legally subdivided.

(G) Emergency Access. All public streets, private and residential drives shall be designed and maintained so as to provide safe and convenient access for emergency vehicles. New developments with restricted access, such as gated subdivisions shall be subject to review and approval by the Director. See Section 302-11(C).

Section 332-3 Driveway Design Standards

(A) Permits Required. No driveway shall be constructed abutting a City-maintained road or street until all applicable driveway permits have been approved and issued by the City Engineer. For driveways that abut a state or federal highway, all applicable permits shall be obtained from the GDOT prior to construction.

(B) General Requirements. See also Section 332-2

(1) Joint access driveways are permitted in order to achieve minimum driveway spacing requirements.

(2) Unless otherwise specified by the applicable zoning and/or overlay district standards, no property may have a curb cut in excess of 40 feet in width, excluding the minimum required radius, without approval of the City Engineer.

(3) If a non-residential driveway design is one-way in or one-way out, then the driveway shall be a minimum width of 14 feet and shall have appropriate signage designating the driveway as a one-way connection.

(4) For two-way, non-residential access, each travel lane shall have a minimum width of 11 feet. When more than two lanes are proposed, a specific driveway design must be approved by the City Engineer.

(5) Driveways that enter an arterial or collector street at traffic signals must have at least two outbound lanes of at least 11 feet in width and one inbound lane with a maximum width of 12 feet.

(6) Except for single-family residences, driveway grades shall conform to the requirements of the Georgia Department of Transportation Design Standards.

(7) Driveways shall intersect roads or streets with no more than a 10 degree skew from a 90-degree angle.

(8) Driveway aprons shall slope from the right-of-way to the edge of pavement or gutter flow line. For all non-single-family driveways and entrances, a storm sewer inlet or grade break shall be provided at the right-of-way line to prevent discharge of stormwater onto the public right-of-way.

(9) Driveways shall comply with the minimum requirements of the City of Valdosta Standard Design and Construction Details, based on projected use and classification.

(10) Driveways serving single-family detached or attached residences may be no less than 10 feet wide and no more than 20 feet wide at the right-of-way line and shall provide a radius to the back of the curb of no less than 5 feet. All other driveway curb cuts on public streets shall conform to the standards shown on the driveway details contained in the City of Valdosta Standard Design and Construction Details.

(11) All driveways and driveway curb cuts on state highways shall conform to GDOT Standards.

(C) Driveway Construction Standards.

(1) Sidewalks and curbs adjacent to driveways shall meet requirements of the Americans with Disabilities Act.

(2) Portions of driveways within the public rights-of-way shall be 6” thick, 3000 psi fiber-reinforced concrete.

(3) Driveways shall be no closer than 3 feet, at the closest point, to an at-grade utility structure, including, but not limited to, curb inlets, drainage structures, streetlights, telephone and electrical poles, boxes and transformers, manholes, handholes and water meters.

(4) Driveways shall be no closer than 5 feet from a street tree or fire hydrant.

(5) Water and sewer lines shall be located outside of driveways, except for generally perpendicular crossings.

(6) Commercial driveways shall provide a 20-foot minimum radius at intersection with a public street. For property used for industrial purposes, the minimum radius shall be 50 feet.

(D) Auxiliary Lanes.

(1) Along any arterial or collector street, a deceleration lane, acceleration lane, larger turning radius, traffic islands or other devices or designs may be required by the City Engineer to avoid specific traffic hazards that, otherwise, would be created by the proposed driveway location.

(2) Deceleration lanes may be required by the City of Valdosta at each access point on streets classified as arterials or collectors when the posted speed limit is 35 mph or higher and otherwise where considered necessary by the City Engineer based on traffic volumes. Minimum deceleration lengths are specified in the “Table of Deceleration Lane Requirements.” The City Engineer may vary length requirements based upon a consideration of available sight distance and traffic volumes.

Table of Deceleration Lane Requirements

Operating Speed	Min. Length of Lane
35 mph	100’ + 50’ taper
40 mph	150’ + 50’ taper
45 mph	175’+ 100’ taper
55 mph	250’ + 100’ taper
60 mph	300’ + 100’ taper
65 mph	350’ + 100’ taper

(3) When a new deceleration lane required by this Section is proposed to begin or end within 50 feet of an existing deceleration lane, driveway or street intersection, then the new deceleration lane shall be extended as needed to provide a safe, continuous connection with adjacent or nearby deceleration lanes, driveways and intersections.

(E) Sight Distance. All roads, streets, and driveways shall provide adequate sight distance as shown in the Table of Intersection Sight Distance Requirements. See also City of Valdosta Standard Design and Construction Details.

Table of Intersection Sight Distance Requirements

Design Speed	Sight Distance, Feet				
	2 lanes	3 and 4 lanes		5 and 6 lanes	
	SDL=SDR	SDL	SDR	SDL	SDR
25 mph	280	290	315	335	350
30 mph	335	350	375	400	420
35 mph	390	410	440	465	490
40 mph	445	470	500	530	560
45 mph	500	530	560	595	630
50 mph	555	590	625	660	700
55 mph	610	650	685	730	770
60 mph	665	705	750	795	840
65 mph	720	765	810	860	910

SDR means Sight Distance required for vehicle approaching from right side of driveway.

SDL means Sight Distance required for vehicle approaching from left side of driveway.

Section 332-4 Requirements for New Streets

(A) All new streets proposed to be constructed in a subdivision or other development shall be designed and constructed to the minimum standards contained in this Article, in accordance with the classification of streets.

(B) If a new street or thoroughfare is proposed by the City of Valdosta or the State of Georgia to traverse the property, the proposed street shall be designed and constructed in accordance with the street classification as shown in the latest GDOT Functional Classification System for the City of Valdosta and contained in this Article or as shown on plans proposed by the City or State of Georgia. The specific vertical and horizontal alignment of the proposed street shall be as established or approved by the City of Valdosta and/or the State of Georgia, as applicable.

(C) Standard Streets.

(1) If a substandard street (dirt or gravel road or inadequate width of pavement or right-of-way) provides a means of access to a major subdivision or non-residential development, the street shall be upgraded to the street classification standard required by the GDOT Functional Classification System for the City of Valdosta and in accordance with this Article. These improvements shall extend from the entrance of the development to the nearest standard paved street of an equivalent or higher classification, along the route of primary access.

(2) All right-of-way required for these off-site improvements shall be acquired at the expense of the Property Owner. Additional requirements may be mandated by the City as outlined in Section 332-4(B).

(D) Improvements along State Highways. For any development that abuts a state or federal highway, improvements to the roadway and the location and design of any street or driveway providing access from the state highway shall comply with the standards and requirements of the GDOT and this Article. A permit for the proposed access or improvements shall be required to have been approved by the GDOT and incorporated into the construction drawings for the project prior to issuance of a development permit by the City Engineer.

(E) Permanent Dead-end Streets. See Section 302-11.

(1) New streets shall connect at both ends to existing streets unless the City Engineer determines that unique parcel configuration or terrain make a fully connected street pattern infeasible or unsafe.

(2) When necessary, streets designed to have one end permanently closed shall provide a cul-de-sac turnaround and may be no more than 500 feet in length, unless otherwise specified by the standards of any applicable zoning or overlay district or as otherwise approved by the City Engineer.

(3) The length of a cul-de-sac street shall be measured from the center of the cul-de-sac to the center of the intersection with another street.

(4) Cul-de-sacs shall conform to design requirements of the City of Valdosta Standard Design and Construction Details.

(F) Temporary Dead-end Streets.

(1) A temporary dead-end street shall be provided to the boundary of a subdivision to provide access to abutting property for planned continuity of future circulation, improved access for public safety vehicles or for the extension of public water or other utilities to neighboring properties. Such dead-end streets shall be designed to meet the requirements of this Article and to allow their reasonable extension and shall be located so as to be reasonably incorporated into a street design for the neighboring property. A temporary vehicular turnaround shall be provided as shown in the City of Valdosta Standard Design and Construction Details.

(2) Existing dead-end streets on abutting property shall be extended into a proposed subdivision and incorporated into the street design of the development when in the opinion of the City Engineer connection is necessary to ensure safe traffic circulation and/or emergency access.

(3) The provisions of paragraphs (1) and (2) of this subsection may be modified by the City Engineer in cases of serious topographical hardship or unacceptable land use conflicts between the two developments. This modification may be conditioned on the provision of easements necessary for the extension of public utilities, the provision of a cul-de-sac or other permanent turnaround on the dead-end street or the removal of the dead-end street back to its nearest intersection.

(4) Where a dead-end street (other than a cul-de-sac) serves four or more lots in a multi-phase subdivision and such street is to be extended later, the Developer shall be required to provide a temporary vehicular turnaround complying with Section 332-1(B), and Sections 332-7(E) and (F). This requirement may be waived if extension of the dead-end street is approved and under construction prior to its inclusion in a final plat.

(G) Access Roads. Where a development borders on or contains a railroad right-of-way, major utility easement, limited access highway right-of-way or a principal arterial; a public street may be required to be constructed and dedicated within the development approximately parallel to and on each side of such right-of-way. Locations of such service roads shall be aligned with similar service roads on adjacent properties.

(H) Construction access drives are required for vehicles with gross weight of 10,000 lbs. or more.

(1) On multi-phase developments, the Property Owner shall be required to dedicate, install, maintain and remove temporary construction access drives for the ingress and egress of construction vehicles, personnel and equipment.

(2) Temporary construction access drives shall be shown on the concept plan and preliminary plat and shall access an existing City street where possible. Construction access drives shall be permitted through the City Engineer, and shall comply with sight distance requirements in Section 332-3(E).

(3) Temporary construction access drives shall be utilized as the sole means of ingress and egress during the construction of subsequent phases of the development, to prevent the flow of construction and heavy vehicular traffic on newly constructed streets completed under earlier phases.

(4) If the City Engineer determines that a temporary construction access drive cannot be provided, due to site-specific restrictions, then the Property Owner shall provide a maintenance bond for those portions of the newly constructed roadway utilized for construction access. The maintenance bond shall provide surety for roadway repairs and resurfacing. The required bond amount shall be the current amount established by the Mayor and City Council. The maintenance bond shall be provided to the City prior to the start of construction, and shall not expire for a period of 18 months following the completion of all construction activities.

(I) Half Streets. Both the construction of new half streets and the extension of access to existing half streets shall be prohibited. Whenever a street is planned adjacent to the proposed subdivision tract boundary, the entire street right-of-way shall be platted within the proposed subdivision.

(J) Reserve Strips. No subdivision or street in a development shall be designed so as to deny access to abutting properties.

(K) Alleys. (See Section 106-1 for definition.) Alleys are to be constructed to the following standards:

(1) Minimum width of easement: 20 feet.

(2) Minimum 14-foot wide paved travel lane. (20 feet for commercial use.)

(3) 24” rolled curb and gutter.

(4) Minimum 4-foot building setback from the edge of the pavement. No obstructions are permitted in this clear zone.

(5) Utility easements as required by the City Engineer.

(6) Maximum length, 1,200 feet with a minimum of two points of access/egress to a local street or higher classification. No dead-end alleys may be longer than 200 feet.

(7) Maximum grade of 8%.

(8) Paving and base must be constructed to standards of public streets.

(9) Alleys shall be signed, "Fire Lanes – No Parking."

(10) Alleys are to be maintained by property owners or homeowners associations.

(L) Street Jogs.

(1) Local streets shall either directly align or have offsets of a minimum of 150 feet, as measured between the centerlines.

(2) Where it is not feasible to align new streets or entrances with an existing street intersecting nearby on the opposite side of a collector or arterial street, then the new street intersection shall be no less than 250 feet from the intersection of the existing street, as measured between centerlines of the two opposing streets.

(M) Traffic-Calming Measures. Street layout and configuration should include a series of relatively short interconnected roadways in lieu of longer straight roads, to discourage excessive speeds. Traffic-calming measures shall be incorporated where required by the City Engineer. See Section 332-10 of this Article.

(N) Maintenance of Private Ways. Property owners or the property owners association shall continuously maintain private streets, alleys, driveways, and other travel ways in a safe and passable condition.

Section 332-5 Street Intersections

(A) Angle of Intersections. Intersections of two public streets shall form an angle that is between 85 and 95 degrees, unless otherwise approved by the City Engineer.

(B) Intersection Approaches.

(1) The approaching street at any intersection shall be designed and constructed to provide both the minimum horizontal and vertical approach distances, as defined in this section and indicated in the table below.

(2) Minimum horizontal approach distance is defined as the minimum distance required along the centerline of an approaching street, perpendicular or no less than 85 degrees to the intersected street, as measured from the edge of pavement of the intersected street to the point of horizontal curvature on the approaching street.

(3) Minimum vertical approach distance is defined as the minimum distance required along the centerline of the approaching street, at a grade less than or equal to the recommended grade indicated in the "Table of Intersection Approach Distances," as measured from the edge of pavement of the intersected street to a point on the profile of the approaching street where grades exceed recommended values.

Table of Intersection Approach Distances

Approaching Street Classification	Minimum Horizontal Approach Distance[1]	Minimum Vertical Approach Distance[1]	Recommended Approach Grade[2]
Principal Arterial	300 feet	200 feet	2.0%
Minor Arterial	200 feet	150 feet	2.0%
Collector Street	150 feet	100 feet	2.5%
Local Street	75 feet	50 feet	4.0%

1. Distance of the approach is measured from edge of pavement of the intersected street to the point of curvature in the approaching street.

2. Recommended approach grades shall be considered as the maximum allowable grades, unless otherwise approved by the City Engineer. No grade shall be less than 1.5 %.

(C) Crown Taper. The typical crowned street cross section shall be tapered over a distance of not less than 50 feet on the approaching street at all intersections, in order to connect flush with the line and grade of the edge of pavement on the intersected street. The cross section taper shall be designed and constructed so as to provide for the adequate drainage of surface water from all portions of the travel surface and gutter.

(D) Intersection Radii. Intersection radii for roadways measured at back of curb and for the right-of-way lines shall be as shown in the "Table of Intersection Radii." For intersecting streets of different classification, the larger radii shall be provided. Larger radii may be required for streets intersecting at angles less than 90 degrees. In all cases, adequate right-of-way shall be provided to maintain a minimum of 12 feet from back of curb to right of way line. Miters are acceptable.

Table of Intersection Radii

	Radius at Intersection
Principal Arterial	30 feet
Minor Arterial	30 feet
Collector Street	25 feet
Local Street–Rural or Urban	25 feet
Commercial/Industrial	35 feet

(E) Islands. Islands in street intersections shall conform to the design requirements of the City of Valdosta Standard Design and Construction Details. In no case shall anything in an intersection island extend more than 3 feet above the street grade within the right-of-way; except traffic regulatory devices, street trees and other infrastructure erected or approved by the City of Valdosta. No island shall be approved that contains less than 100 square feet. Irrigation or other private systems shall not be installed within public right-of-way. No island may be constructed without a maintenance agreement approved by the City of Valdosta.

(F) Intersection Corner Sight Distance.

(1) Intersections shall be designed with adequate corner sight distance for each approaching street. Where necessary, back slopes shall be flattened and horizontal or vertical curves lengthened to provide the minimum required sight distance.

(2) The minimum corner sight distance from the approaching street shall be calculated using latest edition of AASHTO "Policy on Geometric Design of Highways and Streets."

(G) Obstructing Visibility at Intersections. On all corner lots located at a street intersection, a clear sight zone shall be maintained at all times. The design and location of new intersections shall meet the standards of Section 332-3(E).

(H) Turning Lanes at Intersections. Center left-turn and/or right-turn lanes shall be provided on all new internal project streets, and on all existing City streets, where traffic volumes and turning movements warrant the installation. At the request of the City Engineer, the Applicant shall prepare and submit a detailed traffic impact study (see Chapter 302), outlining projected traffic volumes,

turning movements and auxiliary lanes required. The methodology and conclusions presented in the traffic impact study are subject to the review and approval of the City Engineer.

(1) Center Turn Lane Storage. A minimum storage length of 150 feet shall be provided for center left turn lanes on any arterial streets. A minimum storage length of 100 feet shall be provided on all collector streets. Additional storage capacity shall be provided as required, based on projected peak traffic volumes and turning movements.

(2) Taper Length. The taper length shall be in accordance with AASHTO design standards, based on the lane widths and design speed of the subject street.

(3) The design, right-of-way acquisition, drainage system improvements, roadway widening, asphalt construction, traffic control, traffic striping, signage and all other improvements required or incidental to the installation of auxiliary turn lanes required to support any proposed development shall be completed by the Developer or Applicant, at no cost to the City of Valdosta.

(4) Under the following conditions, left storage lanes shall be added to two-lane collectors or arterials with speed limits of 30 MPH or more, at un-signalized locations where left turning vehicles will leave the arterial or collector street and enter major driveways or development entrances. See the "Table of Left Storage Lane Requirements."

Table of Left Storage Lane Requirements

If average peak hour left turn volume is :	And collector/arterial traffic is: (vehicles per lane in peak hour):	Left turn storage lane
Over 25	All volumes	Required
16-25	51-100	Required
13-15	101-200	Required
1-12	Over 200	May be required
Any volume	Any volume	May be required by City Engineer if sight distance (in feet) in either direction is less than 10 times the posted speed limit.

Source: Institute for Traffic Engineers, Traffic Engineering Handbook.
Note: Traffic volume shall include all additional vehicles from proposed development.

(5) The length of left turn storage lanes and tapers shall be as prescribed in the Table 4-9, "Minimum Design Elements of Left Turn Lanes", GDOT "Regulations for Driveway and Encroachment Control", latest edition.

Section 332-6 Geometric Street Design Standards

(A) All streets and roadways shall be designed in accordance with the AASHTO Standards, as provided in "A Policy on Geometric Design of Highways and Streets," latest edition and any amendments thereto. All applicable signage, markings or other traffic control measures shall be designed in accordance with the Manual of Uniform Traffic Devices (MUTCD), latest edition and any amendments thereto.

(B) Horizontal Curvature and Super-elevation. All new streets shall adhere to the standards governing horizontal curvature and super-elevation in "Table of Horizontal Curvature and Super-elevations," unless otherwise specified by AASHTO Standards:

Table of Horizontal Curvature and Super-Elevations

Street Category	Design Speed	Minimum Radius	Maximum Super-elevation
Principal Arterial	55 mph	1,190 feet	0.04
Minor Arterial	45 mph	711 feet	0.04
Collector Street	30 mph	250 feet	0.04

Note: Super-elevation not required for local streets.

Source: AASHTO: Geometric Design of Highways and Streets, 2004.

(C) Tangents. Between reverse horizontal curves there shall not be less than the minimum centerline radii and tangents specified by current AASHTO Standards. Compound radii are prohibited.

(D) Vertical Alignment.

(1) All changes in street profile grades having an algebraic difference greater than that shown the latest edition of the GDOT Design Manual shall be connected to a parabolic curve having a minimum length in feet (L), which is equal to the algebraic difference between the grades in percent (A) multiplied by the design constant (K) assigned to the street according to its classification and design speed (i.e. L = KA).

(2) (K) values shown in the Table of Constant (K) Values for Vertical Alignments shall be utilized in all cases, and in no case shall the constant K value be less than the minimum permitted.

Table of Constant (K) Values for Vertical Alignments

Street Category	Design Speed	Crest Vertical Curves (K Value)	Sag Vertical Curves (K Value)
Principal Arterial	55 mph	114	115
Minor Arterial	45 mph	61	79
Collector Street	30 mph	19	37
Local Street	25 mph	12	26

Source: AASHTO: Geometric Design of Highways and Streets, 2004.

(E) Street Centerline Grades.

(1) Street grades exceeding 10% for a minor collector and 12% for local streets are prohibited, unless otherwise approved by the City Engineer. The City Engineer may grant limited exceptions on maximum grades, based on conclusive evidence that shows a lesser grade is impractical due to topographic or site specific limitations.

(2) The minimum centerline grade for any street shall not be less than .5%, without exception, due to drainage concerns. A desirable minimum centerline grade of 1% shall be provided where possible.

(3) The maximum centerline grade across any cul-de-sac turnaround shall be 5%.

(F) Crown Slope. Unless super-elevated, all streets, except alleys, shall be designed and constructed with a crown slope of ¼" per foot, to provide for the adequate drainage of surface water from the street centerline to the gutter or edge of pavement.

(G) Super-elevation. The design of arterial and major collector roadways may require the super-elevation of the travel surface on horizontal curves in accordance with AASHTO Standards. The design and horizontal alignment of minor collectors and local streets serving residential areas

should avoid the use of super-elevation where possible. In all instances, the maximum super-elevation rates shall be in accordance with paragraph (b) above. Under no circumstance is a curved street of any classification to be reverse super-elevated.

(H) Pavement Design.

(1) Pavement sections shall be constructed in accordance with the standards in the "Table of Standard Pavement Sections."

Table of Standard Pavement Sections

Street Type [1,2]	9.5 mm Superpave		Superpave			GAB[3]
	Type I	Type II	12.5 mm	19mm	25mm	
Residential Streets						
< 250 VPD	1 ½"		2"			8"
250-1,000 VPD	1 ½"		2 ¼"			8"
1,001-5,000 VPD		1½"	2½"			8"
Commercial/Industrial Streets						
< 250 VPD			1½"	3"	4"	10"
251-1,000 VPD			1½"	3"	3"	10"
1,001-5,000 VPD			2½"	3"	4"	12"

Notes:

1. Only streets that serve strictly residential uses (<1% trucks) shall use the sections listed above as residential. All other developments shall use the commercial/industrial sections.
2. All streets designated as "arterial" shall have a pavement design submitted that meet the requirements below.
3. Graded Aggregate Base (GAB). Aggregate shall be crushed granite.

(2) The Developer may submit for review and approval an alternative pavement design, prepared at the Developer's cost. This submittal shall meet the following requirements:

(a) Design prepared by a Professional Engineer licensed in Georgia.

(b) Soils testing results prepared by a Professional Engineer licensed in Georgia.

(c) Design shall be completed using the GDOT's "Asphalt Pavement Design Procedures," latest edition.

(d) Design shall be based on 15-year pavement life.

(e) Traffic shall be calculated using the Trip Generation Manual, by the Institute of Transportation Engineers, latest edition.

(f) Traffic projections shall be made for any streets that serve areas outside of the proposed development.

(g) Traffic counts, including truck traffic, shall be made as required on existing streets.

(h) The City of Valdosta will require written certification that material used in sub-base conforms to the soils test results used in the design.

(i) Cores of pavement and base will be made as necessary to verify actual thickness of each pavement layer (surface, base, and sub-base). Test results shall be certified by a 3rd party contractor at the expense of the Developer. Copies of the test reports will be made available to the City Engineer. The minimum number of cores of surface, binder,

base, and sub-base is one core per 100 feet of each street (or one core with streets less than 100 feet in length).

Section 332-7 Street Construction Standards and Specifications

Unless otherwise specifically set forth in this LDR, all of the materials, methods of construction, and workmanship used in street construction shall conform to GDOT's "Standard Specifications for the Construction of Transportation Systems," latest edition and any amendments thereto.

(A) Pre-construction Meeting. A mandatory pre-construction meeting is required for all development, construction and land disturbing activities, unless this requirement is specifically waived by the City Engineer. The Applicant or Developer shall contact the City Engineer to schedule the pre-construction meeting. The City Engineer will ensure the attendance of all necessary staff. The Applicant or Developer must, at a minimum, have the following project personnel attend the pre-construction meeting:

(1) On-site Project Representative on behalf of the Owner or Developer.

(2) General and/or Grading Contractor.

(3) Sub-contractors performing drainage system installation, base course construction and asphalt paving.

(4) Other specialty contractors performing a significant portion of the work.

(5) Design professional responsible for project design.

(B) Clearing and Grubbing. Before grading is started, the entire right-of-way area shall be first cleared and grubbed of all trees, stumps, roots, brush, debris and other objectionable materials. Specific trees that are intended for preservation shall be indicated on the design plans and subject to the review and approval of the City Arborist. All clearing limits shall be marked and tree protection fence installed prior to the pre-construction meeting. All erosion control measures shall be installed as required by the approved plans and in accordance with Chapter 306 of this LDR, Soil Erosion and Sedimentation Control and the City of Valdosta Standard Specifications for Construction as applicable.

(C) Rough Grading.

(1) Grading activities shall be performed in accordance with the lines and grades shown on the approved construction plans. Grading plans shall include a plan view of the proposed roadway, showing existing and proposed contour lines at an interval of no more than 2 feet, as well as a profile of the street centerline and all applicable curve and design data. Grading plans shall outline those areas required to remain undisturbed (i.e., tree protection areas, buffers, etc.) and shall indicate protective fencing or staking to be placed surrounding such areas.

(2) Cut or fill slopes shall not exceed three horizontal units to one vertical unit, unless otherwise approved by the City Engineer based on site-specific topographic and geotechnical conditions. Flatter slopes shall be provided, where possible, to better accommodate utility installation and maintenance activities.

(3) Erosion and Sediment Control Best Management Practices (BMPs) in accordance with the GA Stormwater Management Manual, shall be installed in accordance with the approved construction plans, prior to or concurrent with all land disturbing activities. Alternate or additional BMPs may be required by the City Engineer, if it is deemed that current measures do not provide adequate protection.

(4) Suitable material from roadway cuts may be used in the construction of fills, approaches or at other places as needed. Excess or unsuitable materials, including organics, soft clay, etc.,

shall be removed from within the right-of-way and for a distance not less than 1 foot on each side of the street surface for each vertical foot of unsuitable material at the right-of-way line.

(5) Fill material shall be placed in uniform horizontal layers or "lifts," not to exceed a compacted thickness of more than 6". Moisture content shall be adjusted as necessary to compact material to 98% of maximum dry density. The top 12" of sub-grade material under any roadway, drive or parking area shall be compacted to 98% of standard proctor density.

(D) Final Grading and Sub-grade Preparation.

(1) After rough grading, storm sewer and utility installation is complete and the back-fill in all such ditches is thoroughly compacted, the sub-grade shall be brought to the lines, grades, and typical roadway section shown on the plans.

(2) All utility crossings shall be installed prior to sub-grade approval. If utility installation cannot be completed at this time, the Developer shall coordinate the installation of casings or conduits to accommodate subsequent utility installation without disturbance to the sub-grade. Utility trenches cut in the sub-grade shall be backfilled and compacted as specified herein. The City Engineer may require additional compaction tests at utility crossings to verify compaction.

(3) Prior to sub grade inspection and approval, the registered land surveyor shall certify in writing to the City Engineer that the lines and grades of the proposed street or streets are within 6" of design grades. This letter shall be submitted prior to sub grade inspection by City personnel.

(4) Sub-grade Testing and Inspection: Sub-grade compaction shall be tested by the Developer's geotechnical engineer, prior to construction of the graded aggregate base course. The City shall perform visual inspections of actual live axle loads, commonly referred to as a "roll test." The Developer shall submit a compaction report to the City Engineer prior to the "roll test." The Developer shall schedule all roll tests with the City Engineer no less than 24 hours in advance. The Developer also shall provide an adequate testing vehicle, minimum 18-ton hauling capacity, fully loaded. Compaction testing shall be performed every 300 linear feet or at the discretion of the inspector. All areas or sections of the sub-grade that do not pass visual live load compaction testing, at the discretion of the City Engineer, shall be corrected. Once the Developer makes all necessary corrections, it shall be his/her responsibility to re-schedule any and all subsequent roll tests.

(5) Provisions shall be made to provide adequate drainage of the street surface during the course of construction, including temporary 4" drain lines in all concrete gutters.

(E) Graded Aggregate Base Course Construction.

(1) The base course shall consist of graded aggregate, of a minimum thickness as required based on the street classification. Minimum base course thickness is provided in Section 332-6(h). The base course shall be constructed in accordance with the lines, grades and typical cross sections shown on the approved construction plans. All aggregate materials shall be secured from GDOT- approved sources and shall comply with the "Standard Specifications for the Construction of Transportation Systems," latest edition.

(2) All base course material shall be spread uniformly with a mixture spreader, or other approved means, to the proper depth to obtain the required thickness. The maximum thickness of base course material to be placed in one course shall be 6 in. compacted. If the design thickness of the base course is more than 6 in., it shall be constructed in two or more courses of approximate equal thickness. With sufficient and suitable equipment, the City Engineer may allow base material to be placed in lifts up to 8 in.

(3) The moisture content of the aggregate material shall be uniformly distributed and shall be adequate to allow compaction to a minimum of 100% of the maximum dry density based on the Modified Proctor Method. Immediately following the spreading of the graded aggregate,

all material shall be compacted to the full width by rolling with a smooth-wheel, vibratory roller weighing 7 to 10 tons. Rolling shall progress gradually from the edge to the center, parallel with the centerline of the street and lapping uniformly each preceding track by one-half the width of such track. Rolling shall continue until the entire surface is smooth, closely knit, free from cracks, conforming to the prescribed line, grade and cross section, within the limits specified.

(4) Any irregularities, areas of segregation or depressions that develop under such rolling shall be corrected by loosening the material at these locations and adding or removing material until the surface is smooth and uniform. The application of water, applied uniformly over the base course, may be required to achieve adequate compaction. Shaping and rolling shall be performed alternately, as required to prepare a uniform compacted base.

(5) Along curbs, headers, walls and at all locations not accessible to the roller, the base course material shall be compacted thoroughly with mechanical tampers or approved hand tampers.

(6) No base material shall be deposited or shaped when the sub-grade is frozen, thawing, or during other unfavorable weather conditions.

(F) Graded Aggregate Base Course Testing and Inspection.

(1) *Cross Section*. The cross section and crown slope shall be verified at intervals or locations determined by the City Engineer. The Developer shall provide a string line and dedicated personnel to pull the line and allow verification measurements to be made by the City Engineer. Those areas or portions of the roadway, which do not comply with the design cross section or crown slope, shall be corrected and verified by City personnel prior to base course approval.

(2) *Roll Test*. Base course compaction shall be tested and the thickness confirmed by the Developer's geotechnical engineer prior to the application of bituminous asphalt paving. The Developer shall submit a compaction and depth report to the City Engineer prior to the "roll test. The Developer shall schedule all roll tests with the City Engineer no less than 24 hours in advance. Roll testing shall be accomplished by visual inspections of actual live axle loads. The Developer also shall provide an adequate testing vehicle, minimum 18-ton hauling capacity, fully loaded. Compaction testing shall be performed every 300 linear feet or at the discretion of the inspector. All areas or sections of the base course that do not pass visual live load compaction testing, at the discretion of the City Engineer, shall be corrected. Once the Developer makes all necessary corrections, it shall be his/her responsibility to re-schedule any and all subsequent roll tests.

(3) *Prime Coat*. At the completion of base course construction, testing and approval by the City Engineer; the base course shall be primed and sealed with 0.25 gallon of R.C. 70 per square yard. This requirement may be waived by the City Inspector, if the placement of asphalt paving is anticipated within the following 3 to 5 days and prior to any significant rainfall event.

(4) *Additional Inspections Due to Weather Conditions*. If a significant weather or rainfall event occurs following the approval of base construction but prior to asphalt paving, the City Engineer may require additional roll testing to re-verify the structural integrity of the road base. The Developer shall be subject to comply with such additional inspections, at the discretion of the City Engineer.

(G) Bituminous Asphalt Paving.

(1) Bituminous asphalt production, handling, transportation and placement shall meet or exceed the requirements of the GDOT's "Standard Specifications Construction of Transportation Systems," latest edition and any amendments thereto. Asphalt pavements shall be of the superpave mix design, as specified herein; and the use of conventional mix designs will not be permitted, unless otherwise approved by the City Engineer.

(2) Equipment.

(a) *Mechanical Pavers*. Mechanical pavers used for the placement of hot-mix asphalt shall be capable of spreading and finishing all courses to the indicated widths and depths, true to line, grade and cross section, and shall be capable of striking a smooth finish, uniform in density and texture. Mechanical pavers shall be equipped with extendable screeds, capable of spreading at the width of each travel lane in one pass.

(b) *Compaction Equipment*. The compaction equipment must be in good mechanical condition and capable of compacting the mixture to the required density. The number, type, size, operation, and condition of the compaction equipment shall be subject to the approval of the City Engineer. At a minimum, a smooth drum vibratory roller (minimum 8 tons) and a separate pneumatic-tired roller shall be provided. An additional finish roller or larger equipment may be required by the City Engineer, based on visual observations of surface texture or density tests.

(H) Paving Operations.

(1) The City Inspector will require that a copy of the detailed asphalt mix design be submitted prior to asphalt paving. Only asphalt produced by a GDOT-approved plant may be utilized. Plant production, transportation and paving operations shall be so coordinated that a uniform continuity of operation is maintained. If the spreading operations are interrupted for 1 hour or more, a transverse joint shall be constructed. Asphalt shall be delivered to the job site at a temperature that is within ± 20º F (± 11º C) of the temperature of the job mix formula. The City Engineer may reject any asphalt load that does not meet temperature requirements, contains segregated material or does not comply with mix design requirements.

(2) *Weather Limitations*. The mixing and placement of bituminous asphalt pavement shall not be performed when the existing surface is wet or frozen. For all courses, the air temperature for placement of the mix shall be in accordance with the "Table of Air Temperature for Placing Asphalt Pavement."

Table of Air Temperature for Placing Asphalt Pavement

Lift Thickness (Inches)	Minimum Temperature (°F)
1 or Less	55
1.1 to 2.0	45
2.1 to 3.0	40
3.1 to 4.0	35
4.1 to 8.0	32[a]

Note "a": Temperature must be rising and base material may not be frozen.

(3) Bituminous Tack Coat. Tack shall be applied prior to the placement and compaction of all subsequent courses of asphalt pavement, in accordance with GDOT Standards. On curbed streets, the edge of the gutter shall be tacked to provide a water-resistant seal at the joint. Special care shall be taken to avoid the application of bituminous tack to portions of the curb and gutter that are to be visible following construction.

(4) Wearing course must be placed at the earliest of the following times:

(a) Upon completion (final inspection) of principal structures on 80% of the buildable lots in the subdivision.

(b) 2 years after recording of the final plat for the subdivision.

(c) At an earlier time by the mutual consent of the Developer and the City Engineer.

(5) Prior to installation of the surface pavement course and bituminous tack coat, the City Engineer shall inspect existing asphalt pavement for damage from traffic and construction

activities. Any areas found shall be repaired to the City Engineer's satisfaction prior to final paving.

(I) Concrete Streets. Concrete streets are not allowed.

(J) Typical Sections. All streets and roadways shall be constructed to the typical sections specified in the City of Valdosta Standard Design and Construction Details, based on street classification category. Copies of test results are to be made available to the City Engineer as needed for verification of standards and specifications.

Section 332-8 Curbs and Gutters

(A) Except in the E-R zoning district, all new streets or street widening sections shall be provided with curb and gutter, except as noted below. All gutters shall drain positively with no areas of ponding.

(B) Only in rare circumstances shall streets without curb and gutter be allowed with the approval of the City Engineer. Such cases may involve future street widening projects or unique circumstances that prevent the installation of new curb and gutter. Otherwise, all new streets shall have curb and gutter.

(C) All concrete curb and gutter shall be GDOT Standard 9032B, Type 2 (except in subdivisions, where the curb and gutter shall be 24" wide, while all other dimensions remain). Roll-back or Hollywood curbing shall be prohibited, except for alleys.

(D) Curbing shall conform to the following standards:

(1) Concrete shall be Class "A," as defined by the GDOT, and have a minimum strength of 3,000 PSI at 28 days.

(2) One-half inch expansion joints or pre-molded bituminous expansion joint material shall be provided at all structures and radius points. Contraction joints also shall be provided at 10-foot intervals along the curb line and shall not be less than ten feet. Curb shall be sawed through at a minimum of every 60 feet.

(3) When the development ties into existing curbing, the curb and gutter shall transition to and match the existing width and profile at the connection point.

(4) Terminations or curb tapers shall be provided at the end of any gutter. The curb height shall be tapered from 6" to 0" over a distance of 4 feet.

(E) Curb and gutter shall be set true to the line and grade of the street, horizontally and vertically field staked and finished to the section shown on the plans. Line and grade shall be established by the Developer's engineer or surveyor. Offset staking shall be provided at 50-foot intervals.

(F) Curbing not installed in accordance with the requirements of this section or the Standard Details shall be removed and replaced at the Developer's expense. The City Engineer may require and the Developer shall provide core samples to verify concrete thickness.

(G) Disturbed areas along all curbing shall be back-filled, compacted, stabilized and grassed.

(H) Developer is required to take concrete test cylinders (3 each) every 100 cubic yards or one day's pour.

Section 332-9 Sidewalks and Bikeway Requirements

(A) For new development along a local street frontage, sidewalks shall be installed along the northern right-of-way of east-west streets and along the eastern right-of-way of north-south streets, or as

otherwise determined by the City Engineer. For new development along an arterial or collector street frontage, sidewalks shall be installed along such street frontage regardless of which side of the street the development is located.

(B) For new development, sidewalks shall be installed on existing street frontage in a manner that is consistent with the existing sidewalks, and as approved by the City Engineer.

(C) Sidewalks shall be located as shown on the City of Valdosta Standard Design and Construction Details. All new sidewalks shall match and provide a smooth transition to any existing sidewalk.

(D) Sidewalks shall be installed on an individual lot basis at the time of building construction. The City shall inspect the location and construction of the sidewalk. All sidewalks shall be completed upon completion (final inspection) of principal structures on 80% of the buildable lots in the subdivision of within 18 months after recording of the final plat for the subdivision or at an earlier time by the mutual consent of the Developer and the City Engineer.

(E) Unless otherwise specified by applicable zoning or overlay district requirements, a strip of grass or other approved landscape material at least 2 feet in width shall separate all sidewalks from adjacent curbs on public streets. See City of Valdosta Standard Design and Construction Details.

(F) Unless otherwise specified by applicable zoning or overlay district requirements, sidewalks shall be concrete and a minimum of 5 feet wide and 4" thick. Concrete shall be Class "A," as defined by the GDOT, and have the strength of 3,000 PSI at 28 days. Disturbed areas along sidewalks shall be backfilled, compacted, stabilized and grassed. The City Engineer may require and the Developer shall provide core samples to verify core thickness. The Developer shall submit a compaction report to the City Engineer prior to the inspection.

(G) Additional sidewalks, wider sidewalks, and/or pedestrian easements may be required in subdivisions or developments when deemed essential by the City Engineer to provide circulation or access to schools, playgrounds, shopping centers, transportation and other community facilities.

(H) Bicycle lanes, where deemed necessary and appropriate by the City Engineer, shall be a minimum of 4 feet in width and placed between the outside lane of a roadway and the curb or shoulder. When on-street parking is permitted, the bicycle lane shall be between the parking lane and the outer lane of moving vehicles. Lanes shall be delineated with appropriate markings, as required by MUTCD Standards. Bikeways and bicycle lanes must be pre-approved by the City Engineer and meet the requirements of AASHTO "Guide for the Development of Bicycle Facilities," latest edition.

(I) Maintenance. It shall be the responsibility of landowners to maintain their sidewalks and pedestrian walkways, including those on adjoining rights-of-way, free of weeds and overgrown vegetation and in a clean and sanitary condition.

Section 332-10 Traffic Calming Devices

(A) Traffic calming devices and associated signage may be required by the City Engineer during the design and construction of streets in residential zones of the city where either the design speed or the posted speed limit is 35 miles per hour or less. Examples of situations what may be appropriate for the installation of traffic calming devices include, but are not limited to the following:

(1) Existing streets where more than 85% of the vehicles exceed posted speed limits.

(2) New streets with a straight length exceeding 1,200 feet without a stop-controlled intersection.

(3) New streets longer than 800 feet where lot widths are less than 60 feet or

(4) Local residential streets that directly connect two arterials or major collectors.

(B) Traffic calming devices for all local streets shall be placed, designed and installed in accordance with the design and placement standards approved by the City Engineer.

(C) Traffic calming devices and placement standards shall meet the following minimum criteria:

(1) The proposed traffic calming device must be recognized as such by the transportation industry, i.e., it must be recognized by the Institute of Transportation Engineers, American Association State Highway Transportation Officials, the Federal Highway Administration, the American Traffic Safety Services Association or other nationally recognized transportation industry organization or guiding authority.

(2) The City Engineer may impose additional design, location or construction criteria prior to approving such a device.

(3) The proposed traffic-calming device may include approved plantings, water quality or other environmental enhancements or beautification elements.

(4) Traffic calming may be accomplished via alternative geometric designs of the streets. Such designs are subject to review and approval by the City Engineer.

(5) Traffic-calming devices shall not create unusual or costly maintenance, create a safety hazard, or restrict movement of emergency vehicles.

(D) Entrance islands, cul-de-sac islands, tree save islands or other decorative islands are subject to review and approval by the City Engineer.

(E) All plant materials included in islands shall be installed at the expense of the Developer and shall be maintained by the property owner or property owners association. An approved maintenance agreement shall be included on the final plat recorded for the subdivision. See Section 302-66.

Section 332-11 Traffic Control Devices

(A) Manual on Uniform Traffic Control Devices Compliance. All traffic signals, signage, striping and pavement markings shall conform to the Manual on Uniform Traffic Control Devices (MUTCD), latest edition and any amendments thereto. Traffic control signs shall comply in shape, color, size, reflectivity, height, materials and placement.

(B) Traffic Signage.

(1) After final plat approval, the Developer shall procure and install all necessary traffic signs, traffic signals, and pavement markings as called for in the final plat. The City of Valdosta will inspect the installation to insure that work is done in accordance with the final plat and the MUTCD.

(2) Any signs that are damaged following initial installation, due to additional work at the site, shall be replaced at the Developer's expense.

(3) The use of decorative signposts may be approved at the discretion of the City Engineer, if covenants are provided that require decorative sign post replacement to be funded by the property owner or an established property owners association. If decorative signposts in any development are damaged or worn, the City will provide a standard U-channel sign post as replacement.

(C) Pavement Markings.

(1) Local streets are exempt from traffic striping requirements, except for stop bars at stop signs and markings at traffic calming devices. All other street classifications shall require both centerline and edge line striping in accordance with this Article.

(2) All centerline or edge line striping shall be performed in compliance with current GDOT standards. On any street classified as a Collector, Principal Arterial or Minor Arterial, all traffic striping shall be thermoplastic in accordance with current GDOT standards.

(3) All pavement markings shall be reviewed and approved by the City Engineer. All pavement markings shall be thermoplastic and shall be installed in accordance with current GDOT standards and MUTCD requirements.

(4) On any newly paved or resurfaced streets on public rights-of-way, thermoplastic stop bars are required on all approach lanes in accordance with MUTCD Standards.

(5) Raised pavement markers or similar devices shall be required on Collector and Arterial streets, and on any other street installed by Developers where safety conditions warrant such devices as determined by the City Engineer.

(D) Traffic Signals.

(1) Prior to the installation of a traffic signal, the installation of a single-lane roundabout may be considered in design of new streets following the submittal and review of a traffic study prepared by a Professional Engineer, registered in the State of Georgia.

(2) Traffic signal installation must be approved by the City of Valdosta and the GDOT, if on a State route. The Developer shall submit a traffic impact study prepared by a Professional Engineer, registered in the State of Georgia, detailing existing and projected traffic volumes, movements, capacity and required improvements. The City Engineer may require that a traffic impact study be provided for any development where increased traffic volumes may significantly impact the existing capacity, traffic flow or safety on any existing City street.

(E) Traffic Safety Improvements. It shall be the Developer's sole responsibility to fund, design, construct and/or install any all traffic safety improvements and traffic control devices required to provide safe ingress and egress to any development.

Section 332-12 through Section 332-20 ***Reserved***