

Staff Report

Subject: Commercial Corridor Overlay District
Author: Steve Candler
Department: Development Services
Date: September 10, 2024
Item Description: Additional Development Standards for Some Commercial Areas

Summary Recommendation

The Board of Commissioners sought to improve the entrance corridors into the county with improved appearance standards for commercial development. The overlay district is still the traditional zoning requirements for the zoning district (i.e. B-3) and then the overlays standards are an additional criterion.

Executive Summary/Background

- US Highway 21 from Chatham County line to Rincon City limits
- US Highway 21 from Rincon city limits to Springfield City limits
- Effingham Parkway
- Hodgeville road, as shown on the map

Alternatives

Approve an amendment to the Code of Ordinances Part II Appendix F Overlay Districts, Section 1 Commercial Corridors

Deny an amendment to the Code of Ordinances Part II Appendix F Overlay Districts, Section 1 Commercial Corridors

Recommended Alternative: 1 **Other Alternatives: 2**

Department Review: Development Services **FUNDING:** N/A

Attachments: Commercial Corridor Overlay District Ordinance

Corridor Overlay District

I. Intent and Purpose

The intent of the Corridor Overlay District is to establish minimum design standards for public improvements and property development that will enhance the character of the corridors by encouraging walkability while creating a streetscape. These standards include transportation connectivity, landscaping, architecture, lighting, and other elements that provide quality visibility and consistency along the Highway 21, Effingham Parkway, and Hodgeville Road corridors. Access and connectivity standards set forth in this ordinance seek to create a development pattern that creates safe and easily navigable circulation for vehicles, pedestrians, and alternative transportation methods. Development within the overlay district should connect and relate back to the surrounding community, as well as existing and planned roadways.

The purpose of the Corridor Overlay District is as follows:

- a. To promote the general health, safety, and welfare of the community
- b. To promote safe and efficient movement within and into the Corridor Overlay District for all modes of travel, including motorized vehicles, bicycles, and walking
- c. To improve connectivity and reduce curb cuts on Highway 21 and Effingham Parkway
- d. To create an aesthetically appealing, consistent connection between the Cities of Rincon and Springfield
- e. To create welcoming gateways from Chatham County into Effingham County
- f. To set minimum standards that promote development that is both aesthetically pleasing and environmentally responsible
- g. To establish standards that will assist in the development or redevelopment of these corridors with a particular focus on creating a true main street style of development

II. Overlay District Boundary

- a. *Location.* The Corridor Overlay District includes three separate areas as illustrated in Figure 1. Two of the areas include all unincorporated properties located within 500 ft. of either side of Highway 21 and the third area includes all unincorporated properties within 500 ft. of the right of way of Effingham Parkway and Hodgeville Road. The boundaries include all lots of record which are in whole or in part within that 500 ft. of the included rights-of-way. Where there are existing intersecting streets, the standards shall apply for the first 500 ft. of depth from the street intersection, as depicted in Figure 1.
- b. *Future Applicability.* The entirety of any property subject to this ordinance on the date of adoption shall remain subject to this article, even if the original parcel is subdivided in the future.

- c. *Zoning.* The Corridor Overlay District is supplemental to the underlying zoning district classifications and regulations established in the Effingham County Code of Ordinances. The provisions of this ordinance shall be overlaid and imposed in addition to underlying zoning regulations and other County ordinances. The Director of Development Services or designee is authorized to interpret and enforce such rules, regulations, guidelines, and standards as may be reasonably necessary or desirable.

In any case where the standards and requirements of the Overlay District conflict with those of the base-zoning district or with other provisions of the County Code, the standards and requirements of the Overlay District shall govern unless otherwise specified.

- d. *Applicability.* These regulations apply to new development and redevelopment within the Corridor Overlay District. In the case of redevelopment or site plan, an entire redevelopment site shall be brought into compliance with this ordinance if one or more of the following conditions are met:
 - 1. If the site is subject to a rezoning application; or
 - 2. The building floor area is being increased by more than fifty (50) percent; or
 - 3. More than fifty (50) percent of the existing building floor area is being replaced; or
 - 4. There is a combination of floor area increase and existing floor area replacement exceeding fifty (50) percent of the original building floor area.
- e. *Exceptions.* Parking, landscaping, screening, and all other regulations will need to be met for the entire site. The following exceptions shall apply to redevelopment sites:
 - 1. Building setback. Existing buildings will not be required to be moved or expanded to meet the setback requirements. However, building additions shall meet the required setback. All new buildings within a redevelopment site shall be required to meet the building setback provisions.
 - 2. Minimum height. Existing buildings undergoing redevelopment shall not be required to meet the minimum building height. Any new buildings within the redevelopment site, however, shall meet the requirement.
 - 3. Building frontage. Existing buildings shall not be required to meet the minimum building frontage requirement. However, new buildings and additions shall be required to comply with the frontage requirements to the maximum extent feasible.
 - 4. Non-Substantial Expansion. For redevelopment projects not meeting the criteria of Section D, *Applicability*, only the addition or exterior building modifications

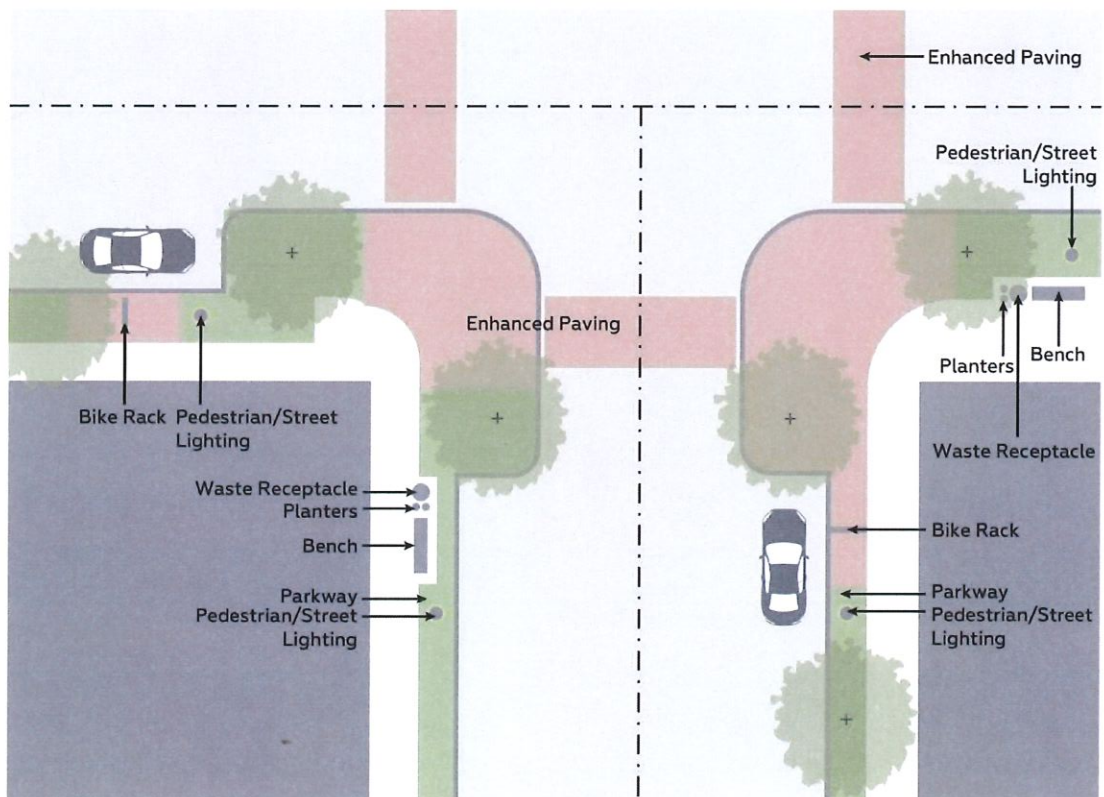
shall comply with the regulations contained in this ordinance. The remainder of the building and the site shall not be subject to this ordinance.

III. Access Planning Standards

a. Vehicular/Pedestrian streets and site access shall be as follows:

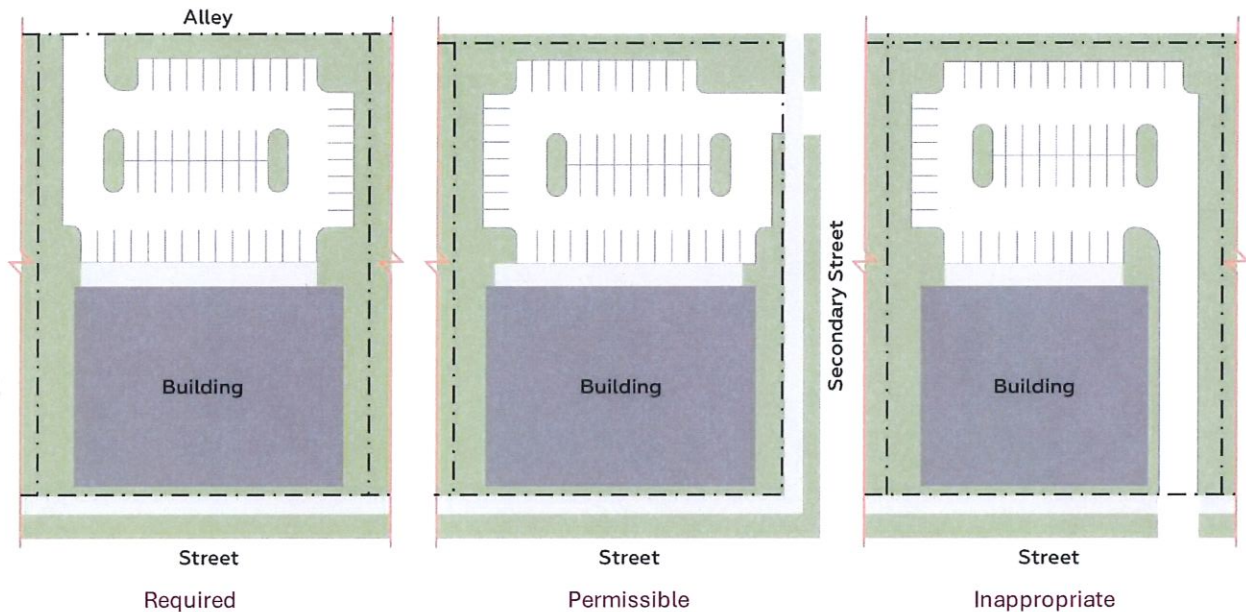
1. *Dedication.* The applicant may be required to build and/or dedicate right of way for public streets to provide interconnectivity and parallel routes to Highway 21 and Effingham Parkway. Such new streets shall meet County design standards for construction materials and quality, but shall also include, where applicable and approved by the County Engineer, enhanced paving/crosswalks, on-street parking, bike/pedestrian accommodations, and street trees as shown on Figure 2.

Figure 2



2. *Access.* The number of curb cuts and driveways shall be minimized. Cross access or rear/side access is preferred where possible as shown on Figure 3.

Figure 3

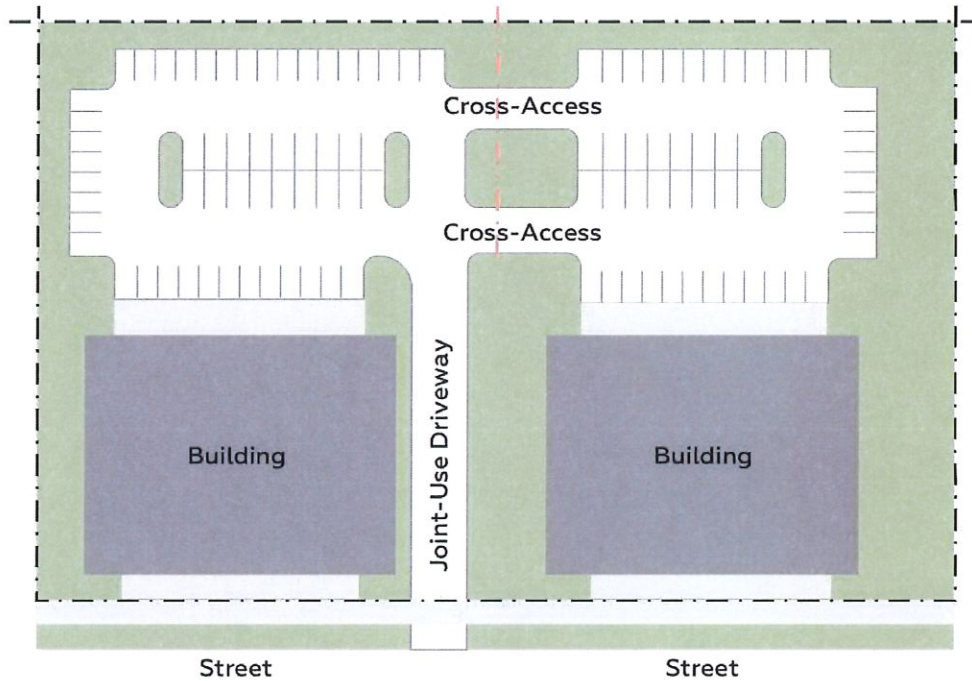


b. Additional design standards shall be as follows:

1. *Street trees.* Provide large or understory tree species along all new streets. Spacing for understory species shall be 30' to 45' on center and large species shall be 50' to 60' on center.
2. *Lighting.* Install pedestrian scaled street lighting on all streets to provide the minimal foot candle levels needed for the planned intensity of uses adjacent to the streets.
3. *Regulations for Driveway and Encroachment Control Manual.* The minimum spacing of driveways/vehicular access points and the minimum throat depth from right of way to first internal access point shall comply with the GDOT standards in the Regulations for Driveway and Encroachment Control Manual.
4. *Inter-parcel access.* Provide inter-parcel access points suitable for safe vehicular, bicycle, and pedestrian travel between all contiguous commercial, office, industrial, or residential uses, as demonstrated in Figure 4. The Director of Development Services or designee may waive this requirement only if the developer demonstrates that an inter-parcel connection is not feasible because of traffic safety, environmental, or topographical issues.

- i. The point of access shall meet the minimum spacing and throat depth referenced above and shall be established on a first come basis. Subsequent adjacent parcel developments must utilize the established connection point.

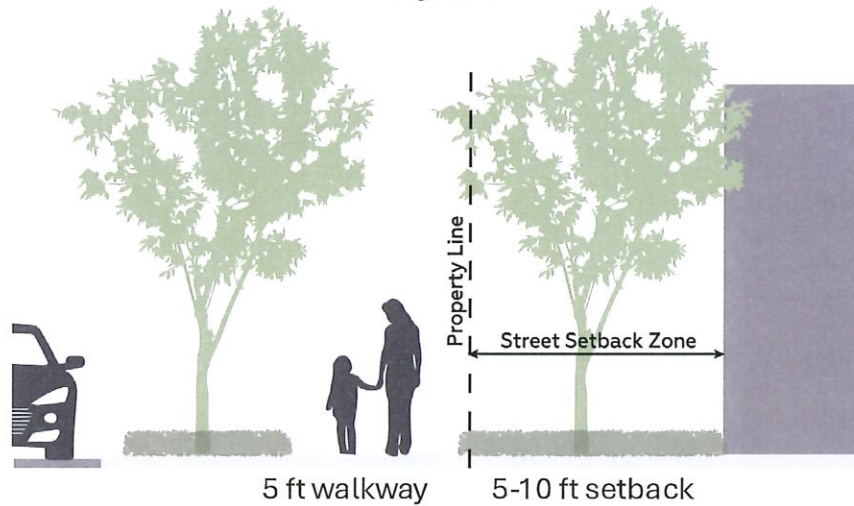
Figure 4



IV. Standards for Effingham Parkway

- a. Reverse-fronting residential lots shall be platted with a landscaped common use access easement for pedestrian flow, but restricting vehicular access placed adjacent to the Parkway right of way. Such easement shall be a minimum of 20 feet in depth and shall include the following:
 1. A continuous 4-foot-high solid or pierced masonry wall or a 4-foot-high fence constructed with masonry pillars with minimum spacing of 30 feet on center;
 2. Canopy trees spaced on average 50 feet on center;
 3. A minimum 5' wide pedestrian walkway along the entire frontage providing access to and between all lots. Common areas with a 5' wide pedestrian walkway providing access between lots shall be spaced no greater than every 500'. (Figure 5)

Figure 5



- b. Required setbacks on residential lots shall not overlap with the required buffer.
- c. The standards for Effingham Parkway are shown in **Table 1**.

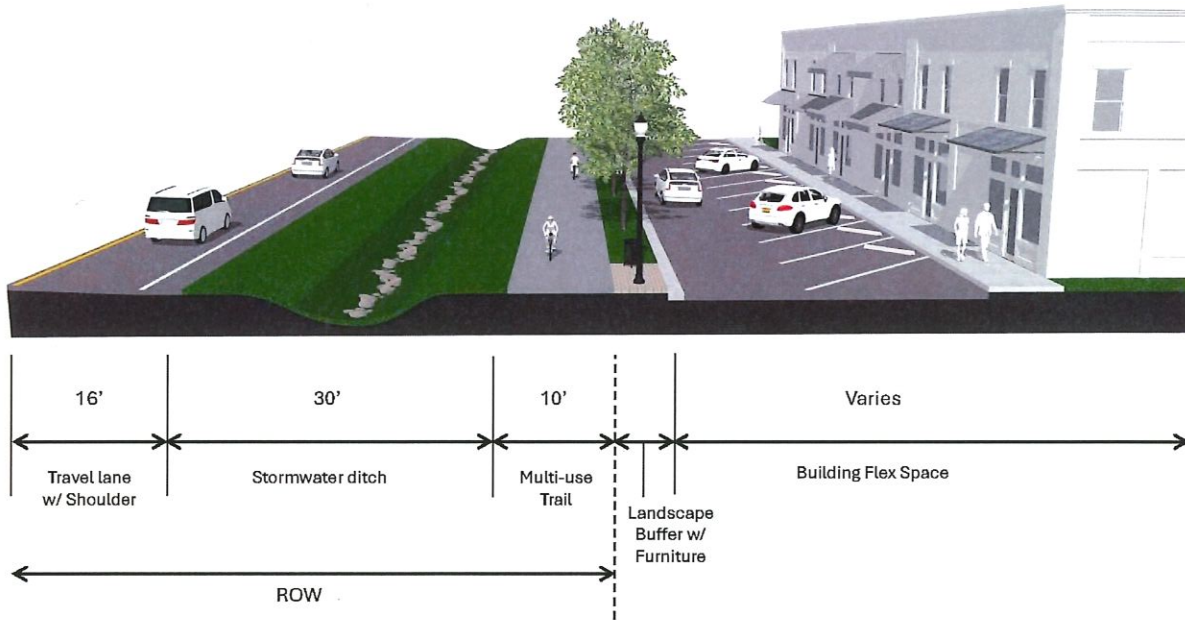
Table 1 - Site Standards

	Effingham Parkway
Building Placement	
Front and street side setback	5' min. to 10' max.
Side setback	0' min.
Rear setback	5' min.
Frontage buildout	60% min.
Lot and Block Standards	
Maximum block length	
Lot width	20' min.
Impervious surface area (%)	70% max.
Building Height	
Minimum building height	16'
Maximum building height	3 stories, 40 feet
Height for mechanical/ architectural above the max height	10 feet
Ground floor ceiling height	12' min.

V. Standards for Highway 21

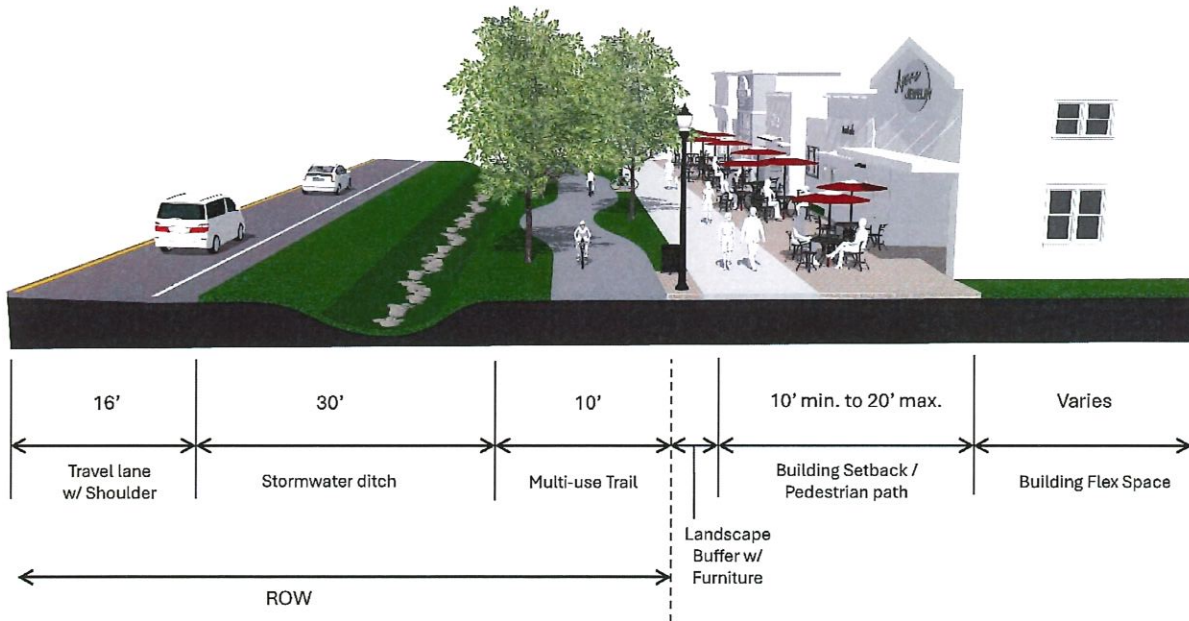
The intent is to activate the corridors and provide good pedestrian connectivity. Stormwater collection is provided either through swales/ditches or piping. This results in a requirement to have further separation from the edge of pavement to the buildings. In an effort to enhance this condition, a trail and bioswale are required, as depicted in Figure 6.

Figure 6 – Typical Section Existing Conditions



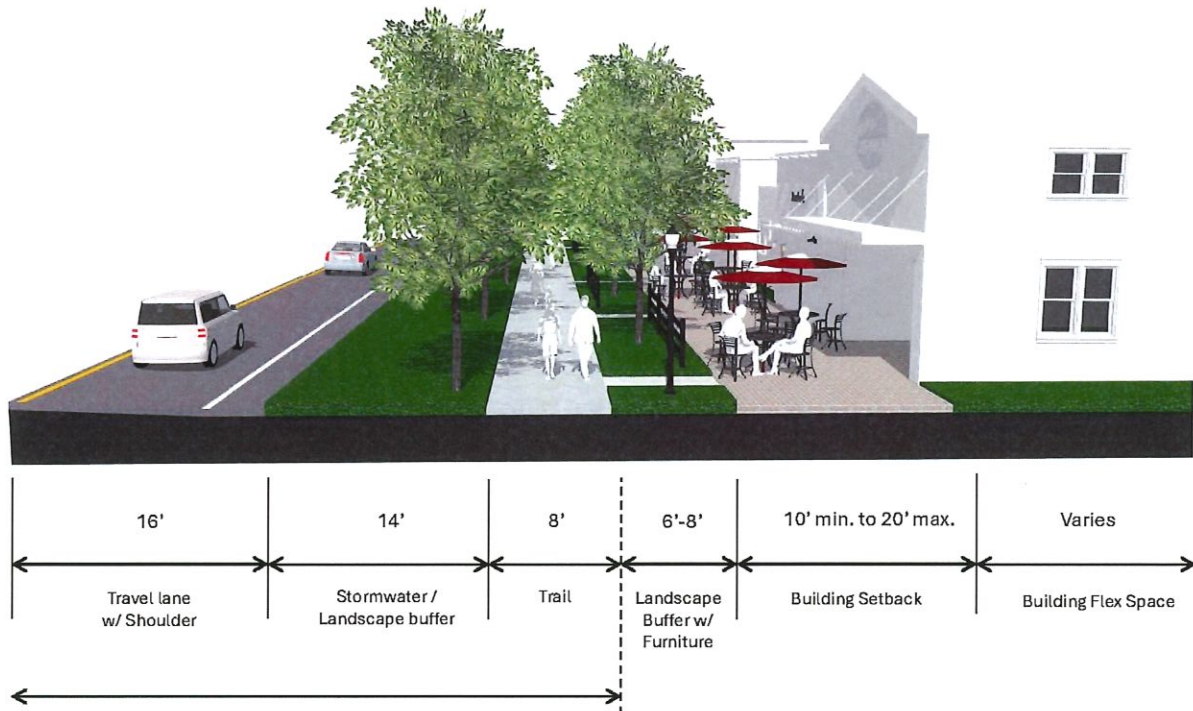
When a swale/ditch is provided, the requirements associated with Tier 1 in Figure 7 are applicable. Swales/ditches are vegetated open channels that are designed to manage post-construction stormwater runoff. Swales/ditches can be used to manage stormwater runoff on a wide variety of development sites, including residential, commercial and mixed-use. Figure 7 demonstrates how the swale/ditch continues to be accommodated along with a trail, setback, and pathway.

Figure 7 – Typical Section Tier 1



The depth from the travel lanes to the multiuse trail is reduced for sites with piped stormwater. In the case of piping, the dimensions for the trail and building setback/pedestrian path in Figure 8 are applicable. This condition is considered Tier 2.

Figure 8 – Typical Section Tier 2



a. The standards for Highway 21 are shown in **Table 2**.

Table 1 - Site Standards

	Highway 21
Building Placement	
Front and street side setback	5' min. to 10' max.
Side setback	0' min.
Rear setback	5' min.
Frontage buildout	70% min.
Lot and Block Standards	
Maximum block length	
Lot width	20' min.
Impervious surface area (%)	80%
Building Height	
Minimum building height	22'
Maximum building height	3 stories, 40 feet
Height for mechanical/ architectural above the max height	10 feet
Ground floor ceiling height	12' min.

VI. Landscaping

1. A minimum of 20% of the site shall be an open space/landscaped area. The areas required in other standards herein may count towards achieving this standard.
 - a) Landscaping shall be provided in the front and street side setback.
 - b) Plant at least 50% of the required open space/landscaped area in trees, shrubs, and groundcovers/ornamentals. No more than 50% of the landscape shall be in turfgrass whether seeded, sprigged, or sodded.
 - c) Provide at least 10 large canopy trees per acre. This requirement may be accomplished through preservation, planting, or a combination of the two.
2. All landscape designs must observe and accommodate sight lines at all intersections, driveways, and pedestrian crossings.
3. Provide a 15' minimum landscape strip along Highway 21 and Effingham Parkway frontage to create a consistent landscape aesthetic that does not block visibility to the use. The following shall be the minimum requirements for every 100' of the landscape strip:
 - a) 5 understory trees (may be grouped provided that there is no more than 50' between trees in any area)
 - b) 15 shrubs or ornamental grasses. Ornamental grasses must be of a species that will mature to a height of a minimum of 30" and a maximum of 6'.
 - c) Landscape at least 50% of the total area with trees, shrubs and living ground cover ensuring no more than 50% turf grass.
4. Provide a 5' minimum landscape strip on each parcel for the side and rear lot lines for areas where a county-wide buffer would not apply. For areas where a county-wide buffer standard would apply, that county-wide standard shall be used. The following shall be the minimum requirements:
 - a) 15 shrubs or ornamental grasses. Ornamental grasses must be of a species that will mature to a height of a minimum of 30" and a maximum of 6'.
 - b) Landscape a minimum of 75% of the total area with trees, shrubs, and living ground cover ensuring no more than 25% turf grass.

VII. Parking Lot Layout.

1. For parking lots with more than 10 spaces:
 - a) Provide no more than 10 spaces in a row without a tree island that is at least 9' wide and as deep as the adjacent spaces.
 - b) Provide a minimum of one medium or large canopy tree species in each island unless there is a conflict with an overhead utility. In that case, an understory tree may be used.

2. Parking shall not be fronting Highway 21 or Effingham Parkway. Parking lots shall be oriented in the side or rear of properties as demonstrated in Figures 6A & 6B. If parking is on the side, a street wall minimum height of 2.5 feet and a maximum height of five feet (measured from the elevation of the public sidewalk) shall be provided. Street walls shall provide the following:
 - a. Street Walls shall have openings no larger than necessary to allow automobile and pedestrian access.
 - b. Street Walls shall be placed in line with the building façade facing the same street
 - c. Street Walls shall not be permitted in the right-of-way.
 - d. Street Walls shall be constructed of wrought iron, brick, masonry, stone, powder-coated aluminum or other decorative materials that complement the finish on the primary building. Chain link, wood and PVC street walls/fences shall be prohibited.
 - e. The area in front of a street wall shall include a landscaped strip with a minimum width of five feet (with ground cover, hedges, or shrubs). The landscape strip may be waived by the Director of Development Services if the area in front of the wall is needed to expand the public sidewalk.
 - f. The area between the street wall and on-site parking shall also include a three-foot wide landscape strip.
 - g. Trees shall be planted in front or behind the street wall at a rate of one tree per 25 feet of wall length. If planted behind the street wall, the landscape area shall be at least 5 feet wide to accommodate such trees. The trees may be waived by the Director if they conflict with the required or existing street trees.

Figure 6A

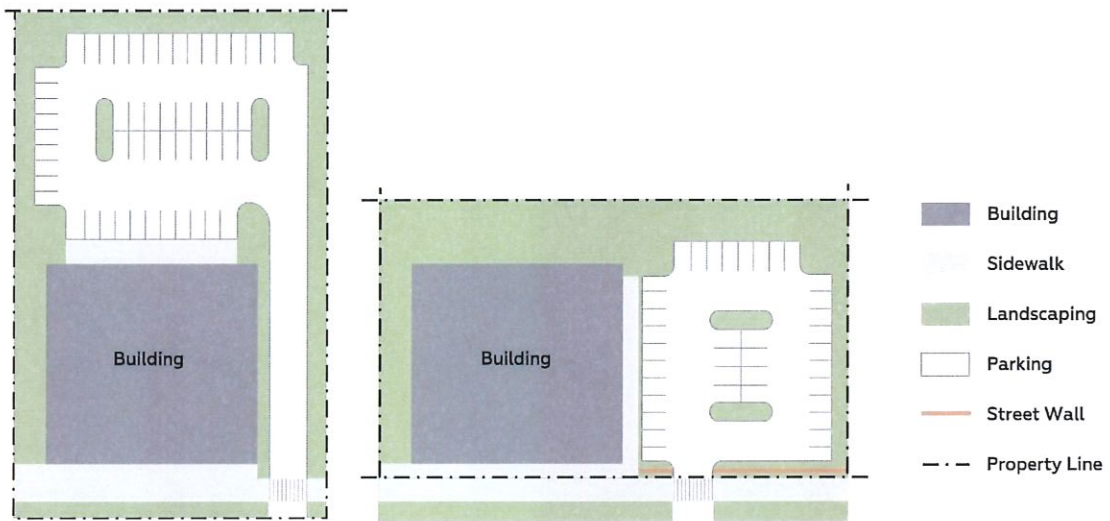


Figure 6B



VIII. Screening Requirements and Loading Requirements

1. Garbage/refuse areas and receptacles shall be placed in an accessible location as far from any public streets as practicable. The area shall be enclosed on three sides with decorative masonry walls of a similar material to match the architecture of the adjacent building. The fourth side shall be a self-closing opaque gate made from non-combustible

materials. The walls and gate shall be a minimum of 12” higher than the receptacle.

2. HVAC units and other mechanical equipment shall be screened from view from public streets by locating them behind the building, behind walls/fences, or through adequate landscaping plantings or other screening.
3. Vegetative screening shall include 100% coverage of the planting area, including a minimum of 75% evergreen plant materials. The plants shall be a minimum of four feet in height at the time of planting and have a height of not less than one foot above the height necessary to fully screen in two years. (whichever is greater).

IX. Lighting Design Standards

1. Streetlights shall be provided on both sides of all internal streets and public rights-of-way and shall be spaced appropriately for the needs of pedestrians and vehicular use.
2. The streetlights should use decorative fixtures and poles with housing and pole materials that are dark in color, non-reflective, and consistent with the design and architectural character of the buildings.
3. Fixtures shall meet IESNA standards for full cut-off type and designed to accommodate a house-side shield when adjacent to residential uses.
4. Lighting shall not directly illuminate adjacent residential properties.
5. Canopy lighting fixtures shall be completely recessed into the canopy and shall be shielded such that the lamp source is not visible. No lighting is permitted on top of or on the side of the canopy.
6. Parking lot lights shall not exceed a height of 25’ from finished grade.
7. Site and parking lot lights cannot be placed in the tree islands.
8. Street/pedestrian light posts shall not exceed a height of 18’ from finished grade and shall be a uniform decorative post and cap accepted by the County.

X. Drive-Through Facilities

Figures 7A to 7C are examples of appropriate design for drive-through facilities (building up to the street; drive-through window in the rear)

1. Building and Site Design.

- a) Drive-through lanes and windows shall be located along the side or rear of the building, away from street frontages. If the use is located within a building that has a parking garage, the drive through windows/bays shall be located within the garage.
- b) Drive-through facilities on a separate site than the principal use shall not be allowed.
- c) Menu boards shall not be visible from public rights-of-way. When not concealed from view by a building, menu boards shall be screened with landscape.
- d) Weather protection devices shall be provided over drive-through service points, openings, and menu boards. Lighting associated with weather protection devices shall be recessed and flush with the underside of such device.
- e) Weather protection devices, menu boards, and other elements associated with drive-through facilities shall be architecturally integrated and designed in harmony with the building.
- f) Garbage receptacles shall be provided after the service point or opening. Such trash receptacles shall be convenient and easily accessible from automobiles.

2. Pedestrian circulation.

- a) A direct and convenient pedestrian connection shall be provided between the right-of-way and the main building entrance.
- b) Safe pedestrian walkways shall be provided within the site. Walkways shall be clearly delineated by raised pedestrian crossings, decorative paving, bollards, signage, and landscaping to create separation from vehicular use areas. Where walkways intersect a vehicular use area, the walkway pavement shall be continued through the vehicular use area to clearly delineate the pedestrian network.

Figure 7A - Appropriately sited drive-through facilities

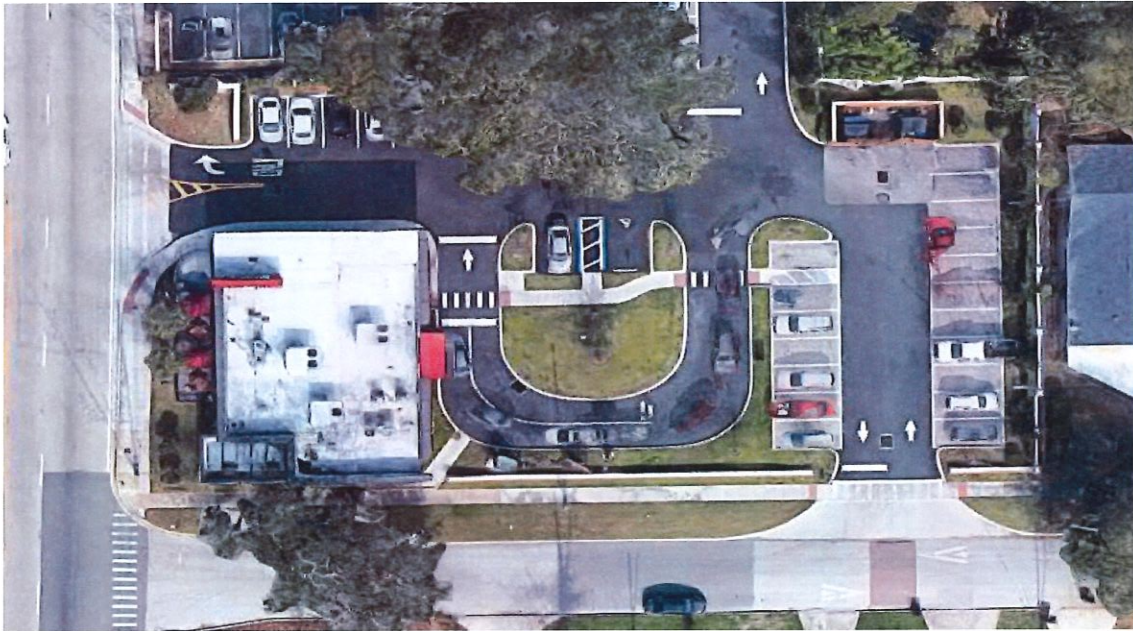


Figure 7B - Exterior Drive-Through Facilities



Figure 7C - Interior Drive-Through Facilities



XI. Auto Service Station/Car Wash Facilities

1. The convenience store or service building shall meet the required setback of the district. All pumps, parking, and service bays shall be located to the side (interior side only) or rear of the main building.
2. All services, other than gas, shall be performed within a fully enclosed building.
3. Screening as provided in subsection d of this ordinance shall be provided to screen the vehicular use areas. Landscaping (up to three feet in height) shall be provided in front of the wall to soften the treatment.
4. Gas station canopy clearance shall not exceed 18 feet.
5. Accessory car wash structures shall not exceed 20 feet in height, unless they have a hip or gable roof.
6. Accessory car wash openings, service, and storage areas, and refuse enclosures shall be oriented away from public view.

7. Site lighting shall minimize direct and reflected glare and excess brightness. Therefore, only cut-off fixtures shall be allowed.

Figure 8A - Gas station with ground-floor shopfront that defines the frontage of the lot.

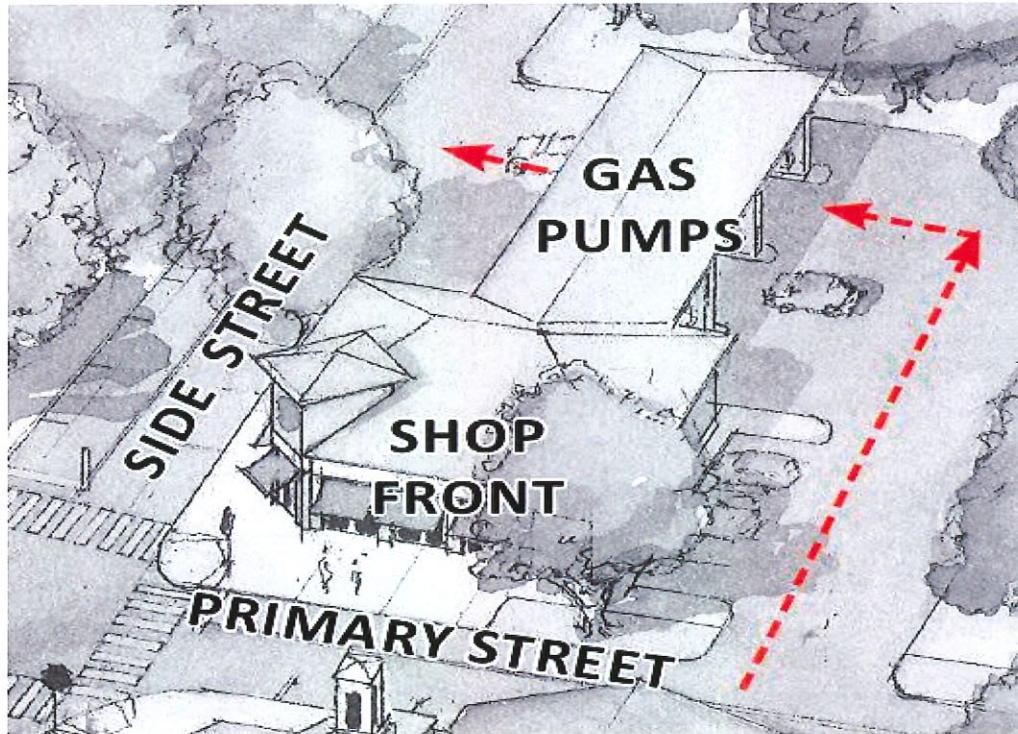


Figure 8B - Service Station Examples





Gas Station with pumps to the side of the building

XII. Signage Design Standards

1. Monument signs:

- a) No more than one double faced monument sign per road frontage
- b) Maximum height of 8 feet
- c) Maximum sign area of 64 square feet per face
- d) Structure material and separation:
 - 1) No exposed concrete block
 - 2) Brick, stone, masonry or equal architectural material
 - 3) Must reflect the architecture of the development
 - 4) Minimum 50-foot separation between monument signs on any street frontage.
- e) Exceptions: Gas stations may have an additional 24 square feet per street frontage to advertise gasoline prices
- f) The numerical address of the site shall be on the monument sign.

2. Wall signs

- a) Maximum of one wall signs for each place of business
- b) Permitted only on exterior building walls facing public streets
- c) Sign area of four-square feet per linear foot of the wall, subject to the following maximum sizes:
 - 1) Maximum of 150 square feet for buildings of three stories or less
 - 2) Maximum of 300 square feet for buildings of four stories or more

3. Window and Door Signs

- a) Permanent and/or temporary signs shall not exceed 10% of the aggregate window area. This limitation does not apply to information that local, state, or federal governments require, such as the proprietors' name, business name, address, phone numbers, hours of operation, etc.
- b) Signs may be placed in one window panel or distributed across more than one panel.
- c) Signs shall not be placed on doors.
- d) Lettering shall not exceed three inches in height.
- e) Address numbers must be between four and six inches in height and visible from the street.
- f) Temporary signs and banners may not exceed 60 square feet in area.

XIII. Architectural Design Standards

Developments shall divide large building masses into heights and sizes that relate to the human scale by incorporating actual or perceived changes in the building mass. This may be achieved by the façade treatments described in subsection 4 below. Each new building with elevations over 50 lineal feet corner to corner shall be broken into smaller Major Articulations intended to convey the impression of separate buildings. Requirements for both Major and Minor Articulations will apply to the front elevation and both side elevations.

4. Major Articulations – breaking up of larger elevations into smaller masses

- g) Façades (over 100 feet) should be broken vertically with a maximum spacing between breaks in material or massing occurring no less than every 50 feet horizontally or at each change in occupant. (See Figure 9)
- h) Each unit with a single building containing multiple units (strip mall) should treat every business's façade (more than 50 feet from the adjacent business measured entry to entry) with a change in material, color, and/or massing. (See Figure 9)
- i) Use color changes, material changes, slight projections in materials, offsetting of the building envelope, or changes in parapet height to achieve the required variation. (See Figure 11)
- j) In general, any change in material or color should also include a change in the profile of the material or outlined with trim.
- k) Changes in material and color should not but one another within the same vertical plane.

- l) Changes in a perceived massing can be achieved through slight projections of veneers (three to four inches) or changes in parapet heights and are not required to include actual offsets in the footprint.

5. Minor Articulations – way in which each mass is given a variety of detail

- m) Building exteriors shall all have consistent architectural features, building materials, and rooflines.
- n) Building permit applications must include elevations for all four sides of the building.
- o) Metal wall panels used as veneer on pre-engineered metal buildings should be limited to no more than 40% of any given façade on the front and side elevations.
- p) The same material and color mix for the front elevation should be carried around both sides. (See Figure 9)
- q) Buildings at the corner of two public streets shall create focal points to anchor the corner. These focal points may include a chamfered corner, display windows, corner entrances, fountains, or an outdoor gathering area with landscaping and furniture. Varying the height, adding canopies, providing additional glazing, projecting materials, providing changes in materials, etc. are additional ways to create a focal point and anchor the corner. (See Figure 10)
- r) The design of the primary entrance and individual tenant space entries must express greater architectural detail by using awnings, recessed/projected entries, changes in material, variations of the material patterning, or other similar techniques to create a focal point at the entry. (See Figure 11)
- s) Building colors shall be earth tones, grays, pale (less than 50% color value) primary and secondary colors, white cream tones, and/or other similar colors.
- t) Dramatic accents and/or primary colors may only be used for small areas such as trim, logos, or to distinguish an architectural feature.
- u) The combination of dramatic accent colors or primary colors cannot compose more than 10% of any building façade.
- v) Material selections and/or colors should be layered horizontally and detailed to present the appearance of a base, body, and crown. Simple metal coping topping a parapet is not a design element and cannot be considered as a crown. (See Figure 11)
- w) Prototypical buildings designed for repetition to project a company or chain image do not generally comply with the district regulations. The designs may be acceptable if they conform to the

standards or adapt their features to accomplish the standards' intent.

- x) The following exterior materials and features are prohibited:
 - 1) Plywood, cinderblock, unfinished poured concrete, unfaced concrete block, and plastic and/or metal not closely resembling a natural material
 - 2) Ribbed, standard metal panels
 - 3) Mansard roofs, low slope roofs without a parapet, and unarticulated roofs exceeding 50 feet in length without a change in parapet height
 - 4) Incongruous architectural details or contrasting color combinations
 - 5) Unscreened chain link or woven metal fences
 - 6) Use of highly reflective glass or other reflective materials as the main building feature
- y) Some consideration may be given to the following:
 - 1) Architectural poured in place concrete or concrete veneer panels
 - 2) Mansard roofs used only to focus attention on primary entries or corners

Figure 9

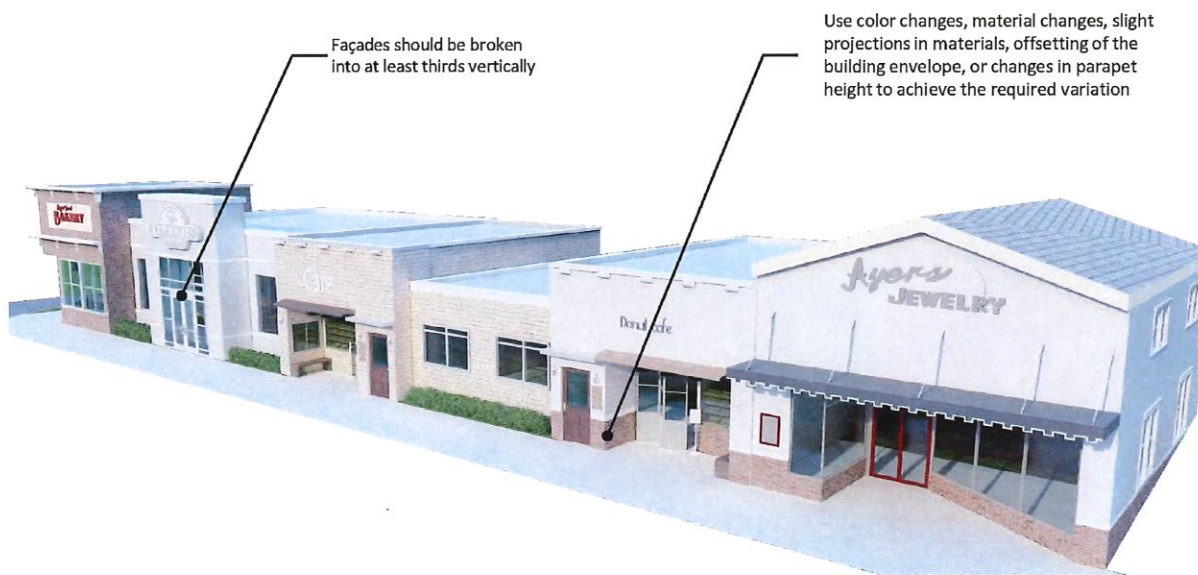


Figure 10

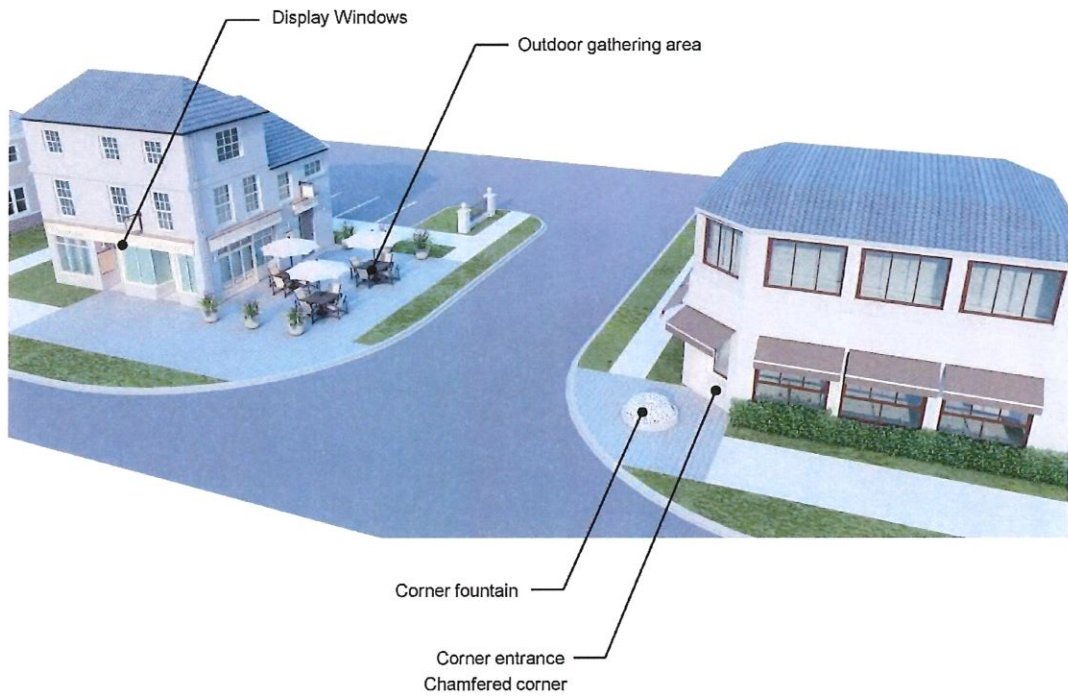
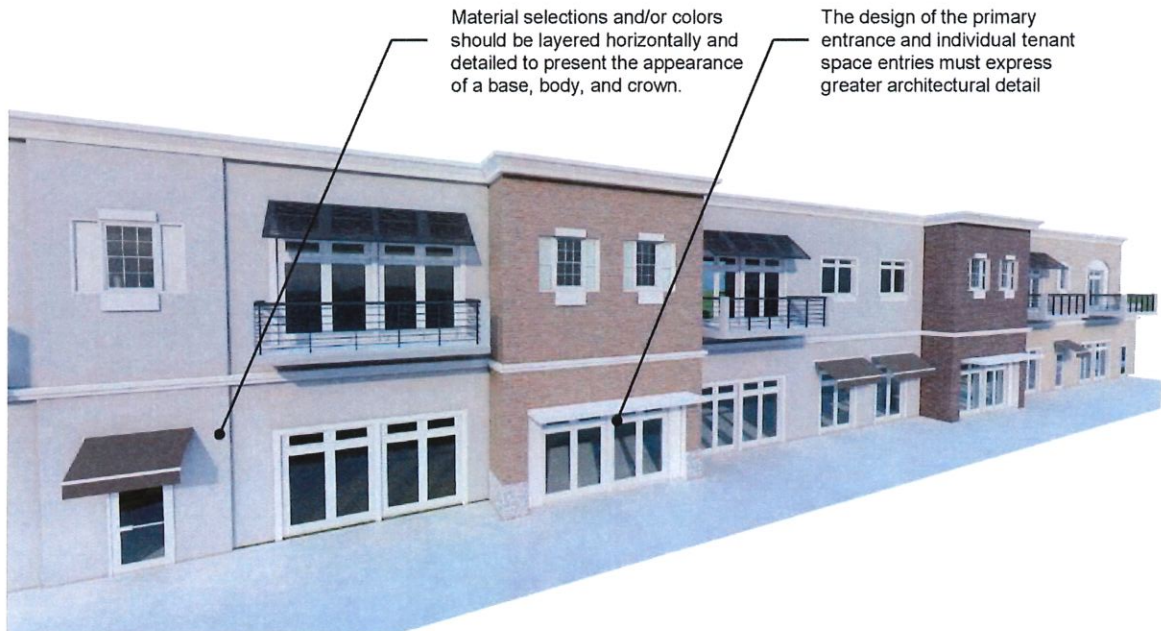


Figure 11



I. Traffic Signals

1. General Requirements

- a. All materials and workmanship shall meet the requirements of MUTCD (Manual on Uniform Traffic Control Devices), Institute of Transportation Engineers, the National Electrical Code, Industrial Control Standards of National Electrical Manufacturers Association, GDOT, and applicable State and local agency standards.
- b. All Traffic signals shall have poles and mast arms with attached luminaires. These elements should preferably be aluminum. For mast arms longer than 60 feet, steel poles and mast arms can be used. All poles, mast arms and other accessories shall be given adequate rust protection treatment as specified in these standards.
- c. Signal poles should have a height adequate to provide a minimum 17.5 feet clearance measured from the bottom of signal head to the crown of the road. The maximum height is determined by vertical sight distance as stated in the MUTCD. Poles shall be located at the Right-Of-Way Line (back of the Sidewalk), whenever possible.
- d. A minimum of two signal heads shall be provided for each approach. Heads shall be located from 40 to 180 feet from the stop bar, where, because of the Roadway geometry, the nearest signal face is 180 feet or more beyond the stop bar, a supplemental near side signal face shall be used. Non-permissive left-turn signals shall be three-section consisting of green arrow, yellow arrow and red ball. Use "left-turn signal" sign adjacent to non-permissive left turn signal(s). Dual left turn lanes require two three-section turn signals. Use five-section head cluster for protected permissive left-turning movements where such movements are warranted.
- e. All the signal indications shall be 12-inch glass lenses and LED for all indications unless otherwise specified by the County.
- f. Pedestrian signal heads and push buttons are to be installed at all signalized intersections unless otherwise approved. Crosswalks shall be a minimum of ten feet wide, with curb-cut ADA compliant ramps centered at each end. Pedestrian signals are to be aligned within crosswalks as closely as possible.
- g. All "T" intersections shall have a four-phase full activated controller in a BC 333 cabinet and all four-way intersections shall have an eight-phase full activated controller in a BC 333 cabinet unless otherwise specified by the County. A BC 4T cabinet shall be used to accommodate an existing telephone drop location.
- h. Detection for vehicular movement through an approach shall be accomplished using mast arm mounted video detection cameras. All video vehicle detection

systems shall be approved by the County engineering department prior to installation.

- i. Coaxial cable for video detection are to be placed in its own separate conduit independent of signal cable conduit.
- j. All poles, controllers, detector cabinets and other elements of the installation shall be grounded using a ground rod assembly or a ground rod array. The poles shall be grounded for a minimum depth of 60 feet, the loop detector pull boxes shall be grounded for at least ten feet, and the controller cabinet shall be grounded for at least 110 feet or latest specification from the County.

2. Materials

- a. The design of mast arms, poles, and pole foundations shall be in accordance with the “Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals”, AASHTO, latest edition. All shop drawings shall be signed and sealed by a registered structural Engineer.
- a. Vehicle detector loop wire shall conform to the current International Municipal Signal Association specification with the following exceptions:
 - 1. Loop wire shall be AWG #14 wire stranded 19/27; PVC insulation 0.032 inch thick, nylon jacket 0.010 inch thick, insulation voltage rating 600 volts. Temperature rating shall be 90°C maximum.
 - 2. Loop and lead-in to the controller cabinet shall be one continuous run with no splices. When splices are necessary, the splice shall be soldered, tapered and an approved waterproof coating applied (Scotch Guard or approved equal).

1. Installation.

- a. Pole foundation installations shall be backfilled and compacted to a firm, stable condition equal to or greater than that of the surrounding soil. Where applicable, the pole base shall be finished flush with the adjoining Sidewalk so as to allow an obstruction-free walking surface.
- b. The pole and mast arms shall be so constructed, connected, and installed that in their final positions the centerline of the signal arm will maintain a clearance above the Street of not less than 20.25 feet and not greater than 21.25 feet.
- c. Separate cables shall be installed to each pole including separate cables for pedestrian signals. Poles shall have flush hand-holes, one located near the base and one near the mast arm connection.
- d. A one-inch diameter wire access hole with rubber grommet shall be field drilled and cold galvanized on each signal mast arm by the contractor. Each location shall be the responsibility of the contractor to verify prior to drilling.

- e. The electrical circuits for luminaires and internally illuminated street name Signs shall be installed in separate conduits.
- f. When steel structures are used, rust protection shall be provided. The rust protection procedure shall be as follows:
 - g. After galvanizing but prior to painting, all galvanized surfaces shall be allowed to cool and vent gases produced during the cooling process.
 - h. Test galvanizing thickness to ensure sufficient galvanizing remains on the substrate to meet specification.
 - i. At the upright base and for a length of two feet, the interior of the pole shall be mechanically cleaned and coated with a zinc-rich epoxy powder 350°F minimum and 400°F maximum.
 - j. The exterior surfaces of the pole structure shall be coated with a urethane or triglycidyl isocyanurate (TGIC) polyester powder to a minimum dry film thickness of 2.0 MILS (0.020"). The coating shall be electrostatically applied and cured by heating the steel.